

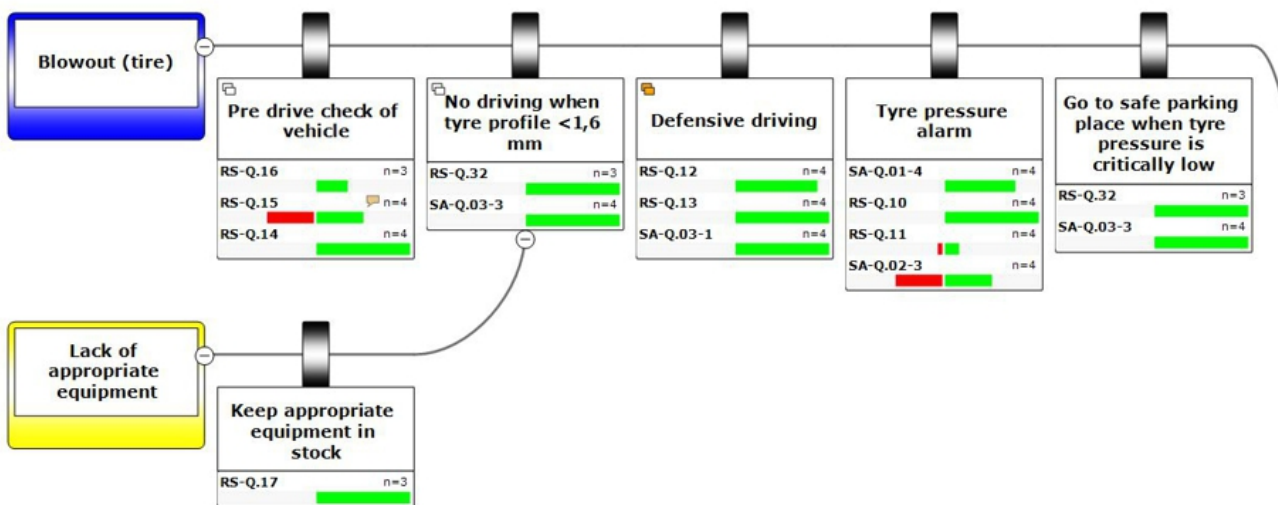
[News story: BowTie: a visual tool to keep an overview of risk management practices](#)

BowTie finds its roots in the chemical industry course notes for a lecture on hazard analysis given at the University of Queensland in 1979. The exact origin is unclear but the mainstream use started in the aftermath of the Piper Alpha disaster with Royal Dutch/Shell adopting the methodology as the company standard for analysing and managing risk. It is widely regarded as a suitable visual tool to keep an overview of risk management practices, rather than replacing existing processes or systems.

[RA 1205](#) provides a regulatory framework for an Air System Safety Case (ASSC) for each platform and identifies that it is not a single document, but a living body of evidence. Thus, ASSC based auditing techniques can be both complex and time consuming. BowTie can be employed to simplify this and improve the communication of risk by acting as an overarching document that collates all the documentary evidence of an ASSC together, meaning that it can then be interrogated to source auditable data that underpins the Safety Statement. With the publication of [RA 1210 Issue 4](#), Operating Duty Holders (ODH's) have been given more latitude in the way in which they choose to record and document risk within their area of responsibility allowing the scope to incorporate and develop good practice. For several years, the majority of ODH's have been developing risk management systems that embrace the BowTie risk assessment methodology as it is believed that, when used correctly, it can provide an easier to interpret and more holistic view of overall risk exposure.

Of the 6 ODH's that cover UK military flying, 5 have made a commitment to using BowTie within their respective Air Safety Management System (with the 6th now developing a capability). Early adopters have been working on its implementation for several years and are continuing to make significant developments in the way BowTie is utilised and how the software is implemented. There has been a significant investment in the translation of current risks from the traditional risk register into the BowTie format, and training key personnel in a revised way of working. The MAA has intentionally remained at arm's length, in order to encourage the development of good practice by the user community, whilst keeping a Regulator's oversight to ensure that the work implemented remained within the bounds of RA 1210.

