



National Audit Office

**REPORT BY THE
COMPTROLLER AND
AUDITOR GENERAL**

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Ministry of Defence

The Major Projects Report 2009

Summary

1 The Major Projects Report 2009 details the cost, time and performance of 30 military equipment projects from across the Ministry of Defence (the Department) for the year ended 31 March 2009.¹ The Project Summary Sheets, on which our analysis is based, are compiled by the Department and submitted by them to Parliament. Full copies of all the Executive Project Summary Sheets and Project Summary Sheets are available in Volume II² of this report and on our website.³

Conclusion on Value for Money

2 Two-thirds of the gross cost increases reported in the Major Projects Report 2009 reflect deliberate decisions to slip projects, taken corporately by the Department as part of a wider package designed to address a gap between estimated funding and the cost of the Defence budget over the next ten years. The size of the gap is highly sensitive to the budget growth assumptions used. If the Defence budget remained constant in real terms, and using the Department's forecast for defence inflation of 2.7 per cent, the gap would now be £6 billion over the ten years. If, as is possible given the general economic position, there was no increase in the defence budget in cash terms over the same ten year period, the gap would rise to £36 billion. In both cases these figures involve inevitably uncertain assumptions about the outcome of future Spending Reviews over a long period. In recent planning rounds, the Department concentrated its efforts on ensuring that the Equipment Programme was affordable in the early years, and on creating room in the budget for improvements in capability that were relevant to current operations. Since any radical changes in planned Defence capability would fall to be made in a Strategic Defence Review, the Department chose to make savings by re-profiling expenditure on existing projects and reducing the numbers of equipment being acquired on others. These decisions were necessary to ensure that the programme was affordable in the next few years, but they increased the overall procurement costs and represent poor value for money on the specific projects affected. The decisions did not (and could not) resolve the underlying issue of affordability which will need to be addressed by the Department, working with Treasury, as part of the Strategic Defence Review which is expected after the General Election.

3 Such corporate decisions make it difficult to conclude on the effectiveness of the delivery of individual projects by both the Department's staff and its commercial partners. It would be unfair to chastise those charged with delivering projects when the major drivers of cost increases lie outside their control. Indeed, on the performance of specific projects our analysis suggests signs of improvement in project cost control, with innovative decisions being taken to ensure progress. However, unless the Department addresses the underlying budgetary and governance issues it will not consistently deliver value for money for the taxpayer, or encourage its commercial partners to operate effectively. Nor, vitally, will the operational benefits of expensive new capabilities be available to the Armed Forces in a timely manner or in the numbers the original analyses suggested were required.

¹ Our methodology is described in Appendix 1.

² Ministry of Defence, *Major Projects Report 2009* (HC 85-II Session 2009-10), 15 December 2009.

³ www.nao.org.uk/mpr09.

Attempts to balance the defence budget in the short-term have increased overall costs on projects, and slipped the introduction or reduced capability, which represents poor value for money

4 The most pervasive feature of the changes in performance since last year's Report⁴ is the effect of the Department's deliberate decisions to slip the introduction into service of some projects to produce short-term savings to address affordability issues. In particular:

- On the Queen Elizabeth Class aircraft carriers, the Department decided to slow the rate of manufacture to reduce forecast expenditure by £450 million in the next four years. After this time, costs are forecast to increase by a total of £1,124 million, giving a net increase in costs of £674 million. The decision causes the entry into service of the first aircraft carrier to slip by one year and the second by two years.
- On Astute Class submarines, the Department decided to slow the production of boats 2-7, which will lead to a net increase in forecast costs of £400 million, arising as a result of reducing expenditure by £139 million up to 2013/14. In addition, this decision is expected to result in a period between 2015 and 2021 when there will be a shortfall in submarines availability against the Department's stated requirement. As a result of the slippage on the Astute Class submarines, additional costs of £38 million will be incurred to continue running the existing, less capable, Trafalgar class submarines, although these costs should be at least partially offset by the (as yet unquantified) savings from not having to support the new Astute Class. Further extensions to the Trafalgar fleet are not considered feasible.

5 Of course, Government departments constantly make prioritisation decisions to commit to, or to defer, particular projects which are not yet underway depending on the available funding. These decisions may have an effect on the costing of the particular projects deferred because of underlying cost inflation. However in terms of the overall portfolio of projects the effects are generally compensatory. This logic does not apply to cost management by deferring a project by "slow down" once it is underway. This will typically drive substantial real cost increases into the project. This has been the case with some of the recent decisions taken by the Department, most notably on the Queen Elizabeth Class aircraft carriers. Whilst the decision to slip the aircraft carrier project has reduced average spend in each of the first four years by £112 million, it has increased the average annual spend for each of the next six years by £187 million. This adds up to a 16 per cent increase in the total cost of the procurement in order to obtain a spending deferral in the first four years, which looks an expensive decision.

