National Audit Office

Report
by the Comptroller
and Auditor General

Ministry of Defence

The Equipment Plan 2020 to 2030

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National Audit Office

Ministry of Defence

The Equipment Plan 2020 to 2030

Report by the Comptroller and Auditor General

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Comptroller and Auditor General
National Audit Office

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This report reviewed the robustness of assumptions underpinning the Department's Equipment Plan to assist Parliament in evaluating the affordability of the 2020–2030 Equipment Plan (the Plan).

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Contents

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Key facts

£197.4bn

the Ministry of Defence's (the Department's) estimated cost of equipment procurement and support projects in the 2020–2030 Equipment Plan (the Plan)

£7.3bn

the Department's central estimate of the most likely funding shortfall in the 2020–2030 Equipment Plan

£1.8bn to £17.4bn

the Department's estimate of the range within which the 2020–2030 funding shortfall lies, depending on whether risks materialise

The Equipment Plan continues to be unaffordable:

4	years in a row that we have reported that the Equipment Plan has been unaffordable
£8.3 billion	funding shortfall in the first five years of the 2020–2030 Plan. In contrast, the Department estimated that forecast costs were £0.9 billion less than budget in years 6–10 of the Plan

The Department has continued to face funding pressures:

Unknown	additional cost of equipment not yet included in the Plan, with the Department possibly facing cost pressures of at least £20 billion on capabilities which it has not yet decided how to develop
£25.1 billion	costs removed from the Plan as a result of the Department's judgements on the likelihood of delays on equipment projects and its ability to make future savings
66%	proportion of the Plan's efficiency target the Department is confident of achieving
£0	departmental contingency budget for 2020-21 to offset any unexpected cost increases during the year, having used this at the start of the year to reduce the funding shortfall

The Department now has the opportunity to re-assess its equipment expenditure:

£16.5 billion	additional funding announced by the government in November 2020[1] to support investment in military capabilities over the next four years, including capabilities outside of the 2020–2030 Plan

Note

1 The Department's assessment of the affordability of the 2020–2030 Equipment Plan was produced before this announcement.

Summary

1 The Ministry of Defence (the Department) publishes its Equipment Plan report each year, setting out its intended investment in equipment and support projects over the next 10 years. It assesses whether this is affordable within its future budget. The Equipment Plan summarises the Department's investment programme over a 10-year period because of the long-term nature of large, complex defence projects. It includes funding for equipment already in use, such as the Lightning II jets, and in development, such as the Type 26 global combat ship. It also includes budgets to support and maintain its military capabilities.

2 The latest Equipment Plan covers the period 2020–2030. It shows that the Department has allocated a budget of £190 billion to equipment and support projects, 41% of its entire forecast budget. It needs to manage this expenditure effectively to ensure the Armed Forces can secure and maintain the equipment they need to meet their military objectives. The Department faces financial pressures across its wider budget and must make choices about investment priorities, which can affect the money available for equipment procurement and support projects.

3 The Department introduced its Equipment Plan in 2012 after a period of weak financial management. Its original intention was to assure Parliament that its spending plans were affordable. The Secretary of State for Defence invited the National Audit Office's Comptroller and Auditor General to examine the robustness of the Equipment Plan's underlying assumptions. Each year since then we have, in parallel, published a report examining the Department's assessment of the Equipment Plan's affordability and its response to the financial challenges it faces.

4 Under the Department's delegated model, managing projects is the responsibility of the Front-Line Commands (Navy, Army, Air and Strategic Command), the Defence Nuclear Organisation and the Strategic Programmes Directorate. These organisations are known as Top-Level Budgets (TLBs) and are required to deliver their agreed defence outcomes within delegated budgets. The delivery organisations such as Defence Equipment & Support, the Submarine Delivery Agency and Defence Digital manage and deliver the equipment and support projects on behalf of the TLBs. The Department's Head Office aggregates the information provided by the TLBs to establish the departmental position on the affordability of the Equipment Plan.

5 In July 2020, the Department wrote to the Committee of Public Accounts to explain that it would not publish a full Equipment Plan report this year. It deferred a full report until the Spending Review and Integrated Review of Security, Defence, Development and Foreign Policy (the Integrated Review) have concluded. The Integrated Review will re-assess government's ambition, priorities and approach to delivering defence policy. The 2020–2030 Equipment Plan (the Plan) therefore provides the Department's latest assessment of the affordability of military commitments flowing from the 2015 Strategic Defence and Security Review. The Department's affordability assessment is based on financial information available at the start of the 2020-21 financial year and was therefore produced before the government announced additional defence funding over the next four years.[1]

6 In preparing the Plan, the Department has undertaken the same depth of financial analysis as in previous years. Its 2020–2030 summary provides an assessment of the affordability of equipment and support projects, with supporting cost and budget data. However, the Department has cut back the contextual commentary in its report and included less project-level information. The shortened summary also reflects the Department's need to divert resources to prepare submissions for the Integrated Review and Spending Review, and to adapt its working practices due to COVID-19.

7 The Department needs effective long-term financial planning to maintain and develop future military capabilities. The aim of this report is to evaluate the Department's assessment of the affordability of equipment and support projects, and to set out how it can strengthen its approach to preparing future Equipment Plans. It examines:

- the affordability of the 2020–2030 Plan, considering the Department's approach to cost forecasting and reasonableness of its adjustments (Part One); and
- how the Department has been seeking to manage the funding shortfalls (Part Two).

8 We do not consider the value for money of the specific projects mentioned in this report. Nor do we comment on the specific decisions that the Department must take to develop an affordable Equipment Plan to meet future needs, which are policy choices. Our review examines the Department's approach to producing the Plan and how it ensures that it contains everything that it should. It focuses on the Department's approach to cost forecasting and the reasonableness of the assumptions underpinning its assessment of the Plan's affordability. We have not reviewed the Department's systems to test the accuracy of its data but have examined its quality assurance arrangements for testing the consistency and reliability of data used in the Plan.

1 The 2020 Spending Review was published in November 2020 and set out additional defence funding over the next four years.

Key findings

The affordability of the 2020–2030 Plan

9 **The Plan remains unaffordable, with the Department estimating that costs will be £7.3 billion higher than budget between 2020 and 2030.** Its central estimate is that its equipment procurement and support costs of £197.4 billion would exceed the available budget of £190.0 billion. The 2020–2030 Plan shows:

- a £13.8 billion increase in forecast costs compared with 2019–2029. This mainly reflects the inclusion of new equipment projects, cost growth on existing projects and additional commitments at the end of the 10-year period (paragraph 1.13); and
- a £9.4 billion increase in budget compared with 2019–2029, based on the Department's assumption that additional funding provided in 2020-21 will be followed by an increase in the defence budget from 2021-22 to 2029-30. However, the Department has not reduced the Plan's budget to reflect restrictions on spending commitments, as it did for 2019–2029 (paragraphs 1.6, 1.9 and 1.33).

We continue to have reservations about the Department's approach to estimating its funding shortfall, which are set out in paragraphs 12 to 15. The Department's assessment of the affordability of the 2020–2030 Plan shows the position before the government announced additional funding for military capabilities in November 2020.

10 **In our view, the Department's estimated funding shortfall is not comparable to previous years.** On paper, the Department's central estimate of the Plan's funding shortfall has increased from £2.9 billion over 2019–2029 to £7.3 billion over 2020–2030. While the Department has applied the same cost methodology as last year, there is continued uncertainty over the completeness of cost forecasts and its approach to making management adjustments (paragraph 14). It has also presented the equipment budget on a different basis to previous years, due to changes in its approach to setting the TLBs' overall budgets (paragraphs 1.9, 1.33 and 1.34).

11 **The financial pressures on equipment and support projects have built up over the past five years.** The size of the Plan has increased as the Department has added new capabilities set out in the 2015 Strategic Defence and Security Review, with the forecast cost of the Plan increasing by £31 billion since 2015. As financial pressures have increased, the Department has made larger deductions to cost forecasts, with planned efficiency savings more than doubling since the 2016 Equipment Plan to £12.3 billion. However, previous reports on the Equipment Plan have concluded that these adjustments have been over-optimistic and there has been patchy progress in achieving planned savings. The Department's focus on short-term financial management and deferring project expenditure has led to higher overall costs and larger funding shortfalls in later years (paragraphs 1.24, 1.38 and 2.4).

The Department's assessment of the Plan's affordability

12 **The level of funding for equipment projects over 2020–2030 remains uncertain.** In April 2020, as part of its 2020-21 planning round, the Department assessed that it faced a wider funding shortfall of £4.1 billion over the next five years. It also imposed spending restrictions on the TLBs to provide it with flexibility to respond to the possibility of an unfavourable Spending Review settlement. However, its budget forecast for the 2020–2030 Plan assumed that neither the shortfall nor the restrictions would affect equipment spending. The November 2020 government announcement of additional funding will help to address the shortfall in the next four years, and the Department is forecasting a surplus on its defence budget between 2025-26 and 2029-30. However, it has not yet determined how the additional funding will be allocated to develop new capabilities or announced any disinvestment decisions that will be needed to develop an affordable equipment programme. If the additional funding does not fully address the shortfalls, it is likely that further savings will need to be found on equipment projects as they represent 41% of the total defence budget, and the Department faces wider financial pressures, including on the defence estate, which mean that it will need to continually re-assess its priorities (paragraphs 1.8, 1.9 and 2.9).

13 **The Department faces substantial additional cost pressures to develop future military capabilities which are not yet reflected in the Plan.** The Plan excludes the full costs of buying equipment that TLBs will need to replace existing capabilities as they become obsolete, such as the Navy's mine-hunting capability. The Department has also started major procurement projects, including new submarines and combat aircraft, or is seeking to develop new capabilities, such as space capabilities, but has not made full provision to fund them to completion. As there is no unallocated funding in the Plan, the Department can only add new projects by disinvesting elsewhere or securing additional funding from HM Treasury. Including these new capabilities would add substantially to the cost of the Plan. Our review of TLBs' submissions indicates that this could be at least £20 billion (paragraphs 1.11, 1.20, 1.21 and Figure 2).

14 **The Department continues to make over-optimistic and inconsistent judgements when forecasting costs.** Its Cost Assurance and Analysis Service independently estimated the forecast costs of a sample of projects in the Plan and concluded that costs were again understated, this year by £3.9 billion. In the Plan, the Department reduced its overall cost forecast by £25.1 billion to reflect adjustments for expected savings. It has made improvements in some aspects of its approach, such as introducing a new process for estimating efficiency savings, but has not yet made sufficient progress in establishing a consistent and evidence-based approach to making management adjustments to its cost forecasts (paragraphs 1.12, 1.18, 1.26 and 1.30). In particular:

- in 2020-21, the Department introduced a new methodology for assessing and verifying efficiency savings, although there is still some variation in approaches across TLBs. The Department is implementing plans to achieve £8.2 billion of savings on equipment projects (66% of its target) and has assumed it will realise all of these savings. It has also included £3.7 billion of savings that it has not yet implemented plans to deliver and needs to find further savings of £430 million to achieve its target. The TLBs face a significant challenge finding these savings, which have been deducted from forecast costs, and failure to do so would make the Plan even more unaffordable. The Defence Nuclear Organisation and Air also included £2.6 billion of other cost reductions in the Plan, but we have not seen plans to deliver these savings (paragraphs 1.23 to 1.27 and 1.32);

- the Department reduced cost forecasts by £10.4 billion to reflect judgements that it will not deliver projects as quickly as originally planned. However, it has once again removed these costs from the Plan rather than reprofiling them over a 10-year period. We found that the TLBs continued to make these adjustments on an inconsistent basis and had limited evidence to support their judgements. There was also a risk of double counting between deductions made by TLBs and delivery organisations (paragraphs 1.28 to 1.31); and

- the Department's approach to analysing cost risk and uncertainty means that, in our view, it is likely to have understated the level of risk in the Plan's central forecast. It should explore whether its approach to assessing risk remains appropriate for new, complex projects (paragraphs 1.15 to 1.19).

15 **The Department has not explored the full range of uncertainties that affect its affordability assessment.** It estimated that the funding shortfalls could be as large as £17.4 billion should the risks it has considered materialise. It tests parts of its forecast, including the potential range of some efficiency savings, foreign exchange movements and portfolio delays. However, it does not consider potential changes to its budget and does not fully test the range of potential project costs. Considering the uncertainty in these forecasts would improve how it estimates the range within which the funding shortfall lies (paragraphs 1.36, 1.37 and Figure 7).