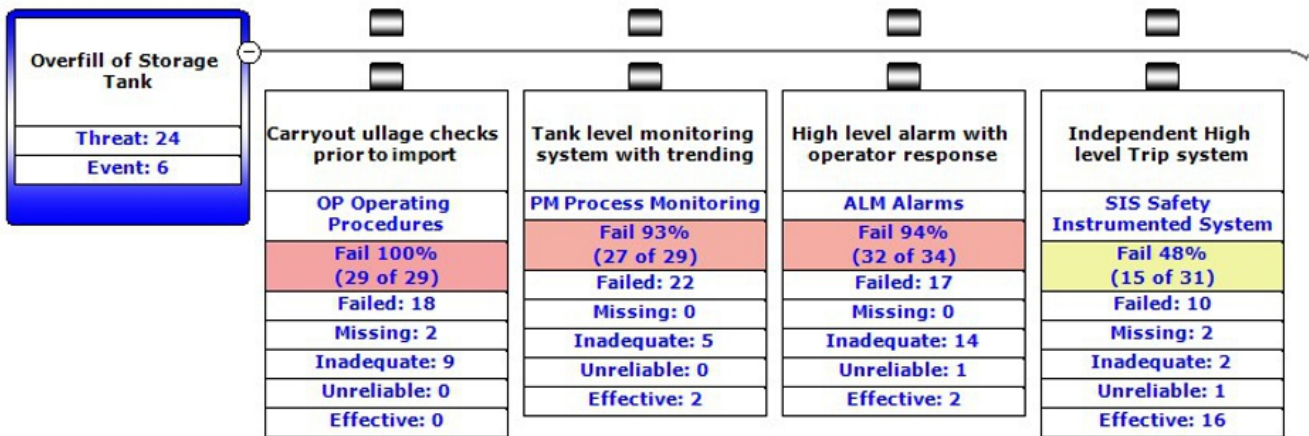
Up until 2017 all ODH's maintained suitable Platform Risk Register's to meet the intent of the MAA Regulatory Publications, but in early 2017 Air Officer Commanding (AOC) 2 Gp made the decision to move completely from risk registers to using BowTie as the sole method of recording and presenting risks and risk management. The decision was made once the Gp's SMEs were content that the BowTies were sufficiently developed to ensure no degradation in the risk picture presented.



AuditXP. Crown Copyright. Photo: via MOD.

The BowTie user group has made progress in agreeing a common approach to BowTie creation and produced a pan ODH level BowTie Standard Operating Procedures complete with a description of what a BowTie consists of and the taxonomy that is to be used. This has aided with configuration control and allows for easier analysis across all areas as the picture will look the same. This document continues to evolve as more functionality is included within the BowTies. The choice was made to use the standard taxonomy for BowTie to allow for shared learning from industry and to reduce training cost for personnel involved in the development. Therefore, risk terminology was changed to fit with the barrier (vice mitigation) based risk management model. Rather than dealing with the traditional risk based approach each BowTie deals with a hazardous situation and loss of control and can cover multiple risks.

These elements can then be embellished with additional information to allow for easy viewing of barrier effectiveness, owner, manager and importantly the evidence that underpins that assessment. The inclusion of Air Safety Information Management System data will allow for interrogation of the BowTies to further refine the effectiveness assessment of barriers and will generate a huge amount of quantitative data for analysis by Front Line Command and the MAA alike. There is no automatic process that updates the effectiveness rating and human interpretation is required before a change is made. Additionally, a currently unused but being explored capability is the generation of questionnaires allowing for targeting questioning of personnel to understand how a barrier is functioning.



IncidentXP data close up. Crown Copyright. Photo: via MOD.

BowTies are never truly complete as they are subject to continual review and as such are a living document. As the existing documents are further developed more of the existing functionality with the software will be utilised and additional tools will be delivered to increase the synergy between occurrence reporting and the risk management process. As to where we go next, there is significant interest from the Defence Equipment and Support (DE&S) community to communicate hazards in the correct language for the ODH risk assessment model, without the need for translation. The DE&S Airworthiness Team via the ASPIRE project, is investigating the viability of transitioning DE&S to BowTie methodology. All ODH's have been consulted and have agreed that the project is a step towards fully integrating the risk management process.

