



Ministry
of Defence

The Defence Equipment Plan 2018

Financial Summary

5 November 2018

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Foreword from the Minister for Defence Procurement

This financial summary of the Defence Equipment Plan (the Plan) is the seventh consecutive annual publication and presents our plans to deliver the equipment needed by our Armed Forces to defend the country and keep our people safe. The government is committed to meeting the NATO target to spend 2% of GDP on defence and at least 20% of that spending on equipment. This report sets out our plans to spend £186bn on equipment in the 10-years from 2018/19.

We have substantially revised the content of this report to make it more transparent and accessible. For the first time, we have set out the strategic context for the Plan and presented in detail the Department's assessment of affordability. The NAO has assessed our plans, the supporting assumptions and transparency of our reporting. Their report is available online¹.

In 2017/18 the Department achieved several significant milestones in procurement and support of equipment and successfully delivered the plan within budget, driving out significant costs through effective cost control and oversight. Highlights include the commissioning of HMS Queen Elizabeth, the first of our new aircraft carriers, the biggest and most advanced warships ever built for the Royal Navy, and delivery of a further 12 F-35 Lightning aircraft, which will form an integral part of our Carrier Strike capability once operating from the aircraft carriers. We also placed contracts for the seventh Astute class submarine and the next phase of the Dreadnought programme delivery; and prepared the first of the Army's new family of Ajax multi-role armoured vehicles for their final acceptance process before going into service.

Looking ahead, there are significant financial pressures in the Equipment Plan and across the wider defence budget to be managed over the four years from 2018/19. Our central estimate for the cost of the Equipment Plan at April 2018 exceeded the allocated budget by an average of 3.7% over the 10-years from 2018/19. The shortfall is greatest in the four years from 2018/19. This forecast will vary as risks and opportunities materialise and project plans mature or are changed through management action.

We are acting to address this increased risk to affordability. During the 2017/18 financial planning process, we worked closely with HM Treasury to ensure that budget holders received sufficient funding to deliver their plans in 2018/19. We are confident that with appropriate spend control and oversight we will deliver the Equipment Plan within budget for 2018/19 as we did in 2017/18.

We have also taken steps to enable longer term affordability by improving financial management of the Plan. Efficiency targets have been consolidated to simplify management of outstanding efficiency targets; a new Executive Agency was established to lead on the procurement, in service support and decommissioning of all UK nuclear submarines; and Head Office launched a finance functional leadership strategy which will improve cost management and forecasting accuracy.

The Modernising Defence Programme will further strengthen and modernise UK defence and the Armed Forces and put UK defence onto an enduringly affordable footing for the future. This will involve rigorously pursuing productivity and efficiency gains as well as prioritising capabilities to meet the changing threat environment. This work will reshape the content of the Equipment Plan and improve the way in which it is managed. We will report on the implications of this work for the Equipment Plan in the next financial summary report.



Stuart Andrew MP, Minister of State for Defence Procurement

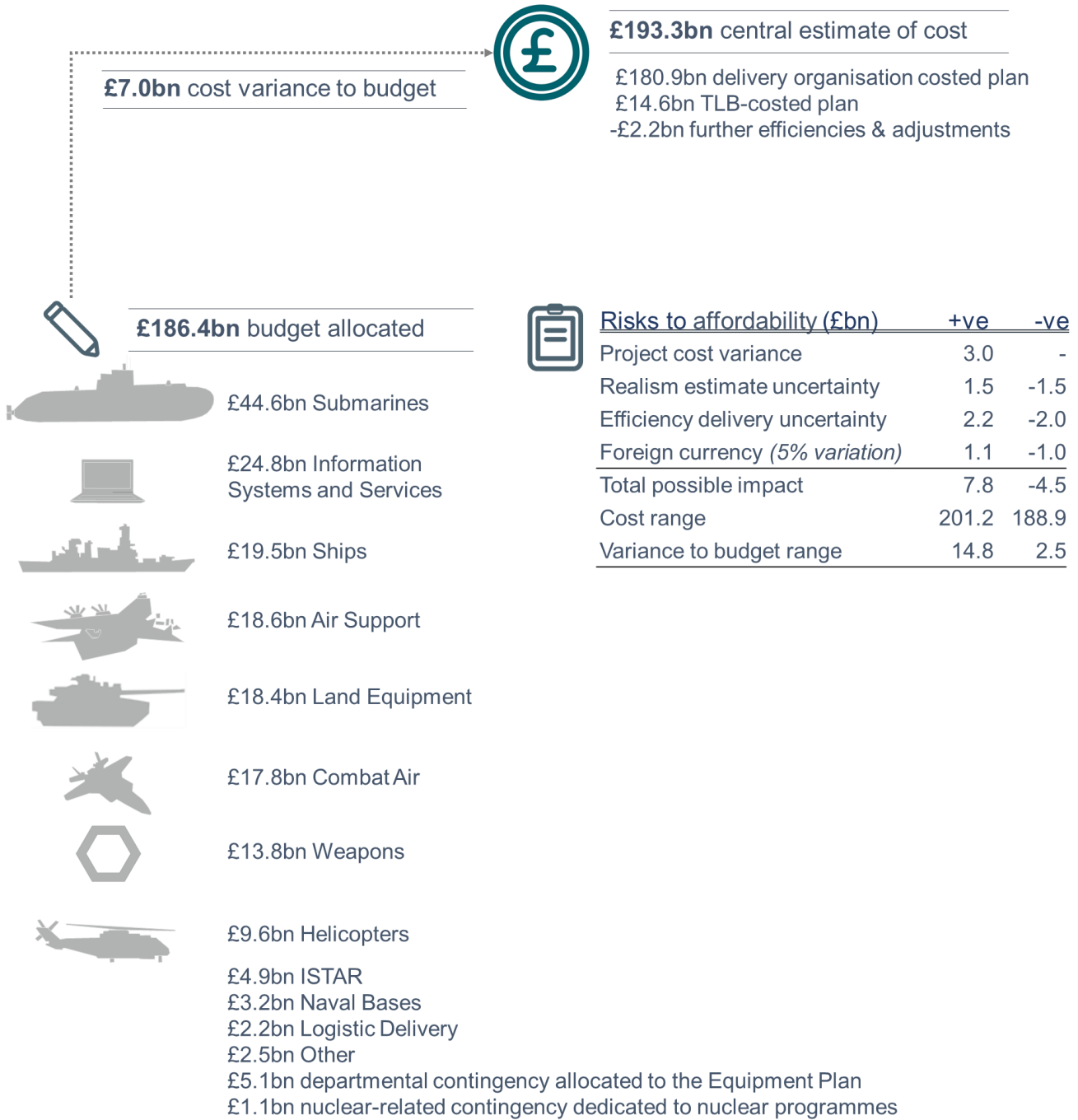
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¹ <https://www.nao.org.uk/>

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Key facts²



² Figures may not sum due to rounding.

Part 1: Strategic Context

1.1 The Equipment Plan

The Equipment Plan (the Plan) covers some of the largest, most complex procurement projects in the world delivered over long periods. The Plan involves spending over £186bn on equipment and support over the decade from 1 April 2018 to 31 March 2028. We will continue to meet the NATO target to spend 2% of GDP on defence and 20% of that spending on equipment, fulfilling the Defence Investment Pledge we agreed at the NATO Wales Summit in 2014.

1.2 Delivering the Future Force: SDSR15, NSCR and MDP

The last major review of UK defence policy and plans took place in 2015, as a key strand of that year's Strategic Defence and Security Review (SDSR). This set a new headmark for the UK's Armed Forces: Joint Force 2025, equipped with a range of new and enhanced capabilities, and better able to take on a broader range of missions to meet the national security challenges we expected.

However, since 2015 the world has become more uncertain, volatile and dangerous at a faster rate than predicted. The National Security Council (NSC) reviewed the National Security Strategy and SDSR after the general election in 2017, and concluded that the headline judgements in the SDSR, including about defence, were sound.

In light of growing security challenges, the NSC commissioned a focussed National Security Capability Review (NSCR) to identify how we could develop, deliver and deploy our national security capabilities to maximum collective effect.

Through the course of the NSCR, it became clear that a further, separate programme of work was required to strengthen and modernise defence and the armed forces to deliver better military capability in an enduringly sustainable way. In January, the NSC commissioned the Modernising Defence Programme (MDP) to deliver this intent. The NSCR's conclusions were published in March 2018, headline conclusions from phase one of the MDP were shared in July 2018 and we are now in the midst of phase two.

We are using this exercise to further strengthen and modernise UK defence and the Armed Forces, to ensure they can play their full part in strengthening global security through NATO; provide the structures and capabilities required to defend the UK; meet the wider challenges to international security and stability; lead multi-national operations; act independently when appropriate; and put UK defence onto an enduringly affordable footing for the future.

To deliver the MDP in such a way that we balance our policy goals, commitments, forward plans and resources, we will be rigorously pursuing productivity and efficiency gains. The overall approach to the latter will impact on how the Equipment Plan is managed and delivered while prioritising capabilities will shape aspects of the content.

Our analysis to date has clarified three key themes we are considering in this second phase: firstly, our Armed Forces need to be ready and able to match the pace at which our adversaries now move. Secondly, our Armed Forces need to be a fighting force fit for the challenges of the 21st century. And finally, we need to transform the business of Defence to deliver a robust, credible, modern and affordable force.

Consistent with the key principles of Joint Force 2025 this will require the capacity to deploy a joint, all arms force comprising a Maritime Task Group, an Army Division, and Expeditionary Air Group and a wide range of joint force enablers in support. The strong, modern capabilities we are currently operating and will be bringing into service in the years ahead will continue to provide the backbone of the UK's Armed Forces. We are making good progress with turning this plan into reality, with a range of new policies taking root and major new capabilities entering service.

To ensure that we maintain military advantage against our adversaries and competitors, we must now add capabilities to Joint Force 2025 that strengthen national resilience, offer the greatest possible choice to government and pose the greatest risk to our adversaries. A modernised joint force with global utility must be able to operate far from the UK, across all five

domains of conflict³, in difficult conditions and in the face of a determined and resourceful adversary.

We will need to acquire and retain the advanced, high-end capabilities required to deter our most capable adversaries and better utilise low-end platforms to maximise presence and mass. In the short-term we will be working to improve the productivity of our existing force structure and improve the availability of our current capabilities.

In this second phase of the MDP, we are considering the investments we need to ensure that Defence can operate effectively in the new domains of warfare, as well as against the most challenging global threats.

To help create headroom for further modernisation, we are examining where we could remove existing areas of overlap and duplication within the overall force structure and rationalise equipment holdings; delay, defer or de-scope areas of the forward defence programme which have less utility against the contemporary threats we are now facing; remove early from service capabilities which are uneconomic to maintain; burden-share more effectively with allies and partners; and examine the balance between where sovereign capabilities are essential and where military and commercial off-the-shelf solutions would be wholly adequate.

Our judgements on the overall shape and balance of the forward defence programme will also be informed by our plans to radically reform the business of defence and tackle structural challenges with the defence cost base. This work has the potential to produce substantial headroom for modernisation in the second half of the decade ahead.

We expect to report on the initial implications for the Equipment Plan in the next Equipment Plan Summary, once the second phase of the MDP has concluded.

1.3 Industrial strategy

The Ministry of Defence (the Department) and the defence industry are contributing to the implementation of the Government's Industrial Strategy White Paper published in November 2017. The Department spends around £18bn a

year with UK industry and commerce. Our defence exports average £6bn per annum and help cement our wider international trade relationships. One of the risks to delivery of the Equipment Plan is also the ability of UK industry to deliver the necessary capital programmes and support activity to achieve it.

Last December we published a refreshed Defence Industrial Policy, setting out our priorities to support the growth and competitiveness of the defence sector. Within the MDP we are now working jointly with industry to identify and put in place: new business models to generate UK economic value; improvements in the way in which we take account of prosperity within our future decision-making and investment appraisal processes; enhancements to the resilience and productivity in the UK supply chain; measures to make it easier to do business with defence; and further improvements in our support to exports, including at the systems and sub-systems level thereby supporting UK mid-tier companies as well as small and medium-sized enterprises.

We also committed to working with industry to increase the exportability of our future equipment and we have put in place new policy to achieve this, as reflected in the National Shipbuilding Strategy, published in September 2017. Contributing to prosperity is a core objective for the Type 31e Frigate programme. We are working with the rest of Government to secure inward investment, whilst also strengthening our capability to detect and respond to hostile foreign investment that could undermine our key infrastructure and capabilities.

Our new Combat Air Strategy, published in July 2018, sets out the UK's vision for our future Combat Air requirements and preserves choice in how we deliver them. By setting a framework that allows the Department and wider Government to balance military capability, international partnering and prosperity we will maximise long-term affordability and the national value the sector delivers for the UK.

The Department is also working on a response to the recommendations made in the recent Dunne Review on defence prosperity.

³ The five domains of conflict are: cyber, space, maritime, land and air.

1.4 Delivery progress and challenges

Progress

We have made substantial progress in delivery of our Equipment Plan through financial year 2017/18.

The Royal Navy saw the commissioning of HMS Queen Elizabeth, which also completed helicopter flying trials and the arrival in the UK of Royal Fleet Auxiliary Tiderace, Tidesurge and Tidespring for their final fit. These remaining three of the four Tide class tankers will provide replenishment at sea support to the Royal Navy, and particularly the Carrier centred Maritime Task Group. The first of our five new Patrol Ships, HMS Forth, joined the Fleet. Steel was cut for HMS Glasgow, the first of the new Type 26 Frigates.

The first of the Army's new family of Ajax armoured vehicles are about to progress through their final acceptance process before going into service. These multi-role armoured fighting vehicles will transform the Army's medium armour and advanced intelligence, surveillance, target acquisition and reconnaissance capability as part of the war-fighting division, including the new strike brigades.

A deal to provide 50 Apache helicopters through a Foreign Military Sales agreement with the US has been signed, this will provide the basis for the UK to maintain a battle winning attack helicopter that is aligned to and interoperable with our major Allies.

The RAF have continued upgrading and enhancing the Typhoon aircraft through Project Centurion. In tandem, F-35 Lightning (Lightning) delivered a further 12 of the 5th generation platforms, initially, to bases in the USA, while significant infrastructure work continued to prepare for the Lightnings' arrival at RAF Marham. Airseeker, which comprises three Rivet Joint reconnaissance aircraft, reached full operational capability ahead of schedule. Finally, as UK Defence further develops Space based capabilities, the RAF launched its first ever Intelligence, Surveillance and Reconnaissance (ISR) satellite, Carbonite-II.

Morpheus, the largest project in the Land Environment Tactical Communication and Information Systems programme, is progressing well as it works to deliver the next generation

tactical voice and data system for both current and future operations.

Joint Forces Command enhanced Cyber Resilience and Defence, and delivered Falcon, secure deployable broadband voice, data and video communications system early entry capability and the Naval Extremely High Frequency Satcom Terminal into the Astute and Trafalgar class submarines. Defence's Satellite Communications capability continues to be provided by the Skynet 5 private finance initiative.

The Submarine Delivery Agency placed the contract for the seventh Astute class submarine, to be named HMS Agincourt, and the second delivery phase of the Dreadnought programme, which will continue the build of the first of class and commence build of the second.

UK and overseas users are seeing the delivery of modern Information and Communications Technology (ICT) services through New Style of IT (Deployed), integrating user services, including voice services over the data network and Global Connectivity, as part of a new digital communications network.

Challenges

As would be expected in complex procurement and support programmes, variances to forecast cost or time can arise from a variety of sources including budget priorities, requirements change, technical challenges or opportunities encountered by the supplier, commercial and procurement processes, international collaboration, accounting adjustments and dependencies in associated projects. The following paragraphs provide detail on some of the challenges that arose in 2017/18 and are highlighted in the Project Performance Summary Table. Further information can also be found in the part 4 of this report. Costs presented here and in the Project Performance Summary Table are those of the approved Demonstration and Manufacture stages of the project, rather than the full 10-year cost of the project.

