

# DESIDER

AN INSIDE LOOK AT DEFENCE EQUIPMENT & SUPPORT



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



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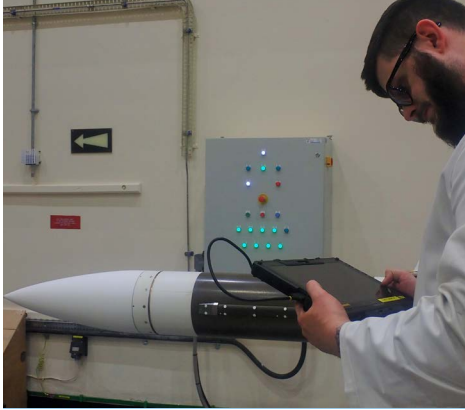


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# START Talking

The ambition of UK Defence, as set out by Defence Secretary John Healey, is for the UK to be “secure at home and strong abroad”.

The UK must be securely protected from external threats, whether that takes the form of cyber-attacks on digital networks or acts of sabotage on undersea infrastructure. And, at the same time, alongside our allies we must project strength and unity around the world to maintain the deterrent threat and guarantee our collective security. That global might makes the UK and its people safer, while our national security and prosperity allow us to be the best possible partner to our allies.

DE&S is committed to ensuring that the programmes we manage and the support we deliver provide that security and prosperity. Our people successfully manage a huge programme of work in support of our Armed Forces’ operations, hitting a tremendous 98 percent of our strategic milestones in 2023/24. And we ensured good value for the taxpayer, realising £122 million of in-year efficiencies and £753 million of multi-year efficiencies.

We have continued to support Ukraine, securing over £900 million worth of battle-winning equipment for their forces during that time. We recently passed a milestone of 1,000 equipment projects delivered for Ukraine since February 2022. Together, they amount to millions of individual inventory items. And we will continue to aid our Ukrainian allies, whether supplying equipment through Operation Scorpius, imparting battlefield skills through Operation Interflex, or helping Ukraine build a strong defence-industrial complex through Taskforce Hirst.

DE&S and our partners across Defence can be immensely proud of these achievements. The equipment and support we provide makes a big difference and our role has never been more important.

But there is always more to do. Our adversaries’ defence investment is large and the pace of their innovation is rapid. Our response must be to make better use of the experience, skills and ideas of our prime industry partners and our micro, small and medium-sized enterprises. We must quickly incorporate new technology into existing

platforms so our capabilities evolve with the threats.

Across the defence enterprise, we are taking action to ensure our security in a more uncertain, unstable world. This means advocating for a strengthened NATO, where increased levels of interoperability, interchangeability and integration can amplify the alliance’s deterrent impact.

And closer to home, it means optimising our ways of working to drive greater productivity, pace, availability and collaboration. We are in the final stages of the largest change programme DE&S has seen in a decade, readying us to operate with the speed and agility the current environment demands. Our change process is taking the best of what DE&S already does and combining that with deeper enterprise-wide engagement, an improved approach to managing our people, and greater digitisation and automation.

DE&S’ transformation reached an important milestone at the end of July, when Core Delivery, the engine at the heart of our operating model, and Corporate, the area that will enable DE&S to improve how it functions, stood up.

The milestone saw 100 of around 700 total order book items held in DE&S move from our former Ships domain into Core Delivery. That number will grow in the weeks and months to come.

When we reach full operating capability our new structure will have released tens of thousands of hours a month from indirect activity to directly support the delivery of defence projects. Based on our current planning, combining a leaner structure with more consistent use of better processes will make DE&S 10 percent more productive by the end of the financial year.

At the end of July we said farewell to an important member of the DE&S team, Deputy Chief Executive Officer Adrian Baguley. From my first day with DE&S, two years ago, Adrian has been an indispensable source of insight and guidance. He is one of the most highly respected people working in Defence and the dedication he has shown to serving the nation over his 40-year career is an inspiration. I know Adrian will always be a strong advocate for what we do across Defence and lend us his support in the future. I wish him all the best as he begins a very well-earned retirement.

## SENIOR LEADER COMMENT

# "When we work together, we achieve astonishing things."

At the end of July, Adrian Baguley stepped down as Deputy Chief Executive of DE&S. On his last day, Desider had the chance to meet with Adrian and ask him about his career.



## What's the proudest moment of your career?

There have been many. I have had such an incredible breadth and range of jobs that I could have been working in 15 different organisations. I've worked in NATO; I've worked in the UK Embassy in Washington DC; I've worked in the MOD Head Office in London; I've worked in research laboratories and in acquisition, including for the last 18 years at DE&S.

I'll treasure my delivery achievements. Our support to the NHS during the COVID pandemic and latterly to the people of Ukraine were defining moments in my career.