There is still more work to be done to ensure that the taxonomy used is acceptable by both the equipment and operating stakeholders. Along with this, many of the user groups are starting to use BowTie for functional safety with a clear interest in its ease of interpretation.

This year will see the reinvigoration of the legacy BowTie User Group (BUG). Previously this was a large meeting with representation from a wide cross section of stakeholders attending, each having particular issues to raise. To improve upon the quality of the information exchanged, the BUG will be rebranded the BowTie User Forum and will have comprise of a periodic symposium that will include topical discussion and Q&A sessions and the creation of a dedicated BowTie SharePoint portal with a discussion board and wiki pages. It is within the dedicated BowTie SharePoint portal that the most

current and up to date information regarding BowTie and its development will be found. Training availability will be advertised with links to application forms in addition to how to get a software or BowTieServer licence. Introductory training is provided currently through the MAA Air Safety Risk Analysis & Management Practitioners (MASRAMP) course held at Centre of Air Safety Training (CoAST) and there is a desire to include a bespoke BowTie training course for more advanced users as part of the Safety Training for Error Prevention (STEP) contract.

[News story: Britain leads first ever European conference on veterans mental health](#)

Minister for Defence People and Veterans Tobias Ellwood hosted the conference, which included delegations from Denmark, France, Germany, Italy and the Netherlands.

The conference, the first meeting of its kind, saw Ministers and military officials from six NATO countries share best practice on veterans issues and discuss how nations can further mental health support for former service personnel.

Opening the conference, Mr Ellwood outlined to delegates that while most veterans go on live happy, healthy and successful lives, all Governments had the responsibility to look after the mental health of those who have served.

Minister for Defence People and Veterans Tobias Ellwood said:

In order to recruit the next generation of soldiers, sailors and airmen and women, we need to show that we look after our service personnel and veterans.

Britain is not unique in facing this challenge. That's why it's vital that we discuss these issues and share best practice with our close European military partners.



Tobias Ellwood with delegations from Denmark, France, Germany, Italy and The Netherlands.

At today's meeting, Mr Ellwood addressed the need to counter the negative perceptions of veterans. He told the conference that while more needs to be done to help veterans, it's unhelpful that, despite statistics which prove otherwise, many people think that service life leaves people damaged.

Figures released today show that rates of mental disorder amongst serving armed forces personnel (3.1%) remain slightly below those of the general population (3.5%). Rates of Post Traumatic Stress Disorder also remain low, with 2 in every 1000 personnel assessed with having the disorder in 2016/17.

Every study conducted by the Ministry of Defence has also found that the risk of suicide among the Armed Forces community, including veterans of the Falklands conflict and the Gulf War, is lower than amongst the general population. The UK regular Armed Forces male rate of suicide for 2017 is 8 per 100,000. The UK general population male rate in 2016 was 19 per 100,000.

Support on offer

The Ministry of Defence is now spending some up to £220 million over the next decade to improve mental health services for serving personnel.

While the provision of veterans' healthcare is the responsibility of the NHS in England and the Devolved Administrations, the MOD is working closely with all relevant government departments to make sure the unique needs of veterans are addressed.

Veterans in England, Scotland and Wales receive priority access to NHS specialist care for conditions stemming from their military service.

Last year the government created a Ministerial Covenant and Veterans Board, to coordinate and address veterans specific issues across all relevant government departments. The board will be presented with the first ever veterans strategy in the autumn

In 2017 the Veterans Gateway was also launched, providing a single point of contact for veterans, service personnel and their families to get the right information advice and support 24/7. The MOD provides £2 million to fund the helpline.

Press release: United Kingdom – Poland Quadriga 2018: joint communiqué

Today's annual meeting of Foreign and Defence Ministers demonstrates that the UK and Poland are delivering on their commitment to develop our partnership to be even stronger and even more strategic.

