

CHAPTER 13 – CUTS, CHANGE, DILUTION AND DISTRACTION (1998-2006)

“There was no doubt that the culture at the time had switched. In the days of Sir Colin Terry¹ you had to be on top of airworthiness. By 2004, you had to be on top of your budget, if you wanted to get ahead”. (Former Senior RAF Officer, 2008)

*“Your friend the British Soldier can stand up to anything except the British War Office.” (George Bernard Shaw, 1856-1950, *The Devil’s Disciple* (1901))*

“We trained hard, but it seemed that every time we were beginning to form up into teams, we would be reorganized. I was to learn later in life that we tend to meet any new situation by reorganizing; and a wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency, and demoralization.” (Gaius Petronius Arbiter, 210 BC)²

Contents

Chapter 13 addresses the key organisational causes which contributed to the loss of XV230. It answers the following questions:

- What were the concerns in 1998 about maintaining the future airworthiness of the Nimrod fleet? Were they heeded?
- What organisational changes followed the 1998 Strategic Review? What was their cumulative effect?
- What were the financial pressures during this period? What effect did they have?
- What happened to the airworthiness regime in the MOD during this period?
- What effect did the organisational changes and financial pressures have on the Defence Logistics Organisation during this period?
- Did organisational failings contribute to the loss of XV230? If so, how?

Summary

1. The MOD suffered a sustained period of deep organisational trauma between 1998 and 2006 due to the imposition of unending *cuts* and *change*, which led to a *dilution* of its safety and airworthiness regime and culture and *distraction* from airworthiness as the top priority.

1998 Strategic Defence Review

2. This organisational trauma stemmed from the 1998 Strategic Defence Review which unleashed a veritable ‘tsunami’ of cuts and change within the MOD which was to last for years.
3. Financial pressures (in the shape of ‘cuts’, ‘savings’, ‘efficiencies’, ‘strategic targets’, ‘reduction in output costs’, ‘leaning’, etc.) drove a cascade of multifarious organisational changes (called variously ‘change’, ‘initiatives’, ‘change initiatives’, ‘transformation’, ‘re-energising’, etc.) which led to a dilution of the airworthiness regime and culture within the MOD and distraction from safety and airworthiness issues. There was a shift in culture and priorities in the MOD towards ‘business’ and financial targets, at the expense of functional values such as safety and airworthiness. The Defence Logistics Organisation, in particular, came under huge pressure. Its primary focus became delivering

¹ Air Chief Marshal Sir Colin Terry, Chief Engineer RAF (1997-1999).

² But sometimes attributed to Charlton Ogburn, Jr. (1911-1998).

‘change’ and the ‘change programme’ and achieving the ‘Strategic Goal’ of a 20% reduction in output costs in five years and other financial savings.

Nimrod Airworthiness Team Report 1998

4. A Nimrod Airworthiness Review Team Report in 1998 drew attention to low manning levels, declining experience, failing moral and *“perceived overstretch generally”*, and the hazards of sustaining operations *“with far fewer personnel and a smaller proportion of serviceable [aircraft]”*. The Report warned of *“the conflict between ever-reducing resources and ... increasing demands; whether they be operational, financial, legislative, or merely those symptomatic of keeping an old ac flying”*, and called for Nimrod management that was *“highly attentive”* and *“closely attuned to the incipient threat to safe standards”*, in order to safeguard the airworthiness of the fleet in the future.³
5. In my view, these warnings were not sufficiently heeded in the following years:
 - 5.1 Management was not *“highly attentive”* to safeguarding the airworthiness of the Nimrod fleet in all respects in the period 1998 to 2006, as we have seen, from the lack of leak trend monitoring (**Chapter 5**), the lack of historical duct failure analysis (**Chapter 7**) and the Nimrod Safety Case.
 - 5.2 Management was not *“closely attuned”* to the incipient threat to safe standards within the Nimrod fleet. On the contrary, the conflict identified *“between ever-reducing resources and ... increasing demands”* became markedly worse in the period 1998 to 2006: overall resources continued to be reduced and *“operational, financial, legislative”* pressures substantially increased as a result of: (i) severe financial targets following the Strategic Defence Review and the setting of the ‘Strategic Goal’; (ii) massive organisational change, particularly in the Defence Logistic Organisation; (iii) markedly increased operational demands due to Iraq and Afghanistan; and (iv) the fact that 30-year old Nimrod MR2s were required to be kept flying longer than planned due to delays in the MRA4 programme.
 - 5.3 Meanwhile, the overall integrity of the airworthiness regime and culture within the MOD weakened during this period as a result of organisational change and the ‘strategic’ emphasis given to delivering ‘change’ and savings targets. Safety and airworthiness slipped off the top of the agenda.
6. The Nimrod fleet of aircraft was going to require more (not less) care, resources and vigilance and a strengthening (not weakening) of the airworthiness regime and culture if these ‘legacy’ aircraft were going to continue to operate safely until their extended Out-of-Service date. Unfortunately, this proved not to be the case.

Three major organisational themes

7. As explained in **Chapter 12**, the Strategic Defence Review intensified three organisational themes during the period 2000-2006:
 - 7.1 First, a shift from organisation along purely ‘functional’ to project-oriented lines.
 - 7.2 Second, the ‘rolling up’ of organisations to create larger and larger structures as a result of (a) the drive to create more tri-service ‘purple’ organisations, and (b) a move to ‘whole-life’ management of equipment.
 - 7.3 Third, the ‘outsourcing’ to industry of increasingly more of the functions traditionally carried out by those in uniform.

³ Nimrod Airworthiness Review Team Report, dated 24 July 1998, paragraphs 13 and 30.

Cuts, Change, Dilution and Distraction

'Cuts'

8. Severe financial and resource pressures were placed on the MOD in the period 1998 to 2006. These included: (i) a 3% cut in the budget over the period 2000 to 2003; (ii) a 3% annual assumed efficiency saving in the period 2000 to 2004; and (iii) in the case of the Defence Logistics Organisation, a 'Strategic Goal' of a 20% saving in output costs in the period 2000 to 2005/06.

'Change'

9. A major programme of organisational 'change-upon-change' was initiated by the Strategic Defence Review driven, in large part, by financial imperatives. This included the following initiatives:
 - (1) 'Smart' Procurement;
 - (2) Equipment Capability Customer;
 - (3) Defence Procurement Agency;
 - (4) Defence Logistics Organisation;
 - (5) Integrated Project Teams;
 - (6) Defence Aviation Repair Agency;
 - (7) Joint Service and Air Publications;
 - (8) 'Partnership' with Industry;
 - (9) 'End-to-End'; and
 - (10) 'Leaning'.
10. There followed further waves of change, including:
 - (1) 'Re-energising' the DLO Change Programme in 2002;
 - (2) New DLO 'Change' Programme in 2002;
 - (3) 20-40% Manpower reduction programme commenced in 2002;
 - (4) Defence Logistics Transformation Programme in 2004;
 - (5) 'Streamlining End to End' Review in 2004;
 - (6) Expansion of 'Leaning' programme in 2004 onwards;
 - (7) Further savings required by the Gerson Report in 2004;
 - (8) Phase 2 of DLO re-structuring programme in 2005;
 - (9) Further MOD manpower reductions required in 2006; and
 - (10) Planning for eventual formation of DE&S (in 2007).

'Dilution'

11. The continuous organisational change during the period 2000 to 2006 led to a marked dilution of the safety and airworthiness regime and culture in the MOD, for three reasons. First, during this period there was an inexorable shift in the MOD from a 'safety and airworthiness culture' to a 'business culture'. Second, the organisational changes in the MOD led to a safety and airworthiness regime which was organisationally complex, convoluted, confused and *"seemingly dysfunctional"*. Third, meanwhile, there was also a steady dismantling of some of the important features of the safety and airworthiness regime which had previously existed:
 - (1) Abolition of the "Chief Engineer RAF";

- (2) Demise of full Airworthiness Audits and Support Authority Reviews;
- (3) Downgrading of level at which FWAMG was chaired;
- (4) Dilution of air technical support services;
- (5) Dilution of aircraft engineering skills;
- (6) Demise of the Inspectorate of Flight Safety;
- (7) Demise of the Role Office;
- (8) Removal of 2-Star tier from the Letters of Delegation chain;
- (9) 'Rationalisation' of AD Eng Pol with ADRP; and
- (10) Dilution of 'airworthiness' as part of Safety, Health Environment and Fire Risk Management (SHEF).

'Distraction'

12. These financial pressures and organisational changes distracted attention from vital functional values such as safety and airworthiness, as people and organisations within the MOD, in particular the Defence Logistics Organisation, became increasingly focussed on delivering the 'change' and the savings required.

Increasing operational demands

13. This was against a backdrop of dramatically increased operational demands as a result of commitment to the conflicts in Afghanistan and Iraq (Operations 'HERRICK' and 'TELIC').

Causation and the Nimrod IPTL and IPT

14. These organisational pressures, weaknesses and failures were a significant causal factor in the loss of XV230. They significantly contributed to the failures of the Nimrod Integrated Project Team (IPT) to ensure the airworthiness of the Nimrod fleet.
15. As set out in **Chapters 10 and 11**, there were significant failures by certain individuals within the Nimrod IPT in relation to the Nimrod Safety Case which contributed to its poor quality and failure to capture the risks which led to the loss of XV230. The evidence suggests that the Nimrod IPT was under increasing pressure during the period 2000-2005 as a result, in particular, of: (i) the demands of delivering the cuts and savings required by the Strategic Defence Review and 'Strategic Goal'; (ii) the demands of delivering the 'Transformation' required by the Defence Logistics 'Change' programme; (iii) the demands of supporting the growing operational roles of the Nimrod MR2 and R1 in the conflicts in Afghanistan and Iraq; (iv) the demands of extending the Out-of-Service Date of the MR2 as a result of delays in the In-Service Date of the MRA4; and (v) the wide role and remit of the Nimrod IPT Leader (IPTL). The job of the Nimrod IPTL during this period was described as "awesome". The Nimrod IPTL, Group Captain (now Air Commodore) George Baber, said in interview that, at times, there was a "lack of supervision" by his superiors and he felt "abandoned" when the 2-Star tier of airworthiness delegation above him was removed.
16. These organisational factors, *i.e.* the cuts, change, dilution and distraction, go some way to explaining (whilst not excusing) the personal failures of George Baber and Wing Commander Michael Eagles. They were, to a significant extent, distracted by and preoccupied with delivering the cuts and change required by the 'Strategic Goal' and Strategic Defence Review and subsequent initiatives, and consequently gave materially less priority and personal attention to the Nimrod Safety Case and airworthiness issues during this period than was appropriate. The weakening of the airworthiness culture meant that 'business' goals and achieving savings and efficiency targets

became the paramount focus of their time and attention, at the expense of safety and airworthiness matters such as the Nimrod Safety Case. The weakening of the airworthiness regime meant that there were insufficient checks and balances and less oversight of the Nimrod IPT than was required in all the circumstances during this period.

Responsibility

17. Two very senior figures bear particular responsibility for the episode of cuts, change, dilution and distraction and its consequences outlined above, and are the subject of significant criticism in their roles as Chief of Defence Logistics (CDL) during the key periods:

- General Sir Sam Cowan (CDL from 1 April 1999 to 31 August 2002)
- Air Chief Marshal Sir Malcolm Pledger (CDL from 2 September 2002 to 31 December 2004)

Conclusion

18. Airworthiness in the MOD became a casualty of the process of cuts, change, dilution and distraction commenced by the 1998 Strategic Defence Review.

Introduction

NART Concerns about Nimrod fleet in 1998

13.1 By 1998, the Nimrods were nearly 30 years old and getting closer to their Out-of-Service Dates (OSD). The planned OSD for the MR2 was 2006, by which time it was to be replaced by the MRA4. The planned OSD for the R1 was 2009.

NART Report 24 July 1998

13.2 In 1997, as part of an ongoing Airworthiness Review programme, the Assistant Chief of the Air Staff (ACAS) and Air Member for Logistics (AML) tasked the Inspectorate of Flight Safety to carry out a review of the Nimrod fleet. The review was duly conducted by the Nimrod Airworthiness Review Team (NART) which was instructed *“to conduct a wide ranging independent review of all in-service marks of the Nimrod aircraft to assess the integrity of the airworthiness management and maintenance practices in place or proposed; the currently planned out-of service date for the MR-Mk2 is 2006 and 2009 for the R-Mk 1”*.

13.3 NART delivered its report on 24 July 1998. It expressed real concerns about ensuring the future airworthiness of the Nimrod fleet:

13.3.1 Page 13 of the Executive Summary stated:

“The Review’s findings endorse those of various [Flight Safety] surveys and visits to RAF Kinloss over the past 2 years and highlight low manning levels, declining experience, failing moral and perceived overstretch generally as the driving concerns that impact directly on the MR Mk2 force’s ability to meet its operational task safely. Overall, the MPA Force is attempting to sustain historical levels of activity with far fewer personnel and a smaller proportion of serviceable ac, i.e. there is a large element of continuously trying to get ‘a quart out of a pint pot’, with all the attendant hazards that such a scenario presents to safe ac operations.” (emphasis added)

13.3.2 Page 30 of the Executive Summary stated:

“The majority of the [Nimrod Airworthiness Review Team]’s other airworthiness concerns and observations... tended to be linked to one central theme, i.e., the conflict between ever-reducing resources and stable, or in some cases, increasing demands; whether they be operational,

financial, legislative, or merely those symptomatic of keeping an old ac flying. The pressures that ensue from reducing resources place additional burdens on a 'can do' organisation such as the Nimrod Force and call for highly attentive management, closely attuned to the incipient threat to safe standards, if airworthiness is to be safeguarded." (emphasis added)

- 13.4 These concerns and warnings in the NART report were dismissed at the time as 'uninformed, crew-room level, emotive comment lacking substantive evidence and focus'.⁴ They should not have been dismissed so easily in 1998. They proved to be very prescient. (It should be noted that many of the same concerns were echoed to me by rank-and-file during my visits to RAF Kinloss ten years later in 2008.)
- 13.5 In my view, the NART concerns and warnings were not sufficiently heeded in the following years leading up to the XV230 accident, 1998 to 2006:
- 13.5.1 Management was not "*highly attentive*" to safeguarding the airworthiness of the Nimrod fleet in all respects in the period 1998 to 2006, as we have seen from the Nimrod Safety Case (**Chapters 10 and 11**), the lack of leak trend monitoring (**Chapter 5**) and the lack of historical duct failure analysis (**Chapter 7**).
- 13.5.2 Management was not "*closely attuned*" to the incipient threat to safe standards within the Nimrod fleet. On the contrary, the conflict identified "*between ever-reducing resources and ... increasing demands*" became markedly worse in the period 1998 to 2006: overall resources continued to be reduced and "*operational, financial, legislative*" pressures substantially increased as a result of: (i) severe financial targets following the Strategic Defence Review and the setting of the 'Strategic Goal'; (ii) massive organisational change particularly in the Defence Logistics Organisation; (iii) markedly increased operational demands due to Iraq and Afghanistan; and (iv) the fact that 30-year old Nimrod MR2s were required to be kept flying longer than planned due to delays in the MRA4 programme.
- 13.5.3 Meanwhile, the overall integrity of the airworthiness regime and culture within the MOD weakened during this period as a result of organisational change and the 'strategic' emphasis given to delivering 'change' and savings targets. Safety and airworthiness slipped off the top of the agenda.
- 13.6 The Nimrod fleet of aircraft was going to require more (not less) care, resources and vigilance and a strengthening (not weakening) of the airworthiness regime and culture if these 'legacy' aircraft were going to continue to operate safely until their extended Out-of-Service date.
- 13.7 Unfortunately, this proved not to be the case because of the 'cuts, change, dilution and distraction' that took place in the MOD between 1998 and 2006.

'CHANGE'

Organisational change and trauma (1998-2006)

"There was so much successive change-upon-change and not enough support to people like the IPTLs in understanding exactly what the environment looked like, what their responsibilities were and what help they needed to undertake those responsibilities." (RAF Officer, 2008).

The 1998 Strategic Defence Review

- 13.8 The starting point of any analysis of the effect of organisational change in the past decade is the Strategic Defence Review (SDR) of 1998.⁵ No single event introduced as deep or broad a change in defence acquisition as the SDR. It started a process of continuous 'change' which lasted for years, and the benefits and dis-benefits of which continue to be felt today.

⁴ Notes of a meeting to discuss the report dated 24 September 1998. See also the Brief for ADI dated October 1998 D/DAO/14/3/5 which refers to: "*regret that some of the content [of the NART report] does tend to reflect crewroom gossip/whinges rather than factual data*".

⁵ *Modern Forces for a Modern World*, Strategic Defence Review, 1998 White Paper (Cm 3999).

McKinsey Report on Procurement

- 13.9 As set out in **Chapter 12**, McKinsey & Co (McKinsey) was engaged by the MOD in December 1997 to review military acquisition in the light of the “*serious failings*” in the process of developing and purchasing major military systems in the United Kingdom.⁶ McKinsey was asked to undertake a review of the Procurement Executive with two objectives: to diagnose the underlying weaknesses in the present Procurement process and organisation; and to develop and cost alternative ‘models’ which would, if fully implemented, lead to a significant improvement in performance of the overall system as measured by though life programme costs, in-service dates and performance requirements.⁷ In its report dated February 1998 entitled *Transforming the UK’s Procurement System*, McKinsey made seven main recommendations for the organisational change of Procurement, including a revised ‘front-end’ process, the establishment of Integrated Project Teams (IPTs) and powerful industry incentives. McKinsey estimated the benefits of its recommendations to amount to: (a) a reduction in procurement time of 30-45%; (b) a saving of 30% on through life costs; (c) £150-290 million in annual savings through improved purchasing of parts and services; (d) £33-51 million annual savings from specific improvements in the purchase of non-operational common-use items; and (e) £35-50 million annual savings from a 20% reduction in the operating costs of the Procurement function. It is little wonder that McKinsey’s Report was greeted with enthusiasm in certain quarters, and its recommendations accepted and made a central part of the SDR programme. Some of the recommendations and tenets migrated across to Logistics and In-Service Support.

Change driven by cost considerations

- 13.10 The desire to achieve cost reductions across Defence was a major driver behind the 1998 SDR:

“We are determined to make every pound spend on defence count. We instituted a fundamental review of activities and assets as part of the Defence Review. This has proved so successful that we have been able not only to provide for the enhancements necessary to modernise the Armed Forces, but also to make a contribution towards wider Government priorities. The Defence settlement will mean a reduction, in real terms, of £500M in the first year, rising to nearly £700M in the third year, as the efficiencies begin to take greater effect.”⁸

- 13.11 As explained in **Chapter 12**, there was a belief that increased efficiencies and savings would come from: (i) greater ‘project-orientated’ organisations, *i.e.* as opposed to ‘functionally-oriented’ organisations; (ii) greater ‘purple’, *i.e.* a move from single-service to tri-service organisations; and (iii) greater ‘through-life’ management of platforms, *i.e.* throughout the whole CADMID cycle.⁹

Organisational trauma

- 13.12 There were many valuable aspects to the 1998 SDR. Reform and rationalisation of Defence Procurement, in particular, was long overdue. This Report is not intended to detract from the many achievements of the SDR and its contribution to the improvement of Defence Procurement and In-Service Support.
- 13.13 In this Chapter, however, I wish to concentrate on and explain how the 1998 SDR was the start of a prolonged period of deep organisational trauma in the MOD. This organisational trauma was brought about by a combination of numerous sustained financial pressures (in the shape of ‘cuts’, ‘savings’, ‘efficiencies’, ‘strategic targets’, ‘reduction in output costs’, ‘leaning’, *etc.*) which drove a cascade of multifarious organisational changes (called variously ‘change’, ‘initiatives’, ‘change initiatives’, ‘transformation’, ‘re-energising’, *etc.*) and which led to increasing organisational confusion, complexity, distraction and dilution. The Defence Logistics Organisation (DLO) within the MOD, in particular, came under huge pressure. There was a shift in culture and priorities towards ‘business’ and savings and efficiency targets, at the expense of functional values such as safety and airworthiness. The primary focus of the DLO became delivering ‘change’ and the ‘change programme’. There was a dilution of the safety and airworthiness regime and culture within the MOD.

