

DESIDER

AN INSIDE LOOK INTO LIFE AT DEFENCE EQUIPMENT & SUPPORT



**PROTECTING OUR NATION, OUR TERRITORIES AND OUR ALLIES
TODAY, TOMORROW, TOGETHER**



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START

Talking

It's now one year since Russia's illegal invasion of Ukraine. A pivotal moment for UK, European and global defence and security, which continues to reshape the international landscape. As the global threat environment changes, we can't afford to stand still and must change with it. The pace of change means that we need to innovate to maintain our edge and keep ahead of our potential adversaries. Working as a One Defence team, we need to harness the best people with the brightest minds to generate new ideas and think outside the box, to drive innovation and pioneer new outcomes that transform the way Defence thinks and operates.

As you'll read in this issue, UK Defence is pulling out all the stops to get out in front of our adversaries today, and be ready for the new opportunities and challenges that will emerge tomorrow. Our response to Russia's invasion has been grounded in fast-paced, innovative approaches that broke with old moulds and generated agile, integrated solutions. We have worked together, across Defence and wider industry, and delivered impressive results. It's imperative that we take forward the lessons we've learned and apply them to our wider programme of work.

Changing global power balances, the impacts of climate change, and the recent natural disasters we've witnessed in Turkey and elsewhere will all have repercussions on our work. By being proactive and anticipating future challenges, we can stay ahead of the curve and maintain our innovative edge. As John Ridge, MOD's Director of Innovation, writes in our external insight piece, we need to put Defence on a constant war-footing, ever-ready to act.

New technology, including artificial intelligence, virtual simulations and autonomous systems, will play a major role

in the future of Defence and we must embrace them. You can read more about Peregrine, the Royal Navy's eye-in-the-sky, and ICAVS(D), a new virtual training suite, later in this issue. Innovations like these bring improved efficiency, accuracy and effectiveness to defence operations.

When we work together, we are stronger. It's proven. We know this. It's the partnerships in our One Defence team approach that set us apart from our adversaries. We must continue to foster a culture of innovation with our partners, allowing us to get new technologies and capabilities into the hands of our armed forces more quickly. These partnerships and collaborations bring fresh perspectives and new innovative energy. By investing in research and development, collaborating with academic institutions and industry partners, and providing funding for defence research, we can test, trial and improve. A brilliant example of this is Project Synergia led by our Future Capabilities Group – you can read more about the success of this project on page 11.

Our international partnerships are a vital part of this too and can help the UK defence industry stay competitive and innovative. Collaboration towards a common goal with other countries brings together more diverse expertise, resources and ideas that can drive innovation in our mission to equip our armed forces with the edge to protect our nation.

This is a very exciting time to be part of DE&S and the One Defence team. The 'speed of relevance' is getting faster and technological solutions are being realised more rapidly than ever before. We therefore need to evolve our approach and it's great to see in this issue the ways in which innovation will ensure we stay at the front of the pack; today, tomorrow, together.

PEOPLE

How can Defence keep innovating?

Simon Dakin, DE&S Director Integrated Battlespace, talks to Desider about the steps DE&S needs to take to work as an innovative organisation.

I believe that DE&S has a vitally important role in driving innovation across Defence. This can come in many forms. First, we need to ensure that we consistently engage and understand the markets we work in, as well as the emerging technology coming from them, especially the civil sector (beyond traditional Defence suppliers), which is evolving at a dramatic rate.

DE&S teams have exceptional talent, expertise and enthusiasm, and there's a real appetite to test, challenge and improve the way we do business across Defence, both in the business and battle spaces.

Key to accelerating innovation in DE&S is developing, exploring and trialling innovative approaches – especially in our commercial models. We need to engage with industry in a much more flexible and responsive manner, and then share and spread those ideas across Defence. We've got to act as an 'exploitation engine' for innovative ideas. We must make sure that bright ideas are pulled through and exploited by those on the operational front-line and not allowed to stay in the experimentation phase. If necessary, ideas should also be deliberately terminated if it is determined that there is no realistic chance of delivering benefit to the front-line in the necessary timescales.

We have seen DE&S at its best during times of crisis. Whether during the Covid pandemic or responding to the conflict in Ukraine, we've found new ways to deliver what's required at the speed of relevance. We have risen to the challenge in an impressive manner for which we should be very proud. Much of that achievement has been through innovation – in what we do and how we do it.



Our strategy is to be highly collaborative with others in MOD, the front-line commands, research establishments, and partners both in industry and beyond UK Defence – bringing together communities to drive innovation, share lessons and spread good practice.

Strong DE&S engagement with MOD HQ and the Defence Innovation Unit, who invest in specific capability areas, is vital to drive innovation, such as maritime autonomous systems, expeditionary robotics, counter-uncrewed air systems, electronic warfare, modelling and simulation, high-value manufacturing, and directed-energy weapons.

