**CAS Lord Trenchard Memorial Speech - RUSI 11 Nov 2024**

Ladies and Gentlemen, I am honoured to once again take to the stage here at RUSI for the annual Trenchard Memorial Lecture. Thank you for the very kind invitation to speak again in your now wonderfully modernised building.

I last gave the Trenchard lecture in 2019 as the Deputy Chief of Defence Staff, Mil Cap and spoke then about multi-domain operations. I gave that speech in 2019 at a time of – by historical standards - relative stability.

A lot has changed in that intervening five-years: as well as a few different jobs for me, we have suffered a global pandemic, a withdrawal from Afghanistan, huge inflationary pressures, a new monarch, several new prime ministers and presidents, an enduring and bloody war in Europe and, perhaps most significant, further clear evidence of the return of great power competition.

General David Petraeus speaks for many when he said:

'The Western World faces the greatest number and the most complex array of threats we have ever seen.'

In my three and a half decades in uniform, I do not think I have seen a more challenging strategic environment.

I am conscious that every generation thinks that it is living through the most tumultuous time in history, or that world is rapidly changing, and we are at an 'inflection point'.

So, I think we need to be careful not to exaggerate the threats, but our job in defence is to anticipate these risks and adapt so that we are ready to protect our country, our interests and our people.

It is this adaptation, particular for the Royal Air Force, that I want to concentrate on today.

When I have been here before I feel quite a lot of pressure - because of the calibre of the thinking done here by the likes of Malcolm Chalmers, Justin Bronk, Jack Watling and many others - to bring fresh conceptual thinking and up my intellectual game!

But as this is the first Trenchard lecture I have given as the Chief of the Air Staff, I think there are some rather more prosaic matters for me to address. In particular the state of the RAF today and how we need to evolve. I hope this is something that the first Lord Trenchard would approve of!

Today the RAF remains strong and capable, but we have spent the last 25 years or more optimising ourselves for the types of conflict we saw in the Balkans, in the Middle East or in Afghanistan.

We responded well and have adapted our systems and capability for those wars, but that is not the threat we face.

We need to become match fit for the new, bigger, and more important game. The Secretary of State for Defence recently said that:

'Unless we're ready to fight, we're not in shape to deter. And this is at the heart of the NATO thinking.'

To deter against a costly war, we must build a credible force that our foes fear and our allies value. We cannot do it alone.

The RAF must evolve as part of the integrated force: our Service siblings, the whole of government, the defence industry, as well as allies and partners are all critical to our collective success.

This is a team game.

We have a lot to do, and time is of the essence, but in simple terms we need to build an air force that can fly, fight, and win today, tomorrow, and together.

So I want to set out today some of my thinking about how we do that.

I will focus very much today on air rather than space – simply because of time and having recently spoken at the Space Conference – but I am happy to take questions on space too.

Context

Let me start by saying a bit about where we have come from.

Over the past 30 years, there has been no existential threat to the homeland, we have pursued wars of choice rather than wars of necessity, and usually far from home.

As our main effort switched, so did our defence budget, capabilities, and ways of working.

Our Cold War focus over time shifted to meet the new challenges of overseas intervention and counterinsurgency.

The 'A' war versus 'The' war debate was hotly disputed the first time I worked in the MOD almost 20 years ago;  the Army, understandably, led the charge for the Defence budget to be prioritised towards delivering success on operations in Iraq and Afghanistan.

While the RAF and Royal Navy supported the Army's position, they also wanted to see investment in their key longer-term programmes such as the aircraft carriers, Typhoons, and F35s.

Today, the challenge of establishing the right balance between near-term and long-term success is no different, but the pendulum has definitely swung firmly towards making sure we are ready for the future fight – the one, in fact, that we want to deter.

For over a decade now, a rising China has caught the attention of the global hegemon.

With the US increasingly focusing its time, money, and capabilities on the Indo-Pacific region, there is an unquestionable demand for Europe to carry more of the load.

A resurgent Russia has accelerated that process and ensured more united and stronger European states.

After almost a thousand days of brutal and bloody fighting in Ukraine, an enlarged, reinvigorated, and increasingly focused NATO now has to deal with a wounded, frustrated, and unpredictable Russian animal.

As he took office, our Prime Minister said:

"We live in a new and dangerous era…one defined by volatility and insecurity…we face a generational threat of Russia…the alternative to Ukraine's victory is unthinkable…a green light to aggressors everywhere."

One of the lessons I think we should take from the experience of the last couple of years is that the world is connected and so are the strategic issues we face.

The ongoing conflict in the Middle East and the connections to it from Iran, Russia, China and North Korea illustrate the indivisibility of many of these problems.

And, more broadly, after a three-decade sabbatical, I conclude that deterrence is back. And this demands that we think about the new threats and the capability we need to deter and, if necessary, fight and win.