⁶ *Transforming the UK’s Procurement System*, McKinsey & Co., 20 February 1998, page 1.

⁷ *Transforming the UK’s Procurement System*, McKinsey & Co., 20 February 1998, paragraph 2.2.

⁸ *Making Every Penny Count*, Appendix of supporting essays to SDR White Paper 1998.

⁹ (Concept, Assessment, Demonstration, Manufacture, In-service and Disposal, *i.e.* CADMID cycle)

- 13.14 In my view, airworthiness was an unintended, but undoubted, casualty of the seemingly unending process of 'cuts and change' launched by the 1998 SDR.

Summary of organisational changes

- 13.15 I now turn to summarise the main organisational changes resulting from the 1998 SDR and their consequences so far as is relevant to this Report. The 1998 SDR covered both Acquisition and In-Service Support. The organisational changes introduced by, or consequent upon, the 1998 SDR were numerous and wide-ranging and included 10 major changes:¹⁰

- (1) *Smart Procurement Initiative*: The launch of the *Smart Procurement Initiative*, a change programme based on McKinsey's recommendations aimed at transforming Procurement processes and organisation structures to make the procurement of defence equipment 'faster, cheaper and better'. The *Smart Procurement Initiative* was renamed *Smart Acquisition* in October 2000 to stress the point that the MOD was concerned not only with buying equipment, but with acquiring the means to support it throughout its in-service life. This programme had an associated target of reducing acquisition costs by £2 billion over the period 1998 to 2008.
- (2) *Equipment Capability Customer*: The creation of an *Equipment Capability Customer* (EC) organisation responsible for determining future equipment capability requirements and priorities for procurement.
- (3) *Defence Procurement Agency*: The remodelling of the Procurement Executive as the *Defence Procurement Agency* (DPA), an Executive Agency of the MOD.
- (4) *Defence Logistics Organisation*: The amalgamation of the three single Service Logistics Commands to form the *Defence Logistics Organisation* (DLO).
- (5) *Integrated Project Teams*: The creation of *Integrated Project Teams* (IPT) which would have responsibility for project management of military platforms throughout the CADMID cycle. This involved a shift from an organisation based on 'functional' lines to one organised along 'project-oriented' lines. The IPT model was adopted across the DPA and DLO.
- (6) *Defence Aircraft Repair Agency*: The merger of the three single-Service aircraft deep maintenance and repair organisations into the tri-Service *Defence Aviation Repair Agency* (DARA).
- (7) *Joint Publications*: The convergence of the single-Service aircraft maintenance policies into a series of *Joint Service Publications* (JSPs) and *Joint Air Publications* (JAPs).
- (8) *Partnership with Industry*: The increasing role of Industry in all of aspects of delivery of 'platform capability' and in-service maintenance and support, and the development of '*Partnership with Industry*' in a range of new areas.
- (9) *End-to-End*: The re-organising of all maintenance activities into 'Forward' and 'Depth' and the greater involvement of industry, known as the *End-to-End* (E2E) initiative.
- (10) *Leaning*: The introduction of efficiency business techniques and practices called '*Lean*' and '*Leaning*' developed by Japanese car manufacturers into all aspects of in-service logistics support.

- 13.16 I have touched on some of these principal organisational changes in **Chapter 12**. There are also many published documents regarding them. I therefore confine myself to expanding on certain particularly relevant aspects below.

Formation of DLO in 2000 and the 'Strategic Goal'

- 13.17 For present purposes, the principal organisational development was the formation of the DLO from the merged logistics organisations of the three Services. The new unified structure of the DLO 'stood up' on 1 April 2000. A new 4-Star level post of Chief of Defence Logistics (CDL) was created to lead the DLO. The CDL set the DLO a target of a 20% reduction in total output costs by the Financial Year 2005/2006 (£1.863 billion). This was referred to as the "*Strategic Goal*". I examine this in further detail below (under *Financial Pressures*).

- 13.18 The SDR rationale for the formation of the DLO was as follows:

¹⁰ See generally the *Defence Logistics Transformation Programme Handbook*, April 2001.

“The Strategic Defence Review (Cm 3999) recognised that the three single Service logistics organisations that existed at the time provided the necessary close relationship between the logistics area and the Front Line forces it supported, but that it was less well suited to maximising the scope for rationalisation and convergence on a functional, defence wide basis. It also took into account that operations were increasingly conducted on a joint basis with units of two or three Services working closely alongside each other, and the need to realise the benefits of the smart procurement initiative. As a result, it was decided to bring together the single-Service organisations into a unified Defence Logistics Organisation (DLO) to provide logistic support to all three Services. The organisation would be commanded by the Chief of Defence Logistics (CDL) charged with re-configuring them, after an appropriate transition period, into one integrated organisation whilst retaining the necessary close relationship with Front Line forces.”¹¹

- 13.19 Some steps were taken to manage the risks inherent in the creation of the DLO. In particular, the Principal Administrative Officers (PAO) remained in place during the foundation year (April 1999 to April 2000), each Service retained a 2-Star officer as a permanent member of the DLO (in the case of the RAF it was DG ES(Air)) and governance arrangements were put in place from a newly formed DLO Headquarters in Bath.

Shift from ‘functional’ to ‘project-oriented’ organisation

- 13.20 The major management change at this time was the shift from an organisation based on ‘functional’ lines to one organised along ‘project-oriented’ lines, as recommended by McKinsey. This shift had the potential, however, to undermine key functional principles such as safety and airworthiness, unless carefully managed. This was for two reasons in particular. First, management organised on project lines would necessarily be focused upon, and driven by, the immediate needs of the project itself, *i.e.* the imperatives of delivery, time and cost, and ensuring a successful output, *i.e.* completion of the project on time and on budget. Second, the task of maintaining standards and principles and injecting ‘orthogonal’ (functional) values of Good Governance, Best Practice, Safety and Quality Assurance is more difficult when dealing with a series of semi-autonomous self-standing project-driven bodies.
- 13.21 When changing from a ‘functional’ to a ‘project-based’ organisation, it is vital to set up rigorous structures, procedures, audits and reviews which will inculcate and regularly monitor the maintenance of standards, principles and orthogonal values in the project-based bodies. The safety regime and culture needs strengthening to deal with the new structure, not weakening. Greater checks and balances are required in the system not less. It is not clear that sufficient thought was given to these issues at the time of the formation of the DLO.
- 13.22 The theory is as shown in Figure 13.1 below.

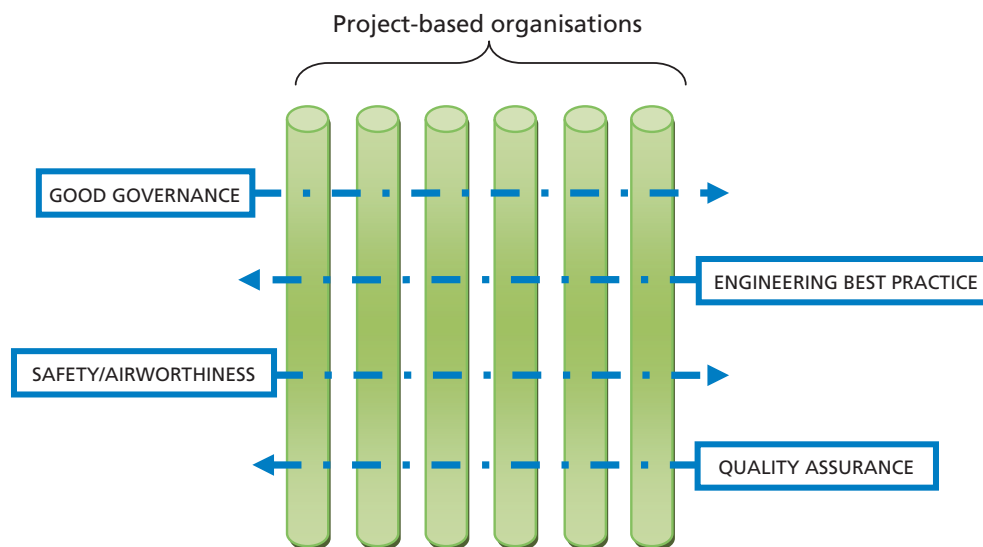


Figure 13.1: Orthogonal values in theory

¹¹ A Stocktake of Defence Logistics Transformation, November 2004.

13.23 The reality can look like Figure 13.2 (below).

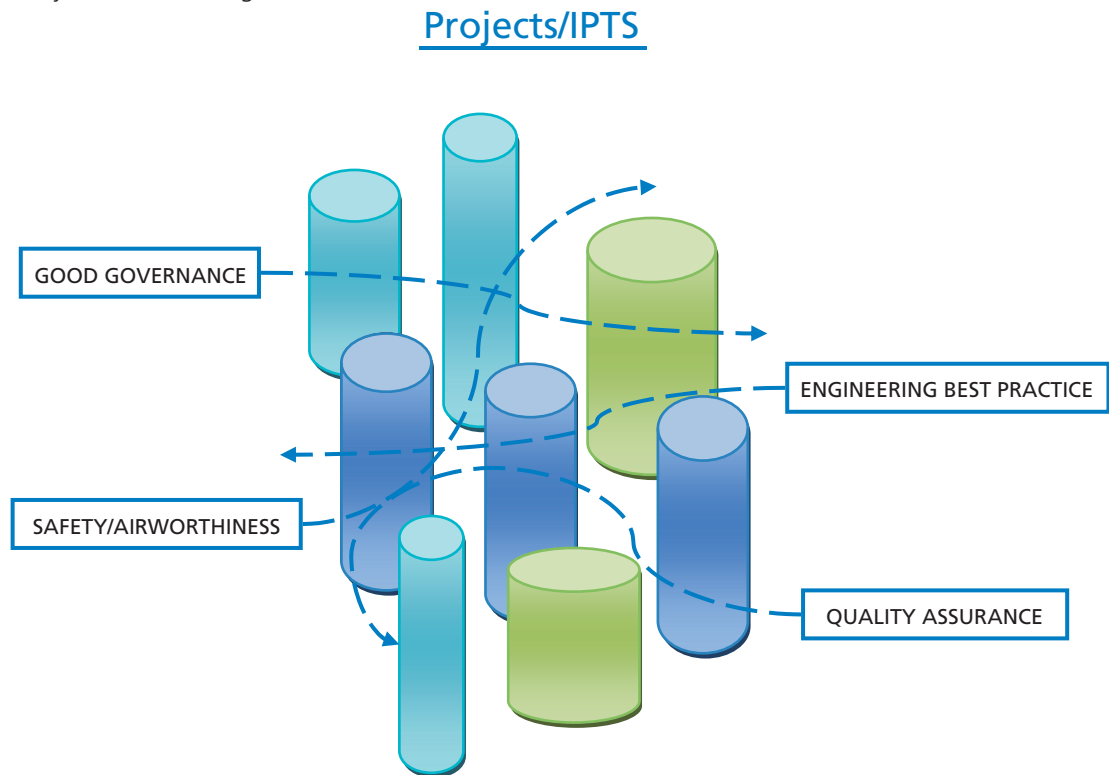


Figure 13.2: Orthogonal values in practice

De-layering

13.24 The process of devolution or ‘federation’ of responsibility to IPTs and IPTLs also involved ‘de-layering’, *i.e.* the removal of intermediate layers of management and oversight which had hitherto been provided by, *e.g.*, DG Technical Services, which had provided assurance and auditing functions, checks and balances. This was to ‘empower’ IPTLs and make IPTs fully ‘self-standing’. Some 100 IPTs were created which, therefore, had great freedom and independence to manage their platforms ‘end-to-end’, *i.e.* throughout the CADMID¹² cycle, as they saw fit. But, IPTs were, to some extent, cast adrift by this process. The IPT model was heavily dependent on the right calibre of people, capable of managing complex organisations and operating with sufficient time, resources, guidance and oversight. As the Nimrod IPT proved, however, it was not always easy to manage priorities correctly or balance functional values with project outputs. “*Project Engineers were lonely*”, as one senior official put it to me.

Change was difficult

13.25 In my view, changing Defence Procurement and Logistics in the way envisaged by the SDR was always going to be very difficult. There were a number of obvious reasons why. First, there are obvious and significant differences between procuring for Industry and procuring for Defence. The former involves commercial firms driven by profits and bonus schemes, with everyone normally coming from homogenous organisations with similar aims and measures of success. The latter involves a variety of competing Service Personnel, Civil Servants, and Industry, often with widely differing agendas, budgets, and motivation (public service or profit). The former often involves incremental procurement. The latter involves long-term decisions and risks concerning cutting-edge technology years hence. Second, the turnover of civil servants and military personnel in post is often rapid, since the most able are moved around to broaden their experience leading to a loss of continuity. Indeed, promotion in the military depends upon achieving a rapid succession and breadth of two-year postings (McKinsey recommended that Directors and IPTLs should remain five years in post but this did not always happen). Third, brokering smooth ‘civil partnerships’ between the two different cultures of military and industry is often easier in the saying than the doing. Fourth, the military are rightly, and naturally, trained, focused and busy dealing with the day job, being part of a fighting force and meeting the day-to-day challenges of military exigencies and demands.

¹² Concept, Assessment, Demonstration, Management, In-Service and Disposal.

- 13.26 The extent to which all these considerations may not have been fully understood in some quarters from the outset is not clear.

SDR said 'One major or two minor conflicts'

- 13.27 The SDR was also predicated on the assumption that UK Defence forces should be able to: (1) respond to one major international crisis which might require a military effort and combat operations of a similar scale and duration to the Gulf War; or (2) undertake a more extended overseas deployment on a lesser scale (as in Bosnia), while retaining the ability to mount a second substantial deployment, which might involve a combat brigade and appropriate naval and air forces, if this were made necessary by a second crisis. The SDR stated, however, that *"We would not, however, expect both deployments to involve warfighting or to maintain them simultaneously for longer than six months"*.¹³ This proved to be a false assumption. UK Armed Forces were subsequently required to play a major role in two major conflicts: Iraq and Afghanistan. The DPA and DLO had to procure and support Service personnel, platforms, materiel and Urgent Operational Requirements (UORs) for two major conflicts. As we shall see, this came at the same time as coping with major change and re-structuring and delivering major financial savings.

Subsequent change to DLO 'Change' programme

- 13.28 I turn first to set out some of the further organisational changes which took place following the initial launch and 'stalling' of the DLO 'Change Programme'.

'Re-energising' the DLO Change Programme in 2002

- 13.29 By May 2002, the DLO 'Change Programme' was in trouble. This was due to a variety of implementation and other problems including 'IT' problems. McKinsey was again brought in to advise and asked to identify the causes of the problems and review and adjust the 'Change' programme. McKinsey was specifically tasked by the MOD to *"carry out a review of the DLO change programme to revitalise current improvement efforts and identify further scope for improvement, leading to a robust implementation plan for delivery of the full 20 percent output cost savings within the original timeframe."*
- 13.30 On 6 September 2002, McKinsey published its paper, *Re-energising the DLO Change Programme*. McKinsey said that the DLO's 'Business Change' programme had *"stalled"* due to questions about affordability, delivery, prioritisation and focus on 'core business drivers'. McKinsey said that the Strategic Goal set by CDL was *"a major challenge"* since it was equivalent to fully 5% of the MOD's then cash budget but said that the *"current shortfall"* had to be addressed and made recommendations for a more *"radical programme"* of change. McKinsey pointed out that every day that it took to implement the 'change' equated to £1.7 million lost. The overall 'Strategic' Objective of 20% savings in output costs by 2005-06 remained; but because, by 2002, the DLO had fallen behind where it should have been, savings greater than pro-rata 20% were required in the remaining years 2002-2005 to achieve the target.
- 13.31 It should be noted that the DPA was not immune. When giving evidence to the House of Commons Defence Committee (HCDC) in February 2003, the then Chief of Defence Procurement (CDP) stated that the DPA had adopted only one of the principles of *Smart Procurement*.

New DLO 'Change' Programme – September 2002

- 13.32 On 26 September 2002, the *DLO Change Programme* was launched which was said to replace *"the previous incoherent"* Business Change Programme. The DLO change programme comprised three elements: (a) existing initiatives; (b) McKinsey 'workstreams'; and (c) transformational activity from the Strategic plan. There were nine McKinsey 'workstreams': Strategy; Programme Management; Engineering & Asset management; Materiel Flow; Procurement; Finance & Performance Management; Information & Knowledge Management; and Organisation & Management. The aim was to move from *"a predominantly Provider role to one of an intelligent Decider"*.

¹³ *Modern Forces for a Modern World*, Strategic Defence Review, 1998 White Paper (Cm 3999), page 32.

McKinsey recommendation of 20-40% reduction in manpower

- 13.33 As part of the solution to 're-energising' the DLO change programme, McKinsey recommended that a major 'personnel reduction' exercise be commenced within the DLO which would achieve manpower reductions of 20-40 % from the levels of 1 April 2002. McKinsey observed that successfully 're-energising' the DLO change programme would represent "*a massive multi year challenge*" and changing the DLO's 'core' processes would be "*extremely difficult in its own right*", as well as changing DLO working practices. The McKinsey manpower reduction recommendation was accepted and implemented, leading to further change and re-organisation within the DLO in the ensuing years.

Defence Logistics Transformation Programme in 2004

- 13.34 On 1 April 2004, the logistics elements of the DLO Change Programme and the E2E Review were brought together under the *Defence Logistics Transformation Programme* (DLTP) to form a single programme of logistics change initiatives across Defence. To achieve the three key DLTP 'deliverables' of 'effectiveness, efficiency and flexibility' seven 'key principles' were adopted: "*configure for the most likely operational scenario (medium scale); concentrate resource and material; rely on an effective supply chain; apply lean principles and techniques; minimize the deployed footprint; apply the forward depth concept; optimize MOD/industry contractual relationships*". A number of new bodies were set up including the Defence Logistics Board (DLB), the Defence Logistics Transformation Board (DLTB) and the Logistics Programme Board (LPB).

'Streamlining End to End' Review 2004

- 13.35 The *End-to-End* programme was said to be on target to achieve the full target saving of £342 million in the next three to five years, but success depended particularly on ensuring "*supply, cost consciousness of the Front Line Commanders*". A joint MOD/McKinsey Report said: "*There is a real danger of underestimating the sheer scale and intensity of the effort required for delivery over the next 5 years.*"¹⁴ The *End-to-End* Review made 51 recommendations. The principles and techniques of the 'Leaning' process were to be applied to the E2E supply chain.