We took the opportunity of this meeting to celebrate the hundred years of Polish regained independence and a bilateral relationship that has vastly expanded over a century. During that time the UK and Poland have worked and fought side-by-side for freedom in Europe and the world. We remember the heroism of British and Polish soldiers, sailors and pilots throughout the Second World War and subsequent conflicts. Our countries have a strong trading relationship and deep cultural links through the thriving Polish community in the UK. We are active partners in international fora like the UN, OSCE, EU and NATO, and our troops serve together on the ground in Poland as part of NATO's enhanced Forward Presence. Today we have discussed concrete ideas for how we can further enhance our strategic foreign, defence and security partnership.

As the hosts of the previous two NATO Summits, we share a deep commitment to the Alliance, and to a successful Summit in Brussels. NATO continues to adapt to the evolving security environment, having made good progress since 2014 in rebuilding and strengthening its Deterrence & Defence posture and Projecting Stability. The 2018 Summit is an important landmark in providing a modern, prepared and unified NATO. It will be an opportunity to review the progress made since Wales and Warsaw, demonstrate Allies' unity, and agree the remaining steps ahead of NATO's 70th anniversary in 2019. Ensuring the effectiveness of NATO's

deterrence and defence, including in the Eastern flank, is of vital importance for both countries. Our partnership in the area of security and defence continues to serve that purpose. Against this background, Poland and the UK stand for a timely and successful adaptation of the NATO Command Structure.

Both the UK and Poland are committed to meeting the NATO target of spending at least 2% of GDP on defence, and 20% of that on major equipment capabilities. We recognise the importance of increased defence spending across the Alliance. We also fully support NATO's open door policy and the 2018 Summit offers an opportunity to recognise the progress made by aspirants, particularly as this year marks the 10th anniversary of decisions made at the Bucharest Summit. We recognize that Euro-Atlantic integration remains an important driving force of reforms in Georgia and Ukraine.

In order to build our collective capability to tackle hostile activity and hybrid threats, the UK and Poland will draw on the complementary experiences of NATO, EU and likeminded partners, ensuring a consistency in approach across multilateral fora to all forms of threats. We commit to strengthen resilience to Chemical, Biological, Radiological and Nuclear-related risks (CBRN), through practical cooperation including sharing information and lessons learnt. By coordinating the attribution of hostile activity in cyberspace and pushing for all available diplomatic tools to be used in response to cyber-attacks, we will raise the cost of malicious cyber activities. We will also explore new areas of innovation, and seek to harness the commercial cybersecurity opportunities they afford, by facilitating an exchange of ideas and expertise between British and Polish businesses.

Our two countries will enhance our strategic communications and develop strategies to reinforce our democracies, strengthen our societies' resilience, and uphold freedom of expression and a free and independent media in the face of the disinformation threat. We will further continue to initiate joint actions aimed at supporting independent media in Eastern Partnership countries so as to build resilience to Russian disinformation and build plurality and balance across media landscapes. The UK and Poland will work together to tackle hybrid threats through NATO to improve crisis management, identify the tools available to hostile actors, and enhance resilience among NATO Allies and partners. The NATO-Ukraine Platform on Countering Hybrid Warfare can play an important role, and the UK and Poland will work to strengthen this instrument.

We remain committed to continuing our efforts aimed at stabilising the EU neighbourhood and handling various challenges on the Eastern and Southern flanks. The heightened risk from Russia and the bold pattern of its behaviour, designed to undermine the rules-based international order, concerns us greatly. We have worked hand-in-hand to shape Europe's response to Russian aggression against Ukraine and hostile action. Russia's hostility has seen it

operating in more agile and asymmetric ways, be it the use of a nerve agent on the streets of Salisbury or cyber-attacks such as NotPetya in Ukraine. We agreed that the best response is to maintain pressure on Russia, including through sanctions, until the Minsk agreements are fully implemented and Russia abides by agreed international norms and standards.

