



Ministry
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Issue 135
October 2019

*the magazine for
defence equipment
and support*



**Thousands of
boats to be
supported under
new multi-million
agreement**

Over 100 years invested in leading UK technology



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Foreword

September was an incredibly busy month for DE&S as we continue to focus our efforts on meeting the requirements of the armed forces.

"DSEI provided a great platform for some important announcements, all of which showcased some of the excellent work that our DE&S teams are delivering"



By Sir Simon Bollom, CEO

For me, it was a productive month. DSEI in London provided an invaluable opportunity to engage with strategic partners and a wide range of defence companies from across the globe as we seek more innovative and intelligent ways of delivering equipment and support.

I know that many of our people will also have met with their counterparts in industry as well as their customers across the armed forces and taken the opportunity for valuable face-to-face discussions.

The show also provided a great platform for some important announcements, all of which showcased some of the excellent work that our DE&S teams are delivering.

Alongside the Italian Secretary General of Defence, I signed a Statement of Intent to partner on Tempest in our roles as National Armament Directors. This crucially commits both governments to further develop their Combat Air capability relationship and covers existing platforms such as Typhoon and F-35, as well as Tempest. A great demonstration of international collaboration with one of our NATO allies.

I was also delighted to pledge my commitment to the Women in Defence Charter which I hope will encourage more women to reach the very top of every part of Defence.

During DSEI the Minister for Defence Procurement Anne-Marie Trevelyan announced that DE&S has awarded a new contract worth around £100 million to General Atomics to test the performance of the UK's ground-breaking Protector aircraft.

There was also the news

that the £177 million Boats In-Service Support deal had been signed with a number of industry partners to support thousands of boats used by the UK's armed forces.

A £31 million contract has been awarded to Ferranti Technologies Ltd to provide a Joint Fires Synthetic Trainer for the Army, Air Force and Navy allowing them to experience realistic and complex environment training at multiple UK sites.

And Qinetiq have been awarded a £67 million contract to provide the Robust Global Navigational System, an innovative, small and light system that is resilient to false signal and jamming threats.

Finally, two further contracts were announced at DSEI, a multi-million research and development programme with Leonardo to work alongside the RAF to better understand counter-drone technology and a deal with MBDA to develop a new electronic warfare version of the SPEAR weapon system.

I very much enjoyed our Exec Connect events which I launched at Abbey Wood with four briefings in each of our neighbourhoods. Myself and the Exec team also took to the road, visiting Devonport, Bicester, Yeovil, RAF Coningsby, RAF Marham, RAF Waddington, Glasgow and our Defence Munitions sites at Beith, Kineton, Longtown and Gosport.

These briefings enabled us to thank all staff for their excellent efforts over the year and to set out our plans for delivering DE&S@21 through Great People, Great Delivery and a Great Place to Work. I sincerely hope that all of you who attended these events found them informative and that they provided a greater understanding of how DE&S is striving to be world-class. The engagement was excellent and it was good to hear your views via the intelligent comments and questions that were raised. This feedback is vital and will help us to refine our Change Plan.

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Barry Burton, Director Strategy and Change, talks to Desider about his pride in DE&S, his recent highlights and the plans to make DE&S 'Great'



Like many people, when I reflect on why I like working in DE&S I conclude that it is the balance between our focus on getting things done and the consequent clarity of our achievements.

I'm passionate about Defence, which probably explains why I'm currently in my 40th year in the MOD. The role DE&S plays is a vital component in delivering the capability we need and it's something I'm very proud to be a part of. Our whole reason for DE&S being here – and the most important thing we do – is to deliver our element of the MOD's equipment programme, and that always has to be our first priority.

But equally, it's important to do things better, to find efficiencies and productivity in our work so that we can reinvest in the capability of our armed forces.

My biggest highlight of the last year is the work we've done to focus our change programme and to improve its implementation and clarity – to make clear why we need to change, how we are doing it and, most important, what benefits we will see as a result.

As an Executive team, we've spent the last month visiting

many DE&S sites across the country, with our Exec Connect programme. As the name suggests, this was an opportunity for us to have open, honest discussions with staff about their work, the changes we've implemented over the last year, and to listen to their views on how we can continue to make improvements.

From my point of view, it's been reassuring to see that so many people are now coming along with us on this journey (which hasn't always been easy) and to hear that we, as a leadership team, are now starting to hit most of the right notes in terms of how we're managing our performance system; integrating new tools and systems to better manage our delivery; and investing in developing our staff to become the best that they can be.

To me, it is impressive that we've already improved so much of the way DE&S operates but it's unsurprising that we don't get everything right first time. The ambition to improve how we deliver and to put into place the tools we need is right, but we need to get the implementation right too. We have worked very hard to

The role DE&S plays is a vital component in delivering the capability we need and it's something I'm very proud to be a part of

do that and made real progress.

As we edge towards 2020, my main priority now is to consolidate what we've done, to continue our progress towards DE&S@21 and to be really clear about what we are doing and why. The DE&S@21 vision is about achieving Great Delivery, with Great People in a Great Place to Work, with the aim of providing a better service and experience for our customers.

One change I think would help all of us deliver more efficiently would be to adjust our view of the money we spend on behalf of the taxpayer. It's easy to see our budget as the amount we need to spend to hit a target. Instead, we should view it as an outer limit from which we're incentivised to work to spend less but deliver the same output. Our systems make that a challenge, but it would help us deliver more to the "front line".

So that's another challenge I see for the future and hopefully one we can improve over time, to ensure we continue to effectively support our armed forces.

