Can air power deter the next war?

With a theme of deterrence, integration and interoperability, there was plenty of food for thought at the RAF Chief of the Air Staff's Global Air and Space Chiefs' Conference, held in July in London. **TIM ROBINSON** FRAeS reports.

A new UK government and defence review, an upcoming US presidential election, ongoing conflicts in Ukraine and Gaza, new NATO members and AI and autonomous technology racing ahead, made this year's RAF Chief of the Air Staff's Global Air and Space Chiefs' Conference even more topical and insightful than ever. Drawing over 60 air and space chiefs from around the world, as well as industry, academia and media attendees, the two-day conference in London, organised by the Air and Space Power Association, covered a range of subjects from contemporary air and space power, integration and interoperability, resilience, space power, the defence industrial base, technology trends and more.

> "TO OUR INTERNATIONAL FRIENDS, I WANT YOU TO KNOW, BRITAIN IS BACK
>
> **Luke Pollard MP**
> UK Minister for Armed Forces

'Britain is back'

Giving a keynote at the conference was the (then new) Minister for Armed Forces, Luke Pollard MP, with his first speech as a government minister, who began by stressing the importance of space and cyber, as well as air power. He noted that multi-domain warfare is a "journey to all-domain warfare."

He said that "defence is the first duty of government" and that he would "have the back" of the armed forces. The new government is committed to looking hard at procurement, he said, and stressed that it intends to renew contracts between armed forces and the nation, improving housing and support for personnel.

USAF Chief General David W Allvin displayed this notional light fighter concept in his presentation. A sign of a shift in thinking about NGAD?

Pollard demonstrated a mastery of his brief in the unscripted Q&A session afterwards, especially on the complex technical questions around missile and drone defence of the UK.

However, as might be expected, when asked about ring-fencing the trinational GCAP future fighter programme in the forthcoming *Strategic Defence Review* (SDR), which he said would report in the first half of 2025, Pollard deferred from guaranteeing its safety, saying "GCAP is a really important programme... but [it's] not right for me to pre-judge what will happen in the defence review." However, he dismissed the idea that focusing on the defence review would slow programmes down. "The SDR is not asking everyone to pause or stop work."

Finally, he had this message to delegates at the conference: "To our international friends, I want you to know, Britain is back."

Four years to prepare for war?

Presenting a bleak future of a potential all-out war with an emboldened Russia determined to split NATO was RUSI's Prof Justin Bronk, who predicted that by 2028, events and timings would converge together for Moscow to directly challenge NATO. Despite the horrendous losses of personnel and materiel inflicted on its forces, Bronk warned Russia had not been deterred by this and was still looking to widen the war. Unless things radically changed, he said Ukraine was on a pathway to defeat, and a rearmed Russia, having learnt lessons from this conflict and out for revenge, would attempt to test NATO's Article 5 guarantee in the very near future – which may coincide with a US administration that had pulled its focus from Europe and a simultaneous threat to Taiwan from China.

Despite these dire warnings, Bronk explained that, due to the slow pace of procurement, particularly in air systems, NATO had at its disposal exactly the right kind of weapons and aircraft that were designed to overmatch the Russian threat of Flankers and S400 SAM systems – namely Typhoons and F-35s – as well as AMRAAMs and Meteors, Brimstones and Mavericks. The solution, he argued, was to forget about any long-term defence procurement projects and, instead, instigate a crash programme of dramatically increasing existing missile and munition stocks, spares and boosting maintenance contracts in preparation for an extended fight. Discretionary deployments and flag-waving visits should be axed, he argued, and training focused on the essentials of preparing pilots for war.

NATO	RUSSIA
Fighters	
755	253
Attack Aircraft	
1,368	481
Attack Helicopters	
1,329	423

Additionally, despite its rapid pace, Bronk was critical of GCAP's ability to alter the balance of power in the near term. "GCAP is completely impossible if there is a war in Europe in the coming five years because the global economy will have completely tanked." However, he concluded "the good news is air power is the key to deterrence."

