

# THE AIR & SPACE POWER ASSOCIATION

SHAPING THE FUTURE OF AIR AND SPACE POWER

THE BULLETIN | AUTUMN 2024



**Dear members**

**We hope you enjoyed a restful and peaceful summer break after an eventful first half of the year.**

The Association has certainly had a busy first half culminating in what has been billed as the best ever Global Air & Space Chiefs' Conference (GASCC) in July. Over 60 chiefs attended with delegates drawn together by a theme of 'Deterrence', especially poignant against a backdrop of the continued war in Ukraine, escalating conflict in the Middle East and deepening security concerns in the Indo-Pacific. Inside this issue, our Secretary Jim Beldon has penned an excellent summary of some of the crucial elements of the discussions raised over the two days.

## CHAIR'S LETTER

The conference also arrived hot on the heels of the NATO summit in Washington DC with European Alliance leaders seeking pledges from a weakened US administration to shore up support for Ukraine's – and de facto – Europe's defence. Closer to home, the UK had just seen a momentous change to a Labour-led Government with a promise by the incoming Prime Minister to undertake a 'root and branch' Strategic Defence Review. The new Armed Forces Minister Luke Pollard MP gave an upbeat speech at GASCC but at the same time he raised question marks over some of the UK's next generation capabilities.

While we could not have foreseen these developments, we had already embarked on our own project to review the UK's air and space power. Our president, Greg Bagwell, gathered some of the leading experts and former practitioners over two workshops in London to examine a number of key questions and assumptions about UK air and space power and we published a short pocket guide with our own conclusions and recommendations in time for GASCC.

'Air & Space Power in a more Dangerous World - 10 Perspectives' is our first contribution to what is set to become a hotly debated topic over the coming weeks

and months as part of the Government's Review. While the book is only a starting point, we are now scoping wider engagement to ensure the discussions around the UK's air and space power are informed by fact not emotion. Our end goal is to see the UK embark upon a path to ensuring our air and space power is fit for purpose to defend our Nation now and in the years to come.

This is an undertaking that I am personally proud to be a part of and is a crucial part of our mission here at The Air & Space Power Association. Please do help us in this endeavour. We will be seeking your input as we have a number of other initiatives in the planning for the remainder of the year. For those of you who have read the book, we welcome your views. For those of you who have yet to read it, please read Greg's introduction and you can view the book online [here](#). You can pick up your own copy at our forthcoming events.

**Yours**

**Roberto**

**Air Commodore (Ret'd) Mark Roberts  
Chair of The Air & Space Power Association**

**UK AIR AND SPACE POWER  
IN A MORE DANGEROUS WORLD**

**10 PERSPECTIVES**

COMPILED BY THE AIR & SPACE POWER ASSOCIATION



# PRESIDENT'S VIEWPOINT

**This Bulletin comes hard on the heels of another successful annual Global Air and Space Chiefs' conference, hosted superbly by our Patron. It saw multiple attendees from an expanded, more alert and focussed NATO, and the theme of deterrence at the conference could not have been more timely.**

But, as I have written elsewhere, deterrence is only earned and respected if you pose a credible threat to the intentions or aims of an aggressor. As you all know, we who run your Association, constantly question how we can contribute to the Air and Space power debate in order to not only input our collective and well-informed viewpoint, but also to influence decision makers to do what we believe is necessary to protect our nation's security. With a new Government now in place, and the prospect of an imminent Security and Defence review we decided that if we are going to be true to our vision and purpose we had to make our case - so we have!

We have just published a book entitled: 'UK Air and Space Power in a More Dangerous World' and we hope you will be as proud of it as we are? It's short, with 10 essays of about 600 words, and we have attempted to address the key issues facing air and



space power in the UK. Rather than give you a précis here, you can now access the e-book version on our website [here](#) and we are looking to build on that with various podcasts and links to other sources for more detail and to keep the debate alive and up to date.

If you want a physical version we will make them available at all of our in-person events this year. But to whet your appetite, it does not pull its punches on where we have deficiencies (or why) and what we believe needs to be done to rectify them. But, we are all aware of how difficult the public finances are and so we need to try and work with HMG and the MoD to try and develop a plan that can address the challenge in a meaningful and realistic way. We are already seeing others speak up as we have, and we can expect the volume to increase as the much-promised and much-anticipated review kicks into gear.