Our discussions also focused on the dire situation in Syria, and we agreed to continue to champion urgent humanitarian access through the UN Security Council. We call on all parties to engage fully in the UN process in Geneva towards a credible political solution. We deplore the repeated use of chemical weapons by the regime and will use the special session of States Parties to the Chemical Weapons Convention later this month to reinforce global norms and work towards a new attribution mechanism for chemical weapons incidents. We also discussed Iran and, whilst remaining concerned about Iran's ballistic missile programme and regional behaviour, we shared a desire to maintain both the JCPOA and Transatlantic unity. The UK and Poland continue to be close partners in the Council on numerous issues, and plan to host a joint event in New York later this year.

We reaffirm our shared commitment to the security, stability, prosperity and sovereignty of all six countries in the Western Balkans. The UK and Poland will continue our close cooperation in preparation for the 2018 and 2019 Berlin Process summits. In particular, we will explore joint projects and activities on priority themes, which include countering corruption, and resilience against disinformation and the malign activity of external actors. Foreign Ministers will make a joint visit to the region between our Summits. This will ensure continuity between the British and Polish Berlin Process summits as well as a lasting, positive impact in the Western Balkans region.

Alongside our foreign and security policy collaboration, we also agreed to deepen our bilateral defence cooperation. In December 2017 we signed a defence treaty that will elevate our bilateral cooperation in the areas of information exchange, collective defence, intelligence and technologies, military exercises and investment planning. In the past year we have also made steps in the development of bilateral capability collaboration projects. The Defence Capability and Industrial Dialogue has been supported by Ministerial and senior official engagement, and we will continue to discuss opportunities for both British and Polish companies.

We have signed the Plan for Bilateral Defence Cooperation for the year 2018, and continue to deliver these commitments; working together across a full range of activities, including in such thematic areas as enhanced interoperability of forces, promoting defence industries' collaboration as well as bilateral visits and exchanges.

The UK and Poland continue to respond jointly to shared threats and

hostile state activity. This includes leading discussions in multilateral organisations such as the Northern Group. This year, we both participate in two large scale exercises, SABER STRIKE and ANAKONDA 18 demonstrating the strength of our military cooperation and enduring commitment to Euro-Atlantic security. We are determined to participate in exercises aimed at restoring NATO's ability to conduct large combat operations, including in the Eastern flank.

Speech: Armed Forces Minister speech at the RUSI Land Warfare Conference

I'm delighted to be here today. This Conference is always a major event. But this year it feels bigger and even more relevant than usual.

It's not just the Conference's status as a premier, if not the premier, international military event in Land Warfare. It's the unique challenges of the times in which we live and work as military professionals and security experts.

An Era of Unprecedented Threats

We have heard a lot about threat over the past twenty-four hours and over the last year far greater military minds than mine have been publicly outlining their concerns.

The First Sea Lord, Sir Admiral Philip Jones, General Sir Nick Carter, as CGS, General Sir Gordon Messenger, our Vice Chief, and of course our former Chief of the Defence Staff. They all spoke not of potential threats that we could face at some undefined point in the future, but threats that we face now. I thought that Sir Stuart Peach spoke extremely candidly during his annual lecture at RUSI about the proximity of these threats, both in terms of time and space.

Of course, the cynic might see all this as some sort of a coordinated attempt to make a bid for more resource something that is, as you saw from Deborah Haynes' question yesterday very much a hot topic, no less so than in the Lancaster Household. Being married as I am to a Health Minister can make for some interesting discussions! But to believe this would be to ignore the significance of a number of worrying global trends: resource scarcity, fragile states, rising populations, migration, regional tensions, trade disputes, hostile states. I could go on.

I believe that these threats are as acute now as they were in 1963 when RUSI made the bold decision to write to The Times warning the public of escalating

dangers but to suggest that the threats we face now are the same as those that we faced during the Cold War would not only be irresponsible, but dangerous. To do so would be to risk strategic malaise.

Back then, things were more straightforward. Ideological divides were clearer, and what constituted war and peace was considered self-evident. But national security in the 21st Century doesn't fit comfortably into those traditional boxes. It's not just the range of dangers we're facing but the breaking down of tradition boundaries, physical and virtual. Our adversaries have recognised this and they are adapting.