£100 million boost for cutting edge Protector aircraft

Pictured: CGI of an RAF Protector (Picture courtesy of General Atomics)



DE&S have awarded a new contract worth approximately £100 million to test the performance of the UK's ground-breaking Protector aircraft

The world-class Protector will be the first remotely controlled aircraft capable of attacking targets anywhere in the world while being operated from their home base in RAF Waddington.

This contract will see General Atomics test the aircraft to its limit and report back on its performance in advance of the aircraft's introduction to the frontline in 2024.

Kim Ward, Protector Project Manager at DE&S said: "Awarding the contract represents a significant milestone as the project progresses from the design phase and into the test and evaluation phase. This contract shall see General Atomics demonstrating compliance against the UK capability and certification requirements in order to deliver this cutting-edge RAF capability."

Sir Simon Bollom, DE&S CEO, said: "Our partnership with General Atomics is allowing us to explore cutting-edge technology to deliver capability to the RAF which is world-class.

Our partnership with General Atomics is allowing us to explore cutting-edge technology to deliver capability to the RAF which is world-class

Sir Simon Bollom,
DE&S CEO

"These trials with Protector show that we are determined to push the boundaries and ensure that our military personnel have the capability to respond robustly to a range of constantly evolving threats on the battlefield."

Replacing the Reaper aircraft, Protector will be the world's first certified Remotely Piloted Air System (RPAS), meaning it can operate in civilian airspace. This is possible due to the aircraft's ground-breaking Detect and Avoid system which draws on enhanced sensors to avoid other aircraft.

Protector will be able to fly consistently for up to 40 hours, offering the RAF vastly improved armed Intelligence, Surveillance, Targeting and Reconnaissance (ISTAR) capability. The aircraft will be deployed across the full spectrum of operations, including ISTAR, search and rescue, flood prevention or disaster response missions.

Speaking at the DSEI, where the contract was announced, the Chief of the Air Staff, Air Chief Marshal Mike Wigston, said: "Protector exemplifies the benefits that military-industry partnering can bring. Through the embedding of experienced RAF operators in the programme, we are helping bring

to life a world-leading capability which will provide the RAF with a remotely-piloted air system that can operate worldwide in unsegregated airspace."

Defence Minister Anne-Marie Trevelyan said: "Our intelligence-gathering and surveillance capabilities will be critical to staying ahead of our adversaries as we enter an era dominated by grey-zone warfare. This contract represents a welcome step towards our world-beating Protector aircraft reaching the frontline, giving us the upper-hand against our adversaries."

Italy partners with the UK on Tempest

Pictured: The Team Tempest stand at DSEI (Picture by Jack Eckersley)



The Italian Secretary General of Defence, Lieutenant General Nicolò Falsaperla has, alongside DE&S CEO Sir Simon Bollom, signed a Statement of Intent to partner on Tempest. The Statement of Intent, signed in their roles as National Armament Directors at the DSEI conference last month, commits both governments to further develop their Combat Air capability relationship.

The agreement covers existing platforms such as Typhoon and F-35, as well as Tempest, the programme initiated by the UK to develop a next generation combat air system.

Group Captain Mark Butterworth, Deputy Head of the DE&S Combat Air Strategy Team (CAST), said: "Members of the CAST team, working closely with our colleagues in Head Office, have been helping to create opportunities for international collaboration on the exciting Tempest programme. We are seeing this come to fruition first with Sweden and Saab coming on board at RIAT in July, and now with Italy and its industry signing Statements of Intent with their UK counterparts to partner on Tempest at DSEI in September."

The Statement of Intent outlined

Members of the Combat Air Strategy Team, working closely with our colleagues in Head Office, have been helping to create opportunities for international collaboration on the exciting Tempest programme

Group Captain Mark Butterworth,
Deputy Head of the DE&S CAST

a number of commitments from both countries:

- Closer Government alignment on future Eurofighter Typhoon enhancements;
- Deepening discussions on Tempest military requirements;
- Developing a combat air roadmap, identifying opportunities to integrate advanced technologies from Eurofighter Typhoon into Tempest;
- Developing an innovative, agile and cooperative industrial framework to deliver Tempest;
- Launching pilot studies to demonstrate new, collaborative ways of working.

The agreement was the result of the joint Government feasibility study, which was launched following publication of the UK's Combat Air Strategy at the Farnborough Airshow in July 2018.

The study concluded that the UK and Italy are natural Combat Air partners, with both Air Forces (the Royal Air Force and the Aeronautica Militare) operating the same, potent fleet of Eurofighter Typhoon and F-35.

Informed by these systems, both Air Forces have a strong overlap in views on the characteristics necessary for the next generation of combat aircraft. Both Air Forces also share a close alignment on doctrine, training, and operational experience.

The UK and Italy have a proven 50-year track record of working closely together on combat aircraft development and support through the Panavia Tornado and Eurofighter Typhoon programmes.

Both governments confirmed a common desire for a strong industrial base to develop key capabilities and boost prosperity in both nations. The agreement also paves the way for closer industrial collaboration, including through shared industrial entities such as Leonardo and MBDA.

Earlier this year, the UK and Swedish governments signed a comprehensive Memorandum of Understanding on future combat air, committing the parties to work on a joint combat air development and acquisition programme.

Preferred bidder selected for Type 31 programme

Pictured: CGI of Babcock's proposal for Type 31 (Picture courtesy of Babcock)



DE&S CEO Sir Simon Bollom has congratulated the Type 31 team on their hard work after Babcock was announced as the preferred bidder for the Royal Navy's UK-built future frigates.