This is quite a departure for the Association, but we felt that the time is right to stick our head above the parapet - if not us, who? We trust that you recognise our themes, words and suggestions - they have been forged over many years of debate and discussion at our numerous events. The book was compiled using a wide range of individuals from veterans, industry, academia and even the media, and we worked extensively and very closely with the Freeman Air and Space Institute in doing so. We believe that the book adds to the debate in a way that could encourage those who pay it less attention, to pay more. The world is more dangerous and air and space power offers multiple ways to address that challenge now and in the future. We hope you like it. Spread the word!

**Air Marshal (Ret'd) Greg Bagwell**  
**ASPA President**



# NUCLEAR COUNTDOWN

**Back in 1947, the Bulletin of the Atomic Scientists tried to alert the world to the relative proximity of nuclear destruction through the Doomsday Clock. At a time when the forerunner of the ASPA was forming, the proximity of nuclear destruction was positioned at seven minutes to midnight. At the end of the Cold War, it was shifted back to 17 minutes before midnight. Today, it stands at 90 seconds to the midnight hour.**

Russia's deterrence policy, last updated in 2020, outlines explicit conditions under which the Kremlin could launch nuclear weapons. These are to retaliate 'against an ongoing attack against critical government or military sites' by ballistic missiles, nuclear weapons, or other weapons of mass destruction. In addition, to retaliate against 'the use of conventional weapons when the very existence of the state is in jeopardy'.

As President Putin surveys the shifting tactical situation around the around Ukraine and Kursk, he may eventually calculate that only a credible threat of battlefield nukes can bring a settlement to the Ukrainian war on his terms. Putin does not sound desperate now, even though his 'special military operation' has cost his people 315,000 dead and wounded over two years. But although Putin keeps signalling that he is ready for a long war, he (or more frightening, a more bellicose successor) might gamble on nuclear weapons threatening, or if even briefly used, bringing about an unstable peace.

It is hard not to agree with the observation that UK armed forces are close to being "too small to be credible." It was revealed in the Commons last year that the stockpiles of our ammunition

started depleting around about 1997. It is now estimated that the cost of rectifying this is estimated at £ 2.5 billion: if there is one thing we know for sure, given MOD's record, the final bill will be much higher. There is nothing for it but to build capacity back up, but at what cost? Across Europe, defence contractors are nervous about expanding capacity in case fickle governments stop ordering after a few years, leaving them with no customers. Yet the Russians are unashamedly going down the cheap and cheerful route, adding simple, cheap conversion kits to convert dumb bombs into GLONASS-guided bombs. A slightly more sophisticated and accurate version has the wings integrated in the body of the weapon, is laser-guided and with anti-jamming antenna: two of them struck Kharkiv on 27th March. That same day, the Ukrainian foreign minister said that Russia dropped 700 glide bombs in a six-day period from 18h March. It doesn't take a rocket scientist to envisage incorporating small tactical nuclear warheads to the glide bomb scourge.

Today, if the cost of the British nuclear deterrent is omitted, the UK is spending about 1.75% of GDP on defence. Yet, in the face of threats ranging from Ukraine through to the South China Seas, enhancing national deterrent/warfighting capability will not be easy. It can take months before a potential recruit even meets a serving officer, while the history in getting value for money from the defence budget can be woeful. Where we do buy off the shelf, as with the ill-fated Ajax armoured fighting vehicle, The Times revealed that MoD added 1,200 specifications to an already tried and tested 'armoured taxi'.

The focus now must be on getting a seriously enhanced yet affordable deterrent capability into front line service as quickly as possible. We can no longer rely on trendy panaceas such as drones and robots. Every few days, some

Russian official brandishes a tactical nuclear sabre, and we must be able to respond with something less awesome than Trident. Only Britain and France have a nuclear capability within Europe, but the UK retired its free-fall tactical WE177 nukes around 1998.

Germany does not have its own nuclear weapons but if major war breaks out tomorrow, German pilots will clamber into German Tornado aircraft in the Rhineland-Palatinate to drop B-61 nuclear bombs on Russian troops. Under NATO's nuclear sharing scheme, the US quietly stations nuclear bombs across five European countries. The yield of these B-61 bombs can be set from between one-third of a kiloton to more than 170 kilotons. They remain in American custody in peacetime, but Italy and Turkey are thought to have the most, 60 to 70 each, with smaller numbers in Belgium, Germany and the Netherlands. Around a hundred are thought to be stored back in New Mexico. The US recently completed development of a new B61-12 guided nuclear bomb which is being integrated on the B-2A, the B-21, the F-15E, the F16C/D, the F16 MLU, the F-35A and Tornado.