Spin the globe and look at the world from Russia's perspective. Consider how they might view threats and whilst we don't know whether they view conflict as inevitable, they are preparing. Some commentators have suggested that Russia's use of proxy forces and hybrid methods suggest that they don't intend to get their hands dirty.

There is an alternate thesis that Russia have concluded that they are not ready for major combat operations, that they have learnt the lessons from Georgia and the relative failure of their annexation of Crimea, and are now investing hard in the future of their conventional forces.

On this basis, it is a myth to think that Russia won't use hard power at some point in the future. Fires and mass remain central to their way of warfare. You only have to look at Syria to see this in action, in what has become a testing ground for the integration of Russian land, maritime and air capabilities. Russia has at the same time been carving out an advantage in the sub threshold environment using cyber and hybrid methods to cause disruption and to obfuscate.

With a new appetite for risk, and a new determination not to be bound by the rules of the international order, information is being weaponised to sow confusion and create tensions. Tensions that in turn create divisions and opportunities that they can exploit. The 'cracks' to which the CGS referred yesterday. In this anarchic ungoverned space, they are calibrating their activity to understand where the threshold for international response sits. This introduces dangers of escalation and miscalculation.

Tensions once grew slowly, providing us with advance warning of potential conflict but we can't rely on that any longer. We must be ready to respond, at very short notice, and in a wide variety of contexts. But of course Russia is not our only threat. We face a multitude of other challenges: hostile states, global extremist organisations, the rise of nationalism, political fragmentation, organised crime, terrorism and these threats have become so much more acute given the proliferation of sophisticated military hardware that was once the preserve of Tier 1 militaries.

But as we take forward our Modernising Defence Programme, the big question we're asking today is what does "the new normal" mean for our Army? One thing we do know is that the land domain remains vital.

Essential Importance of Land Power

As Sir Mark Sedwill said yesterday, our primary imperative is the protection of our people and HMG's interests, here and around the world but our rules based system is not self-sustaining and it is very much underwritten by hard power. Wars can be won and lost in the land environment, and it is with land forces that we will continue to confront aggression, seize hostile territory, hold it and deny its access to the enemy.

As we do that, the Division must remain the centre pillar to our Joint Force. A benchmark for a credible deterrent and war-fighting capability. The Division is where concurrent tactical actions in multiple domains are planned and co-ordinated, where long range area and precision weapons bring reach and influence and where we can look past the clutter of the close fight, using systems like Watchkeeper.

It is the Division which provides the umbrella of theatre missile and air defence systems along with offensive and defensive cyber and electronic warfare while aviation extends its scope for manoeuvre. And it is the Division which orchestrates the modern battlefield information system enabling the Joint Force, meshing decisive Special Operations Forces with cyber operations to achieve information advantage and assuring multi-national interoperability through its open system architecture.

Whilst every individual element has utility in its own right, it is the collective capability of the Division that gives it the ability to dislocate and overwhelm an opponent. It is the ability of the Division to be greater than the sum of its parts that will allow it to fight and increase the chances of victory. But to be truly successful we need to out think, anticipate, innovate and integrate.

21st Century Division – Innovative and Integrated

That's why I'm very pleased to announce Exercise Autonomous Warrior, a radical new approach to securing operational advantage. Some of you may have seen the stand set up in the Hoare Memorial Room.

Later this year, a battlegroup from 1 Armoured Infantry Brigade will spend a month on Salisbury Plain, putting the most innovative ideas in Robotics and Autonomous Systems through their paces. They'll work alongside the Royal Marines and the RAF Regiment, and will be joined by the US Army and observers from our other Allies.

The Army will be putting cutting-edge proposals from industry through their paces – over 70 new systems from 45 commercial partners. Ground-breaking innovations in A.I., unmanned autonomous vehicles, force protection and situational awareness will be tested to the limit in the toughest of simulated operational environments. This is partnership in action, the Army and wider Defence, industry and academia working together to get cutting edge technology to our front line.