Meanwhile, another presentation from AM Johnny Stringer, Dep Cdr, NATO Allied Air Command also called for a more hard-headed and muscular approach to air power – noting that the language around air defence had become very 'Sgt Wilson' from *Dad's Army,* whose catchphrase, 'would you mind awfully?', projected polite weakness. A case in point, he said, was 'air policing' with its civilian, non-threatening connotations. Instead, it should be rebadged as 'air defence' he said, and Integrated Missile and Air Defence (IMAD) return to first principles, that were well understood in the Cold War to defend against threats ranging from UAVs to ballistic missiles.

Stringer also opined that armed forces still lagged in having an 'industrial age mindset', in 'an innovation age'. Why, he asked, if he was able to produce a 3D-printed modular UAV with payloads that could be swapped around like 'Thunderbird 2' in the hundreds or thousands, would this need to be governed by

▼ From left to right:

An RAF Typhoon FGR.4 having Paveway IV weapons loaded in support of operations against Houthi targets in February 2024. Should the UK concentrate on stockpiling weapons and spares, rather than developing new platforms?

At the conference, ACM Knighton stressed that deterrence cannot be static or passive.

New UK Armed Forces Minister, Luke Pollard MP stressed the importance of apprenticeships and skills.


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▲ RAF Voyager MRTT and Swedish Air Force Gripens. NATO's combined air power has been boosted by the addition of Finland and Sweden.

the same military certification and safety rules that are designed around multi-million-dollar crewed platforms? "We are talking about the right things, but our mindset has not moved on," he suggested.

Whither NGAD?

UAVs and drones were, of course, another key theme to emerge from the conference – with their ubiquitous use in Ukraine raising questions over the future trajectory of air combat. Is Ukraine a one-off drone war, or portent of things to come? More significantly for air force planners trying to predict the future, is the mix between crewed and uncrewed systems for any future air combat system? More importantly, can these Collaborative Combat Aircraft (CCAs) – as the latest evolution of 'Loyal Wingman' drones are called – actually deter a peer enemy, like China or would these just present more easy targets for expected hordes of PLAAF/PLA missiles? One view raised at the conference was that this type of uncrewed warfare, that pitted drone vs drone or missile vs missile was unlikely to deter China. Instead, it may be that for the military wing of the Chinese Communist Party (CCP), the key fear for the PLA was bloody urban combat in cities – and where the real ideological commitment and training of their young soldiers would be laid bare.

However, the conference heard that it was strong international partnerships, interoperability and co-operation that provided real deterrence against China.

Furthermore, despite the ticking clock to ramp up deployment of these systems and reconstitute lost combat mass in US and Western air forces, more than one speaker opined that more time to wargame, trial and test CCAs was needed – and that the jury was still out on the correct mix and balance of these drones – which as they get more survivable, also get more expensive. Said Tom Jones, President, Northrop Grumman Aeronautics Systems. "I believe that the CCAs will be here to stay and we in industry need to step up and find that right balance between survivability, tactical lethality and affordability."

Jeffrey L Harrigian VP, Strategic Campaigns, Lockheed Martin Aeronautics, agreed that "operational analysis really needs to get done to a level of specificity that works through the different mixing and matching there."

On the sidelines of the conference, this debate about uncrewed systems also fed into thoughts about the shock decision by the US to back away from its NGAD (Next Generation Air Dominance) fighter as a F-22 replacement – with the latest news that it will be pausing this progamme to more thoroughly evaluate the options and potentially rescope. At least one senior defence industry executive, no doubt with insight into the progamme and classified US R&D projects, admitted they too were baffled by the decision, with other comments from attendees being 'something has changed.'