Innovation is happening all the time, all around us, and we must encourage and recognise that. The world is moving fast. We need to do more than just keep up with our adversaries. We need to get ahead of them. But that will not happen if we keep doing what we have always done. We must continuously look for ways to get better and act on them, fast. Our front-line clients, our partners, the taxpayers and the nation deserve the very best from Defence. We must see these crises as a wake-up call. We need to learn the lessons and strive to adopt such impressive performance more widely.

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FEATURE

“We don’t have an invention problem, we have an exploitation one.”

John Ridge, UK Director of Defence Innovation, talks with Desider about the innovation challenges and opportunities facing UK Defence today.

President Zelensky’s recent visit to the UK underlined our significant role in helping Ukraine resist the Russian invasion. Nearly a year into the conflict, it is easy to forget how pessimistic many were about their ability to hold out against seemingly overwhelming Russian forces.

It is tempting to credit particular capabilities for their extraordinary performance: their use of drones and artillery, Starlink satellite communications, or anti-armour ambushes using the UK’s NLAWs. The reality was that it is Ukraine’s ability to adapt at speed which has made them so effective. This is the real lesson we need to draw from the Ukraine conflict – your national competitiveness is directly linked to the speed at which you can adapt, whether through repurposing existing capabilities or fielding new ones.

Helping Defence do this is the Innovation Directorate’s central role. We are here to help turn ideas into new ways of operating to achieve advantage over our adversaries. The UK has an impressive track record when it comes to innovation: radar, decryption and the tank to name but three game-changers. But frustratingly, these innovations tend to be driven by a response to a crisis – we are less innovative when the pressure is off. And this is not because we lack novel ideas. We don’t have an invention problem, we have an exploitation one. The challenge is quickly turning successful prototypes and concepts into tangible

capabilities and scaled approaches.

This is where DE&S has a key role to play. Their role in the Ukraine conflict has been extraordinary. They helped ensure that verbal offers to “gift in kind” turned into physical weapon systems and ammunition in the hands of the Ukrainian Armed Forces. DE&S also helped Ukraine harness the incredible inventiveness of the UK’s small- and medium-sized enterprises. Their contribution has been far more significant than most people realise.

Now we need to use that same focus, imagination and determination to help the UK turn inventions into scaled capabilities – getting new capabilities into the hands of those who need them more quickly. We can do this through embracing new ways of procuring technology, moving away from waterfall delivery of fixed specifications to agile delivery of constantly evolving capabilities, driven by intimate and sustained engagement with Defence personnel. It means reversing a paradigm where performance is the fixed variable, with cost and time as regulators, to one where time is the dominant factor, trading performance to get better (not necessarily the best) capabilities into the hands of users as quickly as we can.

The bumper sticker phrase I use to sum up the change we need to make in Defence is: “put innovation on a war footing”. We have a senior leadership at the top of Defence that recognises



the existential challenges we now face and is prepared to make the changes – cultural, systemic and structural – that are required to meet them. This is very much a One Defence approach, working across Defence and industry to deliver for the Armed Forces. I look forward to working with DE&S further, as part of its Strategy Refresh, to ensure it can play as significant role in transforming UK Defence as it has in turning the tide against Russian forces in Ukraine.

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NEWS

DE&S procures Royal Navy's new 'eye in the sky'

As part of a £20 million contract, the Royal Navy will have new uncrewed aerial technology to detect and track surface contacts at sea.

Powerful surveillance sensors sourced from Thales UK will be fitted to an S-100 uncrewed air system provided by Austrian-based Schiebel. From 2024, this new uncrewed air system, known as 'Peregrine', will be able to feed real-time images and radar data back to Royal Navy warships on the front-line.

Procured by DE&S, Peregrine will enable round-the-clock surveillance of targets over Gulf waters and will be available to support allies and partners in the region.

Peregrine can be launched in challenging conditions – in the day or at night. Not only will it greatly extend detection range, but it can be used for enhanced intelligence, surveillance and reconnaissance gathering.

DE&S CEO Andy Start said: "The DE&S Remotely Piloted Systems team have delivered a contract which will see the rapid development and deployment of a key remotely piloted air system capability for the Royal Navy. Due to the collaborative approach we have taken with industry, the Navy shall be receiving a mature air system that is able to detect threats at range, protecting British interests in the Gulf."

The S-100 has rapid launch ability and superior mission endurance of several hours. The air system – which takes off from the ship's flight deck like a helicopter – will be the first uncrewed rotary wing aircraft to operate alongside a Wildcat helicopter, allowing for improved aerial surveillance in a timely boost to the Royal Navy's operational capability.

It will be fitted with the Thales I-Master radar, which can track and identify targets using proven technology. The high-definition imagery and radar data from



Peregrine will be fed directly into the ship's Combat Management System, granting the command team good situational awareness and the ability to make rapid operational decisions.