During 2017/18 the aggregate forecast costs increased notably on *Lightning* (£309m); *Protector unmanned aircraft* (£278m), *Astute Boats 4-7* (£199m), and *Queen Elizabeth Class Carriers* (£149m).

In the case of Protector and Astute, there were also delays to in-service dates as part of the wider management of the projects: Protector was delayed 24 months and Astute Boats 4-7 were delayed nine months. Other projects that saw in-service date delays include the *Warrior Capability Sustainment Programme* (13 months), *Sky Sabre* (8 months) and the *New Style of IT (Deployed) project* (6 months).

The financial impact in *Lightning* was predominantly the result of increases to the US foreign exchange rates. These increases were anticipated. They will be partly offset by the department's forward purchase cover and there is provision within the programme's approvals to cover them. The forecast cost of approved elements of the Lightning programme is still £588m under its aggregate approved value of £8,948m and is expecting to achieve its in-service date of December 2018.

Protector was re-baselined to meet directed savings measures for early years' funding which resulted in a reduction of £100m in 2017/18, a cost increase of £162m across the 10-years from 2018/19, and a delay to the programme of 24 months. Forecast costs over this period increased by a further £56m for foreign exchange movements and by £60m for an enhanced sensor fit to improve the capability. Despite these challenges, initial flight trials of Protector are progressing well. There will be a seamless transition between the current fleet of Reaper aircraft and the cutting-edge Protector.

Cost and schedule risk assumptions were reviewed and updated for the *Astute Boats* while the time variance is due to a combination of supplier performance and re-evaluation of the risks linked to boat delivery. The focus is on improving performance on the Reactor Line activity across all boats. In March 2018, improved commercial arrangements were secured on Astute Boat 7 which will insulate the Department against further cost increases. Lessons have been learned from early boat builds and are being applied to the remainder of the class. The historical problems on the Astute programme have been well-documented including in the recent NAO Landscape Review.

The *Queen Elizabeth Class programme* variation (£149m) is comprised of three elements. First, it reflects unavoidable cost growth that has arisen due to the Aircraft Carrier Alliance experiencing

schedule and technical challenges. Under the terms of the prime manufacture contract this is shared equally between the Department and Aircraft Carrier Alliance (£112m each). Second, it reflects additional funding secured for preparatory work supporting the integration of fast jets (£27m). The final contribution to the change is additional provision for risks (£10m). The Department continues to work closely with Aircraft Carrier Alliance to minimise scope for additional cost growth.

Cost increases to the Equipment Plan were partially offset across the portfolio by some sizeable cost savings, notably on the Apache Capability Sustainment Programme (£132m), Type 26 frigates (£104m) and Poseidon maritime patrol aircraft (£52m) which are the result of efficiencies identified and realised by the delivery organisation through transformation initiatives.

The *Warrior Capability Sustainment Programme* schedule is forecasting a delay of 13 months since April 2017 due to engineering and technical challenges in the Demonstration phase. The programme is also forecasting a cost increase of £62m, due to a revised estimate for manufacture costs, coupled with adjustments to inflation indices. The final cost and time for manufacture will not be fully understood until the Department concludes negotiations with the Prime Contractor.

The time variance for *Sky Sabre* is a result of risk management activity to separate equipment and training delivery rather than delivering in parallel. The delivery schedule remains challenging but is much more realistic than at Main Gate. Detailed oversight and effective senior responsible owner governance identified the misalignment issue early, which provided the opportunity to respond without increasing overall cost.

The overall performance of the *New Style of IT (Deployed) project* remains unchanged, with the key variance relating to a six-month delay to delivery. The delay is attributed to two principle factors: complexity of design and a shortfall in manning. However, the additional six months has been used to overcome the complexity of design and independent reviews have now confirmed that the design is fit for purpose. The Department is working to address the remaining issues around the recruitment of key individuals to fill highly specialist posts.

Part 2: Affordability and Financial Risk

2.1 Management of the Equipment Plan

Under the Defence operating model established in 2014, Head Office leads Defence by setting direction through strategy and policy, allocating resources and providing oversight.

Top Level Budget (TLB) holders are responsible for delivering outcomes agreed by Head Office within delegated budgets. Responsibility for managing the Plan is within this delegated authority. TLBs therefore set equipment procurement and support requirements and manage budgets across their portfolios to achieve these requirements.

TLBs with responsibility for the Plan are the four Front Line Commands of Navy, Army, Air and

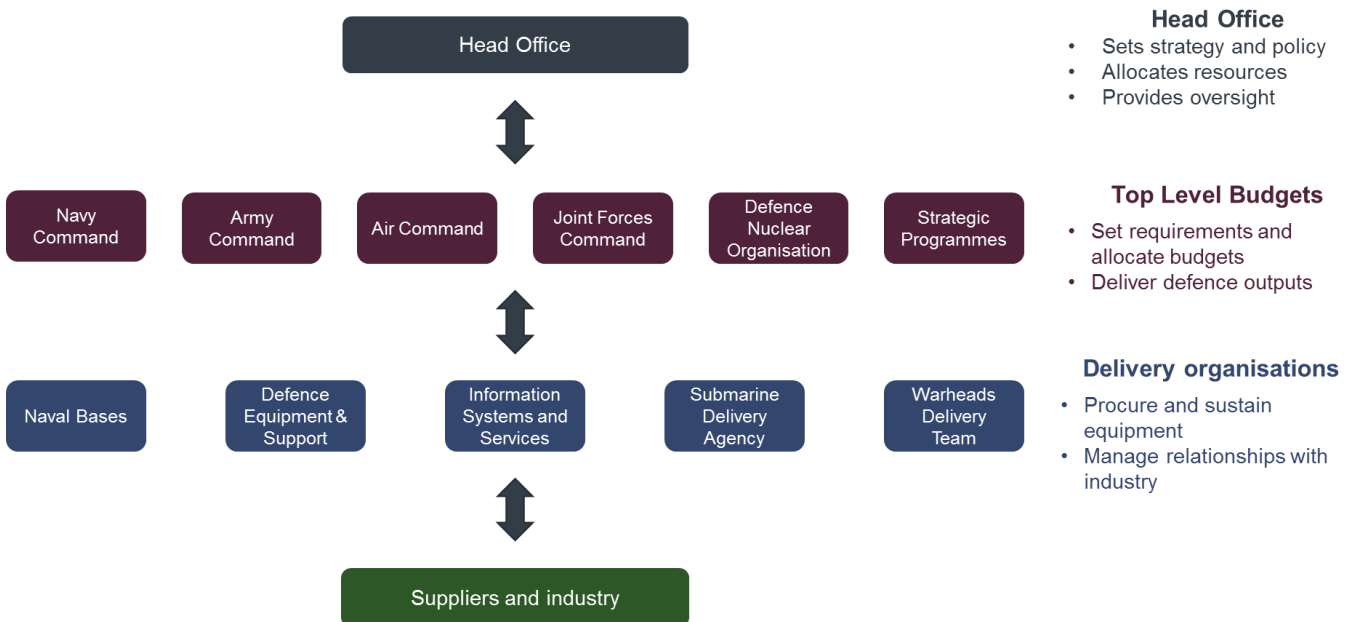
Joint Forces Commands; the Defence Nuclear Organisation and Strategic Programmes.

The Plan is managed in two parts: the Equipment Procurement Plan, which covers capital investment in Equipment, and the Equipment Support Plan, including support costs.

The Plan is delivered on behalf of the TLBs by delivery organisations with the expertise to manage relationships with industry and provide commercial advice to support TLBs decisions.

These delivery organisations are Defence Equipment and Support (DE&S), Information Systems and Services (ISS), Naval Bases, the Submarine Delivery Agency (SDA) and the Warheads Delivery Team. The Warheads Delivery Team is part of the Defence Nuclear Organisation (DNO), which was established formally as a TLB on 1 April 2018.

Figure 1: Illustration of the relationship between TLBs and delivery organisations



2.2 Cost forecasting for the Equipment Plan

TLBs are responsible for providing 10-year cost forecasts to Head Office for the Plan. These forecasts have two components:

- Forecasts generated and assured by delivery organisations, for projects delegated by TLBs; and
- Forecasts generated and assured by TLBs for elements of the Plan not delegated to delivery organisations.

Delivery Organisation Costed Plan. Project teams in the delivery organisations forecast costs using quantitative models to understand the range of possible outcomes. Cost forecasts used for budget planning and approvals are typically at a confidence level where there is an equal chance of outturn costs being above or below the forecast amount, known as 50th percentile costing. Other confidence levels are used when appropriate, for example some complex nuclear projects have used 70th percentile costing for forecasts to recognise the complexity of the programme.

Delivery organisations regularly review cost forecasts to provide assurance that current costings are realistic and that the level and profile of risk funding held within projects is appropriate. The review processes are closely linked to reviews of programme performance and allow budget holders to take mitigating action to keep within budget limits. This governance mechanism ensures that the cost of every project in the equipment plan receives assessment and oversight at senior level.

Project cost forecasts include the expected cost of risks that are assessed as more likely than not to materialise. These are known as “Risks Inside Costing”. At April 2018, the value of risks included in forecast costs was £11.3bn over the decade. Risks judged to be less likely to occur are not included in cost forecasts and are referred to collectively as “Risks Outside Costing”.

⁴ Delivery organisation costed plan is defined for this report as those projects not in Operating Centres ‘Corporate’ and ‘Miscellaneous’ which are used to report the TLB-costed parts of the Plan.

At April 2018, the total forecast cost of projects costed by delivery organisations⁴ was £180.9bn, including £11.3bn for risks.

This cost forecast is uncertain and so there is a risk of additional costs. The Department’s Cost Assurance and Analysis Service (CAAS), carry out an independent assessment of the cost of the Plan each year. Their estimate of expected outturn for the 10-years from 2018/19 was £3.0bn above project team cost forecasts⁵. Consequently, there is a plausible range for the forecast cost of projects costed by delivery organisations of £180.9bn to £183.9bn.

Budget-holder Costed Plan. Some projects or savings initiatives in the Plan are managed and costed directly by the principal budget holder organisations for the Equipment Plan, the TLBs. These costs are usually included to take account of initiatives that are less mature for which requirements have not yet been agreed with delivery organisations. TLBs also include cost forecasts to reflect judgements about risks, delivery realism and savings initiatives across their portfolios. The value of adjustments for delivery realism included by TLBs was -£3.0bn.

The total forecast cost of the TLB-costed element of the Plan at April 2018 was £14.6bn.

Efficiency Savings. The Department is aiming to achieve £13.4bn reduction in cost in the plan through efficiency initiatives over the 10-years from 2018/19. These targets are presented in detail in section 2.4.

The forecast cost of projects in the plan includes adjustments for efficiency measures that delivery organisations are confident will be achieved. The total expected efficiency delivery forecast by delivery organisations was £7.3bn over the 10-years from 2018/19.

In addition to these efficiencies already ‘realised’ in forecasts, delivery organisations expect to achieve further savings through new initiatives that are under development, but not yet mature enough to include in project forecasts. The total potential savings from efficiency initiatives in development is £4.1bn over the 10-years from 2018/19. The Department estimates that

⁵ Project team forecasts against which CAAS provides an independent view include risk provisions and delivery organisation management adjustments for realism, but exclude TLB-costed elements of the Plan.

approximately £2.2bn savings should be expected from these opportunities identified so far, bringing the total expected efficiency delivery over the 10-years of the Plan to £9.5bn against a target of £13.4bn (71% delivery). This figure is uncertain, with potential for over-delivery of up to £2.0bn and under-delivery of up to £2.2bn from these initiatives depending on the success of plans. Processes in place for identifying and developing new efficiency opportunities will add to expected delivery against this target over time.

Delivery realism adjustments. Both TLBs and delivery organisations adjust forecasts for an element of slippage to be expected across their portfolios of projects based on experience from previous years. These adjustments reduce the expected cost of the Plan.

These realism adjustments total £6.7bn over the 10-year Plan, of which £3.7bn is found in project forecasts and £3.0bn is in TLB cost forecasts.

TLB judgements of delivery realism are not subject to the same level of assurance as realism adjustments included in project forecasts. Assuming a plausible maximum variation of 50%, the associated variation in cost to be managed is +/- £1.5bn over 10-years.

Fuel and foreign exchange costs. The Plan includes forecast demand for US\$30bn and €6.2bn Euros. The effect of changes to fuel and

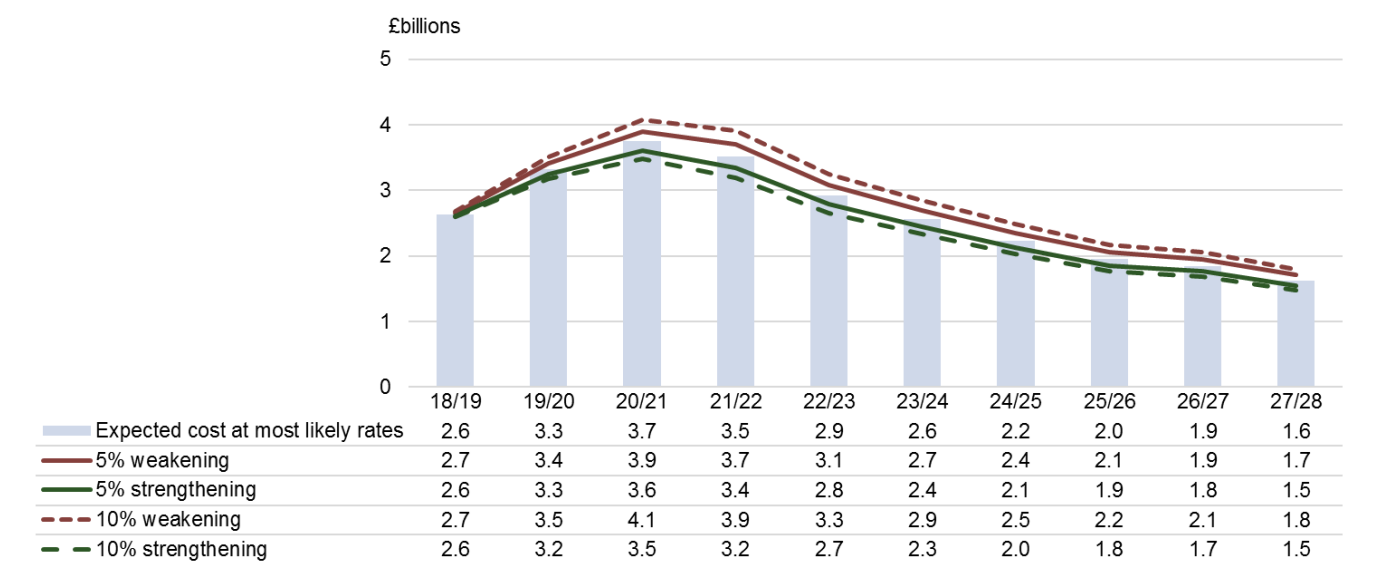
foreign exchange rates in the Plan is tracked and managed by Head Office. TLBs forecast their 10-year costs using assumptions set by Head Office at the start of each financial year. The difference in cost at the planning assumption rate and forecast rates is monitored in Head Office and funded from central provisions.

At April 2018, the expected cost of foreign exchange and fuel in the Plan was £30m lower over 10 years than at the planning assumption rates used by TLBs. This difference was held as a funding line by head office to ensure that the most likely expected cost could be fully funded.

Exchange rate changes present a risk to the affordability of the Plan. The Department manages this risk by securing prices for a proportion of this demand in the first three years of the Plan using a forward purchase mechanism provided by the Bank of England and HM Treasury.

Figure 2 illustrates the cost of foreign currency at forecast exchange rates at April 2018 and under different illustrative scenarios. The potential change in cost is reduced in the three years from 2018/19 due to the forward purchase cover. An illustrative 5% change in exchange rates over the period of the 10 years of the plan would change the expected cost of the Plan by around £1bn.

