February 2019

Roland Berger Focus

Whither Defence III

Waiting and hoping ...

Management summary

The UK faces a pivotal moment in terms of defence strategy. The threat environment has continued to deteriorate since the last Strategic Defence and Security Review (SDSR) of 2015. State and non-state threats identified in that review have developed faster than anticipated, whilst technological change continues to rapidly broaden the scope of the MoD's responsibilities. The UK faces these threats with a new "black hole" in its defence budget, and a domestic industrial base that faces unprecedented levels of global competition. The Modernising Defence Programme of 2018, one of the longest defence reviews since the Second World War, was tasked with navigating a path through these challenges.

However, the Modernising Defence Programme has publicly done very little to address these issues. Its guiding principles of mobilisation, modernisation and transformation are well intentioned, but are hardly substantiated. The short-term funding injection for 2018-19 aside, the review has not secured the long-term budgetary commitments which the Defence Secretary would have been hoping for. Consequently, the upcoming Comprehensive Spending Review of 2019 and possible SDSR of 2020 will need to make critical decisions about the future of UK defence.

We believe that the upcoming reviews can nevertheless guide the UK in the right direction if they are executed appropriately, and our analysis has identified a number of principles that must guide the review processes. Fundamentally, we argue that a new realism and strategic clarity must be brought to upcoming budgets, ending the practice of highly ambitious efficiency targets that are rarely realised. Given the current threat environment and the growing importance of new military domains, any decision not to increase the defence budget will inevitably require net cuts in capability. This may in turn require deeper collaboration and burden sharing with NATO allies, reducing duplication of capabilities to mitigate the effects of a more focused UK force.

The UK must also ensure its industrial strategy is balanced and export-led, that the productivity of the UK's defence industrial base is increased, and that further opportunities for efficiency savings are pursued in a strategic and realistic manner.

Contents

1. Introduction

An array of challenges

With the country's focus centred on Brexit, issues of defence and security have understandably moved down the government's priority list. Ironically, the country currently confronts some of the most difficult and consequential defence challenges of the past three decades. The UK faces an ever broadening and deepening array of threats that are undermining prior paradigms – a reassertive Russia; cyber-attacks on the West attributed to several foreign powers; and an ongoing terrorist threat. It does so with a defence budget that is significantly overstretched, potentially by as much as GBP 21 bn over the next ten years. Furthermore, it faces these threats in a climate where multilateral cooperation is more difficult than ever, given ongoing uncertainty over Brexit and its consequences for European collaboration, and a growing preference for unilateralism from the United States.

It is in this context that the government has recently concluded its latest defence review, the Modernising Defence Programme (MDP). In summary, the much anticipated MDP is light on detail, and has not made significant progress towards solving the UK's defence challenges. It appears the MoD is instead anticipating the most consequential decisions being made as part of the forthcoming Comprehensive Spending Review in 2019 and possibly the 2020 Strategic Defence and Security Review. In any case, the time is soon approaching when the government must take the difficult decisions necessary to deliver a properly funded plan and a clear strategic direction for the UK.

This report will reflect on what we have learnt from the MDP process, and examine the directions the government could take in the coming years.

The UK remains in a precarious position with respect to its defence, and the Modernising Defence Programme has done little (at least publicly) to change this.

2. The security environment in 2019

The principal threats faced by the UK

It is a truism frequently stated by politicians, military figures and academics that the security threats currently facing the UK are more severe than at any time since the end of the Cold War. The period of geopolitical stability predicted by some following the drawdowns in Iraq and Afghanistan (conveniently envisaged in a climate of austerity) has not materialised. Furthermore, the 2018 National Security Capability Review concluded that the threat to the UK has continued to deteriorate since the last SDSR in 2015, developing at a faster pace than previously anticipated. A number of key themes emerge – the resurgence of state-based threats, the disruptive impact of technology, and the continued danger posed by terrorism and extremism.

RESURGENCE OF STATE-BASED THREATS

The last few years have witnessed the re-emergence of persistent and intense interstate competition, for the first time since the fall of the Soviet Union. As far as the UK is concerned, the most relevant instance of this is the newfound assertiveness of Russia. Russia has publicly announced its desire to help shape a "post-West world order" and has demonstrated an increasing willingness to violate international norms to achieve its interests. Indeed, Gavin Williamson has recently described the threat from Russia as "far greater than the challenges that were presented as an insurgency in terms of Iraq and Afghanistan". This is quite a radical departure from SDSR 2010, which spoke of the UK not facing "a conventional threat of attack on our territory by a hostile power", although SDSR 2015 did re-prioritise countering state-based threats.