The five Type 31 warships will be manufactured using companies across the UK for an average production cost of £250 million per ship through a consortium led by Babcock, subject to a successful contract award.

The bold, ambitious and innovative Type 31 programme is the first frigate competition the UK has run in a generation.

Sir Simon said: "The pace and innovation of the Type 31 programme has been unprecedented and the Type 31 project team at DE&S have worked incredibly hard to reach this highly significant milestone.

"I would like to thank them for all their efforts to date, their hard work and focus will see a new generation of frigates being built to ensure the size of the Royal Navy's surface fleet is maintained."

The frigates will be built and integrated at Babcock's shipyard in Rosyth and the programme will support 1,250 highly skilled jobs across the UK, including around 150 new technical apprenticeships.

The company also envisage it will support an additional 1,250 roles within the wider UK supply chain.

The pace and innovation of the Type 31 programme has been unprecedented and the Type 31 project team at DE&S have worked incredibly hard to reach this highly significant milestone

Sir Simon Bollom,
DE&S CEO

Forming the next generation of the Royal Navy fleet, the new Type 31 frigates will be a fast, agile and versatile warship, capable of independent and sustained global operations and readily adaptable for future roles.

They will undertake missions such as interception and disruption of those using the sea for unlawful purposes, intelligence collection, Defence engagement, consort protection and assisting those in need. Crucially, they will also free up Type 45 destroyers and Type 26 frigates for their specialist combat roles in support of the strategic nuclear deterrent and as part of the carrier strike group.

The first ship is set to enter the water in 2023 ensuring the Royal Navy maintains a truly global presence in an increasingly uncertain world.

DE&S project lead Dan Bishop said: "This announcement is a major success in the procurement of the Type 31 frigate and is a huge achievement for DE&S.

"The Type 31 delivery team employed radical new approaches to challenge private industry, as well as our own internal practices, to deliver a ship which meets the Royal Navy's capability requirements at a highly competitive price point in record time.

"The highly capable design has strong exports prospects and will contribute to the reinvigoration of

UK ship building capability."

Subject to successful negotiations, the Ministry of Defence expects to award a contract before the end of 2019. The vessel will commence production within three years of the launch of the programme, which is much quicker than similar shipbuilding programmes.

The ships will be fitted with the world-leading UK-designed and manufactured Sea Ceptor missile system, a range of highly advanced weapon and sensor systems, a sophisticated combat system with a 4D air and surface surveillance and target indication radar and will have the capability to operate with a Merlin or Wildcat helicopter.

The design, construction and commissioning of the Type 31 ships remains a key part of the National Shipbuilding Strategy, which was announced in September 2017.

Dan Bishop added: "It is a testament to the hard work, determination and professionalism shown by everyone involved in this project that we are on target to deliver the contract by the end of 2019, and all five ships off contract by 2028."

The decision on where the Type 31 frigates will be based will be made in due course.



Final Typhoon delivered

The final Typhoon aircraft has been delivered to the Royal Air Force.

It completes the order for 160 of the aircraft which are at the heart of securing the skies of the UK on Quick Reaction Alert and on overseas operations.

BAE Systems handed over the jet, continuing to work closely with its customer and industrial partners to deliver the capabilities required to ensure Typhoon remains an operationally effective backbone of the UK's combat air power.

The company's production facility in Warton, Lancashire, is now gearing up to start assembly of the first of 24 Typhoons for the Qatari Emiri Air Force with the first jet due to be delivered in 2022.

The completion of the RAF order was marked by a ceremony held in BAE Systems' final assembly facility at Warton.

Air Commodore Paul Lloyd, Head of the Fast Air Support Team at DE&S, was one of the members of staff that attended.

He said: 'Great pride should be taken for the continued dedication and hard work needed to reach this significant milestone for the Typhoon Programme.'

HMS Medway commissioned into the Royal Navy

HMS Medway has been officially commissioned at a naval ceremony in Chatham, Kent.

The second Batch 2 Offshore Patrol Vessel (OPV), procured by DE&S and built by BAE Systems on the Clyde, was commissioned into the Royal Navy on the river Medway on September 19.

HMS Medway is the second of five river-class OPVs. The first, HMS Forth, was commissioned earlier in the year.

Paddy Clayton, DE&S OPV deputy head, said: "This is an important occasion for HMS Medway and is a culmination

of four years hard work for the OPV team based in Bristol and on the Clyde. The team have shown huge dedication and this is a good example of how the MOD and industry can work together with the ship's company to deliver great ships for the Royal Navy."

The Batch 2 OPVs will undertake a variety of roles, including; counter-terrorism, anti-smuggling, maritime defence and counter-narcotics as well as securing the UK's borders, protecting UK interests around the globe.



Exec Connect 2019

The DE&S Executive Committee took their Exec Connect programme to a dozen DE&S sites across the UK during September.

Exec Connect was an opportunity for the Executive to engage with staff and communicate their plans for making the organisation an even better place to work.

It was also a chance for staff to share their views on how they feel the organisation is progressing and put questions to senior leaders.

In total, the Executive committee visited 12 DE&S sites – MOD Abbey Wood, Yeovil, Bicester, RAF Coningsby, RAF Marham, RAF Waddington, HMNB Devonport, DM Beith, DM Gosport (pictured),

DM Kineton DM Longtown and Kentigern House and spoke with thousands of staff about the challenges and successes they encounter in their roles.

Topics of discussion included pay and performance; recruitment and retention; future plans for our projects and programmes; and IT and Infrastructure.

The programme was an invaluable opportunity for everyone who attended, providing a chance to engage in open, honest conversations and offering the Executive an opportunity to see first-hand the range of challenges staff face across our regional sites on a daily basis.