Figure 2: Expected cost of foreign currency in the Plan and sensitivity to changes in exchange rates



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Inventory costs. In 2017/18 the Department's budgeting treatment for Raw Materials and Consumables (RMC) was revised to align with the European System of National and Regional Accounts 2010. This has introduced additional costs to the Plan equivalent to the forecast difference between consumption and purchases of RMC. The Department has been given no additional budgetary cover for this change so costs must be met within existing budgets.

The total additional cost included in forecasts at April 2018 was £1.7bn over 10-years.

There is a significant degree of uncertainty in this figure as forecasting of inventory purchases was relatively immature in 2017/18. These forecasts are improving as system changes now allow the attribution of items to lead Commands.

The additional RMC cost is currently being managed by Head Office as the new ways of working are embedded. From April 2019, the costs will be delegated to TLBs, improving accountability and incentivising TLBs to more closely align purchases and consumption of RMC. This change is expected to reduce the additional cost over the longer term.

Expected cost of the Plan. At April 2018, a plausible range of 10-year costs for Plan was between £188.9bn and £201.2bn with a central estimate of £193.3bn (see Figure 3 and Figure 4).

Figure 3: Cost forecast, 10-year total

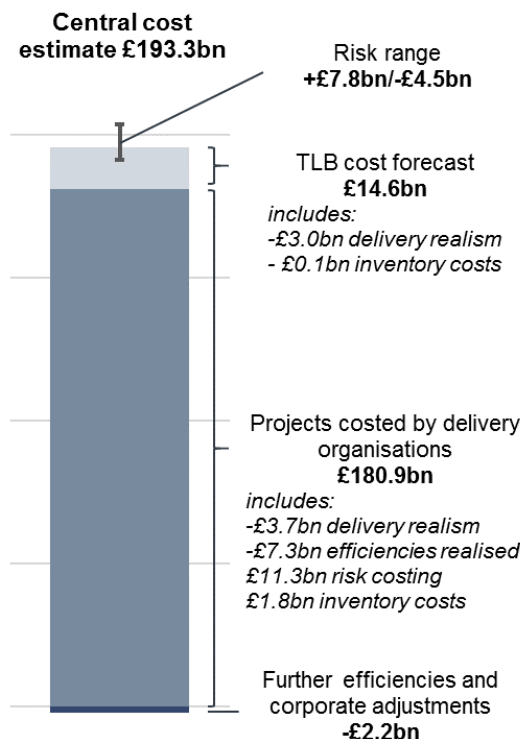
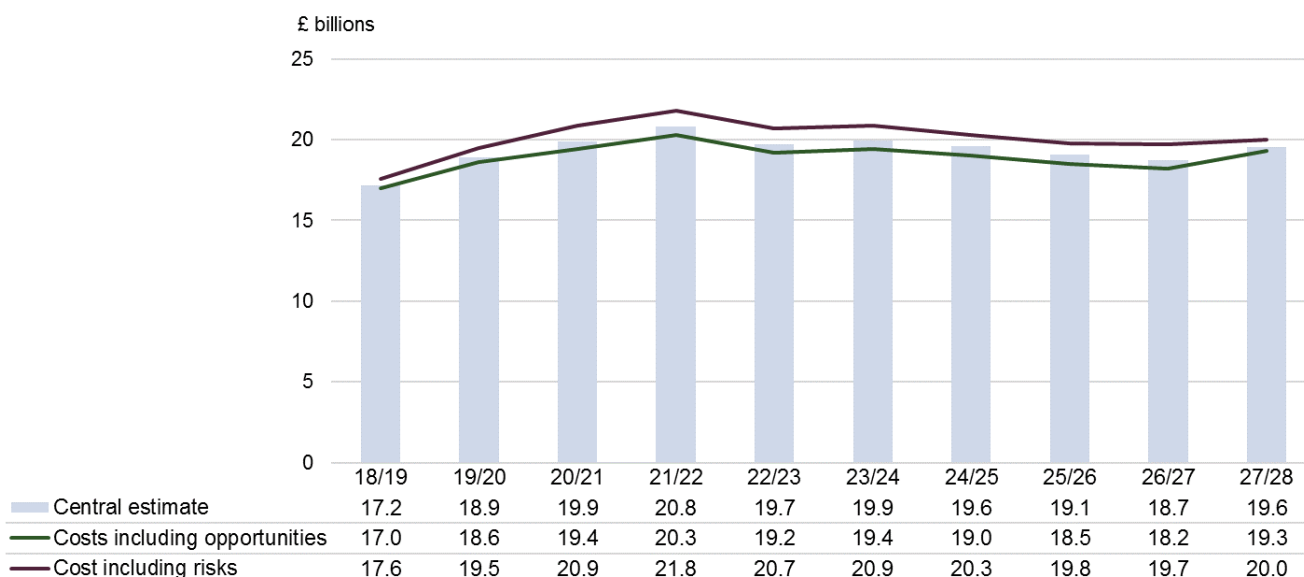


Figure 4: Cost forecast, 10-year profile



2.3 Allocation of Equipment Plan budgets

The Equipment Plan budget is set by TLBs and Head Office through the Department's annual financial planning process, known as the Annual Budget Cycle.

The Annual Budget Cycle enables Head Office to review financial and capability risk to delivery of the Department's strategic objectives, and agree changes to the programme needed to manage these risks. The process concludes with Head Office providing direction to TLBs, confirming TLB budgets for the forthcoming financial year and providing indicative 10-year budgets for planning.

Budgets for 2018/19 were allocated based on a realistic assessment of expected TLB spending, informed by analysis of financial risks, cost control measures and spending in previous years. Consequently, the allocated budget is less than the forecast cost of the Plan at the start of the financial year, which did not yet include adjustments for the changes agreed during budget planning.

TLBs determine the proportion of their expected 10-year budgets to allocate to the Equipment Plan, prioritising spending to deliver their outputs most effectively. Funding allocations are reviewed regularly based on evolving plans and priorities. Consequently, the budgeting position presented in this report will change as TLB plans mature.

Corporate contingency. Head Office allocates funding for the Equipment Plan to manage risks (referred to as contingency) and specific costs not budgeted for by TLBs (referred to as provisions).

Corporate contingency and provisions for the Plan at April 2018 were:

- £5.1bn equipment plan contingency;
- £1.1bn nuclear contingency⁶;
- -£30m provision to fund the difference in cost of fuel and foreign exchange at forecast prices (£248m for Euros; -£278m for US Dollars, <£1m for fuel); and

⁶ This contingency is managed by the Department and is separate to the £10bn Dreadnought contingency held by HM Treasury.

- £385m for additional inventory costs due to changes in budgeting treatment against a forecast cost of £1.7bn⁷.

In addition to contingency funding specifically allocated to the Plan, Head Office retains corporate contingency to manage financial risks across defence.

Dreadnought Programme contingency held by HM Treasury. Following a costing review by the Defence Nuclear Organisation, the Department was given access to up to £600m additional funding in 2018/19 from the £10bn contingency announced in SDSR15 for the Dreadnought Submarine Programme. This is additional to contingency funding already held by the Department.

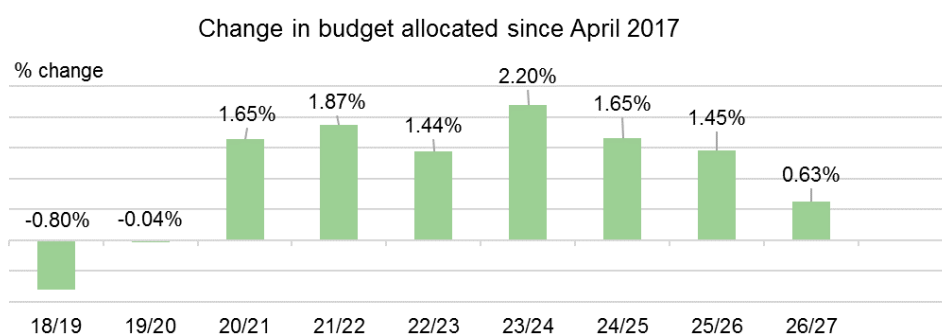
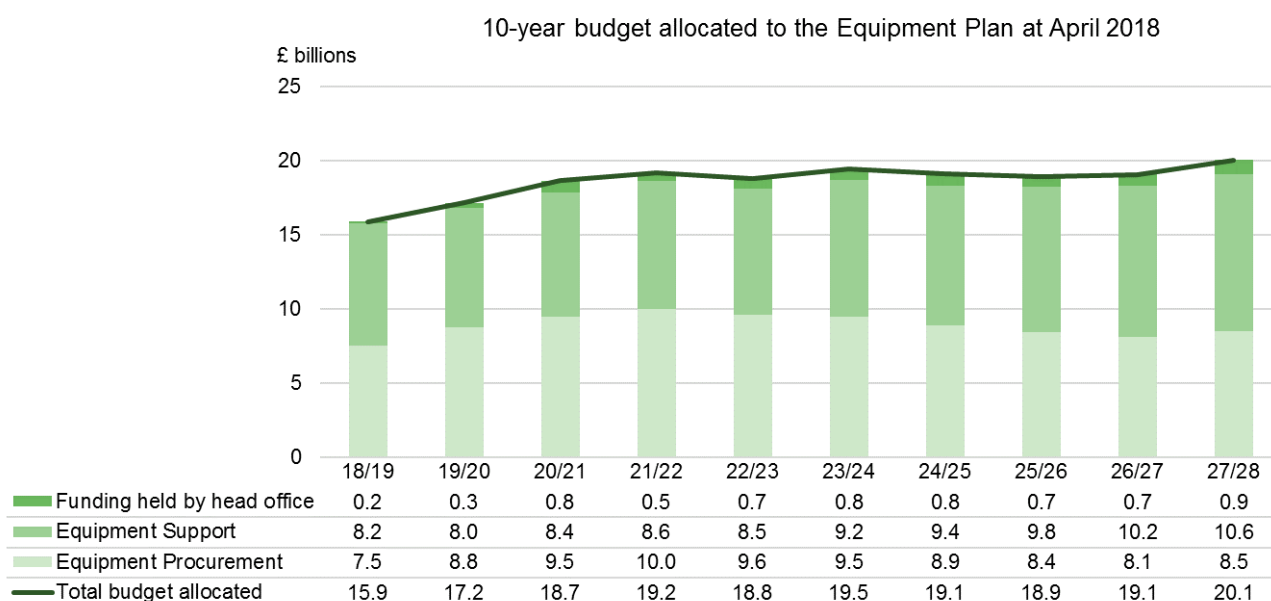
Including these contributions, at April 2018 the total funding allocated to the Plan was £186.4bn (see Figure 5). This compares with £179.6bn allocated to the Plan in the 10-years from 2017/18.

The budget allocated to the Plan is likely to change over the 10-years from 2018/19. Two sources of potential changes are:

- **Financial pressures in the wider Defence budget.** The overall Defence budget is under significant pressure as additional costs must now be managed within the budget agreed at Spending Review 2015. To ensure that defence spending remains affordable the department may need to reduce the budget allocated to the Equipment Plan.
- **Dreadnought contingency.** With access to up to £600m from the £10bn contingency for the Dreadnought programme in 2018/19, the Department can take opportunities to drive out cost and risk later in the programme, ensuring that the Dreadnought programme remains on track to deliver on time and within its £31bn forecast. It is possible that part of the remaining £9.4bn will be required over the 10-years from 2018/19 depending on circumstances.

⁷ Refer to section 2.2 for further explanation of the changes to budgeting treatment and the associated cost.

Figure 5: 186.4bn budget allocated to the Equipment Plan



Notes:

1. No value is shown for the percentage change in budget allocated for 27/28 as this year was not included in the 10-year Plan at April 2017.
2. Totals may not sum due to rounding.

2.4 Savings targets in the Equipment Plan

In December 2017, the Department adopted a new approach to delivering Equipment Plan efficiencies in which targets are 'pooled' to allow greater flexibility in how the efficiencies are delivered and reduce the risk of double counting. Targets were agreed between delivery organisations and TLBs in two categories referred to as Pool A and Pool B.

DE&S Transformation (Pool A). DE&S and SDA continue to deliver significant efficiencies through their comprehensive programme of transformation, designed to raise the skills and productivity of staff and introduce world-class systems for managing and controlling projects. They have been focused on embedding new ways of working, maturing new systems and driving best practice, all of which is focused on supporting the UK's Armed Forces and improving value for money on a sustainable and enduring basis.

The transformation target was set in Spending Review 2015 before the SDA became a separate entity. The original target was £1.2bn over the 5-years from 2016/17. This was extrapolated over the 10-years from 2018/19, increasing the target to £3.9bn. By April 2018, DE&S and SDA forecast delivery of £4.2bn with high confidence.

Consolidated Efficiency Target (Pool B). Several further efficiency targets were brought together to form a new consolidated target known as 'Pool B'. These included targets set in Spending Review 2015 such as the full 'Single Source Regulations Office savings' and 'Further Equipment Support Plan savings' targets, as well as the Equipment Plan facing portion of other initiatives. Equipment Support Plan efficiency targets set before Spending Review 2015 were also included in the consolidated target.

Over the 10 years from 2018/19, the total consolidated efficiency target is £7.3bn. By April 2018 the department forecast delivery of £1.9bn against this target with high confidence.

Further efficiency initiatives. Further opportunities to reduce cost through efficiencies have been identified but are not yet mature enough to

allocate to specific projects. These could achieve up to £4.1bn further reduction in cost if all proposals deliver in full. By April 2018 the Department expected to deliver £2.2bn of this total, reflecting lower confidence in delivering these measures in full. £1.3bn was attributed to DE&S Transformation and £0.9bn to the consolidated efficiencies target.

The Submarine Enterprise Performance Programme. The Department is working in conjunction with BAE Systems, Babcock Marine and Rolls-Royce Submarines to pursue improvements in efficiency, performance and long-term sustainability within the Submarine Portfolio. The Submarine Enterprise Performance Programme (SEPP) supports the acquisition and maintenance of submarines as well as delivering £879m of savings against the forecast cost of the submarine programme in 2010/11 over the 10 years to 2020/21. £711m of financial benefits have been delivered under SEPP to March 2018 and £168m further possible savings have been identified between March 2018 and March 2021.

Over the 10-years from 2018/19 the SEPP target is £1bn against which £0.6bn savings have been identified, leaving £0.4bn outstanding.

Complex Weapons Programme. The Complex Weapons Programme (CWP) includes an innovative approach to providing missile systems that was established in 2010 between the Department and MBDA UK Ltd. The initiative reduces costs by developing families of weapons based on the principles of commonality, modularity and re-use. Eight years into the programme, the CWP has so far realised efficiencies of £1.768bn (85%) against a 10-year target of £2.075bn. This is ahead of schedule and the Programme currently forecasts that it will achieve or exceed that target. This provides confidence that the £1.216bn⁸ net savings, which have been assumed in the CWP budget since 2010, will be achieved. CAAS has independently assured these efficiencies, providing substantial assurance that at least 95% of estimated values are realistic and achievable (or have already been realised)⁹, but notes that ongoing realisation remains subject to project performance delivery.

⁸ The CWP target is £2.075bn gross efficiencies, which realises £1.216bn actual savings after netting off the notional additional cost of single-source procurement from the benefits of the extant procurement strategy.

⁹ The level of assurance for the CWP is marginally lower than last year (95% vs. 99%) due to standardising the methodology by adopting an estimating maturity assessment based on Data Readiness Levels.