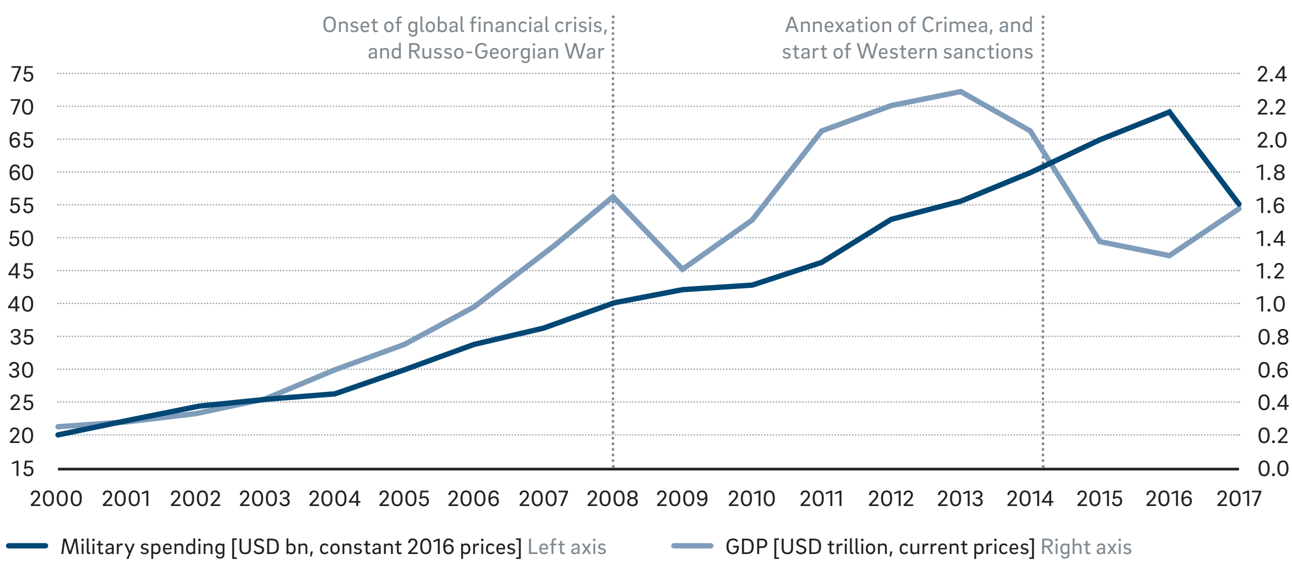
A rapid increase in defence spending over the last decade has significantly bolstered Russia's conventional capabilities. However, Russia's military modernisation programme has been hit by lower energy prices and Western sanctions, which resulted in a recession from 2014 to 2017. Consequently, the Russian defence budget has been cut by around 20%, putting a dent in Moscow's aspirations to replace its aging equipment with new platforms like the Su-57 fighter and Armata tank. All in all, despite a series of unconventional moves, it remains unlikely that Russia would directly take direct military action against a NATO member (a status Ukraine never enjoyed), although the UK and its allies must be prepared to respond if challenged. → A

Russia is therefore expected to continue to prioritise non-conventional capabilities that can deliver a disproportionate impact relative to their cost. One of these is its nuclear arsenal, including the new hypersonic technologies trumpeted by President Putin in his 2018 State of the Nation address. Moreover, Russia is expected to continue to engage in cyber espionage and disruption, including attempts to manipulate public opinion in countries like the UK. Russia's actions in Crimea and Sailsbury demonstrate that there are few lines it is unwilling to cross to advance its goals.

In a broader sense, the UK also risks being dragged into ongoing interstate competition in other regions, given the inherent risk of miscalculation and subsequent broader conflict. The most notable examples are the regional proxy conflict between Saudi Arabia and Iran, and North Korea's ongoing illegal nuclear weapons programme. China is a particularly interesting case. The UK continues to seek deeper ties with China, albeit to a lesser extent than under the Cameron government, and despite the ongoing trade and geopolitical tensions between China and the United States. The recent National Security Capability Review (NSCR) therefore speaks of China as an ally rather than a threat.

Nevertheless, as China deepens its influence beyond Asia in the coming decades, such as via the Belt and Road Initiative, the UK will become increasingly influenced by its policies. Whilst unpublished defence policy undoubtedly addresses this, any future re-evaluation of the UK's relationship with China will need to be addressed in the next SDSR.

A: The explosive growth in the Russian defence budget under Putin has halted – further incentivising investment in asymmetric capabilities
Russian Military Expenditure and GDP



Source: SIPRI, World Bank, Roland Berger

ACCELERATING TECHNOLOGICAL DISRUPTION

The ever-accelerating pace of technological advances continues to increase the scope and complexity of the UK's national defence. In particular, the new domains of cyber and space continue to grow in significance, straining a budget that already struggles to cover the traditional domains.

The importance of the cyber realm will continue to increase as more digital devices are connected (with relatively little built-in security) – and both state and non-state actors become better equipped in the use of offensive cyber capabilities. Consequently, cybersecurity has moved to the top of the agenda for many states and militaries. Cyber poses a threat particularly for its potential to be used asymmetrically – North Korea has proven itself to be a worthy adversary of Western powers in the cyber domain, despite its much lower levels of defence spending. Furthermore, cybercrime has reached unprecedented levels of scale, with recent ransomware attacks demonstrating the vulnerability of nation states to non-state actors. The ever-growing reach of cyber continues to blur lines between defence and security, increasing the risk of inter-department conflict and capability gaps that adversaries can exploit.

Technological advances are also rapidly amplifying the importance of space to military operations. All other military domains are becoming increasingly reliant on space-based technology for precision, navigation and timing (PNT) capabilities. This has created a strong incentive for adversaries to develop anti-satellite technologies to exploit this vulnerability. Russian and Chinese weapons are currently expected to reach operational capability in the mid-2020s, despite public adherence to international agreements on the non-weaponisation of space. Full appreciation of the likelihood and severity of these threats needs to be coupled with plans for mitigation against them. The focus must not only be on defending satellites, but also on ensuring that 'life goes on' should they be disabled or destroyed. The UK has taken several steps in the right direction – the RAF has now assumed command of all military space operations, with headcount set to increase by 20% over the next five years. Challenges remain however, including the continued lack of a UK sovereign launch capability following the UK's presumed exit from the European Space Agency. The most immediate challenge is the uncertainty over the UK's continued involvement in Galileo, Europe's Global Navigation Satellite System (GNSS). Any future strategy for development of space capabilities is highly dependent on this, especially if the UK space budget ends up being heavily devoted to a sovereign UK system.