Impact on TLBs

16 **The affordability pressures have continued to grow in the short term and are increasingly restricting the Department's ability to develop military capabilities.** The Department's affordability assessment shows a funding shortfall of £8.3 billion before 2025-26 on its equipment and support projects.[2] It also shows that, over the same period, TLBs need to achieve £4.6 billion of expected efficiency savings and identify or secure a further £3.8 billion of savings. The Department also has no contingency for 2020-21, restricting TLBs' ability to respond to any unexpected demands or cost increases, such as pressures caused by unfavourable changes to foreign exchange rates. The TLBs have responded to the ongoing funding pressures by again reviewing their equipment programmes to reduce expenditure in 2020-21, stopping projects or deferring expenditure into later years. They have highlighted that this short-term approach to managing costs is increasingly restricting their ability to develop the capabilities they need (paragraphs 1.11, 1.35, 1.40, 2.3, 2.4 and 2.6).

17 **The TLBs face differing challenges in managing their equipment programmes.** All of the TLBs had funding shortfalls in their 10-year equipment programmes, with the Navy reporting the largest of £4.3 billion (12% of overall costs). The ability of individual TLBs to address these shortfalls depends on the nature, maturity and complexity of the military capabilities that they are developing. For example, Air Command's long-term contracts mean that 62% (£16.2 billion) of its forecast equipment support costs are already committed over the next 10 years, limiting its flexibility to adjust its programme. TLBs also carry different levels of exposure to foreign exchange risks. Air Command's portfolio includes £16.9 billion (41%) of costs in foreign currencies, compared with 4% (£1.4 billion) in Strategic Command (paragraphs 1.39, 1.40 and Figure 8).

2 The estimated shortfall in the first five years of the Plan is higher than the 10-year shortfall as the Department is forecasting that its equipment budget is £0.9 billion greater than forecast costs in years 6–10.

The Department's approach to producing the Plan

18 **The Department has made some improvements in its approach to producing the Plan but weaknesses in its quality assurance remain.** Over recent years, the Department has made improvements to its processes for producing the Plan and enhanced the transparency of its report. More recently, it has introduced a new streamlined process for reviewing project cost forecasts and a standardised framework for verifying potential efficiency savings. However, Head Office does not have the data, resources or remit to undertake the level of quality assurance we would expect and relies on the TLBs to test their own information. Neither could demonstrate that their quality assurance work had ensured that the Plan was based on consistent and fully documented data and assumptions. In addition, the Department found errors in its 2017–2027, 2018–2028 and 2019–2029 reports after publication (paragraphs 1.26, 2.12 to 2.14 and 2.16).

The Department's approach to managing funding shortfalls

19 **Faced with an unaffordable defence programme, the Department has again focused on managing short-term financial pressures.** In 2020-21, the Department has again focused on living within its annual budget. Head Office required the TLBs to make £1 billion of savings, released all departmental contingency funding and retained the controls which reduce TLBs' ability to enter into contracts. The Department has also assumed that HM Treasury will fund cost increases from pensions changes, foreign exchange movements and the Dreadnought submarine programme. Despite these measures, the Department started 2020-21 with a £250 million shortfall, which means that the TLBs may need to conduct another in-year exercise to find further savings to stay within their annual budgetary limits. We have previously highlighted that this short-term focus on living within annual budgets has led to higher overall costs, creating increasing risks to value for money from the Department's management of the Equipment Plan (paragraphs 2.2 to 2.6).

20 The increases to the Department's budget, announced in November 2020, should help it establish a more affordable equipment programme. We have previously reported on the missed opportunities to determine priorities on future military capabilities and develop an affordable equipment programme, such as the 2018 Modernising Defence Programme review. The Department expected the Integrated Review to reset government's defence policy and ambitions, including the military capabilities that it will need in the future. Although completion of the Integrated Review has been delayed to 2021, in November 2020 the government announced it would provide an additional £16.5 billion of defence funding over the next four years.[3] This funding is intended to allow the Department to modernise and invest in new technologies, including its cyber and space capabilities. The Department now needs to ensure that long-term decisions on equipment expenditure are based on realistic assessments of future project costs and the deliverability of efficiency savings. Otherwise, it risks a continuation of the financial problems faced in recent years (paragraphs 2.6 to 2.9 and 2.12).

Conclusion

21 For the fourth successive year, the Equipment Plan remains unaffordable. However, the Department has still not established a reliable basis to assess the affordability of equipment projects, and its estimate of the funding shortfall in the 2020–2030 Plan is likely to understate the growing financial pressures that it faces. The Plan does not include the full costs of the capabilities that the Department is developing, it continues to make over-optimistic or inconsistent adjustments to reduce cost forecasts, and is likely to have underestimated the risks across long-term equipment projects. In addition, the Department has not resolved weaknesses in its quality assurance of the Plan's affordability assessment. While the Department has made some improvements to its approach and the presentation of the Plan over the years, it has not fully addressed the inconsistencies which undermine the reliability and comparability of its assessment.

22 The Department faces the fundamental problem that its ambition has far exceeded available resources. As a result, its short-term approach to financial management has led to increasing cost pressures, which have restricted TLBs from developing military capabilities in a way that will deliver value for money. The growing financial pressures have also created perverse incentives to include unrealistic savings, and to not invest in new equipment to address capability risks. The recent government announcement of additional defence funding, together with the forthcoming Integrated Review, provide opportunities for the Department to set out its priorities and develop a more balanced investment programme. The Department now needs to break the cycle of short-termism that has characterised its management of equipment expenditure and apply sound financial management principles to its assessment and management of the Equipment Plan.

3 The £16.5 billion funding is additional to the Department's planning assumption of 0.5% real growth from its 2020-21 budget, based on the economic determinants in the Office for Budget Responsibility's July 2020 *Fiscal sustainability report*.

Recommendations

23 The Department will now need to make tough decisions on its future equipment programme, including how to allocate the additional funding announced in November 2020. It will also have to identify and achieve savings in order to balance its 10-year budget and ensure the intended funding is available to develop military capabilities. Our recommendations are intended to help the Department develop a reliable assessment of affordability and use the Plan to manage its long-term investment in the development of military capabilities. The recommendations are designed to help strengthen its production and management of future Equipment Plans:

a **The Department needs to develop a comprehensive and realistic assessment of the affordability of its 10-year equipment and support programme.** It should improve the consistency of judgements that underpin its budget and assessments of future costs. In doing so, it should:

- ensure all adjustments to cost forecasts are fully evidenced, transparent and supported by a clear rationale. Forecast savings and future efficiency initiatives should not be deducted from budgets until there is a high-quality audit trail to provide confidence in their deliverability;
- include funding provision across the later years of the Plan to make it more adaptable to future needs to develop new military capabilities. This would allow more flexibility to adapt the equipment programme to changes in the strategic environment and make it less vulnerable to repeated short-notice exercises to reduce investment in existing projects;
- re-assess its approach to assessing risk and how this affects future costs. It should consider how to improve the quality of risk analysis, including whether strategic risks are fully assessed in the Plan's affordability analysis; and
- explore a more complete range of outcomes in its affordability analysis by improving its understanding of uncertainty in project costs, reflecting the potential additional cost pressure of new capabilities, undertaking more detailed testing of project cost forecasts and considering the level of certainty in its budget over the 10-year period.

b **The Head Office team should review and define its role in producing the Equipment Plan, and ensure it is capable of delivering its remit.** In doing so, it should determine its role and responsibilities, in terms of providing a reliable departmental statement on the affordability challenge and engaging with the TLBs to challenge the basis of their cost forecasts and manage funding challenges. At the very least, the central finance team should:

- provide robust quality assurance to ensure the Plan is based on reliable data, including consistent management adjustments and a sound evidential basis. It should provide meaningful challenge to the TLBs on the robustness and consistency of their costed plans and adjustments to forecast costs;
- better understand past performance, undertaking detailed reviews of outturn against forecasts to improve the rigour of cost forecasting. For example, conducting analysis on its efficiencies programme would give a more realistic view on what is achievable and the future cost of the Plan; and
- continue to improve the integrity of the cost forecasts and establish consistency between TLBs' plans. Building on its recent reviews of realism and risk, it should use the lessons it has learned to ensure all parts of the Department apply best practice.

c **The Department needs to focus on strengthening its analytical capacity.** Continuing to develop staff with financial qualifications and improve its use of data would help it more effectively produce and analyse the Equipment Plan. It should identify and exploit opportunities for more effective data analysis and sharing. It should make its data – such as records of reasons for project cost changes, detailed outturn data and breakdowns of forecast efficiencies – more accessible to finance and planning staff throughout the Department, reducing the need for Head Office to commission bespoke reports.

Part One

The affordability of the Equipment Plan 2020–2030

1.1 This Part sets out the results of our examination of the Ministry of Defence's (the Department's) approach to assessing the equipment and support budget and forecast costs in its 2020–2030 Equipment Plan (the Plan).

The purpose of the Equipment Plan

1.2 The Equipment Plan report sets out the Department's planned expenditure over the next 10 years to develop and support the equipment needed by the Armed Forces. These projects span the full range of the Department's capability needs, including the future nuclear deterrent, Type 26 frigates, Lightning II jets and the introduction of new information and communications technologies. The Plan also includes a budget to support new and in-service equipment, such as maintaining Typhoon aircraft.

1.3 The Department first announced it would publish a summary of its Equipment Plan in 2012 following a period of weak financial management, which led to a significant gap between funding and forecast costs across the defence programme.[4] Its aim is to demonstrate to Parliament that it can make effective financial decisions on its long-term equipment programme. That year, the Secretary of State for Defence invited the National Audit Office's Comptroller and Auditor General to examine the robustness of the underlying assumptions in the Plan. We have since provided an annual commentary on the Plan to assist Parliament in evaluating the Department's affordability assessment and response to financial challenges.

1.4 Under the Department's delegated model, responsibility for managing projects is delegated to the Front-Line Commands (Navy, Army, Air and Strategic Command), the Defence Nuclear Organisation (DNO) and the Strategic Programmes Directorate. These organisations are known as Top-Level Budgets (TLBs) and are responsible for delivering their agreed defence outcomes within delegated budgets (**Figure 1** overleaf).[5] The delivery organisations such as Defence Equipment & Support (DE&S), the Submarine Delivery Agency and Defence Digital manage and deliver the equipment and support projects on behalf of the TLBs.

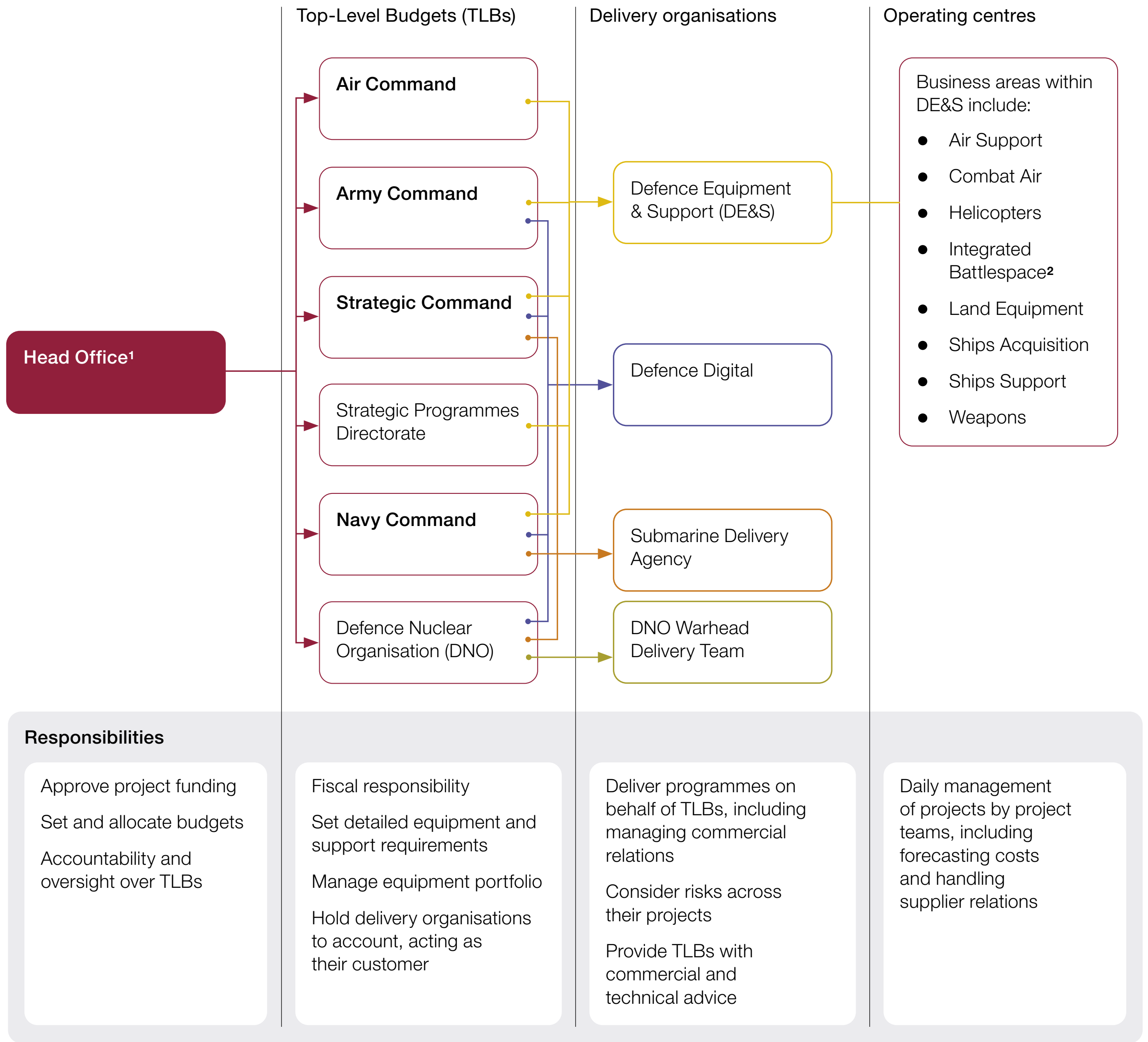
4 While the Department's first annual summary of the Equipment Plan was published in 2013, it announced its intention to produce it in May 2012.