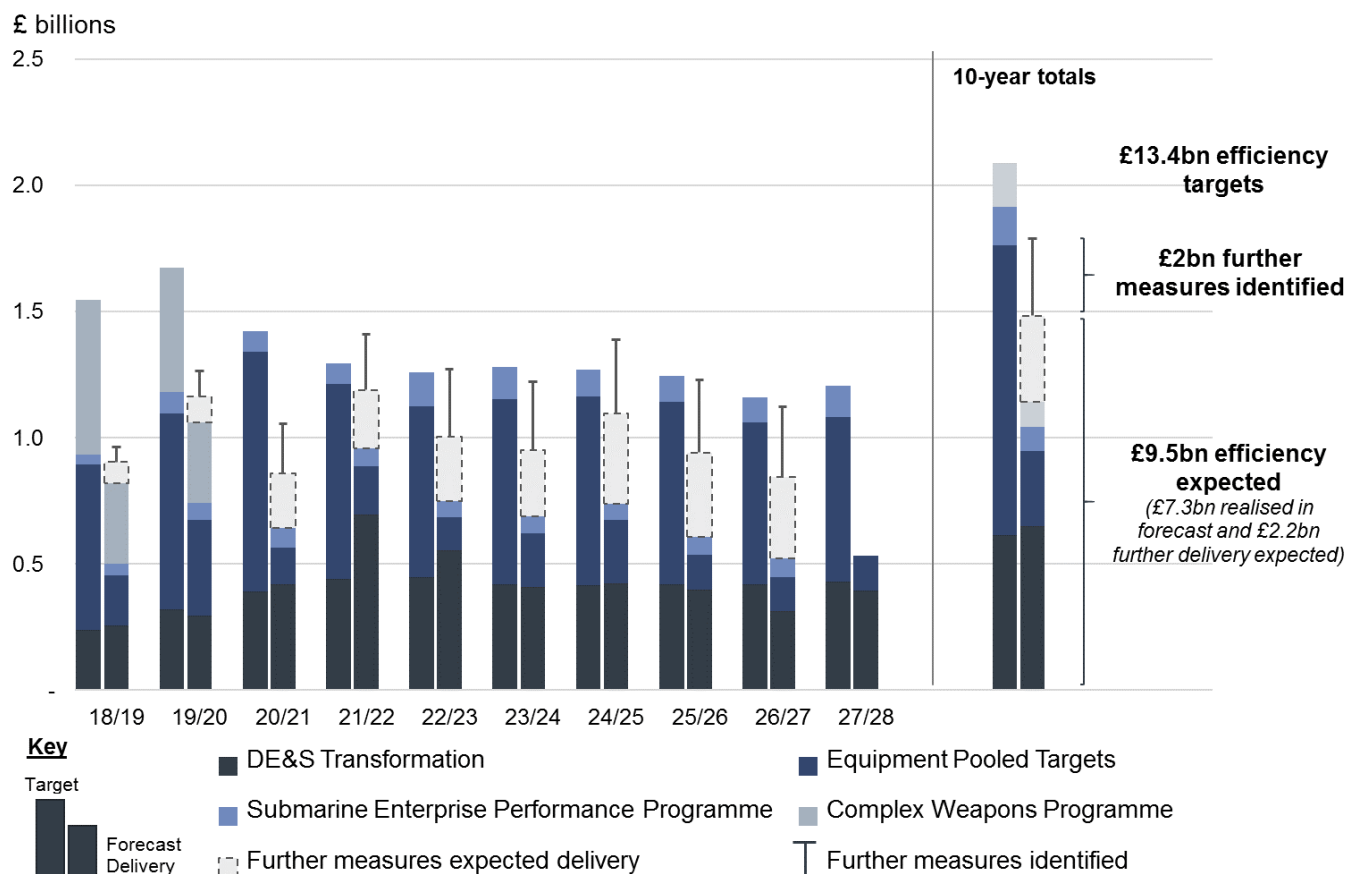
Figure 6: Summary of efficiency savings in the Equipment Plan

£ billions in the 10 years from 2018/19	Target	Efficiencies Realised	Further delivery expected	Total expected delivery	Remaining shortfall	Further measures identified
DE&S Transformation	3.9	4.2	1.3	5.4	-1.5	2.0
Equipment Pooled Targets	7.3	1.9	0.9	2.8	4.5	
Submarine Enterprise Performance Programme	1.0	0.6	-	0.6	0.4	-
Complex Weapons Programme ¹	1.1	0.6	-	0.6	0.5	-
Total	13.4	7.3	2.2	9.5	3.9	2.0

Notes:

1. The Complex Weapons Programme has delivered £2.4bn benefits against a target of £2.1bn over the 10 years from 2010/11. It contributes £0.6bn benefits in the first two years of the 10-year period of this Equipment Plan.
2. Figures may not sum due to rounding.

Figure 7: Efficiency savings targets and expected delivery over the 10-years of the Plan



Notes: The Complex Weapons Programme has delivered £2.4bn benefits against a target of £2.1bn over the 10 years from 2010/11. It contributes £0.6bn benefits in the first two years of the 10-year period of this Equipment Plan.

2.5 Assessment of affordability

At April 2018, the Department allocated £186.4bn funding for the Equipment Plan in the 10-years from 2018/19 against a forecast cost of the Plan of between £188.9bn and £201.2bn.

Over the 10-years of the Plan, the difference between planned budget and the expected cost was between £2.5bn and £14.8bn with a central estimate of £7.0bn or 3.7% of budget (see

Figure 8). The pressure is greatest in the four years from 2018/19, with annual variances to budget of between 6.5% and 10%.

In each of the past three years, the forecast cost of the Plan has reduced by 5-10% during the financial year through cost control and oversight (see Figure 9). In 2017/18 the Department managed a similar scale of pressure to that forecast for 2018/19 and delivered the Equipment Plan within the allocated budget.

Based on past performance, the Department expects a comparable reduction in cost to be achievable over the first three years of the Plan, but there remains risk to affordability.

The Department has therefore planned a further £4.3bn contingency funding to manage financial risks across the department. This funding has not been attributed to the Equipment Plan specifically and is intended to manage risks across the defence programme. While the full value of these provisions cannot be set against pressures in the Equipment Plan, they could be used if planned management action cannot drive down costs sufficiently while maintaining defence outputs.

The Department aims to deliver a more strategic approach to achieve sustainable affordability through the MDP. Over the longer term there remains more flexibility in both the Plan and the wider Defence programme to manage the risk to affordability. For example, about 70% of forecast costs over the 10 years are not yet contractually committed.

Figure 8: Equipment Plan affordability: variance to budget

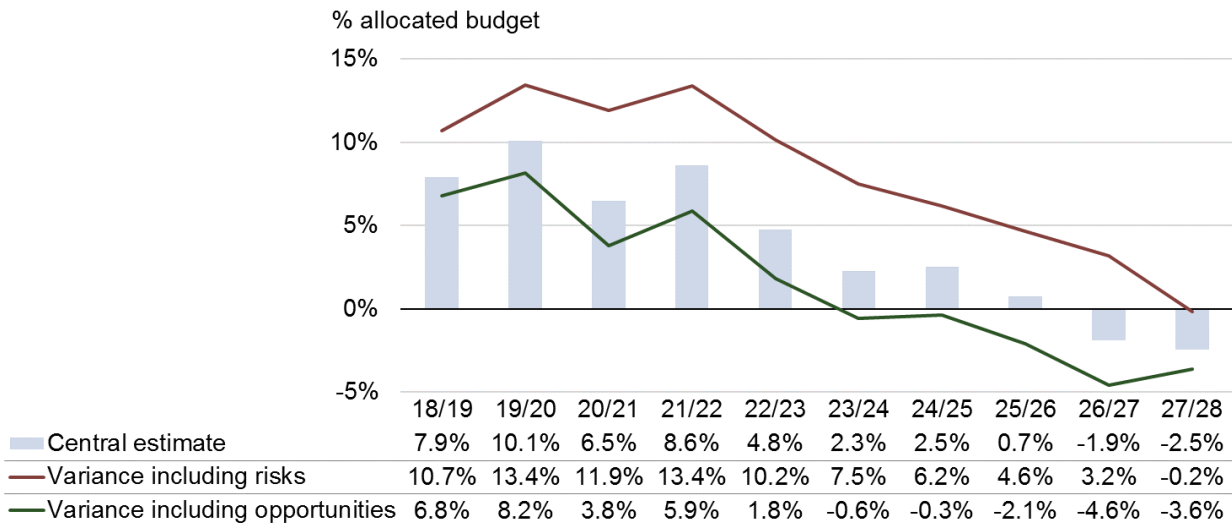
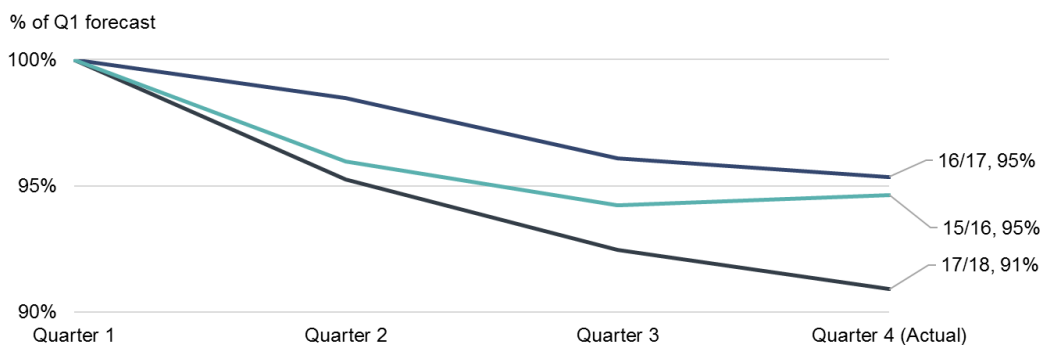


Figure 9: Equipment Plan in-year change in forecast since 2015/16



Part 3: Changes to management of the Equipment Plan

This Equipment Plan Summary is being published during a period of transformation, the full effects of which will be realised over several years. Multiple strands of this work will impact on how the Equipment Plan will be delivered, whether through updating the supporting structures and governance (including the acquisition process) or through changed behaviours sought through the new approach to change and efficiency across Defence.

3.1 Change in Head Office and TLBs

Driving greater efficiency

The Department recognises the need to improve how we transform and modernise Defence to find savings that can be re-invested in the front line. The Chief Operating Officer is driving forward a new approach to make Defence more efficient and productive, by reducing duplication and using modern business methods. The team's work is part of the efficiency and business modernisation work-stream of the MDP.

Reviewing our approach to equipment acquisition and support is an important part of this improvement. Building on recent successful achievements - such as DE&S Transformation - we aim to make further savings, including through better strategic supplier management and the introduction of modern logistic support systems.

Updated operating model

To reset and re-energise the way the Department is led, organised and managed, we are creating a stronger and more strategic Head Office. This stronger Head Office will reinforce the current structure which is based on central, clear strategic direction with delegation of military capability budgets and decision-making responsibility to the Services in the four Front Line Commands.

The Defence operating model will be updated to help crystallise the critical role Head Office plays ensuring the success of the overall Defence enterprise through: better-informed strategic direction and oversight; improved understanding of, and support for, the Commands and enabling organisations in the challenges they face; and a

firmer grip on the delivery of outputs, efficiency and business transformation.

We are also examining aspects of the operating model outside of Head Office. This includes the roles of, and inter-relationships, between the Commands and enabling organisations; developing the necessary governance to improve coherence and generate savings across Defence.

This work will be completed by March 2019 including publication of the Defence operating model accompanied by a fully updated version of How Defence Works.

Functional Leadership

Head Office has launched an ambitious programme to build the capability of the financial function and introduce a revised finance function operating model, which is consistent with the approach used across government. The Department will improve forecasting accuracy through a review of best practice and by examining ways to incentivise better outcomes. Work is also underway to improve management of costs and financial risk by understanding better the department's cost drivers and ensuring an evidence-based approach to over-programming and optimism bias assumptions. Further initiatives are reviewing approvals and asset management.

Commercial and project delivery functional strategies are also being implemented and will enable more efficient delivery of the Equipment Plan.

TLB led change

Across the TLBs preparatory work is underway to refresh operating models to align with changes to the Defence operating model while at the same time improving coherence in how they deliver collaboratively against their outcomes and objectives. This will be completed as soon as possible after the Defence operating model has been updated. Strategic reviews in Navy Command and Army Command are assessing how processes and governance structures can support senior reporting officers responsible for different programmes while Air Command has established a transformation programme to bring together its range of business change and efficiency programmes. Joint Forces Command are using the refresh of the operating model to

invest in strategy development, resource planning and performance management.

3.2 Change in delivery organisations

Delivery Organisations are now in place with the expertise needed to manage the complexity and breadth of the Equipment Plan.

Submarine Delivery Agency

The SDA was formally established as an Executive Agency on 1 April 2018, delivering against the government's commitment in the SDSR15 to create a dedicated submarine delivery body. The SDA leads on the procurement, in service support and decommissioning of all UK nuclear submarines.

Establishing the SDA reflects learning from other successful programmes of similar scale and complexity from elsewhere in government, which consistently demonstrate that a dedicated organisation with a single focus can make a major contribution to successful delivery. As an organisation focussing on delivering submarine procurement and support to time, cost and quality, the SDA has a clear line of accountability for successful delivery of the complex submarine programmes.

The Department has created the governance framework for the SDA, giving it freedoms to manage its workforce and to organise itself in accordance with delivery of its objectives. Specifically, these freedoms include: management of its workforce as necessary to meet business needs, within an agreed cost envelope; approval for some senior staff to be paid more than the senior salary cap set by HM Treasury, to attract the best people into these key roles; bespoke arrangements around Cabinet Office controls on external recruitment, redundancy and compensation, commercial transactions, use of training from Civil Service Learning, and consultancy. We also established the Dreadnought Alliance, a joint management team between the Department, BAE Systems and Rolls-Royce, to ensure that 'best for project' decisions are taken with the full agreement of all participants to address shortfalls; and put in place incentivised commercial arrangements.

Defence Equipment & Support

The MDP review of DE&S transformation found that there have been tangible improvements since the creation of DE&S. The key MDP recommendation, is to focus on DE&S interface with Head Office and the customer. This will be taken forward - in line with the review recommendation - by creating an empowered and appropriately resourced sponsorship function in Head Office reporting to the Chief Operating Officer. The sponsor will be in place by 1 April 2019 and lead further work to recast the performance measures against which DE&S is held to account, and its leadership and workforce prioritised to capture the longer-term outcomes Defence needs as well as the delivery of in-year targets. In addition, the Chief Operating Officer already has a seat on the DE&S Board to hold DE&S to account on corporate performance on behalf of Head Office.

The fundamental building blocks of the overall DE&S transformation are in place and the work is now on fully embedding these changes and establishing an environment of continuous improvement. DE&S transformation has already realised £3.3bn¹⁰ of benefits since 2015 exceeding the target of £2.9bn.

The process of managing DE&S transformation is achieved by developing a detailed yearly plan, identifying the expected outcomes and the activities required to achieve it. For each activity, specific milestones are established and progress against each is measured monthly, alongside overall programme progress in terms of schedule and cost performance indicators. The measures are reported monthly to the DE&S transformation committee and Corporate performance is also reviewed by the department's Head Office.

An example of this is costing accuracy, DE&S is now employing the project and cost performance capability provided by the investment in the DE&S 'P3M' toolset and establishment of the Project Controls function. Several exemplar projects have progressively proven the benefits of this investment, gaining access to greater volumes of industrial data to assess contractual performance and to optimise project performance through more integrated project management

¹⁰ As at 31 March 2018; based on DE&S (including SDA) Equipment Plan transformation target, i.e. from 2014/15 to 2023/24.

with industry. The experience built by these exemplars now sets the path for the remainder of DE&S. Costings are reviewed regularly by DE&S and its customers and independently by CAAS. Project costs are also thoroughly scrutinised by appropriate experts prior to each significant decision point on a project.

Information Systems and Services

ISS provides, operates and defends the core ICT Platform for Defence, delivers modern flexible, user-focused ICT services and manages Defence's electromagnetic spectrum.