'Leaning'

- 13.36 The '*Leaning*' programme gathered pace in 2003 and was rolled out across the board together with the E2E initiative over the next two years. Few areas were immune. 'Leaning' was applied to RAF Kinloss by both the Nimrod IPT and Strike Command. The scope for 'leaning' at RAF Kinloss was not obvious since, unlike e.g. the Tornado fleet which was spread out over several bases, the Nimrod fleet: (a) already had all its maintenance, Forward and Depth, on one base (RAF Kinloss); and (b) Flight Refuelling Services (FRS) were already contracted to carry out a high proportion of RAF Kinloss Nimrod maintenance.
- 13.37 Despite its valuable aspects in terms of eliminating waste and increasing efficiency, '*leaning*' became increasingly synonymous in many people's minds with 'cuts' and regarded as just another 'euphemism' for the inexorable rounds of reductions in manpower and resources. There was some justification for this view. '*Leaning*' proved something of a Trojan Horse for many.

Further savings required by Gershon Report in 2004

- 13.38 In 2004, a Spending Review (called SR04) took place in the course of which further savings were required by the *Gershon Report*. An 'efficiency' target of £2.82 billion by 2007/2008 was accepted. The report explained accounting changes from Long Term Costing and Cash accounting to Resource Accounting and Budgeting (RAB).¹⁵

¹⁴ *Streamlining End to End Air and Land Logistics, End of Wave 1 Report: From Demonstration to Delivery*, 8 April 2004.

¹⁵ RAB included the full cost associated with the activity, platform or spares, including depreciation and interest on capital employed.

Phase 2 of DLO re-structuring programme: 2005

13.39 The MOD Annual Report and Accounts 2004-05 stated:

"The DLO completed Phase 1 of its Restructuring programme in 2004-05. This established the DLO's new corporate structure, realising around 700 post savings and reducing the cost of corporate support substantially. It has transformed the delivery of corporate support by dismantling the previous structure of 5 individual High Level Budget areas, including the headquarters, and establishing a single corporate approach. At the same time the Integrated Project Teams and other units delivering output to the DLO's customers were organised into clusters to provide effective and coherent management of a technology supplier or customer base. A radically different organisational structure has now been created based upon three Layers – a Delivery Layer, supported by an Enabling Layer of corporate support services and directed by a very small Strategic Layer. A new performance management regime has been created to drive performance across the organisation. For the first time the performance of the Enabling Services will be measured against standards set out in internal business agreements. These changes provide the basis for Phase 2 of the Restructuring programme, aimed at delivering significant effectiveness and efficiency benefits over the next two years."

Further MOD manpower reductions required: 2006

13.40 In June 2006, *Enabling Acquisition Change*¹⁶ contained a DLO plan to reduce MOD manpower numbers from 27,000 in October 2004 to 21,600 by March 2008. The Report observed:

*"The Department has a record of being sound on analysis but less strong on implementation. The changes we have recommended should be incorporated into a single coherent DIS acquisition reform programme led at Departmental Level and managed in accordance with Office of Government Commerce best practice including a risk mitigation strategy. This programme should form part of the Defence Change Programme, but the governance arrangements will need to engage both the Acquisition Policy Board and the Defence Management Board. At the same time a major effort will be needed, involving Ministers and all members of the Defence Management Board to present the changes in a way that will bring them to life, and encourage the changes in behaviour and culture needed."*¹⁷

Formation of DE&S in 2007

13.41 As explained in **Chapter 12**, there was no further bedding down time because plans were developed in 2006 which led to the eventual merger on 1 April 2007 of the DPA and DLO to form the Defence Equipment & Support (DE&S).

Conclusion on Change

13.42 The scale, pace and variety of 'change' which the MOD in general, and the DLO in particular, underwent during the period 1998 to 2006 has been without precedent in recent times. Indeed, there existed a state of almost continual revolution, such that the MOD has almost become addicted to 'change' and a 'change culture'. 'Change' has been seen as a good thing *per se*. In some quarters, this attitude is still prevalent today.

13.43 It is reassuring to see an article by an RAF officer in *Desider* (the DE&S' own magazine) in February 2008 on the RAF *diaspora* in Main Building referring to the subject of the Air Force Board's (AFB) approach to leadership and, specifically, what is required from squadron and station commanders: "[The AFB] want people in command who are confident enough not to succumb to changing things for the sake of change".

¹⁶ MOD Report, *Enabling Acquisition Change*, June 2006.

¹⁷ *Ibid*, page 43.

- 13.44 'Change' in any organisation is a necessary and good thing. Change is required to improve quality and productivity, to address changed circumstances, and to meet future challenges. Change for change's sake, however, should be avoided. Further, great care must be taken to ensure that change is not at the expense of core functional values. Change can be seriously inimical to safety and airworthiness unless properly planned, resourced and managed. It can lead to the organisational dilution of safety structures. It can lead to a diversion of resources from safety matters. It can distract attention from safety issues. It can lead to a shift in priorities. It can change the culture. In this case, it did.

'CUTS'

Financial pressures on DLO (2000-2006)

"More for less is a perfectly tolerable position provided it is linked to genuine, achievable efficiencies. But the feeling we have is that the organisation is expecting more and more, in a way that takes little or no account of the level of resources, which are being cut as a matter of policy." (Minute by Air Vice-Marshal, 1998-2000).

Cuts drove Change

- 13.45 It is clear that the SDR 'Change Programme', the formation of the DLO, and many of the subsequent initiatives outlined above were driven in large measure by a desire to achieve reductions in Defence costs.

General Sir Sam Cowan (CDL April 1999-August 2002)

- 13.46 General Sir Sam Cowan was chosen to be Chief of Defence Logistics (CDL) and charged with implementing the decision of the then Secretary of State for Defence to create the DLO. Sir Sam Cowan was promoted to 4-Star in September 1998 and held the post of CDL from 1 April 1999 until 31 August 2002. He was *"overseeing one of the biggest corporate change programmes under way in Britain"*.¹⁸ As set out above, the concept of the DLO was the merger of the three single-service logistic support organisations into one tri-Service (i.e. purple) organisation. In the 1998 SDR White Paper, the Secretary of State stated that the CDL would be *"responsible for delivering best business practice throughout our support services"*.¹⁹
- 13.47 Sir Sam Cowan told the Review that the setting up of the DLO was *"strongly opposed by the Service Chiefs of Staff"*, but the Secretary of State insisted that it was both necessary and appropriate. He said he continued to encounter some opposition to the change throughout the implementation period and beyond. He said *"I was not helped by the fact that the Secretary of State, who made the decision, moved on at an early stage"*.²⁰

Inherited financial risk – 'bow wave'

- 13.48 The MOD budget was already under great pressure at the time of the 1998 SDR because of financial problems inherited from the previous single-Service PAO budgets. By the late 1990s, a considerable amount of inherited financial risk had built up, i.e. commitments for which no ostensible financial provision existed or gaps between the cost of delivering programmes and the funding allocated. This was in the shape of a large 'bow wave' of deferred acquisition and other expenditure which had built up in the 1990s. This stemmed mainly from year-on-year 'Peace Dividend' financial cuts following the end of the Cold War. There were two 'Peace Dividend' reviews: *Options for Change* in 1990 (which led to major cuts in Defence manpower and resources); and *Defence Cost Study "Front Line First"* in 1990 (which led to 'purple'²¹ and further reductions in manpower). There was, however, a reluctance to take hard decisions to cut future military equipment programmes to balance the budget, and the financial cuts were temporarily absorbed by the practice of

¹⁸ *Financial Times* of Monday 3 April 2000.

¹⁹ 1998 White Paper *Modern Forces for a Modern World*, paragraph 16.

²⁰ General Cowan's Written Statement to the Review dated 22 May 2000.

²¹ Also called 'jointery', i.e. the merging of single Service organisations into tri-Service 'purple' organisations.

deferred expenditure or savings ‘wedges’. There was a ‘conspiracy of optimism’ in 1990s. This had the knock-on effect of a growing gap between the PAO budgets and the actual cost of delivering logistics support two or three years down the line. A cash-based accounting system made the under-estimation of future resource costs possible. This was going to be less easy with RAB.

13.49 Sir Sam Cowan summarised his time as CDL:

“[M]y time as CDL was marked by a constant struggle with the central MOD financial authorities to get a greater allocation of cash to maintain logistics outputs, while we introduced the change in business practice mandated in the SDR to reduce the cost of delivering the outputs demanded.”

1 April 1999 brochure

13.50 On 1 April 1999, Sir Sam Cowan sent a brochure to every person in the DLO in which he spelt out how he saw the future financial position:

“We must acknowledge that in a world of shrinking Defence budgets, we will have to meet increased diverse operational commitments with the same or less money. The reality is that we simply cannot afford to maintain the front line agreed in the SDR unless the Defence Logistics Organisation finds better, cheaper ways to provide the support necessary within the money available.”

The brochure also said: *“There will be no sudden uprooting of large numbers of people. Change will come, but it will come at a suitable pace and where it is needed.”* He told the Review that he stuck by that principle throughout his time as CDL.

‘Strategic Goal’ of 20% reduction in output costs by 2005

13.51 On 1 April 2000, a six-page Corporate Plan was distributed to each of the 43,000 people working in the DLO which announced the (so-called) ‘Strategic Goal’ of a 20% reduction in output costs by 2005:

“We are committing ourselves to a bold target. We will reduce our output costs by 20% by 2005 whilst ensuring that we continue to deliver and, indeed where appropriate, improve the quality of our outputs.”

13.52 Sir Sam Cowan’s Corporate Plan was expressed in trenchant terms:

13.52.1 A ‘transformation’ was required: *“Quite simply, we have to achieve a transformation in how we deliver effective logistics support to the front line at a sustainable cost. This means that we must reduce the cost of our outputs, not by crude cuts but by changing the way we work”.*

13.52.2 There was to be an urgent ‘step change’: *“We are committing to this strategic goal for a clear and vital purpose... the future effectiveness of the UK’s Armed Forces. The consequence of us failing to deliver will be inadequate funding for investment to modernise our Armed Forces. To make these savings we need a step change in our performance which we must pursue with a sense of urgency”.*

13.52.3 There was an exhortation on all to strive to achieve the goal: *“We must all be obsessive about performance. Where it is good we must strive to do even better and where it is barely adequate we must commit to radical new ways of working”.*

Treasury synopsis 2000

13.53 A Treasury synopsis dated 3 April 2000²² re-enforced the commitment to the 20% ‘Strategic Goal’:

²² Public Services Productivity Panel Report, Targeting improved performance: *Performance Management in the Defence Logistics Organisation*: http://hm-treasury.gov.uk/pspp_press03.htm

13.53.1 The Minister for the Armed Forces was quoted as follows: *"The creation of the Defence Logistics Organisation was an essential element in delivering the Front Line improvements heralded in the Strategic Defence Review. It is committed to achieving major reductions in output costs within 5 years and improving the availability of equipment, and views a robust performance management regime as an essential tool in achieving this aspiration."* (emphasis added)

13.53.2 McKinsey was quoted as follows:²³ *"The newly-formed DLO has made commendable progress in improving performance, not least by committing itself to cutting output costs by 20% by 2005, while maintaining the standard of its service to its customer."* (emphasis added)

13.54 In the accompanying letter to the Prime Minister dated 4 April 2000, the Chief Secretary to the Treasury highlighted the following points:

- *"Responsibility for £2.75 billion of spend has been delegated to the leaders of 50 cross-functional Integrated Project Teams."*
- *"... the DLO has set itself a target of reducing output costs by 20% by 2005, whilst maintaining both the quantity and quality of the outputs required by its customers."*
- *"Particular challenges facing the organisation are to refine its agreements with customers to include robust and granular costings, to institutionalise its performance review processes, and to continue to refine its scorecard of measures. ..."*

Implementation of the 'Strategic Goal'

13.55 In its Performance Report to Parliament 2001-2002, the MOD reported that the DLO *"continued to work towards its Strategic Goal"* of realising a 20% reduction in output costs by 2005 while maintaining or improving delivery. It reported that the DLO had made a 5.6% reduction in output costs since March 2000 as a result of a number of 'efficiency' initiatives. These included the establishment of *"a single supply chain organisation"* for key commodities, the implementation of *"cost management and 'lean support' initiatives"*, the achievement of *"inventory reductions"*, the reduction of *"almost 1,000 posts"* in HQ, and the establishment of *"partnership arrangements"* with key industry suppliers. As explained above, however, the DLO 'Change programme' subsequently required 're-energising' in 2002 and 20-40% cuts in manpower were recommended by McKinsey.

13.56 In its Performance Report to Parliament 2002-2003, the MOD reported 3.5% savings in the year 2002/03 against an in-year target of 2%, leaving *"a balance of 10.5% to be achieved by March 2006"*.

Single supply chain in DLO

13.57 It is clear that, in 1998, the MOD's materiel and logistics base was inefficient and involved much duplication of effort, inventory and resources. Instead of having three storage organisations and three supply chains, it made sense for there to be some rationalisation, particularly given that there were more joint deployed operations. The SDR mandated that the DLO should hold ready *"only that manpower, equipment, materiel, weapons and ammunition that cannot otherwise be provided within readiness and preparation times without unacceptable operational risk or at greater cost."*²⁴

13.58 The SDR principle set in train a huge process of stock reduction. The SDR set a target of a 20% or £2.2 billion reduction in the book value of inventory over the next three years.²⁵ In order to implement this directive, the DLO set an overall 5% target for 'stock reductions' in 2001-2002 and 2002-2003 and *"more stretching targets"* in some individual areas, including the Air domain, which had a target of 10% stock reduction in 2001-2002.²⁶ This involved the disposal of stock deemed to be 'surplus'. It is not clear whether sufficient thought was given, however, to the implications of some of the stock disposals, in particular getting rid of items which, whilst not in demand at the time, would be required further downstream. Analysis by the

²³ The McKinsey member of the Public Services Productivity Panel.

²⁴ National Audit Office (NAO) Report, dated 20 June 2002.

²⁵ Paragraph 186 of the SDR White Paper.

²⁶ National Audit Office (NAO) Report, dated 20 June 2002.

RAF's Logistics Analysis and Research Organisation indicated that while some 50% of stock items might be 'inactive' at any one time (due to a lag in the manufacturing/purchasing process), somewhat less than 10% of stock items were inactive in the long term. It appears, however, that a somewhat draconian approach to disposals may have resulted in valuable and necessary spares held in stores being thrown away, only to have been subsequently re-purchased at a later date.

- 13.59 The formation of a single supply chain organisation brought considerable financial benefits. It is not clear, however, whether sufficient risk analysis was done in relation to the central sourcing of spares. As I discuss in **Chapter 5**, the fact that a non-conforming Avimo seal part found its way into the Nimrod fleet raises concerns about the MOD procurement chain for such parts and whether it is wise for specialist aviation parts to be sourced by the centralised non-specialist 'Medical and General Stores IPT'. And as Sir Sam Cowan himself pointed out, the SDR principle that the armed services should not hold above what their immediate readiness needs were, soon "*broke down*" during the Afghanistan and Iraq deployments.

Further financial pressures on DLO: (a) 3% cut over three years and (b) 3% annual efficiency savings for four years

- 13.60 As Sir Sam Cowan would have been well aware at the time,²⁷ the 'Strategic Goal' came on top of two further financial pressures imposed on the DLO by the SDR. In the financial year 1999/2000, the DLO was given an allocation from the total MOD budget of £22.295 billion based on the aggregate of the three PAO budgets in the previous financial year. The DLO's allocation was some 20%, or approximately £4.6 billion, of the total MOD budget. The subsequent years' allocations were, however, subject to two further financial reductions imposed by the SDR: (a) a 3% cut in the total budget; and (b) 3% assumed annual efficiency savings, as explained below.

(a) Defence settlement: 3% cut over three years

- 13.61 The first financial reduction amounted to a "3% over three years" cut in the Defence Budget imposed by the SDR. The Government's SDR White Paper provided: "*The Defence settlement will mean a reduction, in real terms, of £500M in the first year, rising to nearly £700M in the third year, as the efficiencies begin to take greater effect. In sum, a fall of 3% in real terms in the Defence budget by the end of this Parliament*".²⁸

(b) Annual efficiency savings of 3% over four years

- 13.62 The second financial reduction arose from the attribution of the assumption of future efficiency gains made in the SDR White Paper, namely "*a 3% annual efficiency saving in operating costs over each of the next four years*".²⁹

Move from cash-based to RAB accounting

- 13.63 In 2000, the MOD began to move from cash-based financial management to RAB. The burden of implementing this change "*fell particularly heavily on all staff across the DLO*". During Sir Sam Cowan's time as CDL, however, financial accounting in-year continued to be run on a cash basis, *i.e.* at the start of each year he was given a cash allocation which he could not exceed.

Deductions at source – Iron rule

- 13.64 Thus, all budget reductions were to be made at source, *i.e.* it was assumed at the beginning of the financial year that the targets for reductions in output costs and annual efficiency savings would be met and funds were deducted from the budget funds allocated for each financial year accordingly. It followed that each service

²⁷ And as Sir Sam Cowan explained in his Written Statement to the Review dated 22 May 2000.

²⁸ SDR White Paper, page 386, taken from the "*Press Notice and Key Points of the Strategic Defence Review*".

²⁹ SDR White Paper, paragraph 194.

or organisation faced a shortfall at the end of the financial year if the targeted savings were not made. The iron rule was the services had to live within the cash provided. The cash was being taken before the savings were in fact delivered.

Sir Sam Cowan's evidence about the 20% 'Strategic Goal' figure

- 13.65 Sir Sam Cowan was asked by Counsel to the Review about the figure of 20% 'Strategic Goal' figure for reduction in output costs:

MR PARSONS QC: ...[Where does the] figure of 20 per cent.... come from?

GENERAL COWAN: It comes entirely from me.

MR PARSONS QC: It was your figure?

GENERAL COWAN: It was my aspirational target. ... It was appropriate at that stage to make certain that everybody in the organisation had a stretch target; had an imaginative aspirational target that we could achieve."

- 13.66 Sir Sam Cowan was asked why he had chosen the figure of 20%. He explained that 'it could have been 15% or 25%' but came from his experience as Quartermaster General and work done as part of the SDR:

GENERAL COWAN: ... — I had been the Quartermaster General for two and a half years before I took this job on. I had been immersed in this area. I knew about the inefficiencies on stocks. It had been, of course, spelt out for me in the separate piece of work done as part of this Strategic Defence Review.

So I thought it was, having discussed with — internally, it could have been 15 per cent; it could have been 25 per cent. I thought that based on the work that we got underway — ... — so I inherited a lot of ideas which had been the product of nearly two years' work; of different work strands as part of the Strategic Defence Review."

- 13.67 Sir Sam Cowan was asked whether he 'stress tested' the figure to see how realistic it was and what the risks associated with implementing it would be:

MR PARSONS QC: During your six months with the implementation team, I assume that you stress tested the 20 per cent to see how realistic it was and what the risks associated with it would be?

GENERAL COWAN: Well... this was not something that was stress tested and — I was not making a 20 per cent reduction in people's budgets. ... I was not taking ... a 20 per cent cut ... and [passing] this on immediately arbitrarily in a very stupid way to the Nimrod IPT. Nothing like that took place.

