Minister, Fellow Air Chiefs, distinguished guests, ladies and gentlemen. I am delighted to welcome you to the 2019 Royal Air Force Air and Space Power Conference – the final time I will be at this world-leading event whilst in command of the Royal Air Force. The Conference brings together a global gathering of international air chiefs, partner Services and members of the Royal Air Force, here and live-streamed at our bases in the UK and overseas.

At this venue alone, there are 46 military chiefs from 39 countries plus NATO, and around 200 serving members of the Royal Air Force. Whoever you are, and wherever you are, this is your Conference – so your engagement, ideas and questions are vital to its success. I very much look forward to us driving forward our individual and collective thinking over the next 24 hours.

As we examine how air and space forces can exploit the opportunities presented by multi-domain operations, let me first offer some thoughts on the strategic context. Unsurprisingly, the era of persistent strategic competition continues and the channels through which our adversaries are pursuing strategic advantage are multiplying. Our most dangerous opponents are deliberately calibrating their activities to just below the threshold that might incur a direct military response.
But just because they have so far elected not to confront us directly by military means, doesn’t mean that their intent is somehow less malign. Through activities in the ‘grey zone’, they seek to sow doubt in the minds of our populations, blunt our reactions, and try to undermine our collective resolve. The challenges associated with this evolving context were introduced earlier today and will be explored further by our first panel session this afternoon.

But whilst the grey zone and the seams between peace and conflict draw more attention at the moment, we must still be prepared for major military escalation, confrontation and conflict – especially as we watch our adversaries continue to invest in high-end military capabilities, across all domains. We must therefore guard against complacency, because the advantages we have secured and depended upon for decades – especially in the air and in space domains – are being eroded.

If activity in the grey zone has expanded at one end of the scale, and our high-end military edge is reducing further at the other, then we must redouble our efforts to exploit the synergies, pace, flexibility and reach that air, space, cyber, information and our command and control capabilities offer to our Joint and multi-national endeavours.
That’s the subject of this Conference: to determine how, as air and space forces, we can synchronise our activities across multiple domains to counter, rapidly, in terms of capability, thinking and decision-making, the threats that are ranged against us - in peace, in war and in the grey zone between the two. This will, I believe, be one of the principal challenges for Next Generation Air Forces.

Let me now talk about how the Royal Air Force is developing its approach to multi-domain operations.

Last year I announced the re-formation of Number 11 Group as the RAF’s multi-domain operations group. We have not stood still since. Giving substance to the principle that command-and-control is a vital pillar of air and space power, 11 Group’s establishment last autumn created for the first time a standing Headquarters capable of exercising robust command and control of Air Command’s operational outputs across the air, space, cyber and information domains.

11 Group recognises and sponsors information as being the lifeblood of our Next Generation Air Force, with ‘information advantage’ as our key operational enabler. That is why, from the outset, at the core of 11 Group was a new Air and Space Intelligence Centre - ensuring superior
integration of intelligence and information activity into the planning and execution of multi-domain operations.

11 Group now undertakes 24/7 C2 of all of the RAF’s UK-based operations, as well as being the principal touch point for our C2 relationships across the Joint domain, home and overseas. And it’s been busy, ranging from the UK’s quick reaction alert mission, to operational control of our deployed Typhoons in Estonia, ensuring that when stood down from NATO air policing missions, they are able to conduct training serials with deployed NATO land and maritime forces, strengthening joint cross-domain and multilateral integration whilst sending a resolute message of deterrence.

The Group also participates in the delivery of operational command of our always-in-high-demand Air Mobility Forces. It has the flexibility to deal with the unexpected, such as C2 of the RAF capabilities deployed to counter drones disrupting civilian air traffic movement, and assisting civil authorities in dealing with flooding. And it will even be exercising OPCOM of our Red Arrows during their forthcoming tour of North America.
11 Group is also now co-ordinating training across all our front-line force elements – from space and cyber to our combat aircraft and C2 nodes - enhancing the Whole Force’s readiness, resilience and combat effectiveness. And in line with the RAF’s responsibility for operational command of space, 11 Group’s Space Operations Centre is now a key space situational awareness node, providing persistent detection and reporting of threats in space, in concert with our Allies.

Multi-domain operations are, of course, not the preserve of 11 Gp, or any one Service, or even of Defence collectively. Multi-domain operations can only be effective if there is coherence and integration across the enterprise. We, the RAF, are ready for that joint challenge, and now have our building blocks in place.

I’d like now to move on to some reflections of my time in command of the RAF. I laid out three strategic themes three years ago: deliver on operations, focus on our people, and grow our front-line capabilities. So let me take a few moments to describe what I think we have achieved in each of those areas.