ISS works in close partnership with customers and suppliers in developing products and services, which range from office ICT infrastructure for the Department, including the new MODNET platform with Office 365 suite of tools and Skype for Business, to cutting-edge cyber and information security capabilities, and battle-winning technologies such as the Falcon Early Entry Capability and communication systems to allow the F-35 to fly from the Queen Elizabeth Class carrier. ISS is also responsible for delivering pan-Defence ICT design, information security assurance, information policy, compliance and strategy.

Following Defence Transformation in 2014, ISS moved from DE&S into Joint Forces Command (JFC) in recognition of its role as a key enabler for Defence. Responding to Government policy to drive increased competition and deliver better value for money, the monolithic Defence Fixed Telephone System and Defence Information Infrastructure (DII) contracts were broken up and Grapevine 1, Global Connectivity and Integrated User Services contracts were created to provide the Department with modern, evergreen ICT, embodied by MODNET which has currently been rolled out to 100,000+ users across the Department.

Post-Transformation, ISS has continued to evolve. In the past year:

- The Defence ICT Design Authority has further taken shape, enabling ISS to take full control of the Department's enterprise design and greatly reduce vendor lock-in.
- The new Chief Information Officer and Chief Executive Officer ISS posts were created to enhance the control and governance of the Defence ICT portfolio and provide greater clarity of organisational purpose.

- At the start of 2018 further strides were made in addressing the challenge of ensuring suitably qualified and experience personnel through the ISS Sustain programme which is looking at ways to increase crown servant qualifications and experience and simplify and streamline the recruitment process.
- The ISS 'Improve' initiative is tackling continual improvement, removing impediments to efficiency, both in the live service environment and in the remainder of the business.

Looking ahead, 2018 will see a refocus on the ISS portfolio. Work is ongoing to produce an overarching plan for the delivery of the 'defence as a platform' services and enable ISS to move away from the DII/Atlas contract and further transform the capabilities that it delivered, in a phased approach. Wrapping in the work on MODNET Evolve, this approach will be applied to other areas of the ISS portfolio in future. Other areas of focus will include cyber defence and resilience: secure communications: cryptography and delivering our key projects.

3.3 Project Performance Summary Table

The Project Performance Summary Table (PPST) provides the details of the approval position and completion forecasts for cost, time and key user requirements. This year we have expanded the PPST table to provide further visibility on the impact of foreign exchange fluctuations and changes to the scope of projects. This maintains and builds on our commitment to Parliament to provide transparency for the delivery progress of our largest equipment projects.

It is worth noting that other sections of this report look at the overall 10-year forecast for a project which includes contractually committed costs, uncommitted costs and, where applicable, future phases of work. Consequently, a direct comparison cannot be made with approved Demonstration and Manufacture phase costs presented in the PPST at Section D, which are a specific cost and time proportion of the entire project.

Part 4: Sector Analysis

Since April 2013, responsibility for managing most the equipment budget has been delegated to TLBs, including the Front Line Commands. TLBs are responsible for delivering outcomes agreed by Head Office within their delegated budgets.

The TLBs allocate their equipment budget to the individual delivery organisation teams responsible for delivering equipment and support projects. In DE&S these project teams are grouped into 'Operating Centres' based on the type of equipment delivered. Figure 10 shows the breakdown of funding for the Plan by TLB and, separately, by the seven main DE&S operating centres, ISS and the SDA.

This section presents in detail the funding allocated by each TLB for the Equipment Plan in the 10 years from 2018/19. The budget allocation is also referred to as planned expenditure to reflect the Department's intent to ensure that costs are managed within the allocated budget. It is split into two major elements, the Equipment Procurement Programme (EPP) and the Equipment Support Programme (ESP).

This section also highlights achievements and milestones from the past financial year, and explanations of significant changes to allocated budget by TLB. Examples of project level cost and time variations that have occurred during 2017/18 are presented to illustrate the affordability and deliverability challenges of the Equipment Plan as a whole.

Figure 10: £186.4bn Equipment Plan funding allocated by TLB and Operating Centre

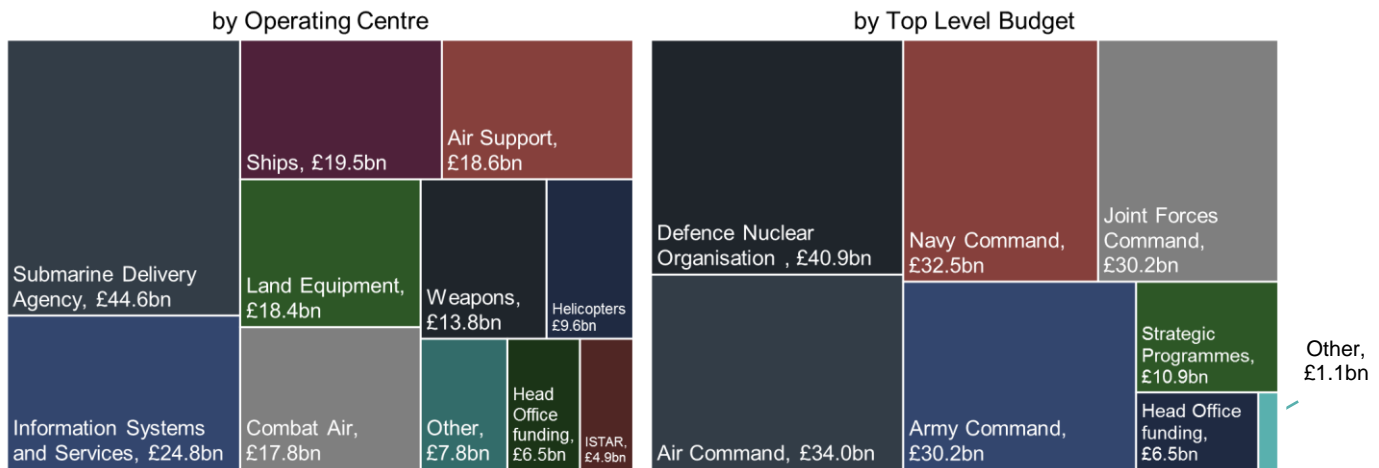
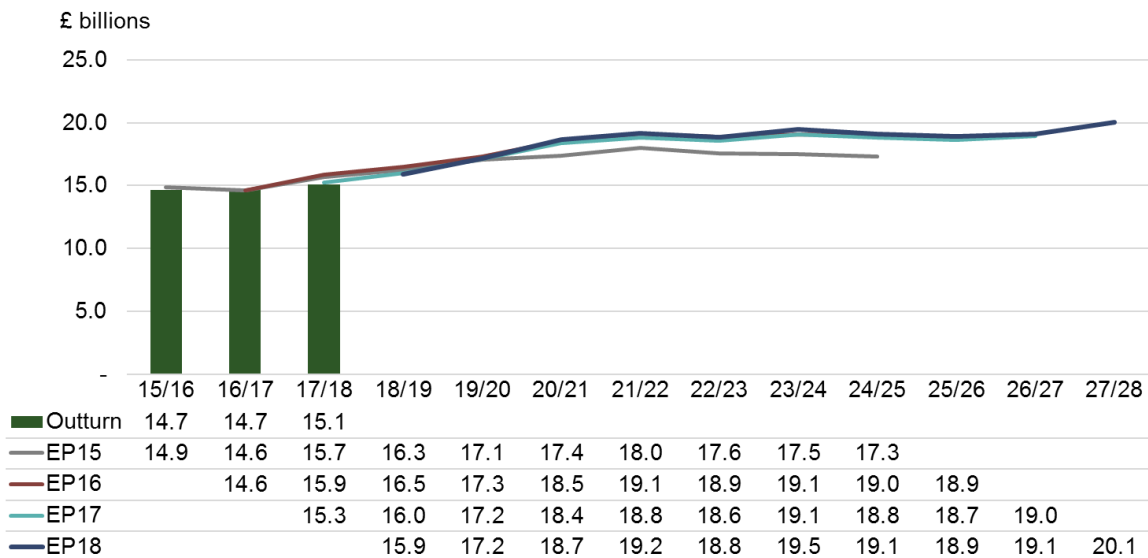


Figure 11: Allocated funding and outturn for the Equipment Plan since 2015/16



4.1 Navy Command

Navy Command currently plan to spend around £32.5bn in the Equipment Plan over the next ten years in comparison to £28bn at the end of the previous planning period (see Figure 12)¹¹.

This spend will cover surface ship and maritime helicopter upgrade and procurement, in service support of maritime platforms and programmes to improve the wider supportability and maintainability of equipment. This includes some aspects of submarine support and equipment delivery; however, most submarine programmes are now funded and delivered by the DNO.

Changes in planned expenditure

The major change in Equipment Plan forecast expenditure since April 2017 is due to the move of SDSR15 Investment Funding, totalling approximately £1.9bn, from support to equipment procurement lines, primarily as the procurement funding for the Fleet Solid Support ships for the Royal Fleet Auxiliary.

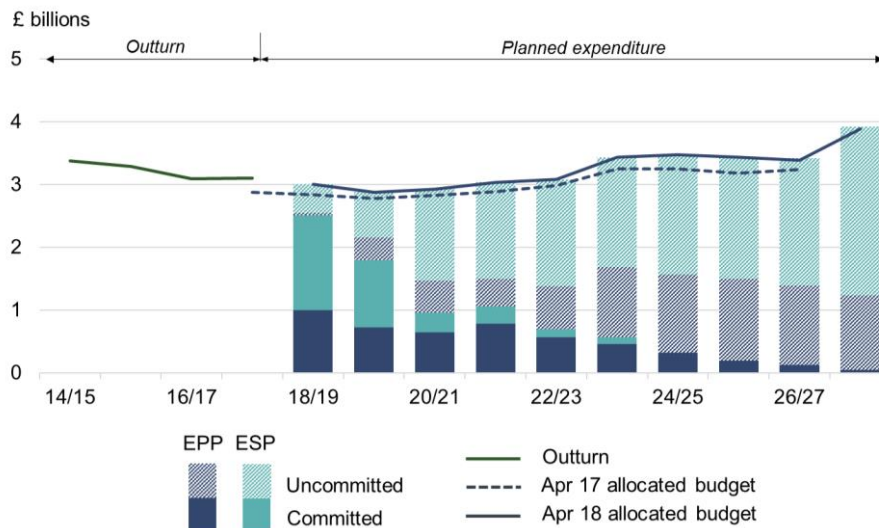
The other significant component is the £1.5bn funding received from Head Office to cover the purchase cost of the Type 31e Frigates¹². Both changes create an increase across the period of

the plan, but for both the bulk of the uplift is in Financial Year 2023/24 and later.

Navy Command is responsible for:

- Completion of trials activity for HMS Queen Elizabeth and the continuing build and acceptance of HMS Prince Of Wales as we move towards the first operational deployment of the Maritime Task Group in 2021.
- Continued development and initial build of the class of eight Type 26 Global Combat Ships as the replacement for the Anti-Submarine Warfare variant of the Type 23 Frigate.
- Development, procurement and delivery into service of a new class of initially five Type 31e Frigates to replace the General Purpose variant of the Type 23 Frigate.
- Completion of the build, trials and acceptance of the class of four Tide class tankers for the Royal Fleet Auxiliary, to provide Replenishment At Sea support to the Royal Navy, and particularly the Carrier based Maritime Task Group.
- Design and procurement activity for a new class of up to three Fleet Solid Support ships for the Royal Fleet Auxiliary, to deliver solid stores and ammunition Replenishment at Sea.

Figure 12: Navy Command Equipment Plan outturn and allocated budget



Notes: The total allocated budget shown from 2024/25 is lower than the total of the components shown in the bars due to negative values for the committed ESP during this period (24/25: -£10m, 25/26: -£9m, 26/27: -£28m and 27/28: -£41m)

¹¹ The allocated budget at Apr 17 shown here excludes funding for equipment investments held in the Navy TLB Plan.

¹² The Department is planning for a cost of £250 million per platform and a further allocation of £250 million for non-platform specific acquisition programme costs.

- Completion of the build and acceptance of a class of five new Offshore Patrol Vessels.
- Initial development work on locating, identifying and neutralising maritime mines, using unmanned autonomous systems.
- Delivery of a new class of Airborne Early Warning and Control helicopters, based on the Merlin airframe.
- Completion of the upgrade and life extension of the Spearfish Heavyweight Torpedo, to ensure our submarine force retains an effective weapon against all threats.
- Development and implementation of a new industrial and contractual arrangement for warship maintenance and support activity in Naval Bases, aimed at delivering significant efficiencies, simplifying governance and allowing increased opportunity for Small and Medium Enterprises, while providing the quality and flexibility of support required for the future maritime force.

Equipment Support 2017/18

During 2017/18 the Royal Navy:

- Conducted three major deployments to the Asia Pacific region in support of wider government aims, including short notice deployment of HMS ALBION with a Royal Marines Task Group.
- Maintained delivery of our standing tasks, including Continuous At Sea Nuclear Deterrent, permanent presence in the Arabian Gulf, Falkland Islands, Diego Garcia and Gibraltar, as well as home waters roles covering border protection, maritime counter-terrorism and fisheries duties.
- Completed work on the new naval support facility, Jufair, in Bahrain, providing improved support to the permanent Frigate/Destroyer and Mine-Counter Measures Vessel presence in the region under Op Kipion.

Equipment Procurement 2017/18

During 2017/18 we:

- Achieved delivery, acceptance and initial sea trials of HMS Queen Elizabeth.
- Achieved Main Gate approval and placed a contract for the build of the first three Type 26 Frigates, with build commenced for the first ship, HMS Glasgow.
- Accepted the first of the Tide class tankers, RFA Tidespring, into service and accepted

ships 2 and 3, Tiderace and Tidesurge off contract.

- Implemented the Royal Navy aspects of the National Shipbuilding Strategy, setting up internal governance and structures which will support the delivery of future surface ships in line with the new 30-year plan between Defence, wider government and industry.
- Completed delivery of the Wildcat maritime helicopter, replacing the Lynx helicopter in all maritime roles.

Risks to affordability or delivery

The Queen Elizabeth Class programme is now in its later stages, however there have been some further increases in build costs despite industry incentivisation and additional small increases cannot be ruled out even with the ongoing close control of the programme.

The Type 26 Frigate programme remains on track to deliver within contract, although early engineering issues have absorbed some schedule float. The selection of Type 26 by Australia to meet their SEA5000 requirement will provide positive benefit and likely reduce cost of ownership in the longer term, however in the short term there will be some costs associated with resourcing the necessary inter-government arrangements.

Due to its novel competition approach of fixed vessel build costs, but variable capability delivered, the Type 31e acquisition has no direct affordability challenges. However, the future support costs remain to be determined subject to competition responses, as does the value for money of the industry proposals once received.

UK industrial capacity in complex warship and submarine building is limited, and key elements are close to their perceived maximum capacity based on the forward maritime equipment plan. This introduces tight inter-programme dependencies and risks, though the National Shipbuilding Strategy goes some way to mitigate these. Similarly, the shift of focus back to generating multi-vessel Maritime Task Groups, rather than regular single ship deployments, has the potential to challenge the current maintenance and support arrangements, including industrial capacity. Navy Command is working closely with both suppliers and service providers to better understand and manage these potential risks.

4.2 Army Command

Army Command plan to spend around £30.2bn on the Army’s Equipment over the next decade in comparison to £29bn at the end of the previous planning cycle (see Figure 13).

Changes in planned expenditure

There has been a minor cost increase over the comparable years of the programme since April 2017 (+0.5%) due to the cost of project reprofiling namely in Warrior Capability Sustainment Programme as identified in the Project Performance Summary Table.

