# Air & Space Power after the SDSR

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## Introduction

The 2010 Strategic Defence and Security Review (SDSR) was conducted under 3 cute countervailing pressures: the need to do all we can to ensure the success of current operations, the need to look forward to 2020 and beyond to ensure the long-term security of the United Kingdom, and the urgent need to address the government's wider financial situation. The Review was structured in 2 parts: the National Security Strategy (NSS), published on 18 October, and the SDSR. The NSS provided strategic vision and purpose, and highlighted, above all, the complexity and potential volatility of the 21st Century world in which we live. The test of the strategy will be the coherence of NSS and SDSR – how well are the ends set out in NSS supported by the ways and means delivered by SDSR, and by implication how well is the Future Force described in SDSR matched by Defence Planning Assumptions and the more detailed decisions on implementation which are needed. From an Air perspective, whilst the full implications and detail will take some time to establish, it is clear that the outcome is a capable RAF, with an updated inventory, structured to be as coherent as possible with the wider priorities of UK Defence requirements in the 21st Century. There will inevitably be rough edges that need to be smoothed.

## Afghanistan

In the immediate term, the overriding priority is the campaign in Afghanistan. Strategic failure is something we simply cannot countenance from any perspective, be it national security, the potential for the destabilisation of Pakistan and the wider region, or simply David Kilcullen's pithy observation that the West is likely to have to fight hybrid wars against deeply asymmetric opponents until it demonstrates it can succeed in them. The RAF is, and will remain, fully committed to providing assured operational capability and relevance in Afghanistan, across all 4 Air & Space Power roles (see below), and building on the level of expertise in Air/Land Integration, and on the subtle but critical key roles involved in applying air power in a complex COIN environment.

## Core Roles

During the SDSR process, I was (and remain) determined to retain the capabilities necessary to deliver each of the 4 fundamental air and space power roles: Control of the Air and Space; Air Mobility; Intelligence and Situational Awareness; and Attack. Though the post-SDSR RAF will undoubtedly be smaller, it will retain the ability to deliver significantly in each of these areas, in maintaining the sovereignty of United Kingdom airspace, in Afghanistan, in the Falkland Islands, and in the event of short-notice contingency operations anywhere on the globe.

Whilst we will retire some fast jet platforms (all our Harrier and some GR4) migration to their successors, the Typhoon and eventually Joint Combat Aircraft (JCA), will give us a durable truly multi-role Combat ISTAR capability based on 2 types as we progress to 2020. Technologically this is the equivalent of the replacement of biplane fighters with the Hurricane and Spitfire in the 1930s. As each individual Hurricane and Spitfire delivered a quantum

leap in capability over the Gloster Gauntlet and Gladiator aircraft they replaced, so it became possible to achieve more with fewer aircraft, and fewer squadrons. The same applies today. The very fact, that unlike Harrier, Tornado GR4, and Tornado F3, both Typhoon and JCA will be as capable of delivering Control of the Air as they are Attack or Intelligence and Situational Awareness, means that in the contested and challenging operational environment of the future fewer platforms will be required to deliver greater capability. Increasingly realistic and networked simulation is also allowing us to conduct much more training in synthetic environments.

The Future Force structure also maintains the capability of the RAF to address another core Air and Space role – the provision of Intelligence and Situational Awareness to the campaign. The further development of Remotely Piloted Air Systems (RPAS) is one of the central elements. Not only do they provide a key capability for the current Afghan campaign, they also provide the basis for a persistent Combat ISTAR capability in future campaigns, and ensure that the RAF and UK remain in the vanguard of the development of RPAS tactics and techniques, and at the core of the eventual move to truly unmanned autonomous systems. It is not unreasonable to envisage force structures with a mix of, say, one third remotely piloted Combat ISTAR platforms to two-thirds manned after 2030.

Strategic intelligence is a key capability for the United Kingdom. In the current strategic environment, the ability to detect the development of threats and deal with them early is critical. The UK's ability to do this will be significantly enhanced by the introduction of the Rivet Joint capability which is able to span the full spectrum of intelligence collection and dissemination, from the strategic to the micro-tactical, and deepen still further our cooperation with our key intelligence ally. The RAF will also continue to provide the UK military lead in integrating with our allies and partners in the use of Space for intelligence and situational awareness. Intelligence collection is of little use without effective analysis, processing and dissemination, and as a Service we will remain centrally engaged at the national and coalition level to ensure that the collection of intelligence by air and space platforms is coordinated with HUMINT, and its processing and dissemination integrated with both HUMINT and information from open sources.

