



National Audit Office

**REPORT BY THE
COMPTROLLER AND
AUDITOR GENERAL**

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Ministry of Defence

The Major Projects Report 2011

Key facts

£466m
(0.9%)

Increase in 2010-11 forecast costs to complete projects from original approval. This includes £113 million of capability enhancements which, if excluded, means in-year cost growth is £353 million.

£6.1bn
(11.4%)

Total increase in forecast costs to complete all 2011 projects since the Department approved the main investment decision.

£10.6bn
(11.4%)

Total increase in forecast costs since the Department approved the main investment decision for all Major Projects since 2000.

Major Projects 2011

15	Number of 'post-main-gate' projects covered by the Report
£53.5 billion	Total approved cost for all 2011 projects
£59.6 billion	Total forecast cost for all 2011 projects
30 months	Total in-year slippage to in-service dates (average two months)
£1 billion	Cost increase on the Astute programme over the past three years
28 months	Average delay to delivering each of Astute boats one to seven over the past three years
£3.4 billion	Total spent on the Nimrod maritime patrol aircraft, which was cancelled by the 2010 Strategic Defence and Security Review

Major Projects since 2000

16.8 per cent	Percentage increase in project costs on projects approved in or before 2001
2.8 per cent	Percentage increase in project costs on projects approved in or after 2002
£7.2 – £8.8 billion	Cost increases avoided by cutting equipment numbers from those originally planned

Summary

1 This report – *Major Projects Report 2011* – analyses the cost, time and performance of the 15 largest military equipment projects by value, when the main decision to invest funding (the main investment decision or main-gate) has been taken for the year ending 31 March 2011.¹ The Ministry of Defence (the Department) compiles project summary sheets for these projects, which the NAO validates but does not fully audit. The Department then submits this information to Parliament. These project summary sheets then form the basis for our analysis of the 15 largest projects.

2 In addition to these 15 projects, the Department also produces project summary sheets for the ten largest projects where the main investment decision has yet to be taken. Copies of the executive project summary sheets for all 25 projects are at Appendix Two of this report. Full project summary sheets, plus limited analysis of the ten pre-main-gate projects, are available in Volume II² of this report and on our website.³

In-year performance

3 During the financial year 2010-11, forecast costs for completing the 15 largest post-main-gate projects rose by £466 million (0.9 per cent). The forecast cost to complete these projects is now £6.1 billion (11.4 per cent) over the estimate of expected cost, from when the main investment decision was made. Macro-economic factors, such as adverse foreign exchange rates, accounted for £176 million of the in-year cost growth. Cost overruns from project-specific technical issues continued to decline, although they did account for £53 million of the increase. For the third successive year, central planning decisions taken by the Department had a significant impact, accounting for £237 million of the increase. Of this, £124 million resulted from decisions to delay spending on projects, and £113 million to enhance equipment capabilities. If the latter is excluded from the analysis, the total forecast cost increase reported in-year was £353 million (0.7 per cent).

4 During 2010-11, there was a total increase of 30 months (average two months per project) in the projected time to complete the 15 post-main-gate projects and bring them into service. The most significant changes were a 12-month delay in the timetable for the Watchkeeper unmanned aerial vehicle project, which was largely due to the contractor failing to deliver against the agreed schedule. There was also a 13-month deferral on the Astute Class submarine programme (paragraph 11).

¹ Our methodology is described in Appendix One and on our website.

² *The Major Projects Report 2011*, HC 1520-I, Session 2010–2012.

³ www.nao.org.uk/Major-Projects-2011

5 When the Department approves defence projects it uses a number of key performance measures, which specify and subsequently monitor how equipment should perform. It also measures eight capability components, including personnel, training, and logistic support, which are necessary for equipment to be effective. In-year, neither the key performance measures nor the wider capability indicators showed any significant changes.

Analysis indicates that cost increases are lower on newer projects

6 As well as assessing progress in-year, this report provides trend analysis of spending for all post-main-gate equipment projects covered in the annual report since 2000. The projects we examined represent around 90 per cent of the total value of post-main-gate equipment projects (with a value of over £200 million) currently being funded by the Department.

7 Our cost analysis in **Figure 1** shows that the difference between the approved and forecast cost of all projects since 2000 is £10.6 billion, which is an 11.4 per cent increase. Additional costs have been avoided by reducing the numbers of equipment the Department originally planned to buy. Had the Department not reduced equipment numbers, cost growth could have been between £18.2 – £19.4 billion, depending upon assumptions made on equipment costs – approximately 20 per cent over the originally approved costs.

Figure 1

Total cost growth on all projects since 2000 is £10.6 billion

Description	Projects approved in 2001 or before	Projects approved in 2002 or after	Total
Number of projects	33 projects	30 projects	63 projects
A. Approved cost	£57.2 billion	£35.5 billion	£92.7 billion
B. Forecast cost	£66.8 billion	£36.5 billion	£103.3 billion
C. Reported cost increase (B–A)	£9.6 billion	£1.0 billion	£10.6 billion
Percentage increase	16.8 per cent	2.8 per cent	11.4 per cent

NOTE

1 Analysis includes all projects reported in the post-main-gate population since the Major Projects Report 2000. Astute boats five and six are excluded from the above table as they have not yet achieved their main investment decision. Total approvals for these two boats are for initial build items only and total £1.1 billion, with only a marginal variation between approved and forecast costs.

