

## **CAS – Air Power Conference Keynote Address – 11 Jul 18 V5.0**

**Speaker:** Chief of the Air Staff, Air Chief Marshal Sir Stephen Hillier.

**Date:** Tue 11 Jul 18.

Fellow Air Chiefs, distinguished guests, ladies and gentlemen. I am delighted to welcome you to the 2018 Royal Air Force Air Power Conference. Last year we focused on the importance of partnerships. It was clearly a persuasive message - the heads of no fewer than 54 nations' air forces are here. The most diverse yet inherently connected gathering of senior airmen and women ever to assemble at a UK Air Power Conference.

Our Conference is also being live-streamed to Royal Air Force units in the UK and around the World. So welcome to all, whether you are part of the RAF's Whole Force, in our partner forces, business, industry, or in academia. Here at the IET or participating remotely. We all have something valuable to contribute to, and gain from, this conceptual centrepiece of our RAF100 programme.

My sincere thanks to our Conference sponsors, the Air Power Association, and the Royal Air Force Centre for Air Power Studies, for laying on this exceptionally promising event.

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Thank you also to everyone here for your outstanding support to RAF100 yesterday. With RAF100 we commemorate the courage, successes and sacrifices of the Royal Air Force over the past century. We also celebrate our achievements and our people today – busier than ever on operations, with right now 16 operations, in 28 countries, across all 5 continents.

But, most importantly of all, we aim to inspire the next generation by an example of excellence, and the excitement of aerospace. We will hear more this afternoon about how we are meeting our recruiting challenges, but our aim of inspiring young people goes far beyond just that. We seek to build on the great affection that already exists for the Royal Air Force by fostering young men and women's interest in science, technology, engineering and mathematics, for the benefit of the entire aerospace enterprise.

We are reaching out to 2 million young people across the country, encouraging them to seize opportunity, develop themselves and realise

their potential. That includes, together with the Royal Academy of Engineering, engaging more than 60,000 young children through our ‘STEM in a box’ programme; sending RAF100 STEM activity books to every primary school in the country; and visiting so far over 830 secondary schools and 200,000 pupils through our RAF100 STEM Roadshows.

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So it is on young people and their future that this Conference will focus. Because if the Royal Air Force’s future is to match the brilliance of its past, we need to think, innovate and organise more creatively and rapidly than ever before: the evolving strategic environment demands that we must. I therefore ask you constantly to keep in mind the title of this Conference – ‘Building the Next Generation Air Force’.

No one has a monopoly of good ideas on any of these subjects, which is why our speakers represent a wide diversity, not least from the young people who are the lifeblood of our future. I ask all of you – here at the IET or engaging remotely – to get stuck into the debate. We must, as the RAF Strategy makes clear, ‘Think to Win’, if we are to translate our intellectual capital into operational success.

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Let me get us going by offering a brief overview of the strategic context, at least from a UK perspective. Threats are arising and evolving at pace. We are in a climate of growing strategic uncertainty, in an increasingly complex and contested international environment. One in which the threat posed by violent extremist organisations co-exists with ultimately more dangerous and ever-evolving state-based threats. One in which the asymmetric advantages that air and space power have so far conferred on our interventions in the post-Cold War era are being eroded, and quickly.

Counter-insurgency and counter-terrorism operations continue to be a huge effort, evidenced not least by the RAF’s ongoing fight against Da’esh; our significant and growing commitment in Afghanistan; and our recent deployment of RAF Chinooks to Mali. But they are just part of a much more complex tapestry of strategic competition and conflict. Take Syria, for example, where terrorists, state actors and proxies operate across the full spectrum of military capabilities.

We can no longer reassure ourselves that the most dangerous state-based threat is the least likely: our potential enemies’ actions over the past 5

years provide ample evidence of their unfriendly intent. Russia exemplifies the complex and growing challenge posed to this country and our allies: it is applying pressure and seizing opportunity wherever it can; it has illegally annexed part of another state's sovereign territory; it is tolerating Assad's chemical weapons atrocities in Syria; and it has a clear policy of subversion against the West. Even as a veteran of the Cold War, I'm still shocked and in disbelief that Russian norms now include the use of nerve agent to murder in the UK.

But I remain equally impressed by the international solidarity and resolve shown in the face of this aggression and pressure. And NATO's Enhanced Forward Presence on the Alliance's eastern flank – including the current deployment of RAF Typhoons to Romania – is sending an appropriate message of deterrence.