Rear Admiral James Parkin, the Royal Navy's Director Develop, said: "I am delighted that we are at the stage where this excellent capability is about to be introduced into the front-line. As a system both deployed on to and integrated into warships and auxiliaries operating in congested and complex areas of the world, the Peregrine aircraft offers what the Royal Navy needs in order to respond to the wide

variety of threats that we are facing today."

Peregrine will be deployed directly into an operational theatre from mid-2024, initially for two years, with the option to extend.

This will give the Royal Navy valuable experience and understanding of the use of uncrewed systems in this role ahead of further decisions and investments.

The name Peregrine was inspired by the former HMS Peregrine, the Royal Naval Air Station in West Sussex, which was used after the Second World War as the Fleet Air Arm's dedicated test and development centre in the early years of carrier-borne jet aircraft.

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NEWS

Field training takes the next step with virtual simulations platform

DE&S enhances military training by delivering a simulation platform that allows troops to complete virtual in-the-field training, in all weathers, terrains and environments.

Specialist technology procured by the DE&S Training and Simulation Systems Portfolio team within Soldier Training and Special Programmes (STSP) is enabling units to get the most out of live field-training exercises.

The Interim Combined Arms Virtual Simulation (Deployable) platform, known as ICAVS(D), was developed and delivered by Elbit Systems UK to provide immersive, tactical training as part of the British Army's Battlecraft Syllabus. It is an important pathfinder project for the Army's collective training transformation programme.

Delivered to schedule, ICAVS (D) went into full operating capability in April last year and has already proved its agility and highly deployable capabilities during British Army exercises in Germany and Estonia.

Nick Taylor, DE&S STSP team leader, said: "ICAVS (D) uses the latest high-specification hardware and Defence Virtual Simulation software to deliver immersive virtual tactical training, enabling units to get the most out of their live-fire exercises. It is used by both reserve and regular soldiers in the British Army, providing the ability to conduct combined-arms collective training and experimentation at a place and time of the units' choosing, as well as allowing for mission rehearsal of complex operational environments in all weathers, terrains and environments."

ICAVS(D) is used by all services in the British Army, as well as the Royal



Marines and members of Joint Helicopter Command. It replaced the Unit Based Virtual Trainer in April and is the bridge to the full CAVS(D) capability.

There are currently four ICAVS(D) units available at any time and the system is easily deployed around the UK and overseas. It complements both online and in-person training, and contributes to Future Soldier, the Army's modernisation and transformation plan.

Martin Fausset, CEO of Elbit Systems UK, said: "The rapid deployability and ease of configuration of ICAVS(D) has proven its value in enhancing training across all aspects of the Army. After 10 months in service, ICAVS(D) is due to exceed its annual delivery target, and the growing demand for more training events signals

the Army's confidence in ICAVS(D)'s ability to exploit the full potential of the service."

Following a demonstration of ICAVS(D) at the Land Warfare Centre, Major Ian Atkins said: "The exercise provided an opportunity to conduct low-level training in a virtual environment prior to deploying on exercise later in the year. ICAVS(D) offers a step change in capability and provides the Army with the ability to conduct low-level training, both mounted and dismounted, in a virtual environment, meaning units can maximise the benefit they get from their time in the field training in the live environment. ICAVS(D) is not intended to replace live training, but to augment it by allowing units in barracks to train in areas they previously couldn't without deploying into the field at huge resource expense."

NEWS

Counter-drone programme transfers to in-service capability

Innovative counter-uncrewed aerial system will provide enhanced protection against drone strikes for UK sites.

Project Synergia was originally procured as a research and development programme in response to the threats posed by uncrewed aerial systems (UAS).

Managed by DE&S' Future Capabilities Group (FCG), Project Synergia, the counter-uncrewed aerial system (C-UAS) study is considered of high importance to national security and a means of further protecting UK military operating bases from hostile drone activity.

Using technology delivered by Leonardo, it will enable the RAF to establish the most effective way to detect, track, identify and defeat hostile drones, as well as evaluate a range of capabilities including advanced radar, electro-optic and radio frequency sensors, and counter-measures.

The system has been deployed for use in operations and used in the UK for Military Aid to Civilian Authorities (MACA). FCG have transitioned the capability to the Joint Sensor and Engagement Networks (JSENS) delivery team,

meaning that the equipment can now be incorporated into the DE&S supply chain.

Rakesh Takooree, DE&S FCG Assistant Head for Air and Strategic Command Projects, said: "We're seeing the threat from Uncrewed Air Systems heightening across the globe. It is vital that our armed forces are equipped with the latest technology to counter emerging threats from our adversaries. This programme is part of a wider C-UAS ecosystem and demonstrates how to effectively collaborate with other defence teams and government departments, both nationally and internationally. This leads to being able to combat an evolving threat by combining innovation and the expertise within that ecosystem, and is important because it strengthens Defence's ability to react to the latest threat quickly. This is by being a platform to knowledge share about the evolving threats and latest advances in technology. The effectiveness of the Synergia equipment

and collaborative ways of working have been recognised by both the Secretary of State for Defence and the Minister for Defence Procurement, resulting in the team receiving an acquisition and innovation award."