Source: National Audit Office analysis of Departmental data

8 However, Figure 1 also illustrates that total cost growth on all post-main-gate projects approved before 2002 was, at 16.8 per cent, significantly higher than the 2.8 per cent total cost increase on all projects approved since 2002. Most of this latter cost growth has come on the Queen Elizabeth Class aircraft carrier. If this large project is excluded from the analysis, there would have been a net saving of £839 million from projects approved in or after 2002. More generally, larger projects have disproportionately suffered from cost increases. Almost all were approved before 2002, yet they still comprise the vast majority of the £10.6 billion (11.4 per cent) cost overrun, noted above. This indicates that the Department continues to live with the consequences of cost increases on projects approved before 2002, and particularly the legacy of significant cost overruns on larger projects.

9 Our wider analysis in Figure 8 on page 20 also indicates that cost growth was primarily driven by project-level difficulties, such as design and contracting issues, up to 2008; adding £7.5 billion to project costs. There have recently been relatively small increases in project-level costs, which point to continuing stable project performance. This is despite Departmental planning decisions having added £4.2 billion to forecast costs since 2009.

The Strategic Defence and Security Review has significantly affected several equipment projects

10 The most significant development for defence acquisition in-year was the October 2010 Strategic Defence and Security Review, the first full defence review since 1998. The Review was undertaken during a significant military commitment in Afghanistan and with a shortfall reported by the Department of up to £42 billion (which includes funding for the Successor nuclear deterrent programme) between the anticipated Defence budget and forecast spending over the coming decade.⁴ As the Review noted, such a shortfall made 'painful, short-term measures unavoidable', such as reducing or cutting military capability. Two of the most significant measures taken by the Review were extending the build programme of the Astute Class submarine and cancelling the Nimrod maritime patrol aircraft. The Review also changed the aircraft variant to be carried on the Queen Elizabeth Class aircraft carrier. This has been covered by a separate NAO study.⁵

⁴ House of Commons Defence Select Committee, *The Strategic Defence and Security Review and the National Security Strategy*, Rt. Hon. Liam Fox MP, 9 March 2011, Q134, www.publications.parliament.uk/pa/cm201012/cmselect/cmdfence/761/11030902.htm

⁵ *Carrier Strike*, HC 1092, Parliamentary Session 2010–2012.

11 As a result of the delay to Successor and to further save costs in the short-term, the Astute build programme was slowed to avoid a production gap in the submarine construction industry. The Review therefore extended the build time for the seven-boat Astute Class submarine programme by a further 96 months, including the 13-month deferral to boat four noted in paragraph 4. This has resulted in an average deferral to the Astute Class over the past three years of 28 months per boat. By extending the Astute build programme, the Department will have to use older boats beyond their out-of-service dates, work the smaller fleet of Astute submarines harder, or reduce scheduled activity for submarines. Therefore, the Department is currently reporting that the Astute Class submarines will not meet the Royal Navy's requirement for sufficient numbers of submarines to be available for operations over part of the next decade.

12 Extending construction time of the Astute Class submarines also added a further £200 million in-year to the forecast cost to complete the Astute programme for approved boats (boats one to four). In total, these decisions have added nearly £1 billion to forecast costs to complete all seven boats in the last three years. The cost increase rises to over £1.9 billion when technical difficulties and capability changes made since the original approval for boats one to three was taken in 1997.⁶ In procurement terms, this equates to substantially more than the cost of acquiring a further boat.

13 Although outside the scope of the Major Projects Report, the Department also announced in the Strategic Defence and Security Review plans with the main industrial partners to reduce the cost of the entire submarine business by £900 million over the next decade.⁷

14 The Nimrod maritime patrol aircraft project has had a long history of management, technical and commercial difficulties. By the time the Department cancelled Nimrod in 2010 for financial reasons, the project was 114 months late and £789 million over budget. Cancelling the Nimrod maritime patrol aircraft has avoided approximately £1.9 billion in forecast costs associated with running and maintaining the aircraft up to 2020. The Department has noted that cancelling Nimrod was a difficult decision, but was considered 'an acceptable risk and not a gamble'.⁸

⁶ The approval process for the Astute programme has been split into five parts. Astute boats one to three were approved together in 1997 and have a recorded forecast cost increase of £1.3 billion in the Astute project summary sheet. Astute boat four was approved in 2007 and has a recorded forecast cost increase of £0.1 billion. The remaining £0.5 billion is the forecast cost increase of boats five to seven (to be approved separately) which have yet to be approved. All figures are excluding cost of capital.

⁷ *Securing Britain in an Age of Uncertainty: The Strategic Defence and Security Review 2010*: http://www.direct.gov.uk/prod_consum_dg/groups/dg_digitalassets/@dg/@en/documents/digitalasset/dg_191634.pdf

⁸ House of Commons Defence Select Committee, *Appointment of the Chief of Defence Staff*, Oral and written evidence, HC 600-i, Session 2010-11, Q 38.

Conclusion on value for money

15 The underlying trend of the Major Projects is reduced cost growth at the project level, even though in 2011 the total forecast cost of Major Projects rose by nearly £0.5 billion. This includes £113 million of capability enhancements. As a result of this in-year cost growth and previous cost increases, the Major Projects are now in total more than £6.1 billion (11.4 per cent) over the forecast cost from when the main investment decision was made. As well as decisions taken to enhance capabilities, a significant part of this year's increase has been due to action by the Department to balance its overall budget by delaying the Astute project.

16 The Department had limited options to manage a legacy of poor planning and performance on some past projects. These circumstances were largely, however, of the Department's making and the resulting cuts and delays to capability are not value for money. The Department acknowledges that its budgetary position is serious and has taken steps to reduce its budget deficit over the longer term. Both a balanced budget and a continuing focus on improving project performance are necessary to create the conditions for effective and sustainable acquisition in the future.