5 The Department also contains other TLBs, including the Defence Infrastructure Organisation, which do not manage equipment portfolios.

Figure 1

Responsibilities for preparing and managing the Ministry of Defence's (the Department's) Equipment Plan

The Department has delegated Equipment Plan roles and responsibilities



Notes

1 Head Office is the Department's central financial and resource function that oversees the TLBs.

2 Until October 2020, this was called ISTAR (Intelligence, Surveillance, Target Acquisition and Reconnaissance).

3 The Strategic Programmes Directorate is responsible for the procurement, support, testing and evaluation of complex and novel weapons.

4 Strategic Command ensures that joint capabilities, such as medical services, training and education, intelligence and information systems are developed and managed. It also manages overseas joint operations and the permanent joint operating bases.

5 The Defence Nuclear Organisation oversees all defence nuclear business, including providing the nuclear deterrent.

6 Entities in bold text are Front-Line Commands.

Source: National Audit Office

1.5 The 2020–2030 Equipment Plan provides the Department's latest assessment of the affordability of military commitments. Its assessment is based on financial information available at the start of the 2020-21 financial year and therefore precedes the November 2020 government announcement of additional defence funding over the next four years. The Department will re-assess its equipment expenditure before producing the next Equipment Plan covering 2021–2031.

The Equipment Plan budget

1.6 The Department has assumed an Equipment Plan budget of £190.0 billion over 2020–2030, which includes:[6]

- procurement (£86.8 billion);
- support (£96.7 billion); and
- centrally held funding to cover costs not budgeted for by TLBs, including provisions for fuel and foreign exchange cost increases up to April 2020 (£1.2 billion) and an Equipment Plan contingency fund (£5.4 billion) to manage risks.

The 2020–2030 Equipment Plan budget is £9.4 billion higher than in the 2019–2029 Equipment Plan, in part because of the Department's assumption that additional funding provided in the 2019 Spending Round for 2020-21 would translate into an increase in the defence budget from 2021-22 to 2029-30.

1.7 The Department sets the funding available for equipment projects within the context of its wider defence budget. Its Head Office undertakes an annual financial planning round and issues the TLBs with their budgets for the next year, along with indicative budgets for the following nine years. The TLBs fund their equipment programmes from their delegated budgets and also manage expenditure on infrastructure and workforce. While some equipment expenditure is ring-fenced, the TLBs must balance competing priorities and may change planned expenditure on equipment to meet other demands or priorities.

6 Numbers do not sum due to rounding.

1.8 The TLB budget allocations and departmental contingency for 2020–2030 were within the Department's total 10-year budget but exceeded the Department's budget in the first five years by £4.1 billion. In our view, by not reflecting at least some of the wider budget shortfall in the next five years on the Plan's budget, the Department presented an overly optimistic picture of the available funding for equipment projects in the period to 2024-25. The equipment budget represents 41% of the defence budget and the Department has limited flexibility to reduce spending on its workforce or defence estate.[7] Should the additional funding announced in November 2020 prove insufficient to balance the budget, it is likely that some, if not all, of any financial pressures will affect equipment expenditure in this period. The Department has forecast a £9.1 billion surplus of unallocated funding over 2025-26 to 2029-30 and may choose to draw on this to increase its equipment budget during these years.

1.9 To provide the Department with flexibility to respond to the possibility of an unfavourable Spending Review settlement, Head Office imposed restrictions on TLBs' contracted expenditure. After applying these restrictions, the TLBs' permitted spending and departmental contingency still exceeded the Department's budget by £2.0 billion over the next five years. Despite imposing these controls on wider TLB spending, the Department has not reduced the 2020–2030 Plan's budget to reflect these controls, which means that it is presented on a different basis to last year. In contrast, the Department reduced the 2019–2029 Plan's budget due to similar controls on the wider defence budget. It told us that it did not apply spending restrictions this year as it has changed its budget-setting methodology and believes the budgets allocated to TLBs provide a realistic basis for planning.

1.10 The Department has included £5.4 billion of contingency in the 2020–2030 Plan to manage risks and absorb unexpected cost pressures, although no contingency is available in 2020-21. The Department has again allocated all of its year 1 contingency at the start of the year. Using contingency this way to reduce funding shortfalls means that the TLBs have to deal with any unexpected demands or cost increases from their existing budgets by reprioritising expenditure. The Department has established different arrangements for the Dreadnought submarine programme due to its size and complexity.[8] HM Treasury holds a separate £10 billion contingency fund, from which the Department drew down £705 million in 2018-19 and 2019-20 to allow DNO to remain on schedule in delivering the programme.

7 The infrastructure programme has a shortfall of £1.4 billion over 10 years to deliver current plans, under which the condition of the estate will continue to decline. To end the estate's decline would require £4.8 billion of extra funding in the next four years.

8 The Dreadnought programme will replace the four Vanguard submarines that have provided the continuous-at-sea nuclear deterrent with four new submarines.

1.11 Since 2016, the Department has not reserved any funding for future projects not already in its Equipment Plan (**Figure 2** overleaf). The purpose of this 'headroom' was to allow it to fund "additional programmes that are a high priority… when they are required". The absence of 'headroom' means that the Plan only makes provision for projects that the Department has already begun. The Department has not allocated equipment funding to develop new high-priority capabilities or replace some existing capabilities. At the start of 2020-21, it forecast a funding shortfall over the next five years (paragraph 1.8) which means that, under these budget assumptions, it would not have been able to start new equipment projects without disinvesting in other projects or securing additional funding from HM Treasury. The Department also forecast that it would have a surplus in its overall budget in later years, which it could potentially allocate to the Equipment Plan. However, in our view, the wider financial pressures facing the Department mean that there is considerable uncertainty over the Plan's 10-year budget, so there are no guarantees over the scale of the surplus and potential headroom.

Estimating costs

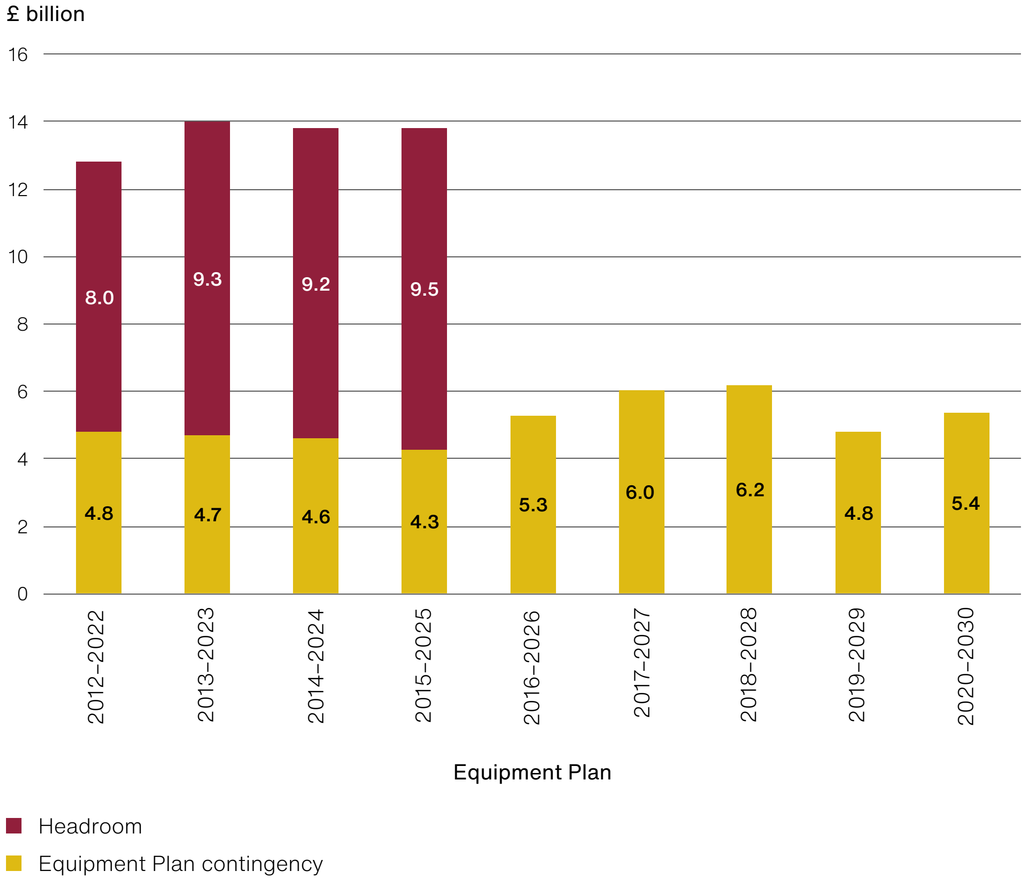
1.12 The Department estimates the Plan's total cost by aggregating cost forecasts on individual projects and then makes adjustments to reflect possible efficiency savings, its assessment of its ability to deliver projects and additional foreign exchange costs. The Plan shows forecast costs of £197.4 billion, based on:

- £212.8 billion for equipment projects;
- a £16.9 billion reduction to forecasts to reflect adjustments and planned savings. Another £8.2 billion of implemented efficiency savings are embedded in the equipment project costs, meaning that a total of £25.1 billion of cost reductions are assumed in the Plan; and
- a £1.3 billion addition to reflect higher fuel and foreign currency costs.

Figure 2

The Ministry of Defence's (the Department's) Equipment Plan budget not allocated to specific projects, 2012–2022 Plan to 2020–2030 Plan

The Equipment Plan has contained no unreserved funding ('headroom') since 2015



Notes

1 'Headroom' is unallocated funding reserved for the Equipment Plan which the Top-Level Budgets can use to fund extra projects according to their military priorities. 'Equipment Plan contingency' is unallocated funding which Head Office keeps as a financial buffer to allow the Department to cope with unexpected cost increases on equipment projects.

2 The 'headroom' figures for 2020–2030 exclude a forecast £9.1 billion surplus in the wider departmental budget in 2025-26 to 2029-30, which the Department could potentially allocate to the Plan.

3 Excludes the Dreadnought contingency, which is held by HM Treasury and cannot be spent on the wider Plan; contingency for fuel price and foreign exchange rate movements; and other departmental contingency not allocated to the Equipment Plan.

4 The Equipment Plans for 2016–2026, 2017–2027 and 2018–2028 included some contingency which was ring-fenced for the nuclear enterprise.