The next stage of the programme will see the C-UAS taken forward as a formal programme of record. This means the project will be managed by an in-service delivery team at DE&S and incorporated into a portfolio of other in-service capabilities. Synergia is on a good footing to inform future programmes across Defence.

Group Captain Jason Davies, RAF Air Command, said: "This project is facilitating the rapid development of the knowledge necessary to define future capability to protect RAF sites and assets. As a result, the programme is supporting the development of world-leading counter-UAS technologies within UK Defence."



NEWS

Autonomous mine-hunting systems transporter arrives in the UK

A specialist ship, bought by DE&S to support the Royal Navy with a suite of cutting-edge autonomous mine-hunting systems, has arrived in Plymouth.



Having arrived at HM Naval Base Devonport, the vessel – currently named MV Island Crown – is undergoing conversion work before being renamed and handed over to the Royal Fleet Auxiliary (RFA) later this year. The ship is intended to enter service in spring 2023.

The 96.8-metre-long ship, the length of two Olympic swimming pools, has been quickly delivered due to the rapidly evolving threat posed by naval mines and the need for effective counter-measures.

When deployed, the ship will carry a range of capabilities, including the joint French and UK Maritime Mine Counter Measures system, the Combined Influence Sweep system and Medium Underwater Autonomous Vehicles. It will also include equipment deployed as part of Project Wilton, the team delivering

the Navy's unmanned mine-hunting and survey programme.

Gareth Morris, DE&S Multi Role Ocean Surveillance project manager, said: "It's a proud moment to see Island Crown arrive safely in its destination. The success of the project is testament to the desire of all stakeholders to work collaboratively to ensure key capabilities for the Royal Navy and Royal Fleet Auxiliary can be delivered as quickly as possible."

Innovative systems operated by specialist teams on board will allow the Royal Navy to meet offshore operational requirements to defend the UK's territorial waters, and in North Atlantic and European waters.

DE&S Director General Ships Vice Admiral Paul Marshall said: "Our team undertook extensive research and market

analysis to identify a vessel for the Royal Navy that would meet the vital capability it needs and could be delivered at pace, whilst also provide value for money to the taxpayer. The result of that agile working is the delivery of a highly effective ship, which will be converted to purpose at HM Naval Base Devonport. Once militarised, it will play a key role in countering the evolving threats posed by mines at sea."

Commodore Steve Prest, Director Navy Acquisition, said: "The delivery of this ship is an important step in the Navy's transformation to conducting mine counter-measures using distributed off-board systems-of-systems. The ship will be used to extend the range of our Maritime Autonomous Systems from coastal waters to conducting offshore survey operations in defence of the UK."

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 **Mr Martin Jõesaar**, Project Officer, European Commission DG DEFIS

KEY HOST NATION SPEAKERS:

-  **Lieutenant Colonel Iain Lamont**, SO1 Robotics and Autonomous Systems, **British Army**
-  **Lieutenant Colonel Chris Armstrong**, SO1 Autonomy, Future Commando Force, **Royal Marines**
-  **Mr James Gavin**, Head of the Future Capability Group, DE&S, **UK Ministry of Defence**
-  **Mr Peter Stockel**, DSTL Fellow, Autonomous Systems & Innovation Autonomy Challenge Lead, DSTL, **UK Ministry of Defence**

KEY INTERNATIONAL MILITARY AND EXPERT SPEAKERS INCLUDE:

-  **Colonel Robin Smith**, Director of Robotics and Autonomous Systems Implementation and Coordination Office, **Australian Army**
-  **Colonel Corbacho**, Director, C-IED COE, **NATO**
-  **Colonel Jan Mazal**, Head of the Department of Military Robotics, **Czech University of Defence**
-  **Lieutenant Colonel Sjoerd Mevissen**, Commander of the Robotics & Autonomous Systems Unit, **Royal Netherlands Army**
-  **Lieutenant Colonel Emory J. Hayes**, Military Deputy, Manoeuvre CDID, **U.S. Army Futures Command**
-  **Dr Robert Sadowski**, Army Chief Roboticist (Robotics ST), Ground Vehicle Systems Center (GVSC), **U.S. Army Futures Command**
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NEWS

Meet the specialist team delivering fast-paced projects for the Army, Navy and Special Forces

Nick Taylor, Head of DE&S' Soldier, Training and Special Projects team talks with Desider about the innovative work of his team and the delivery of high-quality, well-supported equipment.

