Dear Chair,

COMMITTEE OF PUBLIC ACCOUNTS (PAC) CARRIER STRIKE: WRITTEN RESPONSES

Thank you for your letter of 13 October 2017 seeking responses to your questions and written responses to questions raised by the PAC members at the Carrier Strike hearing on 11 October. I have detailed below the information you requested.

Arrangements for appointing a new Chief Executive of DE&S, including interim arrangements.
1. We are currently in the process of drawing up arrangements for the recruitment of a new Chief Executive Officer of DE&S, including addressing the possibility of interim arrangements. These will be confirmed at the beginning of November following the normal approvals. The appointment will be made jointly by the Ministry of Defence (MOD) and the Board of DE&S. I will, of course, write to you at that point to confirm our plans.

The Department’s exposure to fluctuations in foreign currencies (particularly the dollar) over the current 10 year budget period.
2. At the Carrier Strike Hearing on 11 October I promised to write to you setting out the extent of the MOD’s exposure to foreign exchange rate changes over the 10-year planning period.

3. A substantial proportion of defence’s costs are incurred in foreign currencies, either as a consequence of operating or training abroad or procuring equipment. The majority of these costs are in US Dollars and Euros, with forecast demand totalling $33bn US Dollars and €8bn Euros over the ten years from the start of this financial year).

4. Fluctuations in exchange rates introduce uncertainty in the cost of foreign currency expenditure to the Department. The Department reduces this uncertainty and provides budget stability in the near-term by purchasing a proportion of foreign currency in advance using services provided by the Bank of England and HM Treasury’s Exchange Equalisation Account.

1 Forecasts correct at the end of the department’s annual financial planning process in May 2017.
Contracts are placed every quarter to maintain cover for a proportion of the forecast demand over the first three years of the programme.

5. The forward purchase programme is structured to provide an increasing level of cover in the three years before the requirement. This approach means that in financial year 17/18 only 10% of forecast demand remains exposed to exchange rate changes, while in 18/19 around 30% of forecast demand currently remains unprotected.

6. The Department does not purchase foreign currency more than three years in advance for two principal reasons. First, because to do so is unlikely to represent value for money since the market will price in the much greater risk of fluctuations in relative values that far ahead, and second because there is also significantly more uncertainty about the likely demand beyond that point.

7. For the Lightning Programme our cost approvals include some provision to address FOREX risks. This will continue to be monitored, and as necessary, will need to be prioritised against the delegated and the overall departmental position.

8. We continue to keep these arrangements under review, consulting HM Treasury and the Bank of England as necessary, to ensure they remain appropriate.

How the Department is delivering the SDSR 2015 commitment to enhance a QEC class carrier to support amphibious capability? [Extract from SDSR 2015: “Royal Marines of 3 Commando Brigade who are trained and equipped to provide specialist amphibious and Arctic warfare capabilities. We will enhance a Queen Elizabeth Class aircraft carrier to support this amphibious capability.”]

9. In SDSR 10 we recognised the inherent utility of the Queen Elizabeth Class (QEC) to operate helicopters to land Royal Marines as part of our amphibious capability. This was reinforced in SDSR 15 with a commitment to ‘enhance a QEC aircraft carrier to support this amphibious capability’. I can report that we are on track to declare an Initial Operating Capability with battlefield helicopters in Summer 2018, although this will have to be caveated by equipment and training limitations. We will not have had sufficient time to fully train in this role due to other priorities in HMS Queen Elizabeth’s schedule (most notably First of Class flying trials with F-35B off the US coast), nor will there be full clearances to operate all types of helicopters. This has always been our plan and is within operational tolerance. These caveats are being managed and elements of the training limitation will be addressed later in the year.

10. As part of SDSR 15 we have developed plans to further optimise QEC to better meet the demands of this role. This includes optimising communication systems for amphibious operations, improving the services in the aircraft carrier for embarked Royal Marines, providing ammunition stowage and expanding the operating envelope for helicopters. Navy Command are progressing this work. As explained in the hearing, QEC will not have a surface off-load capability but this will be delivered from other ships.

PAC Members’ Questions

How much contingency is left in the Carrier Strike schedule up to 2020?

11. As with any other very large and complex programme, the schedule requires constant management and analysis to identify and mitigate issues which could impede successful delivery. This approach ensures we have sufficient schedule contingency which is appropriate to the particular schedule risk. The Cabinet Office Infrastructure and Project Authority (IPA)
conduct exacting independent reviews of each of the constituent programmes to ensure that this schedule risk analysis is comprehensive and realistic. We use this information to refine and adjust our plans. The NAO report states that; ‘the way the department manages CEPP aligns with good programme management principles……..with consistent management information, visibility of risks and issues, and strong leadership.’ Additionally our schedule is benchmarked with other aircraft carrier operators and while we know the timescale is challenging, we remain on track to achieve an Initial Operating Capability (IOC) for Carrier Strike from the end of 2020.