Source: National Audit Office analysis of Ministry of Defence data

1.13 The 2020–2030 Plan shows that forecast costs are £13.8 billion higher than in the 2019–2029 Equipment Plan. This is due to: a £10.7 billion increase in project costs; a £1.5 billion increase in costs due to revised judgements on the delivery of projects; and a £1.5 billion increase to reflect revisions to forecast efficiency savings and foreign exchange rates, and corrections and transfers (**Figure 3** overleaf). The TLBs' analysis, and our review of their plans, shows:

- growth in the costs of submarine procurement and support programmes, as the scope of planned work has changed and new data have become available from suppliers;
- Army has added £0.9 billion of new projects to its programme, including £0.5 billion of costs transferred in from its wider TLB plans;
- £2.1 billion of additional costs in Strategic Command's equipment programme, reflecting £1.1 billion of new investments to fill capability gaps and strengthen cyber capabilities and £1.1 billion of cost growth in major projects, such as global connectivity; and [9,10]
- the cost of equipment projects in 2029-30 which have been added to the Plan is £2.5 billion more than programme costs in 2019-20, which are no longer included. One factor behind this is Army's intention to spend more on procurement at the end of the decade than the start.

Head Office also found that decisions to defer spending from 2020-21 to later years, made on affordability grounds, were a factor contributing to the cost increases.

Assessing the risk of cost increases

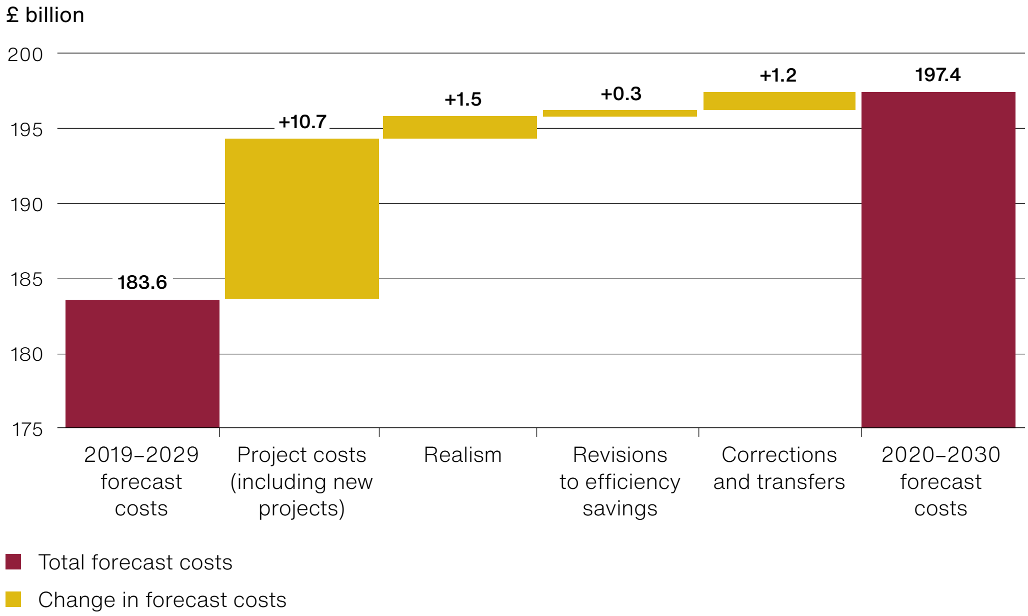
1.14 The delivery organisations and TLBs build the cost forecast in the Plan by assessing the likely cost of individual projects. In doing so, they make allowances to reflect the risk of future cost increases, aiming to ensure that the overall provision in the Plan broadly matches the most likely cost of all financial risks. In total, they have included £13.5 billion in the Plan's cost forecast to reflect project risks that they judge will probably occur. But they have not included another possible £20.0 billion of cost increases that they have tracked, related to other project risks, but they judge will probably not occur.

9 This project provides essential parts of the Department's IT systems and communications network.
10 Figures do not sum due to rounding.

Figure 3

Changes to the Ministry of Defence's (the Department's) forecast cost of equipment projects between the 2019–2029 and 2020–2030 Equipment Plans

Increases in underlying project costs are the main reason for the £13.8 billion increase in the 2020–2030 Equipment Plan's (the Plan's) forecast costs



Notes

1 In the Plan, the Department's deduction for 'realism' was £1.5 billion lower than in the 2019–2029 Equipment Plan. This reflects its judgement on its ability to deliver its equipment projects and means that forecast costs have increased. See paragraphs 1.28 to 1.31 for a full explanation.

2 Corrections and transfers include amendments for foreign exchange rate movements.

3 Figures may not sum due to rounding.

Source: National Audit Office analysis of Ministry of Defence data

1.15 The Department's approach to risk analysis means that its central cost forecast may exclude risks that it cannot calculate precisely, and strategic risks not tied to any specific project, regardless of their likelihood. The Department does consider some strategic risks in its upper and lower estimates of the funding shortfall, although it has not recorded how it selected these risks or assessed their financial impacts. Its annual financial planning process includes discussions of strategic risks to the defence budget and major risks to the finances of each TLB, but these discussions are not specific to the Plan. Because the Department's evaluation of risk and uncertainty in the Plan's costs is not comprehensive, the full extent of risks may not be visible to decision-makers.[11]

11 HM Treasury, *The Aqua Book: guidance on producing quality analysis for government*, March 2015. HM Treasury's guidance states that uncertainties not quantified by modelling must also be evaluated because the overall uncertainty is important for decision-making.

1.16 The Department estimates most project costs at the 50th percentile, which means that the project is as likely to cost more than the estimate as it is to cost less. We have highlighted in previous reports that forecasting project costs at the 50th percentile, irrespective of complexity and the level of project maturity, may not always be appropriate.[12] The Department has taken a more prudent approach on some high-risk projects, including the Dreadnought submarine programme and the Type 26 ship-building programme, estimating their costs at the 70th percentile to reflect the likelihood of cost increases due to the projects' complexity. In some other cases, project teams have forecast the costs of nuclear projects at the 50th percentile, while the Cost Assurance and Analysis Service (CAAS) has used higher confidence levels in its independent estimates. In our view, the Department should explore whether forecasting at the 50th percentile remains appropriate for new, complex projects.

1.17 In addition, the Department's approach to estimating the aggregate risk of cost increases is based on an assumption that there will be an equal number of project overspends and underspends, which will balance out across the Plan. Its approach does not reflect that large cost overruns are more likely than large underspends, nor that cost increases across multiple projects may be linked to the same underlying risks.[13]

1.18 Each year, the Department asks CAAS to review a sample of its projects and give an independent view of the 'realistic outturn' of cost forecasts.[14] Based on its review, CAAS concluded that projects across the whole Plan are likely to cost £3.9 billion more than forecast by the delivery teams. Common reasons for the variances on projects were differing opinions on the appropriate level of uncertainty in cost forecasts and the ability of project teams to deliver the savings and efficiency measures embedded in their costs. The Department has used CAAS's findings to assess the potential for cost increases in its upper estimate of the funding shortfall but could refine this analysis in future (paragraph 1.37 and Figure 7).

12 Comptroller and Auditor General, *Equipment Plan 2012 to 2022*, Session 2012-13, HC 886, National Audit Office, January 2013; Comptroller and Auditor General, *Equipment Plan 2013 to 2023*, Session 2013-14, HC 816, National Audit Office, February 2014; Comptroller and Auditor General, *The Equipment Plan 2016 to 2026*, Session 2016-17, HC 914, National Audit Office, January 2017; Comptroller and Auditor General, *The Equipment Plan 2017 to 2027*, Session 2017–2019, HC 717, National Audit Office, January 2018; Comptroller and Auditor General, *The Equipment Plan 2018 to 2028*, Session 2017–2019, HC 1621, National Audit Office, November 2018.

13 U.S. Government Accountability Office, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Program Costs*, GAO-20-195G, 12 March 2020.

14 CAAS reviewed a sample of projects accounting for 54% of equipment procurement and support costs. CAAS has used project team estimates for projects outside of its sample to provide its cost forecast for the whole Plan.

1.19 Last year, the Department told us that it planned to carry out a comprehensive review of its approach to estimating financial risks. This was in response to a recommendation in our 2017 report and its own initial work, which found inconsistent approaches across TLBs and delivery organisations. It completed the review in May 2020 and has begun a project to improve its risk provisioning and funding. The work has not yet concluded and has not been reflected in this year's cost forecasts.

Completeness of the Plan

1.20 The Department's Head Office asks the TLBs to provide assurance that their equipment programmes contain all relevant projects and reflect agreed plans. However, our review of TLB plans shows that funding provisions do not cover all of the Department's plans to develop future military capabilities, which will be assessed in future investment priority exercises. For example, the 2020–2030 Plan does not cover the full costs of:

- retaining or replacing some capabilities which are near the end of their life, such as specialist air transport and the Navy's mine-hunting capability;
- major procurement projects, including the future combat air capability, a replacement radar system for Typhoon and the successor to the Astute submarine programme. While the Department has not yet made final decisions on the capabilities that are needed, it expects the projects to begin before 2030;
- policy decisions that are pending, such as the number of Lightning II jets that are needed, and the funding implications of buying more than its current commitment to purchase 48 jets;
- new capabilities, such as space capabilities, as well as the option to deploy its two aircraft carriers as landing platforms for battlefield helicopters in addition to Lightning II jets; and
- continuing the 'Transformation Fund' projects beyond 2021-22. Last year, we reported that the Department had approved 18 projects, which were expected to cost £405 million over three years. We highlighted that these projects would need significant additional funding to deliver usable capabilities. The TLBs are making decisions on their future development through their 'balance of investment' assessments and will need to reduce expenditure elsewhere in their programmes to accommodate any additional funding requirements.

1.21 The development of these capabilities will increase the financial pressures and add to the unaffordability of the Plan. Our review of TLB estimates found that the cost of filling their capability gaps would be at least £20 billion between 2020-21 and 2029-30.[15] While this figure represents an early, rough estimate, given that future requirements are being defined, it provides an indication of the scale of potential additions to the Plan.

Management adjustments to cost forecasts

1.22 The Department reduces the cost forecasts in the Plan to reflect possible savings and its judgements that some projects will progress more slowly than originally planned (known as 'realism'). We reviewed the Department's approach to making these adjustments.

Reflecting future efficiency savings

1.23 The Department defines efficiencies as cost reductions which are not associated with a reduction in outputs or capabilities. It has set a target of making £35.3 billion of efficiencies over the 10 years to 2029-30 across its total defence spending. Of this target, the Department expects the TLBs and delivery organisations to find £12.3 billion of efficiency savings from projects in the Plan, which is a reduction of £0.2 billion on the 2019–2029 Equipment Plan.

1.24 Delivery organisations reduce project cost estimates when they are confident that the project will deliver an efficiency saving. The Department has reduced the forecast costs in the Plan by £8.2 billion to reflect these savings. The delivery organisations also identify other potential efficiencies but do not deduct these from project cost estimates as they are less confident of achieving them. However, the Department has assumed it will achieve £3.7 billion of savings that it has not yet implemented plans to deliver – in addition to the mature efficiencies – and reduced the Plan's forecast cost to reflect this. This £3.7 billion includes £2.7 billion of less mature planned savings and £1.1 billion of savings commitments not linked to specific plans.[16] The TLBs still need to identify an additional £430 million in efficiency savings to achieve their targets. Previous reports have found that the Department has been over-optimistic on the level of efficiency savings it can realistically achieve and that it has a mixed record of delivering these.[17] The failure to deliver the less mature efficiencies and find new efficiencies would make the Plan less affordable, and the TLBs told us that delivering and finding new efficiencies was becoming increasingly difficult.

15 This figure includes capability gaps affecting Army, Navy, DNO and Strategic Command. It excludes capability gaps affecting Air and Strategic Programmes.
16 Numbers do not sum due to rounding.
17 Comptroller and Auditor General, *The Equipment Plan 2019 to 2029*, Session 2019-20, HC 111, National Audit Office, February 2020; HC Committee of Public Accounts, *Defence capability and Equipment Plan*, Tenth Report of Session 2019-21, HC 247, July 2020.

1.25 The Department is confident it has mature plans to achieve 66% of its savings target. It assumes that it will realise all of these savings, despite TLBs reducing the savings they are confident of achieving in 2020-21 and 2021-22 by £270 million. The Department has reduced the level of savings it is less confident of achieving from £4.7 billion to £3.7 billion over the 10 years, and from £518 million to £224 million in 2020-21. However, we found that there was some variation in the level of caution applied by the TLBs to their forecast savings. Air, Army and Strategic Command have all removed their full efficiency targets from their costs in years 2–10. However, while Army has implemented plans to achieve 106% of its target, Air has implemented plans to achieve only 43% and Strategic Command only 66% of their targets.