The Soldier, Training and Special Projects (STSP) Delivery Group is a team of around 280 people, delivering a portfolio of 650 projects for the Army, Navy and Special Forces. The group comprises four delivery teams aligned to particular capabilities: dismantled close combat, specialist and autonomous mobility, training and simulation systems, and specialist explosive ordnance disposal (EOD), search, exploitation and countermeasures.

The team oversees a variety of small, fast-paced projects, which can quickly respond to evolving operational needs. STSP uses a number of different methods to rapidly deliver these, including framework agreements, pipeline approaches and novel outsourced support arrangements.

Nick said: "STSP's collective success is measured by the delivery of high-quality, well-supported equipment to the end-users and this drives what we do. It is a testament to the team's professionalism and skill that we are frequently praised by our clients, who operate in the most demanding circumstances, be they infantry soldiers, EOD technicians, Special Forces operators or those developing their skills and careers in training establishments.

"My role is to create and sustain the environment that allows the delivery teams to succeed. I look for opportunities for them to learn from each other, exploit the similarities between their projects, share resources and manage strong relationships with stakeholders.

"Each portfolio within STSP is focused on a different area of capability; however they frequently interact with each other, as decisions in one portfolio impact on the others. The varied focus of the work provides a wide range of employment experiences and opportunities, with a support network that allows team members to develop, while delivering capability and the sense of achievement that goes with it.

"They are always looking for more innovative delivery models and opportunities to learn from existing projects. That innovative spirit was evident when the call went out for help with personal protective equipment (PPE) procurement during the pandemic. The team realised, because of their background in sourcing protection for front-line troops, it would be more effective to assign a whole section of STSP to the PPE effort rather than individual team members. The new group hit the ground running, using their established industry contacts and their ability to already operate as a well-honed group. They had an amazing impact on PPE availability, quickly delivering millions of items to the NHS.

"For me, leading any team in DE&S or Defence is a privilege, but when what you deliver is so interesting, it turns a good job into a fantastic one. The thing I'm most proud of is creating such a diverse and inclusive team with a single ethos, despite the differences in their outputs."



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NEWS

Crucial aircraft refuellers upgraded

Tankers used to refuel military aircraft have been refurbished, enabling them to support UK Armed Forces for up to 15 more years.

The 20,000 litre Large Capacity Aircraft Refueller (LCAR) vehicles supply the majority of the fuel for RAF, Royal Navy and British Army aircraft. But as the LCARs did not comply with road transport regulations the fleet could not be driven on UK roads while laden with fuel.

Now, the LCAR Life Extension Project is upgrading 80 tankers to make them more flexible, available and easily deployed. The vehicles' bulk fuel carrying tank has been replaced and components including the pumping system have been upgraded to ensure they are now compliant with international safety standards for the transport of hazardous materials.

Air Commodore Simon Young, DE&S' Head of Air Systems, Equipment & Training, said: "The Large Capacity Aircraft Refueller is a vital Defence-enabling capability, providing the backbone of our aircraft refuelling fleet. These vehicles are out there every day, ensuring our aircraft have the fuel they need to deliver their tasks, whether that means securing the skies above the UK, transporting people and equipment around the world, or delivering on operations. Without this capability, UK Defence aviation simply doesn't happen.

"This project is not only extending the life of these vehicles but, through the upgrades being delivered, will provide a more operationally capable vehicle that is safer and easier for our personnel to use and maintain."



The project is a collaboration between DE&S, the RAF and Terberg DTS UK, with sub-contractors including MAN UK and Tasca Tankers. Work on the project has taken place at Terberg DTS UK's facility in Halifax, and at MAN UK's facility in Manchester and Tasca Tankers' Wakefield site.

Alisdair Couper, Managing Director of Terberg DTS UK, said: "The LCAR Life Extension Project is an extremely important part of Terberg's defence contract portfolio and a great example of our industry collaborating closely with the MOD."

Last summer, successful ground and on-aircraft refuelling trials were

completed with aircraft including Typhoon fighter jets, Poseidon maritime patrol aircraft, Hawk jets and Merlin helicopters. Training packages for service operators and maintainers were rolled out and Terberg DTS UK started delivering its in-service support for the vehicles. The upgrades are due to be completed in 2025.

Alongside the LCAR Life Extension Project, a number of Small Capacity Aircraft Refueller (SCAR) variants are being replaced with 90 MAN HX60 based vehicles. The 5,000 litre capacity road-safety compliant SCARs will mainly be used for refuelling helicopters and training aircraft.

DE&S exploring capabilities in the stratosphere

Ross Corbett, Project Aether military requirements manager, talks to Desider about his team's work to better understand the stratosphere and the high-altitude platforms that could operate there.

I started as an artillery officer in the British Army, but now I'm part of DE&S' Future Capabilities Group – our hub for strategic research and innovation. Our mission is to give our fighting forces and allies every opportunity to gain and maintain the operational advantage over our adversaries.