I was fortunate last year to be awarded a CB by the King in his first Birthday Honours and to be elected to the Royal Academy of Engineering, in recognition of my career achievements.

But the greatest honour of my career was when I was appointed as Deputy Chief Executive of DE&S. It's an organisation I love and its mission is palpably important to the security and prosperity of the nation. To be appointed to help lead an organisation I have such great affinity for was a stand-out moment for me.

## Your career has spanned 42 years; a lot has changed in that time. What is something that stands out?

Without a doubt the thing that has changed the most is the digitisation of our work and our lives. I've had a fascination with

technology throughout my career. We are now fully online, fully digitally enabled. It has completely transformed what we do, how we buy and how we fight.

My first MOD job was in a drawing office at the Royal Aircraft Establishment in Farnborough. There was this grey box in the corner, our first computer-aided design machine, which no one knew how to switch on. And here we are now, everything's done online and there's a powerful computer in our pockets and on our wrists.

## What advice would you give to someone considering a career in defence?

Seize every opportunity. I've had the good fortune to be presented with some amazing opportunities, and on each occasion, I took a deep breath and stepped into the unknown. I was offered my first overseas posting, to go to Germany as a science adviser to help prepare the 7th Armoured Brigade for deployment to the Gulf, with one day's notice. And I've never looked back.

Have the courage to walk through the opportunity doors when they open. You might feel uneasy and nervous, but there might be great things waiting on the other side – and there are very few one-way doors!

## If you had to sum up your career in three words what would they be?

I'll use four: incredible opportunities and people.

I've been involved in some of the most interesting and important projects on the planet, at the cutting edge of technology. And I've had the privilege to work with some quite astonishing people who have inspired me to be a better version of myself.

Two senior US officials I met while I was working in the US became my role models thanks to their incredible intellect and tremendous humility. They could talk equally to the President of the United States and the most junior member of staff. It's something I deeply admire, which I've tried to embrace myself.

## Lastly, any farewell messages for Desider's readers?

To my colleagues in DE&S: It's been an honour to have served as your Deputy Chief Executive. Always remember the critical importance of what DE&S does to equip our Armed Forces and defend the nation. It can never be overstated just how important that is.

And to our mission partners in industry and the Armed Forces: Thank you for all your support. I've always had the view that this is a team sport. There's no such thing as a win-lose in our business. It has to be a win-win. When we work together, we can achieve astonishing things.

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## FEATURE



# Latest Apache helicopters delivered to British Army

## The British Army's attack helicopter fleet grows in strength with the delivery of three more Apache AH-64E.

**The latest batch of Apache AH-64E attack helicopters have been delivered to the British Army.**

Three new aircraft are now undergoing their acceptance checks with 656 Squadron of 4 Regiment Army Air Corps at Wattisham Flying Station. This delivery means 41 of what will be a 50-strong fleet are now in the UK.

Procured by DE&S through a Foreign Military Sales programme with the US Government, the Boeing-manufactured Apache E-model is a twin-engine, tandem-seat helicopter. It is designed to accomplish operations during the day or at night, and in a range of weather conditions.

Primarily designed to find and destroy air defence units, tanks and armoured vehicles, they are armed with a 30mm automatic cannon, wing-mounted 70mm Hydra rockets and Hellfire missiles. The E-model flies faster and has a greater capability and range than the Mk1, which was in service with the British Army from 2001 and proved itself in conflicts many times, including in Libya and Afghanistan, before being retired earlier this year.

With the Modernised Fire Control Radar above the main rotor blades, the Apache E-model can detect and classify up to 256 potential targets, displaying 128 of these to the crew and prioritising the top 16 threats, all in a matter of seconds.

Colonel Andy Howarth, DE&S Apache Delivery Team Leader, said: "We are incredibly proud to work on such a cutting-edge helicopter programme while creating and supporting jobs in the UK. The

Apache is delivered by a team drawn from across DE&S, industry and our Front-Line Command colleagues, all of whom share a common goal to bring this outstanding battle-winning aircraft into service."

The new fleet became operationally ready for the Army last year and is on course to be fully operational in 2026.

The Apache E-model has already been put through its paces in a deep attack battlegroup alongside Wildcat helicopters during Exercise Iron Titan in the UK. It was also deployed in Finland and Estonia during Exercise Swift Response where it worked to destroy anti-aircraft assets and 'soften up' targets.

Boeing Defence UK is providing the long-term training and support service for the new Apache fleet. The 20-year agreement with DE&S will create more than 200 jobs in the UK, including 165 at the Army Aviation Centre at Middle Wallop, Hampshire, and around 45 at Wattisham in Suffolk.

Leanne Legge, Vertical Lift Director at Boeing Defence UK, said: "As the world's most advanced and proven attack helicopter, the UK benefits from a significant capability increase with the E-model, as well as global interoperability with allied nations around the world.

