Ministry of Defence

Major Projects Report 2003

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
HC 195 Session 2003-2004: 23 January 2004

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executive summary

1 Each year since 1984 the Ministry of Defence (the Department) has reported to Parliament on its progress in procuring major defence equipments. Prior to 1991, the Department classified much of the data submitted to Parliament and our analyses of the key themes and trends emerging were therefore not published. The Major Projects Report 2003 is the twelfth that we have published since the level of classification was reduced.

2 The Major Projects Report 2003 covers the period to 31 March 2003 and provides cost, time and technical performance data for 30 projects split, in accordance with Smart Acquisition principles, between the 20 largest projects on which the main investment decision (Main Gate) has been taken and the 10 largest projects yet to reach that point. Three of the 20 post-Main Gate projects - Bowman, Skynet 5 and Support Vehicle (Cargo and Recovery) - are new to the population this year.

3 As our recent report on Through-Life Management[1] highlighted, in addition to procurement cost data the Department has begun to produce more data on the whole-life costs of equipments. We have been exploring with the Department how best to reflect this important new information in the Major Projects Report. Appendix 7 provides an update on progress and gives details of the way Through-Life decisions are likely to be reflected in the Major Projects Report 2004.

4 For the Major Projects Report 2003, our overall conclusion is that while 173 out of 174 Key User Requirements (99.4 per cent) are forecast to be achieved, difficulties on four projects that predate the introduction of Smart Acquisition have been the primary cause of cost and time overruns in the last year. The well publicised difficulties of Astute Submarines and Nimrod aircraft have cost the Department £1541 million[2] in cost overruns and the Prime Contractor, BAE Systems, £1050 million[2]. Cost increases totalling £1163 million[2] have also arisen on Typhoon (formerly Eurofighter) and the Advanced Air-Launched Anti-Armour Weapon largely reflecting, under Resource Accounting and Budgeting, the financial impact of the time delays on these projects.

5 The 13 Smart Acquisition projects have performed better than the Legacy projects **(see Figure 1)**, although in some cases it has taken longer than anticipated to negotiate contracts and contract prices have exceeded estimates. Optimism continues to govern the initial appraisal of projects and there are signs that risks are not always sufficiently understood when committing to the main investment at Main Gate. The costs and in-service dates for more than two thirds of projects have drifted away from those planned (50 per cent estimates) towards, and in a very few cases beyond, the highest acceptable approved limits (90 per cent estimates)[3].

1 *The Comptroller & Auditor General's Report, Ministry of Defence: Through-Life Management, HC 671 Session 2001-2002.*

2 *These figures reflect the position as at 31 March 2003. The BAE Systems contribution is stated in cash terms.*

3 *Forecast estimates (50 per cent) are the basis on which the Department plans its equipment programme, while highest acceptable (90 per cent) estimates are not to be exceeded values for the cost and in service date of equipment and represent the manifestation of all identified risks.*

1 **Average in-year cost and time performance split for Smart and Legacy projects**

Projects	Average in-year cost variation		Average in-year time variation (months)
	(£ million)	(%)	
Smart	33	2.1	3
Legacy	389	10.9	16

NOTES

The average in-year Sterling cost variation is calculated across 11 Smart projects and seven Legacy projects, against a baseline of forecast costs at 31 March 2002.

The average in-year percentage variation is an average of individual percentage in-year variations on Smart and Legacy projects, against a baseline of forecast costs at 31 March 2002.

The average in-year time variation is calculated across nine Smart projects, and seven Legacy projects.

Source: National Audit Office

6 Successive Major Projects Reports since 2000 have highlighted the need for the Department to get the best out of the crucial early Assessment Phase of projects in terms of understanding and reducing risks[4]. The Public Accounts Committee have made recommendations for the Department to improve how it measures the effectiveness of risk reduction through better estimating and other indicators such as Technology Readiness Levels[5]. Progress has been made but more needs to be done. In the case of one project in this year's Major Projects Report - the Support Vehicle - the Department decided to proceed without a formal Assessment Phase on the basis of work done to examine the suitability of the project for a Private Finance Initiative solution, and in an effort to accelerate the programme to enable earlier delivery of capability. In the event, the Department's and industry's understanding of the requirement was immature and has resulted in programme slippage through an extended competitive phase.