Wildcat deployed to assist Hurricane Dorian relief efforts

A Wildcat HMA Mk2 (Wildcat 211 Flight from 815 NAS, Yeovilton) embarked on RFA Mounts Bay has been assisting in Hurricane Dorian Relief Operations in the Bahamas.

It has been involved in search and rescue missions, delivering diesel to the hospital on Great Abaco Island, transporting aid, water, rations and shelters and

carrying out aerial reconnaissance to allow assessment of the damage and destruction the islanders face.

Shaun Williams, Wildcat safety release to service manager at DE&S, said: "The work that goes on in the background to allow the two complex systems of an aircraft and a ship to be safely operated together and allow embarked aviation activities can sometimes

go unnoticed.

"However, the work we do is crucial to enabling this capability and I get an immense sense of pride and satisfaction from knowing that my team and I have played a part in permitting Wildcat to operate safely in the embarked environment, in this case RFA Mounts Bay, to save lives."



Maritime Combat System leads innovation on HMS Argyll

An autonomous boat worked alongside a Royal Naval warship, transmitting imagery from the vessel to the ship for the first time during demonstrations at DSEI.

The Type 23 frigate, HMS Argyll, used its combat system to work with an unmanned Pacific 24 sea boat in trials at London's Docklands.

Developed by BAE Systems, the PAC24 is part-funded by NavyX – the Royal Navy's new Autonomy and Lethality Accelerator to rapidly develop, test and trial cutting-edge equipment with the aim of delivering the technology into service at pace.

The trials are NavyX's first live trial, demonstrating the success of joined-up working with DE&S, industry partners and the Defence Science and Technology Laboratory (Dstl).

The boat's integration with an active warship and the operational combat system shows its potential for future missions including anti-piracy operations, border control and force protection.

The new innovative integration methods are a direct result of the Maritime Mission Systems Enterprise initiative lead by Maritime Combat Systems in the Ships Domain at DE&S.

Their work has seen a transformational impact on operational combat systems at sea to deliver open system architectures.

The delivery of these Open Systems will fully support the NavyX initiative with vastly improved agility in the delivery of new capability to the frontline warfighter and support a Global Navy.

SPEAR-Electronic Warfare development contract awarded

Pictured: MBDA'S new SPEAR-EW weapon will provide the RAF with a highly potent electronic warfare capability (Picture courtesy of MBDA)



DE&S has awarded a contract to MBDA for the development of SPEAR-EW, a new electronic warfare (EW) version of the SPEAR weapon system family on order for the Royal Air Force.

SPEAR-EW is being developed to complete a wide range of Suppression of Enemy Air Defence missions under a technology demonstration programme.

It will integrate a cutting-edge miniaturised EW payload, which will act as a stand-in jammer to greatly increase the survivability of RAF aircraft and suppress enemy air defences.

The core of SPEAR-EW's payload is Leonardo's miniaturised Digital Radio Frequency Memory technology, which offers advanced and future-proof electronic jamming and deception.

Chris Harris, Lightweight and Medium Attack Systems team leader at DE&S, said: "The Technical Development Programme for the electronic warfare variant of the UK's SPEAR3 missile is the exciting start to developing a family of air-launched weapons.

"Not only does the family approach maximise aircraft

The Technical Development Programme for the Electronic Warfare variant of the UK's SPEAR3 missile is the exciting start to developing a family of air-launched weapons

Chris Harris,
Lightweight and Medium
Attack Systems team leader
at DE&S

integration read-across, it benefits from modularly and reuse of weapon technology whilst introducing world-leading UK electronic warfare technology into the weapons domain.

"This is a huge opportunity for DE&S to showcase how emerging technology can be de-risked, optimised and assessed by UK subject matter experts to best deliver emerging UK capabilities requirements for the RAF's fast jet aircraft."

The contract was announced at DSEI during a speech by Minister for Defence Procurement Anne-Marie Trevelyan.

The Minister said: "These state-of-the-art electronic jammers will confuse our adversaries and keep our pilots safer than ever in the air.

"Paired with the devastating power of precision Brimstone and Meteor missiles, our world-class F-35 and Typhoon jets will continue to rule the skies in the years to come."

The new SPEAR-EW will complement the SPEAR network enabled miniature cruise missile, which is designed to precisely engage long range, mobile, fleeting and re-locatable targets in all weathers, day or night, in the

presence of countermeasures, obscurants and camouflage, while ensuring a safe stand-off range between the aircraft and enemy air defences.

The compact size of the SPEAR family allows four weapons to be carried internally in each of the two internal weapons bay of the F-35, or three per station on the Eurofighter Typhoon and for a high total weapons loadout of up to 12 SPEAR weapons. SPEAR-EW will keep the same form and fit as the baseline SPEAR to enable a single integration pathway and launcher solution.

DE&S secure new £177 million deal to support thousands of UK military boats

Pictured: A fleet of Offshore Raiding Craft which are one type of craft supported under the new Boats In-Service support agreement (Picture by LA(Phot) Joel Rouse)



DE&S has signed a new £177 million deal to support thousands of boats used by the UK's armed forces, safeguarding more than 100 jobs.

The Boats In-Service Support (BISS) agreement enables spares, repairs and maintenance for 115 different classes of boat – around 2,200 individual watercraft in total.

Boats maintained by the contracts provide essential support to the defence of the UK, including craft which support the Continuous At-Sea Deterrent and the Queen Elizabeth Class carriers.

The signing means essential equipment will be ready for use wherever and whenever it is needed.