"We look forward to continuing our close partnership with the British Army and providing maintenance and engineering support, supply chain and logistics management, as well as delivering aircrew and maintainer training for the UK's E-model fleet."

## FEATURE

# DE&S operating model reaches implementation milestone

**DE&S' new operating model, which promises to make the organisation a more efficient, agile and effective partner, reached a key milestone with the stand-up of the Core Delivery and Corporate areas.**

The DE&S operating model implementation has reached an important milestone, with the Core Delivery and Corporate areas both standing up.

DE&S' mission is to equip the UK's Armed Forces with the edge by delivering and supporting the platforms, systems and services they need. And, with its guiding principle of 'operational excellence', the new operating model has been designed to ensure they continue to achieve that.

The aim of DE&S' transformation is to keep the best of what the organisation does now, while leveraging greater automation, integration and simplified ways of working that focus on outcomes over process. A more agile approach to managing and supporting its people will ensure they are allocated to where their skills can be deployed to meet defence priorities.

The Gateway, Corporate and Core Delivery areas are all now stood up, with System Integration due to reach that target in October. All four are due to complete the transition to full operating capability by early 2025. Combined, they form an operating model that provides the UK's Armed Forces, industry partners and allies with a service grounded in greater consistency, reliability, standardisation and repeatability, and that drives improved pace, efficiency and equipment availability.

Core Delivery, the new engine at the heart of the organisation, will now gradually take over the work currently carried out in DE&S' Ships, Strategic Enablers, Land and Air domains, with personnel transferring into the new structure. They will continue to ensure that equipment and services are safely delivered and sustained.

The move saw people from the Ships domain become the first Core Delivery group. With this, 100 of around 700 total order book

items held in DE&S now sit in Core Delivery, and that number will grow in the weeks and months to come. This includes the in-service maintenance of the UK's flagship aircraft carriers, HMS Queen Elizabeth and HMS Prince of Wales.

Alongside this, while the Gateway, Core Delivery and System Integration areas focus on delivering the MOD Equipment Plan, Corporate will support the whole of DE&S. Corporate people will provide guidance and support across every part of the organisation, from communications to infrastructure, and maintaining a culture of continuous improvement. The Business Services team, the first to move into the Corporate area, will quickly and efficiently support needs across DE&S, freeing up their colleagues to focus on delivery.

Core Delivery will be led by Dr Simon Dakin, previously the Director of the DE&S Integrated Battlespace Operating Centre. "Our new model gives us the tools to deliver at pace by deploying the right people with the right skills and experience to the right place at the right time. It builds in quality and safety as golden threads that run through every project, while driving us forward at speed."

DE&S will now work with partners from across the defence enterprise to test and refine the Core Delivery and Corporate areas.

MOD Chief Operating Officer Dr Nina Cope said: "At the heart of our work in Defence Design are the same principles that drive the DE&S Operating Model – particularly Core Delivery – a more efficient Defence with a clear and simplified approach to how our system works together to deliver common goals."



## FEATURE

# Digital and Engineering collaboration creates game-changing tool

**The Digital Engineering Centre's Ben Bayross explains how his team worked with the DE&S Digital Apps & AI Team to develop a Large Language Model to bring defence knowledge to everybody's fingertips.**

**In an earlier life I worked with a machine tool manufacturer in Switzerland. The machines they hand-built in their vast, pristine factory could do incredible things. But what sticks in my mind is the curious little workshop where four gentlemen refurbished old machine tools.**

I was told that refurbishing old machines could cost three times as much as buying brand-new, but their clients – mostly artisan watchmakers – would only use their trusted machines. This led to these four men being paid as much as senior management for the three days a week they worked. For me, this was an early lesson in the value of knowledge and the lengths to which organisations should go to keep it.

I'm reminded of this every time I need a specific piece of knowledge and spend hours trawling through technical standards, hoping they contain what I need. When I joined the Digital Engineering Centre (DEC) about 18 months ago, I set about trying to address this pain point. It wasn't until some months later, as I was trying out ChatGPT, that I realised the technology I needed had arrived.

The DEC has regular check-ins with Steve Hodson, in the DE&S Digital Apps & AI team, to share learning and solve problems. After explaining my idea to Steve, he said: "Have you been looking through my inbox?". He was already one step ahead of me, having trained a Large Language Model (LLM) on a small set of technical standards. Steve had proved the concept: you could ask the LLM a question and it gave you an answer based on the standards. Now, Steve needed real-world users to work with his data scientists and develop it further. Within a week, the DEC had assembled a team and brought MOD Defence Standardisation (DStan), who would ultimately own the solution, into the fold.