A worrying development that has received less media attention has been the development of hypersonic missiles. In contrast to traditional ballistic missiles, hypersonic missiles are capable of manoeuvring whilst travelling at speeds up to 5,000 miles per hour. This feature enables such missiles to penetrate most existing missile defences, and to compress the available timeframe for response for a nation under attack. This has the potential to change traditional models of nuclear deterrence, although it would likely increase the relevance of the UK's Trident deterrent. There is little time to prepare for these developments either, with hypersonic systems from the likes of Russia and China expected to be in-service from the mid-2020s.

This is all to say nothing of the full range of emerging technologies, including artificial intelligence, autonomous platforms and directed energy weapons. These disruptions will require nimbleness that is uncommon in a sphere characterised by lengthy cycles and decision-making that moves at a glacial pace.

ONGOING TERRORIST THREAT

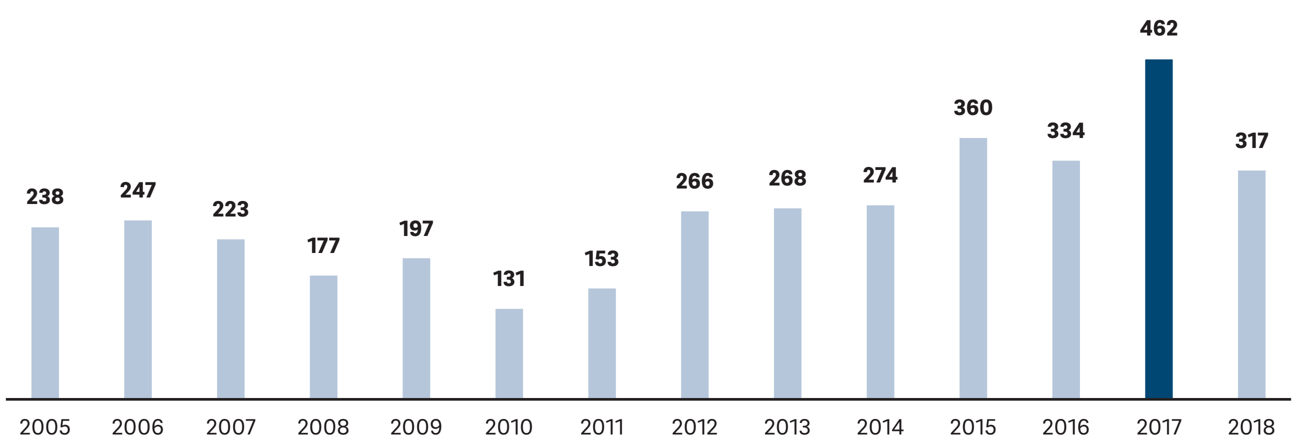
Meanwhile, the threat to the UK from terrorism remains severe. 2017 was the deadliest year for terrorism in the UK since 2005 – the attacks at Westminster Bridge, Manchester Arena, London Bridge and a mosque in north London killed 36 people. Whilst 2018 did not see a major incident in the UK, attacks in France, Belgium and the Netherlands demonstrated the continued capacity of terrorist groups to strike in Europe.

International military intervention in Iraq and Syria, to which the UK has heavily contributed, has been successful in eliminating ISIS from almost all of the territory it held at its peak in 2014-15. However, several estimates claim the group may still have up to 30,000 fighters, and has simply shifted to insurgency tactics such as kidnappings and assassinations. With homegrown terrorists the biggest perpetrators of attacks in the UK, ISIS still has the capacity to radicalise and motivate Western citizens so long as it retains sufficient "relevancy". If ISIS-linked attacks continue to dominate public discourse, the group's narrative will be buoyed, and it will be difficult for the counter-ISIS coalition to portray the group as defeated. ISIS therefore still poses a considerable risk to NATO allies, hence the much-publicised controversy over President Trump's decision to withdraw troops from Syria. This is notwithstanding the continued threat from Al-Qaeda, which is believed to be more regionally-focused and less able to influence homegrown terrorists than ISIS.

These ongoing threats led the Intelligence and Security Committee to label the scale of the threat to the UK as "unprecedented", and the head of MI5 to describe the intensity of counter-terrorism operations as the highest he had seen in his 34-year career at the agency. MI5 currently tracks around 3,000 "subjects of interest", including a growing share of "high-risk" individuals who have received terrorist training or are attempting to procure the means to carry out an attack. Whilst the security services do not release this data regularly or in a more granular fashion, the number of terrorism-related arrests provides a proxy for the growth in the threat. These hit a record high in 2017 at 462, although the number fell in 2018. As terrorist groups continue to develop innovative tactics, utilising low-sophistication methods such as knives, vehicles or simple drones, the threat to the UK will continue to grow. → **B**

B: Record arrest levels were reached in 2017, demonstrating the rising intensity of the UK's counterterrorism operations

Terrorism-related arrests in the UK [# arrests]



Source: National Counter-Terrorism Police Operations Centre (NCTPOC), Roland Berger

3. Internal challenges

Balancing the budget and sovereign capability

In meeting these threats, the UK must also address two key challenges.