So, we now have to be ready, willing and able to deal with the most advanced as well as the most prolific threats simultaneously. And we need to be flexible; to adapt quickly; and to have the strategic patience and resilience needed to sustain our commitments – be that with deterrence or on live operations - for as long as takes to finish the job. We must also leverage the enormous strategic advantages of our multi-lateral and bi-lateral defence and security agreements, be that through NATO or the UK's wide range of other vital multi-lateral and bi-lateral partnerships.

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Much of what I've said links very closely to the UK's Modernising Defence Programme, which aims not only to ensure that we have the capabilities to fight tonight, but also that we properly modernise and are equipped and organised to meet the challenges of an era of intensifying strategic competition and potential conflict. Let me offer my assessment of what more the RAF needs to do.

The RAF Strategy, published last year, continues to be our framework. It already makes clear that we need to grow our front-line capability now, as well as grow the next generation Air Force – be that equipment, infrastructure or, critically, people.

We need to grow capability, firstly, to build more resilience, more strength in depth, into a current front-line which is already exceptionally busy and hard-pressed. Second, we need to fill in gaps in our current range of capabilities. And third we need to grow the capabilities which will allow us to apply air and space power and retain our operational advantage in those complex and contested environments.

For the immediate challenge, thickening our current front-line, in the last year we have continued to develop our A400M Atlas Force, and now deployed it on operations, markedly increasing our always-in-demand air mobility capability. We have developed our C-17s for the Airborne Long-Range Insertion role. And we have reached full operational capability with our Chinook Mk6 fleets.

In ISR, we have grown by 20% the numbers of our constantly committed Shadow and Reaper Forces, as well as markedly increased the input into our training system of more aircrews and intelligence analysts. And we have declared Full Operational Capability with our Rivet Joint signals intelligence Force.

Our combat air capabilities remain in equally high demand. Our Tornado Force is still deployed on operations, just as it has been for the last 28 years. But the final 2 Tornado squadrons – 9 and 31 Sqn – are currently due to disband when the Tornado retires from RAF service in March next year. We have already announced that the Typhoon Force will grow to offset the retirement of the Tornado and that one of those new squadrons will be Number 12 Sqn. Today I can announce that the next new Typhoon squadron will be Number 9 Sqn, and it will start to form at RAF Lossiemouth later this year.

Furthermore, I can confirm that the programme to replicate Tornado's outstanding Brimstone and Stormshadow capabilities on Typhoon is firmly on track. The work with Stormshadow should complete next month, ensuring that we can continue to execute the sort of long-range precision strike missions as we did so successfully with our US and French Allies against Syria back in April.

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The next challenge - filling in the gaps in our current capability - means getting the P-8 Poseidon maritime patrol aircraft into service. We are on the brink of restoring this capability, and when we receive the first of our 9 aircraft in 2020 at RAF Lossiemouth, its trained crews will be operational immediately. It also means developing further our RPAS capability, to increase persistence, speed of response, weapon load and, critically, the ability to fly in unsegregated airspace – meaning we will be able to fly our RPAS platforms anywhere in the world.

This is our Protector programme – our sovereign development of the Certifiable MQ-9B Skyguardian. As I speak, a Protector RPAS is flying from the continental United States to RAF Fairford, where it will land this evening after a flight – which will include a simulated operational orbit – of 22 hours. Thankfully, it will remain at RIAT on the ground for somewhat longer, so you will have the chance to see for yourselves this world-leading new capability. And I can announce today that the first RAF squadron to be equipped with Protector will be Number 31 Squadron, carrying on that Sqn's current proud operational record from the Tornado Force.

Across our Air ISTAR Forces, we will develop a current and future enterprise which is more efficient; thickened, broadened and more pervasive; more inter-operable with other national and coalition capabilities; and able to operate effectively in a contested air and space environment.

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All of the capabilities which I have been describing are essential building blocks for the next generation air force. But we need to go further to deliver the full requirement and succeed in the future operating environment. The F-35 Lightning is the headline capability – a genuine game-changer, with our first aircraft now in the UK. And, as you saw in the sky over Buckingham Palace yesterday, already starting to be integrated into the front-line – jointly manned by both the Royal Air Force and the Royal Navy. By the end of this year, we will have declared an initial operational capability from land bases, and we will also have started flight trials on the Royal Navy's new aircraft carrier, HMS Queen Elizabeth. Such that by the end of 2020, we will have an F-35 operational capability from land or from the sea.

But even as we introduce and develop the F-35, we need to look even further ahead with our combat air capabilities, to ensure that we can preserve our operational advantage. So that we can continue to be a leading nation in collaborative international programmes and exports, using our world-class capabilities in platforms, propulsion, sensors, weapons and system integration.