We started small, developing and testing bit by bit, failing fast, and learning more each time we did. Early on I was asking the LLM tool questions I knew it should be able to answer, but it was struggling. I then asked directly if it had access to the specific standard that held the answer and it told me it didn't. This identified an issue with the data-ingestion process, which was much quicker to diagnose and fix early on than if we had tried to get straight to the finished product.

The whole team believed the tool could genuinely revolutionise the way we do certain tasks, but, until our first round of user-testing, that was just a hypothesis. We were kept in suspense for all of 10 minutes before we got our first piece of feedback: "This is a game-changer."

When we predicted how much time the tool could save it varied a lot and depended on the task being done, but on average a two-hour knowledge retrieval task was reduced to 10 minutes. That's an incredible 92 percent of the task time back in your pocket.

This is one of the first steps in unlocking the potential of such a powerful emerging technology, but, as with the Swiss factory, it's not the technology that sticks in my mind, it's the power of knowledge and collaboration. Digital and Engineering teams working together to do something which would have been impossible in isolation. This is the future for Defence.





## NEWS



# The shift from “remotely piloted” to “uncrewed” air systems

**Reflecting the changes taking place in this rapidly evolving field, the DE&S Remotely Piloted Air Systems delivery team is now the Uncrewed Air Systems delivery team.**

## **In the rapidly advancing field of aviation technology, terminology matters.**

On 1 August 2024, the DE&S Remotely Piloted Air Systems (RPAS) delivery team was renamed as the Uncrewed Air Systems (UAS) delivery team to better reflect its mission and the evolving nature of the team’s work.

The shift from “remotely piloted” to “uncrewed” is more than just a semantic change. It reflects the definitions made in the Defence Drone Strategy, advances in air systems technology, the breadth of systems in use across Defence and the pace of their development.

The term “remotely piloted” suggests technology that is dependent on human operators to control aspects of the aircraft’s flight. However, with the introduction of automation and artificial intelligence, many air systems now operate with minimal or no human intervention. These systems can autonomously navigate complex environments, make real-time decisions and execute missions with

unprecedented efficiency and accuracy. As such, “uncrewed” better reflects the autonomous capabilities of these platforms, and highlights the technological leap forward from human-operated to autonomous operations.

The evolution from RPAS to UAS also signifies a broader shift in operational paradigms. While RPAS focuses on the pilot’s role in remote operations, UAS encompasses a wider range of functions and capabilities, from autonomous delivery drones to advanced surveillance and armed systems. The change also aligns the delivery team with the UK Armed Forces and defence enterprise, as well as with the UK’s allies in NATO.

The new UAS delivery team will work in three delivery pillars. UAS 1 will provide and support tactical-level programmes, such as TIQUILA and Peregrine, with a specific focus on delivery of spiral development and urgent capability requirements. UAS 2 will be focussed on larger, theatre-level operational

capabilities, such as Watchkeeper. UAS 3 will be responsible for the largest drones, such as Protector and Reaper.

Simon Holford, Head of the UAS delivery team, said: “I’m delighted that we are reshaping and renaming the delivery team to enable us to better meet the needs of Defence. This is a really exciting time for the delivery of UAS and I am looking forward to working closely with our colleagues in the DE&S Gateway and the Front-Line Commands to deliver innovative, safe and iterative UAS in an agile and efficient manner. Our new ways of working should also enable us to learn lessons and pull through the latest solutions from Ukraine and apply them to the UK’s systems. The adoption of UAS aligns DE&S with the Defence Drone Strategy, NATO and industry standards. It is intended to facilitate clearer communication and establish our team as the focal point for UAS acquisition within UK Defence.”

# DVD2024

18<sup>TH</sup> - 19<sup>TH</sup>  
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## FEATURE

# "3D printing could revolutionise support to the UK Armed Forces."

**DE&S and UK Strategic Command are delivering Project Tampa, which aims to build 3D printing capacity throughout the UK defence enterprise.**

**Picture the scene. The UK and its allies are engaged in a global conflict that rages on land, at sea and in the air. World-leading platforms, including aircraft carriers, armoured vehicles and fighter jets, are proving critical to gaining the edge over our adversaries.**

Such is the ferocity of the fighting that the need for spare parts is endless. Thankfully, the UK's Armed Forces and allies have access to global hubs where quality parts can be 3D-printed and rapidly dispatched, and where designs can be securely transmitted to front-line personnel who have the technology to print them on-site.

"That's the vision," said Charlotte Robinson, Innovation Team Lead at UK Strategic Command, who has headed up Project Tampa since its inception in 2021. "A series of global hubs that can rapidly print and provide quality assured parts. Not only could this be crucial in terms of platform availability if we did find ourselves in a conflict, but it brings with it a host of other positives, including quick access to spares, reduction of the need to stockpile, significant cost savings and environmental benefits."

DE&S has been trialling deployable 3D printing (also known as additive manufacturing) since 2018. However, it wasn't until a meeting with the US Marine Corps in Tampa that the reality of what could be achieved became clear.