MR PARSONS QC: No, but what you were doing was setting a target of a strategic goal of reducing output costs by 20 per cent —

GENERAL COWAN: Over five years.

MR PARSONS QC: — in resource terms by 2005/2006 which is a major challenge equivalent to 5 per cent of the MOD's cash budget.

GENERAL COWAN: Yes. We did it.

MR PARSONS QC: That must drive cost-cutting actions.

GENERAL COWAN: No.

MR PARSONS QC: It must do. You must make a saving somehow.

GENERAL COWAN: Yes, but they were not cost-cutting as under cash. They were reducing output costs by introducing specific measures; specific changes."

13.68 Sir Sam Cowan subsequently added:

"GENERAL COWAN: *I think I did carry out a self-examination, in discussion with my — my management board, about whether 20 per cent over five years was the right sort of area, given that there were no immediate consequential cuts in budgets that — dependent on this 20 per cent. These were going to be real savings achieved by implementing real changes and progressively reducing the costs of these outputs."*

13.69 Sir Sam Cowan was asked specifically whether, and if so, what, risk assessment he had carried out at the time as to the implementation of the 20% reduction in output costs programme:

"MR HADDON-CAVE QC: *[The question is] whether and if so what risk assessment you did at the time with your board as to the implementation of this programme which you outlined.*

GENERAL COWAN: *I think the simple answer to your question is that: this was an aspirational target. It would be decided year-on-year as we progressed and brought together the storage organisations, brought together the supply chain organisations. ...*

...[W]e decided that we would pitch this at 20 per cent and work our way progressively towards it, knowing that every single measure ... would be properly assessed in terms of risk as an individual measure within the overall process."

20% figure

13.70 In my view, the 20% Strategic Goal figure was more a product of expedience than analysis. It seems no coincidence that the figure was precisely the same as the 20% aggregate of the total Defence funding year-on-year cuts over the previous seven years and the total shortfalls built up in some of the PAO's previous budgets, namely the 20% bow wave of risk which had built up in the AML. Sir Sam Cowan's choice of a figure of 20% must have met with warm approval in certain quarters.

No overall risk assessment carried out

'Aspirational' target

13.71 I reject Sir Sam Cowan's repeated emphasis on the notion that the 20% figure was merely an 'aspirational' target and a 'strategic' goal.³⁰ In my view, this was somewhat naive, if not disingenuous. His so-called 'Strategic Goal' was, in reality, an order down the line that the 20% reduction had to be achieved. This is how it was intended, and certainly how it came to be viewed. I doubt whether the 20% target felt particularly 'aspirational' to any of those who were subsequently charged with implementing or delivering it. The reality was that CDL, having personally committed the DLO to making these savings, expected everyone below him to deliver them. The strong impression one gets from the witnesses and the evidence is that the 'Strategic Goal' of 20% and other required financial savings were implemented across the board with a ruthless, if not 'Stalinistic', efficiency. As one former IPTL put it: *"It was a heinous crime to go above your resource totals."*

'Can do, will do' culture

13.72 The 'Strategic Goal' played straight into to the hierarchical, process-driven, but otherwise wholly admirable, 'Can do, will do' culture of the Armed Forces. Unfortunately, 'Can do, will do' became 'Make Do'.

13.73 Every platform and department was expected to deliver its share, irrespective of special pleading. Ambitious officers on short two year tours saw delivering, and being seen to deliver, whatever 'change', savings and efficiency targets that were demanded as the route to preferment.³¹ The zealots were on the fast track to promotion.

³⁰ Sir Sam Cowan drew parallels with General Slim's 'motivational' speech to his troops before taking Rangoon in 1945. But history relates that Rangoon was a critical supply and communications hub and had to be taken if the Japanese occupation of Burma was to be ended. Lieutenant-General Sir William Slim KCB, CB, DSO, MC said: *"I tell you this simply that you shall realize I know what I am talking about. I understand the British soldier because I have been one, and I have learned about the Japanese soldier because I have been beaten by him. I have been kicked by this enemy in the place where it hurts, and all the way from Rangoon to India where I had to dust-off my pants. Now, gentlemen, we are kicking our Japanese neighbours back to Rangoon."*

³¹ 'Change' initiatives left behind by officers on short tours who have moved on are known as 'pet pigs'.

'Reduction in output costs'

- 13.74 Sir Sam Cowan denied that there were any allocated cuts (let alone any what he termed 'slash and burn') to any DLO budget as a result of the 20% target. He said that he recognised that budget holders *"were already challenged enough dealing with inherited risk, the SDR cut and the MOD's assumed efficiencies"*. He sought to draw a distinction between a goal pitched in 'output' terms as opposed to 'cash' terms. In my view, however, this is a distinction without a difference. As Counsel to the Review put it, the Strategic Goal must have driven cost-cutting measures throughout the organisation. In practice, the Strategic Goal must have felt like cuts to those at the coalface. I do not accept his assertion that *"no cuts, either in manpower or in budgets, were made as a direct result of setting up the DLO"*. It is clear from the evidence that, during the period 2000 to 2005, large amounts of time, energy and the resources of many people within the DLO were devoted to finding ways of making 'savings', 'efficiencies', 'reductions in costs', 'cuts' etc. This inevitably diverted and distracted people from their other duties and led to a shift in priorities.

No risk assessment

- 13.75 Sir Sam Cowan admitted that he did not carry out any initial 'change risk assessment' at the time of setting his 20% Strategic Goal. He suggested, however: (a) it was not necessary to do so because *"each proposal that came up in terms of a programme or work to rationalise a structure, to establish a function, would be properly assessed by risk"*; and (b) it was not appropriate to do so because *"all the changes were not specified ... at the outset"*. I disagree with both arguments. The mere fact that it might be expected that specific safety assessments would be carried out whenever individual changes were made does not obviate the need for careful thought to be given at the outset to the overall impact of the launch of such a major programme of output. In my view, the effect of setting a substantial and defined 'Strategic Goal' of 20% savings in output costs in the DLO over five years inevitably had potential safety implications which ought to have been considered from the outset for a number of reasons. First, the 'Strategic Goal' was inevitably going to drive a series of cost-cutting measures and lead to a substantial amount of pressure, disruption, diversion and distraction on, of or for those charged with delivering the goal. Second, this was a brand new organisation that was only just bedding down and which already had the *raison d'être* of achieving 'transformation' in every area of the DLO, its structures, processes and resources, indeed, a revolution in the whole way in which the DLO 'did business' was called for. Third, there was a major challenge in maintaining the values and principles of safety and airworthiness during the organisational shift from 'functional lines' to 'project lines'.

Regulations for impact assessment – JSP815

- 13.76 A formal requirement to assess and control the impact of changes to organisational structure or resources which might affect safety was introduced in the civil nuclear arena in April 2000 following incidents at Dounreay in 1999 (Nuclear Site License Condition 36 *"Control of Organizational Change"*). A similar requirement was not introduced in the military arena, however, until 2006, by an amendment to JSP815 which provided (in **Chapter 3**):

"Management of Organisational Change

42. *Without adequate planning and analysis, change may result in the inadvertent erosion of the emphasis on high standards of environment and safety performance. This may manifest itself in the loss of established formal and informal environment and safety processes, loss of critical safety culture, knowledge and expertise, or lack of sufficient personnel to safely operate and maintain a process with consequent increased likelihood of accidents and incidents.*
43. *Duty holder organizations shall, prior to any significant changes, conduct an environmental and safety assessment to baseline the existing arrangements for critical environment and safety activities; analyse the impact and justify the proposed changes. The rigour of the assessment shall be proportionate to the significance of the change. Where appropriate and proportionate, the organization should seek the views of the relevant FSBs [Functional Safety Board] or discipline leads.*
44. *It shall be the responsibility of the individual or team proposing the initiative to implement and*

complete the assessment prior to making any changes. Outcomes of assessment shall be included in any submissions seeking endorsement to continue with the implementation phase. Once implemented the impact of the changes shall be reviewed after an appropriate period."

- 13.77 In my view, however, the absence of a formal regulatory requirement prior to 2006 did not mean that senior officers and managers had no duty to carry out impact assessments in relation to changes initiated by them in preceding years whenever appropriate. Common sense, good practice and responsible leadership have always required that careful thought to be given to the impact of decisions potentially affecting safety, including decisions giving rise to changes in organisational structures or resources which might affect safety.

LOD

- 13.78 As CDL, Sir Sam Cowan was ultimately responsible for safety and airworthiness in the DLO. Sir Sam Cowan received an LOD direct from the Secretary of State. His LOD dated 27 April 1999 stated:

"As Chief of Defence Logistics you are granted delegated authority for ensuring the safety and airworthiness of military aircraft, military aircraft materiel and services.... In executing this delegated authority you are to ensure that all staff comply as appropriate with formally promulgated procedures and regulations.

You may make further sub-delegations of this airworthiness to other MOD staffs who are responsible for procurement of military aircraft, military aircraft materiel or services. If you or those to whom you have delegated authority become aware of any practice or procedure being followed in the procurement, support, or operation of military aircraft materiel which may compromise airworthiness or safety standards, then you are to take immediate steps to control the situation or, if outside your control, to draw the matter to my attention and to the attention of the CDP and the Service Chief of the Staff concerned."

- 13.79 Sir Sam Cowan delegated airworthiness authority to his 2-Star Director General of Operations & Business Development (DG Ops & B Dev, including all Safety, Health, Environment and Fire Risk Management (SHEF).³² But under his LOD, as CDL, he retained lead responsibility for safety and airworthiness.

Criticism of Sir Sam Cowan

- 13.80 In my judgment, in all the circumstances, it was incumbent on Sir Sam Cowan as CDL to carry out an overall impact assessment before launching his 'Strategic Goal'. The welter of 'change' which would inevitably flow from implementation of his 'Strategic Goal' had obvious safety and airworthiness implications, both directly and indirectly: directly, because a reduction in output costs of 20% over five years was plainly going to drive cost-cutting measures which might affect safety and airworthiness; and indirectly, because the major organisational changes envisaged and/or the sheer scale of activity in delivering change and 'savings' would inevitably divert time, attention and resources away from routine tasks such as to affect safety and airworthiness.
- 13.81 Sir Sam Cowan did not carry out any initial impact assessment before picking his 20% figure or launching his 'Strategic Goal'. In my judgment, Sir Sam Cowan is open to criticism for not having done so. Good and responsible leadership required it.
- 13.82 I am satisfied that, if he had given careful thought to the implications of imposing the 'Strategic Goal' on the DLO at this time and some sort of impact assessment had been carried out, it would have been apparent, at the very least, that the imposition of the blanket 20% 'Strategic Goal' gave rise to potentially significant risks and great caution, sensitivity and vigilance would be called for to safeguard safety and airworthiness. The following points, in particular, were foreseeable: (a) the difficulties that a large and complex organisation such as the newly-formed DLO was bound to have at all levels in coping with such a major programme of 'change' and 'transformation'; (b) the 'Strategic Goal' would drive a culture of cost-cutting which might be at the expense of, and impact on, safety and airworthiness; (c) the difficulties of maintaining functional safety and airworthiness oversight and standards when shifting from 'functional' to 'project-based' organisational

³² MOD Health & Safety Handbook, JSP375 Volume 1, October 2001.

lines (see further below); (d) the widely differing needs and ages of military platforms and the particular challenges faced by 'legacy' platforms; (e) the exigencies and imperatives of future operational demands; and (f) the huge organisational burden and distraction of delivering three layers of year-on-year savings, namely the 20% 'Strategic Goal', the 3% cut and the 3% annual 'efficiency saving' required by the SDR.

- 13.83 It is unclear as to what, if any, impact assessment had been carried out at the commencement of the SDR itself.

Delays in MRA4 programme led to Nimrod MR2 out-of-service date being put back

- 13.84 As regards (d) above, between 1999 and 2003 the In-Service date (ISD) of the MR2's replacement, the Nimrod MRA4, was March 2005. In February 2003, however, further delays in the MRA4 programme led to the MRA4's ISD being pushed back to March 2009. This date was subsequently pushed back further to 2010 (see further **Chapter 14**). Sir Sam Cowan commented in his evidence to the Review: *"I assume that at the appropriate point work was initiated to assess how the Nimrod MR2 fleet was to be maintained in service for the extra years envisaged"*. He pointed to the Ageing Aircraft Audit (AAA) first conducted on Nimrods in 1993 and its review in 2003. During this period, however, AAA only related to structures. It was expanded in September 2006 to include systems as well as structures; but this was too late to benefit XV230.

Increased operational demands due to Afghanistan and Iraq conflicts

- 13.85 As regards (e) above, operational demands on all three Armed Services did subsequently increase dramatically. As Sir Sam Cowan accepted (albeit only with the benefit of hindsight) the *"very high operational demands"* on Nimrods following the deployment of British troops to Afghanistan³³ and then Iraq³⁴ was in stark contrast to the *"low tempo"* prior to September 2002. There was, however, no amelioration of the scale or tempo of the implementation of the Strategic Goal of 20% savings in output costs or other savings targets. Indeed, when the DLO 'Change' Programme was found to have *"stalled"* in September 2002, savings greater than pro-rata 20% were required in the remaining years 2002-05 to make up for the *"shortfall"*; and a raft of McKinsey recommendations to *"re-energise"* the DLO 'Change' Programme were accepted, including a major programme of 20-40% manpower reductions within the DLO.

Over 900 'cost reduction' initiatives

- 13.86 As regards (f) above, by mid-2002, the DLO had launched over 900 initiatives aimed at delivering 'cost reductions' within the STP 02 timeframe.³⁵ This shows how the Strategic Goal, together with other downward financial pressures, did unleash a *tsunami* of cost-cutting initiatives within the DLO during this period. The three-fold consequences of this were hardly surprising, in my view, and would or should have been apparent from an impact assessment. First, many within the DLO and on the Front Line found themselves increasingly diverted and distracted from their core duties by the imperative to formulate, create, implement, monitor and report on a plethora of 'cost reduction' measures. Second, priorities inexorably shifted so that the focus was increasingly on 'cost reduction' as the 'Strategic Goal'. Third, the eye was increasingly off the airworthiness and safety ball.
- 13.87 There was, in my view, a real and appreciable risk that the adoption of cost reduction as the central 'Strategic Goal' might or would relegate safety risk management to a secondary position. This is, in fact, what transpired.

³³ Afghanistan operation commenced 7 October 2001.

³⁴ Iraq operation commenced 20 March 2003.

³⁵ In 2003, the incoming DG(ES)Air sought to rationalise some of these 'disparate' initiatives across IPTs.

Formidable quadruple challenge faced by IPTs

- 13.88 Thus, platform IPTs within the DLO, including the Nimrod IPT, were being expected to face the formidable, quadruple challenge of: (i) coping with major organisational change; (ii) seeking to maintain or improve the availability of equipment to the three Armed Services; (iii) dealing with increasing operational demands and UORs; whilst at the same time (iv) dealing with the imperative of delivering three layers of substantial year-on-year financial cuts, reductions in output costs and efficiencies.

Safety regime

- 13.89 This was accompanied by a loosening rather than a tightening of the safety and airworthiness regime (see *Dilution of Airworthiness Regime* below). It is noteworthy that, in his Foreword to the DLO Environment & Safety Report 2002, Sir Sam Cowan had to report a “challenging” year for the DLO safety community “with resources under considerable pressure” in some business units. The Director Safety, Estates & Security reported that “a recurrent theme is the challenge posed by an ever decreasing pool of suitably qualified and experienced personnel and, of course, the constraints imposed by limited resources”.
- 13.90 In all the circumstances, it is not surprising that something subsequently gave way.

Air Chief Marshal Sir Malcolm Pledger (CDL 2002- 2004).

- 13.91 Air Chief Marshal Pledger replaced Sir Sam Cowan as CDL on 2 September 2002, a post which he held until 31 December 2004. His tenure as CDL, therefore, coincided with the key period of the drawing up of the Nimrod Safety Case (see **Chapters 10A** and **10B**).

Task

- 13.92 Sir Malcolm Pledger said in his evidence to the Review about his appointment: “I was tasked with transforming the acquisition and through-life logistics support for the Armed Forces and delivering efficiencies equivalent to 20% of the £10 billion top level budget”. When questioned, he explained that he had not been specifically tasked in so many words, but this was his interpretation of his role following his introductory meetings with the then Secretary of State and Ministers and others (see also further below).

Poisoned chalice

- 13.93 It is fair to say that that Sir Malcolm Pledger inherited a situation which was not of his making and, to some extent, was handed a poisoned chalice.

(1) Change programme ‘stalled’

- 13.94 First, the DLO’s ‘Business Change’ programme had “stalled” due to what McKinsey said were “fundamental questions about affordability, delivery, prioritisation and focus on core business drivers”.³⁶ It was clearly proving difficult to deliver the 20% reduction in output costs in the timescales required by the Strategic Goal as well as coping with the 900 ‘Change’ initiatives. When Sir Malcolm Pledger took over as CDL in September 2003, the DLO had delivered only 5.6% of the 20% Strategic Goal and 14.4% remained to be achieved by 2005/06, i.e. only about a quarter of the Goal had been met with nearly half the time gone. As he said, “the programme that I inherited had significant financial risk embedded within it”. He would have to accelerate the programme and catch up if he was to achieve the Goal. He said that the 20% Strategic Goal figure gave him a ‘concern’ when he took over because “I had no idea personally at the time whether or not what we held was sufficient to perform the operation that we were due to be embarked upon [namely, Iraq]” and this kind of financial risk meant his ability to ‘mend’ aspects would be very restricted.

³⁶ McKinsey’s its paper, *Re-energising the DLO Change Programme*, paragraph 2.1.

(2) *Increased operational tempo: Afghanistan and Iraq*

- 13.95 Second, at the same time, Sir Malcolm Pledger had inherited one major operation, namely the conflict in Afghanistan (Operation 'HERRICK') which had been running for nearly a year since coalition operations were launched on 7 October 2001. To add to this, within six months of his appointment, UK forces were committed to a second major conflict, the invasion of Iraq (Operation 'TELIC') which took place on 20 March 2003, and the subsequent aftermath.

(3) *Did not believe he was fully qualified for the job*

- 13.96 He told the Review, candidly, that he did not believe that he was fully qualified for the job of CDL. He said this was one of the reasons why he attended a two-week course at the IMD Business School in Switzerland. He was not a logistician or an engineer; he was a career helicopter pilot who had only brief hands-on logistics experience and no business experience.

(4) *No clear plan*

- 13.97 He told the Review that he was not aware of there being any "clear plan" drawn up of how the Strategic Goal and other targets were going to be achieved. He insisted that said there should have been such a plan "from day one":

MR HADDON-CAVE QC: *You said earlier, Sir Malcolm, that you didn't think [a clear] plan existed as to how to deliver all this. Should there have been a plan —*

SIR MALCOLM PLEDGER: *To my mind —*

MR HADDON-CAVE QC: *— from day one?*

SIR MALCOLM PLEDGER: *Absolutely. I think there was what I would call a top level piece from Sam, that described the strategic arrangements and the expectations. But I don't — I never saw a translation of those high level ideals into what I will call the "project activities" that would have then been visible and could have accumulated an answer to that top level strategic aim."*

(5) *No idea whether targets deliverable*

- 13.98 It is perhaps unsurprising, in these circumstances, that he admitted to the Review that he had "no idea" whether the targets were deliverable.