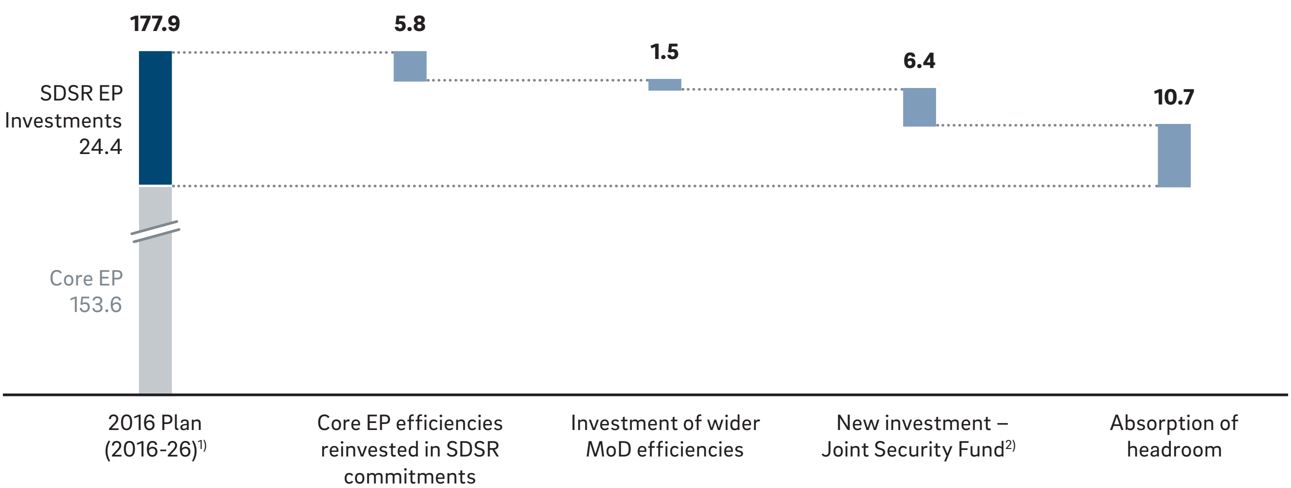
AN UNBALANCED BUDGET

The UK defence budget is currently overstretched and risks being unable to deliver on the UK's existing commitments. In 2017 the National Audit Office identified a shortfall of up to GBP 21 bn in the ten-year Equipment Plan, although the MoD has now published its own, lower estimate of GBP 15 bn for the current 2018-28 Plan. The causes of this are diverse, but the most immediate can be traced to the Strategic Defence and Security Review (SDSR) of 2015. Whilst this returned the defence budget to real terms growth following an era of austerity-driven cuts, it simultaneously made a number of significant new capability commitments. These included Boeing P-8 maritime patrol aircraft, Type 26 Frigates and additional F-35 Joint Strike Fighters. Such commitments were only made achievable via novel "funding" mechanisms, including absorption of the Equipment Plan's "headroom" contingency and anticipation of unrealistic efficiency savings. → C

Doing so left the MoD without any protection against further unanticipated defence inflation, which has since materialised. A combination of cost overruns, slow delivery of efficiency savings and depreciation of sterling has left the defence budget significantly overstretched. Whilst

C: Novel mechanisms were necessary for the MoD to afford the SDSR 2015 Equipment Plan commitments, including the use of all its headroom

Funding of the additional SDSR 2015 commitments [GBP bn]



1) Includes roll-forward adjustments from 2015 and Core EP efficiency savings; 2) Assumed MoD allocation from the JSF, which is shared with the Intelligence Services and Foreign and Commonwealth Office

Source: Ministry of Defence, Roland Berger it has so far been politically expedient for the government to creatively "squeeze" its capability commitments into the existing 2% of GDP spent on defence, this approach is becoming less and less tenable. This is even more the case now than in 2015, as the sheer scale of required investment in areas like cyber and space becomes apparent, alongside an expansion of traditional missions in response to Russian activity. Fundamentally, the UK must increase its defence budget or rationalise its capability commitments – indeed any sustainable solution will require a combination of the two. This was the crucial challenge that it was hoped the MDP would begin to address tangibly.