"That meeting was pivotal as we heard about a new type of contract with a vehicle manufacturer, which included provision for an additive manufacturing design library, so that the equipment could be repaired while deployed," said Alex Champion, who was part of the team delivering Project Tampa at DE&S. "Their success confirmed that, before focusing on front-line command adoption, our priority should be encouraging additive manufacturing in the UK industrial supply chain. Project Tampa was created by UK Strategic Command and the DE&S Future Capability Group [now the Future Capability Innovation delivery team] was tasked with delivering the programme."

The goal of Project Tampa is to help give companies in the defence supply chain the confidence and expertise to widely adopt 3D printing by delivering a series of challenges – Spirals – of increasing complexity within a safe, collaborative, learning-focused environment.

DE&S set up an industry framework with several in-service support Defence companies. The first and simplest Spiral challenge was to produce and fit non-safety critical metallic parts to in-service platforms. Thales, Babcock, AMFG, NP Aerospace and RBSL engaged in this process, capturing and sharing their learning with each other and the MOD as they went.

Following this, a second Spiral, ramping up the complexity, was launched for safety critical metallic parts, with recent events dictating that companies offering parts for platforms gifted to Ukraine be given priority consideration. Spiral 2 is ongoing and is due to conclude in 2025.

In tandem with the spirals, the DE&S Future Capability Innovation delivery team has supported other advanced manufacturing challenges in Defence to see how MOD spare-part availability and supply chain obsolescence can be improved.

Such was the success of Project Tampa that, earlier this year, Alex was brought into Strategic Command Defence Support to work for Charlotte and the Project Tampa team directly. However, DE&S continues to be a critical stakeholder, helping stimulate industry and encouraging defence suppliers to use additive manufacturing to supply parts in new and existing defence contracts.

Alex said: "The opportunities for Defence are huge. 3D printing could revolutionise support to the UK Armed Forces."





# DE&S orders Lightweight Multirole Missiles for UK Armed Forces

**A new order placed by DE&S will secure versatile, precision missiles for British Army and Royal Navy platforms.**

**DE&S has placed an order with Thales UK for a significant number of Lightweight Multirole Missiles (LMMs), which will be used by units across the UK's Armed Forces.**

The order, worth £176 million, will provide missiles for current and future short-range air defences, including the British Army's Stormer combat vehicles and the Royal Navy's Martlet maritime anti-surface missile system, which is deployed from Wildcat helicopters.

Weighing only 13kg each, LMMs provide a versatile, precision solution against a range of threats, such as helicopters and other aircraft, as well as fast-moving maritime targets.

The contract supports 135 jobs at Thales' site in Belfast, as well as small and medium enterprises and local manufacturing.

Minister for Defence Procurement and Industry Maria Eagle announced the LMM order at the Farnborough International Airshow.

Ms Eagle said: "In a more dangerous world, we must continue to provide weapons to Ukraine, but also replenish our own stocks. Our new order of Lightweight Multirole Missiles from Thales UK will support this, providing our Armed Forces with versatile missiles that can be used against threats such as drones, helicopters and small maritime targets. This contract is also a great example of how defence investment can support economic growth and sustain jobs in the UK for years to come."

In the maritime setting, LMMs were first fired from a Wildcat in the Bay of Bengal during the Royal Navy's Carrier Strike Group deployment in 2021. Since February 2022, hundreds of LMMs have also been gifted to Ukraine, as they have fought to repel Russia's invasion.

Andy Start, DE&S CEO, said: "As we have seen during UK military operations and when used by our Ukrainian allies, LMMs are a versatile and valuable missile in a variety of battlespaces. Now more than ever we need to ensure the UK Armed Forces and our allies are fully equipped to defeat the evolving global threats we face. This order with Thales UK is a key element of that collective effort."

The order follows a £69 million contract placed by DE&S earlier this year, also with Thales UK, to secure the supply chain for key components used in the manufacture of the missiles.

Production at the Thales Belfast site has doubled since the full-scale conflict in Ukraine began, as global demand for air defence capabilities has increased.

Alex Cresswell, Thales UK CEO, said: "Today's contract announcement reflects the enduring partnership between the MOD and Thales UK for the provision of lightweight weapons. I look forward to continuing to work closely together with the MOD to deliver the capabilities our Armed Forces need, and to make industry more resilient to deal with increasing demand."

## NEWS

# New high-energy laser trialled with Wolfhound

**Team Hersa has mounted and fired a new high-powered weapon from a British Army vehicle for the first time.**

**MOD scientists and engineers have successfully fired a high-energy laser weapon from a British Army combat vehicle.**

During the test, conducted at the Defence Science and Technology Laboratory (DSTL) range at Porton Down, the weapon was mounted on to a British Army Wolfhound armoured vehicle. It was then able to neutralise targets, including enemy drones, over 1km away.