DE&S Head of Commercially Supported Shipping (CSS) David Farmer, said: "These contracts have been awarded after a rigorous competition that drew on in-depth knowledge and understanding of the boats market-place, particularly here in the UK. The team has delivered world-class, efficient support at the very best value for the taxpayer.

"We will continue to develop our relationships with both our

The team has delivered world-class, efficient support at the very best value for the taxpayer

David Farmer,
DE&S Head of
Commercially Supported
Shipping

armed forces customers and trusted suppliers, to ensure that our boats play their part in helping to keep the UK safe."

The announcement of the contract was made by Defence Minister Anne-Marie Trevelyan at the DSEI conference last month.

She said: "Our armed forces rely on having the finest kit available and this multi-million-pound contract ensures the thousands of vessels used across the entire British military will be maintained and repaired to the exceptionally high levels demanded by our service men and women."

Contracts signed under the agreement include:

- Four contracts with BAE Systems worth a total of £112 million to support Royal Navy, Royal Fleet Auxiliary, British Army, Royal Marines and MOD Police boats, supporting 55 jobs in Portsmouth;

- Three contracts with Babcock worth a total of £49 million for support to boats based overseas and to training craft, supporting 27 jobs including those in Bristol, Dartmouth in Devon and Gibraltar;

- A £4.6 million contract with Griffon Hoverwork to support boats used by the Royal Marines, supporting 12 jobs in Southampton;

- A £4.3 million contract with Holyhead Marine to ensure the continued availability of boats essential to UK submarine operations, including the Continuous At-Sea Deterrent, supporting eight jobs in Holyhead and Faslane;

- Two contracts with Marine Specialised Technology Ltd, worth a total of £7.6 million, to support diving operations and to maintain inflatable craft.

By encouraging competition and bringing together multiple arrangements under one, easier-to-manage agreement, the BISS programme is expected to result in a saving of around £21 million for the taxpayer compared to previous support frameworks.

All contracts under the BISS will run until March 2026.

Users of MOD-owned boats include the Royal Navy, Royal Marines, British Army, Royal Fleet Auxiliary, Cadets, MOD Police and the Gibraltar security services.

DE&S hold successful Diversity and Inclusion Awards

Pictured: Chief of Materiel (Ships) Vice Admiral Chris Gardner presents Jenny Sandham with the 'Senior Leader of the Year' award (Picture by Charlie Perham)



A successful award ceremony has been held to celebrate teams and individuals at DE&S and the SDA making major contributions to ensuring the organisations are diverse and inclusive workplaces.

The awards took place as part of National Inclusion Week, which was opened on September 23 with a speech by DE&S CEO Sir Simon Bollom, who acknowledged the significant progress made by the organisation in meeting its diversity and inclusion targets.

A diverse range of speakers followed, addressing a range of issues that can affect workplaces including transgender inclusivity, reverse mentoring and gender-based abuse.

Three categories of Diversity and Inclusion (D&I) awards then followed with 'Personal Achievement of the Year', 'Senior Leader of the Year' and 'Network of the Year' all up for grabs.

Gold in the 'Personal Achievement of the Year' award, which celebrates individuals who demonstrated a high level of commitment to diversity and inclusion in our workplace, was won by Jenni Dawson-Marsh. Jenni was recognised for giving her own time to teach English to employees whose first language is not English. Her efforts provide these employees with the confidence to speak

We know that the conference, workshops and networking opportunities provided have reinforced the commitment of DE&S and SDA towards creating an inclusive culture

Zahoor Ahmad,
Head of D&I at DE&S

up, improve their writing skills and ensure smoother integration into their teams.

The 'Senior Leader of the Year' award, which celebrates D&I Champions who as role models and ambassadors have made a significant contribution to improving the D&I within DE&S and SDA, was won by Jenny Sandham for her active support of under-represented

groups within the staff population. She was nominated for significantly contributing to the implementation of the D&I Strategy and for making an impact beyond her team/function by partnering with the delivery of a Cabinet Office Work Experience Programme for STEM students from disadvantaged backgrounds.

Finally, the 'Network of the Year' award, celebrating the contribution of diversity network groups, was won by the Neuro Inclusivity Network for positively impacting the organisation in its desire to make DE&S and SDA a better place to work and gain better support. The network was also celebrated for developing a training package that provides administrative guidance for managers and colleagues along with advice and support for the workforce, which demonstrates an innovative approach to overcoming workplace barriers and has resulted in real benefits to employees.

Head of D&I at DE&S, Zahoor Ahmad, said: "Diversity is the mix. Inclusion is how we make the mix work. This has been an incredibly successful week for us as an organisation. We know that the conference, workshops and networking opportunities provided have reinforced the commitment of DE&S and SDA towards creating an inclusive culture."

Highly Commended Personal Achievement of the Year

Silver: Anna Walther - for being a strong role model for female engineers and providing guidance and advice for employees.

Bronze: Martin Raymond - for providing support and encouragement to others to overcome barriers.

Senior Leader of the Year award

Silver: Jo Osburn - for being a role model who positively challenged the Ships Leadership team to change the use of gendered language.

Bronze: Lieutenant Dave Kime - for demonstrating proactive leadership in providing numerous floorplate briefs on D&I which has positively impacted the organisation.

Network of the Year

Silver: Pride Network - for its success in influencing the leadership team to buy in to the request for Gender-Neutral Facility provision at Abbey Wood.

Bronze: MOD Women's Network - for positively impacting the organisation and the daily lived experience of employees by establishing new facilities at Abbey Wood.