LACK OF INDUSTRIAL STRATEGY

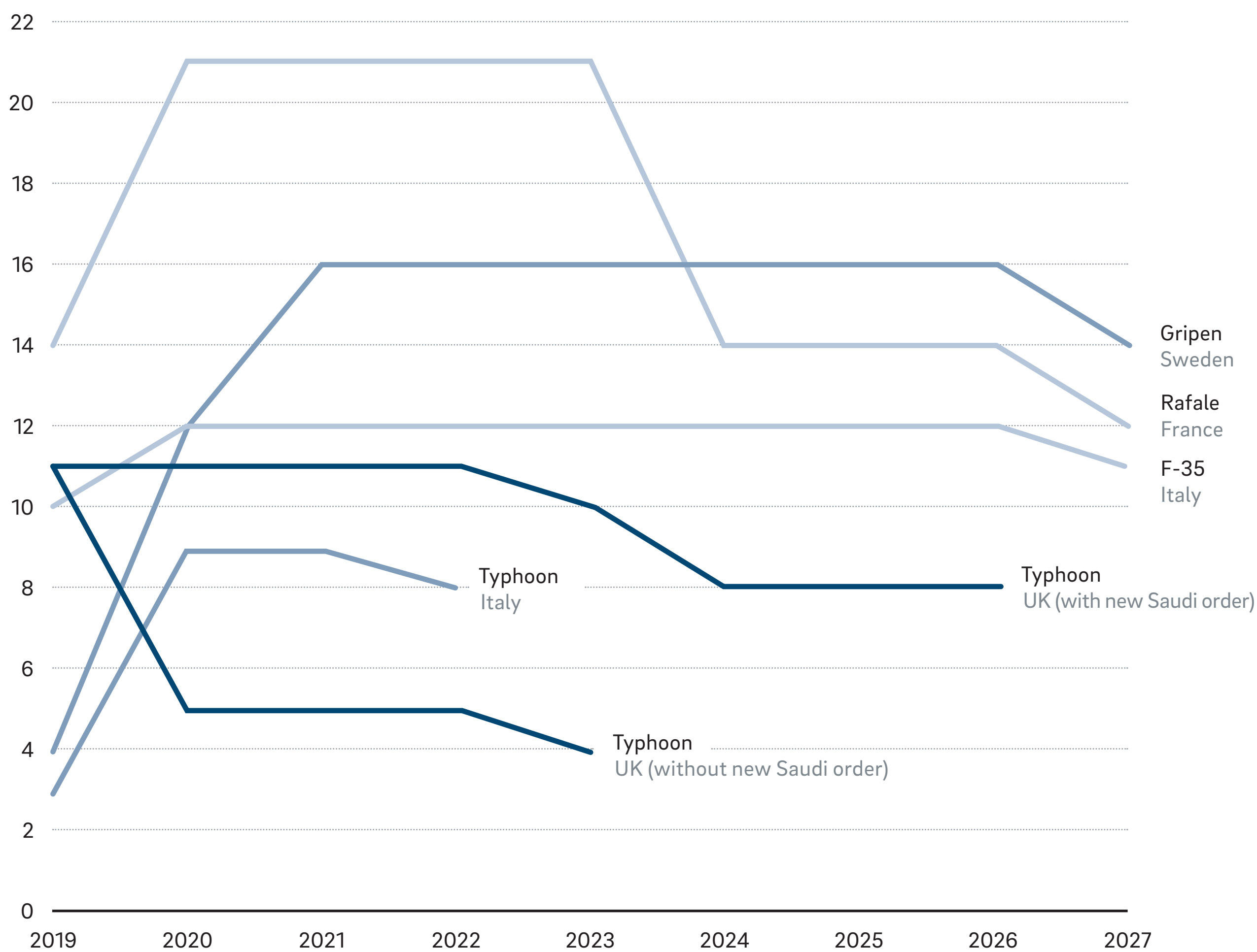
On top of its budgetary issues, the UK also faces longer term challenges around retention of sovereign capability. Whereas in decades gone by, a number of domestic firms may have competed for MoD proposals, in an increasing number of areas the MoD has preferred to look abroad. Whilst this has been most documented in land systems, it risks being extended to aircraft. The cancellation of the Nimrod programme has irreparably damaged the UK's ability to build large fixed-wing military aircraft. Meanwhile, the future of combat jet production remains far from clear, despite the laudable ambition shown by the launch of the Tempest programme. Unless a new order from Saudi Arabia is secured, UK Typhoon production will likely be sustained for only another five years. In contrast, Italy has created a final assembly line for the F-35 Joint Strike Fighter, whilst other European programmes have been notably more successful in the export market. The forthcoming ramp down in UK production will make it more difficult to retain the critical skills needed to deliver the Tempest to time and budget. → D

The MoD faces a familiar dilemma when attempting to steward the domestic defence industry. Purchasing and promoting core equipment production domestically is instinctively attractive. Such a policy in theory retains the capabilities in question, whilst promoting domestic employment and tax contributions. It also facilitates further investment in the domestic defence industry via export sales of the same equipment to Britain's allies. However, home-grown equipment programmes have had a poor recent record of on-budget and on-time delivery – headline examples being Astute, FRES and Nimrod. The ultimate result has been less equipment for the force in question, often of lower quality, or, in the case of FRES, nothing at all.

The natural alternative is to buy "off-the-shelf" proven equipment, usually that developed by the United States. Whilst such programmes are not without their issues, on average by doing so the UK may better avoid the aforementioned problems. The scale of such US programmes tends to generate attractive pricing, whilst procuring at a later stage in the development cycle limits delays and uncertainty. However, this sort of procurement contributes to a loss of the associated capability domestically and leads to increased reliance on the continued cooperation of overseas commercial organisations.

The UK's challenge lies in balancing these lines of argument, with any compromise unlikely to satisfy everyone. Nevertheless, it appears the MoD has recently viewed itself too much as a "customer" – a consumer of goods and services, rather than the prime generator of national capability. Whilst white papers have pronounced more balanced guiding principles, the overriding behavioural emphasis has been on retaining absolute freedom to buy from the world market as necessary. There has been some improvement in this regard – the recent Combat Air Strategy introduces a more comprehensive evaluation framework for procurement decisions, with more emphasis on longer-term, economic benefits. It was hoped the MDP would further develop this theme, clearly formulating the means by which the UK would balance competing short- and long-term priorities.