Tension between delivering '20% efficiencies' and supporting the conflicts

- 13.99 When questioned by the Review as to whether he felt there was an inherent tension between being required to deliver the 20% Strategic Goal and the need to support the Afghanistan and Iraq conflicts, Sir Malcolm Pledger initially said 'no'. His initial explanation ('delivering more with less') contained an element of *ex post facto* rationalisation. When questioned further, however, he gave a more candid and compelling explanation: he said he was a 'realist' and explained that, because the 20% Goal was already in place and was part of the Government's published agenda, he felt he could not ignore it and as CDL he was 'accountable':

MR PARSONS QC: *... What I am trying to explore from your perspective is whether you considered it was appropriate for you to still be under the pressure of all this tasking to achieve a 20 per cent or bust, when the priority is to improve efficiency to support the front line.*

SIR MALCOLM PLEDGER: *I just think I'm a realist, I am afraid. It existed. And yes, it was another pressure. But I tried to turn a requirement into a virtue.*

MR PARSONS QC: *But they are different pressures, aren't they?*

SIR MALCOLM PLEDGER: *Oh, they are different pressures. I am not disagreeing with you. They are different pressures. But it is realistic. It was there, it was in place. That didn't mean to say we rushed headlong and without due consideration into anything associated with it. But you couldn't ignore it.*

MR HADDON-CAVE QC: *Sir Malcolm, you said it was there and it was in place. Can you help us with how much it was there and how much it was in place?*

SIR MALCOLM PLEDGER: *It depended on which authority you had that debate with. You know, not surprisingly, the Permanent Undersecretary had one view which may have been different from the Chief of Defence Staff, in terms of importance and in terms of response, but it had been published, it was part of the government's agenda, and it was something to which the CDL was accountable to the different aspects of the defence case."*

'Salute smartly and get on with it'

13.100 Sir Malcolm Pledger said that, on appointment, he was left in no doubt by Ministers as to what was expected of him and he felt he should "Salute smartly and get on with it":

"MR HADDON-CAVE: *In a sense, some might say it was a bit of a hospital pass, and you were given a situation which was not of your making.*

SIR MALCOLM PLEDGER: *Yes.*

MR HADDON-CAVE: *Would it have been better if the first CDL, instead of remaining two years, had —*

SIR MALCOLM PLEDGER: *I think that's what I am saying. If the first target had been identified, if it had been in negotiation between Sam and the Ministry of Defence... if it had been to achieve a strategic goal of X, if he was willing to accept that and would agree with them it would take five years or six years, I think he should be appointed for six years. Classic example. But I think he should play a part in setting that target, because if he wasn't able to accept that as a reasonable target, I think he should be able to say no.*

MR HADDON-CAVE QC: *Assuming that he did have a role in setting that target, which he may well have, you, in a sense, were in the unfortunate position of not having a role in setting the target. You had to eat the meal... that was served to you.*

SIR MALCOLM PLEDGER: *Yes. I was summoned within — another nice, "Welcome. How are you?" — I was summoned by the House of Commons Defence Committee within a week of taking over the CDL and the first question was: well, now look what you have done. What do you think about your ability to achieve this 20 per cent cut? And, you know, why did you accept this appointment on that basis?*

MR HADDON-CAVE QC: *And why did you accept the appointment on that basis?*

SIR MALCOLM PLEDGER: *To which the answer was: I don't think you understand the military organisation. I was posted on a due date. I was not consulted in the parameters of this appointment. I was simply given the task to be the Chief of Defence Logistics. And that process is wrong.*

MR HADDON-CAVE QC: *And it's wrong, because?*

SIR MALCOLM PLEDGER: *Because it is imposed. I don't believe I was qualified to do the job, for want of a better word, fully. That was one of the reasons I went to IMD [IMD Business School in Switzerland]. But you are appointed. You are given the job and it says, "Report to such and such, on such and such a date", and away you go.*

So, you know, it was pointless asking me whether or not I agreed with a 20 per cent strategic goal or anything like that. So it was my arrival present, sitting there ticking. Whether or not I then tried to deliver it, I think is a completely different question, but that was the mechanism.

MR HADDON-CAVE QC: *But you could have said, "I've now examined the background documents, I've seen that it has been going off track in the last two years, because it's proving to be very difficult to deliver and I've read McKinsey and these other documents that have come onto my desk. I see looming Iraq and other challenges. It's clearly time to take stock and move much more cautiously, because this is proving to be very, very difficult and I'm not going to commit to delivering this in the timescale that's been handed to me."*

SIR MALCOLM PLEDGER: *I don't think I could have done that to the House of Commons Defence Committee, having been appointed as the new CDL, could I? I mean, surely I would have had to go to the PUS and say, "Thank you very much for this great honour, sir, but I am not taking the job", and "under these conditions. Can we negotiate"? And if the answer to that was "No", you know, "Which employment are you going to look actively for your next few years, Pledger?"*

Because I couldn't — if you have been appointed to a job, you have got to do it. Salute smartly and get on with it.

MR HADDON-CAVE QC: *But I thought you told us earlier that there wasn't a defined condition imposed.*

SIR MALCOLM PLEDGER: *No, not in writing. No.*

MR HADDON-CAVE QC: *In your paragraph 4. If it wasn't in writing, where was it, then?*

SIR MALCOLM PLEDGER: *Well, as I also said to you, I was invited to a very senior meeting in the Ministry of Defence, a couple of months before I took over, to sit on the side and watch the Ministers debate the current arrangement progress within the organisation. Clearly the purpose of that was to leave me in no doubt as to what was expected.*

...

MR HADDON-CAVE QC: *But even after two weeks of IMD, you, with the best will in the world, couldn't be sure, particularly given the background and the fact it had stalled, that this was deliverable.*

SIR MALCOLM PLEDGER: *I had no idea. I am not sure that impacts on anything there, other than I had been posted to complete the job, to be CDL."*

Realpolitik

- 13.101 I am satisfied this latter explanation reflects more closely the reality at the time: Sir Malcolm Pledger took the path of *Realpolitik*. Faced with what he may have seen as the *fait accompli* of the 20% Strategic Goal already in place, he chose not to rock the boat but to get on with the delivering the 'Strategic Goal' and other rolling 'efficiency' measures. He admitted to the Review that achieving a one-fifth reduction in output costs meant that costs would have to be 'cut' and that redundancies and re-organising the business would be 'one outcome'. Unfortunately, he does not appear at any stage to have questioned the wisdom of seeking to enforce the Goal within the timescale envisaged, or at the pace required, notwithstanding: (a) the situation which he found when he arrived in post at the DLO in September 2002, namely, that the DLO 'Business Change' programme was already coming off the rails and great difficulties were being encountered in achieving the scale and pace of 'Cuts' and 'Change' required; and (b) the new operational situation which was rapidly developing, namely, preparations for the invasion of Iraq (see above).

Criticisms of Sir Malcolm Pledger

- 13.102 In my view, however, Sir Malcolm Pledger, did have a number of options and duties on taking up his appointment as the new CDL which he did not avail himself of or fulfil.

- 13.103 The first option, and duty, was to assess the situation and challenges which he had inherited very carefully and to question whether it was feasible, realistic and sensible to enforce the remainder of the 20% Strategic Goal at the pace and within the timescale envisaged, given the marked difficulties already encountered and the challenges ahead of supporting the greater operational tempo (see above). If he took the view that, in all the circumstances, it was necessary, sensible or desirable to act more cautiously and incrementally in enforcing the goals, he should have raised this and argued the case vociferously. There should, at least, have been pause for thought.
- 13.104 The second option, and duty, was to consider what special measures needed to be taken in the meanwhile, in any event, to ensure that fundamental values such as safety and airworthiness were preserved in the face of the serious challenges potentially posed by: (a) the size of the 'economies' required (a 14-15% reduction in output costs in two to three years plus the 3% efficiencies etc); (b) the huge amount of change that this would involve; (c) the substantial organisational changes already in train in the DLO; (d) the lack of a clear or coherent 'plan' as to how the Strategic Goal was to be achieved in the first place; (e) the evidence that the organisation was already finding it difficult to cope and deliver the cuts and change required; and (f) the growing operational challenges to be faced in the near future.

Option chosen – to acceleration pace of cuts and change

- 13.105 There is no evidence that Sir Malcolm Pledger considered either of the above options. He chose instead to *accelerate* the pace of cuts and change in order, in appears, to carry out his 'task' as he saw it and catch up with the Strategic Goal. In my view, these are matters which are open to criticism. Good and responsible leadership required a more measured and reflective approach in all the circumstances.
- 13.106 His attitude was 'Can do, will do' and he applied himself to the task with vigour as he quickly fashioned and implemented what was, in effect, a second phase of the DLO Change programme which he called the DLO 'Transformation' programme. He told the Review that selected the word "*Transforming*" in order "*to show the enormity of the task we faced*".
- 13.107 His *DLO Strategic Plan*, which was widely disseminated amongst the IPTs, set out the following uncompromising "*Key Targets*":
- "*Reduce net Total Operating Costs £1225M⁶ (14%) against the STP-2 baseline by Mar 06.*
 - ...
 - *All IPTs and logistic service providers to baseline their total Cost of Ownership by Mar 03; and subsequently to reduce it by 10% by Mar 04; a further 10% by Mar 05; and identify means of reducing it by a total of 30% before Mar 07.*" (emphasis added)
- 13.108 As set out above, during the period 2002-2004, Sir Malcolm Pledger presided over the implementation of: (1) McKinsey's paper 'Re-energising' the DLO Change Programme which recommended a more "*radical programme*" of change; (2) the New DLO 'Change' Programme comprising existing initiatives, McKinsey 'workstreams', and transformational activity from the Strategic plan and the move from "*a predominantly Provider role to one of an intelligent Decider*"; (3) McKinsey's recommendation for a 20-40% reduction in manpower; (4) the Defence Logistics 'Transformation' Programme; (5) the 'Streamlining End to End' Review; (6) the 'Leaning' programme. McKinsey described its recommendations in its July 2003 paper³⁷ in the following terms: "*Our recommendations cut across the whole of Defence and are likely to require the most complex restructuring of MOD activities since the Strategic Defence Review.*"
- 13.109 It is small wonder that IPTs and IPTLs felt increasingly pre-occupied with delivering costs reductions and 'efficiencies' during the period 2002 to 2004 and with coping with 'change'.

³⁷ *Streamlining End to End Air and Land Logistics*, 1 July 2003, McKinsey.

DLO Business Plan 2003

- 13.110 Sir Malcolm Pledger said that the Office of Government Commerce (OGC)'s principles and practices and risk management techniques were applied.³⁸ The DLO Business Plan for 2003 listed 12 'top-level' risks but they were all 'business' and implementation risks. It is noteworthy that none related to safety or airworthiness.

DLO Environment & Safety Report 2003

- 13.111 Sir Malcolm Pledger's Foreword to the DLO Environment & Safety Report 2003 echoed closely the wording of the previous year's edition in which Sir Sam Cowan had reported a "*challenging*" year for the DLO safety community "*with resources under considerable pressure*" in some business units. The Executive Summary stated: "*The most significant risk affecting E&S performance within the DLO.... relates to the lack of resources*". The report on Air Equipment Safety by ES AD EngPol stated:

"Issues & Risks

4. *Funding Constraints. IPTs consider that continued pressure on funding, without the provision of 'catch up' funds, could affect safety in the medium-to-longer term. Moreover, whilst the new emphasis on hazard management allows much better targeting of safety issues, all areas involved in support are under pressure to do more with the same, or reducing, resources. Although the airworthiness of aircraft has not been compromised, there are examples where modifications to enhance airworthiness have not been taken due to lack of funding; all such instances are being report to the DASB via the Aviation Safety Steering Group (ASSG).*" (emphasis added)

Summary

- 13.112 For the above reasons, I am satisfied that both Sir Sam Cowan and Sir Malcolm Pledger each bear a significant share of the responsibility for the episode of cuts, change, dilution and distraction described in this Chapter.
- 13.113 These organisational causes adversely affected the ability of the Nimrod IPT to do its job and the oversight and culture in which it operated during the crucial years when the Nimrod Safety Case was being prepared, in particular 2001-2004 (see further below).
- 13.114 By the beginning of 2005, the effects of the episode of cuts, change, dilution and distraction of the previous years were entrenched, the Safety Case had been completed (unsatisfactorily) and the damage was done. There was little that a new incumbent to the job of CDL could reasonably have done thereafter to reverse or rectify matters that would have made any realistic difference.

³⁸ The OGC is a Treasury body.

'DILUTION'

"When a 3-Star is interested in safety, everyone is interested in safety."
(Junior RAF officer, 2009)

Dilution of airworthiness regime and culture (2000-2006)

Summary

- 13.115 In my view, a marked dilution of the airworthiness regime and culture took place in the MOD during the period 2000 to 2006. There was a steady erosion of focus on safety and airworthiness. The implementation of the SDR and the 20% 'Strategic Goal' held centre stage.
- 13.116 It is clear that *"continuous organisational change over an extended period"*³⁹ had a deleterious effect on the management of airworthiness. The period 2000 to 2006 was marked by three features so far as safety and airworthiness in the MOD was concerned:-
- (a) First, there was an inexorable shift from a 'safety and airworthiness culture' to a 'business culture' during this period in the MOD.
 - (b) Second, the organisational changes in the MOD led to a safety and airworthiness regime which was organisationally complex, convoluted, confused and seemingly dysfunctional.
 - (c) Third, meanwhile, there was also a steady dismantling of some of the important features of the safety and airworthiness regime which had previously existed.

(a) Shift from 'safety and airworthiness' to 'business' culture

- 13.117 In my view, there can be no doubt that the implementation of the 1998 SDR and 'Strategic Goal' brought about a major shift in culture within the MOD from 'safety and airworthiness' to 'business'. All the evidence points to this being the case. Whereas in the 1990s there had been a strong focus on safety and airworthiness issues, in the period 2000 to 2006, 'business' was increasingly paramount. I agree with George Baber's summary of the position in his evidence to the Review:

*"I believe that as major organisational change occurred, with the formation of the DLO and then subsequently as the DLO re-organised internally, then the balance between safety and business-related decision-making shifted, with airworthiness becoming less prominent. The consequence was to reduce the organisational oversight of IPT airworthiness systems, processes and outcomes and to make it more difficult for the IPTs to balance their business responsibilities with those associated with safety."*⁴⁰

(b) Airworthiness structure became complex, convoluted, confused and seemingly dysfunctional

- 13.118 As a result of the successive organisational changes, by 2005, the MOD's airworthiness structure had become, by its own admission, complex, convoluted and confused and seemingly dysfunctional.

MOD airworthiness regime was simpler and more coherent in 1990s

- 13.119 The airworthiness regime within the MOD used to be relatively simple, coherent and effective in the days of the Chief Engineer RAF and RAF Logistics Command in the 1990s. The airworthiness regime established during this period represents a high-water mark in my view.

³⁹ George Baber's written statement to the Review of 11 June 2009.

⁴⁰ Ibid.

Chief Engineer RAF

13.120 The “Chief Engineer RAF” CE(RAF) was a 3-Star who had overall responsibility for assuring the airworthiness of all fleets. He reported to the Air Force Board (AFB) on fleet airworthiness. He discharged his airworthiness responsibilities in a number of ways: setting airworthiness policy, drafting airworthiness regulations, conducting the airworthiness review process (the RAF Logistics Command Airworthiness Review was chaired by the CE(RAF)), and maintaining an airworthiness audit of Multi-Disciplinary Groups (MDGs).⁴¹ MDGs were responsible to him regarding airworthiness (see below). Strike Command were required to assure him that they were correctly following maintenance procedures, standards and practices. The airworthiness regime operated by the CE(RAF) included a calendar-based self-check list of requirements, an effective audit regime, and “Support Authority Reviews”, all within an ISO 9000-based quality management system.

13.121 The structure and lines of authority were clear, as shown in Figure 13.3 below.

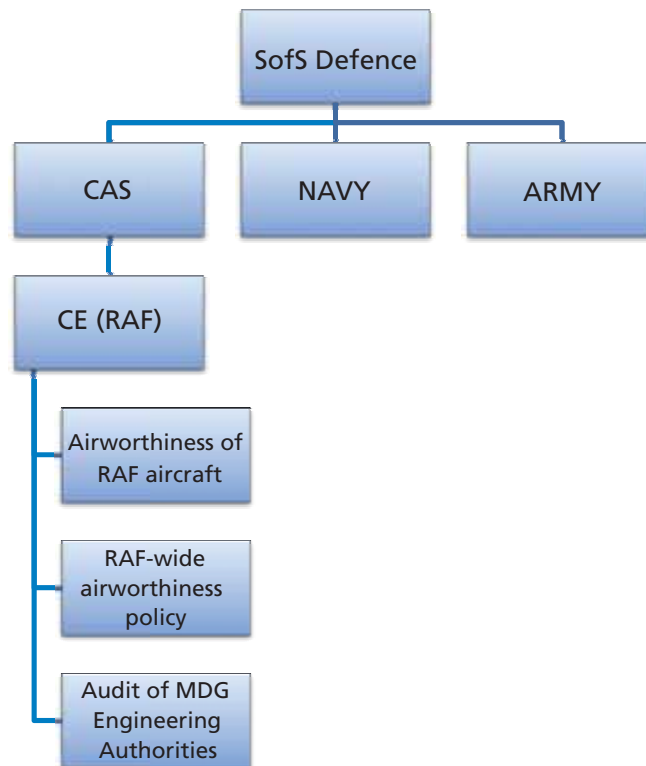


Figure 13.3: Airworthiness structure and lines of authority in 1990s

13.122 The chain of delegation for airworthiness was similarly clear. The CE (RAF) delegated responsibility directly to the 2-Star officer who commanded the MDGs (DGSM), who in turn delegated authority to “Heads of Engineering Authority”, 1-Star officers who commanded groups of MDGs, each of which managed the airworthiness of aircraft or airborne equipment. This is depicted in Figure 13.4 (below). Strict protocols were in place to ensure that there were never successive gaps in the engineering management chain; i.e. if a non-engineering specialist filled a management post, the posts above and below his had to be filled by qualified engineers.

⁴¹ Forerunners of the current Integrated Project Teams.

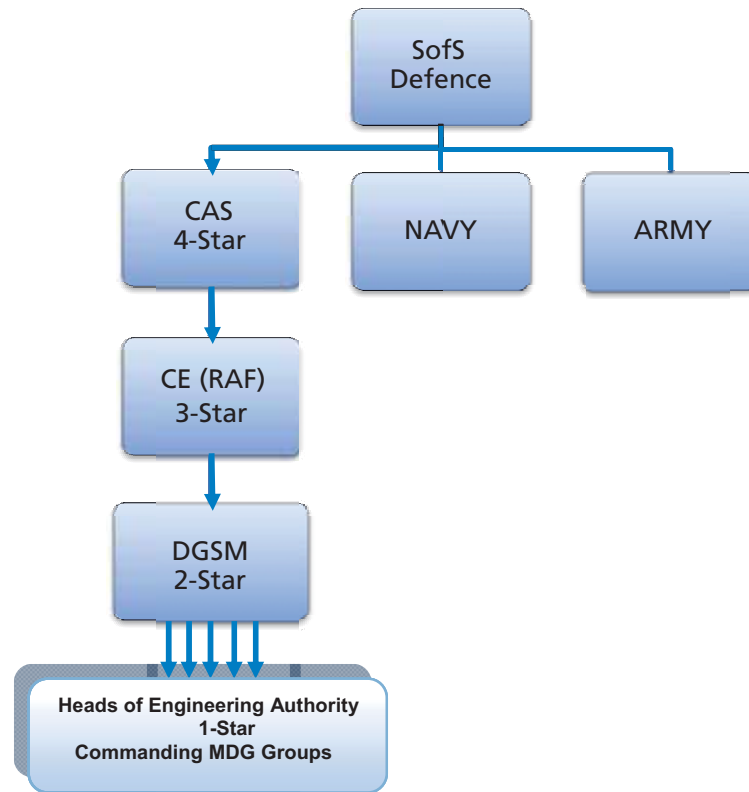


Figure 13.4: Chain of delegation for airworthiness in 1990s

- 13.123 The CE(RAF), therefore, had a powerful voice as regards airworthiness which resonated through the organisation.