Air Mobility is absolutely key to success at every level in Afghanistan in its current phase, and in most likely campaigns of the future. As with our Combat ISTAR, we will replace old with new. Chinook, for example, is the key provider of rotary wing mobility in Afghanistan, and in the likely Joint campaigns of the future, and we will be getting an additional 12 Chinooks – less than originally hoped but still very necessary. Similarly, whilst the Hercules, VC10 and Tristar continue to provide excellent service, our ability to squeeze much more from such venerable aircraft (some of our C130Ks are almost 40 years old) is limited. The C17, A400M and FSTA represent a better future capability for Defence – and FSTA is more than

a tanker, it also provides enhanced strategic airlift capability.

The last ten years have seen a quantum leap in our ability to provide air mobility in the demanding High Intensity Counter-Insurgency environment. Our equipment is better protected, and our crews more tactically adept. This is something we will maintain after the drawdown of operations in Afghanistan. Operationally focused and tactically effective air mobility is not an optional extra, it is absolutely essential to the core business of joint warfare.

For our Allies, the RAF will remain a valuable partner capable of the full range of air operations in the most demanding environments. The quality of the combat force will be enhanced; indeed, the ability to self-escort will make integration into Coalition operations easier and mean that we will offer considerably more against capable opponents. Our capability to provide mobility will be modern and survivable and our Strategic ISR capability will be enhanced, notwithstanding the difficult decisions not to bring the Nimrod MRA4 into service (see below) and the withdrawal of the Sentinel once it is no longer required in Afghanistan.

**People**

The same premium that demands agile future platforms demands intellectually and professionally agile people. This necessitates a singular focus on the quality of training, using advanced simulation where appropriate, and education to ensure our current operationally focused ethos is fully embedded across the whole Service in a form that would be recognisable to Trenchard, to Dowding, to Coningham or to Slessor. The already impressive level of operational experience across the Service also provides the basis to enhance the conceptual component by educating ourselves to produce flexible, thinking military airmen, true members of a wider profession of arms, able to offer the optimum to joint and coalition campaigns at all levels. This will particularly involve a positive, sensible and credible articulation and advocacy of the value of air and space power in the joint and combined campaigns of the future. The professional links and relationships we have developed across the Atlantic and the Channel, within the broader NATO and further afield will remain strong and our people will continue to punch above their weight in Combined Air Operation Centres and joint and coalition headquarters.

**Safety**

One area, which is non-negotiable, is safety. The RAF will not, under any circumstances, be driven by considerations of resource to compromise safety, either on operations or in training. On operations, it is quite simply unacceptable to expose our people, of all 3 Services, to any greater risk than that imposed by the combination of extremely demanding operating environments and the enemy.

**Risks**

So much for the positives. Whilst the properly resourced SDSR will deliver an RAF capable of fulfilling the 4 core air power roles, and offering particular capabilities such as Storm

Shadow to Coalition partners and allies, we should not blind ourselves to the fact that it contains some areas of risk. Perhaps the most obvious is the deletion of the suite of capabilities provided by Nimrod MRA4, which range across the air, maritime and land environments, and the full range of effects it offers, from long range search and rescue at the softer end of the spectrum, to kinetic attack against submarines and surface combatants. In addition, the Sentinel will be withdrawn from service, and the RAF Regiment reduced in size, once no longer required in Afghanistan.

Mitigating these risks will demand close cooperation with our sister Services in the UK, with industry and with Allies. The Defence Secretary has been clear that the Nimrod decision means taking some risks on the capability that the MRA4 was to provide, and has been similarly upfront on the judgement that we have sufficient certainty in overflights and overseas basing to take risk on Carrier Strike until the Joint Combat Aircraft – Lightning II – capability enters service. The Carrier Variant of JSF will be cheaper to buy, and cheaper to maintain whilst operationally it will go further and carry a greater weapon payload than the STOVL version. But we must retain the concept of employment jointly with our Naval colleagues as the aircraft and the ship together are the power projection element and the raison d'etre for the carrier.