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 **Lieutenant Colonel (Name Withheld for Security Reasons)**, Israeli Defence Forces


 **Dr Stanislav Rolc**, Chief of Division, Material Engineering and Active Protection Lead, Czech Military Research Institute

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MILITARY SPEAKERS INCLUDE:


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 **Lieutenant Colonel Richard Craig**, SO1 Coherence, Robotics and Autonomous Systems, British Army

 **Lieutenant Colonel Simon Routledge**, SO1 Land Systems, DSTL, UK MoD

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 **Mr John Crozier**, Technical Partner Urban Canyon Sixth Sense, DSTL, UK MoD

 **Mr Martin Hagström**, Deputy Research Director CIEDS, FOI Swedish Defence Research Agency

 **Mr Richard Hooper**, Principle Vetronics Engineer, DSTL, UK MoD

 **Colonel (Ret'd) Daniel McCormick**, Deputy PEO Operations and Modernisation, JPEO CBRND, US DoD

INDUSTRY AND TECHNICAL EXPERTS INCLUDE:

 **Mr Guy Davies**, Capability Manager - Vehicle Systems, Leonardo


 **Dr Manfred Salk**, CEO, Rheinmetall Protection Systems GmbH


 **Mr Antony Summerfield**, CEO, Tricis


 **Mr Matthew Aujja**, Senior Sales Manager, Pearson Engineering

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On delivery, a high-performing team and his love of country music

Colonel Michael Taylor is Chief of Staff for the Land Equipment Operating Centre and responsible for facilitating the delivery of the projects and programmes within it

What does your role involve?

I am the Chief of Staff for the Land Equipment Operating Centre (LEOC) and I am responsible for the running of the Operating Centre to support the delivery of the projects and programmes within it. I am also responsible for the customer interface with Army Headquarters (AHQ), no easy task, however the post is extremely rewarding and I have enjoyed my first 18 months. We have achieved a great deal in my tenure and I am confident we can further provide a more inclusive, coherent environment which will allow the Operating Centre to continue to deliver.

What about your role is exciting, rewarding or interesting?

The sheer range and complexity of the tasks makes my role extremely interesting, whether that be prioritisation of resource discussions with AHQ or leading with DVD 18 event for DE&S - no day is the same, which keeps me on my toes. What I find most rewarding is that my small part in DE&S helps soldiers, on operations, abroad or on exercise, conduct their roles more easily. I particularly enjoy a role that makes a difference to soldiers on the ground, knowing that our endeavours are helping in a small way to make soldiers' lives more bearable. Anything we can do to look after those that put themselves in harm's way on the nation's behalf receives my full attention. I thrive on making sure the Land Equipment Operating Centre does all it can to support

our people within the teams. It is the small details that can make such a difference, such as coffee machines in the kitchens or high visibility covers for laptop bags; they really make a difference.

How are you helping embed change in your area?

Life is all about continuous improvement and we experience it every day of our lives. Whether at work or in our own time we naturally drive to becoming better. That is no different in work and so for LEOC I have responsibilities for delivering certain strands within DE&S @21. Additionally, making sure my team and the Operating Centre respect all those we encounter and that we help others less capable than ourselves, we will not go far wrong. Change can be difficult for some to accept and the journey tends to have its frictions; I try where possible to minimise the friction and drive positive change to completion while reviewing the benefits to ensure they are realised fully.

Why did you choose a career in DE&S?

DE&S offers a great deal for all military, it is extremely dynamic, which provides opportunities not experienced in the military corridors of the Field Army. It also provides me with further professional development in the Capability and Acquisition field and strikes the perfect balance between work and home life, which I have not experienced in other organisations throughout my career. My favourite tippie is cider so where better to locate than to the West County?

What do you enjoy most about your job?

I love the balance between working with professional, enthusiastic people who are committed to deliver to the best of their ability and the fun on a day to day basis we have in doing so. I sometimes reflect on what more could the team give and continually conclude we are giving our all.

What do you enjoy in your spare time?

It has got to be spending every minute of my time with my wife Amelia and my two daughters. They are so much fun and leave me with little time to do anything else, although I do make sure I squeeze some fitness training in before I start a day's work. Weekends and holidays are for adventures although an occasional weekend of relaxation does appeal. I am also passionate about developing soldiers and am the Royal Logistic Corps Chairman for Rugby League, which allows me to indulge in being around soldiers and helping them reach their full potential.

What might surprise people about you?

I am a huge country music fan and love singing along to my favourite songs. If you ask me nicely I'll give you a rendition!

£31 million contract awarded to UK-based industry to support training in the armed forces

Pictured: CGI images of what a range of mounted and dismounted JFST simulators may look like (Picture courtesy of Ferranti)



A £31 million contract to provide a virtual reality suite of training equipment at multiple UK sites to the armed forces has been awarded by DE&S to Oldham-based Ferranti Technologies Ltd, the MOD has announced.

The Joint Fires Synthetic Trainer (JFST) will provide a new immersive capability for the Army, Royal Air Force and Royal Navy to train troops in realistic and complex environments that cannot be replicated easily using the defence estate.

Used in addition to live training exercises which troops take part in, both in the UK and overseas, the simulators have also been designed to reflect operations using the latest in-service equipment and weapons.

David Ball, Training and Simulation Systems Programme (TSSP) New Acquisition Section Leader at DE&S, said: "The team has worked extremely hard to successfully run a fair and open competition to procure a high quality technical solution, within budget constraints. We are proud to be enablers in providing the Army with a world-class training capability which will be a step

We are proud to be enablers in providing the Army with a world class training capability which will be a step change in Joint Fires training effectiveness

David Ball,
TSSP New Acquisition
Section Leader at DE&S

change in Joint Fires training effectiveness".