The RAF and Fleet Air Arm currently have ordered 48 VSTOL F-35B's. The aim is to increase the order to 74. The best win-win option would be to order 24 longer-ranging (and cheaper) land-based F-35As to equip the Lightning OCU and, in war, to carry B61-12s (there is no spare AWRE capacity to resurrect the WE177). This would not only resurrect the UK's tactical nuke capability in the fact of Kremlin belligerence, but also it would be achievable at a time when a serious stand must be made. This is crucial given that the Doomsday Clock doesn't look like back-tracking any time soon.

**Former Secretary of the ASPA, Andrew Brookes was a Royal Air Force pilot. He flew 3,500 hours on strategic reconnaissance Victors, Canberras and also the Vulcan bomber. He was a NATO Nuclear Release Officer and led an aviation safety team at the Ministry of Defence, before being appointed Commander of RAF Greenham Common cruise missile base.**

**A shorter version of this article appeared in the RAeS Insight Blog [here](#).**



B61-12 under trial from an F-35 (Credit US DoD)

# WHAT'S NEXT FOR SIXTH GENERATION COMBAT AIR TRAINING?

In much of the discussion around sixth generation (or next generation) combat air platforms, much of the focus has been on the platforms themselves - whether it be Tempest, SCAF or NGAD (the latter how having a question mark over it in recent weeks after statements from senior US officials).

While parts of the wider 'system' such as drones (or collaborative combat aircraft) and the 'combat cloud' are part of the debate - one area arguably receiving less attention is on the training requirements and aircraft needed for these future fighters. This is an area, however, that was raised at the RAeS Future Combat Air and Space Capabilities Summit in May which brought together military professionals, industry and academia.

Three trends are evident. The first is that the traditional 'stick & rudder' fighter pilot skills have been displaced by 'mission manager' abilities - a trend that begun in the FBW and glass cockpit fighters like the F-16 and F-18 and which has currently reached its zenith with the F-35 - which gives pilots unparalleled situational awareness through its sensor fusion and datalinks. Easy to fly, they are a challenge to fight. Brig Gen Edi Turco, Chief of Staff of



The Boeing T-7A Red Hawk is a new Advanced Pilot Training System (APTS) for the U.S. Air Force. (Photo: Boeing)

the Air Education Training Command / 3rd Air Region Italian Air Force told the Summit that three skill sets would be essential for fifth/sixth generation pilots - technological literacy, ability to make strategic decisions, and adaptive problem-solving skills. But how (and where) best to learn these? In secure synthetic environments, or in real aircraft, with the pressure of unexpected events such as weather, wingmen being unavailable and the real fear of physical danger to sharpen the senses? Interestingly, despite advances in fidelity and networking in synthetic environments, (and the benefits in reduced cost and increased security) there appears to have been a shift from the concept of doing the majority of training in simulators - based anecdotally on the quality of output towards a more balanced approach between live and virtual.

The second trend is that given the jump in capabilities from fourth to fifth generation (and beyond) along with the proliferation of advanced stealth - is how to hone the edge of these pilots and really test them to their skills to the limit. Traditionally this has been done with training against other similar aircraft or against older generation fighters, or trainers re-rolled as aggressors that are today increasingly provided by private 'Red Air' services. Yet while some of these can be updated with AESA radars andIRST systems to give fifth generation fighters a stiffer challenge, they lack sheer performance, LO attributes and numbers to present a representative threat. Jim 'Guido' DiMatteo - Strategy Department, Director of Communications, F-5 Adversary Pilot, Tactical Air Support, told the Summit that the F-35 with its "spectacular" capabilities presents new issues providing challenging opponents and scenarios to fight against "Nothing we do confuses those kids". The solution, at least in the near term is to increase the challenge by sheer numbers of opponents for next-gen platforms to fight against. This can be through live aggressors or potentially via LVC (Live/Virtual constructs) - which thanks to systems such as Red 6's AR HMD can now bring virtual 'bandits' into the visual arena.

Beyond this, is that LO drones (are drone aggressors 'disloyal wingman?') could be co-opted into the Red Air role to provide the stealth threat in the right sort of numbers. Indeed, recent trials with an AI-dogfighting F-16 in the US have shown one possible



AERALIS is designing and building a completely novel modular jet training aircraft. (Photo: Aeralis)

solution where a training drone might be able to present a representative threat, all the way from BVR to close in combat.

