NAO
National Audit Office

Report
by the Comptroller
and Auditor General

Ministry of Defence

Defence capabilities – delivering what was promised

Key facts

£196.2bn

the estimated total
procurement cost of the
32 most significant defence
capabilities that the Ministry
of Defence (the Department)
is bringing into service

10

number of the Department's
32 most significant defence
capabilities that require
'urgent action' to deliver in full,
or are already 'undeliverable'
to the current timetable

5

number of the Department's
32 most significant defence
capabilities where delivery is
'probable' or 'highly likely' to
be in line with schedule

12 months	average forecast delay to the delivery of an initial operating capability for the Department's most significant defence capabilities
26 months	average forecast delay to the delivery of a full operating capability for the Department's most significant capabilities
10	number of the Department's 32 most significant defence capabilities which face serious issues with supplier engagement and/or performance
9	number of the Department's 32 most significant defence capabilities which have significant skills shortages that are impacting on deliverability
12	number of additional Senior Responsible Owners that the Department calculated in 2018 it would need if each of the most significant defence programmes was to have its own

Summary

1   The Ministry of Defence (the Department) develops and operates military capabilities in order to meet its strategic requirements and objectives. A military capability is not simply a piece of equipment such as a tank. Rather, it is a tank with a trained crew that: can communicate with others on the battlefield; can meet identified threats; and can be properly maintained and repaired during its lifetime. The Department estimates that around 20,000 civilians and military personnel within the Department are involved in delivering such defence capabilities.

2   The military capabilities are intended to meet the strategic requirements that underpin UK defence policy, as set out in the National Security Strategy and five-yearly Strategic Defence and Security Reviews. Supporting this work are processes for identifying strategic threats and continuously analysing the UK's ability to meet them. Where the Department concludes there are current or future gaps in its ability to counter these threats, it must decide whether to fill the gap or carry the risk. However, once the Department has decided the gap must be filled with a new or replacement capability, it has historically struggled to deliver fully functioning capabilities to schedule.

3   Where the Department decides to fill a capability gap (or prevent one appearing), a Senior Responsible Owner (SRO) in one of the Commands (Air, Army, Navy, Strategic (formerly Joint Forces)), or the Defence Nuclear Organisation (DNO), oversees delivery of the capability.[1] The user requirements are tracked across eight 'defence lines of development', including the equipment itself, the relevant training and the infrastructure necessary to support it. A series of key milestones to delivering the capability underpin the project or programme.

4   As at 30 September 2019, there were 32 programmes defined as capabilities in the Department's Defence Major Projects Portfolio (DMPP) – those programmes the Department considers the most complex and strategically significant, its top priorities. These programmes have an estimated total procurement cost of £196.2 billion. Thirty of these programmes were also in the Government Major Projects Portfolio as at 31 March 2019. The DMPP programmes are overseen by the centre of the Department (known as 'Head Office'). Less significant programmes are monitored at Command level under the Department's delegated organisational model. The Department has a range of initiatives under way that are intended to transform the system to approve and monitor acquisitions.

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1   Where we refer to Commands this also includes DNO.

5 The focus of our study is on the delivery of defence capabilities, from the point at which the Department sets the requirement and starts the acquisition process through to the capability being declared fully operational. The work complements our review of the Department's Equipment Plan, which focuses on the cost of these capabilities.[2] In particular, this report considers whether the Department secures the capabilities it requires when it needs them. To do this, we examined:

● the extent and causes of delays and shortfalls in bringing capabilities into service (Part One);

● the completeness of the Department's system to monitor the delivery of capabilities (Part Two); and

● whether the Department is putting in place appropriate arrangements to transform its capability delivery in the future (Part Three).

6 The study does not examine why and how the Department derived a particular user requirement. We have also not looked in detail at the role of delivery organisations, such as Defence Equipment & Support, which act on behalf of the Commands (the customer). We set out our audit approach and evidence in Appendices One and Two.

7 Our report combines an overview of the Department's system for delivering the capabilities, with a detailed review of a sample of eight programmes from across the Commands (**Figure 1** and Appendix Three). We selected these programmes to enable us to examine the processes in place in more detail. Six of them sit outside the DMPP, thus providing us with insight into the majority of capability acquisitions which are not covered by the Department's central monitoring. They are not intended to be representative of all the Department's programmes. Instead, given the limited number of projects which passed through milestones during the sample period, they do illustrate how the Department's processes are currently being applied.