D: Production of Typhoons in the UK is likely to end by 2023 if a new order from Saudi Arabia is not secured – rival European programmes have sufficient orders to sustain production throughout the 2020s
European final assembly of fighter jets [# aircraft][1)]



1) Excluding a possible new German order for Typhoons to replace their Tornado fleet, which would extend the life of the German Typhoon Final Assembly Line
Source: TEAL, Defence-Aerospace.com, Roland Berger

4. Reflections on the Modernising Defence Programme

A review of little substance

Whilst 2018 was beset with uncertainty over the scope and timeframe of the MDP, Gavin Williamson presented its second and final "update" in December. The Government has confirmed that this publication represents the full extent of the formal MDP process, although elements of the work began under the MDP will continue. The report is a relatively short document, most of which recounts developments since 2015 and assesses the threats the UK faces. Where it does address the UK's future direction, it identifies three broad priorities:

→ "We will mobilise, making more of what we already have to ensure our Armed Forces are best placed to protect our security ..."

→ "We will modernise, embracing new technologies and assuring our competitive edge over our adversaries ..."

→ "We will transform, radically changing the way we do business and staying ahead of emerging threats ..."

As legitimate as these priorities are, the report provided very little detail on the government's approach to achieving them. Whilst the 2018 Equipment Plan publication mentioned that the MDP was evaluating which capabilities to "delay, defer or de-scope", no detail was provided in December's report on which programmes would be affected. The report did declare that the MoD will increase weapon stockpiles and spares by re-prioritising current defence programmes, but it did not explain what re-prioritisation entails. Similarly, whilst EP 2018 referenced an ongoing review of where domestic and off-the-shelf procurement was appropriate, the MDP update provided no more clarity.

The announcements that were made were peripheral – for example the creation of a new ring-fenced Defence Transformation Fund aimed at innovation, and accelerated transformation of the Defence Equipment and Support (DE&S) procurement organisation. The most consequential development to arise out of the MDP was in fact announced several months prior to publication – total injections of GBP 1.8 bn (c. 5% on top of the current budget) for 2018-19.

Consequently, reaction to the publication has generally been highly critical. Shadow Defence Secretary Nia Griffith described it as "underwhelming", SNP Defence spokesman Stewart McDonald described the conclusions as "extremely thin", while former Labour defence spokesman Kevan Jones described it as "waffle". It does appear that the MDP has merely delayed the required hard choices again. Indeed, the MDP makes five references to the forthcoming Spending Review, with Gavin Williamson adding that it "is going to be very important to the Department to make sure that we get the right investment going forward".

Assuming the Spending Review takes up much of 2019, the next question is whether the Government will begin a new SDSR for 2020. The MDP makes no reference to a future SDSR and the Cabinet Office said in early December that no decision has been made on the timing of the next one. A 2020 review would however align with the pledges made in the 2010 and 2015 versions – to have them on a five-year cycle. If the UK does indeed leave the European Union this year, it would also allow the country to formally update its defence policies in the light of this change. Regardless of the precise timing of upcoming reviews, the question arises – what must these critically important reviews focus on and achieve to be considered a success?

5. Recommendations for upcoming reviews

Key success criteria

We believe a number of areas must be addressed if the upcoming Comprehensive Spending Review (CSR) and subsequent Strategic Defence and Security Review (SDSR) are to be successful:

SPENDING & CAPABILITIES MUST BE BROUGHT IN LINE

The government must end the recent pattern of capability commitments that are only achievable via highly ambitious and uncertain efficiency savings. However broad the challenges facing the UK in defence are, they can only be properly addressed via transparency and realism. Whilst it may be politically difficult in Westminster to admit so, the UK faces a clear choice – either significantly increase defence spending, or tangibly rationalise capabilities.

The extra funding granted in the Autumn Budget to the MoD shows that the Treasury does possess a degree of flexibility on the defence budget. At the very least, the government should end its practice of creatively meeting the 2% GDP target via inclusion of adjacent spend such as personnel pensions and overseas aid. However, the level of increase necessary to deliver current capability commitments does not seem viable given the fiscal constraints the UK faces, even before the possible economic impacts of Brexit are considered. In particular, the 2018 pledge of real-terms spending increases for the NHS over the next five years has tied the government's hands. Since the true cost of full-spectrum "tier 1" capabilities lies in the range of 3% of GDP, as proposed in June 2018 by the Commons Defence Select Committee, it is clear that some rationalisation of capabilities is unavoidable.

Potential candidates for such capability cuts are, of course, fraught with difficulties. The MoD is now deeply committed to both the new Queen Elizabeth-class aircraft carriers and the new fleet of Dreadnought ballistic missile submarines. At the same time, any reduction in the order size for the F-35 risks seriously damaging the relationship with the Trump administration, which increasingly views trans-Atlantic ties in very transactional terms and faces its own affordability challenges amidst a ballooning budget deficit. Even the more restricted, leaked proposal to cut the Albion-class amphibious assault ships was faced with a furious response from Conservative backbenchers. Nevertheless, these are the sorts of decisions that can no longer be ducked if the UK is to develop a sustainable approach to its defence with no additional funding. → E

ENHANCE BURDEN SHARING & COLLABORATION

Given the deterioration of the security environment, rationalisation of capabilities clearly risks leaving the UK unacceptably vulnerable to certain threats. Indeed, mere maintenance of capabilities would also do so, given the emergence of new types of threat such as cyber that are significantly under-funded and under-addressed.