Third, is that these next generation combat platforms are likely to be in service in smaller numbers than previous fighters – and the prognosis from F-35 operating costs staying stubbornly high is causing air forces to consider the potential for ‘companion/surrogate’ trainers to allow pilots of high-end expensive platforms to train and fly real flight hours on lower-cost trainer aircraft – getting the best of both worlds. This is in itself a not a new idea (F-117 pilots used the A-7 for currency, while B-2 pilots use the T-38) but with modern glass

cockpits and open architecture systems, it is not inconceivable that a new advanced trainer could be re-rolled from advanced/LIFT trainer to a specific sixth gen type (or even enemy aggressor) with a press of button – given how fighter cockpit design is now converging on a single large display.

Indeed, in February of this year, RAF Chief of the Air Staff, ACM Sir Richard Knighton, told the UK House of Commons: “One potential opportunity that we’re exploring is how we might use an aircraft that was principally bought and developed for training also to provide surrogate training for the in-service GCAP. Instead of flying the all-up combat

aircraft every day, for some of the missions you could get all of the training that you needed through a surrogate platform”.

In summary, as the role of the fighter pilot evolves further to a ‘on scene’ mission manager (albeit one with ‘skin in the game’ and who must be at last resort, be prepared to close in and face the enemy in an aerial duel) so too, must the training. technology and pilot skill requirements will need to keep pace.

**Tim Robinson, Editor  
Royal Aeronautical Society  
Aerospace magazine**

## PROSPECTS FOR A UK INTEGRATED AIR & MISSILE DEFENCE SYSTEM

**FASI hosted a workshop at the close of 2023 at the request of the UK Ministry of Defence’s Development, Concepts and Doctrine Centre to consider the UK’s air and missile defence capabilities, or lack of, and to discuss how to stimulate debate around the need for Integrated Air and Missile Defence (IAMD).**

One output of the workshop was identified as the publication of a paper to stimulate debate around the future of UK Integrated Air and Missile Defence (IAMD) ahead of a potential Strategic Defence Review following a general election. With the date set for 4th July – earlier than the anticipated date in the autumn of this year - the matter is even more pressing. More generally, IAMD has become a critical issue within NATO and the Euro-Atlantic security context.



I am now working with Dr Julia Muravska (FASI Visiting Research Fellow) on a co-authored paper which will analyse current policy, capability requirements versus commitments and investments (and implementation where relevant), and how the UK is perceived in IAMD terms by NATO Allies. It will include the historical context of the state of air and missile defence in the latter part of the Cold War in comparison to the present day. The paper will conclude by raising key questions regarding the UK’s IAMD needs and prospects in the current geopolitical context.

The paper will also draw on discussions from the recent NATO Air Power Conference in March, where I was a member of the NATO IAMD working group, and also the RUSI IAMD Conference in April. My article for the Royal Aeronautical Society on Integrated Air and **Missile Defence: Does the UK Need an Iron Dome?** concluded that the UK doesn’t need

an Iron Dome but it does need to urgently address IAMD in the round. In the same vein Julia’s paper on **European Integrated Air and Missile Defence in NATO: Progress and Persistent Challenges** in 2023 provides more food for thought.

Pooling our discussions from these events and research we intend to finalise the paper in the early Autumn. Any thoughts, contributions or recommended reading are very welcome from ASPA members!

Do get in touch!

**Dr Sophy Antrobus Research Fellow Freeman Air and Space Institute King’s College London**

The **Freeman Air and Space Institute (FASI)** is an inter-disciplinary research institute in the **School of Security Studies**, King’s College London, which provides independent, original knowledge and understanding of air and space issues. The Institute seeks to inform scholarly, policy and doctrinal debates in a rapidly evolving strategic environment across the air and space domains. [www.kcl.ac.uk/research/freeman-air-and-space-institute](http://www.kcl.ac.uk/research/freeman-air-and-space-institute)



# SPACE MASTERCLASS SUCCESS



**The National Space Academy is pleased to report that our ASPA-funded masterclasses and Continuing Professional Development (CPD) sessions have lifted off around the UK and we're seeing some great results with students and teachers getting inspired by and engaged with the UK's vitally important space industry.**

To date, we have reached nearly 440 students through 16 masterclasses, with another 10 booked in. These masterclasses, thanks to funding from ASPA, are given to secondary schools around the UK completely free of charge.

Our hands-on workshops utilise contexts from space science, engineering, and the work of ASPA to inspire and engage our next generation. Masterclasses highlight potential

career pathways, as well as supporting students' school science studies, opening up opportunities in the growing UK space sector.

And it's not just students who are benefiting: ASPA's funding also enables us to deliver CPD to teachers, helping to broaden their knowledge and increase their skills in the arenas of space and science. So far, we have worked with nearly 140 teachers in six ASPA-funded CPD sessions, with another 5 ready to roll out.