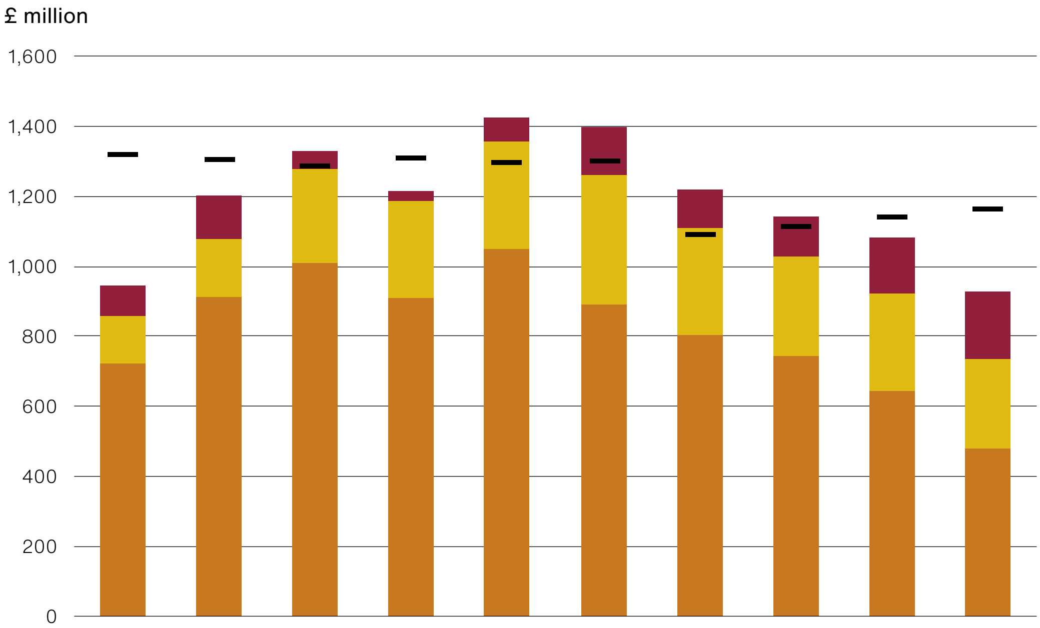
1.26 The Department has sought to address inconsistencies in the way TLBs report efficiency savings by introducing a standard framework for delivery organisations to assess and verify potential savings in 2020-21. However, the maturity of approaches varied, with Defence Digital only piloting its system in August 2020. TLBs have also taken different approaches to reporting less mature efficiencies. Departmental guidance states that TLBs should provide supporting evidence for their assumptions. However, we found TLBs could not always provide evidence to explain why they had deducted some potential savings from cost forecasts, or what assurance Head Office had sought on these estimates.

1.27 Over 2020–2030, the Department judges it is close to meeting its 10-year efficiency target, although this relies on identifying new efficiencies and developing plans for the less mature efficiencies. In the next two years it must find a further £511 million of these savings in addition to £1.6 billion that it has mature plans to deliver (**Figure 4**). The failure to do so will create additional financial pressures and, if not achieved, the TLBs will need to make equivalent reductions in their expenditure to stay within annual budgets.

Figure 4

The profile of efficiency savings in the Ministry of Defence's (the Department's) Equipment Plan 2020–2030

The Department does not yet have mature plans to achieve its annual efficiency targets in full



	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Target	1,317	1,306	1,286	1,308	1,297	1,301	1,091	1,112	1,139	1,163	**12,319**
Further identified efficiencies	87	120	51	27	70	136	110	115	159	192	**1,068**
Less mature efficiencies	137	167	273	278	306	369	305	283	279	258	**2,655**
Mature efficiencies	721	913	1,008	911	1,051	892	804	744	644	479	**8,167**

Notes

1 The Department defines efficiencies as cost reductions which are not associated with a reduction in outputs or capabilities.

2 'Further identified efficiencies' are forecast efficiency savings or commitments not linked to specific plans.

3 'Less mature efficiencies' are forecast efficiency savings linked to specific plans the Top-Level Budgets (TLBs) have identified but not yet implemented.

4 'Mature efficiencies' are forecast efficiency savings linked to specific plans the TLBs have identified and implemented.

5 Figures may not sum due to rounding.

Source: National Audit Office analysis of Ministry of Defence data

Adjustments for delivery 'realism'

1.28 The TLBs and delivery organisations have reduced cost forecasts to reflect judgements that they will not deliver projects as quickly as originally anticipated. They base these judgements on their past experience in managing equipment projects and views on their suppliers' capacity. In total, the Department reduced the forecast costs in the Plan by £10.4 billion, equivalent to 5% of overall costs.[18] This comprised:

- £6.7 billion to reflect delivery organisations' assessment of likely slippage on projects; and
- an additional £3.7 billion to reflect further judgements made by TLBs. The Department is aware that there is more uncertainty around this judgement.

1.29 The deduction for realism was £1.5 billion lower than in the 2019–2029 Equipment Plan, which the TLBs told us reflected efforts to establish a better estimate of their confidence in delivering projects. However, we have seen no evidence setting out why the Department has removed these costs from the Plan in their entirety rather than reprofiling project expenditure. Removing costs is only appropriate if deferring costs into later years would mean the planned delivery of projects in those years was undeliverable or if project cost estimates were overstated. In addition, Head Office and the TLBs could not provide us with assurance that there had been no double counting between the adjustments made by delivery organisations and those made by TLBs.

1.30 The TLBs also differed in the way they made realism adjustments. The level of adjustments varied widely, ranging from 10% of Strategic Command's overall costs to 3% of Navy's and DNO's (**Figure 5** on pages 29 and 30). Air and Navy made deductions exceeding those of their delivery organisations across the Plan, whereas DNO imposed a single adjustment on its main delivery organisation. There were also large changes in realism adjustments compared to last year. For example, adjustments ranged from a 66% fall for Navy to a 77% increase for Strategic Programmes. Not all TLBs provided us with sufficient evidence or analysis to explain these movements in their realism adjustments.

18 Based on the overall costs for equipment programmes forecast by project teams before TLBs make adjustments for less mature savings and delivery realism.

Figure 5

Realism adjustments in the Ministry of Defence's (the Department's) Equipment Plan across the Front-Line Commands, the Defence Nuclear Organisation and the Strategic Programmes Directorate in 2019–2029 and 2020–2030

There has been considerable variation in the scale and direction of changes to the Front-Line Commands', Defence Nuclear Organisation's and the Strategic Programmes Directorate's forecast cost reductions due to delivery realism since the 2019–2029 Equipment Plan

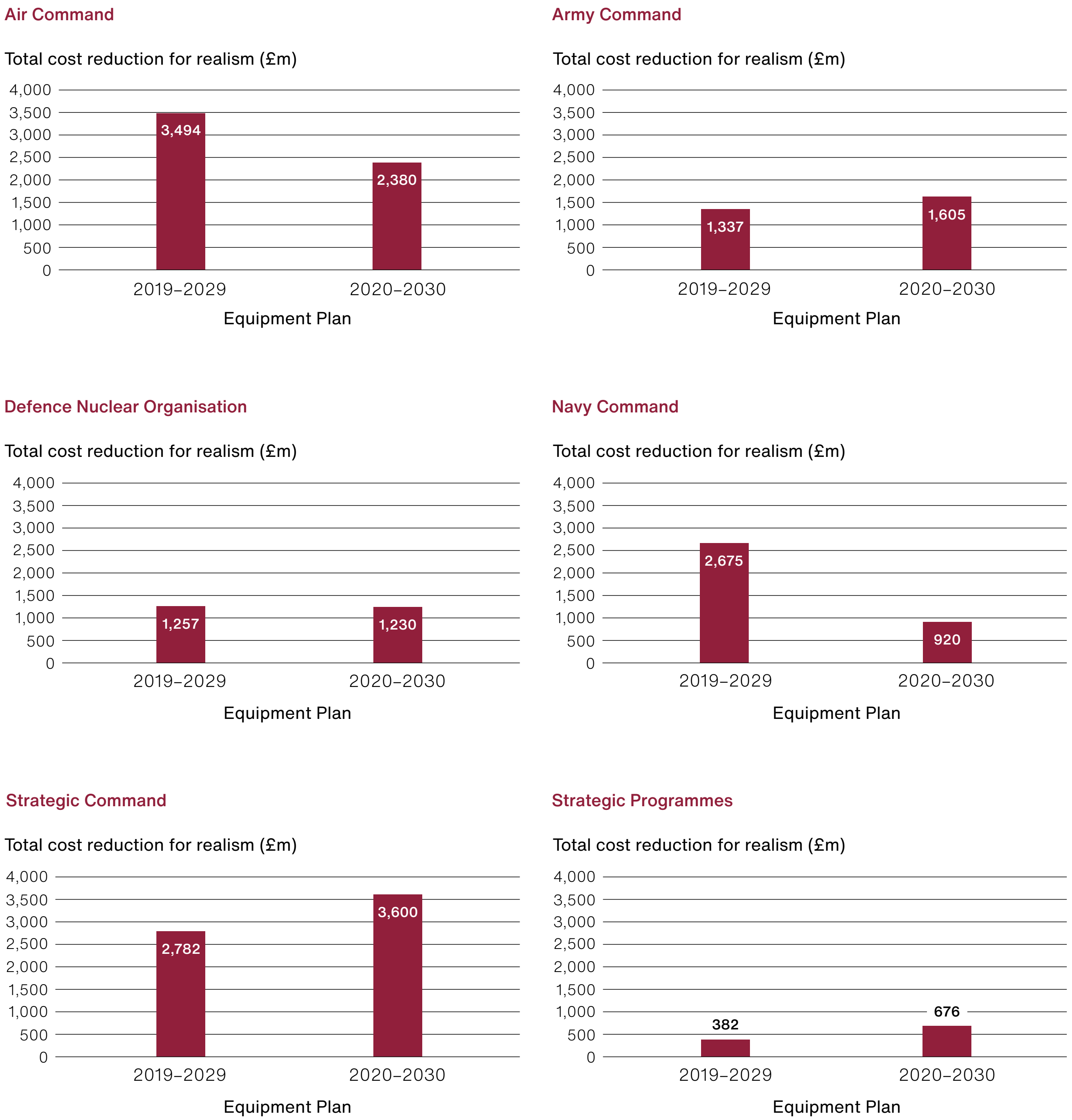


Figure 5 *continued*

Realism adjustments in the Ministry of Defence's (the Department's) Equipment Plan across the Front-Line Commands, the Defence Nuclear Organisation and the Strategic Programmes Directorate in 2019–2029 and 2020–2030

Notes

1 Under the Department's delegated model, responsibility for managing projects is delegated to the Front-Line Commands (Navy, Army, Air and Strategic Command), the Defence Nuclear Organisation and the Strategic Programmes Directorate. These organisations are known as Top-Level Budgets (TLBs).

2 The Department defines realism as a forecast cost reduction which reflects TLBs' judgements that they will not deliver projects as quickly as originally anticipated.

3 2019–2029 represents cost reductions estimated in the Department's 2019–2029 Equipment Plan, 2020–2030 corresponds to cost reductions in the 2020–2030 Equipment Plan. Due to changes in calculation methods and the contents of the Plan, estimates may not be directly comparable.

Source: National Audit Office analysis of Ministry of Defence data

1.31 We also found evidence that realism adjustments are being used as a management tool to make the Plan appear more affordable. The Department recognised that realism "has been used by TLBs to balance the programme, affecting the integrity of budget/costings". Budget submissions from Navy, Strategic Command and Strategic Programmes also described using realism adjustments to suppress costs and reduce financial pressures in some years. In 2019, the Department told us it intended to introduce a more evidence-based approach to cost forecasting. In 2020-21, DE&S introduced guidance that project teams should support realism adjustments with evidence. However, there is no equivalent guidance from Head Office to TLBs. Head Office has relied on TLBs to provide assurance for their realism adjustments, although it intends to review the basis of these adjustments in more depth by 2021-22.

Planned cost reductions

1.32 The Department has reduced forecast costs by £2.8 billion for 'planned cost reductions', with £2.6 billion coming from Air and DNO. We would expect any savings measures included in the Plan to be supported by an evidence-based route to implementation, but it is not clear to us how these reductions will be achieved. This total includes the 'Warhead Savings Challenge' for which the Department has reduced costs by around £550 million in the past three Equipment Plans to reflect speculative savings from a planned restructuring it could not confirm until 2020-21.