6 The Department also generated savings by reducing helicopter numbers for the Lynx Wildcat and Merlin Mk2 fleets. The Department has taken a £194 million saving by reducing Lynx Wildcat numbers by 23 per cent, from 80 to 62 helicopters, and by reducing planned flying hours by a third. The Department has also decided not to proceed with upgrading the entire fleet of 38 Merlin Mk1 helicopters as planned; instead, only 30 will be upgraded. This will avoid £65 million of costs.

⁴ Ministry of Defence, *Major Projects Report 2008* (HC 64-I Session 2008-09), 18 December 2008.

7 The Department took these decisions as part of a wider package of savings to try to make the defence budget more affordable and to free up funding to support current operations. For example, the Department has been able to commit £330 million to provide a modernised set of equipment for training and engaging in close combat, including weapons and surveillance and target acquisition equipment.

These short term affordability decisions have combined with other influences to cause significant time, cost and performance variation

8 **Figure 1** shows aggregate time and cost performance for the 15 projects where the main investment decision has been taken. The current forecast⁵ cost for the 15 projects that have passed their main investment decision is £60.2 billion, which is an increase of £4.5 billion (or just over eight per cent) compared to the expected costs when the main investment decisions were taken. The total slippage, when compared to the most likely In-Service Date, averaged across 14 projects⁶, is 24 months per project.

9 Overall, the key changes to cost, time and performance on the 15 projects in-year are:

- Over £1.2 billion of cost increases (some 27 per cent of total cost growth since the main investment decisions were taken). The majority of this occurred on the Queen Elizabeth Class aircraft carrier (+£1,070 million), the A400M transport aircraft (+£653 million) and the Astute Class submarine boats 1-4 (+£192 million).⁷
- Excluding projects already in-service (Support Vehicles and the Typhoon aircraft, but not the Typhoon Future Capability Programme) an average slippage of seven months per project was added in 2009⁸, compared to an average additional in-year slippage of six months in 2008. Five projects reported no change; and six projects slipped, including the A400M (+48 months), the Terrier engineering vehicle (+16 months), the Astute Class submarine boats 1-4 (+10 months), Queen Elizabeth Class aircraft carrier (+10 months), the United Kingdom Military Flying Training System (+8 months on two increments), and the Falcon communications project (+5 months on both increments).
- Seven of the fifteen projects are forecast to meet all of their Key Performance Measures without risk. Of 192 Key Performance Measures across 15 projects, 185 (96 per cent) are forecast "To be met". Twenty-one of the 185 are further assessed as "At risk"⁹ across six projects, but the Department is confident it can mitigate these risks before the equipment enters service.

5 The forecast is the Department's most accurate estimate of future time, cost or performance, based on the best information available at the time the forecast is made. Such forecasts form the basis for the Department's budget; the NAO does not question Departmental forecasts unless better information becomes available.

6 The Future Joint Combat Aircraft does not yet have a confirmed In-Service Date, and has been excluded from the analysis of time variation.

7 The detailed cost breakdown of the overall £653m in-year increase on A400M has also been excluded on commercial grounds. Volume II provides further details of cost performance since the main investment decision.

8 The Future Joint Combat Aircraft does not yet have a confirmed In-Service Date and has been excluded from the analysis of time variation, as has the breakdown of slippage on the A400M due to on-going commercial negotiations. Volume II provides further details of time performance since the main investment decision.

9 When an "At risk" assessment is made, the Department still expects to achieve the requirement by the time the equipment enters service (or, in the case of equipments that are already in-service, on an ongoing basis). However, there remain risks that need to be managed to achieve this.