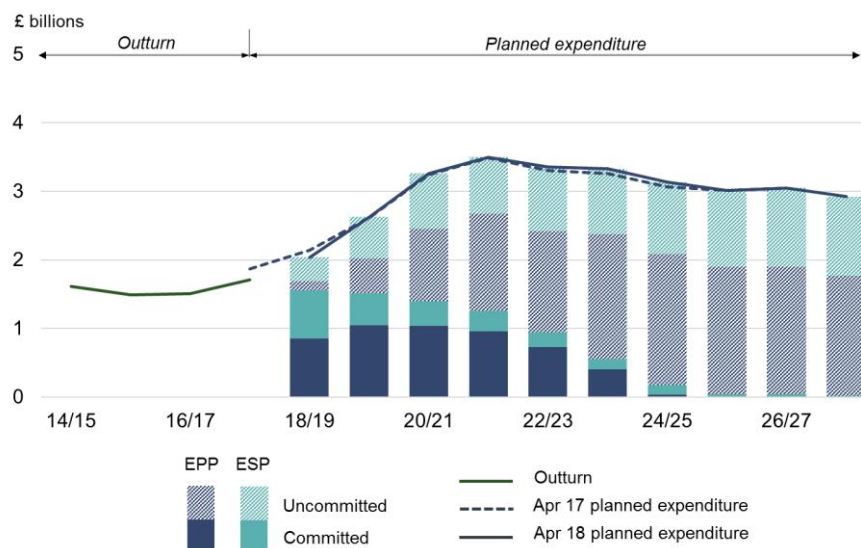
Army Command is responsible for:

- the delivery and support of armoured fighting vehicles;
- artillery systems;
- protected and support vehicles;
- helicopters;
- unmanned air systems;
- operational infrastructure;
- soldier fighting systems; and
- training solutions in the Land and Special Forces domains.
- Intelligence, surveillance, target acquisition and reconnaissance (ISTAR) and communications capabilities whilst pivotal to the Land Environment are largely funded and delivered by Joint Forces Command.

This includes:

- The new multi-role Ajax armoured fighting vehicle programme, which will transform the Army’s medium armour and advanced ISTAR capability as part of the war-fighting division, including the new Strike brigades.
- The Mechanised Infantry Programme, which will deliver a fleet of 8x8 Mechanised Infantry Vehicles to equip the Army’s new Strike Brigades (announced in SDSR15), as part of Joint Force 2025.
- The Warrior Capability Sustainment Programme, which will deliver a fleet of upgraded Infantry Fighting Vehicles, the corner stone of the modernised Armoured Infantry brigades. The Capability Sustainment Programme includes enhancements to lethality as well as survivability and improved situational awareness.
- The Challenger 2 Life Extension Programme, which will address platform obsolescence as well as extending the life of the platform from 2025 to 2035.
- the Joint Light Tactical Vehicle programme delivering a family of adaptable, protected general purpose vehicles for command and logistics.
- The Apache Capability Sustainment Programme, which will provide the basis for the UK to maintain a battle winning Attack Helicopter that is aligned to and interoperable with our major allies.

Figure 13: Army Command Equipment Plan outturn and allocated budget



- The Chinook Capability Sustainment Programme, which will provide a UK heavy lift capability replacing the current fleet over the next two decades as the current fleet becomes obsolescent.
- Support to our existing fleets, including land vehicles, helicopters and soldier systems.

Equipment Support in 2017/18

During 2017/18 we:

- Deployed and sustained equipment in support of UK operations and commitments overseas. This included the enhanced forward presence in Poland and Estonia, significant support to Iraq and Afghanistan, numerous smaller operations in Africa, the response to two major terrorist incidents in the UK and supported the civil authorities with equipment during the nerve agent attack in Salisbury and by deploying troops in support of flooding and storm damage.
- Held equipment at readiness to support new operations, including bringing an Armoured Infantry Brigade to high readiness which along with Headquarters Allied Rapid Reaction Corps, has formed the basis of our contribution to the NATO Readiness Force as the framework for the multinational Very High Readiness Joint Task Force (Land) throughout 2017. In early 2018 the Army also took on responsibility for Supreme Allied Command Europe's Strategic Reserve Force Battlegroup for operations in the Baltics.
- Negotiated a contract extension for continued provision of Apache Training achieving efficiencies of circa £19m.
- Placed a follow-on support arrangement for continuous support of the Puma platform out to 2022 saving £12m.
- Renegotiated five land equipment contracts (including contracts for SA80 and AS90) which are set to deliver £65m of efficiencies out of a scope of £401m (16%) over 10 years.

Equipment Procurement 2017/18

During 2017/18 we:

- Achieved a significant technical milestone with initial Live Firing of the Ajax Turreted variant at the Pendine trials ranges. Ares vehicles arrived from Spain at General Dynamic's new production facilities in Merthyr

Tydfil in April 2017 and were subsequently used to validate delivery procedures for the Army and assist in the training of Army Instructors.

- Gained approval for the Mechanised Infantry programme to be delivered via Occar as part of the Boxer programme.
- Continued with the production of 11 Warrior Capability Sustainment Programme Demonstration Vehicles.
- Awarded the Challenger 2 Life Extension Programme competitive assessment phase contracts to BAE Systems and Rheinmetall GmBH.
- Agreed a price with the US government for the first 38 Apache AH-64E helicopters as part of the Apache Capability Sustainment Programme agreement which secured £246m in efficiency savings.
- Delivered three rapid erect shelters to support operations in Mali.
- Achieved initial operating capability of the Chinook air collision avoidance system.
- Achieved release to service certification for the Chinook Mk6A aircraft.
- Regenerated and returned 29 operationally damaged Heavy Equipment Transporters to the user, at a saving £11.8m over a new procurement.
- Finalised a £56m contract to convert 382 15 tonne support vehicles to the Enhanced Palletised Loading System.
- Delivered 5000 SA80 A3 rifles to the Army.
- Delivered 80 small arms low level sight systems, signifying a step change in capability.

Risks to project affordability or delivery

The key risk to project affordability and delivery is within the Warrior Capability Sustainment Programme which is currently forecasting a delay in the Demonstration Phase which creates inflationary cost growth in the Manufacture Phase.

4.3 Air Command

Air Command plan to spend around £34.0bn on the Equipment Plan over the next decade in comparison to £32.2bn at the end of the previous planning period (see Figure 14). However, this is principally due to the transfer of the Poseidon Maritime Patrol Aircraft funding responsibility from Joint Forces Command to Air Command.

Changes in planned expenditure

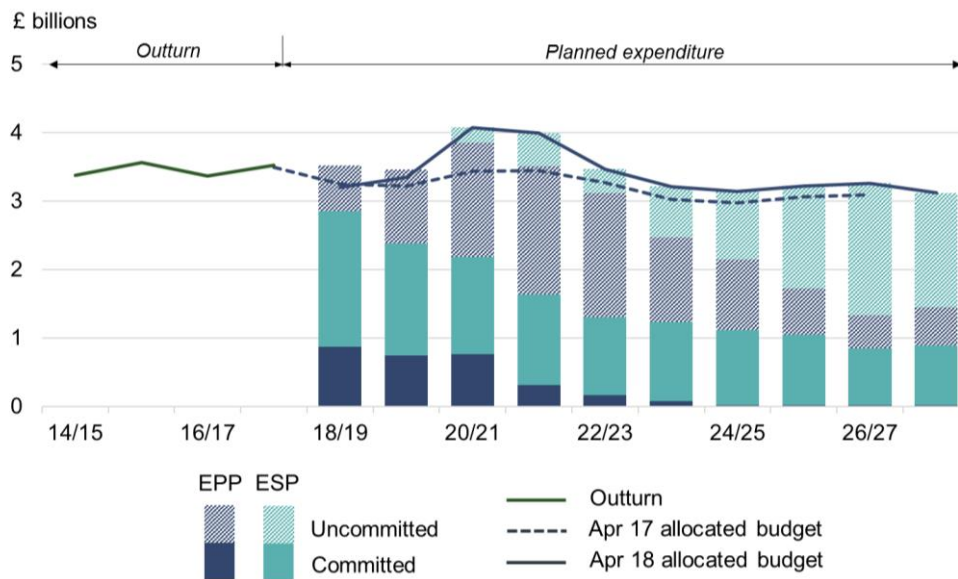
The Air planned expenditure has increased since April 2017. This is due to the inclusion of the Poseidon Maritime Patrol Aircraft (£2.4bn) which transferred from JFC. Air Command is responsible for three major sectors:

- Combat Air, which covers fast jets including the Future Combat Air System, weapons and synthetic training systems.
- Air Mobility and Air Enablers, which covers all large transport and air-to-air refuelling aircraft, air platform protection, and training aircraft (as part of the UK military flying training system).
- Command, Control, Intelligence Surveillance and Reconnaissance, which covers large ISR aircraft, remotely-piloted aircraft, and a broad range of equipment associated with communications, radar, air traffic management and tactical data links.

This investment includes:

- Growing the number of Typhoon squadrons by two, which includes a Joint UK/Qatari Typhoon squadron realised through the Qatar Typhoon Export deal.
- Ongoing support to the Typhoon Centurion programme, which includes increasing the range of weapons the aircraft can utilise.
- Enhancing Typhoon's radar capability and survivability to significantly improve operational effectiveness in the very challenging war-fighting environment.
- Delivery of an advanced synthetic system to enhance Typhoon's operational advantage.
- Promoting prosperity and capability reinvestment through Typhoon exports.
- Continued delivery of the Lightning programme as it progresses towards Initial Operating Capability in December 2018; with Initial Operating Capability (Maritime) scheduled for December 2020.
- Continued progress on the Protector Unmanned Air System programme, the replacement for Reaper, which is on schedule to deliver in the first half of the next decade.
- Using emerging synthetic technology to enhance training for frontline crews until 2033.

Figure 14: Air Command Equipment Plan outturn and allocated budget



Notes: The total allocated budget in 2018/19 and 2019/20 is lower than the total of the components shown in the bars due to negative values for the uncommitted ESP in 2018/19 and 2019/20 (18/19: -£319m and 19/20: -£111m)

- Continued investment in the A400M strategic and tactical air transport aircraft.
- Ongoing capability enhancements to the A400M, C130J and C17 fleets.
- The purchase of two additional Shadow aircraft.

Equipment Support in 2017/18

During 2017/18 we:

- Completed the construction of a bespoke High-G Centrifuge building at Royal Air Force Cranwell, installing the main centrifuge mechanism in March 2018, a programme which will significantly improve fast jet pilot training.
- Doubled the capacity of Typhoon synthetic training available at Royal Air Force Lossiemouth.
- Deployed A400M on operations for the first time.
- Down-selected the industry bidders to support the delivery of Air Support to Defence Operational Training, which will deliver aircraft and synthetics to provide training to all three Services from 2020.

Equipment Procurement 2017/18

During 2017/2018 we:

- Took our total number of Tranche 3 Typhoon aircraft delivered to 32.
- Under Project Centurion delivered upgrades to Typhoon missile systems, aircrew mission systems and enhanced aircraft survivability.
- Took ownership of the Lightning Operations Centre at Royal Air Force Marham, which was officially opened by Her Majesty The Queen in February 2018.
- Reached elementary flying training initial capability in March 2018 utilising the new Prefect aircraft, with full capability expected in Summer 2018.
- Achieved full operating capability for Airseeker.
- Started construction on the Poseidon maritime patrol aircraft Mk 1 strategic facility at Royal Air Force Lossiemouth in preparation for the first aircraft being delivered in 2019.

- Let a contract with IBM, under Programme Guardian, to replace the ground-based air command and control systems for the UK and Falkland Islands.
- Restored a ground-based air defence radar capability at Saxa Vord, Shetland Islands, under Programme Tartarus, in February 2018.
- Invited industry to negotiate on the Defence Operational Training Capability (Air) programme with the intent to award the contract in 2019.
- Continued to develop a new emergency locator beacon which can be activated automatically, communicate with the array of search and rescue satellites from anywhere on the globe, and be homed to by rescue aircraft.
- Continued to deliver several chemical, biological, radiological and nuclear (CBRN) projects for the whole of Defence on behalf of Joint Force Command.
- Upgraded sensors on our helicopter fleet to deliver an enhanced common missile warning system which increases the ability to detect hostile threats.
- Integrated a replacement system to improve the ability of selected Joint Helicopter Command aircraft to detect radio frequency threats.

Risks to project affordability or delivery

Air manage numerous programmes with large requirements for foreign currency including the Lightning programme. Foreign exchange rate fluctuation is therefore a major budgetary risk.

The Lightning programme has progressed F-35B propulsion systems procurement cost reductions through contract negotiations by 3.39%. The F-35 Joint Program Office awarded Lockheed Martin the US Financial Year 18 Annual Sustainment contract valued at \$1.44bn, resulting in a 12% reduction in operations and sustainment costs over the previous contract.

4.4 Joint Forces Command

JFC plans to spend around £30.2bn on the Equipment Plan over the next decade in comparison to £31.4bn at the end of the previous planning period (see Figure 15).

Changes in planned expenditure

The change in forecast expenditure since April 2017 is driven primarily by the transfer of the Poseidon Maritime Patrol Aircraft funding from JFC to Air Command.

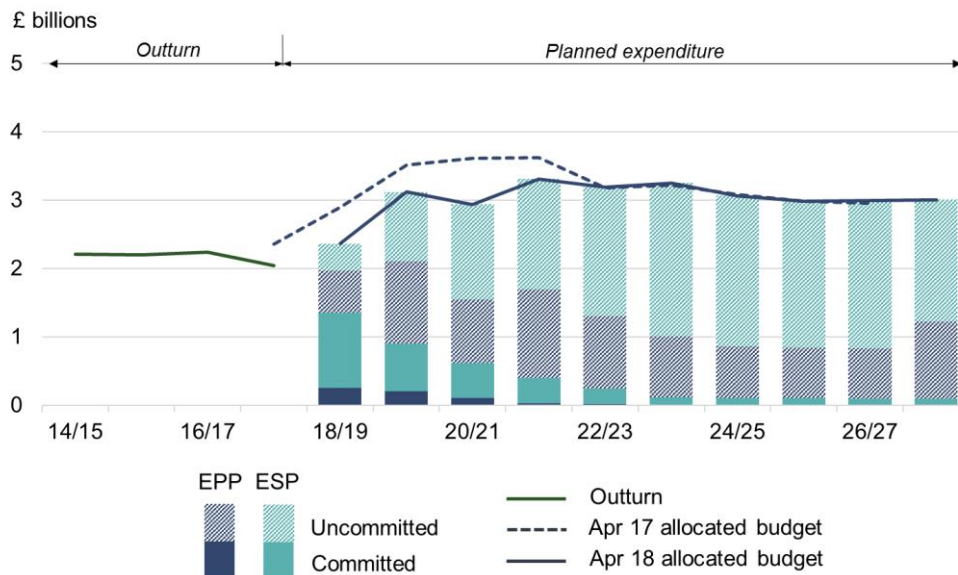
JFC is responsible for four major sectors:

- C4ISR, which covers Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance systems and capabilities in both operational and business environments.
- Special Projects, which includes procurement for UK Special Forces.
- Joint Logistics, which covers the procurement of pan-Defence logistics systems and capabilities to support Defence operations and activities.
- Medical, which covers the procurement of medical operational capabilities, to minimise disease, injury and death in all operational environments.

This investment includes the development and delivery of:

- Resilient Command, Control, Communications, Computing and Information capabilities. These capabilities encompass: Defence’s core ICT system, user services (e.g. telephony) and networks; logistics information systems; operational information systems, which are interoperable with our closest allies; and tactical information systems to support operations and activity in the land environment.
- The current UK military satellite network and the UK’s future military satellite capabilities.
- Defence’s cyber capabilities.
- A range of Intelligence Surveillance and Reconnaissance ‘Collect’ capabilities, including the Protector remotely piloted air system (with Air Command) and rotary wing aerial surveillance capabilities.
- A sovereign cryptography programme with GCHQ, to sustain Defence cryptographic capabilities and the UK’s ability to encrypt and decrypt information.
- Special Forces counter-terrorism and other equipment capabilities, to enhance their ability to operate and strike globally on their own or with our closest allies.