The high-energy laser is low-cost, fully portable, easy to operate weapon, which can track multiple targets. It has the potential to provide significantly increased operational advantage on the battlefield and represents a major leap forward for the MOD's Land Laser Directed Energy Weapon (LDEW) Demonstrator programme.

The weapon can be mounted on various platforms to meet different operational needs and operates with a command and control system that can be integrated into wider battle management radar and surveillance systems.

Team Hersa, which combines DE&S acquisition skills with DSTL technical expertise, developed the laser in

collaboration with a consortium of UK suppliers, including Raytheon UK, Fraser Nash, NP Aerospace, LumOptica, Blighter Surveillance Systems and Cambridge Pixel. Team Hersa is addressing some of the most complex issues facing UK Defence. It underscores the MOD's commitment to leveraging cutting-edge technology to maintain a strategic advantage in defence operations.

Stephen Waller, DE&S Programme Lead, said: "Our responsibility in Team Hersa is to work collaboratively with our partners and provide the engineering, commercial and project management expertise to help manage delivery of the demonstrators and prepare Defence for the introduction of innovative weapons systems. This high-powered firing is a significant step towards ensuring the UK Armed Forces can exploit a potentially game-changing capability at pace, so they have the edge against both current and future threats."

Matt Cork, DSTL Programme Lead, added: "The joint working between DSTL, DE&S and industry partners enabled rapid evolution of this laser demonstrator. The successful testing marks a pivotal moment

in our ongoing efforts to enhance the future operational capabilities of the British Army. This technology offers a precise, powerful and cost-effective means to defeat aerial threats, ensuring greater protection for our forces."

The integration of the advanced capability demonstrator on to a Wolfhound vehicle allows the MOD and the British Army to understand the utility of LDEW systems against evolving threats. The next phase of testing will involve trials with Army personnel later this year, to further evaluate the system's capabilities and benefits in real-world scenarios.

James Gray, Chief Executive and Managing Director of Raytheon UK, said: "In successfully firing the first laser weapon integrated on a land vehicle in the UK, Dstl has proven that the Raytheon high-energy laser weapon system can track, engage and defeat targets whilst mounted on a vehicle. We now look forward to the British Army experimenting with the weapon over the coming months and proving that the technology is battlefield ready."



## NEWS

# Light Fidelity transforms connectivity at DE&S Defence Munitions site

**An innovative data connectivity pilot that could greatly increase collaboration and efficiency is taking place at DE&S' Defence Munitions Gosport site.**

**DE&S specialists at Defence Munitions sites throughout the UK are responsible for the assembly, integration, testing and storage of complex weapons and general munitions.**

Currently, staff work in customised processing facilities where mobile internet and standard Wi-Fi are not permitted due to the safety risks of using radio transmissions around the complex weapons being stored there. This lack of connectivity can significantly impact their productivity, as staff cannot access online technical documentation, operation notes and test plans, and are prevented from real-time collaboration with delivery teams and design authorities.

However, early signs from a pilot taking place at Defence Munitions Gosport are that Light Fidelity (Li-Fi) technology could prove to be a viable alternative for connecting these teams. Li-Fi technology uses light rather than radio waves to

transmit data, making it safer to use around the Defence Munition facilities, as well as more secure.

The pilot is assessing how easy Li-Fi technology is to use, its performance and the stability of the signal it creates around Defence Munitions Gosport. It has been facilitated by the DE&S Weapons Operating Centre and is being run by DE&S Digital and UK Strategic Command Defence Digital, in conjunction with Consolite Technology Ltd and Centiant International Ltd.

Nick Rice, CEO at Consolite Technology, said: "There are many reasons why Wi-Fi poses a problem for military users. Li-Fi provides radio frequency-free wireless data for explosive atmospheres, as we see in Gosport. Li-Fi also provides data where increased cyber-security protection is desirable, and typically much faster data, more than 10 times the sort of speeds we see in our homes. The Gosport team

have done a fantastic job making their trial fully operational to demonstrate the many benefits of Li-Fi. We're delighted to be part of this project."

Pete Forder, Defence Munitions Digital lead at DE&S, said: "The Li-Fi proof of concept trial has been a great success and is potentially game-changing in terms of digital optimisation within our hazardous explosives processing and storage facilities. Introducing this new technology in our unique operating environment has relied on excellent Defence and industry teamwork and collaboration throughout, which further demonstrates the 'One Defence' mindset."

The intention of the pilot is to support wider deployment of Li-Fi throughout Defence Munitions sites to drive greater efficiencies and cost savings. It will also feed into the innovative technologies being employed by DE&S to improve productivity and working practices. The pilot is due to conclude in late-2024 and its results will be used to inform future investments.