The most obvious strategy for mitigating this is via more effective burden sharing with NATO allies, and relaxing the imperative to be able to duplicate the capabilities of those allies within the UK force structure. The UK could focus on specific capabilities where it outperforms allies and adversaries – contributing these to a pooled NATO deterrent and contracting with other members to share their capabilities when needed. Possible examples of UK focus areas include anti-submarine warfare, maritime strike, airborne ISTAR, and airlift, as well as intervention through special operations or amphibious and airborne rapid reaction forces. Indeed, letting go of a full spectrum of military capabilities to focus on a high level of competency in specific areas would arguably increase the UK's usefulness to NATO without comprising national defence.

Even in areas where the UK continues to maintain a robust capability, challenges faced by the industrial

E: The Equipment Plan is committed across a broad range of programmes

Key components of the 2018-28 Equipment Plan

GBP 44.6 bn
Submarines
Dreadnought (strategic); Astute (tactical)

GBP 24.8 bn
Information Systems & Services

GBP 19.5 bn
Ships
Queen Elizabeth-class aircraft carriers; Type 26 frigate; Type 31 frigate

GBP 18.6 bn
Air Support
P-8 Poseidon

GBP 18.4 bn
Land Equipment
Ajax armoured fighting vehicle; Boxer armoured fighting vehicle; Upgrades of Challenger 2 and Warrior

GBP 17.8 bn
Combat Air
F-35 Lightning

GBP 13.8 bn
Weapons

GBP 9.6 bn
Helicopters
Upgrades of Apache and Chinook

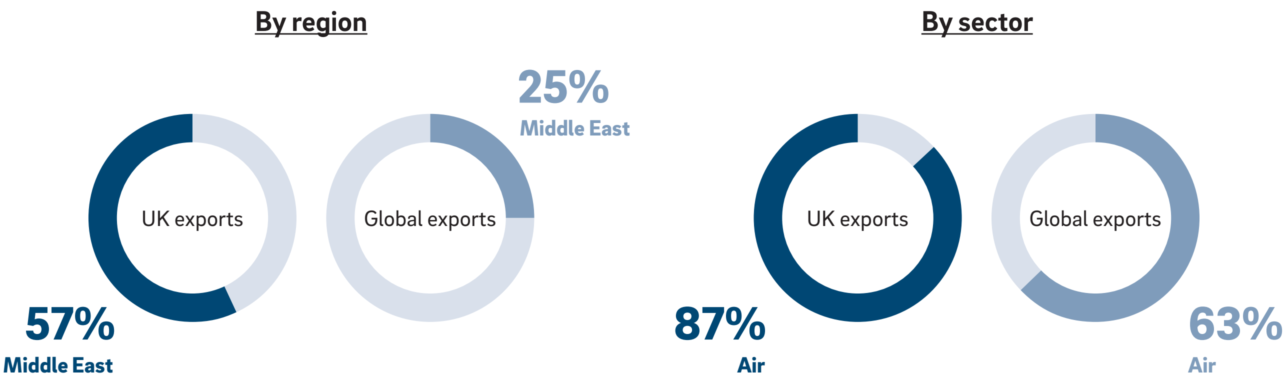
GBP 19.2 bn
Other

Source: Ministry of Defence, Roland Berger

base may also require closer collaboration between the UK and NATO allies. There is a strong argument that UK spending is too small and "lumpy" to sustain ongoing sovereign capabilities in certain areas. For example, the US Navy currently generates sufficient demand to support only two main shipbuilding yards continuously, despite planning to spend c. USD 200 bn on shipbuilding over the next decade (compared to the UK's c. GBP 20 bn). The UK on the other hand lacks the scale to generate such smooth demand, and the loss of skills associated with gaps in production have been a key contributor to cost overruns when new programmes begin. Collaborative multilateral programmes help to achieve this minimum scale, despite the extra political complexities created by such consortiums. Furthermore, such programmes will help to counterbalance the continuing consolidation in the US defence industry, and give European nations a better chance of competing with the US in the global export market.

Such an approach however cuts right to the core of the national debate over the future of the UK following the Brexit referendum. The independence of the military is closely associated with national sovereignty, and in the minds of many, military interdependence with European nations would be antithetical to the country's separation from Europe. Indeed, such an option may not be available if European allies decide to align defence more closely with the European Union as opposed to NATO. For example, entry into existing European programmes such as the Future Combat Air System (FCAS) and Main Combat Ground System (MCGS) may be highly unlikely for now amidst tighter Franco-German collaboration, illustrating one of the many negative side-effects of Brexit. Nevertheless, these opportunities must be explored if the UK is to meet the threats it faces with the budget it has available.

F: UK defence exports have been heavily weighted towards the Middle East and air in the last decade
UK and global defence exports by orders/contracts signed, 2008-17 [%]



Source: Department for International Trade Defence & Security Organisation, SIPRI. Roland Berger

A BALANCED, EXPORT-LED INDUSTRIAL STRATEGY

It is crucial that the MoD develops clearer guiding principles around balancing off-the-shelf and domestic procurement, allowing domestic manufacturers to plan appropriately for the future. This may well require separate approaches by domain, with the full range of sovereign capabilities being retained in only a subset. Furthermore, it is imperative that it adheres to its strategy, and is not tempted into progressively greater degrees of off-the-shelf procurement based on purely short-term considerations.

Defence industrial strategy must also be defined with global demand in mind. Exports help to generate the scale necessary to sustain capabilities during gaps between MoD demand, and it is crucial that exportability is built into future defence specifications. Although this "international-by-design" principle is already part of MoD policy, significant room for improvement remains.

