

Commander Strategic Command, General Sir Patrick Sanders' Speech at the Air and Space Power Conference

Good morning, good afternoon or whatever time it is with you. It's a shame not to be together with everyone for this year's conference, but I am very glad to still have the opportunity to talk to you all today. I'm speaking in my role as Commander Strategic Command, which was set up to deliver the two key elements of the Integrated Operating Concept: to be defence's integrator, and with the strategic capabilities we hold, to sharpen our competitive edge sub-threshold.

But first, let me set out briefly why we must focus on integration. Simply put, we remain configured for joint operations in the era of industrial warfare and have not shifted at the pace needed to be an integrated force able to operate and fight in the Information Age.

Russia, China and other adversaries have developed counter-strategies to our western way of warfare with its emphasis on full spectrum dominance, reaching the apogee in the first and second Gulf Wars. You can see this in the so-called Gerasimov doctrine and the Chinese emphasis on Unrestricted Warfare, that was set out as a concept in 1999.

These states have become adept at integrating all the state levers of power to accrue advantage and to accrue the initiative, including as we can see today, through trade wars, foreign aid assistance, cyber and information warfare and crucially capturing control of key technologies like 5G or artificial intelligence or indeed space control. This approach broadens the very definition of warfare well beyond the narrow boundaries within which our traditional approach can be brought to bear.

Our response is to pursue integration; joint is no longer enough. We must be integrated across government, with our allies and across the 5 domains to counter this threat and protect our interests and national advantage. We must focus on developing an integrated operating concept compatible force structure: one that is credible to deter above the threshold; more competitive below the threshold and with global reach. To operate consistently and fight when necessary.

Concurrently, our adversaries' investments in innovation and exploiting disruptive information age technology is leaving us behind, whether that's in intelligence, surveillance and reconnaissance (ISR) creating a transparent battlespace, artificial intelligence, synthetics or the vast power of open source data and cloud computing, or indeed in hyper-sonics and long-range multi-domain precision fires. And equally Integration is not yet ingrained within everything we do. Our approach to equipment is siloed and still sees duplication and inconsistency across defence, which is an inefficient use of the resources we have.

Even some of our most recent capabilities have been fielded as platforms, rather than as capabilities. More starkly, when procuring them, standardisation and integration in and across the domains hasn't been considered – we are not able to capitalise on the vast amounts of data our platforms can deliver us, as they are not able to share, swap or integrate data at a speed that generates tempo and advantage.

So where do we need to get to? Well to get an idea of what an exemplar of multi-domain integration and indeed a challenge we have to overcome, look no further than China and Russia's development of Anti-Access Area Denial (A2AD). We can see this playing out in the eastern Mediterranean right now – the interplay of Russian systems, since 2015 from disinformation to the use of hard power, that has been continually developed, has developed their own A2AD bubble which they can turn on and off at will.

To defeat our adversaries in environments like this, and we may well need to, we must operate across all domains, and at high tempo. Anything less won't work. It's the only way to over-match. To do this, we need to do 3 fundamental things.

Firstly, integrate the domains but by design, hence we need a deliberate programme. Secondly, to exploit data, through common hosting and standardisation and then thirdly, test and experiment our options virtually and covertly in a secure or a single synthetic environment.

So how do we get there? Well to achieve effect across the domains, Russia, China, Iran and the Democratic People's Republic of Korea (DPRK) all emphasise superiority in information as critical to success. We need to do the same. The standardisation of our networks, information exchanges and data, defence's digital backbone, is the critical enabler to integration across everything we do.

Our networks must form the resilient 'train tracks' – the bearer for data flowing from sensors to effectors. We must then exploit the data that we collect, and not treat it as effluent like we currently do. This requires a single cloud environment with computing power to handle bulk data and common standards. Secondly agreed access protocols that people who own the data pools can trust, whether it's the agencies or our allies. Thirdly, application commonality, as you have with iOS, an open plug and play approach. Fourthly, sophisticated tools to run across the data, not least artificial intelligence. And finally, gateways between the classification layers, so that you can browse down from above secret and you can transfer up from official-sensitive or secret

And we must make a quantum shift in our approach to innovation and research and development at pace, creating a UK Digital Defense Advanced Research Projects Agency (DARPA), an agile software development centre that fuses expertise in data analytics, machine learning and artificial intelligence, autonomy and robotics, synthetics and visualisation, block chain, quantum technologies, 5G and the internet of things. These will lie at the heart of the data-driven and software-defined military capabilities that will offer defence an asymmetric operational advantage into the 2030s.

As well as a digital backbone, we also need the right support spine, to enable multi-domain integration and to ensure our ability to deter, by projecting and sustaining forces at the speed of relevance. So we must invest in our strategic base. Digitisation will again be key in building the capacity we need into the UK's global strategic base to deliver this ambition. A single federated support network and the exploitation of bulk data, that allows us to diagnose and mitigate system failure before it's on us, will significantly enhance our ability to deliver support at the right time and place, avoiding stockpiling.

All of this underpinning work is geared towards enabling faster and better decision making, rooted in deeper understanding from all sources and aided by data analytics and supporting technologies. Now in terms of the command and control needed to execute this, we must inculcate an instinctive inclination to survey all the domains, intervene and command as necessary in pursuance of the overall multi-domain force objective.

Commanders will need to be able to discern opportunities for advantage across domains and all the levels of war, which will need not just good information, but guile, cunning, and emotional intelligence against a backdrop of cross-domain manoeuvre. The vision is not one of computers in command but calibrating the level of augmentation according to the complexity of the task.

Given the time, I've barely scratched the surface of all that needs to be done to deliver multi-domain integration, and it's going to be a long journey. There are many other lines of operation that we need to and are getting after. Our cyber resilience and cyber offensive capabilities, how we develop greater breadth and depth of special operations capability across domains and across defence to support our world-leading special forces, the transparent battlespace and how we build up our understanding and the use of synthetics and virtual training, these are all equally high on my list of priorities. With more time and with a questions and answers in person I would have loved to have unpacked these with you.

But for now, the case in favour of multi-domain integration is clear and the digital spine, the backbone we need to deliver it is essential. Integrating by instinct and by design will deliver capabilities that can be deployed to, employed in, and exploit multiple domains to deliver tempo. The greatest value it will offer though, is the ability for us to provide our commanders and indeed politicians with as many effective capabilities to draw on as possible, including non-military, to apply combinations the adversary doesn't expect or cannot guard against.

The Royal Air Force, with your instinctive understanding of multi-domain operations will be setting the pace, I know. I look forward to our journey together. Thank you.