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2   Comptroller and Auditor General, *The Equipment Plan 2019 to 2029*, Session 2019–2020, HC 111, National Audit Office, February 2020.

Figure 1

Case studies examining passage of capabilities through a major milestone

Case study capabilities passing through Initial Operating Capability (IOC)/In Service Date (ISD)

HMS Forth Batch 2 Offshore Patrol Vessel

Navy Command

IOC milestone declared June 2019
ISD declared November 2019

Materiel Distribution Land equipment transporter upgrades

Army Command

Milestone declared January 2020 for part of the programme

F-35 fighter jet

Air Command

Milestone declared December 2018

Falcon Early Entry Capability battlefield communication system

Strategic Command

Milestone declared January 2018

Case study capabilities passing through Full Operating Capability (FOC)

Commando Training Centre Royal Marines Tactical Engagement System for battlefield training

Navy Command

Milestone declared January 2019

Watchkeeper unmanned reconnaissance vehicle
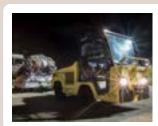
Army Command

Milestone declared November 2018

High G pilot training and testing facility

Air Command

Milestone declared November 2018

Upgraded Base Inventory Warehouse Management System

Strategic Command

Milestone declared January 2017

Notes
1   Details of the case studies are outlined in Appendix Three. Our case study selection approach is detailed in Appendix Two.
2   IOC is the minimum level at which the capability or service is usefully deployable. ISD is usually declared at the same time.
3   FOC is the military capability which is intended for a particular project.

Source: National Audit Office analysis of Ministry of Defence information

Key findings

Delays to capability delivery

8   The Department currently identifies major risks to the timely delivery of nearly one-third of its most significant capabilities. Delayed delivery can affect the Department's ability to meet external threats to national security, leave gaps in capability and require use of existing capabilities beyond their normal lifetime at increased cost. As part of the background work to its transformation initiatives, the Department carried out research that showed delays to capabilities are now less than they were 10 years ago. However, 10 of the 32 current most significant capabilities are rated by their SROs as either requiring 'urgent action' to address major risks to delivery, or being 'undeliverable' to the approved timescale. In contrast, the Department forecasts successful delivery is 'probable' or 'highly likely' for five of the 32 capabilities. Across the most significant capabilities there is an average delay of 12 months for those projects yet to reach Initial Operating Capability (IOC) and an average delay of 26 months for capabilities which are not yet fully operational. Other countries also experience significant delays in the delivery of capabilities (paragraphs 1.4, 1.5 and 1.8 to 1.10 and Figures 2 and 3).

9   The Department faces specific recurring challenges which affect the delivery of capabilities, of which the most persistent is late or faulty equipment delivery by the supplier. Our case studies and other analysis show that a range of factors affect delivery of each capability. In some cases, poor performance by suppliers has persisted over a number of years and has compromised the operation of capabilities. SROs of 10 of the 32 most significant capabilities currently being delivered report serious concerns about supplier engagement or delivery performance, from poor quality control to lack of transparency about progress. The suppliers involved in delivering these capabilities were predominantly a mix of UK firms and subsidiaries of non-UK companies (paragraphs 1.11 to 1.14 and Figures 4 and 5).

10   Commands and delivery teams lack capacity and skills, which affects delivery of the capability. Under-resourced project and delivery teams contribute to delays in delivery. Six of the 32 DMPP capabilities face shortfalls of more than 20% in their programme teams. Our 2019 report *Reforming the civilian workforce* drew attention to the issue of a lack of suitably qualified and experienced personnel in the Department.[3] There are particular shortages of engineering and commercial staff, and some teams are very reliant on consultancy support. SROs for nine of the 32 DMPP capabilities consider that a lack of team capacity and skills is affecting capability delivery. SROs themselves are crucial, being personally responsible for delivering the capability. A shortfall in the number of SROs has led to some individuals being spread across multiple projects. The Department is trying to address these gaps (paragraphs 1.15 and 1.17).

3   Comptroller and Auditor General, *Reforming the civilian workforce*, Session 2017–2019, HC 1925, National Audit Office, March 2019.