One possible clue to the US' new approach was a presentation by USAF Chief of Staff of the Air Force, Gen David W Allvin, who argued that air forces needed to move away from the philosophy of seeing 'built to last' as a virtue, to 'built to adapt' – where common software across multiple platforms would allow hardware to be rapidly ungraded or even discarded. Built to last, he said, can easily become an 'albatross' – shackling an air force to past legacy platforms and thinking. Illustrated with a notional light fighter concept, does this indicate that the USAF is shifting the crewed element of NGAD from small numbers of $200m a piece superfighters to 'disposable' cheap fighters, designed to only last as long as the next technology refresh?

Said Allvin, "the capability to update at the speed of software, this is the edge we can deliver over our adversaries" – moving from a platform to a systems-centric force. Another example and, again, a potential hint of the USAF's future thinking, was of Gen Allvin's use of a picture of a flock of birds that demonstrate 'swarming' and 'collective agility.'

Resilience

Meanwhile, a session on the defence industrial base saw the conference learn how air arms and industry

▲ The chiefs of Nordic countries Denmark, Finland, Norway and Sweden took the stage.

▼ From left to right:

USAF Chief Gen Allvin with a notional adaptable light fighter.

AVM Jim Beck, Director Capability and Programmes, RAF.

AM Johnny Stringer, Dep Cdr, NATO Allied Air Command.

Allied forces (L-to-R): RAF Chief of the Air Staff, ACM Sir Richard Knighton, Gen David W Allvin, Chief of Staff USAF and AM Stephen Chappell, Chief of Air Force, RAAF.


Tim Robinson/RAeS

can work more closely together in one team/one fight. This is not a new concept, explained AVM Jim Beck, Director Capability and Programmes, RAF, who referred to WW2 where industry was seen as an integrated part of the war – and propaganda posters of the time urged factory workers to greater efforts to support the front line. Oddly today this partnership often breaks down into an adversarial relationship between industry and armed forces.

However, this needs to be a two-way street, the conference heard. For their part, industry representatives, including BAE Systems, Boeing, Leonardo and Pratt & Whitney called for greater transparency and earlier engagement from the MoD and defence ministries on procurement strategies and acquisition priorities to help them plan and optimise R&D and scale up production.

While much of the (relearned) concepts of Cold War deterrence has focused on making military forces more agile and resilient by dispersing, defending or hardening them, there is also a growing realisation that the defence industrial base will also be a prime target and, therefore, factories and supply chains will also need protecting in any protracted war.

In common with military bases themselves, supply chain rationalisation, efficiencies and mergers have seen aerospace and defence industrial capabilities concentrate into OEMs and super primes – bringing economies of scale, but also presenting bigger and, arguably, more vulnerable targets.

"Contested logistics is now a reality," said Jill Albertelli, President of Military Engines, Pratt & Whitney, for example, who explained that a redesign of its TJ150 small jet engine using 3D-printing had slashed the part from "over 50" to "just a handful." Harnessing additive manufacturing, where plans for parts are transmitted to a dispersed network of suppliers or "even possibly at the point of need," said Albertelli, thus could be one way of making the industrial base and supply chain far more of a tougher target to take down.

This view was echoed by Heidi Grant, Global Growth & Engagement, Boeing Defense, who had 'Fortify' as one of her four SAFE initiatives (Scale, Advance, Fortify and Engage) for industry.

> "TO SURVIVE AND TO BE CAPABLE TO FIGHT, WE HAVE TO DISPERSE
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> **Maj Gen Juha-Pekka Keränen**
> Commander, Finnish Air Force


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▲ Finland and Sweden are providing lessons on dispersed, resilient operations.

Ukraine and the Nordic lessons

As well as inflicting massive costs upon an enemy, another way to improve deterrence is to improve resilience and for an air force to simply survive – and the conference heard how air arms were continuing to fight on in both a current war and preparing for a future one.