Project Aether is one of DE&S' most innovative areas of capability development. Its purpose is to explore how we can effectively operate in the stratosphere, the space 50 to 80,000 feet above the Earth, using high-altitude, long-endurance unmanned air systems. Successfully exploiting this space could mean huge potential benefits, but there's still a lot left for us to learn about how to operate there, especially for long periods of time.

Aether's scope encompasses the full end-to-end package, including the user in one spot, the effector in another, and the capabilities of the platform in between. The eventual platform will be used to conduct intelligence, surveillance, reconnaissance and rebroadcast activities over an ultra-wide area to support strategic and operational decision-making and shape tactical actions.

What makes Aether such an innovative project is both our exploration of the space above 50,000 feet and the openness with which we've approached the best way to operationalise it. Our working theory is that the turbulence we've all experienced in airplanes cruising at 40,000 feet doesn't exist to the same degree in the stratosphere. If that's right, we could send up really light aircraft for long periods of time, without worrying about them being battered by turbulent air. This could be a layer of the atmosphere with, we think,

very little traffic or weather.

As the project's evolved, we've taken care not to constrain the freedom of thought of our industry partners. We've remained platform agnostic throughout, leaving the door open to those that fly or float, whether held aloft by balloon or fixed wings and rotary blades. We've been deliberately vague on that front to allow the innovation to develop without precondition.

As we've learned more about the stratosphere, and how air densities and movement work at those altitudes, it's reaffirmed our thinking that it was a good idea to keep things broad rather than to try and narrow it down. We've learned that balloon-based and fixed-wing systems have different positives and negative attributes.

We've come to see that it might be advantageous to have a range of available capabilities. For example, platforms that loiter in the stratosphere for longer periods of time and others that can support more deliberate operations, staying there for shorter fixed durations instead. A series of tools to support whatever activity is needed. We're currently running test flights with prototypes from three industry partners – Sierra Nevada, Voltitude and Airbus.

I am absolutely convinced that Project Aether as a capability, and as a package, will give Defence that extra operational initiative to be more globally aware, more globally potent, more globally effective, both within the UK Armed Forces and alongside our NATO allies. I really think the future capability of these platforms could be an important element in winning the battles to come.



NEWS

News in Brief

Three-year anniversary of first Poseidon P-8A arriving in the UK

DE&S is celebrating three years since the arrival of the first Poseidon P8-A in the UK. Procured for the RAF by DE&S, Poseidon is the RAF's multi-role maritime patrol aircraft, specialising in anti-submarine warfare. Its purpose is to locate, identify, track and confront hostile vessels operating in UK waters.

Air Commodore Simon Strasdin, Intelligence, Surveillance, Targeting Acquisition and Reconnaissance Force Commander, said: "Since the eagerly awaited arrival of the first aircraft, the RAF Poseidon fleet has been incredibly busy. From the Arctic to the Mediterranean, whether on patrol or performing long-range search and rescue sorties, the value and utility of this amazing capability to UK Defence is self-evident."

Based at RAF Lossiemouth, the fleet of nine Poseidon aircraft was delivered on time by DE&S, along with the Atlantic Building, the fleet's home, and a support contract worth more than £230 million.

Malcolm French, P-8A team leader at DE&S, said: "The Poseidon P-8A aircraft



capability has increasingly made its operational mark. Most evidently, it has restored our island nation's maritime patrol aircraft capability, monitoring the oceans to track potentially hostile sub-surface and surface vessels. Poseidon

has also been made available to assist other emergency services with coastal protection, such as illegal migration in the English Channel, as well as participating in live rescues of vessels in distress at sea."

High mobility transporters contract award

DE&S has awarded Supacat a contract that will secure 70 high mobility truck variant (HMTV) Mk 2 Extenda platforms – meaning that the configuration of HMTVs can be changed between four- and six-wheel variants.

On completion of blast trials, this procurement will result in an uplift of 69 vehicles to the HMTV fleet used by the British Army. These platforms offer increased flexibility to Defence and their modular design means they can be used as either a

Jackal (L400) or Coyote (L600) vehicle.

Brought into service under an urgent operational requirement, the vehicles provide British forces with an off-road patrol and fire-support vehicle with increased performance and have been integrated into the British Army's fleet of versatile, battle-winning capabilities.

Brigadier Matt Wilkinson, Head of DE&S' Vehicle Support team in the Land Equipment Operating Centre, said: "These battle-winning and versatile platforms offer huge benefits to our troops on the battlefield. The HMTV is a British-built capability that continues to support UK jobs and ensures that the UK retains the crucial engineering and manufacturing skills required in the defence sector, which are key priorities under the British Army's Land Industrial Strategy. I am delighted that we have secured this contract."



NEWS

1,000th F-35 Lightning fuselage delivered

A major milestone in the global F-35 programme has been reached, with BAE Systems delivering the 1,000th rear fuselage to Lockheed Martin.