11   The Department's introduction of capabilities is also hindered by an inability to provide appropriate training when required. The delivery of four of our case studies was affected by a lack of capacity and capability in providing necessary training. Reasons included a lack of appropriate personnel, funding shortages or insufficient equipment. For example, in our Falcon Early Entry Capability case study, reduced capacity within the organisation intended to deliver training led to additional expenditure on a short-term alternative (paragraph 1.18).

12   The Department's funding challenges affect individual capabilities and the whole portfolio. Our case studies included upgrades to existing capabilities which had been delayed to fund other priorities or where implementation was hindered by funding shortages. For example, a shortfall in training funds affected the upgraded Base Inventory Warehouse Management System, and infrastructure funding delays affected the F-35 fighter jet. We have reported for the past three years that the Department's overall equipment portfolio is unaffordable (paragraphs 1.19 and 1.20).[4]

Under-delivery of capability at key milestones

13   The Department declares key project milestones as achieved, without the intended capability always being delivered at that point. Departmental guidance permits the declaration of a milestone even if performance does not meet acceptance criteria, or if testing to confirm criteria have been met is incomplete. The Department allows exceptions for a variety of reasons, but the most frequently used in our case studies was that progress was "good enough", despite criteria not being met. In some cases, this affected the Department's ability to use the capability in the way intended. For example, in the case of the F-35 fighter jet (which accounted for two-thirds of exceptions in our case studies), delays to the provision of synthetic training facilities affected the availability of trained pilots and maintainers. Exceptions should be granted on the basis that there is a timebound plan for their resolution, but this was not the case in most of our sampled case studies. It was apparent that several of the capabilities needed further development work due to the original specification not meeting the user's capability needs (paragraphs 1.21, 1.23 and 1.24 and Figure 7).

14   We identified some examples where the definitions of milestones left the Department unclear what level of capability had actually been achieved against the specified requirements. A lack of clarity about the level of capability generated during acquisition can be caused by the milestone criteria not being sufficiently well defined. For example, in the case of the Type 45 destroyer, the SRO reported that it was unclear what level of capability had been achieved when the ships were declared in service between 2010 and 2013. This was because there was no single statement of the capability required at a particular stage. Even when a capability has technically reached Full Operational Capability (FOC), this does not mean it can do all that is required of it. For example, our case study of Watchkeeper, the Department's unmanned aerial vehicle, illustrates how significant issues remained to be addressed following declaration of FOC (paragraphs 1.21 to 1.23 and Figure 6).

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4   See footnote 2.

Monitoring progress of capability delivery

15 Head Office currently does not have the information it needs to hold Commands fully to account and make strategic decisions. Easy access to consistent information across the entire portfolio is vital for holding Commands to account and for making strategic decisions. Head Office has a strategic role in capability delivery and therefore concentrates on the DMPP. The Department has a central data system for collecting information on this subset of programmes, but it does not have ready access itself to information on all capability projects across the Department and has not ensured that the Commands have it. The DMPP accounts for more than 40% of the Equipment Plan over the next 10 years. It is not always clear why particular capability projects are excluded from the DMPP. There are limitations with the central data collected, which can be out of date when presented to senior decision-makers (paragraphs 2.1, 2.6 to 2.8 and Figure 8).

16 Commands' portfolio management arrangements are at different stages of development, which could affect their ability to hold SROs to account. The portfolio offices within the Commands vary in their maturity and the roles they carry out. Commands are upgrading the capability of their portfolio offices (or in the case of the DNO, developing one for the first time), but all have staffing gaps. Commands do not all have processes for measuring capability acquired against original requirements, although all have a forum for reviewing the progress of the Command portfolio. Nor do they all have information on all the capability projects and programmes within their portfolios, and they use different tools to collect this information, which may duplicate the centrally approved system. Not all Commands centrally manage the relationships and linkages between different projects, systems and activities. In selecting our case study examples, we found errors in Command-level information which, if repeated more widely, could provide a misleading picture of capability delivery (paragraphs 2.11 to 2.14 and Figure 9).