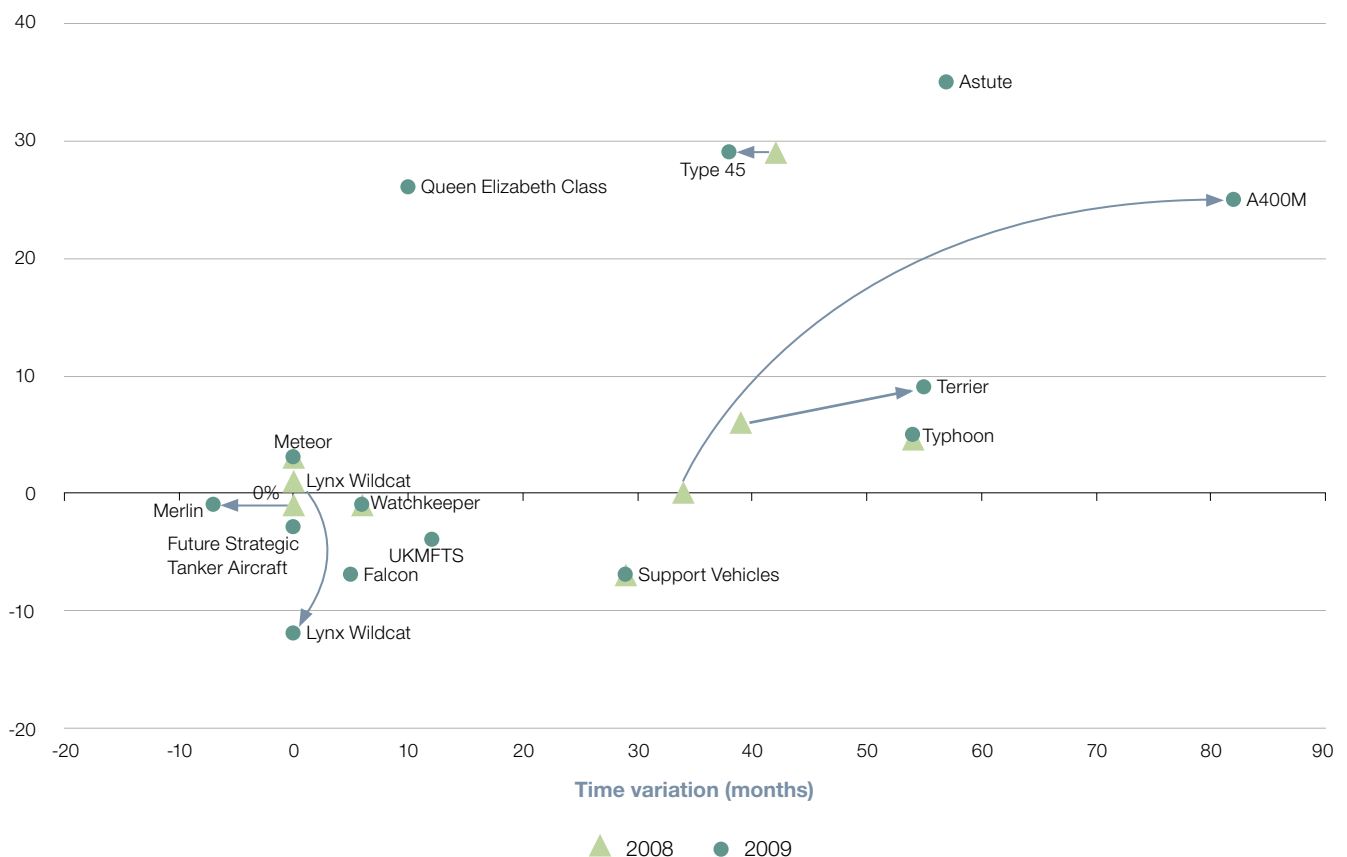
There are encouraging signs of improved performance in managing individual projects

10 There was a net increase in costs of £733 million in year as a result of the Department's decisions to slip the introduction into service of projects for short-term affordability reasons (referred to as Budgetary Factors in **Figure 2** overleaf). The associated gross cost increase was £1,046 million, or two thirds of the gross in-year cost growth. This was partially offset by a £313 million decrease. The remainder of the cost increases were mainly a result of Inflation or unfavourable Exchange Rates. These problems are not directly attributable to the actions of either teams managing specific projects or their delivery partners in industry. More encouragingly, costs over which project teams can exert more direct control – notably Technical Factors – have shown a net decrease in costs. Whilst performance by project teams in controlling time slippage has been more mixed, there has been no slippage on half of the projects in the last year. Taken together, these cost and timescale indicators suggest that project control has improved in 2009.

Figure 1

Time/cost performance for projects where the main investment has been taken

Percentage of cost increase



Source: National Audit Office analysis of Departmental data

NOTE

The arrows indicate in-year changes to cost and time performance since 2008. The Future Strategic Tanker Aircraft and Queen Elizabeth Class aircraft carrier are both new to this year's Major Projects Report; as such, no prior year figures are available. Astute Class submarines, Falcon and the United Kingdom Military Flying Training System all contain increments which were not reflected in last year's Report; as such, no comparable figures are available.