This partnership is an illustration that our 21st Century Force won't just be

innovative with our kit, but integrated with our Whole Force: generalists and specialists; tank commanders and data analysts; industry and employers; and regulars and Reservists. Now, as a Reservist of some 30 years, the Reserve Forces are close to my heart. With Reserves Day next week, now is an opportune moment to reflect on the increased flexibility and the unique expertise that they add.

So, under the Modernising Defence Programme we're looking carefully at our Reserve Forces, with the aim of enhancing national resilience by giving our Armed Forces even more flexibility. As part of that work, we will be testing our arrangements for mobilising large numbers of Reserves. But the need for agility goes beyond the work we do with Reservists and it must be about more than just a single Division.

It is also about the enablers from across the Army, without which the Division would be unable to function. Furthermore, our resilience is founded on our ability to generate a second, follow-on Division to meet the NATO demand signal providing vital wide-area security and stabilisation.

So, if we're to out-think, out-fight, and out-manoeuve our adversaries, we must continually invest in our Whole Force and that not only means across the Army, but more so than ever, from across the whole of Defence, and indeed the whole of Government. This is fusion.

21st Century Division – Information Dominant

Fighting and winning not only requires the masse of well-equipped conventional forces on the battlefield, but also the ability to dominate in the information environment, fighting in the virtual as well as physical space. Conflicts are not just won or lost on the battlefield but in the heads and hearts of the people and their leaders. Our adversaries believe that truth is malleable, that disinformation, the blurring of boundaries, and the creation of tension will together create an environment in which they can achieve their aims. We need to counter that to make sure the truth is heard.

Our Army knows it can't afford to look in the rear-view mirror years down the line and wonder what our cyber deterrent might have been. That's why we're making our Division fully networked. We're breaking down some of the silos that often divide our military hierarchies, dissolving cultural barriers between specialisms and embedding understanding of cyber and the other new domains into the very heart of our Divisional structures.

And we're giving them the very highest quality of training and preparation. The Defence Cyber School at Shrivenham is already laying the foundations of the skills needed to operate on the modern battlefield and exercises such as Cyber Warrior have marked a step change in our collective capability.

We are already seeing this pay dividends on operations. For instance, during the fight against Daesh, our forces weren't just training Iraqi and Kurdish troops in how to defuse bombs and build bridges. They weren't simply using Typhoon and Tornado to destroy the extremist threat. Behind the scenes they were also countering and rebutting their false narrative. Showing the so-

called caliphate for the hollow charade it really was. Tying our enemies in knots in the virtual world so we could destroy them in the real world.

21st Century Division – Internationally Responsive

Finally, the 21st century Division must be international by design. One of our greatest strengths is our network of allies and partners and it's great to see so many of you represented here. At a time of global problems requiring international solutions, it's vital that we continue working alongside you all. Whether it's in NATO, providing reassurance to our Eastern European allies, whether it's as part of the UN where the Army has been at the forefront of a commitment that has doubled in recent years or whether it's as part of our Joint Expeditionary Force of nine like-minded nations, which recently trained together for the first time in Exercise Joint Warrior in Salisbury.

And just as we operate with multi-national groups, we are determined to keep expanding our bilateral alliances not just with our great friends the US, France and Germany but with other less traditional allies like Ukraine, Georgia and Lithuania, to name just three, where many of the significant "below threshold" challenges from our adversaries are directed.

Like many of our allies, we are committed to plans for the defence of Europe. To that end, we hold some forces, such as 16 Brigade, at very high readiness. The rest of our modernised war-fighting Division are able to follow on quickly behind where our agile new STRIKE brigades will make the most of AJAX and the Mechanised Infantry Vehicle. We're looking hard at the effectiveness of our infrastructure in Germany – particularly vehicle storage, heavy transport and training facilities.

And, with our allies, we continually test our ability to deploy the combat mass we may well need at short notice. Besides our Enhanced Forward Presence in Estonia, we must also continue our investment in NATO's international HQ, the Allied Rapid Reaction Corps. And we must build on the success of other initiatives such as the UK-German wide river crossing capability.