Developed by Ferranti, a subsidiary of Elbit Systems Ltd, the JFST will simulate operating environments ranging from the desert to towns and cities, assisting the delivery of safe and more cost-effective training for contemporary operations.

As well as providing training to individuals, the system will importantly allow members of the Army, RAF and Navy to train together collectively to best simulate the battlespace and enhance operational effectiveness.

The contract will sustain 30 jobs at the firm. It will deliver 19 systems to be used in training schools and units across the UK, including the Royal School of Artillery in Wiltshire and Joint Forward Air Controller Training and Standards Unit in North Yorkshire.

Director Land Equipment, Major General Colin McClean, said: "JFST replaces functions currently delivered by several stand-alone training systems, offering a coherent package which can be easily modified to reflect future changes to in-service equipment.

"This procurement will support the armed forces to maintain skills and cost effectively provide the latest simulated training environments, enabling our soldiers to train as if they were on the ground in a hostile environment and preparing them for today's battlefield."

The contract was announced as part of a speech at DSEI by Minister for Defence Procurement Anne-Marie Trevelyan.

The Minister said: "Virtual reality training allows our armed forces to plug in and immerse themselves in a myriad of battlefield scenarios. This pioneering technology allows our men and women to operate in confined urban areas, expansive deserts or thick jungles whilst situated safely in the UK."

The first set of suites is expected to be delivered in late 2021.



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Women in Defence Charter launched at DSEI

Pictured: Anne-Marie Trevelyan MP, Minister for Defence Procurement, launches the Women's Defence Charter at DSEI (Picture by Sgt Paul Randall RLC)



The Women in Defence Charter was launched by the Minister for Defence Procurement, Anne-Marie Trevelyan, at DSEI in London.

The Charter, which has been co-founded by DE&S Director of Commercial Improvement, Morag Stuart, and Women in Defence UK founder, Angela Owen, will encourage individual industries to work together to set targets that achieve the common goal of increasing the number of women in defence.

Focusing on making the defence sector an attractive industry to work in for women, the Charter looks to focus on retaining and supporting women into senior management positions where appropriate.

The key outcomes of the Charter will be in measuring the results at all levels across organisations, but especially at the most senior executive and non-executive levels.

Morag Stuart, who is also a DE&S Gender Champion said: "I rarely sit in a room with a senior woman present and coming from my role as DE&S Gender Champion, this is something I want to change.

I'm proud to be a part of making this initiative happen and look forward to how it will improve the way we support women in defence

Morag Stuart,
DE&S Director of
Commercial Improvement

"Angela and I have collaborated on setting up the Women in Defence Charter that will be fundamental to helping raise the profile of supporting more women to get into senior roles in defence. I'm proud to be a part of making this initiative happen and look forward to how it will improve the way we support women in defence."

This initiative has come from DE&S having been selected as one of the Government Equalities Office's five pilots to address the gender pay gap and look at some of the interventions that might be made to improve it. Alongside the Department for Business, Energy and Industrial Strategy and the Government Equalities Office who have all welcomed the initiative.

The Charter was signed by DE&S CEO Sir Simon Bollom during DSEI.

Sir Simon said: "DE&S is committed to having a diverse work force so I was delighted to sign the Women in Defence Charter as our organisation continues to move towards its goal of employing great people, delivering great programmes in a great place to work."

The Charter is following in the footsteps of other Charters such as the Women in Aviation and Aerospace Charter and the Women in Finance Charter.

Women in Defence UK founder, Angela Owen, who has been working alongside Morag Stuart at DE&S, said; "The Charter is about creating an environment that women want to join, where they feel they can thrive and where they want to stay. An environment that is better for women but better for men too. An environment of opportunity for all, that ultimately improves the output of UK defence."

Graham set to help DE&S deliver future capability

Pictured: Graham Finch heads up the new Future Capability Group (FCG) at DE&S (Picture by Charlie Perham)



DE&S is at the heart of providing new capabilities for the Armed Forces. Graham Finch, Head of the new Future Capability Group (FCG), talks to Desider about how it will help DE&S and Defence to be more agile and innovative in delivery and keep pace with technology development

The recent 50th anniversary of the lunar landings allows us to reflect on the challenge of balancing the desire for technical excellence and innovation with appropriate levels of risk. In line with the DE&S@21 vision and plan, DE&S needs to keep pace with technology and ever-changing threats, by becoming more agile and responsive in delivery and more open to innovation. New opportunities in autonomy, artificial intelligence and quantum computing, as well as providing protection against advanced cyber threats, will be key to our future contribution to Defence.

The ongoing Acquisition Transformation Programme has also identified the need to provide Capability Sponsors in the Front Line Commands (FLCs) with earlier acquisition advice, to better inform capability decisions and shape acquisition strategies. Other initiatives such as the "Spearheads", the Innovation Fund and the Transformation Fund are also aiming to accelerate

exploitation of technology and innovation and make step changes in capability, sometimes in areas in which DE&S has no current expertise. That's why, in response, the CEO asked us to create the Future Capability Group (FCG) which, with the help and support of all areas of DE&S, will be a self-contained team in the centre of DE&S.

FCG will build on the foundations of the Technology Office, with its experience in technology management, concept demonstration and experimentation. Unlike the Technology Office, which had a real technical focus, the FCG will be a stand-alone business unit, including commercial, financial, and programme management capabilities. This broader capability will allow us to better provide pan-functional acquisition advice to our customers. Employing a hub-and-spoke model, it will work collaboratively with experts across DE&S Domains and will be fully integrated into DE&S change and delivery processes.