Air Chief Marshals Sir Michael Alcock and Air Marshal Sir Colin Terry

- 13.124 In my view, the post CE(RAF) was a key feature of the strong airworthiness regime and culture which existed in 1990s. This was due in no small measure to the high calibre and leadership of those who held that post in the heydays of RAF Logistics Command, in particular Air Chief Marshal Sir Michael Alcock (1994-1996) and Air Marshal Sir Colin Terry (1997-1999). They commanded great respect and esteem: (a) because of their knowledge of the subject (they were both distinguished aviation engineers); (b) because they insisted on high standards and brought great rigour to bear; and (c) because they took a keen, personal interest in all airworthiness issues (and used the “*long screwdriver*” with great effect). They inculcated a strong airworthiness and ‘questioning’ culture at RAF Logistics Command which probably represents the ‘golden period’ for airworthiness in recent years. Many witnesses attested to this view.

CE(RAF)’s Audit team

- 13.125 The CE(RAF) and DGSM had an airworthiness audit team comprising a Wing Commander and four Squadron Leaders who were permanently engaged in visiting MDGs and auditing their airworthiness processes. This was achieved by both following a structured examination of internal MDG processes and activity, and sampling actual activity and decision-making. This system of regular auditing was very effective for two reasons. First, as one witness put it, the allocation of significant manpower resources directly to auditing “*allowed you to do a lot of digging*” and kept people on their toes. Second, there was no doubt about the airworthiness chain of responsibility: the delegation of airworthiness authority flowed down from DGSM to the MDGs. It was the DGSM himself who owned the audit team. The audit team reported back direct to him about what they found at the MDGs. It was, therefore, “*a very tight closed loop*” between the man who was delegating authority and the audit team who were responsible to him.

- 13.126 Following publication of the Turnbull Report in 1999, which focused on governance and internal controls, this airworthiness audit and assurance function was broadened to embrace also a 'corporate governance' approach, leading to some dilution.

AD(Eng)Pol

- 13.127 Group Captain Eng Pol/AD(Eng)Pol had a variety of roles in relation to developing engineering policy and supporting IPTs in particular in relation to airworthiness. AD(Eng)Pol's main responsibilities were: (a) developing and publishing RAF-wide engineering policy; (b) the subsequent migration of single-Service policy and documentation into a common standard for use across Defence (i.e. JAP); (c) liaising with ADRP regarding the development of JSP553; and (d) reviewing IPTs for airworthiness standards. On the policy side, AD(Eng)Pol had seven or eight staff. On the airworthiness side, AD(Eng)Pol was assisted by three staff: a Wing Commander, a Major and a Flight Lieutenant. The Major advised IPTs about the GARP⁴² process and Safety Cases, although IPTs were expected to recruit and train their own Safety Case specialists.

Inspectorate of Flight Safety (RAF)

- 13.128 The Inspectorate of Flight Safety RAF (IFS(RAF)) was an independent Directorate headed by a 1-Star officer (the Inspector) with a remit to inspect, study and survey throughout the RAF. The Inspector was expected to keep in current flying practice as an aircraft captain on at least one Front Line aircraft type, and he routinely visited RAF stations to fly as a member of the crew on other types of aircraft. During these visits, he would take time to talk to personnel of all ranks. Through his visits, the inspections carried out by his staff, and by monitoring all RAF occurrence reports, he was able to provide expert and well-informed advice to commanders. The IFS also conducted Airworthiness Reviews of RAF aircraft; in this context, the IFS took a broad view of its remit and included 'fitness-for-purpose' in addition to the technical airworthiness of the platform. The Fleet Air Arm (FAA), and the Army Air Corps (AAC) had their own in-house airworthiness review arrangements.

Defence Aviation Safety Centre (2002)

- 13.129 In 2002, the Defence Aviation Safety Centre (DASC) was formed and the IFS was folded into it. The change was brought about because of the perceived need for a pan-Defence Flight Safety (FS) organisation to reflect the growing proliferation of 'purple' or joint organisations in the MOD: e.g. Defence Logistics Organisation, Joint Force Harrier, Joint Helicopter Command etc. The DASC was led by a 1-Star officer with a staff comprised of officers from all three Services. It was considered to be a MOD level organisation, whose roles included the formulation, regulation and validation of Defence aviation safety policy, providing FS advice upwards and downwards throughout the Department and providing a single Departmental focus for FS issues. However, the Director was not an 'inspector' and the DASC's authority to audit and validate was limited to 'one level down', i.e. not below Strike & Support Command HQs, Fleet HQ and HQ Directorate of Army Aviation (DAAvn). This limitation appears to have stemmed from sensitivity in the Navy and Army that the DASC was just a re-badged IFS(RAF) with, most likely, a light blue 1-Star.⁴³ Ironically, whilst the FAA and DAAvn managed to retain their existing FS structures, the RAF, in a series of HQ rationalisations, ran-down its Command and Group FS staffs, presumably in the mistaken view that the DASC would continue to fulfil the IFS(RAF) roles (which it did not).⁴⁴

Advantage Report in December 2002 was critical

- 13.130 In December 2002, a report by Advantage Technical Consulting identified and emphasised a series of trenchant and perceptive criticisms of the safety and airworthiness regime across the acquisition cycle in the MOD⁴⁵ and concluded: *"There is a pressing need to bring greater harmony and consistency to the assurance*

⁴² Generic Aircraft Release Process.

⁴³ Director DASC, and Director DARS, are competed posts; the incumbent should be the best man for the job, irrespective of his Service. However, the size of the RAF in comparison to the FAA and Army Air Corps make it most likely that the Director would be 'light blue'.

⁴⁴ I understand that the resurrection of the IFS is currently being re-examined.

⁴⁵ Advantage Technical Consulting, "Safety Process Review" Report dated 23 December 2002.

of equipment safety. This will best be prosecuted by the appointment of a 2* champion empowered by the DESB".⁴⁶ Commenting on the creation of DASC, Advantage said: "This initiative brings much closer together the various components of air safety but does little, if anything, to move air safety closer in process, procedure or organisation to the rest of the MoD safety world".⁴⁷ The following criticisms and observations by Advantage of the MOD airworthiness regime at the time are particularly relevant and noteworthy:

- 13.130.1 "IPTs do not believe that they get a sufficiently authoritative or sufficiently early view of who needs to do what, and when it needs to be done, with regard to safety management." (Major Findings, page 4)
- 13.130.2 The IPTs, Operators and Maintainers of equipments and platforms in many cases have separate Safety Management Systems which are sometimes disconnected and inconsistent." (Major Findings, page 4)
- 13.130.3 "Responsibilities for Safety Management are not clear through-life." (Major Findings, page 4)
- 13.130.4 Section 2.2 of the report referred to the importance of separating the assurance functions from the ensurance functions in order to maintain the impartiality and credibility of the assurance provided. It was noted that "there is an inconsistent approach to this separation of assurance and ensurance, and that this is further muddled by an unclear separation between advice and assurance in some areas. These inconsistencies appear to be largely resource driven – by both lack of and availability of resource – and this leads to different approaches being taken to, for example, the use of Independent Safety Assurance (ISA). These differences are manifested in different degrees of independence and also various interpretations of the "A" as meaning advisors, assessors, assurers, auditors and also in different degrees of mandation of an ISA. Taken together, these inconsistencies reduce the value of the assurance given to FSBs and the DESB." (paragraph 2.2.2)
- 13.130.5 Advantage thus recommended that a clear policy on the role and use of ISAs should be identified. (paragraph 2.2.3)

By 2005 airworthiness regime convoluted, confused and 'seemingly dysfunctional'

- 13.131 In its Joint Review of Airworthiness dated 10 January 2005, DASC itself reported:⁴⁸

"The MoDs aviation organisation is complex and as a result of successive organisational changes (including increasing industrial involvement) the overlying structure of airworthiness regulations and delegation of responsibility has become convoluted, is easily misunderstood and displays a number of weaknesses."

- 13.132 It was pointed out that there were now many departments developing aviation regulations, policy and advice and "the airworthiness regime is open to misunderstanding in terms of "who is responsible for what?" unless one has intimate knowledge of the subject".⁴⁹ With admirable honesty, the DASC report concluded:

"As has been established, the overall picture of the airworthiness regime is perceived as one of a wide range of interconnected agencies presenting a confusing and seemingly dysfunctional whole".

LOD chain confused

- 13.133 The lines of airworthiness delegation were no longer clear following the creation of the DLO. At one stage, DG ES(Air) had LODs from the three Service Chiefs to delegate that authority from them to him to set the policy and regulations across all military aircraft. Figure 13.5 is a rough diagrammatic estimation of the position as it is recalled to have been.

⁴⁶ Ibid, Summary, paragraph 10.

⁴⁷ Ibid, paragraph 2.4.5.1.

⁴⁸ Joint Review of Airworthiness by DASC dated 10 January 2005, DASC/5/8/9, paragraph 26.

⁴⁹ George Baber's written statement to the Review of 11 June 2009.

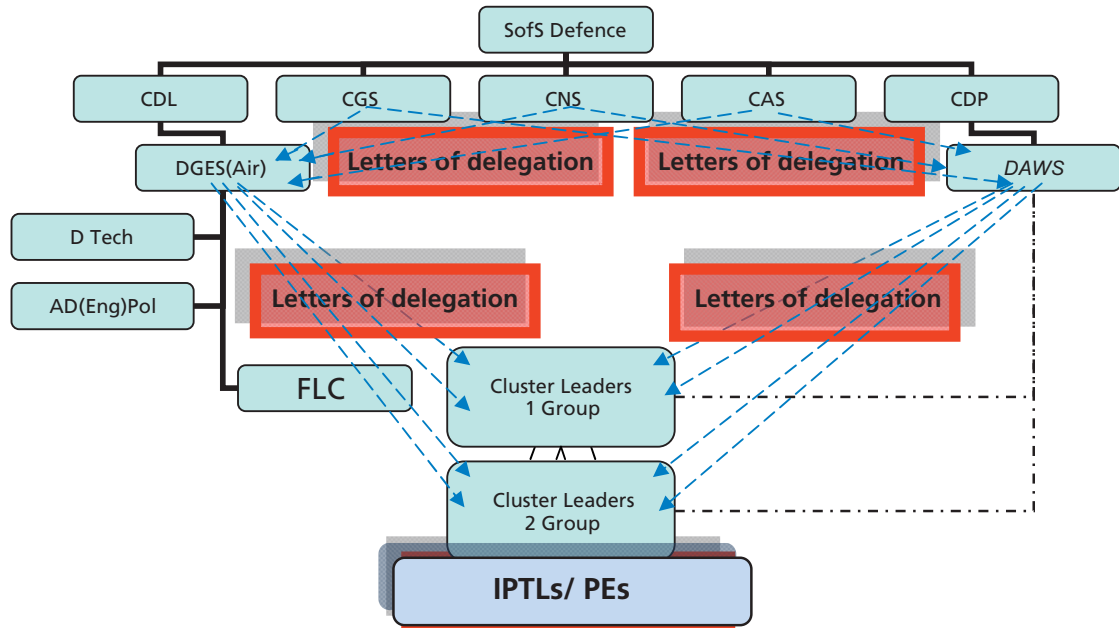


Figure. 13.5: Letters of Delegation Chain(s) in DLO

DASMS, DASSRR, JATAAM, DASC and 'virtual' MAA.

- 13.134 By 2005, the DASC Joint Review of Airworthiness was already beginning to conclude that the complexity of the MoD's aviation organisation, compounded by successive organisational changes, meant that the structure of airworthiness regulation and delegation was convoluted, easily misunderstood and contained a number of weaknesses (see above). It recommended a two phase solution:
- 13.135 The first phase included the replacement of the DASC Airworthiness Branch with a Safety Management System Branch, the introduction of a pan-Defence Aviation Safety Management System (DASMS) and the introduction of a Defence Aviation Safety Strategic Risk Register (DASSRR). These recommendations were actioned.
- 13.136 The second phase was to be a review of pan-Defence aviation management that might lead to the creation of a Military Aviation Authority (MAA). This recommendation was reinforced when the new Chief of Defence Logistics (CDL) and the head of Airworthiness Design Requirements and Procedures (ADRP), wrote to the Vice Chief of the Defence Staff (VCDS) in June 2005 asking him to consider the requirement for a MAA. A MAA Study team was formed, and, in December 2005, it reported that:
- A stand-alone MAA was not required, but this should be reviewed in two years. The Study envisaged a 'virtual' MAA in which the functions, structure and management would be clearly identified, but the components would not necessarily be collocated.
 - The DASC and the MoD Aviation Regulatory Team (MART) ⁵⁰ should be co-located. (This co-location occurred in April 2008 when the DASC and the MART merged to form the Directorate of Aviation Regulation and Safety (DARS)).
 - A separate study was required to examine options for the better management of MOD air traffic and airspace issues. It was envisaged that Airspace and Air Traffic Management policy and regulation could be brought under a single organisation: a proposed MOD Directorate of Joint Air Traffic and Airspace Management (JATAM).
- 13.137 The implementation of the MAA and JATAM Studies was, however, delayed due to a variety of reasons including debates over terms of reference, leadership, 'dual-hatting' and interactions with other Government Departments, together with constraints on physical locations due to estate rationalisation.

⁵⁰ The MART was located at RNAS Yeovilton in Somerset, under the line management of Director Air Staff.

2007/09 – DE&S airworthiness regime

- 13.138 By 2007, the airworthiness regime within the new DE&S had become even more Byzantine, complex and confused. In the DE&S, responsibility for airworthiness was moved to a separate organisation within “Corporate Services”. Today, Airworthiness policy is ‘brigaded’ alongside the other Safety and Environmental disciplines and ‘linkage’ with the three Front Line Commands achieved through the tri-Service forum inherited from the DLO structure. The primary interface with the single-Services at DE&S Main Board level is through the Chiefs of Material (CoM), with CoM(Air) being a member of the AFB. It still continues to confuse many for reasons which will be apparent from the following diagrams.

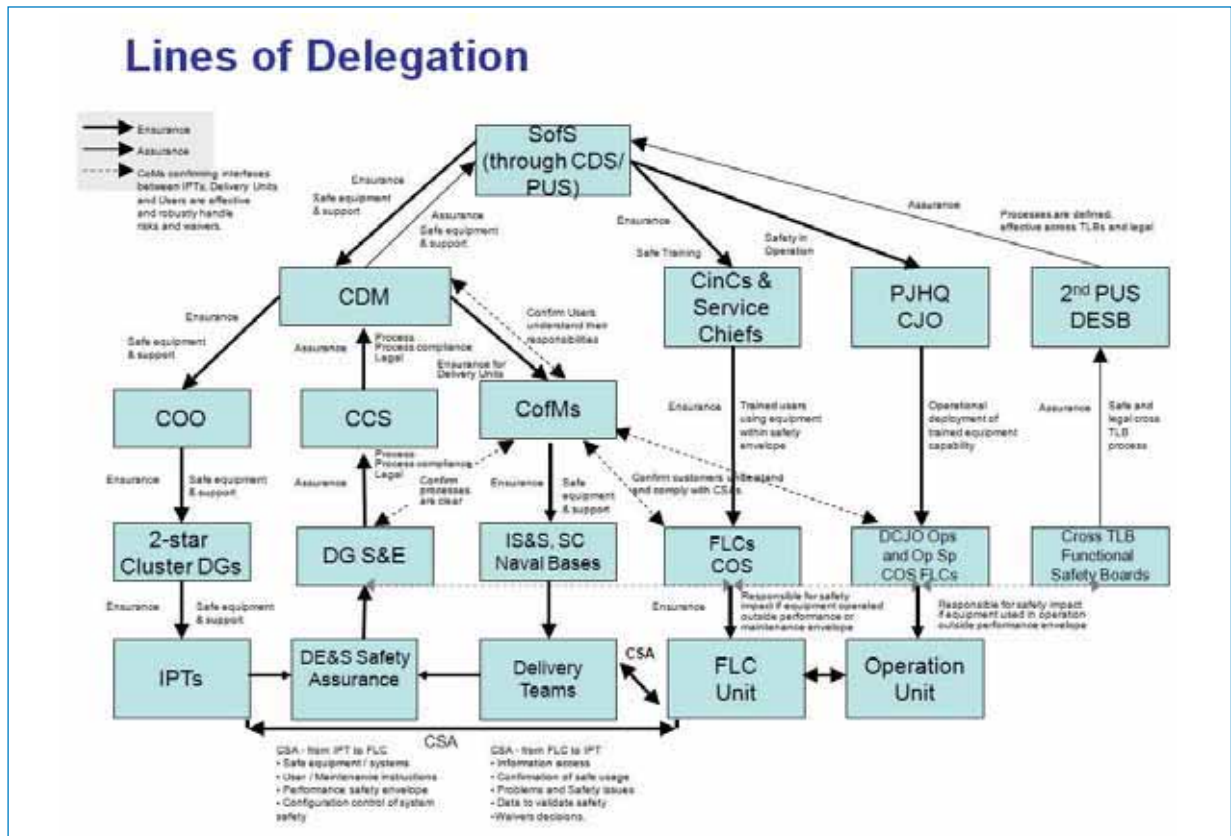


Fig. 13.6: Present MOD/ DE&S Lines of Delegation

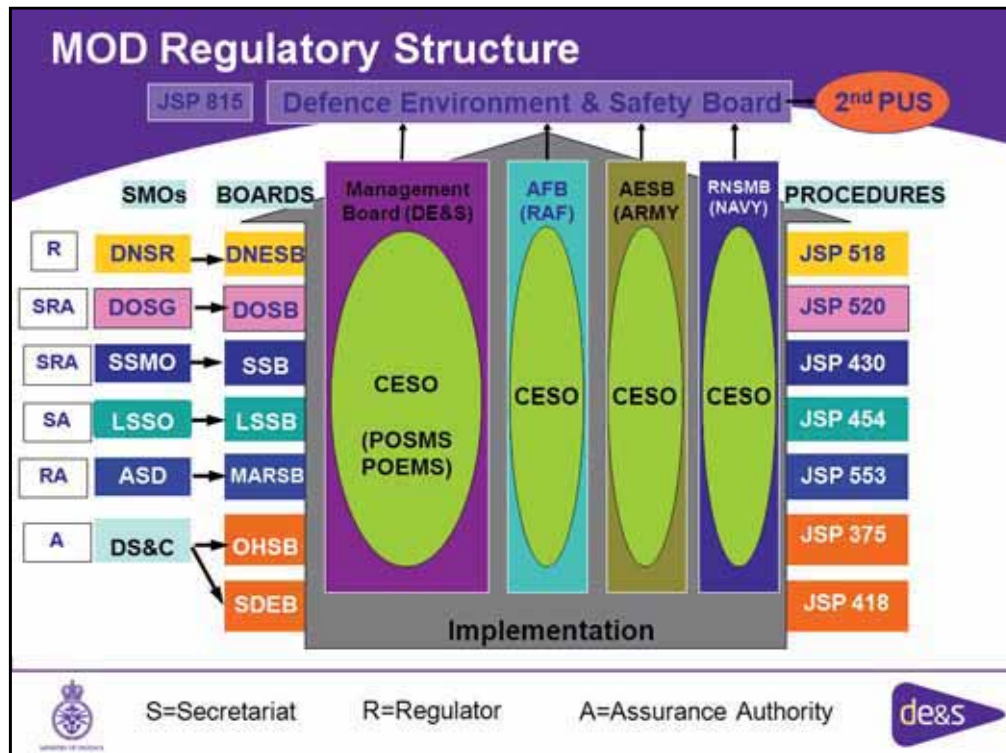


Fig. 13.7: Present MOD Regulatory Structure

Conclusion on MOD airworthiness regime

- 13.139 During the period 1998 to date, the MOD airworthiness regime suffered from an inexorable descent into the vortex of ever-increasing complexity and confusion. This was due first to the difficulties of constructing and maintaining a simple and coherent safety and airworthiness regime against a backdrop of continuous organisational change; and second to a predilection in the MOD for complexity as opposed to simplicity. The MOD is not alone in this regard. The instinctive reaction of many governmental organisations to problems is the creation of more complexity, not less, and the 'bolting-on' of more process, procedures, boards, committees, working parties, etc. rather than stripping away the excess and getting down to the essential elements. The net result for the MOD was, unfortunately, an increasingly complicated safety and airworthiness system which was accompanied by a significant weakening of airworthiness oversight and culture during the period leading up to the loss of XV230 in September 2006. Over the past decade, responsibility for risk and risk management has been divided, dissipated and dispersed. Risk has effectively been 'orphaned' by being made part of an extended family, with everyone involved but no-one responsible. (See further **Chapter 19**).