**Which points in the schedule most worry the Department and what is being done to ensure that further delays are kept to a minimum?**

12. We are focused on the First of Class Flying Trials for F35B which are planned in 2018 and 2019. These trials form the foundation to successfully field the capability. We have invested considerable effort understanding the risks and issues associated with successfully completing this period. In the UK we have conducted a comprehensive examination of the whole enterprise for this period. We have embedded specialist UK staff with the US, including participating fully in similar trials embarked in USS WASP in 2013 and 2015 where they completed qualifying trials as part of the overall process of delivering their Initial Operating Capability. We have incorporated the lessons identified into our plans across all elements of the enterprise.

Since the Committee last looked at this subject in 2013, the Department has brought forward Crowsnest, but the schedule is very tight. If it is not ready in time, will the Department still be able to operate the carriers?

13. The carriers and their embarked aircraft will operate as part of a Maritime Task Group which will be tailored to meet the required task. We would review the operating environment and ensure that appropriate operational mitigations are in place. We would also expect the supplier to provide mitigation as well. The Crowsnest programme is on schedule, with a planned initial operating capability in Q2 2020 as part of the coherent plan for an IOC for Carrier Strike operations by the end of 2020.

**There have been many concerns raised on the technical problems with the jets. How involved are you with the issues that have been found?**

14. We are fully involved. Indeed, our F-35 test squadron forms part of the wider UK/US test effort, and the annual Director of Operational Test & Evaluation (DOT&E) report is a joint report. We are the main partner to the US in the System Development and Demonstration (SDD) phase of the programme, which is more than 90% complete. As issues are found solutions are developed, and the UK is part of that testing. The USMC and USAF have both declared their own IOCs in 2015 and 2016 respectively, at an early warfighting standard of software.

**What technical problems worry the Department most?**

15. It would be unreasonable for a system of this complexity to have no technical issues. However, with F-35 having flown over 100,000 flying hours, we judge that the level of technical challenge is normal when compared to legacy aircraft. The Lightning SRO sits on the F-35 Configuration Steering Board that addresses all technical issues highlighted in testing. The issues highlighted in the media draw on technical reports from last year, the majority of which have been rectified and are undergoing flight test. Considerable progress has been made in many of these areas and we are not expecting these to impact negatively on our ability to declare IOC (Land) in Dec 18.

**The GAO has expressed concerns that the software on the jets could be delayed by up to a year. How concerned is the Department about this?**

16. We are not concerned. We are flying 3F software on a UK aircraft now. This is the same baseline of software that we will declare at IOC and will allow us to use UK weapons.
What is the Department doing to hold industry to account to ensure that they fix these problems?

17. The UK is part of an international collaborative partnership, underpinned by the governance arrangements set out in two primary MOUs (SDD MoU and PSFD MOU). Acting on behalf of all the partners, all contracts are let through the F-35 Joint Program Office (JPO) to industry. We work through the JPO and with industry to ensure commitments are met, in line with our contracts, and the Senior Responsible Officer (SRO) sits on the governance committee that oversees the programme.

How frequently do you anticipate the software associated with delivering carrier strike will need to be upgraded and are the costs associated with those upgrades included in the life-time budget of the programme?

18. Given the scale of software across the enterprise, some software will need upgrading more frequently than others. Costs of updating software are included in the current budget of the programme. Software costs associated with capability upgrades will be considered as part of the department’s routine annual planning cycle.

Given our first batch of jets were being built before they were fully designed, what is the Department doing to ensure that they will work as intended on arrival?

19. The first batch of aircraft are test aircraft and are planned to remain as test aircraft in the USA. As a Tier 1 partner in the programme, the UK is integral to the design and testing of the aircraft. This ensures access to information via embedded personnel in the US working in all areas of the programme to ensure that the aircraft and support systems meet UK requirements. All F-35 aircraft that the UK has received, including the test aircraft, will undergo follow-on modernisation, which includes retrofit, as part of planned programme activity to ensure we gain maximum benefit from the programme.

The lead for the UK’s Lightning II programme has recently downgraded his delivery confidence to Amber-Red. Why was that and what does that mean for achieving Carrier Strike by the end of 2020?

20. In June 2017, the SRO for the UK’s Lightning II programme revised his programme delivery confidence for IOC Land, reflecting compression in the schedule, from amber to amber/red. The SRO is working hard with the JPO, Lockheed Martin and internal stakeholders to address the pressure in the schedule. Based on our previous experience, we expect to make progress and are very active on this matter. SRO LTNG has set the requisite measures in train, and if resolved, he judges that the programme will return to an improved delivery confidence.

What is the mechanism for the UK to influence future development following the end of the UK’s Tier 1 status?