The Department's assessment of affordability

The central estimate

1.33 The Department's central estimate of the Plan's funding shortfall shows a £7.3 billion difference between its forecast costs of £197.4 billion and its budget of £190.0 billion.[19] The central estimate has increased from £2.9 billion in the 2019–2029 Equipment Plan because:

- the budget has increased by £9.4 billion as the Department has estimated its 10-year equipment budget on a different basis (paragraph 1.6); and
- the Department's forecast cost of the equipment programme has grown by £13.8 billion to £197.4 billion (paragraphs 1.12 and 1.13).

1.34 The Equipment Plan remains unaffordable, for the fourth year in a row. However, in our view, it is not possible to compare the central estimate with previous Equipment Plans to establish how funding pressures are changing. The Department has not yet established a stable approach which would enable year-on-year comparisons. Its 2018, 2019 and 2020 estimates of the funding shortfall were each built on different judgements, including the level of confidence needed to deduct efficiencies from forecast costs, over-optimism in the management adjustments and the method used to estimate the budget. Despite this, our view is that the Department is becoming more consistent in developing its annual estimates and that future Equipment Plans could better support year-on-year comparisons.

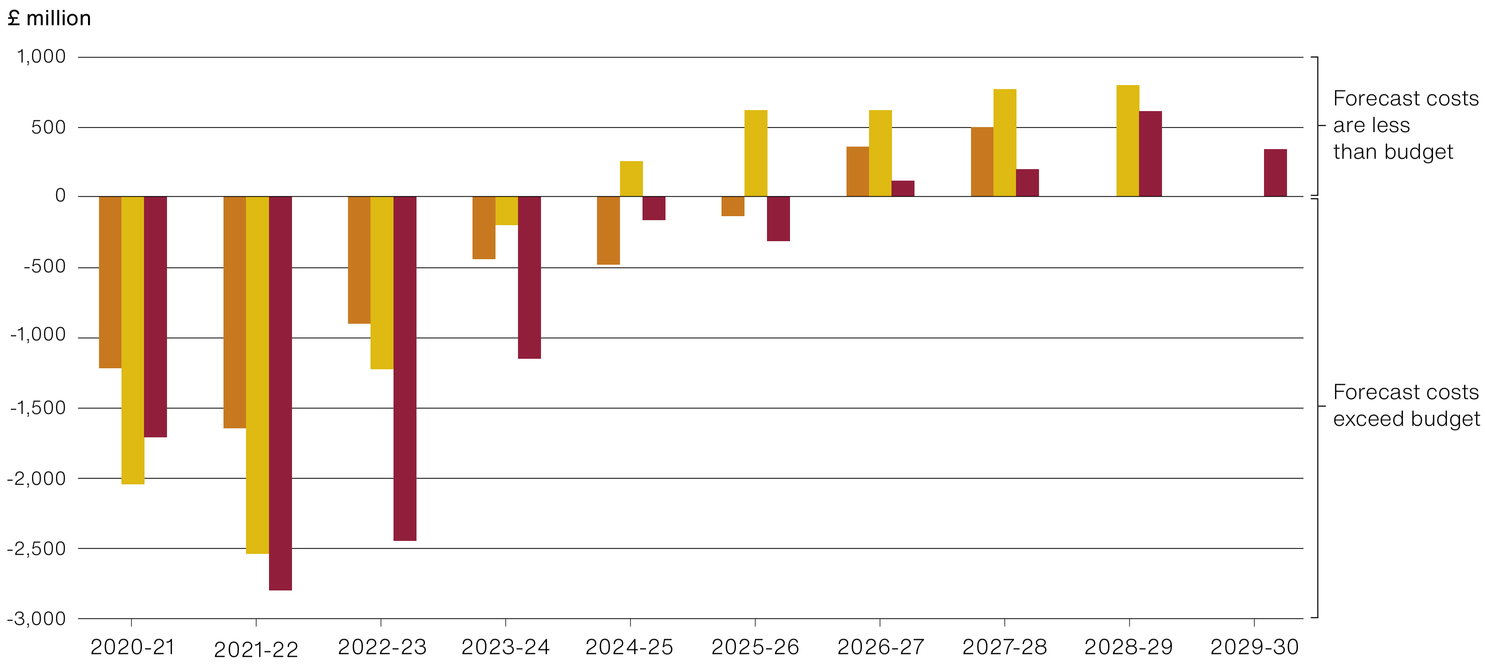
1.35 While we caution against making direct year-on-year comparisons, the profile of funding shortfalls shows the same pattern. The affordability gap is much greater at the start of the Plan's 10-year period, with the 2020–2030 Plan showing an £8.3 billion shortfall in its first five years, and a surplus of £900 million in years 6–10 (**Figure 6** overleaf).[20] In the first five years of the Plan, TLBs also need to achieve £4.6 billion of expected efficiency savings, and identify or secure a further £3.8 billion of savings. The increase in short-term funding shortfalls reflects the Department's continued approach of managing the affordability challenge by deferring planned project expenditure into following years to live within its annual budget allocation.

19 Numbers do not sum due to rounding.
20 We have chosen to compare the first five years with the second half of the Plan as defence strategic reviews have been conducted every five years and to retain consistency with analysis in our previous reports.

Figure 6

The profile of the Ministry of Defence's (the Department's) annual funding shortfalls on the 2020–2030 Equipment Plan (the Plan), compared with 2019–2029 and 2018–2028

The Department forecasts that costs will exceed annual budgets in years 1 to 6 of the Plan



	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
2020–2030 Plan	-1,711	-2,800	-2,454	-1,155	-163	-315	118	195	606	339
2019–2029 Plan	-2,044	-2,547	-1,225	-204	260	620	620	768	794	
2018–2028 Plan	-1,214	-1,651	-901	-445	-482	-141	357	496		

Notes

1 While we urge caution in making direct year-on-year comparisons, the profile of funding shortfalls has shown the same pattern for three years.

2 The 2020–2030 Equipment Plan provides the Department's latest assessment of the affordability of military commitments. Its forecast budget and costs are based on financial information available at the start of the 2020-21 financial year and therefore precede the November 2020 government announcement of additional defence funding over the next four years.

Source: National Audit Office analysis of Ministry of Defence data

Potential range of outcomes

1.36 The 10-year cost forecasts in the Plan contain an inherent degree of uncertainty. The Department recognises complex, long-term projects are subject to a range of factors and presents its affordability assessment as a range. It calculated a worst-case scenario – if all identified risks materialise – of the affordability gap widening to £17.4 billion and a best-case scenario of a £1.8 billion shortfall. If the worst-case scenario materialises, the funding shortfall would be equivalent to 9% of the Plan's budget.

1.37 The Department bases its central estimate of the funding shortfall on the delivery organisations' cost forecasts. It explores the uncertainty of its forecast by producing best-case and worst-case estimates for some adjustments but could not provide analysis to support the ranges it used (**Figure 7** overleaf). In our opinion, the Department's range of outcomes does not fully reflect the uncertainty in delivering the Plan. For example, the following factors could have a significant impact on the Plan's overall affordability:

- The accuracy of the cost forecasts produced by delivery organisations. It added £3.9 billion to its worst-case scenario costs to reflect CAAS's independent cost estimate. However, the upper estimate of the funding shortfall does not consider CAAS's 'worst-case scenario' which found that project costs could be up to £16.4 billion higher than forecast, although it views the upper boundary of this estimate to be highly unlikely. In our previous reports, we have commented that the Department should more deeply explore the range of uncertainty in its portfolio costs, as it does for individual projects.[21]
- Possible ranges for its future budget, which is an area of uncertainty. At the time of producing the 2020–2030 Plan, the Department had agreed its budget with HM Treasury until the end of 2020-21 and its indicative budget for 2021-22 onwards is based on a planning assumption. For five years, the Department's budget has grown faster than its planning assumption predicts, but due to the financial pressures in the personnel and infrastructure budgets, a reduction in the equipment budget is possible.
- Possible changes in the value of mature efficiencies it removes from its cost forecast.

21 Comptroller and Auditor General, *The Equipment Plan 2016 to 2026*, Session 2016-17, HC 914, National Audit Office, January 2017; Comptroller and Auditor General, *Major Projects Report 2015 and the Equipment Plan 2015 to 2025*, Session 2015-16, HC 488-I, National Audit Office, October 2015.

Figure 7

The Ministry of Defence's (the Department's) assessment of the range within which the costs of the 2020–2030 Equipment Plan (the Plan) lie

The Department's view of risks and uncertainties in the Plan

	Change in forecast costs by scenario		
Uncertainty	Worst case (£bn)	Best case (£bn)	Description
Cost understatement on projects	3.9	–	Difference to the Cost Assurance and Analysis Service's (CAAS's)[1] central estimate of project costs. CAAS considers that a credible worst-case cost for the Plan would be between £3.9 billion and £16.4 billion more than the project team costs.[2]
Foreign currency exchange rates	3.3	(2.7)	Calculates the impact of a 10% increase and decrease in foreign exchange rates.
Adjustment for realism	0.9	(0.9)	Calculates the sensitivity of the Plan to a 25% increase and decrease in the Top-Level Budgets' (TLBs') estimates of realism. TLBs adjust their forecast costs for realism to reflect judgements that they will not deliver projects as quickly as originally anticipated.
Feasible level of efficiency delivery	1.9	(1.9)	Calculates the sensitivity of the Plan to a 50% increase and decrease in the value of less mature efficiency savings and savings commitments.
Total	**10.1**[3]	**(5.5)**	

Notes

1 CAAS independently assesses equipment procurement and support project costs.

2 CAAS also calculates a worst-case scenario for each project in its sample. It found the total of these worst-case costs would be £16.4 billion higher than project team estimates but told us that this level of cost increase is very unlikely, as it assumes issues occur in all projects in the sample.

3 Numbers do not sum due to rounding.

Source: National Audit Office analysis of Ministry of Defence data

A longer-term perspective

1.38 The Department's commitments to develop new capabilities from the 2015 Strategic Defence and Security Review have contributed to an increase in the forecast cost of the Plan of £31 billion since 2015. As financial pressures have increased, the Department has included much higher levels of efficiency savings against equipment projects, with planned savings rising from £5.8 billion in the 2016–2026 Equipment Plan to £12.3 billion in the 2020–2030 Plan. The Department has also made larger adjustments for realism, with this year's £10.4 billion deduction being 55% higher than that first reported in 2018.

The TLB perspective

1.39 The TLBs' plans show a funding shortfall of £12.5 billion (6% of overall costs) across the next 10 years, with £10.4 billion of this falling in the next five years.[22] This shortfall varies in size and as a proportion of budgets, ranging from Navy's deficit of £4.3 billion (12% of overall costs) to Strategic Command's £0.5 billion (1% of overall costs). In addition, TLBs have made further adjustments to remove £16.9 billion (8% of overall costs) from their forecasts to bring their programmes closer to their budgets. The level of management adjustments made by the four Front-Line Commands has varied but is broadly proportionate to the size of their programmes, although the relative use of individual adjustments varies considerably (**Figure 8** overleaf). If TLBs' assumptions on adjustments for realism, efficiency delivery or savings are inaccurate, they will need to manage further cost pressure.

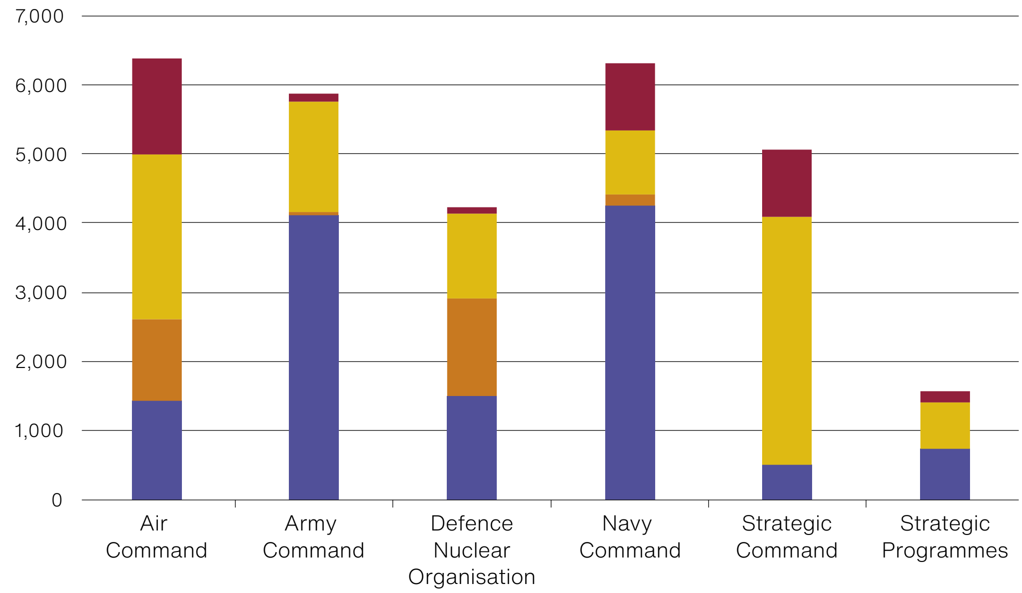
1.40 TLBs manage these financial pressures by prioritising investment, for instance by deferring project expenditure into later years. However, they face differing challenges due to the nature, maturity and complexity of the military capabilities they are developing. For example, Strategic Command told us that its need to respond to technological changes has a big impact on its planning processes. TLBs have also committed differing levels of equipment expenditure, peaking at 62% of Air's spend on support costs (£16.2 billion). Air is also most vulnerable to adverse changes in foreign exchange rates, with 41% (£16.9 billion) of its equipment costs in foreign currencies, compared with 4% (£1.4 billion) in Strategic Command.