Transforming capability delivery

17 The Department has introduced capability transformation initiatives, but these will not address all the recurring issues with delivery. The Department has a portfolio of transformation projects, including several linked to capability delivery. Some of these initiatives are designed to improve the quality of thinking around milestone setting and monitoring, as well as to speed up the acquisition process. Potentially the initiatives could have prevented problems in our case studies where, for example, significant delays in delivering capabilities threatens their continued relevance. However, the initiatives would not in themselves have prevented some of the problems identified in our analysis, such as inadequate contractor performance or failure to deliver timely training. The Department's transformation initiatives are constantly evolving and run the risk of not being coordinated (paragraphs 3.1, 3.3 to 3.8 and 3.10 and Figure 10).

18   There is a risk that the Department's understandable desire to respond to the challenges of modern capability acquisition, encourages a culture in which capability levels are overstated or opaque. In late 2018, the Department's acquisition system review identified that its organisational culture prioritised the passing of milestones and securing approvals over the delivery of outputs and outcomes. The Department has concluded that the speed of technological change and the evolving nature of the threats it faces mean that its current acquisition processes are no longer fit for purpose. The Department wants to make capability acquisition quicker and more responsive through the introduction of a more rigorous business case process and by providing more flexibility in procurement routes for new technologies. The latter will involve a constant cycle of capability upgrades, which is not compatible with the current milestone-setting process. These objectives are important, but it is essential that it does not create a culture that encourages premature declarations of achievement of capability, or leaves it unclear what level of capability is available (paragraphs 3.4, 3.8 and 3.9).

19   The Department has introduced new processes to identify shortfalls in capability readiness, but their success is dependent on addressing the wider affordability challenge. Head Office has processes in place to assess both current and future capability, and the level of readiness of that capability. The additional mechanisms introduced, such as the Capability Readiness Assessment Framework, are intended to strengthen the ability of Head Office to monitor capability challenges and ensure they are addressed. However, addressing capability readiness issues is contingent upon having funding available. The Department already faces an affordability gap for its existing capability commitments and no new capabilities can be funded currently without reducing existing capability commitments further (paragraphs 3.11 and 3.12 and Figure 11).

Conclusion on value for money

20   The Department delivers complex, long-term capability programmes to meet the threats which it has identified. However, at a time of fast-paced technological and political change, it is essential that it can make swift and full use of these capabilities as planned. Failure to do so is likely to undermine the Department's ability to carry out its key tasks, and lead to existing assets being used for longer and additional costs. To achieve value for money, the Department must deliver capabilities to performance, cost and time consistently within a challenging funding envelope. While the Department may be able to deliver some individual capabilities in ways that deliver value for money, the frequent delays, problems with the quality of what is being delivered and poor monitoring information mean the Department has not achieved it for the portfolio as a whole.

21   In response to the challenges, the Department is currently implementing changes to its acquisitions and approvals systems. For these to be successful, the Department must change the culture around capability delivery in a number of ways, including ensuring that pressure to be seen to deliver capabilities quickly does not distort accurate reporting of progress. The Department also needs to address the affordability gap in the overall defence budget, as this affects its ability to maintain and enhance capabilities.

Recommendations

22 The Department needs to improve its delivery of defence capabilities to ensure it can meet the demands of modern warfare. We recommend:

a Head Office should ensure it has the capacity and capability to hold the Commands to account more effectively for capability delivery through a fully developed central portfolio office function. Management information systems should be aligned with need, provide an overall view of performance which is timely and consistent, and promote transparency at all levels.

b The portfolio office should carry out a root cause analysis to establish the causes of time slippages across the capability acquisition portfolio, and the extent to which particular initiatives will address endemic issues in capability acquisition. The lessons from this work should be considered by the Department's Board.

c The Department should be clear about what good capability delivery will look like following implementation of its current transformation programmes, and set out when benefits will be expected to appear. Guidance, particularly around milestones, should be updated to reflect any transition to a faster, more flexible procurement approach in a way that ensures that the current status of capabilities is clearly understood at all levels of the Department.

d The Department should instil a culture where exceptions are seen as just that – exceptional. The Department should require the communication of any exceptions on the most significant capabilities to the central approving authority prior to declaration of the milestone being achieved, together with an explanation of the implications for the future delivery timetable and budget for the capability. The approving authority would then be able to evaluate whether what has been achieved to date is consistent with what was approved.

e In its guidance and training to SROs and their teams, the Department should emphasise the importance of recognising and avoiding optimism bias in reporting of progress. It should also ensure SROs have enough time to carry out their roles when appointing them and look at how they can balance competing demands.