Figure 15: Joint Forces Command Equipment Plan outturn and allocated budget



- Joint force protection capabilities, particularly in CBRN defence and electronic countermeasures, for UK forces on operations.
- A range of joint logistics enabling capabilities, such as contracts for food to support military activity in the UK and overseas and the provision of fuel across all military environments.
- A range of medical equipment capabilities to support military activity and operations.

Equipment Support 2017/18

During 2017/18 we:

- Continued to support the in-service 'Skynet 5' military satellite network.
- Continued the roll-out of modernised and more cost-effective core ICT capabilities across Defence under the 'MODNET' and 'Integrated User Services' programmes and the upgrade of Defence's core ICT network under the 'Global Connectivity' programme.
- Secured further approval to sustain in-service Defence cryptographic capabilities, and for the first major package of work with GCHQ on future capabilities.
- Re-negotiated contracts to sustain core Defence logistics ICT capabilities until the transition to future contracts.
- Implemented new, more cost-effective contracts for UK and overseas under the Defence Food Programme.
- Continued to develop the New Style of IT (Deployed) programme to replace legacy operational information systems, in advance of the deployment of the new capabilities across military environments from 2018/19.
- Delivered enhancements to the UK Armed Forces' ICT interoperability with Allies, including collaborative working environments through the ICT 'Gateways' programme.
- Undertook an increasing number of investigation into potential cyber vulnerabilities across Defence, as part of an enhanced Defensive Cyber Operations programme.

Equipment Procurement 2017/18

During 2017/2018 we:

- Delivered secure deployable broadband early entry capability under the 'Falcon' project, part of the wider Land Environment Tactical Communications and Information Systems (LETacCIS) programme.
- Started to develop the existing, closed battlefield CIS architecture into a more cost-effective, open architecture owned by the Department under the 'Morpheus' project (also part of LETacCIS), following contract re-negotiation and approval in 16/17.
- Reset the Protector remotely piloted air system programme, in conjunction with the Senior Responsible Owner in Air Command and DE&S.
- Achieved Initial Operating Capability for the Intelligence Processing Service, which provides enhanced tools for intelligence analysis.
- Delivered the next stage in the incremental development of the UK's new electronic warfare database.
- Continued to deliver a range of Defence CBRN capabilities, in conjunction with the Senior Responsible Owner in Air Command and DE&S.
- Transferred funding and capability sponsorship responsibilities for the Poseidon Maritime Patrol Aircraft (P-8C) and Airseeker Air ISTAR programmes to Air Command, with the latter also having reached full operating capability.
- Continued to deliver a range of critical equipment capabilities for UK Special Forces.

Risks to project affordability or delivery

The Protector programme In-Service Date was deferred by 24 months due to a Defence directed savings measure to release funding in the early years. Since the re-baselining the programme is progressing well and there will still be a seamless transition from Reaper to Protector.

4.5 Defence Nuclear Organisation

The DNO plan to spend around £40.9bn on equipment procurement and support programmes over the next decade in comparison to £39.4bn at the end of the previous planning period (see Figure 16).

Changes in planned expenditure

The Department undertook a detailed review of cost to inform the 2018 Planning Round. Some of the resulting cost changes were the result of developing a more realistic costing baseline, which involved:

- Costing some of our more complex programmes at a 70% 'confidence level', rather than at a 50% level. Costing at 70% means that we expect there to be only a 30% chance that the project will cost more than the specified amount. Approximately 46% of DNO projects by value are now costed at 70%.
- Revising risk provision across several programmes.

- Revising costs to reflect reviews by the Department's independent cost assurance team.

Other changes include:

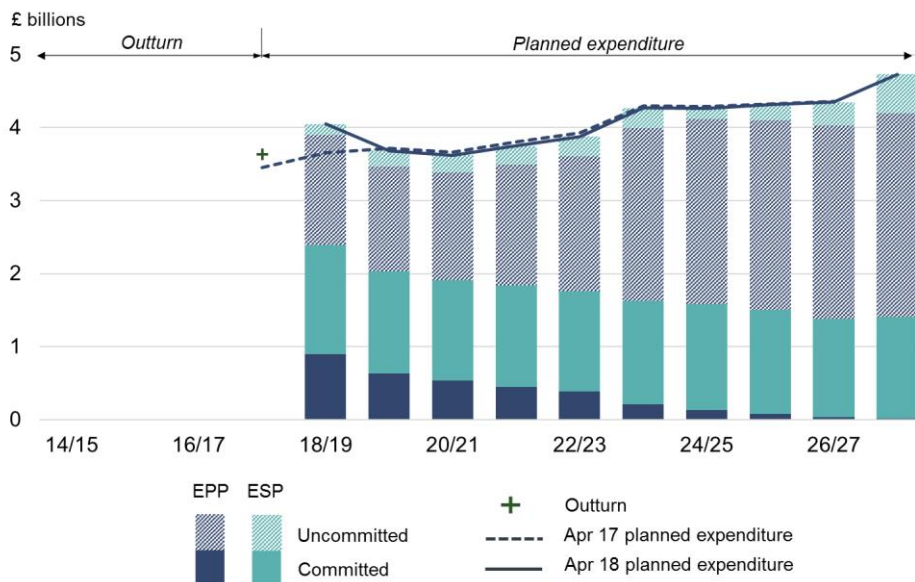
- A reprofiling of the Dreadnought programme, bringing forward spend into the early years.
- Extension of the Astute submarine build schedule.
- New programmes to improve submarine performance and to provide dock infrastructure.

The DNO is responsible for: the procurement and disposal of all the UK's submarines, through the Submarine Delivery Agency; the nuclear warheads and Trident missiles which form the UK's nuclear deterrent; nuclear skills; nuclear-related infrastructure; and day-to-day nuclear policy.

This includes investment in:

- The delivery of seven Astute class submarines to replace the Trafalgar class.

Figure 16: Defence Nuclear Organisation Equipment Plan outturn and allocated budget



Notes: No outturn or allocated budget is shown for DNO before 2017/18, as nuclear spending was part of Strategic Programmes until April 2017/18.

- The delivery of four Dreadnought class submarines to replace the Vanguard class, including the common missile compartment arrangements with the US and upgrades required to naval base infrastructure.
- The demonstration programme to recycle the UK's decommissioned nuclear-powered submarines.
- The support, procurement and design of naval nuclear propulsion system.
- The nuclear warhead capability sustainment programme, which includes the operation, maintenance and updating of the Atomic Weapons Establishment; Trident II D5 missiles with the US; and the UK/France collaborative Teutates project.
- Studies to support a decision on whether to renew or replace the nuclear warhead - a decision will be required in this Parliament.

Equipment Support 2017/18

During 2017/18 we:

- Supported the UK's submarine operations, including the Continuous At Sea Deterrent.
- Established the Submarine Delivery Agency as an Executive Agency on 1 April 2018.

Equipment Procurement 2017/18

During 2017/18 we:

- Placed contract amendments worth £960m with BAE Systems and Rolls-Royce to start the second Delivery Phase of the Dreadnought programme. This will continue production of the first of class of the four Dreadnought submarines and commence production of the second.
- Opened the new Central Yard Facility at BAE Systems' shipyard in Barrow, which will be used for outfitting each section of the new Dreadnought submarines and conducting early testing of their systems.
- Launched the fourth Astute class submarine, HMS Audacious, on 28 April 2017 - she then also successfully completed her first dive in January 2018 to test her safety and stability underwater.
- Placed an incentivised contract worth £1.5bn for the seventh Astute class submarine, Agincourt, on 29 March 2018.

Risks to project affordability or delivery

Project Mensa, which will deliver a replacement facility at AWE Burghfield for assembly and disassembly of nuclear warheads, and Project Pegasus, which will deliver a replacement facility at AWE Aldermaston for the manufacturing and storage of enriched uranium components for the warhead and nuclear propulsion programmes, both experienced delay and cost growth. This led to approval for a revised delivery date and cost forecast for Mensa, and Pegasus being suspended.

In summer 2017, DNO reviewed the costs of its equipment and support programmes. Using this review as a baseline, the forecast cost was £43.9bn over ten years from 2018/19.

For 2018/19 the Department has been given access to up to £600m from the £10bn contingency for the Dreadnought programme, which was announced in the SDSR15 and is held by HM Treasury. This will allow us to take opportunities to drive out cost and risk later in the programme, ensuring that the Dreadnought programme remains on track to deliver on time and within its £31bn forecast.

4.6 Strategic Programmes

The Strategic Programmes Directorate plan to spend around £10.9bn on the Equipment Plan over the next decade in comparison to £10.5bn at the end of the previous planning period (see Figure 17).

Of this, about 80% is used to procure and support our more sophisticated guided weapon systems through the Complex Weapons Programme and most of this is delivered through a partnering agreement with MBDA termed the Complex Weapons Portfolio Management Agreement. The remainder funds the provision of various Test & Evaluation capabilities that support the Department's procurement programmes.

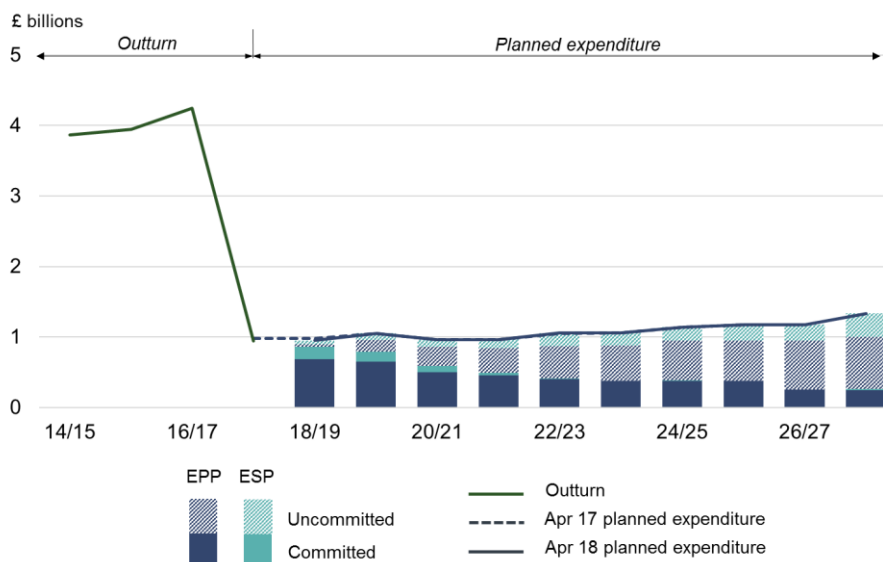
Changes in planned expenditure

There were limited changes in forecast expenditure. The most significant were strategic reduction in Long Term Partnering Agreement costs underpinning the contact renegotiation and the investment in a new test facility at Shoeburyness for circa £20m.

In 2018/19, Strategic Programmes will continue to provide Test, Evaluation and Training Support Services through the Long Term Partnering Agreement with QinetiQ. Under the contract, QinetiQ manages and operates various Test & Evaluation capabilities owned by the Department. The services provided vary depending on specific requirements, but in general, QinetiQ:

- Provides the technical expertise for the planning, management and conduct of trials and provide evaluation and analysis of the results;
- Supports the Department in transforming capabilities so that they continue to match our needs; and,
- Supports the Department in investment in new technology, people and facilities by financing and implementing development and maintenance programmes.
- We will also provide a range of aerial target capabilities through the Combined Aerial Target Service Contract, with QinetiQ, in support of in-service weapon firings and weapon development testing including associated telemetry analysis.

Figure 17: Strategic Programmes Equipment Plan outturn and allocated budget



Notes: Nuclear spending was included in the Strategic Programmes budget until April 2017/18.

2018/19 will also see a significant renegotiation of the Long Term Partnering Agreement contract to achieve improved value for money.

Test and Evaluation

During 2017/18, two key Test & Evaluation achievements were:

- The introduction into service of Thales' new signature measurement facility in Wells.
- Hosting the very successful multinational Formidable Shield exercise on the Hebrides range.

Complex Weapons Programme

During 2017/18 the Complex Weapons Programme:

- Achieved successful first-of-class Sea Ceptor firings from Type 23 Frigate.
- Achieved successful qualification firings of the Lightweight Multirole Missile.
- Achieved Full Operational Capability of Brimstone 2 on Tornado GR4.
- Achieved successful Meteor and ASRAAM Block 6 test firings from Typhoon.
- Began the mid-life upgrade of Storm Shadow missiles.

In coming years, the Complex Weapons Programme plans to deliver:

- In 2018/19, Meteor (a medium-range air-to-air air defence capability), Brimstone (short-range precision strike capability) and Storm Shadow (long-range precision strike capability) into service on Typhoon aircraft.
- Sea Ceptor and Land Ceptor, both utilising the Common Anti-air Modular Missile to provide Future Local Area Air Defence capability in the Maritime (on the Type 23 and Type 26 Frigates) and Land environments.
- Lightweight Multirole Missile, very short-range air defence capability in the land environment.
- Sea Venom and Martlet (utilising the Lightweight Multirole Missile), Future Heavy and Light Anti-Ship capabilities for Wildcat;
- Brimstone 3A Capability Sustainment Programme, short-range precision strike capability for Typhoon (with the potential to fit

it to Protector and Attack Helicopter in the future).

- ASRAAM Block 6, short-range air-to-air air defence capability and Meteor, medium-range air-to-air air defence capability, for Lightning.
- A mid-life refresh programme for Aster missiles, a medium-range air defence capability for Type 45 Destroyers.
- SPEAR Capability 3, a medium-range precision strike capability for Lightning (with the option also to fit it to Typhoon).
- Future Long-Range Cruise Missile/Future Offensive Surface Warfare capability (which could be delivered in co-operation with France).

Risks to project affordability or delivery

In broad terms the Programme is continuing to deliver capability to approved timescales, although it is likely that we will have to declare a one-year slip to the Sea Venom (Future Anti-Surface Guided Weapon (Heavy) capability) programme for the Royal Navy caused by emerging technical issues in the Demonstration phase of delivery.

Part 5: Project Performance Summary Table

This is the third year that the Department has published the Project Performance Summary Table (PPST) within the Equipment Plan. This year further visibility is provided on the impact of foreign exchange fluctuations and changes to the scope of projects. Independent validation of the data has been conducted by the Department's Cost Assurance & Analysis Service.

The purpose of the PPST is to provide an overview of the delivery performance on the Department's largest equipment procurement projects, that have been approved for Demonstration and Manufacture phases¹³. We report on the forecast cost of the project, the forecast timescales for achieving the In-Service Date (ISD), and the forecast achievement of the Key User Requirements (KURs). These are all approved as part of the Main Gate business case or when we commit to manufacture of the equipment.

The overall PPST findings are summarised here in Figure 18, whilst more detail for each of the projects included is presented in Figure 22.

5.1 Changes to the PPST population

In total, there are 27 projects in the PPST18 population. There has been one change to the project population from 2017; Brimstone 2 Integration has been removed from the project population for 2018 as it achieved its in-service date in financial year 2016/17. There is one new incremental approval on Type 26 Global Combat Ships which received approval to enter the Manufacturing phase. The projects have been separated by delivery organisation recognising the Submarine Delivery Agency (SDA) and Information Systems and Services (ISS) as independent delivery organisations from DE&S¹⁴.

¹³ A direct cost comparison cannot be made between the PPST and previous sections of the Equipment Plan as the PPST does not include all costs in the 10-year forecast.