Figure 2

Most of the reasons for in-year cost variation reflect corporate short-term affordability measures, but slippage continues to be a problem at project level

Factor	Cost					Time				
	Gross Increase (£m)	(%)	Gross Decrease (£m)	(%)	Net (£m)	Gross Increase (months)	(%)	Gross Decrease (months)	(%)	Net (months)
Project specific factors										
Changed Capability Requirement	9	0	-8	1	1	16	30	0	0	16
Technical Factors	61	4	-146	15	-85	15	28	-6	75	9
Procurement Processes	0	0	0	0	0	10	19	0	0	10
Receipts	3	0	-51	5	-48	0	0	0	0	0
Accounting Adjustments and Redefinitions	91	6	-469	46	-378	0	0	0	0	0
Sub-Total	164	10	-674	67	-510	41	77	-6	75	35
Other factors										
Budgetary Factors	1,046	66	-313	31	733	12	23	-2	25	10
Inflation	252	16	-3	0	249	0	0	0	0	0
Exchange Rate	120	8	0	0	120	0	0	0	0	0
HM Treasury Reserve	0	0	-20	2	-20	0	0	0	0	0
Sub-Total	1,418	90	-336	33	1,082	12	23	-2	25	10
A400M (classified)					653					48
Total					1,225					93

Source: National Audit Office analysis of Departmental data

NOTE

Commercial sensitivities mean this analysis excludes the A400M transport aircraft. An explanation of these factors can be found in Volume II and on our website www.nao.org.uk/mpr09.

Cost information relating to Typhoon has been declassified this year

11 For the first time since 2004 the costs relating to the procurement of the Typhoon combat aircraft have been declassified. This is thanks to the Department successfully concluding negotiations on Tranche 3A and reaching the financial ceiling agreed in the Memorandum of Understanding, which governs the project. The Department may, however, opt to purchase further Typhoon aircraft in the future.

The Major Projects Report is evolving

12 The Major Projects Report has traditionally focused on the procurement of new equipment and its format has not changed significantly since the Report's inception 25 years ago. In this time, the Department's approach to the acquisition of equipment and its support and delivery of defence capability has changed considerably. As such, the previous Major Projects Report no longer provided a complete picture to Parliament

of the evolution of the Department's current acquisition policies. The Department, with our support and the agreement of the Committee of Public Accounts, has made good progress in evolving the format of the Report.

13 The Report now details 15 projects that have passed their main investment decision with information, where appropriate, on each additional project increment. A new section covering Defence Lines of Development¹⁰ (DLODs) has been added. The Report also includes details of a number of industrial contracts that have been put in place to support five significant in-service capabilities, and continues to provide data on ten projects for which the main investment decision has yet to be taken. These changes to the Report reflect a considerable commitment by the Department; further details on the changes can be found in Volume II and on our website.¹¹ Our Report this year includes some initial analysis of the new data. In future years, as the robustness of the underlying data sources improves and trends become apparent, we will undertake more detailed analyses reflecting the evolution of an equipment from the early Assessment Phase through to in-service support.

14 Looking further forward, the key development will be a new section with more extensive information on the cost and performance of in-service capabilities, rather than simply specific support contracts with industry. The Department is introducing Through Life Capability Management (including setting up Programme Boards) to ensure that new and existing military capability is planned and managed coherently across the DLODs. Through Life Capability Management should generate more reliable and robust management information than is currently available to support this reporting aspiration. However, its success is not assured and will depend on the Department addressing broader systemic factors such as the lack of a stable budgetary environment, whether the existing budgetary and organisational structures are appropriate, and the need to generate more robust and reliable management information. These are all factors which have adversely affected previous initiatives. Recognising these challenges, we assess that it will be at least two years before the Department will have sufficient, reliable and robust data and analytical tools to begin reporting detailed in-service performance and cost information to Parliament for non-equipment DLODs.

15 Following the publication in October 2009 of a report on Defence Acquisition by Mr Bernard Gray, the Department announced a range of planned measures to bring the equipment programme into closer alignment with longer term Defence strategy and the likely availability of resources, and to improve its overall governance, management and delivery. Among the main reforms are: a commitment to publish an annual assessment of the affordability of the equipment and equipment-support programmes against an indicative planning horizon for equipment spending agreed with the Treasury; and the introduction of better and more sophisticated techniques for forecasting project costs. It was also decided to establish a new sub-Committee of the Defence Board, chaired by the Accounting Officer, with a specific responsibility for developing an equipment plan that is aligned with strategy, affordable and realistic; this body has already begun work. A more comprehensive Strategy for Acquisition Reform is to be published in the New Year.

¹⁰ Defence Lines of Development are designed to assess the delivery of different aspects of capability, including: Equipment, Logistics, Training, Infrastructure, Personnel, Doctrine, Organisation, and Information.

¹¹ www.nao.org.uk/mpr09.