These decisions also show the need in coming years for a ruthless focus on delivering value for money. Delays and cost overruns have both reputational and practical implications. The need to do more with less should drive innovation; there are few good reasons, for example, why every airframe in an operational area should not be an ISR collector – or that FSTA could not be configured as a strategic ISR platform - off the shelf modular capabilities to make this happen exist and can be integrated into current and future platforms.

**Future**

It would be foolish to assume that the potential adversaries of the future, whether state, non-state or hybrid, will concede entry to Western military expeditions as readily as they did in the moment of apparent unipolar American power between the end of the Cold War and 2003. Hezbollah's ability to challenge Israeli use of the Lebanese littoral in 2006, and its deployment of crude weaponised UAVs, is a valuable lesson.

It is not necessary to agree completely with the detailed examination of potential future adversaries expounded in the American Air-Sea Battle concept, to accept that contested access will feature as a matter of course in many future operational scenarios. The reality of 21st century operations is that we deploy, enable and largely maintain our forces by air and sea, and that highly capable anti maritime and anti aircraft capabilities will be increasingly available to potential future adversaries, whether state, non-state or hybrid actors. We must also accept and be able to work within cyberspace as our adversaries seek to gain the advantage in unconventional and novel ways. Theatre entry and deployed force sustainability are thus likely to be challenged by our enemies as we

move towards and beyond 2015. Without the capability to operate in contested air and maritime environments therefore, the UK's ability to project military influence in future would be diminished. So for the air environment, maintenance of sufficient high end capability is an essential pre-requisite for an adequate contribution to UK Defence in any but the most benign scenario.

Both the National Security Strategy and DCDC's *Future Character of Conflict* paper (FCOC) clearly identified Space and Cyberspace as areas of asymmetric vulnerability. That the UK is beginning to take ensuring access to Space somewhat more seriously, is heartening, but we need to consider carefully how (and how much) to invest in the assured access to Space, upon which all 9 pillars of our critical national infrastructure depend.

FCOC notes that all future conflicts will partially be fought through the media and by the use of cyberspace. As the Director of GCHQ recently highlighted, cyberspace is a contested and competitive area. The domination of the information space will be critical to the delivery of future military effect. Both hybrid actors and nation states already exploit cyberspace, and as the cyber attack on the Estonian banking system in 2007, and denial of Georgian internet services during the Russia-Georgia conflict in 2008 indicate, sophisticated, developed societies and economies are particularly vulnerable. The UK must strive to guarantee that our systems and processes afford the resilience needed to enable us to continue to operate effectively in the future, and if necessary to have credible offensive capabilities in cyberspace. The nature of the RAF's business, our implicit understanding of the cyber terrain, and our technical culture and training, all point to the Service having a pivotal role to play in the understanding, defence and exploitation of cyberspace, now and in the future.

As we refine existing capabilities and develop new capability areas essential to the challenges of the 21st Century and as we move to assure further our access to space, Defence must seek innovative approaches to ensure affordability. Commercially available technologies such as small satellites now offer much of the capability previously restricted to expensive military systems at a fraction of the cost. It should therefore be possible to meet many of the Defence requirements by developing a mix of small and relatively inexpensive satellites and purchasing space products without necessarily owning the systems.

**Conclusion**

The apocalyptic predictions of the effect of SDSR on the RAF proved unfounded. Despite the loss of some platforms, the Service remains capable and prepared to deliver across the 4 core air and space power roles. It is well configured, postured and focused to support the immediate and overriding campaign priority in Afghanistan – where its Combat ISTAR capability, principally in the form of the Tornado GR4s, are delivering outstanding reliable cost-effective results - the Air Defence of the United Kingdom and dependent territories, including the Falkland Islands, and small scale contingencies. By 2020, it will be a

more modern, and in many ways more capable force than it is today, with an enduring capability based on 2 highly capable and truly multi-role, Combat ISTAR platforms, a range of manned and remotely piloted Strategic ISR capabilities, a modern and flexible fixed and rotary-wing mobility capability and the pivot of UK military capability in both space and cyber operations. That this is the case reflects a fundamental and enduring reality. The ability to exploit the third dimension is essential to success in modern warfare: air and space power is both a key effector and enabler across the full gamut of current and potential future operations.