Firstly, the UK must seek to further diversify its exports, reducing its dependence on Middle Eastern and air demand. Whilst the UK has had a poor historic record of exporting ships, there are signs of a revival. Sales of the Type 26 frigate to Australia and Canada have demonstrated the export potential for British ships, and there is hope the Type 31 can replicate this with a more budget-focused set of customers. Secondly, it is critical that the MoD also promotes the broader supply chain and services to international customers, as well as headline platforms. Thirdly, there must be a continued acceptance in government that defence exports represent the culmination of many years of corporate marketing effort. It is therefore imperative that economic diplomacy properly embraces defence equipment sales, as a strategic policy tool to win the hearts and minds of foreign states. → F

Where the MoD deems it necessary to purchase equipment off-the shelf, necessarily implying non-participation in the highest-level design and integration work, it should mitigate the effects of this as much as possible. One approach is to negotiate design and manufacture responsibility for a subset of the platform, as with the F-35 where the UK is responsible for c. 15% of the content of each aircraft. A second is modified off-the-shelf (MOTS) – basing the platform on a foreign design and purchasing key components from the designer, but insisting that system integration and assembly takes place in the UK. A successful example of this is the Ajax armoured fighting vehicle, which is based on a pan-European design but ultimately manufactured by General Dynamics UK.

Maintaining these capabilities will also require addressing the skills shortages faced by both the MoD and the wider defence sector. It is well documented that the UK faces a "retirement cliff" in engineering – the average age of an engineer is 55, with c. 70% of the workforce eligible for retirement over the next 20 years. Meanwhile, there is a continued shortage of students graduating in key engineering disciplines – Engineering UK has estimated the annual shortfall at c. 20,000 graduates per year. If the UK formally leaves the EU as expected, it will likely become even more challenging to attract EU students and engineering graduates. All in all, the MoD and industry must ensure that any future industrial strategy is aligned with strategic workforce planning programmes. This requires careful analysis of demographic trends and identification of the skills that will be required over the next decade. The wider government must also play its part by ensuring that sufficient amounts of young people are trained in the relevant disciplines, all the way up the educational chain.

PURSUE EFFICIENCIES STRATEGICALLY

This all being said, the UK must also ensure that it properly exploits remaining opportunities to improve the productivity of its armed forces and to do more with its existing force structure. The MDP identifies several initiatives that would build on the recommendations of the 2011 Levene report, such as ongoing transformation of DE&S.

Additional opportunities do however remain. One is a rebalancing of the Levene recommendation to strengthen and empower the front-line commands. Implementation of this has allowed the MoD to address accusations of being "top-heavy" – General Sir Nick Carter recently announced that the total number of brigadiers and generals had been reduced by nearly 40% since 2013. However, there is a risk that the pendulum has swung too far the other way – one crucial implication being that it is harder to prioritise spend, removing or deferring projects from the Plan accordingly. A slightly stronger centre may therefore better contain costs overall.

The high-profile shortcomings of recent large outsourcing contracts also hint at room for improvement on procurement governance, with new processes needed to make it easier for small and medium enterprises (SMEs) to compete. For an organisation the size of the MoD to remain efficient in a rapidly changing world, adaptation on a constant basis is required. There are lessons that can be learnt from the private sector in organisational restructuring, and in introducing flexible and adaptable cultures.

Industry must also play its part in controlling the rising cost of defence equipment. Whilst a fundamental driver of defence inflation has been the pace of technological change, the pace of innovation in civil aerospace and automotive is by no means slow, and in these areas inflation has been much lower. There is therefore considerable scope for the defence industry to become more efficient, with programme management, productivity, and supply chain management being examples of areas where further efficiencies could be achieved. However, it is also necessary for industry and government to work together closely to identify requirements and develop solutions. Joint Improvement Programmes for example, common in civil aerospace, are not utilised often enough in defence.

6. Conclusion

An opportunity that must not be passed up

The UK remains in a precarious position with respect to its defence, and the Modernising Defence Programme has done little (at least publicly) to change this. Clearly much depends on the outcome of the next Comprehensive Spending Review, which in turn will be much significantly affected by the immediate economic and political consequences of Brexit.

Fundamentally, the UK needs to clearly define the defence role it wishes to play in a post-Brexit world. Whilst the central planning assumption of SDSR 2015 was for the UK military to be "globally deployable", the option to be more locally focused rather than globally present remains. The rhetoric of the Defence Secretary hints at the latter, with the UK remaining a "tier 1" military power that will progressively expand its presence again "east of Suez". The recently announced deployment of the HMS Queen Elizabeth to the Pacific further echoes this approach. However, being globally present comes with a cost that is not factored into the current defence budget. Whatever route the UK takes, it must be realistic in the context of the future defence budget. It is our view that given the fiscal constraints the country faces, the UK must start to be more selective on its capability investments and industrial strategy. This will require intellectually demanding, politically unpopular decisions, but these can be passed up no longer.

The government can do little to affect the seismic geopolitical and technological trends affecting the UK, and unless it is prepared to commit to significant additional funding, it will best protect the nation by taking on the hard choices that are required. The next SDSR represents a chance to provide the strategic direction that is badly needed at a time of increasing threat; to miss this opportunity would be to risk undermining the long-term security of the UK.

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WE WELCOME YOUR QUESTIONS, COMMENTS AND SUGGESTIONS

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