7 The variations on some Smart projects indicate that there are a range of cultural and systemic influences which the Department and its industry partners need to manage to deliver projects successfully. The Department recognises these challenges and many of the initiatives it is now undertaking (and which we highlight in this Report) hold the prospect of placing a renewed focus on the issues. Our specific conclusions are summarised below.

4 The Comptroller & Auditor General's Report, Ministry of Defence: Major Projects Report 2000, HC 970 Session 1999-2000. The Comptroller & Auditor General's Report, Ministry of Defence: Major Projects Report 2001, HC 330 Session 2001-2002. The Comptroller & Auditor General's Report, Ministry of Defence: Major Projects Report 2002, HC 91 Session 2002-2003.

5 41st Report from the Committee of Public Accounts (HC448 (2001-02), paragraph 4.

Airborne Stand-Off Radar

8 On the top 20 projects in the Demonstration and Manufacture phase:

(i) The Department expects Key User Requirements to be achieved. Whilst many projects are at an early stage in their lifecycle, assuming the Department's confidence is borne out, this will be a significant achievement.

(ii) With the exception of two projects, the costs of which have been excluded because of their commercial sensitivity, total current forecast costs are £51.9 billion, an increase of £3.1 billion in the last year and some six per cent over approval. Legacy projects account for £2.7 billion (87 per cent) of the £3.1 billion cost increase.

(iii) Projects have slipped an average of 18 months beyond their expected delivery dates, twice the average delay recorded in the Major Projects Report 2002. Legacy projects account for 114 months (79 per cent) of the 144 months slippage in the last year.

9 On the ten projects in the Assessment Phase:

(i) Performance measures for the success of the Assessment Phase in understanding and reducing risk continue to evolve, notably three-point estimates and Technology Readiness Levels.

(ii) Most projects are expected to complete the Assessment Phase within cost, but over half are staying in the phase for longer than expected. In some cases spending more than planned or taking longer for the Assessment Phase will be sensible to reduce risks before committing substantive funding at Main Gate. However, the emphasis on understanding and reducing risk does not diminish the importance of accurately estimating the cost and duration of the Assessment Phase since delays can have a knock-on effect through development and production and lead to unplanned capability gaps.

(iii) As can be expected, the level of Assessment Phase expenditure varies across projects but the average level of expenditure is well below that suggested for such risk reduction activity under Smart Acquisition.