21. The UK can exert influence through the Joint Executive Steering Board and the Configuration Steering Board in the JPO. In 2006 the UK signed a Production, Sustainment and Follow-on Development MOU, alongside the seven other partner nations, retaining the largest non-US stake and influence in subsequent upgrades to the aircraft.

Has Tier 1 status entitled the UK to intellectual property associated with the F-35’s development and if so, how will that change following the end of Tier 1 status?

22. Under the governing MOUs the nature of this collaborative partnership is not that the UK gains intellectual property rights; rather it is the F-35 programme overall that benefits. Through contracts let by the JPO, the UK shares in those benefits. The UK will remain the largest partner to the US in the F-35 programme for the foreseeable future buying the most aircraft, providing 15% by value of every one that is built globally, and retaining influence in line with our planned purchase share of 138 aircraft.
What is the department’s assessment of the costs associated with ongoing maintenance of the jets in the UK and what proportion and value of that maintenance will benefit UK companies?
23. As planned, the F-35 global support solution is being developed and established with UK staff fully engaged. Overall, the programme is resulting in up to 25,000 UK jobs spread across more than 500 companies in the supply chain. F-35 support and maintenance costs are included within the approved budget for the programme, and we remain within our cost approvals. The UK will bid for further global programme support contracts as and when details are released by the JPO.

What is the Department doing to address the long standing gaps in its commercial skills and capabilities?
24. DE&S is undergoing a period of transformation and the commercial function is using that opportunity to improve further the capability and capacity of its personnel. There has been an increased focus on training for effective and active contract management, delivered through the broader MOD Commercial Professionalism Programme.

25. The MOD now has a new Chief Operating Officer and a new Chief Commercial Director. In addition, DE&S has recently had considerable success in recruiting suitably qualified staff into the business with a net increase last year of over 200 people. This increased capacity is supplemented by external expertise from the DE&S Commercial Delivery Partner, who provide focussed effort on contract management activities where appropriate. These external experts work as part of the DE&S Delivery Teams, enabling knowledge and skills transfer that will help to further develop DE&S commercial personnel learning.

26. The MOD Commercial Professionalism Programme delivers coherent education and training, recognised qualifications and supporting processes for commercial personnel across the Department (including in DE&S). This training is being supplemented by the development of a Contract Management Handbook which provides clear guidance on the mechanics of contract management to commercial staff within the operations environment.

When will the Department know that its plans are working?
27. We remain on track for IOC, albeit with some risk. We believe our plans are robust and they have been critically reviewed by the Infrastructure and Projects Authority. We are delivering ships and aircraft today and supporting them.

Are long-term support contracts for the carriers and jets now in place?
28. Following delivery, support arrangements for the QEC are within the Common Support Model and delivered by the Surface Ships Support Programme. Support contracts are in place for the aircraft. Similar to the production contracts, these are let annually by the JPO.

Can you confirm the Initial Operating Capacity specification for the carrier has not been amended to accommodate the current 1-2% overspend?
29. We have not changed our plans for the Initial Operating Capability. We are working with the Aircraft Carrier Alliance to reduce cost pressure within the QEC build programme under the terms of the contract.

Given that the unit cost of future F-35 aircraft is dependent on the scale of production, can the Department provide assurance that the £100 million cost per jet, will not increase?
30. Enshrined in the governing MOUs is the principle of affordability gained by economies of scale and the financial efficiency of sharing costs with partners. Publically available information proves that the costs of aircraft are decreasing. The last aircraft cost data (LRIP 10), which the US publishes, shows that the per-plane price of F-35B is $122.8M (£93.2M at
today’s FOREX rate); a 6.7% reduction from LRIP 9. We fully expect the real cost of the aircraft to continue to decrease.

Is all the enabling equipment for carrier strike fully funded?
31. As stated at the hearing, the planned enabling constituent parts of the programme are in place to allow us to reach IOC and through to the full carrier strike capability.

Can you confirm that there will be no capability gap during the transition from Type 23s to Type 26s?
32. As stated at the hearing, we have scheduled the roll-out of Type 26 precisely in line with the drawdown of Type 23.

What are the comparative costs of including amphibious capability in the new carriers against procuring new dedicated amphibious capability and extending the life of current amphibious capability?
33. We conducted a balance of investment in SDSR 15 and we announced a plan to optimise a QEC aircraft carrier to support amphibious operations. These plans are being developed in detail by Navy Command and we are not planning to change this previous announcement.

What costs are associated with operating carrier strike with the US and are those costs funded?
34. The UK Secretary of State for Defence and the US Secretary of Defense recently announced that USMC F-35B aircraft would embark in HMS QUEEN ELIZABETH’s first operational deployment in 2021. This will be the subject of more detailed planning over the coming years.

Yours sincerely,

STEPHEN LOVEGROVE