If you know a secondary school who could benefit from a free masterclass, please do share our website with them, where they'll be able to apply: [nationalspaceacademy.org/aspa-masterclass-funding](https://nationalspaceacademy.org/aspa-masterclass-funding)

If you would like to get involved with our work, whether that be through offering guidance, facilities and expertise, or supporting us with resources and funding, please contact [nsa@spacecentre.co.uk](mailto:nsa@spacecentre.co.uk), visit [nationalspaceacademy.org](https://nationalspaceacademy.org) or follow us on Facebook, Twitter and LinkedIn.

We encourage ASPA members and corporate members to get in touch if you feel that your company could support our work. We would love to hear from you!

To find out more, please contact us via our website addresses below or on our social media channels.

**Grace Davis,**  
**Communications and Marketing Manager,**  
**National Space Academy**



**ASPA masterclasses take place in school or at the National Space Centre in Leicester and are delivered by our network of outstanding teachers. They use space context to deliver topics in a hands-on, interactive and engaging way.**

The masterclasses can be delivered to students aged 11-18 (KS3 - KS5 or equivalent) in the UK. Schools are able to book a full day masterclass or two half day masterclasses.

Further details here: <https://nationalspaceacademy.org/aspa-masterclass-funding/>

## ASPA IN NEW PARTNERSHIP WITH ROYAL COLLEGE OF DEFENCE STUDIES (RCDS)

The Air & Space Power Association is pleased to announce its partnership with the Royal College of Defence Studies (RCDS), the UK's internationally revered leader in educating senior strategists from the UK MOD and other Government Departments, industry and delegates from overseas.

As an Associate Member of the ASPA, RCDS representatives will be able to participate in the full programme of ASPA events. Furthermore, RCDS student and staff insight will be sought in the development of ASPA initiatives, with ASPA

representatives being reciprocally invited to participate in relevant RCDS activities.

The ASPA looks forward to meeting the incoming cohort of RCDS delegates in the Autumn, and welcoming them to our dinners and other events later this year. We anticipate that this initiative will lead to RCDS graduates electing to become individual members of the Association, carrying forward their relationship with the ASPA - and therefore their deep involvement in air and space strategy - into their careers as senior leaders

and strategists within their fields.

Remarking on this new relationship with the ASPA, Air Vice-Marshal Phil Lester, Senior Directing Staff at RCDS, remarked that "This is an excellent opportunity for our air and space-minded Members to broaden their horizon and widen their network of colleagues. It is also an excellent opportunity to enhance the delivery of air and space power in our strategy learning. We are grateful to the ASPA for making us welcome."

**Jim Beldon, ASPA Secretary**

# GLOBAL AIR & SPACE CHIEFS' CONFERENCE 2024



**There was a pugnacious start to the first day of the Global Air and Space Chiefs' Conference, reflecting the perilous state of the international climate and the need to address the threats posed by Russia, not only in Ukraine, but directly to NATO member states.**

Offering a sobering analysis of the Russia-Ukraine War, RUSI's Professor Justin Bronk stated that currently Ukraine was on a 'pathway to defeat', but allied states could do much to alter that prognosis. Professor Bronk considered that NATO must be ready to fight Russia by 2028, and that the 'empty cupboards' of NATO air forces needed to be re-stocked with munitions and spares to meet that threat, with training and valuable flying hours needing to be focused entirely on warfighting rather than on more discretionary ventures. This was a theme echoed by General Jeffrey 'Cobra' Harrigan (USAF Retd), who argued that air superiority must be trained for, earned and maintained – an effort that would be more costly than Western air forces had experienced in recent years – in any future conflict with 'pacing' adversaries. Greater operational risk would need to be taken, and we would need to accept that in a dispersed, communications-contested environment, mistakes would be made. Much was made of the importance of people, with Dave Appleby of Leonardo arguing that one commodity that needed nurturing and protecting (but could not be stockpiled) was 'SQEP' – Suitably Qualified and Experienced Personnel. Industry representatives, including Heidi Grant, Boeing Defense Space and Security Vice-President Growth and Engagement, made a compelling case for protecting manufacturing and logistical chains, which were becoming contested territory. Bringing these themes together, Dr Viktoria Fedorchak of the Swedish Defence University argued that an 'all of industry and defence' effort would be needed to create the kind of resilient society

that could meet the challenges of a future war with Russia.