On operations, in July 2016, Da’esh was still entrenched, with millions desperately trying to survive under its murderous regime, and the threat
plainly apparent also on our streets in the UK. Today, Daesh is militarily defeated, although we continue to be on point, guarding against its resurgence. Many of you will have heard this morning from Air Cdre Justin Reuter, the UK Middle East Air Component Commander, of the ongoing brilliant achievements of the men and women under his command. From the outstanding control of the air and strike capabilities of the Typhoon Force, to the constantly engaged Reaper ISR and strike RPAS capability, to the whole range of our ISTAR, Air Mobility and AAR Forces, it has been an immense effort, sustained for approaching 5 years and delivered with precision, commitment and great success. And to that fight we have now added our F-35 Lightnings, which recently flew their first operational sorties over Iraq and Syria.

In all this, I do not say that air power alone defeated Da’esh, but I very clearly say that we would not have defeated Da’esh without air and space power. A true Coalition effort, with the RAF providing between 10 and 40 per cent of overall Coalition effort. And an excellent example of integrated multi-domain operations and effect.

But it would be wrong of me to focus solely on that region, because what has been plainly apparent over the last 3 years is the widening of the spectrum of operations which the RAF is involved in; the increasing
likelihood that those operations will be conducted from our home bases in the UK; and the importance of having the ability to flex rapidly between operations, missions and even theatres – in so many ways, the very essence of the air and space power endeavour.

NATO, of course, remains the bedrock of our national defence, and I have already touched on the RAF’s contribution to the Alliance’s Enhanced Forward Presence mission in Eastern Europe. But for anyone in any doubt about the levels of activity we are facing, note that since arriving in Estonia on the third of May this year, our Typhoons have already scrambled 13 times in response to Russian activity over the Baltic Sea – many more times that in the whole of our last deployment there in 2016.

We are supporting French-led counter-terrorism operations in Mali, with our Chinooks providing ground forces with agile, responsive and secure transport in a dangerous operational environment. Our Pumas continue to provide tactical mobility in Kabul, whilst our ISTAR Force constantly supports NATO, national and Coalition operations around the globe. And in West Africa, we have been helping the Nigerian Air Force develop its Force Protection capabilities through the deployment of Short-Term Training Teams manned by the RAF Regiment and Police –
who also have an increasingly vital role in protecting our home base operations.

This is just a fraction of what we have been doing, with 26 operations in 33 countries so far in this year alone. I said when I took command that the RAF was busier on operations than it had been in a generation – and each year since then, we’ve just got busier.

So, in high demand, with a reputation for achievement and success to match. It’s a demonstration of the importance and quality of our capabilities and our superb training. But, most of all, I underline that our successes are down to the supreme quality of our people – I pay tribute to them, Regulars, Reserves, Whole Force alike.

So, let me speak more about people. On my first day in command of the RAF, I promised that I would have no higher priority than ensuring that we could continue to recruit and retain outstanding people. I have never lost focus on that aim, and I’m confident that the rest of my Senior Leadership Team haven’t either. I know that it’s also the focus of all of my fellow Air Chiefs here today.
That is why we initiated a People Transformation Programme – not because we were in a bad position, but to ensure that we became a 21st Century employer; widened our recruiting aperture; took the actions needed now to ensure that we gave ourselves the very best probability of success, both today and for the Next Generation Air Force.

I’m proud of the fact that we’re now leading Defence in our approach to people. In the last year, we have delivered our best recruiting performance in a decade. It hasn’t happened by accident – it’s taken a lot of hard work, initiative and a clear intent not to be driven by previous policies and processes, but by what works for our people and for our organisation making judgements, taking additional risks where appropriate.

Some examples: we’ve increased the upper age limit for joining the RAF to as high as 48 for most branches and trades – there’s no law which says that you can only join the Armed Forces when you’re young! We’re more realistic about the required medical standards for each branch and trade. We’ve reduced the time from application to joining the Service. We’ve developed an innovative Rejoiners scheme, bringing talent and experience back into the Service – this year we expect around 10% of our recruitment targets to be met by rejoiners,
saving ourselves a whole lot of time and cost in training along the way.

It's not just a numbers game – it's also about who we are as an organisation, and better reflecting the society we serve. The very first Chief of the Air Staff made it clear 100 years ago that the philosophy of the RAF was ‘to open widely, and to all.’ So I’m proud that we’re leading Defence with 17% of our combined Regular and Reserve intake now being women, and that this year we have been recognised as one of the Top 50 Employers for Women in the country. I'm proud that our recruitment from BAME communities has constantly increased over the last 3 years, reaching out and understanding better how to appeal to young people, and their families, who in the past might not have viewed a career in the RAF as a natural choice.

But important though recruitment is, for the RAF and, I suspect, for all of our Air Forces, the greatest challenge lies in retention – holding on to our outstanding people. I, for one, welcome that challenge – I want us to be an organisation that has people with the qualities, training and experience to be highly sought-after outside the Service, but for us to value them and look after them, such that they want to stay.
The RAF has an excellent return of service – on average, 16 years. But how do we maintain this level? Our approach has focused on treating everyone as an individual; on flexibility; and on communication.

We’ve now adopted a whole range of flexible employment and engagement options - the way people want to live and work is changing. We’ve recognised that lifestyle choices and family time are often valued much more highly than postings or career progression – people want jobs that fit around their family commitments, not vice-versa.