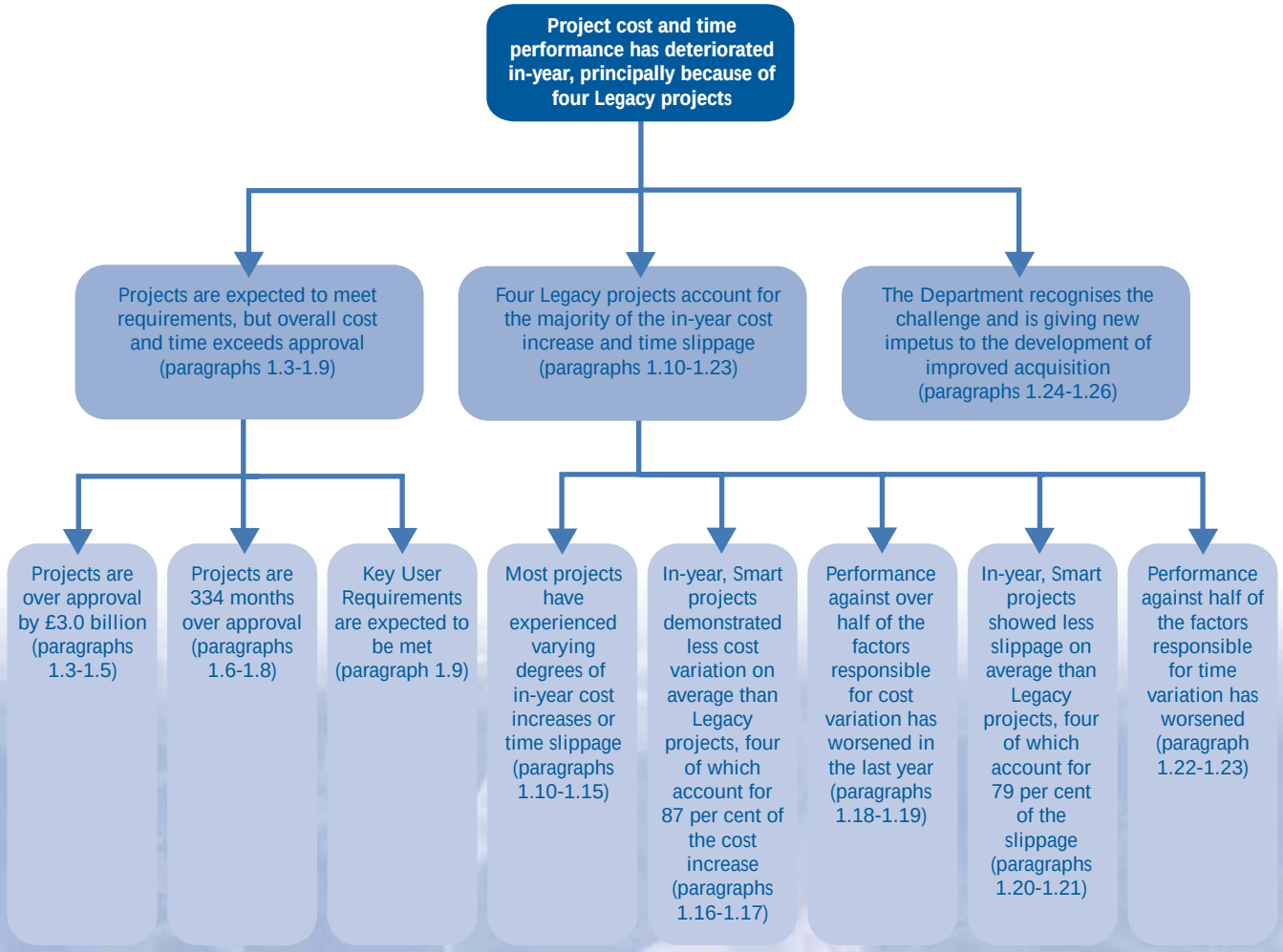
10 Under Smart Acquisition the Department budgets on the basis of estimates which it expects to achieve should 50 per cent of the risks inherent in a programme materialise. However, projects are approved on the basis of 90 per cent confidence figures which represent the most the Department is prepared to spend, or the latest date at which it is prepared to accept the equipment into Service. The difference between the 50 and 90 per cent figures is known as the "risk differential". A high level, in some cases all, of this risk differential has been consumed by a number of projects which have recently passed Main Gate. The early consumption of the risk differential on projects, such as the Support Vehicle (Cargo and Recovery) programme, suggests some risks are still not being fully understood or taken into account when decisions are made to commit substantive funding at Main Gate.

11 We have examined the reasons for the particularly significant time and cost difficulties on four Legacy projects:

(i) The **Astute Class Submarine** and **Nimrod MRA4** programmes have both suffered from technical and project management difficulties which have led to the projects being restructured with the Department and industry sharing the cost increases, and delivery of these capabilities has been delayed.

(ii) Further delays on the **Advanced Air-Launched Anti-Armour Weapon** and the **Eurofighter Typhoon aircraft** have led to increased costs because resources are being tied up on the projects for longer than planned.

12 We have also examined one of the Smart projects new to the Major Projects Report 2003, the **Support Vehicle (Cargo and Recovery)** project, where there have been substantial time slippages.


Project cost and time performance has deteriorated in-year, principally because of four Legacy projects
Projects are expected to meet requirements, but overall cost and time exceeds approval (paragraphs 1.3-1.9)
Four Legacy projects account for the majority of the in-year cost increase and time slippage (paragraphs 1.10-1.23)
The Department recognises the challenge and is giving new impetus to the development of improved acquisition (paragraphs 1.24-1.26)
Projects are over approval by £3.0 billion (paragraphs 1.3-1.5)
Projects are 334 months over approval (paragraphs 1.6-1.8)
Key User Requirements are expected to be met (paragraph 1.9)
Most projects have experienced varying degrees of in-year cost increases or time slippage (paragraphs 1.10-1.15)
In-year, Smart projects demonstrated less cost variation on average than Legacy projects, four of which account for 87 per cent of the cost increase (paragraphs 1.16-1.17)
Performance against over half of the factors responsible for cost variation has worsened in the last year (paragraphs 1.18-1.19)
In-year, Smart projects showed less slippage on average than Legacy projects, four of which account for 79 per cent of the slippage (paragraphs 1.20-1.21)
Performance against half of the factors responsible for time variation has worsened (paragraph 1.22-1.23)

Bowman