Air Marshal Allan Marshall, the RAF's Air and Space Commander, contended that NATO was currently successfully constraining Russia, but that 'we need to stay on our game' and 'get better' to stay ahead of the threat, arguing that through exercising, training and actively deterring, we would continue to hold Russia in check. Air power was, he argued, the key aspect of Western power that influenced our adversaries' perceptions, and argued that, more broadly, multinational partnerships were the West's greatest advantage over its adversaries, which he considered were incapable of forming meaningful political-military alliances. Dr Nicola Leveringhaus of KCL's War Studies Department struck a sombre tone in describing China as being more difficult to deter than ever, and that the trend would continue towards the major milestone of 2049 which would mark a century of Communist power in China. She opined that the PRC aims to play a 'home game' in any future conflict with the USA, so does not need the expeditionary force enablers (logistics, air refuelling, ISR) that US needs to deploy in the Pacific.

The PRC's logistical lines are short, and their aircraft do not need to be as good as the USA's: they just need to be good enough to deny access.

In an exceptionally thought-provoking speech on deterrence, the Commander of US Space Command, General Chance 'Salty' Saltzman, argued that we must ensure our adversaries are aware of our 'observable' capabilities, and that they see what we want them to see: this has a deterrent effect. He argued that space must be defended – and that, with the possible exception of nuclear weapons, which exerted a unique deterrent effect, the ability to deter conventional threats rested on the ability to fight and win, and to persuade the adversary that we would do so. All of this would require "competitive endurance".



**General Chance Saltzman gave a thought-provoking speech on Space deterrence.**

The day's final session – a panel comprising the Chiefs of the Danish, Finnish and Swedish Air Forces (pictured) – examined two core themes: co-operation and remotely deployed operations (a major element of the Agile Combat Employment concept). Whilst Finland's and Sweden's recent accession to NATO had formally cemented their defence relationships, the chiefs remarked that important steps towards greater collaboration had been made by Nordic air forces in the years leading up to that monumental moment, with cross-border training having become a regular occurrence. The Chiefs emphasised the interplay between collaborative training and trust, which they viewed as being the key foundation of effective integration, with combined education and training being engines of mutual faith in one another.



Day 2 was dominated by the keynote addresses made by the UK's new Minister for the Armed Forces, Luke Pollard MP, and by the UK and US Air Chiefs, Air Chief Marshal Sir Rich Knighton and General David Allvin. Mr Pollard praised the members of the Armed Forces whom, he asserted, were performing the 'ultimate public service'. Setting what he described as 'homework', Mr Pollard encouraged members of the community to contribute their thoughts to the Defence Review (readers will no doubt be pleased to learn, therefore, that a copy of the Association's '10 propositions...' book was slipped into his jacket pocket!). He announced that a new military strategic HQ would be established, that a new National Armaments Director position would be created, and he emphasised that the UK 'must have a strong air force'. In Q&A, he was challenged regarding the future of the Global Combat Aircraft Programme (GCAP) and whilst he stated it was a 'really important' programme, he would not pre-judge the outcome of the Defence Review. Air Chief Marshal Knighton struck an urgent tone in advancing the case to out-co-



operate and out-compete our adversaries, highlighting the reality that Western Air Forces could no longer rely on unimpeded supply chains or 'Just in Time' logistics to keep them in the fight. He felt that the international strategic climate had worsened over the past 12 months, but that NATO nations (and other allies) exercised a form of collective deterrence that was greater than the sum of their parts. He emphasised the need to develop ACE and operational agility, underpinned by robust Command and Control, all of which would help achieve the necessary mass, survivability and lethality needed to prevail. Agility was a theme picked up by General Allvin, who argued that Air Forces had shown great individual agility, but that this prowess was no longer sufficient to meet current and future challenges: greater adaptability and the ability of systems (sharing the same technological DNA) to integrate seamlessly was required to generate the degree of collective agility necessary to address the threats posed against us. 'Built to last' was no longer a positive term, he argued, stating that 'Built to adapt' better reflected

the approach that needed to be taken to remain enduringly relevant and effective.

A panel discussion comprising the UK Government's Chief Scientific Adviser, Professor Dame Angela McLean, NATO Allied Air Command Deputy Commander Air Marshal Johnny Stringer and Mike Benitez of Shield AI, formed the final session of the Conference.

Dame Angela remarked on the exponential growth of scientific research being conducted in the eastern hemisphere, with China now leading the US and India leading the UK in the production of scientific papers. She stated that it was not just volume but quality too in which China, India and other states were beginning to excel. It wasn't that the West were getting worse, she argued, but that others were simply improving at a greater rate. Remarking on developments and the future abilities of AI, Dame Angela urged audience members to read the [Royal Society's Report on AI](#).