"The lack of connectivity in specialist areas at Defence Munitions sites can significantly disrupt core activity, so being able to bring new optical wireless communications technologies like Li-Fi to complex environments has been a real game changer," said Tom Brickell, a Defence Digital Innovation Architect within UK Strategic Command. "It's opened up new possibilities for Defence Munitions such as video conferencing with manufacturers, which is very rewarding."

DE&S Digital team leader Steve Hodson added: "This is a great example of DE&S Digital and UK Strategic Command joining forces to deliver a tactical pilot that offers huge potential benefits within the Defence Munitions space. We are demonstrating that collaborative working will offer the opportunity to deliver cutting-edge digital solutions to our mission partners."



# DEFENCE AVIATION SAFETY

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AN INSIDE LOOK INTO THE DEFENCE EQUIPMENT & SUPPORT

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.

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## NEWS

# Battle-winning complex weapons secured for another decade

**The second 10-year Portfolio Management Agreement with MBDA will help ensure the UK's Armed Forces continue to have the weapons systems they need.**

**Complex weapons will be more quickly delivered to the UK's Armed Forces, thanks to a new £6.5 billion planned investment in British industry.**

The Portfolio Management Agreement 2 (PMA2) is a 10-year agreement with industry partner MBDA. Secured by the DE&S Complex Weapons Team, PMA2 represents the renewal of a long-term strategic relationship through which weapon systems design, development, production and support will be conducted.

As John Cunningham, Head of Complex Weapons for MOD Strategic Programmes, explained: "This represents significant investment from MOD and supports our vision to deliver strategic influence for the UK, munition resilience, and battle-winning capability at pace, fit for the future."

The PMA model ensures the UK has the right weapons to counter current and future threats. It supports multiple weapons systems and underpins the MOD's ability to maintain the UK's national resilience and its role internationally by being responsive to rapidly changing environments and a leader in complex weapon technologies.

The agreement is a continuation of a strategic partnership with MBDA that began in 2010. PMA2 incorporates a decade of learning into the running of the complex weapons portfolio. It includes a number of measures to enhance performance, including improved commercial agreements, acceleration of procurement processes and enabling 'always-on' manufacturing. As a result, it will hold industry at a high state of readiness to respond to the demands of Defence.

It has enabled MBDA to invest more than £550 million in the UK, including a new manufacturing site in Bolton. PMA2 will see a further £500 million investment in British manufacturing and technology. The agreement will support more than 5,500 people who work at MBDA UK sites in Lancashire, Hertfordshire and Bristol, as well as thousands of further jobs throughout the UK supply chain. The original PMA has already created savings of around £2.6 billion and helped UK exports of MBDA complex weapons to grow by 6.5 times as a result of international collaborations.

The contract was announced by Defence Secretary John Healey at the Farnborough International Air Show. Mr Healey said: "The Farnborough International Air Show showcases the best of British industry, and how a vibrant industrial base keeps us all safe and contributes to UK economic growth. As Defence Secretary, I want to take the politics out of national security so where there is important work begun under the previous government, we will take it forward in the interest of national security. That is why we are renewing important partnerships with industry and continuing to push technological boundaries. This will drive prosperity and create skilled jobs across the country."

MBDA already produces complex weapons for the British Army, Royal Navy and RAF. In recent years, it has delivered missile systems including Storm Shadow, Brimstone, Meteor, Sea Viper and Sea Venom. MBDA is also developing a future weapons system for F-35B Lightning II fighter jets known as SPEAR Cap 3.

DE&S CEO Andy Start said: "Renewing this partnership for a further 10 years means we can deliver battle-winning equipment to our Armed Forces, while securing thousands of UK jobs and delivering significant savings to the taxpayer. It is an excellent example of the value and importance of long-term strategic collaboration with our industry partners."





# DE&S activity highlights

A digest of some of DE&S' work from the past month that you might have missed.

## DE&S passes 1,000th project milestone in support of Ukraine

DE&S recently passed a significant milestone having delivered 1,000 equipment projects in support of Ukraine since Russia's full-scale invasion began in February 2022. These range in size from medical kits, drones and rifles to huge pieces of equipment, including Challenger 2 tanks and NLAW missiles. Together, the projects add up to millions of individual inventory items that DE&S has secured for Ukraine over the last two years.

This reflects a substantial team effort. DE&S teams have recorded over 45,000 hours of activity and have closely collaborated with organisations and industry partners throughout the UK defence enterprise.

DE&S CEO Andy Start said: "This is a fantastic team effort from across the whole of DE&S, with everyone working incredibly hard in support of Ukraine."

## Cutting-edge mini-drones trialled for use by UK Armed Forces

A cutting-edge mini-drone – the Stalker VXE30 Air Vehicle – has been put through rigorous trials at RNAS Predannack in Cornwall. The Stalker VXE30 was procured from Lockheed Martin by DE&S, as part of Project TIQUILA.