The air and space domains are essential components of our integrated force; they are critical to the joint and coalition's ability to move and operate at a pace, time, and scale of our choosing, they are foundational for successful operations and central to NATO's way of warfighting.

In an uncertain future, air power will continue to be Defence's first responder, the nation's first line of defence, and the integrated force's quickest means to strike, with the flexibility, speed, and reach to deliver effect globally and offer wide political choice.

So what, then, does this context mean for the RAF?

Throughout my whole career, we have largely enjoyed air supremacy never mind air superiority, at least above about ten thousand feet.

That is not going to be the case in the future.  It seems clear to me that we are going to need to fight for control of the air.

This, then, is the first of the three key deductions I draw from this changing global strategic environment and what many are calling 'a dangerous decade.'

Control of the Air is vital. This is our core role and is central to our history, culture, and ethos as a service. This is what we do, not for our own benefit, but for the integrated force. As the US air power historian Richard Hallion identifies control of the air provides three freedoms:

'The freedom of initiative, the freedom to operate, and the freedom to manoeuvre.'

Ukraine is a stark reminder of what warfare becomes when neither side can gain effective control of the air.

Those who fight without control of the air tend to remember the lesson more vividly than those who have bathed in its luxury.

I have no doubt that Russian and Ukrainian strategic leaders would agree with General Petraeus' point that :

'Air superiority…has been a vital aspect of conflict since 1945. With it, anything is possible; without it, everything is dangerous.'

My second deduction from this shifting strategic context is that we should also expect to be called on to do more.  This means doing more things concurrently, but also being able to do them for longer.

Wars tend to last longer than any operational planner or strategic leader would expect. Russia's illegal invasion of Ukraine was not the quick affair that Putin had hoped for; those who gamble on quick wars usually find themselves in long, attritional affairs that are expensive in blood and treasure.

In every way we might look at it, war is costly.

During the Second World War, the UK suffered over 450 000 casualties. The defence budget ramped up from 2.9% in 1936 to 9% in 1939, at the start of the war, and peaked at over 50% in 1945 as the war culminated. It took over six decades to pay off our war loans.

We want to avoid that war. While I am not advocating that we build and sustain a force to win all-out war, we need sufficient strength and resilience to deter, and to stop one from starting.

And this then is my third major deduction, which is that we want to avoid this kind of all-out war.

Deterrence matters.

And as we think about how to deter, we must remember that what we say, and more importantly, what we do, really matters.

This is the topic of a separate lecture, but understanding what our foes fear and our allies value is an important frame of reference for deciding where we should focus in developing the future force.

My fourth, and final strategic deduction is that the environment demands an increase in the speed of adaptation.

Adaptation is not a new idea.  Warfare has always involved rapid adaptation. The measure, counter-measure, counter-counter-measure cycle is one familiar to many histories of conflict.

But over the past 30 years or so, the West has enjoyed such dominance over its adversaries that this cycle has not mattered nearly as much as it will do in the future where it will be a matter of survival.

The required pace has also quickened significantly as new technologies, that were born in the private sector rather than the government labs of North America or Europe, have become ubiquitous and critical enablers of today's way of war.

In Ukraine today we can glimpse the sort of rapid adaptation that will be an inevitable part of peer conflict.

I was in Ukraine recently and those there talk about the cycle I describe being as short as 3 weeks, with the counter to the counter-measure being developed alongside the development of the capability.

But, partly because we have not faced an existential threat, and because of society's changing expectations, we have built increasingly intricate systems of regulation, testing, evaluation and approval.

This system will not deliver the speed of adaptation that is going to be necessary. This is not just a problem for the RAF, but it is particularly relevant for the RAF.

Our thinking on how to address these challenges could also be the subject of another lecture so I will try to summarise here...

We have looked back in history at the rates of technological change, particularly in conflict, and compared it to what we achieve today and mapped across the safety factors used and evaluation approaches that were applied.

It's clear that to deliver the pace of change needed for operational relevance in a future fight we will need to do less testing and live with lower standards of assured performance and quality.

We're fortunate in the air domain to work with a set of regulations that gives duty holders remarkable freedom to make these risk balance judgements.

We just need to get used to being risk-sensible (as Lord Haddon-Cave described it) in the context of the operational imperatives we face.

So these four big deductions - the need to fight for control of the air, the need to do more, the need to deter and the need to adapt faster - are driving my thinking on where we should focus our time and resources and how the RAF will need to develop over the next few years.

Near Term Priorities

So, with this in mind, in the near-term, we simply have to keep getting the basics right.

By setting a solid foundation and focusing on our people, infrastructure, and enablers we can increase productivity and agility to ensure we are ready and resilient for that fight we want to deter.

Right at the heart of our success now and in the future are our people. We are blessed with fantastically able and highly trained people. But right now, we don't have enough.