So I’m delighted that, for example, the RAF recently won the UK employers’ ‘Best for Mothers’ Award; and that our return rate for post-maternity mothers is 96% - one of the highest in the country. We’ve also invested to ensure that every person in the RAF, regardless of rank, has direct access to their career and talent manager. Such achievements contribute to the retention of the key skills we need to deliver the Next Generation Air Force,

Training and development continues to be at the core not just of our capability, but also our values and ethos. Earlier this year we won the national award for ‘Best Employer’ of apprentices, not least for our
exceptional 98% success rate. More generally, we’re also getting better at recognising where talent lies in our organisation – it’s everywhere, not just at the top. So, our Talent Initiative is exploring ways in which we can better foster, recognise and reward innovation and talent at all levels, wherever, and in whatever form, it exists. Through developing flexible and imaginative solutions like this, we will deliver an enriched Next Generation Air Force that is more agile, capable and operationally effective than ever before.

I’ve gone on a lot in this area, but I did say it was my highest priority! And I know that every Air Force Chief in the audience this afternoon also worries about recruitment and retention challenges. We must get this right, individually and collectively.

Finally, let me turn to the progress we continue to make in growing our front-line capabilities. Three years ago, the F-35 Lightning was just appearing on the horizon: today, it is conducting live operations, can deploy anywhere in the world, and later this year will complete its first operational test exercise onboard HMS Queen Elizabeth - an important milestone en route to Carrier Strike capability in 2020, and the carrier’s first operational deployment in 2021.
Three years ago, the restoration of our maritime patrol capability was planned, but still far off. Today, we have two fully trained Poseidon crews and our first P-8 is already in RAF markings, ahead of its delivery to us this October, and starting to arrive in the UK, on schedule, early next year.

Three years ago, we had no plan to re-capitalise our vital airborne early warning and control fleet; today, it’s been confirmed that we are acquiring the E-7 Wedgetail, with some of our people already training with the Royal Australian Air Force’s E-7 Force, ahead of the delivery of our first E-7 aircraft in the early 2020s, to Number 8 Squadron, continuing that Squadron’s outstanding record of operational service and achievement.

And let’s not forget either that we’ve formed and are growing additional Typhoon squadrons; have delivered to time, cost and performance Typhoon enhancements which have given it a true multi-role capability under Project Centurion; and initiated Project Tempest. Just an aspiration 3 years ago, but today an integral part of the UK Combat Air Strategy announced last year, developing Next Generation Combat Air capabilities. Tempest has attracted substantial interest from international partners for the way it is challenging the rising cost curve of new
technologies. More to come on the Combat Air Strategy on Friday at the Royal International Air Tattoo.

I’m hugely impressed by the pace and activity inside the TEMPEST programme. Only one year in, the FCAS TI and Team TEMPEST is already employing 1,000 people across UK Industry and the MOD. We are also employing new airborne test aircraft that should revolutionise how we conduct systems development. And the development of new propulsion systems is changing how we do this in the future.

As part of the technologies being developed in parallel with Tempest, I am delighted to reveal that, in concert with Rolls-Royce, Reaction Engines and BAE Systems, we are developing hypersonic propulsion systems. These will be designed and tested over the next 2 years, paving the way for the UK to become a centre of excellence in this technology and contribute to meeting future UK Defence needs.

We also recently progressed our Lightweight Affordable Novel Combat Aircraft (we call this LANCA) to the Feasibility Phase – aiming to develop an unmanned flying wingman to enhance the capability of our existing and future Fast Jet aircraft.
So, we have come a long way. But it is, arguably, in space where the greatest progress has been made since I became Chief. The success of our Carbonite 2 satellite last year paved the way for a radical re-think of how we might go about delivering Space technology quickly and affordably – and in operationally responsive timeframes. The Defence Secretary will say more about developments in space tomorrow, so I shall limit my comments today to saying that our Space Cadre continues to grow, including now through the award of Space Wings. And we will reform the famous Number 23 Sqn as a Space Squadron responsible for our day-to-day space command and control – including the flying of satellites and essential coordination with allies – a numbered Sqn reinforcing that Space is part of our core business. This is now very definitely a ‘space’ as well as an ‘air’ power conference.

The RAF Rapid Capabilities Office is a world-leader in delivering projects, from Tempest to counter-UAS, such as our plans for swarming drones.

For our swarming drones programme, if we had set about this 3 years ago in a traditional acquisition route we would not be where we are today. The Team were set the most challenging objectives and I am
confident enough to say the results, thus far, are looking pretty impressive. So much so that I can declare that we will shortly be forming an Experimental Sqn – Number 216 Squadron – to bring this capability quickly to the frontline.

That’s more than enough from me. For now, let me just take the opportunity to thank the Air and Space Association, the RAF Centre for Air and Space Power Studies and our sponsors for creating yet another superb Conference. Again, a very warm welcome to you all, and I very much look forward to joining you in the debate.