Air Marshal Stringer focused on the need to address the threat posed by Russia, highlighting the threats posed by Russian surface and sub-surface maritime capabilities as well as advocating for robust Integrated Air and Missile Defence, the need to overcome Russian Anti-Access Area Denial (A2AD) structures, and the fundamental importance of space – not as an enabler – but as a foundational realm on which other forms of power depended. Pleasingly, all the themes covered at the GASCC chimed with the ASPA's new book [UK Air & Space Power in a More Dangerous World - 10 Perspectives](#).



You can replay all the sessions from the conference here: <https://airspacepower.com/conference/the-chief-of-the-air-staffs-global-air-space-chiefs-conference-2024/> Plus the RAF's Air & Space Power Journal is here: [https://issuu.com/globalmediapartners/docs/raf\\_air\\_and\\_space\\_power\\_2024?fr=sOGE2MDY3NTYyMjc](https://issuu.com/globalmediapartners/docs/raf_air_and_space_power_2024?fr=sOGE2MDY3NTYyMjc)

SAVE THE DATE

**THE CHIEF OF THE AIR STAFF'S  
GLOBAL AIR & SPACE CHIEFS'  
CONFERENCE 2025**

**16 & 17 JULY 2025**

**IET, SAVOY PLACE, LONDON**

Register at [www.airspacepower.com](http://www.airspacepower.com)

Join the Debate #GlobalAirSpaceChiefs

# DEFENCE SPACE CONFERENCE

## 24 & 25 SEPTEMBER 2024

### LONDON AND ONLINE



IN PARTNERSHIP WITH



A UK Space Command conference brought to you by  
The Air & Space Power Association

#### We are excited about the forthcoming Defence Space

#### Conference, now in our sixth year!

The line-up this year is looking impressive with Space Command's new Commander Major General Paul Tedman having drawn together leading figures in space policymaking plus component commanders across all of the armed forces, key international partners from Europe, Australia and North America and leading industry and technology players including from the UK Space Agency and Dstl. Space Command's partner for the conference is Defence Equipment & Support (DE&S).

With Day One focused on strategy and policy-related questions and featuring senior leaders in space across government and the military, including strong international representation, Day Two will see a mixture of the 'Dragons Den'-style sessions for delivery of the strategic and operational goals set out the preceding day. This leads then to a UK Defence-facilitated Industry Day which industry are invited to attend if they are approved through the Defence Sourcing Portal.

Conference partners include Defence Equipment & Support (DE&S), Strategic Command, the UK Space Agency, DSTL

and the Department for Business, Energy & Industrial Strategy and DSIT.

A video address will be made by Luke Pollard MP, Minister for the Armed Forces.

Confirmed keynote speakers include:

- Air Chief Marshal Sir Richard Knighton, Chief of the Air Staff, Royal Air Force
- General Stephen N. Whiting, Commander, United States Space Command
- Lieutenant General Sir Charlie Stickland, Chief of Joint Operations, Permanent Joint Headquarters
- Brigadier General John L. Dawber, Deputy Commanding General for Operations, U.S. Army Space & Missile Defense Command
- Dr Paul Bate, Chief Executive Officer, UK Space Agency
- Avril Joliffe, Director General Industry, Trade and Economic Security, MOD
- AM (Retd) Sir Stuart Atha, Former Deputy Commander Operations, RAF

Other key speakers include:

- Air Marshal Allan Marshall, Air & Space Commander, Royal Air Force
- Major General Paul Tedman, Commander, UK Space Command

- Major General Gregory Novak, Commander, Space Command Australia
- Major General Michael Traut, Commander, German Space Command
- Dr Paul Killworth Deputy Chief Scientific Advisor for National Security
- Daniel Hilgert, Senior Space Coordinator, Defence Investment Division, NATO HQ
- Professor Anu Ohja, Director of Championing Space, UK Space Agency
- Paul Russell, Space Team Leader, Defence Equipment & Support, Ministry of Defence
- Josh Broom, Head of Space, Department for Business and Trade
- Jason Gnaneswaran Skynet Senior Responsible Officer, UK Strategic Command
- Melanie Clift, Director of Defence and Security, Satellite Applications Catapult
- Tom Purser Commercial X Business Partner, Defence Digital, UK Strategic Command

Senior figures from industry will also be speaking and including leaders from the space cluster communities.

Check out the programme and how to register here: <https://airspacepower.com/conference/defence-space-conference-2024/>

## MEMBER EVENTS UPDATE

Please check out details and how to book on our website but here is a quick update of what's in store for the remainder of 2024.

