



Chief of the Air Staff, Air Chief Marshal Mike Wigston's Air and Space Power Conference address, 15 July 2020.

Information Advantage for the Next Generation Air Force

Hello and welcome to this year's Air and Space Power Conference.

We're doing it differently this year, as you know, but, virtual or live, the Conference would be nothing without our speakers and of course the audience's interaction.

So I am extremely grateful for the Secretary of State's contribution today as our keynote speaker. I am also extremely grateful to the two speakers who are joining us from overseas, General Jay Raymond, the US Space Force Chief of Space Operations and Commander US Space Command, and Warrant Officer Fiona Grasby from the Royal Australian Air Force. We appreciate your time today and look forward to hearing what you have to say, as we do to all the fascinating speakers we will hear during the day.

I am speaking first, so I have the first opportunity to say how apt it was that we selected Information Advantage as this year's conference theme. Little did we know that we would be testing some of the ideas and technology with a ground-breaking virtual Air and Space Power conference. Organising the conference in a normal year is a big enough task but designing this year's from scratch has been a remarkable effort and a credit to the Air and Space Power Association, and our industry partners Airbus, BAES, Leonardo, Northrop Grumman and Raytheon. I must also highlight the great work done by our Defence Security Studies team and Air Command Media and Communications to make it all happen.

We are only midway through 2020, and so far it's been an extraordinary year. And in that extraordinary context, I am delighted at the way the RAF has continued to deliver on its commitment to UK Defence, the way we have supported the national effort against Covid19, and the way we have supported our international allies too. It says everything about the quality and the talent of our people who kept their eyes on the mission and worked out how to get it done in a different working world. I am immensely proud of the 650 Royal Air Force medical professionals - regular and reserve, working alongside their NHS colleagues at the frontline of the ongoing fight against Covid19. Likewise, our helicopter and air transport forces called on to move Covid patients, UK citizens and supplies around the world. Or the hundreds of military planners, logisticians and mobile testing teams who have worked alongside their Army, Royal Navy and Royal Marine colleagues supporting the national effort.

But at the same time, we've launched repeated Quick Reaction Alerts by the Typhoon and Voyager Forces in the UK and Baltic to protect UK and NATO airspace; we've had Pumas supporting NATO operations in Afghanistan; Chinook supporting French operations in Mali; C17 delivering humanitarian aid to Syrian refugees; Reaper and Typhoon continuing the fight against violent extremists in Syria and Iraq; our Space operators monitoring threats to our national interests in space; and Sentry, Rivet Joint and Sentinel supporting NATO missions across the Alliance area. This year stands testament to the professionalism and resilience of the Royal Air Force. But all that

operational activity also shows how air and space power gives our Government the operational choice and ability to act worldwide, at range, at speed and precisely. With minimal political risk and maximum political choice. Always there and always ready, air and space power plays a decisive role protecting the UK 24/7.

The fight against violent extremism has set the context for operations in the 21st Century so far. In that context, air and space operations have provided our winning edge because we have had almost complete control of air and space. It would be easy to be complacent and take this for granted, but our freedom to operate – in Iraq and Afghanistan for example – has been unchallenged because of control of the air; likewise, our undisturbed reliance on space.

Our potential adversaries have watched us, and they have learnt. Sophisticated air defence missile systems, anti-satellite weapons, cyber, and potent long-range missiles are becoming more capable and proliferating to proxy states too. We can no longer assume unchallenged access to air and space, nor can we ignore the threat of air, ballistic and cruise missile attack at home, across NATO, or overseas.

To continue to protect the UK and our allies, the Royal Air Force must retain the ability and credibility to operate in the ever more complex, competed and contested multi-domain operating environment of the future. Future conflicts will require us to integrate more closely with the other Services and Strategic Command, the MOD, other Government departments and international partners. Success will require rapid understanding and swift, joint, fully integrated action across all warfighting domains, land, sea, air, space and of course cyber. Our aircraft, spacecraft and systems must integrate seamlessly to allow the transfer and exploitation of information, rapid decision-making and timely delivery of effects.

And that, to my mind, is why information advantage matters.

At one extreme, information advantage is about getting the right information to the warfighter at the right time to make the best decision. Getting that vital information from a small satellite or Lightning cockpit into an Ajax turret or the control room of HMS Queen Elizabeth at the speed of light. That means data from every sensor on any platform in the operating space, processed in real time, into useful information that is flagged to any user with a need for that information, so they can access it and fuse it with what they already know. That will enable better and faster decisions than any adversary.

At the other extreme, information advantage is about people having the personal information they need, accessible when they need it, to transform the way we do everything from medical appointments to applying for postings.

And across that spectrum, we have got exciting programmes to turn information advantage into reality. This is what we mean when we talk about the Next Generation Royal Air Force, driven by data and digital technologies. Processing power, machine learning, artificial intelligence, automation and robotics enabling us to make that step.