My Rapid Capabilities Office is already delivering the Future Combat Air System Technology Initiative programme announced in the 2015 SDSR - a portfolio of activities to keep the UK at the forefront of global Combat Air technology development. As 'Team Tempest', they are leading on new ways of working with UK industry to deliver ambitious advanced technology development across the spectrum of Combat Air capabilities, ensuring the

UK has a globally competitive Combat Air enterprise ready to lead in a Next-Generation acquisition programme - at pace and with affordable high-technology.

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In Space, the Defence Secretary confirmed in April the RAF's leadership of the Defence effort in Space. So we are growing our space command and control capability; our situational awareness through acquiring new radars; and our resilience, ensuring that we can continue to protect and exploit an increasingly critical, yet contested and vulnerable Space environment. To help explore future capability options, in January we launched Carbonite 2, a small low-Earth imaging satellite. Taking full advantage of commercial expertise, and at just 9 months from concept to launch - and for just £4.5M - I believe we have gained a great insight into great future possibilities. I can easily see a future constellation of such small satellites, dramatically improving not only our persistent capabilities but also our resilience – and affordability.

For the EU's Galileo satellite programme, the UK's preferred option remains an appropriate level of UK access and involvement. But we plan to embed some of the RAF's space experts within the UK Space Agency to support its work in scoping an alternative, resilient Global Navigation Satellite System.

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These are all exciting developments, but they are insufficient alone to deliver next generation air force capability. Above all, we will need the people. That's why, for the first time, an entire session of this Conference is given over to focusing on how we will ensure that we have the people we need for our next generation air forces – for only through succeeding there will we succeed at all.

Beyond that, we need to be able to fuse our effort across air, space and cyber domains simultaneously, whilst working equally seamlessly with the land and maritime domains. And do it all at a tempo where the pace and quality of our data and information gathering and sharing, and our decision-making, outstrips that of increasingly high-tech adversaries, many of whom certainly do not play to the same rule book as us. It demands a networked approach to our capabilities; the exploitation of disruptive capabilities,

many of them led from the commercial sector; artificial intelligence; big data management.

I believe that in the RAF we understand the nature of the problem. But despite some great work in progress, not least with our allies, I don't believe as an organisation we have yet fully embraced this multi-domain and command and control challenge. Many air forces already make clear in their doctrine that command and control is a key tenet of air and space power. Surprisingly, the RAF has not done so to date. We are going to change that. From now on, air and space command and control will sit alongside control of the air, precision strike, ISTAR and air mobility as the fifth pillar of the RAF's fundamental roles and all that means for capability management. And as part of that we will ensure that our airborne command and control is also fully fit and capable to meet the demands of the next generation air force.

But simply changing our doctrine is not enough to drive the organisational transformation required to ensure we both think and act in a networked way. To grasp better the multi-domain and command and control challenge, and to give it the leadership, operational focus and prominence it deserves, I can announce that we will form a Multi-Domain Operations Group within the RAF.

This will integrate our existing National Air and Space Operations Centre with our Air Battle Staff; brigade under a single commander all of our operational command, intelligence and information capabilities, to give faster and better operational decision-making; with a specific focus on UK-based operations, but with close ties to our Joint and international partners; working across air, space and cyber; from acquisition to operational delivery

The capabilities and units within this new Group have not always been given 'numbered' status within the RAF. That will change too, to reinforce that they are now firmly at the core of RAF capability – as vital to our next generation capability as, say, a Voyager or a Puma squadron. The new Group itself will be Number 11 Group - of Battle of Britain fame – a battle which in so many ways was an early demonstration of the power of multi-domain capability and command and control. And to keep a proper eye on efficiency and leanness in our command chain, there will be no increase in star count or overall headquarters staff as a result of forming Number 11 Group.

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Ladies and gentlemen, the RAF is doing much more in this Centenary year than just commemorating our past, important though that is. If history teaches us anything, it is that the RAF's reputation was built on its unerring focus on the future, pushing the boundaries of technology and providing a platform for people to exploit their talents to the full. It will be through the skill, professionalism and commitment of our people that the RAF's future and our nation's security and prosperity will be assured.

I committed on my first day in command of the RAF that there would be no higher priority for me and my senior leadership than ensuring that the RAF could continue to recruit and retain outstanding people, without whom neither our operations today nor our future capabilities would be possible. I repeat that commitment, and I want to take this very public opportunity once again to thank them for their incredible efforts.

A very warm welcome again to this Air Power Conference. I very much look forward to joining you in the debate.

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