Dilution of airworthiness regime

- 13.140 The period 2000-2005 saw an unfortunate dismantling of some of the key features of the safety and airworthiness regime which had existed in the 1990s. The effect was to undermine further the safety and airworthiness culture and oversight in the MOD.

AESOP Working Group in 2000 and DASB

- 13.141 A review of the MOD's environmental and safety structures was carried out in 1999 following the launch of the SDR initiative and the formation of the DLO. The review was carried out by a working group of interested parties, known as the AESOP⁵¹ Working Group (AESOP WG). Surprisingly, the AESOP WG did not include any representative from the AOA or the RTSA. Whilst Eng Pol and ADRP were represented (*i.e.* airworthiness policy and acquisition), the representation was only at a low level. It is therefore fair to say that there was no, or at least very little, meaningful airworthiness input into the AESOP study.

⁵¹ All-Embracing Safety Organisation Post-SDR.

- 13.142 That said, the AESOP study both had very laudable aims and sought to address a number of important issues. The third draft of AESOP's final report⁵² recognised that the SDR would have "*major implications for the MOD's management of Safety*"⁵³ such that "*to do nothing in response is not an option*".⁵⁴ It noted the following in relation to its attempts to improve the existing regime:⁵⁵

"Safety and Environmental policies and management systems are becoming increasingly central to the Government's overall strategy. The latter in particular are attracting much interest from Parliament and the media, as well as from environmental pressure groups. Safety is always an issue of great public, Trade Union and employee concern. It is important for MOD to have, and to be seen to have, an effective environmental and safety organisation. MOD will need to reassure its Service and civilian personnel that any new organisation will be an improvement on the present one. Consultations with the staffs affected by changes will need skilful handling."

- 13.143 The AESOP study concluded that changes to the MOD's existing safety structures were required in order to match the changing shape of the Department and ensure the development and maintenance of effective and coherent safety management systems. In developing its proposed strategy for change, it began by identifying a set of key principles upon which the MOD's safety systems should be based. These included (amongst other things) the need for: (1) short and clear lines of delegation and accountability, (2) unambiguous ownership of risk by the relevant duty-holder, (3) consistent audit methodologies and (4) proportional allocation of effort and resources.⁵⁶ I endorse these sentiments (and embrace them in **Chapters 20** and **21**).
- 13.144 Regrettably, whilst there was broad agreement upon the principles that should underpin the MOD's safety management systems, it proved impossible to reach consensus within the AESOP WG on the management and organisational structures needed to deliver such a system. Consequently, one of the AESOP WG's key recommendations, that a top level Defence Safety Authority be established with overall responsibility for all aspects of safety and environmental policy and standards, was never implemented. Indeed, the only concrete change that appears to have been implemented following the AESOP study is that the DESC was reformed to become the Defence Environment and Safety Board (DASB) and changed from a ministerial committee to one that was chaired by an official. It is fair to say, however, that this fell somewhat short of the over-arching top level Defence Safety Authority that the AESOP WG considered advisable, in the interests of ensuring that there was a common safety support organisation responsible for pulling together the many and varied strands of responsibility. It is to be regretted, in my view, that this insightful recommendation was not pursued further at the time.
- 13.145 AESOP does not appear to have considered Airworthiness as a discrete discipline, i.e. separate from SHEF.⁵⁷

Retrograde steps which contributed to dilution of airworthiness regime

- 13.146 Unfortunately, any aspirations of AESOP did not come to fruition. As we have seen above, the airworthiness structure became more and more complex and convoluted. Further, during the period 1998 to 2007, the following retrograde steps were taken which, in my view, led to a further dilution of the airworthiness regime and culture:—

(1) Abolition of "Chief Engineer RAF"

- 13.147 The post and title "*Chief Engineer RAF*" (CE(RAF)) was a lodestar for airworthiness. The abolition of the post and title of CE(RAF) in 2000 was a mistake and the subsequent subsuming of his role was a retrograde step. From 2000, the airworthiness light shone less brightly. A vital focus point, at the head of the airworthiness

⁵² The AESOP Working Group made an interim report to the Defence Environment and Safety Committee (DESC) in March 1999, following which the DESC endorsed its preliminary findings but requested further investigation of a number of issues raised in the report. Whilst this led to a draft version of a final report, the AESOP team leader informed the Review that it was never published as a formal report, whose contents were endorsed by the DESC.

⁵³ Paragraph 12 of the third draft of the final report.

⁵⁴ Ibid, paragraph 75.

⁵⁵ Ibid, paragraph 6.

⁵⁶ Ibid, paragraph 18.

⁵⁷ Safety, Health, Environment and Fire risk.

apex, was lost. In December 2002, Advantage Technical Consulting made the following recommendation: *"There is a pressing need to bring greater harmony and consistency to the assurance of equipment safety. This will best be prosecuted by the appointment of a 2* champion empowered by the DESB."*⁵⁸ This was unfortunately not taken up. The creation of a multi-faceted project-based organisation made the retention of a single, acknowledged point of responsibility for safety and airworthiness all the more important.

- 13.148 I welcome the decision by the PUS, Sir Bill Jeffrey, and current CDM, General Sir Kevin O'Donoghue, to create the post of Defence Chief Airworthiness Engineer within his organisation in an effort to create the focus for the MOD that was once provided for the RAF by CE(RAF). However, welcome though this initiative is, I believe that there is a need to go considerably further and I make detailed recommendations regarding the future role, duties and position of a CE(RAF) in **Part VI** of this Report.

(2) Demise of full Airworthiness Audits and Support Authority Reviews

- 13.149 With the demise of the role of CE(RAF), there were fewer full Airworthiness Audits and the rigorous airworthiness review process known as *"Support Authority Reviews"* which had been conducted on a regular basis in the days of Logistics Command disappeared.
- 13.150 There was a perception in some quarters that such Airworthiness Audits were 'something of an imposition' and not 'adding value' and that to get rid of them would save money. They did not properly reappear again until late 2005, when they were re-started by an AD EngPol (who obtained agreement that that they could take place at the same time as Defence Equipment Safety Group (DESG) audits covering generic equipment safety, health and safety aspects, and environmental aspects). There were audits of IPTs during the period 2000 to 2005. These tended, however, to focus on process and procedure. These initially comprised 'compliance audits' conducted to ensure that IPT staffs were 'following local procedures' and 'surveys' to check the implementation of Safety Management Procedures; and subsequently included 'second party audits' of IPT safety management activities which were introduced under the aegis of AD EngPol AW&SHEF.⁵⁹ IPTs were also required to report to the Fixed Wing Airworthiness Management Group (FWAMG) on a regular basis using the airworthiness 'Scorecard' method.
- 13.151 In the days of the CE(RAF), periodic airworthiness reviews, known as *"Support Authority Reviews"*, were conducted of each aircraft type. These were penetrating, rigorous and highly effective. They were conducted in a formal manner in accordance with the then applicable regulations.⁶⁰ They were chaired by the CE(RAF) himself. They brought together senior engineering expertise which brought scrutiny to bear. Senior officers in charge of each aircraft type were obliged to make presentations justifying the airworthiness of their aircraft. These were formal 'set piece' meetings in which the CE(RAF) himself played an active role cross-questioning. The presence of the CE(RAF) gave *"a very immediate incentive"* for such presentations to be prepared with great care. They normally were. These meetings were pieces of *"grand theatre"*, as Sir Sam Cowan put it in his oral evidence to the Review, with *"a huge gap between the 4-Star 3-Star officer and the poor chap who is marched in to give an account"*. But that was the point. Everyone recognised that they had to be on their mettle and weaknesses in the airworthiness case would be exposed. The *"Support Authority Reviews"* had the salutary effect of putting airworthiness at the top of the agenda and keeping it there in everyone's minds. As one former AD(Eng)Pol put it: *"You knew you had to be on top of your airworthiness game. You would get skinned alive if you were not and did not know exactly what was happening to your fleet."*

(3) Downgrading of level at which FWAMG chaired

- 13.152 There was a steady downgrading of the level at which the Fixed Wing Airworthiness Management Group (FWAMG) was chaired.
- 13.153 In June 1987, the then CE(RAF), Sir Colin Terry, formed the FWAMG as a specific 'airworthiness' forum. Its terms of reference were *"to monitor, co-ordinate and report on all aspects of equipment airworthiness/ safety relating to MOD fixed-wing aircraft"* and to report every six months to the Defence Aviation Safety Board⁶¹

⁵⁸ *"Safety Process Review"*, dated 23 December 2002, Advantage Technical Consulting, Summary, paragraph 10.

⁵⁹ See the Report of AD EngPol on Air Equipment Safety in DLO E&S Report 2003, page 20.

⁶⁰ AP100A-01, Leaflet 170 and Business Procedure E1970.

⁶¹ Predecessor of the MOD Aviation and Regulatory Safety Board (MARSB).

via the Aviation Safety Steering Group (ASSG) Chairman (with copies to the full ASSG membership) *“on equipment airworthiness/ safety of the MOD [fixed wing] aircraft fleet, with a summary of issues, actions and recommendations for any significant safety policy matters.”*⁶²

- 13.154 The FWAMG was chaired by Sir Colin Terry whilst he was CE(RAF). Thereafter, there was a steady downgrading of the level at which FWAMG meetings were chaired. Following Sir Colin Terry's retirement, FWAMG was chaired by DGSM RAF (2-Star level). From January 2000 to February 2002 FWAMG was chaired by D Tech (Air) (1-Star level). From February 2002 onwards FWAMG was chaired by a 1-Star officer, D Log Support (Air) (which under a subsequent re-organisation was re-titled D Tech (Air)). The Fourteenth FWAMG meeting in January 2004 was chaired at Group Captain level. The Fifteenth FWAMG meeting on 16 June 2004 was chaired at 1-Star level but by a pilot who had no engineering background. It is striking that, in 2004, there was a *“serious discussion”* as to whether FWAMG still had any purpose and whether it should be abolished. It is to his credit that, on 19 December 2004, George Baber wrote to AD Eng Pol arguing (successfully) for FWAMG's retention:

“Given that Airworthiness... should have primacy in all that we do, it would be extremely off, and probably indefensible, for such a forum not to exist. The FWAMG is the only forum attended specifically by PEs (rather than IPTLs) and the specific remit to discuss AESM [Airworthiness & Environment Safety Management].”

(4) Dilution of technical support services to air – formation of TES

- 13.155 There was a dilution of the technical support services available to air IPTs following the creation of the 'purple' Technical Enabling Services (TES).
- 13.156 In 2004, as a result of further DLO internal re-organisation, the TES was formed by integrating the technical support services for land, sea and air domains. This was said to lead to efficiencies through cuts in personnel. Nevertheless, it led to the loss of services dedicated to support Air IPTs and *“hampered the IPTs ability to understand and analyse equipment serviceability and maintenance trends”* when there were already difficulties arising from trend monitoring using MDS⁶³ data. The RAF and early Air domain of the DLO had extensive in-house data analysis capabilities associated with RCM and fault trending generally. As the organisation came under ever increasing financial pressures, and associated or additional headcount reductions, those parts of the organisation not in the front line of delivering primary outputs were cut mercilessly. As a result, the ability to exploit maintenance data (such as Nimrod MDS defect records) was severely reduced. IPTs did not have the internal capacity to do the work themselves, and their already hard-pressed budgets could not support outsourcing of this work, even assuming that some third party could be found with the necessary knowledge and expertise.

(5) Downgrading of aircraft engineering skills

“It is very easy for people who have never operated aeroplanes to make sweeping judgments that you do not need any particular expertise to look after an in-service aeroplane. It is common sense that you do.”(Former AD Eng(Pol))

- 13.157 In my view, there was an insidious downgrading and under-valuing of engineering skills at all levels in the MOD during the period 2000 to 2006. This was exemplified most starkly by the abolition of the headline post and title of CE(RAF). But it also manifested itself in variety of other ways:
- (1) The DTech Air post was one half of the Air Systems organisation, reduced in capacity and capability.
 - (2) An attempt to remove the post of AD(Eng)Pol.
 - (3) The decline in numbers of RAF engineers reaching the top echelons in the past ten years. (The singular achievements of the immediate past Chief of Material (Air), Sir Barry Thornton, who was a long-standing Member of the Air Force Board, are rare and have much to do with his own outstanding abilities).

⁶² FWAMG Terms of Reference, 2003 edition.

⁶³ Maintenance Data System.

- (4) Few of the immediate line managers and reporting officers for Air IPTLs had engineering backgrounds. They comprised a navigator (2002 to 2003), a supply officer (2004), a pilot (2004 to 2005) and only in 2005 an engineer. It is noteworthy that, in 2008, DE&S appointed a highly competent and distinguished Naval Architect, with no previous experience of aircraft acquisition or support, to head the air transport, refuelling and reconnaissance IPT grouping including Nimrod.
- (5) The abolition of Officer in Command Engineering (OC Eng) at RAF Kinloss in the wake of the imposition of the 'Trenchard' model in place of the 'Binbrook' model.⁶⁴ This meant that the dilution of engineering oversight was mirrored at the station level by the removal of the key engineering figure at Base Headquarters and the distribution of engineering personnel to non-specialist leadership. It should be noted that the BOI recommended that consideration be given to reinstating the position of OC Eng at RAF Kinloss⁶⁵. Wing Commander Steve Wilcock was duly appointed to the post of OC Eng RAF Kinloss in April 2007. His skilled leadership, knowledge and hard work has immeasurably strengthened engineering and morale at RAF Kinloss.

13.158 There was an increasingly prevalent view and vogue, which gained currency at ADRP in Abbey Wood and other quarters, that engineering qualifications were less of a pre-requisite for many posts which hitherto might have been the case because: (a) increasing amounts of in-service support for aircraft came from industry; and (b) 'generalist' business management and financial skills and MBAs were required more as the Armed Forces 'modernised' post-SDR. In my view, this was a mistaken and blinkered approach which failed to have regard to the highly technical and specialist nature of aviation and aero-engineering. Heavier-than-air machines are different. Keeping them flying safely is technically very complicated. A safe system requires skilled and qualified engineers at all levels. This is especially true in the military context with the need to be instantly responsive to changing operational and strategic needs.

(6) Demise of Inspectorate of Flight Safety

- 13.159 With the demise of the Inspectorate of Flight Safety (IFS), the RAF lost a valuable limb of the airworthiness safety regime.
- 13.160 DASC was formed on 1 April 2002 with 35 staff from the IFS. As part of the 'purpling' exercise, elements of the RAF were replaced by Royal Navy and Army personnel to form the joint DASC unit. Whilst DASC fulfilled the requirement for a joint overarching policy maker, the RAF lost a large proportion of its dedicated Flight Safety staff in the formation of the unit and its 'Flight Safety' communication channel. Given its wider function, DASC did not provide the same support to RAF Stations that IFS had previously afforded. The void left by the formation of DASC could not be filled by the few Flight Safety staffs at HQ STC and HQ PTC.
- 13.161 Since the restructure of the Group and Command Flight Safety Organisations (FSO) in 1996, the RAF had lost over a half of its Flight Safety personnel. The feelings expressed at the time that, with the formation of DASC, the RAF's Flight Safety structure had been reduced to an unacceptable level have much force:

*"...the RAF FS organisation had been decimated over the last 8 years. DASC was not seen by FL as an adequate replacement for IFS, and the RAF Commands had not been provided with the assets to "fill the gap". The perception at Stn and Sqd level was that FS was not being properly supported, with RAF FS interests only represented by the Command FS staffs. Furthermore, the gapping over the last 2 years had sent a poor FS message to all our units."*⁶⁶

(7) Demise of the Role Office

- 13.162 In the 1990s, the Role Office at Strike Command at RAF High Wycombe had played a number of important roles. In particular, it provided logistical support to operations and a point of contact, or interface, between Strike Command,⁶⁷ the Units and Group Headquarter Staffs.⁶⁸ The Role Office also played a key role within

⁶⁴ Models of Base organisation (QR640). The 'Trenchard' model took effect at RAF Kinloss by way of a pilot scheme between early 2005 and early 2007.

⁶⁵ BOI Recommendation (i).

⁶⁶ These concerns voiced at the STC Flight Safety Symposium, 3 June 2003.

⁶⁷ Now Air Command.

⁶⁸ STC/7/20/AO Eng & Supply – Strike Command Role Office and Airworthiness Responsibilities (attaching Note to Engineering and Supply Staffs No. 18 on Responsibilities of Strike Command Role Offices).

Strike Command's airworthiness framework. Its responsibilities included: (1) advising the Air Staff on operational plans, airworthiness, fitness-for-use and safety issues; (2) evaluating the impact of over-arching policy changes; (3) analysing trends of ground and air incidents and providing specialist comments on BOIs; and (4) evaluating the impact of emerging quality assurance and health and safety policies on current operations.