While DE&S' Lightning delivery team is responsible for procuring and developing the UK's fleet of F-35 aircraft, the UK defence industry is reaping the wider benefits of playing a key role in the world's largest defence programme. Lockheed Martin are producing more than 3,000 F-35 Lightning aircraft for the programme's 17 customers. Thirty UK

F-35B aircraft have been delivered to date.

More than 1,500 employees at BAE Systems' facilities in Samlesbury, Lancashire, produce the rear fuselage for every F-35 in the global fleet, including aircraft destined for the UK.

Air Commodore Phil Brooker, Head of the DE&S Lightning delivery team, said: "Delivering the ambitious F-35 programme is a collective endeavour and I am thrilled to see BAE Systems reaching this significant milestone. UK industry are providing approximately 15 percent by

value of each F-35 to be built, and delivery of the 1,000th fuselage is a great example of how our skilled UK defence industry is playing a critical role in the safety and security of the UK and its allies, whilst also making a considerable contribution to the UK prosperity agenda."

Cliff Robson, Group Managing Director, BAE Systems' Air Sector, said: "This is a significant moment for everyone involved in the programme and a testament to the highly-skilled workforce we have in the north-west of England."



DE&S celebrates its STEM colleagues

On 11 February, DE&S celebrated International Day of Women and Girls in Science by highlighting the stories of two colleagues who chose to follow careers in science, technology, engineering and maths (STEM).

Susie (personal ballistic protection scientist): "I grew up watching Robot Wars and Scrapheap Challenge, and so the STEM seed was planted early! I kept sight of the things I found interesting, and helped narrow down a subject that I wanted to become a specialist in. But

that took a long time to decide, so I took every learning opportunity I could get my hands on. I think the biggest challenge in the future is ensuring we have enough engineers and scientists in the right place, with the right funding, and the right experience to approach the problems."

Seren (survivability engineer): "I joined DE&S on the Engineering Graduate Scheme and am now a survivability engineer. Defence is a big place, so having a network of people to help find the best opportunities has helped me

develop. When you tell people that you'd like a career in STEM, many people will respond with "Ah! We need more women like you." What they mean is "Well done! You must have studied hard for that and your career will be very rewarding." As part of the Soldier, Training and Special Projects team, over the last four years I've visited San Diego and been to a body armour conference in Copenhagen, but my highlight was taking a flight in a Chinook helicopter."

NEWS

Challenger 3 tank successfully completes critical design review



The DE&S Challenger 3 delivery team recently approved the completion of its critical design review. This allows the project to move on to the next stage of the programme, the building and trialling of Challenger 3 demonstration vehicles, which will eventually deliver one of the most protected and capable tanks in NATO.

The Challenger 3 team have worked alongside industry partners Rheinmetall BAE Systems Land (RBSL) to swiftly deliver the design work and held the critical design review ahead of schedule.

Dave Clark, DE&S Challenger 3 delivery team leader, said: "This is a tremendous achievement that has demonstrated how DE&S, the Army and industry can work together to deliver this really significant milestone. This is another step forward towards the successful delivery of this iconic project

for the British Army. It marks an exciting chapter for the UK as the project re-establishes armoured fighting vehicle manufacturing in the UK. This project will deliver an outstanding tank to the UK thanks to investment in the engineering excellence of the UK supply base."

Under an £800 million contract, which was awarded in 2021, RBSL are carrying out the work to deliver 148 upgraded, fully digitalised battle tanks to the British Army from 2027.

Contributing to the Government's levelling-up agenda, the supply chain sub-contracts have been awarded to UK companies.

The team have also conducted successful trials of a cutting-edge new armour system that is based on a design from the Defence Science and Technology Laboratory and which will be manufactured by RBSL.

Challenger 3 capability

The upgraded tanks will benefit from:

- a new 120mm smoothbore gun, which uses the world's most advanced available ammunition
- a new suite of sights providing tank commanders with enhanced day and night targeting abilities
- a new armour system
- an active protection system
- a turret that can also be fitted to the tanks of allies and global partners
- significantly improved mobility through an upgraded engine and new hydrogas suspension (a gas and water closed liquid system to deal with uneven surfaces).

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Desider is the monthly corporate magazine for DE&S. It is aimed at readers across the wider MOD, armed forces and defence industry. It covers the work of people at DE&S and its partners, and other corporate news and information.



DESIDER

PEOPLE**Erica Benson****Name:**

Erica Benson

Job title:

Business Development Lead for the Innovation Bridge facility

What does your role involve?

My role is to develop the Innovation Bridge facility as a focal point for people to meet, exchange ideas, and form exciting and innovative delivery plans. I have hosted a range of events, from the high stakes of a Dragons' Den style pitch event to the energy and flow of a cyber-Hackathon. Oh, and did I mention Robot Dogs? Yes, we showcase new tech here too!

What do you most enjoy about your job?