Most of all, we must test ourselves as near as possible for the demands of war. So, we can take immense heart from the success of the recent Warfighter exercise in the United States in which our 3rd Division performed credibly under the 18th Airborne Corps, fighting alongside the US 4th Infantry division, our successful exercises in Germany with a Danish Battle Group and the ongoing Combined Joint Expeditionary Force exercises with France.

However, the Army should not just be about reacting to events. In a more dangerous world we must do everything we can to strengthen the international rules-based-order and that means whilst preparing our forces for the worst case, being persistently engaged overseas, so that we can better anticipate threats, build our partners capacity to deal with them, to deter our adversaries and prevent conflict upstream. And perhaps most importantly we need to be clearer at all levels of Defence, across Government and within international alliances, about responsibilities and permissions, without which we risk strategic paralysis. I was particularly taken by Lord Hague's

comments yesterday about the need for a new Article 5B.

Conclusion – Whole Force

So, in this hybrid age we are making the 21st Division and Army a reality. One that is able to manoeuvre in the physical and virtual domain that is stronger than the sum of its parts, that is international by design, that is integrated into the Joint Force and that is fused with the rest of capability across government.

Above all, a force that will leave our adversaries and allies alike in no doubt whatsoever that the UK as it has always done retains the strength, the will and the skill to defend our nation, our values and our way of life.

Thank you.

[News story: British Army set to redefine warfare with joint Autonomous Warrior](#)

Autonomous Warrior, the 2018 Army Warfighting Experiment, will push the boundaries of technology and military capability in the land environment.

And one of the key areas it is set to test is the autonomous last mile resupply. The 'last mile', which represents the extremely dangerous final approach to the combat zone, is crucial to ensuring soldiers have the food, fuel and ammunition to keep them alive.

Autonomous Warrior will test a range of prototype unmanned aerial and ground cargo vehicles which aim to reduce the danger to troops during combat.

The British Army is set to launch the four-week exercise on November 12, with a Battlegroup from 1 Armed Infantry brigade providing the exercising troops and taking responsibility of command and control.

British soldiers will test and evaluate the effectiveness of robotic and autonomous systems (RAS) on the battlefield.

These technological advances will play a key role in the Army's Strike capability, ensuring our forces remain unmatched on the global stage.

Defence Minister Mark Lancaster said:

Our Armed Forces continue to push the limits of innovative warfare to ensure that we stay ahead of any adversaries or threats faced on

the battlefield.

Autonomous Warrior sets an ambitious vision for Army operations in the 21st Century as we integrate drones, unmanned vehicles and personnel into a world-class force for decades to come.

As well as demonstrating the vehicles during the last mile, Autonomous Warrior will also develop capabilities in surveillance which will greatly improve the effectiveness of long-range and precision targeting by service personnel.

The exercise is the result of a large collaboration between the British Army, Royal Navy, Royal Air Force, US Army, MOD, Dstl and around 50 industry participants.

The new Chief of the General Staff, Gen Mark Carleton-Smith, who will give his first address in his new role at the conference, setting out the backdrop of a "darkening geo-political picture" as he calls for British forces to be "combat ready today and prepared for tomorrow".

Giving the closing address, Gen Carleton-Smith will stress the need for British forces to work with their allies not just in the battlefield, but also in the virtual world. He will warn that "we live in exceptionally unstable times and that the world has never been more unpredictable".

As he describes how "the nature of warfare is broadening beyond the traditional physical domains" he will add that 21st Century battlefield requires non-traditional skills, beyond those normally associated with careers in Army, to ensure British forces remain world leaders.



Gen Mark Carleton-Smith will say:

We need a more proactive, threat-based approach to our capability planning, including placing some big bets on those technologies that we judge may offer exponential advantage because given the pace of the race, to fall behind today is to cede an almost unquantifiable advantage from which it might be impossible to recover.

Autonomous Warrior will play an integral role within the £800 million Defence Innovation Fund which supports ground-breaking ideas aimed at transforming both defence and British industry.

The land-based exercise follows on from the hugely successful 'Unmanned Warrior' which the Royal Navy demonstrated autonomous systems diving, swimming and flying together to engage in surveillance, intelligence-gathering and mine countermeasures.