For information advantage in your pocket, I'm delighted to announce that in September we will launch the MyRAF App to everyone. MyRAF App is an interactive app, available on personal devices, giving everyone the opportunity to access the information that matters to them, such as career assignments, leave and pay.

For information advantage in the battlespace, the RCO Air Information Experimentation Laboratory (AiX) is about to start airborne trials of our cloud data-platform called NEXUS. Working with UK Strategic Command over the next 18 months we will demonstrate an operational cloud architecture called DARKSTAR that will reach across the warfighting domains.

Information advantage matters because the UK needs Armed Forces that are radically forwardlooking, embracing new technologies more quickly to remain secure, credible and

indispensable in the face of fast-evolving challenges.

This year the Integrated Review will define the Government's ambition for the UK's role in the world and the long-term strategic aims for our national security and foreign policy. It will also set out the way in which the UK will be a problem-solving and burden-sharing nation and the vital role of our armed forces in a security environment characterised by constant competition between states and other hostile actors.

For the Royal Air Force and Air and Space power, we must be radically forward-looking to be able to make a leading-edge contribution to the UK's place in the world. Our persistent engagement and collaboration with allies and alliances, will deepen and amplify UK influence with like-minded countries worldwide. We need to be ready and able to understand, decide and then act faster, with even greater precision, lethality, and in more places around the world simultaneously than we do today; and sustainably too, in terms of both resource and environment.

We will achieve this by taking a transformative approach to our force structure, our people and training, our bases, the aircraft and equipment we operate, and our interoperability with other warfighting domains and allies. Our campaign to do this - to build the Next Generation Royal Air Force - is called Astra.

First and foremost, the Next Generation Royal Air Force must be able to defend the airspace around the UK and our allies in the face of sophisticated threats that are intensifying and proliferating. The replacement for Typhoon must be capable of operating, fighting and winning in that environment. The Future Combat Air System, combinations of highly-networked piloted aircraft, and remotely-piloted and autonomous drones and weapons, is already generating thousands of jobs across the UK, generating cutting edge technology and R&D, and attracting international partners such as Sweden and Italy. We unveiled Tempest at Farnborough in 2018 alongside BAE Systems, Rolls Royce, MBDA and Leonardo. It was exciting then and it is even more exciting now, a truly national and international programme with the UK's world-leading defence aerospace industry at its heart.

In 2020 we have become a maritime air force once again, alongside the Royal Navy. We've declared the Poseidon Maritime Patrol Aircraft operational this year in a remarkably successful programme that has taken four years from decision to operational capability. Later this year we will declare ourselves ready to conduct Lightning operations from HMS Queen Elizabeth following an ambitious work-up and exercise programme that is already exceeding expectations. These two forces will be vital components of UK Defence for decades to come - air and space power by land and sea.

But we are going to go further. We will expand 216X Squadron's operational trials to evaluate the operation of swarming drones from our Queen Elizabeth Class Carriers. We will do the same with our autonomous wingman project too. Further developments are expected towards the end of this year. Building the Next Generation Royal Air Force means continuing to build on our ambition of a low earth constellation of small satellites under the Artemis programme that you will hear more about from Director Space, AVM Harv Smyth later.

It will also mean the introduction of Gladiator, our synthetic training facility over the next year which will enable Typhoon pilots to train with RAF AWACS crews, US counterparts and British Army formations in a secure, realistic, synthetic environment.

Underpinning all these exciting programmes will be our people. It is not just about having the right number of people with the right skills. It is also about how we think. In the ambiguous, data-rich and complex future operating environment our ability to think differently, challenge the status quo and innovate will be fundamental to success.

Through Astra, we are looking to invigorate what a career in the RAF looks like in 2035. In the

future, people will have flexibility to work how they need to, to deliver the output we need. We will help people develop the skills and digital expertise required for the future and shift from over 60 branches and trades today to 11 professions; a workforce for a digital age, focussed on the delivery of air and space power, and an increased number of mission data, cyber and space specialists.

ASTRA is about empowering ideas from across our service, and wider defence. It requires substantial changes to our way in warfare, how we command and lead, and how we are structured. It will require a shake-up of the way we do HR, our bases, equipment and training. For example, at the grass roots £250,000 of funding has been allocated to projects at RAF Wittering and RAF Shawbury, with many more unit's requests being considered for seedcorn funding for enhancement projects.

Once again, I would like to thank our speakers for taking the time to contribute today, and for you, the audience, for your engagement, challenge and contributions to what you have heard. Conversations like this are an important part of our network in action, they build our capacity, strengthen our ties, and challenge the way we operate.

As I said at the beginning, 2020 has been an extraordinary year so far, and it looks set to continue that way. We can all be very proud of the way the Royal Air Force has responded and how air and space power provides our Government with the operational flexibility and ability to act worldwide, at range, at speed and precisely, with minimal political risk and maximum political choice. Always there and always ready, we play a pivotal role protecting the UK 24/7.

Thank you.