Figure 18: PPST18 Key Findings



+£783 million

1.5 per cent increase in forecast costs, driven by foreign exchange and scope changes



+62 months

3.3 per cent increase in forecast time from a total combined approved duration of 1,851 months



99 per cent

Of key user requirements (191 of 193) are forecast to be met

5.2 Forecast cost

During 2017/18 the aggregate forecast costs of the 27 projects increased by £783m (1.5 per cent of the total costs). There were notable increases to four projects: Lightning (£309m); Protector unmanned aircraft (£278m); Astute Boats 4-7 (£199m); and Queen Elizabeth Class Carriers (£149m). Lightning was predominantly impacted by increases to the US foreign exchange rates and Protector was re-baselined to ensure the programme was affordable in the early years. Cost and schedule risk assumptions were reviewed and updated for the Astute Boats, and the Queen Elizabeth Class Carriers' contractor experienced technical challenges. These increases were partially offset across the population by some sizeable cost savings, notably on the Apache Capability Sustainment Programme (£132m), Type 26 Frigates (£104m) and Poseidon maritime patrol aircraft (£52m) that are the result of efficiencies identified and

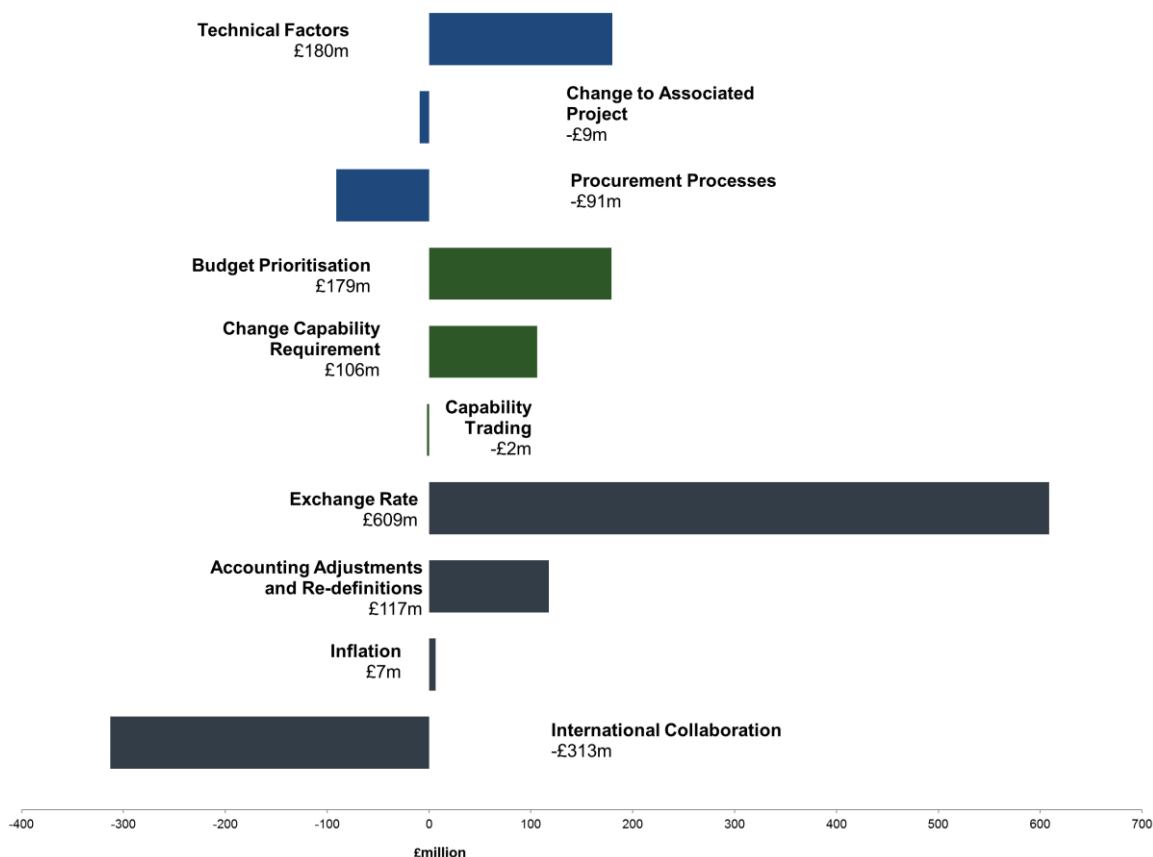
¹⁴ SDA is responsible for delivery of Astute Boats 4-7, Core Production Capability and Dreadnought. ISS is responsible for delivery of New Style of IT (Deployed).

realised by the delivery organisation through Transformation initiatives.

Forecast cost variations are attributed to several categories. As highlighted above, foreign exchange is the single largest contributor to cost

increases this year, although corporate decisions also impacted changes in the scope of projects. Unlike last year, however, technical factors, principally supplier related, were far less significant. Figure 19 presents an overview of variances by category.

Figure 19: In-year Cost Variations by Factor



5.3 Forecast time

A total of 18 of the 24 projects which have an ISD approved reported no change to their forecast in-service date¹⁵. However, there was a total project duration increase of 62 months which represents a 3.3 per cent change from the total approved duration of 1,851 months.

Increases are reported on six projects. The largest time increase was experienced by Protector (24 months) linked to the cost increases caused by the re-baselining activity. Warrior Capability Sustainment Programme's

reported delay (13 months) was due to several technical and supplier issues. The Astute Boats 4-7 project delay (9 months) is due to a combination of supplier performance and re-evaluation of the risks linked to boat delivery. Sky Sabre's time increase (8 months) was a result of risk management activity to separate equipment and training delivery rather than seeking to complete in parallel, whilst a resource shortfall and the complexity of design has delayed the New Style of IT (Deployed) project by 6 months.

¹⁵ BVRAAM on Lightning, Spear Capability 3 and Dreadnought do not yet have an ISD. The ISD will be set when the decision to manufacture is taken.

Figure 20: In-year Time Variations by Factor

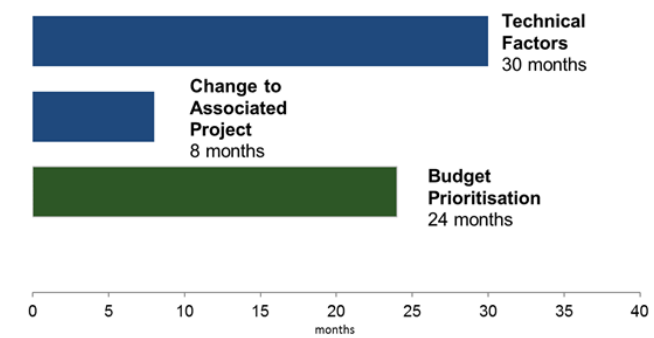


Figure 21: PPST Comparison

Year	Cost forecast variation	Time forecast variation	Forecast achievement of performance measures (KURs)	Number of projects
2018	+£783m	+62 months	99%	27
2017	+£224m	+57 months	99%	28

5.4 Key performance measures

Forecast delivery of key performance measures remains at 99 per cent with 191 of the 193 KURs forecast to be met across 25 projects¹⁶. There are two KURs that will not be met during the current approved phase of New Style of IT (Deployed) as they rely on delivery of subsequent tranches of activity. While these KURs were approved under Main Gate 1 they are not planned to be delivered as part of the current scope of work, so the KUR delivery forecast is expected to improve when future phases of work are approved in late 2018.

5.5 Comparison of performance in PPST17 and PPST18

A comparison on a like for like basis cannot be made against prior years due to projects entering and leaving the population and projects which have received uplifts to their approval.

¹⁶ BVRAMM on Lightning and Dreadnought do not yet have KURs approved. The KURs will be approved when the decision to manufacture is taken.

Figure 22: Project Performance Summary Table 2018

Portfolio	Project	Description	Cost						Time					Key User Requirements (KURs)								
			Expected cost to completion at approval (£m)	Current forecast cost to completion (£m)	Total cost variation to completion (£m)	In-year variations attributed to FOREIGN EXCHANGE (FOREX) (£m)	In-year variations not attributed to 'Delivery Organisations' (exc FOREX) (£m)	In-year variations attributed to 'Delivery Organisations' (exc FOREX) (£m)	Total In-year change on costs to completion (£m)	Expected In-Service Date at approval	Current forecast In-Service Date (ISD)	Total time variation against approval (months)	In-year variations not attributed to 'Delivery Organisations' (months)	In-year variations attributed to 'Delivery Organisations' (months)	Total In-year change to In-Service Date (months)	Number of Key User Reqs	To be met	To be met, with risks	Total number of Key User Reqs to be met	Not to be met	In-year change, to be met, with risks	In-year change not to be met
DEFENCE EQUIPMENT & SUPPORT (DE&S)																						
-	AJAX (formerly Scout Specialist Vehicle)	Armoured Fighting Vehicle	5,479	5,454	-25	1	55	-8	48	Jul-20	Jan-20	-6	0	0	0	11	11	0	11	0	0	0
-	Apache Capability Sustainment Programme	Sustainment of Attack Helicopter	1,778	1,646	-132	119	0	-251	-132	Apr-22	Apr-22	0	0	0	0	0	0	0	0	0	0	0
Complex Weapons Pipeline	Brimstone Capability Sustainment Programme	Sustainment Programme of Air to Ground Missile	521	519	-2	-2	0	0	-2	Oct-22	Oct-22	0	0	0	0	8	8	0	8	0	0	0
	Meteor Integration on Lightning II	Fighter Integration of Air to Air Missile	80	75	-5	-5	0	0	-5	ISD to be set at Main Gate 2				KURs to be set at Main Gate 2								
	Future Anti Surface Guided Weapon (Heavy)	Maritime Air to Ground Missile (Heavy)	392	380	-33	2	0	11	13	Oct-20	Oct-20	0	0	0	0	5	3	2	5	0	2	0
	Future Anti Surface Guided Weapon (Light)	Maritime Air to Ground Missile (Light)	311	294	-17	0	0	-9	-9	Oct-20	Oct-20	0	0	0	0	5	5	0	5	0	0	0
	Sea Ceptor on Type 23 Frigate	Maritime Ground to Air Missile (Type 23)	850	851	1	0	0	-5	-5	Nov-16	May-18	18	0	2	2	10	10	0	10	0	0	0
	Sea Ceptor on Type 26 Frigate	Maritime Ground to Air Missile (Type 26)	130	128	-2	0	0	0	0	Dec-19	Dec-19	0	0	0	0	0	0	0	0	0	0	0
	SPEAR Capability 3	Fighter Air to Ground Missile	473	472	-1	0	0	-1	-1	ISD to be set at Main Gate 2				8	8	0	8	0	0	0		
	ASRAAM Sustainment (MG1)	Sustainment Programme of Air to Air Missile	415	410	-5	0	4	19	23	Nov-18	Nov-18	0	0	0	0	8	8	0	8	0	0	0
	ASRAAM Sustainment (MG2)	Sustainment Programme of Air to Air Missile	246	240	-6	2	0	-19	-17	Aug-22	Aug-22	0	0	0	0	0	0	0	0	0	0	0
-	Lightning II	Fighter / Attack Aircraft	8,948	8,359	-588	267	-8	50	309	Dec-18	Dec-18	0	0	0	0	7	6	1	7	0	0	0
-	Marshall	Air Traffic Control System	1,890	1,890	0	0	0	0	0	Feb-17	Jun-19	28	0	0	0	7	7	0	7	0	0	0
-	P-8A Poseidon	Maritime Patrol Aircraft	2,392	2,207	-185	167	0	-219	-52	Apr-20	Apr-20	0	0	0	0	9	9	0	9	0	0	0
-	Protector	Unmanned Aircraft	704	982	278	56	222	0	278	Jul-21	Jul-23	24	24	0	24	14	14	0	14	0	0	0
-	Queen Elizabeth Class Carriers	Aircraft Carrier	3,541	6,251	2,710	0	27	122	149	Jul-15	Feb-18	31	0	0	0	9	9	0	9	0	-1	0
-	Sky Sabre	Ground Based Air Defence System	618	595	-23	0	0	-4	-4	Mar-20	Nov-20	8	8	0	8	9	9	0	9	0	0	0
-	Tide Class Tanker	Naval Logistics Support	596	550	-45	0	0	0	0	Oct-16	Dec-17	14	0	0	0	11	11	0	11	0	0	0
-	Type 26 Frigates	Global Combat Ship	4,346	4,242	-104	0	0	-104	-104	Oct-27	Oct-27	0	0	0	0	12	3	9	12	0	9	0
Typhoon	Meteor Integration	Integration of Beyond Visual Range Air to Air Missile	130	107	-23	-1	0	1	0	Jun-18	Jun-18	0	0	0	0	10	3	7	10	0	4	0
	Storm Shadow Integration	Integration of Deep Strike Missile	172	114	-58	0	0	0	0	Aug-18	Aug-18	0	0	0	0	10	4	6	10	0	5	0
	Brimstone 2 Integration	Integration of Precision Attack Missile	186	204	19	2	0	-5	-3	Dec-18	Dec-18	0	0	0	0	10	6	4	10	0	1	0
	Warrior Capability Sustainment Programme	Infantry Fighting Vehicle	1,319	1,550	231	0	0	62	62	Nov-18	Mar-23	52	0	13	13	9	9	0	9	0	0	0
DEFENCE EQUIPMENT AND SUPPORT (DE&S) TOTAL			35,516	37,498	1,982	609	300	-361	948	-	-	169	32	15	47	172	143	29	172	0	20	0
SUBMARINE DELIVERY AGENCY (SDA)																						
-	Astute Boats 4-7	Attack Submarine	5,859	6,896	1,037	0	114	85	199	Aug-15	Aug-19	48	9	0	9	10	8	2	10	0	0	0
-	Core Production Capability	Core Manufacturing Facility	1,385	1,667	282	0	0	58	58	Jun-26	Oct-25	-8	0	0	0	2	2	0	2	0	-1	0
-	Dreadnought	Ballistic Submarine	8,051	8,051	0	0	0	0	0	-	-	46	9	0	9	12	10	2	12	0	-1	0
SUBMARINE DELIVERY AGENCY (SDA) TOTAL			15,295	16,615	1,319	0	114	143	257	-	-	46	9	0	9	12	10	2	12	0	-1	0
INFORMATION SYSTEMS & SERVICES (ISS)																						
-	New Style of IT (Deployed)	Information Capability to the Frontline	166	144	-22	0	-18	-4	-22	Mar-18	Sep-18	6	0	6	6	9	7	0	7	2	0	0
INFORMATION SYSTEMS & SERVICES (ISS) TOTAL			166	144	-22	0	-18	-4	-22	-	-	6	0	6	6	9	7	0	7	2	0	0
TOTALS			50,977	54,256	3,280	609	396	-222	-	-	-	215	41	21	-	193	160	31	191	2	19	0
OVERALL TOTAL									783	OVERALL TOTAL					62	OVERALL TOTAL						99%

Publication Notes:

Defence Equipment & Support

P-8A Poseidon, Revisions have been made to current forecast cost to completion and In-Year variations to reflect additional variances identified for 2017 and 2018. Includes a -£134M FOREX variation omitted in PPST17.

Complex Weapons – Meteor Integration on Lightning II, Revisions have been made to the In-Service Date and Key User Requirements to reflect the latest approval position. Both metrics will be entered once the decision to manufacture the munitions is taken at Main Gate 2.

Complex Weapons – Future Anti-Surface Guided Weapon Heavy (FASGW(H)), Funding relating to the Common Integration Programme transferred from FASGW(L) to align with approvals.

Complex Weapons - Future Anti-Surface Guided Weapon Light (FASGW(L)), Funding relating to the Common Integration Programme transferred to FASGW(H) to align with approvals. The figures include additional in-year variations.

Complex Weapons - SPEAR Capability 3, The In-Service Date will be approved when the decision to manufacture the munitions is taken at Main Gate.

Lightning II, The approved cost of the Lightning II programme has increased by £33M since last year following approval of the first phase of the Follow-On Modernising programme which will deliver the first capability upgrade for the F-35 Air System.

Apache Capability Sustainment Programme, Includes a -£3m variation omitted in PPST17.

Submarine Delivery Agency

Dreadnought, Information reflects current approvals for manufacturing activity of the £31Bn Dreadnought Programme up to and including 2020/21