The solution is simple to describe – we must retain more, recruit more and train more – but it is harder to do than it is to describe. I am confident, though, that we will crack this.

This is the issue that we spend most time on as a leadership team and it will dominate my time as CAS.

And while I am confident we will fix it, it can't be done overnight.

Our people who are skilled, resourceful and disciplined, are attractive to other employers, and it takes time to train and develop them.

But with relentless focus and prioritisation on improving the engagement of our people and increasing inflow and training capacity we will fix it.

The good news is that the indicators are all moving in the right direction.

Voluntary outflow rates are down at least to historic norms from their peak 18 months ago.

Expressions of interest to join the RAF last month were over 10 thousand – more than double what they were 2 years ago.

And applications per month have almost doubled over the past 2 years.

So although tough and it will take time, we are definitely making progress.

Part of the reason I highlight infrastructure is because it affects our people and their families as well as our operational output.

Today, too much of our infrastructure simply isn't good enough.

I am enormously grateful to my 2 predecessors who started to address the problem when responsibility for infrastructure was passed back to the front-line commands in 2018.

As a result of their vision and priority placed on this issue, the forward infrastructure programme is now more than doubled what it was when responsibility was delegated back to us in 2018.

But despite this it will still take many years of consistent investment to bring all of our infrastructure up to a modern and resilient standard.

The third near term priority I mentioned was enablers – the seemingly dull but essential things that enable us to generate air power.

Enablers are a focus now because there is latent capacity in our force structure, and putting in place the right enablers can help us unlock that capacity to deliver more from the force structure we have got.

The necessary focus of the last 30 years or so on efficiency led us to focus on cost, led us to lean our supply chains, outsource and consolidate our estate. But the consequence of this focus is the hollowness that the Defence Secretary has described.

The Chairman of NATO's Military Committee, Admiral Rob Bauer, of the Dutch Navy, put it rather well at last year's Warsaw Security Forum that:

'The just-in-time, just-enough economy we built in 30 years in our liberal economies is fine for a lot of things - but not the armed forces when there is a war going on'.

We know that the RAF is one of the most productive air forces in NATO. Where we can make direct comparisons with platforms such as Typhoon, A400M, and C17, we generate more than others, but we can do better.

But even so, modest investment in enablers whether that be weapon stockpiles, ground support equipment, spares, or additional aircrew of groundcrew will allow us to increase output from our platforms.

But as well as getting the basics right and increasing our capacity through the kind of investment I have described, we also need to adapt and develop our capability to face the changing threat over the longer term.

Longer Term Priorities

Today the RAF is the most modern it has ever been. Almost all of the aircraft we operate have come into service over the past 10 years.

But by the end of next year when E7 and Protector come into service, the force we have then is pretty much the force we will have to fight with until GCAP comes into service later in the next decade.

We cannot afford to stand still over the next 15 years in the face of the evolving threat I described earlier.

As part of the Defence Review process, I have highlighted to the Review Team three operational priorities for the RAF.

And given that air power is fundamental to NATO's way of war, you won't be surprised that these priorities align completely with NATO's Air Component Commander's own operational priorities.

The first of these operational priorities is control of the air.

In the near term our combat air force of seven squadrons of Typhoon and two, growing to 3, squadrons of F35 will make a critical contribution to NATO and will be central to our ability to fight for control of the air whether that be from the land or off the Carrier.

We know that these capabilities – Typhoon designed in the 1980s and F35 in the 1990s – need to be continually enhanced over time to ensure that they stay ahead of the enemy.

On Typhoon, the addition of a new E-scan radar, upgraded Defence Aids Suites and new weapons will ensure Typhoon remains at the leading edge of NATO's 4th generation air power and – with a bit of life extension – allow it bridge to GCAP.

And on F35 the ongoing, multinational spiral development programme, although it has some challenges right now, will see the jet continue to overmatch our adversaries well into the future.

But the proliferation of stealth capability through the likes of the Chinese J20 and Russian Su57, as well as increasingly long-range air to air weapons like the PL15 Thunderbolt mean that we also need to be planning for the next generation capabilities now.

That is why we need GCAP.

GCAP is very deliberately being designed to complement and enhance the capabilities of F-35, not replace it.

But we also know that even a force of F35 and GCAP will need to be augmented by Autonomous Collaborative Platforms to defeat the threats we see emerging.

These ACPs – or CCAs, collaborative combat aircraft, as the US call them – will be a critical part of an effective combat air system in the future enhancing lethality and survivability of the core crewed platforms in the system.

Operating together, this high-low mix of platforms will provide the most cost-effective way of delivering the combat mass we will need to win against an ever-improving enemy.

I have said publicly before that the RAF will have a useable and operationally useful ACP in service before the end of this financial year…

But with multiple nations, such as the US, Australia, Japan, France, and Germany, actively investing in ACPs, now is the last safe moment to commit to ACP if we are to retain a lead and seize the initiative as well as the market.