- 13.163 The Review interviewed many witnesses who spoke of the Role Office in glowing terms. It was variously described as *"the focal point for all engineering matters"*, *"the day-to-day airworthiness gurus"*, *"the champions of capability"* and *"a centre of strength/excellence who supported the IPTs"*. Unfortunately, however, the Role Office was substantially wound down and some of its personnel rusticated to different Force Headquarter bases as part of a reorganisation of Group staffs in about 2005. These moves assisted the amalgamation of the headquarters of Strike Command and Personnel and Training Command which formed Air Command. The decision was made to locate the amalgamated two Headquarters at RAF High Wycombe, requiring a loss of 1,000 personnel. The rustication of some Group staff was a means of making the joint organisation fit into RAF High Wycombe.
- 13.164 A number of witnesses testified that a significant effect of the rustication of Group staffs was the loss of the Role Office. In particular, nobody at RAF Kinloss seemed to know quite what had happened to the Role Office, or where it now sat. One view was that, whilst it was supposed to now exist at Force Headquarters on the Unit, the reality was that it did not. Another view was that it remained in the shrunken group within Air Command. In any event, it is plain that the Role Office has at the very least been seriously demoted, if not lost altogether, and this is widely recognised as something to be regretted. In particular, a former Wing Commander Nimrod in the old HQ No. 3 Group explained to the Review that the Role Office would analyse trends across the Units and was responsible for carrying out external audits of the Stations. It is not at all clear that either of these roles is presently being fulfilled by any other body.

(8) Removal of 2-Star tier from Letters of Delegation chain

- 13.165 The airworthiness structure was further weakened by the removal, on 1 April 2005, of a layer of Letter of Delegation (LOD) holder above IPTLs.
- 13.166 Prior to this date, IPTLs held LOD airworthiness responsibilities delegated to them from the 2-Star DG ES(Air). On 1 April 2005, following a proposal put forward by the DLO and taken up by ADRP in Abbey Wood, the 2-Star tier was cut out of the LOD chain of delegation and IPTLs henceforth held LODs direct from the 4-Star level of CDL and CDP. It was in this context that George Baber remarked to the Review that he felt *"abandoned"*.
- 13.167 In my view, the removal of this senior link from the LOD chain of delegation further undermined and weakened the airworthiness delegation chain. An LOD delegator has a personal, *i.e.* non-delegable, duty to satisfy him or herself that his or her delegated responsibilities are being discharged properly. Delegation is not abrogation. It involves a continual reciprocal duty. However, the 4-Star LOD delegator delegating airworthiness responsibility direct to IPTLs is in a difficult position for a number of obvious reasons. First, because the former is so far removed in the chain of command from the latter, it would make it difficult to satisfy him or herself that all is well. Second, because with the vast range of responsibilities and people under his command, the 4-Star would find it difficult to give enough personal attention to each delegatee at that level (and the formidable authority gradient would inhibit access the other way). Third, unless an aviation engineer, a 4-Star is likely to have limited knowledge of airworthiness issues. Fourth, the 4-Star would not be making the relevant decisions affecting the IPTLs' business; these would be made at the two-star level which, *ex hypothesi*, would have no responsibility for the airworthiness impact of those decisions. For all these reasons, therefore, the decision to cut out the 2-Star tier in the chain of LOD holders was ill-advised. This has been recognised and the system has now been restored to that which prevailed previously.

(9) 'Rationalisation' of AD Eng Pol with ADRP

- 13.168 At some stage, a proposal was put forward by ADRP in Abbey Wood to get rid of the post of AD(Eng)Pol and the two SO1 posts and have engineering policy done by an SO2 lead within a more 'generic' organisation, *i.e.* what would eventually become the DE&S. This would have involved merging the role of AD Eng Pol

with ADRP and placing within a 2-Star chain of command that had no specific aviation competence. This proposed change was strongly resisted by the AD(Eng)Pol and DG ES(Air) at the time because of: (a) the importance of having airworthiness of in-service aircraft managed by people with an aviation and engineering background; and (b) the importance attached to Front Line Command (FLC) input to the development of Joint Air Publications.

- 13.169 AD(Eng)Pol ran an engineering policy group forum at which all the FLCs were represented. AD(Eng)Pol's staff would draft policies, circulate these to FLCs and the engineering policy group would discuss and endorse JAP changes. AD(Eng)Pol formed an important link between the FLC and the formulation of engineering and airworthiness policy. If the post of AD(Eng)Pol had been abolished and the generation of JAP policy left to a Squadron Leader, this would have been a serious mistake for obvious reasons of lack of experience and credibility. Such a Squadron Leader: (a) would have been unlikely to have had the relevant breadth of knowledge or experience; (b) would have had little or no credibility with FLCs; and (c) would have been just part of wider 'safety' management group reporting to civil servants with no aviation or front line experience. Suddenly to have given this to somebody with no air background and who was not an engineer and who was solely relying on advice of civil servants who had never worked on front line would amount to a serious dilution of airworthiness experience. It would, in the opinion of one observer, have been 'barking' to have abolished the post of AD(Eng)Pol, but *"this was very much the culture at the time"*. Resistance was successful until the post of AD(Eng)Pol was moved into DE&S under the Director of Corporate Services to become Director Air Safety. George Baber was the first appointee to this post in the summer of 2006.

(10) Dilution of 'airworthiness' to form part of SHEF

- 13.170 As processes became increasingly 'purple' and 'tri-Service', the discipline of 'airworthiness' increasingly became regarded and treated as just another part of 'SHEF', i.e. Safety, Health & Environmental and Fire risk. One can identify many potential reasons for this, but most potent was simply the lack of understanding by the non-air community of the complexity of airworthiness management. All RAF personnel (and other aviation specialists) inherently 'get' airworthiness because it is part of the daily fabric of their working life. However, those from non-aviation backgrounds often fail to appreciate the specialist issues and problems involved in keeping aircraft flying safely. In the larger, tri-Service organisations aircraft support activity once carried out in-house by the RAF has been subsumed within a wider 'safety' ambit in which the majority of senior decision-makers have been from other disciplines.
- 13.171 I have identified evidence of significant and sustained reluctance and lack of understanding over recent years by the DLO senior organisation to recognise the special demands of aviation safety, which has manifested itself in the progressive dismantling of the supervision of those regulating and maintaining airworthiness. This lack of understanding is exemplified by the following statement by Sir Sam Cowan to the Review:
- "You know, airworthiness is a subset of general safety, and there was the whole business of the safety of the equipment; the general health and safety requirements surrounding the area; and then, of course, airworthiness in terms of, ..., what happens to the equipment in the air."*
- 13.172 I am pleased to see that within DE&S this major error has begun to be recognised and is being addressed. However, strong structural steps need to be taken to ensure that, in the future, attitudes and behaviours cannot prejudice proper management of this highly specialised safety discipline (see **Chapter 21**).

Summary

- 13.173 Whilst it is difficult to point to particular effects which the above ten factors may have had individually, there is no doubt in my view that, collectively, they served significantly to undermine the efficacy of the airworthiness structure during period 2000 to 2005. They were both causative and symptomatic of a progressive weakening of the airworthiness regime and structure. They stemmed from continual organisational change, an insidious shift in culture, and the lack of sufficient insight into the effect that seemingly logical or innocuous changes in safety structure might have.

'DISTRACTION'

"It must have been very hard to have been in the DPA or DLO at this time. Re-structuring, organisational changes, new initiatives and reports tumbled one after another, with little time to bed down. They had to support two operations and provide savings which had already been taken by LTC [Long Term Costings]."

(Former senior Army officer)

"There are lots of 'change managers' but nobody manages change."

(a JNCO line engineer, RAF Kinloss).

- 13.174 There is no doubt, in my view, that dealing with the waves of organisational change and the cuts and savings stemming from the SDR and 'Strategic Goal', proved a major distraction for many in the DLO, particularly during the period 2000-2006. The overriding imperative during this period was to deliver the cuts and change required. This meant that the lion's share of attention, focus, time, energy and resources was devoted to these 'strategic' priorities. Inevitably, the adoption of 'change' and cost reduction as central 'strategic' goals was going to relegate risk management, safety and airworthiness to a secondary position.
- 13.175 This was particularly true in the case of the Nimrod IPT at this time.

Causation

"The responsibilities of an IPTL at the time were awesome. An IPTL was responsible for putting place everything you need to keep an aircraft flying: all of the engineering, all of the Maintenance Procedures, providing all of the parts, providing and managing all of the staff, managing the finance, managing the contracts. They were doing this under severe financial challenges in a very fluid environment with significant operational pressures. ... It was one hell of a juggling act." (An AD(Eng)Pol at the time)

- 13.176 In my view, the organisational pressures, failures and weaknesses outlined above were a causal factor in the loss of XV230. They significantly contributed to the failures of the Nimrod IPT to ensure the airworthiness of the Nimrod fleet.
- 13.177 As set out in **Chapters 10** and **11**, there were significant failures by certain individuals within the Nimrod IPT in relation to the Nimrod Safety Case (NSC) which contributed to its poor quality and failure to capture the risks which led to the loss of XV230. The evidence suggests that the Nimrod IPT was under increasing pressure during the period 2000-2005 as a result, in particular, of: (i) the demands of delivering the cuts and savings required by the Strategic Defence Review and 'Strategic Goal'; (ii) the demands of delivering the 'Transformation' required by Defence Logistics 'Change' programme; (iii) the demands of supporting the growing operational roles of the Nimrod MR2 and R1 in the conflicts in Afghanistan and Iraq (Operations 'HERRICK' and 'TELIC'); (iv) the demands of extending the Out-of-Service Date of the MR2 as a result of delays in the In-Service Date of the MRA4; and (v) the wide role and remit of the Nimrod IPT.
- 13.178 These organisational factors, *i.e.* the cuts, change, dilution and distraction, go some way to explaining (whilst not excusing) the personal failures of George Baber and Michael Eagles. They were, to a significant extent, distracted by and preoccupied with delivering the cuts and change required by the 20% 'Strategic Goal' and Strategic Defence Review and subsequent initiatives, and consequently gave materially less priority and personal attention to the NSC and airworthiness issues during this period than was appropriate. The weakening of airworthiness culture meant that 'business' goals and achieving savings and efficiency targets became the paramount focus of their time and attention, at the expense of safety and airworthiness matters such as the NSC. The weakening of the airworthiness regime meant that there were insufficient checks and balances and less oversight of the Nimrod IPT than was required in all the circumstances during this period.

Evidence of Nimrod IPTL and IPT

- 13.179 There was evidence from George Baber and others that the Nimrod IPT faced very considerable challenges which increased during the period 2000-2005. These challenges included, in particular: (a) pressure to deliver the savings and change required by the Defence Reviews; (b) pressure to move towards 'partnered' in-service support arrangements as part of the 'transformation' process; (c) the requirement to take on (indirect) responsibility for 'Depth' maintenance at RAF Kinloss; (d) increasing organisational and procedural changes, e.g. the change from Release to Service (RTS) to General Airworthiness Release Procedure (GARP); (e) the broad remit of the Nimrod IPT which included e.g. responsibility for the Battle of Britain Memorial Flight (BBMF); (f) responsibility for major projects such as Helix; (g) the increasing demands of supporting the growing operational roles of the Nimrod MR2 and R1 in the conflicts in Afghanistan and Iraq; and (h) the demands of extending the Out-of-Service Date of the MR2 as a result of delays in the In-Service Date of the MRA4. The job of Nimrod IPTL during this period has been described as "awesome". George Baber said in interview with the Review that, at times, as Nimrod IPTL there was a "lack of supervision" by his superiors and he felt "abandoned" when the 2-Star tier of airworthiness delegation above him was removed.
- 13.180 In my view, there is considerable force in this. The evidence strongly suggests that: (i) George Baber was so preoccupied with his other duties that he gave less priority and personal attention to the NSC and safety and airworthiness issues than was appropriate; (ii) the Head of Air Vehicle at the Nimrod IPT (NIM(ES) AV), Michael Eagles, was so preoccupied with negotiating Nimrod Integrated Support Contracts (NISC 2 and 3) that he gave less priority and personal attention to the NSC and safety and airworthiness issues than was appropriate; (iii) the Safety Manager, Frank Walsh, lacked oversight and insight in relation to the NSC and airworthiness issues which he was left to handle; (iv) there was a general sense in which 'business' issues, and achieving savings and efficiency targets, was paramount and airworthiness and safety issues were less of a priority and would look after themselves; and (v) IPTs and IPTLs were 'empowered' and very much left to their own devices. Further, the "awesome" scale of the Nimrod IPTL's role is evident from the LOD George Baber received from DG ES(Air) on 26 November 2003. It was in standard form, but was in many ways a remarkable document for: (a) its length and complexity; (b) the number of regulatory references in it; (c) the great emphasis it placed on achieving the DLO 'Change' Programme; and (d) the relatively little emphasis it placed on the delegated airworthiness responsibility (which forms the last of 31 paragraphs).
- 13.181 The debilitating effect of the sheer volume of change has been felt at all levels of the Nimrod community, as QinetiQ noted in a 2008 Report:⁶⁹

"In recent years there have been a number of change programmes that have had a direct impact on the Kinloss structure and the NLS [Nimrod Line Squadron] in particular. While each of these may have delivered benefits in one form or another, the sheer volume of the changes has had a debilitating affect on the personnel who work in the NLS. It is suggested it is time to reevaluate the impact of these programmes to ensure benefits were or are being realised, that the total change programmes have not weakened the make up of NLS and that the communication strategy adopted for these activities continues to be effective."

Lack of supervision and oversight of Nimrod IPT and IPTL

- 13.182 In my view, there was a lack of adequate supervision and oversight of the Nimrod IPT and IPTL during this period. This meant that the Nimrod IPT and IPTL were very much left to their own devices as to striking the balance between the allocation of time and resources to project as opposed to safety issues. It also meant insufficient regular re-iteration of functional values such as safety and airworthiness. But, as I explain below, lack of supervision was, in a sense, the inevitable product of the 'project-orientated' structure set up by the SDR which deliberately aimed to put decision-making into the hands of one person by 'empowering' IPTLs and 'de-layering' above them and allowing them to chose to be 'dual-hatted', i.e. to be their own Project Engineers. The airworthiness regime in the period 2000 to 2006 was inadequate to the task. The "long screwdriver" of the CE(RAF) would have been better suited to inject orthogonal values into IPTs during this period as it had been in the early days of MDGs.

⁶⁹ QinetiQ Nimrod Fuel System Safety Review Report dated October 2007, paragraph J 2.3.6.

- 13.183 In my judgment, the lack of supervision was a problem of the system and changes in operation during this period rather than something which is appropriately the subject of criticism of those in the delegation or authority chain above. I say this for five reasons.
- 13.184 First, as emphasised above, the whole point and construct of IPTs was to make them 'self-standing' project-orientated bodies led by strong IPTLs who would be 'empowered' to take all relevant decisions covering the life of the platform. This was the model, and intent, of the fundamental shift brought about by the SDR, *i.e.* to move from 'functional-oriented' to 'project-orientated' ways of military equipment acquisition and management.
- 13.185 Second, the supervisory structure established within the DLO following the SDR reforms did not easily lend itself to strong, functional engineering-led, hands-on supervision of air IPTs. George Baber received delegated airworthiness authority directly from the 2-Star post DG ES(Air). DG ES(Air), however, had inherited a 'flat' management structure and sat above approximately 25 IPTs and could not, in practice, exercise personal supervision or responsibility for 25 IPTLs, not least because of the extensive range of other roles and responsibilities which DG ES(Air) was expected to carry out at the time. A new 'cluster' arrangement of IPTs was introduced in 2004. However, as stated above, George Baber's immediate line managers and reporting officers were Air Commodores at 1-Star rank who, until 2005, had no engineering background. He initially reported to a navigator (2002 to 2003), a supply officer (2004), a pilot (2004 to 2005) and only in 2005 did he report to an engineer. The former could not realistically be expected to second-guess what steps he was taking to manage airworthiness in his IPT.
- 13.186 Third, there were a number of audits carried out on the Nimrod IPT during this period which gave it a clean bill of health. For instance, on 17 February 2004, a Preliminary Report on the Safety Audit of the Nimrod IPT concluded that Nimrod IPT had developed a *"comprehensive and robust (albeit probably expensive) SMS [Safety Management System]"*. In September 2005, an ASEMS Procedure audit evaluated the adequacy and effectiveness of the safety and environmental management systems established by the IPTL and concluded that *"the majority of the IPT's activities adequately address the requirements for safety and airworthiness"*. The audit highlighted the following *"Areas of Strength"* of the Nimrod IPT:
1. *"The Nimrod Safety and Environmental Panel was working well, providing the IPT with good two way communications and advice from stakeholders."*
 2. *Data held on both the electronic Cassandra Hazard Log and Aircraft Data Configuration Tool was being managed well.*
 3. *Staff training records were accurate and up to date.*
 4. *The IPT was represented on the Safety Manager's Forum, a mechanism for Safety Managers from various IPT's to share experience and ideas.*
 5. *The process for delegating appropriately was robust and thorough.*
 6. *Particular praise goes to the BBMF Safety Manager who was managing the BBMF Safety Management System extremely well."*
- 13.187 Fourth, there was nothing ostensibly which would have suggested all was not well with the Nimrod IPT. Indeed, quite the opposite: for the most part the Nimrod IPT functioned well, particularly in delivering the increasing Front Line capability required by the Afghanistan and Iraq conflicts; and its IPTL, George Baber, would have presented well on all fronts, particularly in the area of airworthiness process and regulation where he had a growing reputation (his standard 'competencies' set was rolled out in the RAF). There would have been little to alert the DG ES(Air) at the time or anyone in the ES(Air) Management Board that any lack of care, priority and attention was being given by the Nimrod IPTL and Head of Air Vehicle in the Nimrod IPT to the NSC. Regular reports were made to the FWAMG as to its progress: see, *e.g.* the report to the Thirteenth FWAMG meeting on 13 June 2003, signed by George Baber, which stated *"The CASSANDRA Hazard Log has been populated by BAE Systems under Phase 1 work, Phase 2 of the task, scheduled for completion 31 Jan 04 will be to mitigate the hazards. QinetiQ has been appointed as the Independent Safety Assessor"*.

- 13.188 Fifth, whilst it was inadvisable to give IPTLs the option to choose to be their own Project Engineer (PE) as well as IPTL, it was standard practice at the time to give IPTLs who were themselves qualified aeronautical engineers (such as George Baber) the option of being their own PEs. Further, it is difficult to criticise this decision (other than with hindsight) given there was no indication that George Baber was not more capable of fulfilling both roles; indeed, he was intelligent and energetic and would have appeared to be an eminently suitable candidate to be 'dual-hatted'.
- 13.189 There is a natural inherent tension between the functions of an IPTL, whose role is 'delivery' of the project, on time and within budget, and that of a PE, whose role is ensuring best practice, safety and airworthiness. Where an IPTL is also qualified to be the PE, there will be a natural tendency, for reasons of professional pride, for him or her to elect to fill both roles, whether or not that decision is sensible in the light of other leadership commitments at that stage of the project life cycle. I am aware that, currently, on some large projects, the IPTLs have chosen not to fill both roles, but I believe that this decision is too important to be left to the individual themselves.

Conclusion

- 13.190 In conclusion:
- 13.190.1 Airworthiness was a casualty of the process of cuts, change, dilution and distraction commenced by the 1998 SDR.
 - 13.190.2 Organisational pressures, weaknesses and failures were a significant cause of the loss of XV230.
 - 13.190.3 These organisational failures were both failure of leadership and collective failures to keep safety and airworthiness at the top of the agenda despite the seas of change during the period 1998 to 2006.