<https://airspacepower.com/events>

DATE	ACTIVITY	VENUE	TIMING	NOTES
4 September	ASPA AGM	Online	1900	
10 September	Fireside Chat	RAF Club	1830 - 2000	AVM Tom Burke AOC 11 Gp
24-25 September	Defence Space Conference	IET London and Online	2 Days	Conference
09 October	Audience with	Online	1900 - 2000	AVM Ian 'Cab' Townsend AOC 22 Gp
07 November	Fireside Chat	RAF Club	1830 - 2100	AM Johnny Stringer Deputy Commander Allied Air Command
19 November	Industry Dinner	IET London	1830 - 2300	ACM Sir Rich Knighton Chief of the Air Staff



A conference delivered by



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## NATO JOINT CAPABILITY GROUP UNMANNED AIR SYSTEMS CONFERENCE 14-17 OCTOBER, OTTAWA

**In 2023, The Air & Space Power Association was asked to assist in the delivery of the Joint Capability Group Unmanned Air Systems Fall Conference which was held in the Victory Services Club in London.**

In order to create a more comprehensive and engaging event, it was agreed that industry would be invited to both sponsor and to take part in the event.

Ross McKenzie Staff Officer UAS International Staff, Aerospace Capabilities, Defence Investment commented:

*"The new format of the 2023 JCGUAS Fall Conference was a truly significant step forward, and the opportunity to engage with Industry in this integrated forum proved invaluable to us in the secretariat and to the nations' delegations. We look forward to enhancing this engagement for the 2024 edition through increasing ability for industry to engage with allies on specific technical solutions and exploring potential for industry to work with leadership developing the agenda."*

The 2023 Conference was universally lauded by all delegations that attended, and its new format would not have been possible without industry support. The event was successful enough for us to be invited to run the 2024 edition in Canada this October. We have looked at venues that will provide a suitable experience and have chosen The Brookstreet Hotel in Ottawa. Dates will be 14 to 17 October.

We expect to host around 150 delegates from 25 nations for four days. There are once again opportunities for Industry to participate. If you would like details please contact: [clive@airspacepower.com](mailto:clive@airspacepower.com)

## EUMAAC CONFERENCE

**Spread over three days the annual meeting of over 40 delegates representing 19 countries from across Europe came together to discuss topics such as Interoperability, Joint Exercises, and Innovative Regulatory and operational use for the flight insertion of RPAS in non-segregated airspace.**

The event consisted of two days of meetings plus networking events including a visit to the Tower of London. AVM Gillespie Director UK MAA said: "The EUMAAC creates and strengthens a network of trust between the Nations and prepares the ground for constructive and trustful bi-lateral and multilateral defence cooperation. The EUMAAC, hosted this year in London, continues to provide a unique forum for open discussion amongst the Directors of the MAAs as we each seek to enhance operational capability whilst delivering effective Air Safety regulation."

Our thanks to ASPA Corporate Members Draken and Metrea for supporting the event. Next year this meeting will be held in Spain. If any members wish to find out more about supporting, please contact Clive on [clive@airspacepower.com](mailto:clive@airspacepower.com).



# ASPA ANNUAL AWARDS 2024

**We look forward to seeing many of you at our Industry Dinner on 19th November when we will be announcing the winners of our Annual Award for 2024.**

As a reminder for the criteria, the Air & Space Power Association Award is given annually to the RAF, Fleet Air Arm, or Army Air Corps individual, team, unit or formation (this applies to the Whole Force including regulars and reserves, civil servants, contractors, and

appropriate elements' cadet forces) that has, in the opinion of the Executive Committee of the ASPA, made a significant and demonstrable contribution to improving the understanding of the importance, relevance and utility of Air and Space Power to the United Kingdom.

The ASPA Secretary, Jim Beldon (secretary@airspacepower.com), would be more than happy to discuss nominations and citations, should you wish. The deadline for nominations is 4 October 2024.



## MEMBER NEWS

**Membership of all categories goes from strength to strength and thank you to all for your continued support for the Association.**

We have a busy defence engagement period coming up in July where our members can mix freely with both domestic and international stakeholders. Please do get in touch if you would like to make introductions within the ASPA membership base.

We are only as good as our membership and the added value that you bring - so may I offer a big thank you for your continued support.

**ASPA Membership Team**

**Ian Draper** [ian@airspacepower.com](mailto:ian@airspacepower.com) or  
**Lloyd Francis** [lloyd@airspacepower.com](mailto:lloyd@airspacepower.com)



**The Air & Space Power Association is a vital forum for encouraging and stimulating debate on important air power issues. We welcome feature letters from members on any air or space power-related subject.**

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