My second operational priority is Command and Control.

As a service, we know just how important C2 is.

We are understandably proud of Dowding's unique command and control system which provided the critical competitive advantage during the Battle of Britain.

It was far from perfect, but it was cutting-edge, available, and effective.  As one of the Sector Controllers said at the time, the Dowding System allowed you to:

‘Make a right enough decision, soon enough.’

But while we can be proud of our historical leadership, we cannot afford to be complacent; Air C2 has moved on and needs to move on more.

Today, Dowding would be overwhelmed by the technology, tempo, and scale of what a modern CAOC can deliver.

By the same token, today’s air power leaders might find it difficult to envisage the C2 architecture and demands of tomorrow’s fight.

To make the integrated force effective we will need a network and all-domain combat cloud that allows effective all-domain. It will also need to connect multinationally too.

The RAF’s NEXUS combat-cloud might just be the right answer for all of defence.

And closer to home – in the air domain specifically – we know that the traditional 72-hour Air Tasking Order planning cycle will not create the pace and agility that we need for future operations.

AI tools, such as the Rapid Capability Office’s Air Power 4.0 tools, will enable much more rapid planning and execution of air operations than we can today.

The last of my three operational priorities is Integrated Air and Missile Defence.

Three decades of relative peace and the absence of a serious direct threat to the UK has left us with limits to our ability to respond to some of the threats we could face in the future.

This issue has been brought into the public consciousness by events in the middle east.

We might envy Israel’s ‘Iron Dome’ capability. I was in Tel Aviv in May 2021 when Hamas launched mass missile attacks on the capital and across the country. I got to see the system in action, close up, over the night sky – it is unbelievably impressive.

But, context matters. Iron Dome is a bespoke capability for a bespoke situation.

Israel is similar in size to that universal comparative measure - Wales - so an ‘Iron Dome’ solution for the UK, never mind NATO, is neither achievable nor affordable due to the physical size of the territory involved and the dispersed nature of our critical assets.

Any IAMD solution will be multi-domain.

Rather like the Dowding System that involved land, sea and air, today our response will need to encompass space and cyber too.

It will also need to be multi-national – integrated with allies in NATO.

But IAMD, even with allies is not cheap, so we will need to prioritise our investment.

Our near-term focus must be on integrating what we already have – fortunately we already have world-class system in 'Guardian' that can do that.

Beyond C2 we will need to improve our sense and warn capability both in the air and on the ground.

Today our ground-based radars are fixed, aging and will need replacing soon.

Mobile, integrated and distributed sense and warn capabilities will almost certainly be the right answer.

We should also remember the old dictum that 'The best form of defence is attack'.

Effective IAMD must include an offensive element – which brings me back to the central importance of our combat air capability.

Ukraine cannot put a shield up to protect themselves against the 30 thousand glide bombs lobbed into the Kursch oblast – Instead what they need, and what we would need, is the ability to strike the aircraft launching these bombs on the ground or in the air.

So IAMD is not just about ground-based air defence, but is a multi-domain, multinational layered capability with C2, sense and warn, and offensive capabilities as critical components.

Conclusion

As I draw this lecture to a close, on today, of all days, it seems fitting that we should spend a little longer than normal remembering those who came before us.

Just over 24 hours ago, just a few meters from here, I stood in front of the Cenotaph.

In that two-minute period of revered peace and calm, I reflected on those who had served, fought, and died to preserve this nation and our way of life.

Our modern Western society has perhaps forgotten that our freedom isn't free; the cost in blood and treasure is always high.

Not far from here you will find Cleopatra's Needle on the banks of the River Thames.

If you look closely at the two Sphinx on either side of the Needle you will see shrapnel damage from bombs dropped by German Gotha bombers in September 1917.

Earlier German raids in June and July 1917, both conducted in broad daylight and with impunity, killed several hundred Londoners.

These attacks were the catalyst for the rapid creation of the world's first independent air force.

When war threatens us directly, it has the power to galvanise our society.

This threat and fear make us as individuals, and as a society, better able to understand warfare and the role that those in the armed service play.

Those of us here today, certainly those who are British, have not experienced the kind of existential threat that our grandparents and great grandparents lived with during the first half of the last century.

Long may that continue, but things have changed, and hope is not a strategy.

Deterrence and hard power matter more now than they have for many years.

If it fails, we are doomed to repeat the brutal suffering of our past wars.

Today, we have an opportunity and a duty to ensure the Service is ready for the changed strategic context and to be match fit to deter our adversaries.

The RAF is strong and capable and will play a vital role in keeping our nation safe.

It has proved itself in combat.

We have great kit and great people,

but we need to evolve to deliver more, to do it for longer and to ensure that we can fly, fight and win, today, tomorrow, and together.

Thank you.