22 This occurs where TLBs forecast equipment costs above their expected individual budgets and exceeds the departmental estimate of the affordability gap by £5.2 billion. It does not include, for example, the Department's central adjustments for fuel, foreign exchange and the Equipment Plan contingency fund.

Figure 8

Adjustments by the Ministry of Defence's (the Department's) Front-Line Commands, the Defence Nuclear Organisation and the Strategic Programmes Directorate to reduce forecast costs in the 2020–2030 Equipment Plan

Front-Line Commands, the Defence Nuclear Organisation and the Strategic Programmes Directorate have made substantial reductions in their cost forecasts in order to meet their budget constraints



	Air Command	Army Command	Defence Nuclear Organisation	Navy Command	Strategic Command	Strategic Programmes
Overall costs	**40,915**	**38,312**	**48,016**	**36,363**	**34,734**	**13,136**
Less mature and further efficiencies	1,395	116	95	985	967	165
Realism	2,380	1,605	1,230	920	3,600	676
Planned cost reductions	1,191	51	1,401	160	0	-50[2]
Variance to budget	1,425	4,104	1,507	4,262	495	725
Total cost reductions as a percentage of overall costs	16%	15%	9%	17%	15%	12%

Notes

1 Under the Department's delegated model, responsibility for managing projects is delegated to the Front-Line Commands (Navy, Army, Air and Strategic Command), the Defence Nuclear Organisation and the Strategic Programmes Directorate. These organisations are known as Top-Level Budgets (TLBs).

2 Strategic Programmes is forecasting £155 million of savings in the first four years of the Equipment Plan, followed by £205 million of related cost increases across the next six years. This means its planned cost reduction measures will result in a net cost increase.

3 The Department defines efficiencies as cost reductions which are not associated with a reduction in outputs or capabilities. 'Less mature and further efficiencies' are commitments to savings or forecast efficiency savings that the TLBs have identified but not yet implemented.

4 The Department defines realism as a forecast cost reduction which reflects TLBs' judgements that they will not deliver projects as quickly as originally anticipated.

5 Planned cost reductions are forecast savings not allocated to specific projects.

6 Variance to budget occurs where TLBs forecast equipment costs above their expected budgets. It does not include the Department's central adjustments for fuel, foreign exchange and the Equipment Plan contingency fund. Therefore, the TLBs' total variance to budget is greater than the affordability gap.

Source: National Audit Office analysis of the Ministry of Defence data

Part Two

How the Ministry of Defence is managing funding shortfalls

2.1 The Ministry of Defence (the Department) faces financial pressure across its wider defence budget, which affects the funding available for equipment and support projects. This Part sets out how the Department has sought to manage these financial pressures in 2020-21; provides an update on the Integrated Review of Security, Defence, Development and Foreign Policy (the Integrated Review); and explains how the Department is seeking to strengthen its financial analysis.

Managing financial pressures on the wider defence budget

2.2 In November 2019, as part of its annual budget-setting exercise, the Department assessed that it faced a worsening financial position in 2020-21. Its assessment was based on delivering all efficiency savings planned for 2020-21 and included £2.0 billion of additional investment provided by HM Treasury in September 2019.[23] The budget allocation for 2020-21 included £141 million to address critical capability risks, including enhanced intelligence, surveillance and reconnaissance capabilities in the North Atlantic, a national cyber force, and chemical, biological, radiological and nuclear capabilities. The Department also recognised that additional funding would be needed to develop military capabilities such as its cyber resilience; replace capabilities that are due to go out of service; and undertake urgent infrastructure works. These pressures have developed despite the defence budget growing at more than 2% above inflation over the last five years, to £41.2 billion in 2020-21.

23 In the September 2019 Spending Round, HM Treasury also permitted the Department to spend an additional £300 million in 2019-20 to avoid deferring that spending into 2020-21.

2.3 Faced with on-going financial pressures, the Department again focused on living within its annual budget in 2020-21. It sought to reduce the in-year funding shortfall by:

- requiring Top-Level Budgets (TLBs) to make £1 billion of savings, through a combination of prioritisation exercises and choices agreed by the Secretary of State. TLBs also had to find further savings of £320 million to absorb the 2020-21 pay award;
- distributing all departmental contingency (£590 million) to TLBs;
- taking £150 million of spending scheduled for 2020-21 into 2019-20;
- reducing spending plans by a further £100 million on the basis that projects would not be delivered as quickly as planned; and
- assuming that HM Treasury will provide additional funding to offset any cost increases that may arise due to pension changes and adverse foreign exchange movements, and on the Dreadnought submarine programme.

2.4 After taking these measures, the Department allocated TLB budgets for 2020-21 which were £250 million higher than its departmental budget. It recognised that unresolved risks meant that this could increase to £1 billion. TLBs therefore started 2020-21 with less resilience to manage unexpected cost pressures and the need to undertake further savings exercises to reduce expenditure to within the Department's budget. Previous reports have found that focusing on managing short-term financial pressures in this way has led to higher overall costs and that deferring projects to remain within budgets has created larger funding shortfalls in following years.[24] However, the Department's focus on managing short-term financial pressures reflects the Accounting Officer's responsibility to stay within departmental spending limits.

2.5 The TLBs' budget allocations and departmental contingency for 2021-22 to 2024-25 also exceeded the Department's budget (paragraph 1.8).[25] Head Office retained controls to restrict the TLBs' ability to contractually commit to spending in following years, thereby reducing TLBs' ability to invest in new equipment projects. From 2025-26, Head Office has set the TLBs' budgets to grow more slowly than the Department's overall budget, creating a funding surplus.

24 Comptroller and Auditor General, *The Equipment Plan 2019 to 2029*, Session 2019-20, HC 111, National Audit Office, February 2020; Comptroller and Auditor General, *The Equipment Plan 2018 to 2028*, Session 2017-19, HC 1621, National Audit Office, November 2018; HC Committee of Public Accounts, *Defence capability and Equipment Plan*, Tenth Report of Session 2019-21, HC 247, July 2020.

25 The Department's planning assumption is that its budget will increase in real terms by 0.5% a year.

2.6 In our last report, we concluded that the Department's continued short-term decision-making was leading to higher costs and reduced capabilities.[26] Since then, the TLBs have highlighted that funding shortfalls are growing and the requirement to continually manage short-term financial pressures is not sustainable as it is increasingly restricting their ability to develop the capabilities they need. For example, the Army reported to Head Office that instability in its longer-term budget has driven significant capability risk into the programme, placing its modernisation programme under increasing pressure. The Department has acknowledged that its approach has reduced its ability to manage emerging pressures and it is becoming increasingly difficult to find savings without unacceptable risk to defence outputs.

Strategic decisions on defence priorities

2.7 We have repeatedly highlighted the need for government to make strategic decisions on defence priorities and for the Department to develop an affordable long-term equipment programme. Our last report noted the missed opportunities to determine priorities on future military capabilities, such as the 2018 Modernising Defence Programme review. The Committee of Public Accounts has also expressed its concerns that a multi-year strategic review is needed.

2.8 In February 2020, government announced the Integrated Review. Its aim was to set the long-term strategic aims for national security and foreign policy. Government initially intended to publish the Integrated Review alongside the autumn 2020 Spending Review, which would set out a long-term budget to deliver the restated defence ambitions. Because of the COVID-19 pandemic, the timing for the conclusion of the Integrated Review was delayed, and it is expected to be published in early 2021. In November 2020, however, government announced £16.5 billion of additional defence funding over the next four years to support the development of military capabilities.[27] The funding is intended to allow the Department to invest in new technologies, such as developing its cyber and space capabilities, and to continue to modernise.

26 Comptroller and Auditor General, *The Equipment Plan 2019 to 2029*, Session 2019-20, HC 111, National Audit Office, February 2020.

27 The £16.5 billion funding is additional to the Department's planning assumption of 0.5% real growth from its 2020-21 budget, based on the economic determinants in the Office for Budget Responsibility's July 2020 *Fiscal sustainability report*.

2.9 The Department will now determine how to allocate this additional funding and will re-assess its investment in existing and future military capabilities. It intends to re-baseline its Equipment Plan from 2021-22 to set out its long-term investment in the capabilities needed to achieve the revised defence policy. The 2020 spending settlement also reflects the need to achieve efficiency savings and the Department will need to identify and deliver a realistic package of savings measures. Failure to do so – or manage wider pressures on the defence budget – would mean the level of funding available for equipment projects will be lower than forecast. We will examine the basis and reliability of the Department's planned expenditure in next year's report on its Equipment Plan.

Improving its financial analysis

2.10 The Department is seeking to strengthen its financial capabilities. In July 2018, it launched a five-year finance functional leadership strategy in line with the cross-government functional leadership agenda. As part of its strategy, it established workstreams to improve its cost forecasting which it hopes will lead to greater consistency in conducting cost reviews, as well as changes in its treatment of risk and realism. It is also seeking to improve its capabilities by increasing the proportion of finance staff with professional qualifications to 60%. In August 2020, this proportion remained at 41%, the same as a year earlier, although the Department had around 240 staff undertaking financial training.

2.11 The TLBs are responsible for providing cost forecasts for their equipment programmes and deciding the assumptions on which the management adjustments are based. Some TLBs told us that they had encountered recruitment challenges for their finance functions. For example, in August 2020, approximately one-third of Equipment Plan-related finance posts were vacant across Air, Army and Navy.

2.12 The Department's Head Office aggregates the information provided by the TLBs to produce the departmental position on the affordability of the Equipment Plan. Although it has established a process to perform systematic quality assurance checks on its aggregation work, it relies on the TLBs to ensure that the data provided are accurate, reliable and consistent. We would expect the Department's reporting to be accurate and based on reasonable and documented data and assumptions. However, we:

- could not obtain full, evidence-based explanations of the analysis used to support the TLBs' differing judgements on likely savings, including realism and efficiencies (paragraphs 1.22 to 1.32);
- identified apparent contradictions between the project costs and foreign exchange costs in the 2020–2030 Equipment Plan. The Department also identified errors in its foreign exchange analysis, since corrected, which meant it had under-estimated the Equipment Plan's vulnerability to changes in foreign exchange rates; and
- found errors in the Plan's underlying data after Head Office and the TLBs had completed their assurance work. In addition, the Department identified an error in its 2019–2029 Equipment Plan report and wrote to the Committee of Public Accounts to report it. This raises further questions on the adequacy of Head Office's quality assurance as it has previously had to issue corrections to the 2017–2027 Equipment Plan and republish the 2018–2028 Equipment Plan after discovering other errors.

2.13 Because of the way the Department is organised under the delegated model, Head Office can neither easily access the TLBs' financial information to identify the reasons for changes to the Equipment Plan's costs, nor challenge the TLBs' judgements. We identified several opportunities to improve the quality of its analysis in line with best practice in other parts of government. These included:

- testing its cost forecasts by analysing past performance, such as the accuracy of project cost forecasts or delivering projected efficiency savings;
- publishing a more detailed explanation of the scope, methods and assumptions behind its forecast;
- considering alternative approaches to its affordability analysis, justifying its judgements, and testing the design and methods it uses; and
- gaining more insight from its data, for instance, to understand what events have added unexpected costs to the Equipment Plan and how to better predict and mitigate these in future.