Project Tiquila aims to deliver cutting-edge small Uncrewed Air Systems (sUAS) to UK Forces at pace, while also offering spiral capability development opportunities throughout the 10-year project.

Weighing a little over 20kg and with a 4.88 metre wingspan, the Stalker VXE30 is an operationally proven, vertical-launch, near-silent drone, which provides up to eight hours of imaging capability at a range of up to 60km.

It was subjected to almost 20 hours of trials in challenging weather conditions that pushed the platform to its limits. The trials were undertaken by an expert team made up of the Joint

UAS Test and Evaluation Flight (part of 744 Naval Air Squadron), the Air & Space Warfare Centre and DE&S' Tiquila Delivery Team.

As a key part of capability acceptance, the initial flight trials provide an essential body of evidence to prove the equipment is capable and provides value for money.

## Final Vahana workboats delivered

The final two Vahana workboats have been delivered to the Royal Navy, as part of a £48 million contract awarded to Dorset-based Atlas Elektronik. Constructed to a versatile, modular design, with a standardised, interchangeable hull, the new boats can be adapted for use in a range of different tasks, from logistics support, officer training and hydrographic survey to passenger transport, dive support and training.

With improved speed, operational range and navigation equipment, the Vahana workboats will play an important role in the Royal Navy fleet. The handover of the final two boats – named Merlin and Fantome – to the Fleet Hydrography and Meteorology Unit in Devonport marks the contract's completion and signifies the full operating capability of all vessels.

## The Tom Nevard Memorial Competition

Running from 4 to 9 August, the Tom Nevard Memorial Competition tests the craftsmanship and creativity of apprentices from across the MOD. It challenges teams to design and build defence-related products, encouraging teamwork and developing core competencies, while cultivating engineering flair and ability. The competition takes place each year at the Shrivenham Defence Academy.

The competition began in 1952 as a memorial to Tom Nevard who was an Assistant Secretary in the Labour Branch of the Ministry of Supply.



## PEOPLE

# Helene Waters

## Job title

Assistant Head NATO and International Engagements

## What does your role involve?

I work in the International and Industry Cooperation team (I&IC, formerly the International Relations Group), part of the new DE&S Gateway. I lead a fabulous and varied team that's building international partnerships and overseeing cooperation in the armaments space, and supporting Andy Start in his role as the UK National Armaments Director. Our recent focus areas include shaping the UK's contribution to defence industrial commitments at the July NATO summit and engaging trilaterally to enable the delivery of AUKUS Pillar 2.

## What do you most enjoy about your job?

Getting to see first-hand the UK's leadership and influence on the NATO and international stage. As part of my role, I attend the six-monthly Conference of National Armaments Directors meetings at NATO HQ. It is incredible to see how much Andy Start, supported by the I&IC team, has shaped discussions in NATO to be more strategic and focused on the pressing issues of industrial resilience and support to Ukraine.

## What is your greatest accomplishment to date?

I am incredibly proud to have represented the UK and the MOD while serving at the British Embassy in Washington DC. It was an honour and a privilege to work directly with the US to enhance our defence relationship.

## What keeps you energised about working at DE&S?

Knowing that the work of my team and DE&S is contributing to the defence and security of our nation and that of our allies and partners. In an ever more volatile world, our work feels as critical as ever and I am very motivated by the genuine impact of everything we do.

## Who or what has shaped who you are?

All my line managers, past and present. I have struggled with confidence and self-belief over the years, but my line managers have believed in me and, in their own unique way, helped me see my potential. I am forever grateful for their cheerleading and support, and strive to have a similar impact on my team.

## What do you enjoy doing in your spare time?

Anyone who asks me about my weekend plans will know about my obsession with pickleball! A cross between tennis, badminton and table tennis from America. Give it a go!

## What might surprise people about you?

That I don't have an education in international relations or policy. In fact, I have a maths degree, in part because I didn't enjoy writing, which turns out to be the crux of my role now! While a degree in a related field is beneficial, it's not the only way to get a job in the policy space. Many of the skills, like critical thinking, are transferable regardless of your educational background, so don't let that hold you back!

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

Don't be afraid to show your vulnerabilities. I used to think I always had to be strong and that being vulnerable was a weakness. However, over the years I've realised that being open about our vulnerabilities is what makes us human. Plus, when you open up, it gives others the courage to talk about their vulnerabilities too, and by talking we can support each other.





More than 400 multinational paratroopers jumped from A400m aircraft into Normandy as part of a tribute to the soldiers who parachuted in on D-Day.

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Two Apache AH-64E from 3 Regiment Army Air Corps provide troops with air support during Exercise Swift Response in Estonia.

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