It sounds weird, but I really enjoy working in the Innovation Bridge – the physical building! The facility is a fun, funky and creative environment to work in. I feel I am thriving professionally within this space. I enjoy immersing myself in collaborative processes – something I get to do every day while transforming tangible defence ideas and challenges into realisable benefits for DE&S.

What is your greatest accomplishment (in your role) to date?

I created and launched the facility's Innovation Programme, which has massively increased the number of innovative themed events. This is something I am immensely proud of, but I know it wouldn't have been possible without the invaluable help of my amazing colleagues.

What keeps you energised about working at DE&S?

There is a sense of real innovative change in the air at DE&S and this really excites me. Everyone who comes through the doors of the Innovation Bridge exudes an enthusiastic energy and a contagious appetite to think differently!

Who or what has shaped who you are?

My children. In every situation, I think about what my children would say or think, and I ask myself, am I role modelling to the best of my ability? I have two young girls so as a female lead within DE&S it is especially important to me that they see and hear this.

What do you enjoy doing in your spare time?

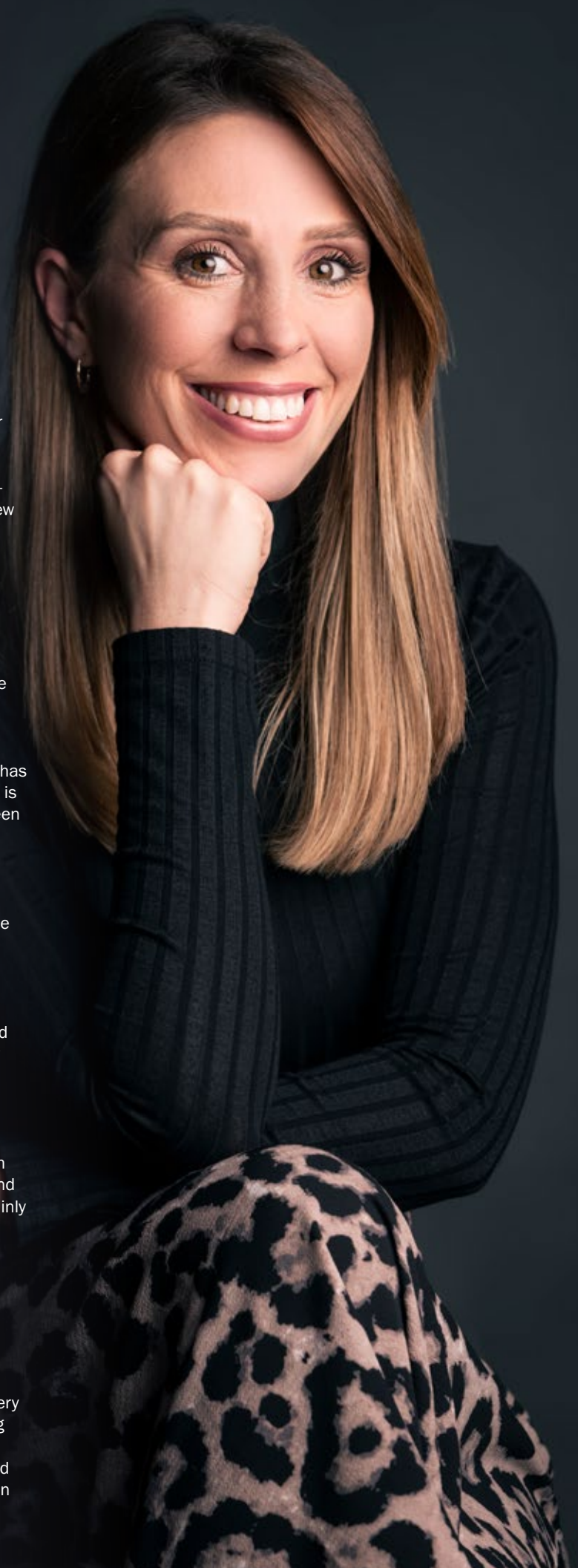
I enjoy running, and recently completed my first half-marathon, with plans to get a full marathon under my belt soon. Walking my dog and spending time with my family are my favourite things, but you certainly won't catch me saying no to an occasional spa day either!

What might surprise people about you?

Prior to working in DE&S, I worked in the NHS for 13 years as a qualified nurse. This is something I am very proud of and draw inspiration from.

What's the best advice you've ever been given?

When an opportunity arises take it and make it work for you. It is very easy to stay within our comfort zone, especially for me as a working mum. I need to ensure the two areas of my life co-exist to maintain an equilibrium. I have learnt through my career that taking risks and wanting to push yourself outside of your comfort zone doesn't mean that equilibrium can't be met – make it work for you.



Soldiers of NATO's multinational enhanced Forward Presence Battlegroup training with the 1st Estonian Infantry Brigade during Estonia's annual exercise WINTER CAMP.



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Printing

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