2.14 Head Office is also responsible for managing the process for producing the Equipment Plan, engaging with TLBs to provide advice and support. Over the past year it has modernised its financial reporting system and issued guidance to TLBs to develop more consistent financial reporting. However, we found that not all TLBs have applied Head Office's guidance and their financial reporting remains inconsistent. We have also seen some evidence of tension between Head Office and the TLBs over the approaches to managing funding pressures.

2.15 The Head Office team responsible for annual financial planning has faced the additional pressures of preparing for the Integrated Review while working within the restrictions created by the COVID-19 pandemic. With stretched resources, it had to extend its timetable for producing the Plan by two months.

A longer-term perspective

2.16 Since 2013, the Department has made improvements to its analysis and reporting in response to our recommendations. For instance, the Department has increased its scrutiny of equipment support costs and has progressed from presenting a single 10-year forecast to describing a range of possible outcomes. We have acknowledged progress in our previous two reports. In particular:

- in 2018, we found that the Department had improved the presentation and transparency of its report, by quantifying the gap between forecast costs and budget, and providing more information on its projects and assumptions; and
- in 2019, we recognised that the Department was seeking to improve the process for producing the Equipment Plan, with Head Office encouraging TLBs to adopt a more consistent and analytical approach to cost forecasting.

Appendix One

Our audit approach

1 In July 2020, the Ministry of Defence (the Department) wrote to the Committee of Public Accounts to explain that it would not publish a full Equipment Plan report this year. It deferred a full report until the Spending Review and Integrated Review of Security, Defence, Development and Foreign Policy (the Integrated Review) have concluded. In preparing the Equipment Plan 2020–2030 (the Plan), the Department has undertaken the same depth of financial analysis as in previous years. Its summary provides an assessment of the affordability of equipment and support projects, with supporting cost and budget data. The shortened summary reflects the Department's need to divert resources to prepare submissions for the Integrated Review and Spending Review, and to adapt its working practices due to COVID-19.

2 As the Department conducted the same level of assessment of the affordability of its planned expenditure on equipment and support projects, we undertook a full examination of its approach. This report therefore assesses the financial assumptions underlying the Department's 10-year Plan. Our work tested the assertions underlying the Department's assessment of the Plan's costs and budget. We examined:

- the basis on which the Plan's budget was set;
- the completeness of the Plan;
- its approach to forecasting costs, including how it had reflected project risks; and
- how the Department made adjustments to the Plan's forecast costs, including the underlying assumptions and evidence on which these were based. In particular, this focused on its approach to forecasting future savings and assessing its ability to deliver projects as originally intended (known as 'realism').

Our assessment enabled us to form a judgement on the reliability and consistency of the Department's affordability assessment. We have not reviewed the Department's systems to test the accuracy of its data but have examined its quality assurance arrangements and approach to testing the consistency and reliability of data used in the Plan.

3 To assess the limitations and assumptions included in the Department's forecast costs, we reviewed its approach against:

- the instructions produced by Defence Resources within Head Office to support the creation of the Plan. We also reviewed the guidance produced by delivery organisations for their project teams and the materials they used to communicate their cost forecasts to the Top-Level Budgets (TLBs);
- where applicable, we compared the Department's approach to best practice – for example, against guidance issued by HM Treasury – and against our wider understanding of how other government departments have approached long-term cost forecasting; and
- we placed assurance on the work of the Department's Cost Assurance and Analysis Service (CAAS), which independently assesses a sample of equipment and support project costs.

4 We assessed the Department's approach to producing the Plan, using our framework to review models.[28] We reviewed Head Office's arrangements for producing the Plan and how it coordinates with the TLBs. We focused on reviewing its quality assurance arrangements, including how it tested the information used in the Plan at different stages of the financial planning process. More broadly, we reviewed the Department's approach to managing the financial pressures and its efforts to improve the quality of its financial analysis.

5 We reviewed the Department's processes and assumptions for producing the Plan's figures but did not extend this to qualitative statements made by the Department in its published statement. Neither do we assess the value for money of projects mentioned in the statement.

6 We also interviewed staff from across the Department including:

- Defence Resources, to discuss Head Office's approach to developing and assuring the Plan;
- six TLBs, to discuss their reflections on the budgeting process, the challenges they face and the adjustments they have made within the Plan;
- three delivery organisations, to discuss their cost forecasts and the adjustments they have made within the TLBs' cost forecasts; and
- the Department's CAAS, to understand its opinion on the reasonableness of the Department's cost forecasts.

7 We also reviewed our back catalogue of Equipment Plan reports and corresponding reports from the Committee of Public Accounts to provide a longer-term context and perspective on this year's Plan.

8 We summarise our audit approach in **Figure 9**. We describe our evidence base in Appendix Two.

28 National Audit Office, *Framework to review models*, March 2016.

Figure 9
Our audit approach

The objective of government

To buy and support the equipment that the Armed Forces require to meet their objectives as set out in the Strategic Defence and Security Review 2015.

How this will be achieved

The Ministry of Defence (the Department) records its plans for equipment procurement and support over the next 10 years in the Equipment Plan and publishes a statement to Parliament on its forecast equipment costs and budget. The Equipment Plan should include all equipment projects needed for the Armed Forces to meet their objectives. The forecast costs of these projects should be realistic, complete and affordable within the defence budget.

Our study

This study reviewed the robustness of assumptions underpinning the Department's Equipment Plan to assist Parliament in evaluating the affordability of the 2020–2030 Equipment Plan (the Plan).

Our evaluative criteria

The Department's assessment of the affordability of the Plan is realistic and transparent.

The Department has managed funding shortfalls effectively.

Our evidence

(see Appendix Two for details)

We tested the assertions underlying the affordability assessment, including by:

- studying the budgeting process, including the link between the Department's overall budget and its equipment budget, using interviews with departmental staff and departmental documents on how the budget is set and managed;
- reviewing forecast cost information and adjustments in the Plan, testing significant changes from the prior year. We also reviewed the process to prepare the cost forecast, including how risk is incorporated;
- interviewing staff at six Top-Level Budgets to understand changes in their forecasts and gather their views on the Equipment Plan process; and
- reviewing efficiencies data included in the Plan, guidance and reporting documents, and interviewing staff in three delivery organisations to understand the process.

We also reviewed our back catalogue of Equipment Plan reports and corresponding reports from the Committee of Public Accounts to provide a longer-term context and perspective on this year's Plan.

Our conclusions

For the fourth successive year, the Equipment Plan remains unaffordable. However, the Department has still not established a reliable basis to assess the affordability of equipment projects, and its estimate of the funding shortfall in the 2020–2030 Plan is likely to understate the growing financial pressures that it faces. The Plan does not include the full costs of the capabilities that the Department is developing, it continues to make over-optimistic or inconsistent adjustments to reduce cost forecasts, and is likely to have underestimated the risks across long-term equipment projects. In addition, the Department has not resolved weaknesses in its quality assurance of the Plan's affordability assessment. While the Department has made some improvements to its approach and the presentation of the Plan over the years, it has not fully addressed the inconsistencies which undermine the reliability and comparability of its assessment.

The Department faces the fundamental problem that its ambition has far exceeded available resources. As a result, its short-term approach to financial management has led to increasing cost pressures, which have restricted TLBs from developing military capabilities in a way that will deliver value for money. The growing financial pressures have also created perverse incentives to include unrealistic savings, and to not invest in new equipment to address capability risks. The recent government announcement of additional defence funding, together with the forthcoming Integrated Review, provide opportunities for the Department to set out its priorities and develop a more balanced investment programme. The Department now needs to break the cycle of short-termism that has characterised its management of equipment expenditure and apply sound financial management principles to its assessment and management of the Equipment Plan.

Appendix Two

Our evidence base

1 We reached our conclusions based on analysis conducted between July and December 2020. Appendix One sets out our audit approach.

2 We drew on findings from our previous reports, particularly on the Equipment Plan, to set our findings in context. We did not undertake a detailed review of how the Ministry of Defence (the Department) manages the overall defence budget. More specifically, in considering the funding available for the 2020–2030 Plan (the Plan) we:

- reviewed the Plan's budget within the context of the wider defence budget and documented the judgements and assumptions the Department made to forecast a 10-year Equipment Plan budget from the 2020-21 departmental budget settlement. We reviewed the guidance and documentation to support key decisions, including briefings and management information on the 2020-21 defence budget provided to senior officials, correspondence between Head Office and HM Treasury, and correspondence between Head Office and the Top-Level Budgets (TLBs);
- interviewed departmental staff about the budget-setting process to understand changes to the process and timetable from previous years, and decisions around the level of financial risk and Equipment Plan contingency built into the budget. We interviewed finance staff at the six TLBs with Equipment Plan spending to gather views on the budgeting process; and
- reviewed the Plan's budget figures, including the contingency, to see how they reconciled to records from the budget-setting process and from the previous year.

3 In examining whether forecast costs within the Plan are realistic we:

- reviewed the detailed forecast cost data that feeds into the Equipment Plan. We performed sense checks on the information received, testing for basic data integrity. The cost forecast data comprise around 1,600 lines; we gathered explanations for significant movements since the 2019–2029 Equipment Plan, using:
  - breakdowns of major changes to the Plan prepared by the TLBs for Head Office in November 2020;
  - short written explanations we requested from the TLBs in August 2020, giving reasons for changes to the value of individual lines in the Plan, where those changes were more than £100 million; and
  - information packs provided by the delivery organisations to the TLBs in January 2020, as part of the last routine refresh of equipment costs before the Plan's data were frozen.
- we did not review any of the models the Department used to generate the forecast project costs, relying instead on the Department's Cost Assurance and Analysis Service's (CAAS's) assurance work;
- CAAS provided us with its view of the accuracy of cost estimates, at project level, based on its own cost estimates of a sample of projects. In 2020 it reviewed projects representing 66% of the value of the Equipment Procurement Plan and 46% of the Equipment Support Plan. CAAS determines which projects it should review following consultations with stakeholders, focusing on projects it considers to be high risk or high value; and
- we checked the project cost lines for completeness based on our audit knowledge, interviews with the TLBs, information on necessary future investments from budget-setting process documentation, and a comparison against new equipment investments which appeared between April 2019 and July 2020 in the Department's major business case approvals, or in its published announcements.

4 In examining whether adjustments for anticipated cost reductions within the Plan are reasonable we:

- interviewed staff at Defence Equipment & Support, Defence Digital and the Submarine Delivery Agency to understand the process for identifying and managing efficiencies. We then reviewed departmental information to estimate the totality of efficiencies factored into the Plan. We did not review the evidence supporting individual project efficiency forecasts; and
- reviewed non-project lines for reasonableness. We sought to understand the Department's adjustments and significant movements by gathering additional information from the TLBs, including by asking each TLB to share the analysis supporting its judgements on the size and profile of its management adjustments for realism.

5 In assessing the technical quality of the analysis the Department uses to estimate the size of the Equipment Plan's affordability gap, we referred to our framework to review models[29] and HM Treasury's Aqua book[30] as guides. We:

- examined Head Office's quality assurance of the analysis, reviewing its quality assurance records and interviewing the staff responsible for delivering the analysis;
- tested the construction of its analysis, checking the logic of the formulas, and reviewing if the data was accurately incorporated and internally consistent. We did not carry out a formal verification or validation. We also assessed the reasonableness and reliability of the main data inputs, as detailed in paragraphs 2, 3 and 4 of this Appendix; and
- reviewed the Department's approach to incorporating risk and uncertainty into the Plan, examining the Department's guidance, internal reviews of its handling of financial risk to equipment projects and a line-by-line breakdown of the Plan's risk inside and outside costing.

29 National Audit Office, *Framework to review models*, March 2016.
30 HM Treasury, *The Aqua Book: guidance on producing quality analysis for government*, March 2015.

6 Our review of the 2020-21 budget-setting process, explained in paragraph 2 of this Appendix, provided context on the extent of the financial pressures the Department faces, and the management actions it is taking in response. We did not review the November 2020 funding settlement in detail; references to the settlement in this report are based on government's published announcements, our discussions with departmental officials and a departmental document which reconciled the figures announced in November to the Department's forecast budget at the start of the 2020-21 financial year.

7 To assess the Department's efforts to strengthen its financial capabilities, we reviewed updates to the Finance Committee from July 2020 on the finance functional leadership (FFL) initiative, and received aggregated data assembled in August 2020 on finance staff qualifications. We reviewed in more detail documents relating to working groups – established under FFL – covering cost risk, and the programme costing process, including a workstream on adjustments for realism.

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