

Written evidence submitted by BAE Systems plc

Following on from my appearance in front of the Defence Select Committee in November as part of the inquiry into Aviation Procurement, I am writing to follow up on two specific questions:

1. The timelines for upgrading the RAF's Tranche 1 Typhoon fleet
2. The availability of the Hawk fleet at RAF Valley and the work to rectify recent issues

Upgrading the RAF's Tranche 1 Typhoon fleet

It is technically feasible to bring a Tranche 1 (T1) aircraft to the standard of a Tranche 2 (T2) or Tranche 3 (T3) aircraft. BAE Systems has previously provided data to the Ministry of Defence (MoD) that outlines the scope of structural and avionics modifications that would be required. BAE Systems has not been asked to provide an assessment of the non-recurring design effort, nor associated costs, to implement such an upgrade. However, Spain has embarked upon a similar programme with some degree of concurrency available through multiple modification lines.

Other Typhoon partner nations have also reviewed their fleets – Germany has concluded that it will retire its T1 aircraft, but will purchase more aircraft under the Quadriga programme in order to maintain combat fleet numbers. Italy are reportedly considering acquiring new Typhoons, in response to the retirement of Tornado, and potentially to replace their Tranche 1 fleet.

It is worth noting that there are some fundamental differences in the avionics equipment and in some areas of the aircraft structure between the T1 aircraft and those in the RAF's T2 and T3 fleet. In addition, whilst the T2 and T3 aircraft share the same avionics equipment, there are structural differences between the T2 and T3 build standards, with the T3s already provisioned to accommodate the weight, power and cooling requirements of the RAF's Mk2 ECRS radar.

Hawk availability

As the Committee heard in the oral session with Lockheed Martin on 29 November 2022, Military Flight Training consists of 2 phases under multiple different contracts, delivered by a number of industry partners working to provide trained pilots to the Armed Forces. The first, the UK Military Flying Training System, is the training delivered by Ascent (which is a joint venture between Lockheed Martin and Babcock) in partnership with the RAF and the next phase delivered by the single Service front line commands on the Operational Conversion Unit. BAE Systems provides an availability service for the Hawk T2 aircraft to enable Ascent and the Ministry of Defence to achieve Phase 2 under the Hawk Integrated Support Solution (HISS) contract. The HISS contract is an eleven-year support contract for the UK fleet of Hawk aircraft, which includes the T2 aircraft, which operate at RAF Valley in support of the MFTS contract. The MoD have a separate contract with Rolls Royce (through DE&S) in order to provide available Hawk engines. The engines are supplied to BAE Systems as Government Furnished Equipment under the HISS contract.

The HISS contract caters for 7800 flying hours of Hawk T2 availability to be provided from a Forward Available Fleet (FAF) of 23 aircraft in Year 1 (financial year (FY) 22/23), with 6540 hours in subsequent years. It should also be noted that there are an additional five aircraft in Depth Maintenance at any point in time, bringing the total Hawk T2 fleet to 28 aircraft.

On 25 March 2022, Rolls Royce reported that significant technical issues had been found in the Low Pressure Compressor (Module 01) of the Adour MK951 engine. The result was that the 4000 hour planned design life of each engine was reduced to a clearance of 1700 hours. This limitation significantly and immediately affected the number of serviceable engines available for the Hawk T2 fleet, leading to an average of eight serviceable aircraft being made available each day throughout FY22/23 and a revised forecasted outturn flying rate of approximately 3700 flying hours, which is 50% of the contracted levels.

BAE Systems is actively engaged with the MOD, Rolls Royce, and Ascent to fully understand the issues, identify potential recovery options and develop plans to utilise available engine assets in the most effective way. We anticipate this reduced engine availability will continue for the next 2-3 years whilst supply chain and engineering solutions are implemented, with a commensurate reduced Hawk T2 flying rate, before the fleet begins to recover from FY24/25 onwards. BAE Systems are aware that RR and the MOD have been working closely to identify the root cause of the engine issue and to ensure short term mitigations and long-term solutions are in place.

I hope that this information is useful to the Committee, and look forward to seeing the outcome of the inquiry.

11th January 2023