On Ukraine, Dr Viktoriya Fedorchak, Swedish Defence University, gave an insight into the Ukrainian Air Force's agile dispersed operations strategy, which had been practised and trained for since 2015 – with pilots training in short take-offs and landings, hot servicing and refuelling. She noted that this introduced risks of its own and that it requires a change in mindset in logistics – with the aircraft flying to where the ammunition is. Crucially, she explained, interoperability is not only important on what is done in the air but on the ground too, to support this agile, mobile strategy.

Another standout highlight from the conference was a panel by the Nordic air force chiefs of Denmark, Norway and new NATO members, Finland and Sweden, all on the same stage, the latter two explaining their concepts for dispersed operations, interoperability and integration. For Finland and Sweden, dispersed roadway operations are not just paper studies or one-off trials but an integral part of their defence strategy, that is now attracting great interest from the US, UK and rest of NATO as Agile Combat Employment (ACE). "To survive and to be capable to fight, we have to disperse," said Maj Gen Juha-Pekka Keränen, Commander, Finnish Air Force. Interestingly, he said that cross-border training between the Finnish and Swedish AFs, which dates back to 2009, had not been imposed by high-command, but had evolved organically by front-line squadrons. "This is a good example of people trusting each other."

Meanwhile, Maj Gen Jonas Wikman, Commander Swedish Air Force, when asked if his country

▲ RAF F-35Bs in Iceland for NATO Air Policing. But is 'air policing' too passive a descriptor?

made Agile Combat Employment (ACE) look 'easy', responded on the historic geopolitics that informed this strategy. "It might seem like a smart move, but in our situation, preparing to fight alone, that close to our perceived threat, for so many years, is more of a symptom of the situation that our nation faced."

However, with both Sweden and Finland now full members of NATO, there is no doubt that these two highly capable air forces have not only added to the overall deterrent effect projected by the alliance but are also providing key lessons for the rest of NATO.

"War is not inevitable"

However, despite some of the alarming predictions from the conference, a keynote by RAF Chief of the Air Staff ACM, Sir Richard Knighton on the second day of GASCC reminded the audience that "war is not inevitable."

Instead, he noted that NATO – 'the greatest military alliance in history' – outmatched Russia in many key areas when both numbers and quality of equipment were compared, and the picture was not as dire as often painted.

NATO, for example, had 755 fighters vs Russia's 253; 3,655 attack aircraft to Russia's 481; and 1,329 attack helicopters to Russia's 423.

However, he warned that it was at the 'seams' between allies where the alliance was at its most vulnerable and where interoperability and co-operations between allies were the most valuable. Said Knighton: "Our collective strength and deterrent effect is always greater than the sum of its parts."

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> **Prof Justin Bronk**
> RUSI

Yet despite this current overmatch and perhaps in a rebuttal to Prof Bronk's advice to drop all long-term projects to boost stockpiles, Knighton said there is a real danger of 'capability stagflation' if there is too much focus on current equipment. Technology, said Knighton, was evolving and enemies were adapting quickly.

Knighton also had a message for industry in his speech, reflecting that while the top-level figures for UK aerospace looked good, military aerospace R&D had dramatically fallen since 2006 and productivity in repair and MRO had also declined.

Even discounting the attention-grabbing headline of 'war in 2028' from one speaker, this year's conference had an undeniable sense of urgency underlying many of the sessions, whether it is to help Ukraine win, rebuild combat mass, exploit AI and drones, develop sixth-generation combat aircraft, deliver a UK defence review, forecast the policies of a new US president or predict China's timeline on Taiwan.

In parallel with this was the awareness of attempting to communicate the message to decision-makers, that air and space power remains, perhaps, one of the most flexible and agile tools in any nation's armoury in deterring and preventing war – whether through satellites that can spot the build-up of tanks over a border or ships leaving port or the rapid deployment of air power across the globe that can cause threat actors to rethink their plans. As ACM Knighton observed: "Air and space power is going to play a critical role in deterring our adversaries. That is why we are the first line of defence and the first responders."