FCG will build on the foundations of the Technology Office, with its experience in technology management, concept demonstration and experimentation

FCG will ensure DE&S is more integral to FLC capability development and will join up with the excellent initiatives already underway across DE&S to be more agile. This will improve the pull-through and exploitation of innovation and technology into acquisition and support. FCG will seek to tackle cross-cutting risk and opportunities and will act as an "incubator" for novel concepts and technologies. It will work to ensure that DE&S has the right skills and practices to enable it to deliver against

future requirements. FCG will also maintain DE&S' corporate links into Defence Science and Technology and the Defence Innovation Unit, seeking to improve exploitation of research and technology through more joined-up programmatic, technical and commercial planning. This includes helping to take forward the recently announced Defence Technology Framework and Innovation Priorities.

FCG launched with an initial capability on September 30, but won't reach its full potential overnight. It will take time to evolve, but I'm extremely proud to lead it and, alongside colleagues from across DE&S, help put cutting-edge, battle winning capability into the hands of the warfighter with confidence, agility and pace. We might not be shooting for the moon 50 years on, but with our current work on project ARTEMIS, a low orbit satellite capability demonstrator with the RAF, we are at least helping DE&S to deliver in space!

Warrior CSP completes initial 20 battlefield missions

Pictured: Warrior, photographed at the Armoured Trials and Development Unit in Bovington earlier this year, has completed 50 Battlefield Missions (picture Jack Eckersley)



The Warrior Capability Sustainment Programme (WCSP) has gone from strength to strength over the past 12 months, achieving three significant uncontested milestones.

Working alongside prime contractor Lockheed Martin, the DE&S WCSP delivery team have celebrated the completion of 20 Battlefield Missions (BFMs) and the first live crew clearance firing of a large calibre weapon on an Armoured Fighting Vehicle in 25 years.

WCSP will combine devastating 40mm armour piercing and airburst lethality with the ability to engage targets whilst moving.

It will deliver a fleet of upgraded Warriors which will be the corner stone of the modernised Armoured Infantry brigades; delivering a new turret system and cannon incorporating Closed Telescopic Ammunition technology; enhanced turret armour protection; 21st century electronic architecture; and improved crew and dismount briefing facilities.

With the completion of the first 20 Battlefield Missions (BFMs) within the Reliability Growth Trials (RGT), WCSP has

It is only through close collaborative working that projects get delivered and I and my counterpart in Lockheed Martin, are both determined to get good safe kit into the hands of the Army as quickly as possible

Marcus Bruton,
WCSP programme leader
at DE&S

achieved, on schedule, a significant strategic anchor milestone in its Demonstration phase. The BFMs were enabled by close collaboration between the DE&S delivery team, Lockheed Martin UK (LMUK) and the Army Trials and Development Unit (ATDU) at Bovington in Dorset.

BFMs are designed to test sub-system integration in all aspects of operational employment including silent running; cross-country manoeuvre; navigation; and crew-casualty evacuation. Critically, given the nature of the programme, the platform engaged moving targets from both static points and whilst on the move.

Concurrent to RGT, Live Crew Clearance, another significant project milestone, was achieved on schedule. This is on the critical path to WCSP Design Acceptance and will enable MOD personnel to crew the platform for future live firing events.

DE&S programme leader, Marcus Bruton, said: "It is only through close collaborative working that projects get delivered and I and my counterpart in Lockheed Martin, Lee Fellows, are both determined to get good safe kit into the hands of the Army as

quickly as possible."

Captain John Borley, WCSP Trials Captain within ATDU added: "The RGTs have demanded a significant number of hours and hard work from the integrated LMUK and ATDU team, including crew, safety staff and enablers". Valuable lessons were learnt about the system and the collegiate approach within the team resulted in noticeable improvements in reliability as the trials progressed.

Warrior CSP will now continue to progress through its remaining Battlefield Missions and Qualification and Verification trials on its way to entering service in 2023.

CEO Commendations

DE&S former winners: what it was like to win their awards and where they are now



Ajax Recast Negotiation Team

Richard Melia won a CEO commendation with the Ajax Recast Negotiation Team

Why was your team nominated for this award?

The Ajax programme had experienced significant technical and capability challenges which slipped both the trials and production schedules. The result was increased risk and dissociation between the contract and the actual programme. The Ajax programme is key to meeting Army Strike objectives and therefore is a high priority.

The Project Team entered into a set of negotiations and rebaselining activity with the contractor in 2017. Technical, commercial and programme areas were addressed over a two year period in a structured approach to get to a rebaselined programme

with commercial liabilities settled and a way forwards on critical technical challenges.

The award recognises the hard work, sound approach and stakeholder engagement to completing the negotiations and coming to a hard-won settlement which delivered value to tax payers.

This is the highest accolade a team can achieve within DE&S, how did it feel?

The team are immensely proud to have received this reward. As so many have worked long and hard to achieve the result it was an uplifting experience to receive the reward and know the appreciation of DE&S and the front line command.

What are your memories of the awards ceremony?

The ceremony was held in MoD Main Building in London

and was attended by a host of high achieving teams from amongst the organisation and the DE&S leadership team. After the introductions a citation was read out for each team, summarising the commitment and the positive impact they had made. Sir Simon Bollom shared his genuine and earnest appreciation for all that those who had worked so hard to overcome key challenges and give DE&S the strong reputation that it has. Afterwards, there was a shared lunch and an opportunity to network with colleagues and leadership.

What would you say to other teams hoping to be awarded a CEO Commendation?

There are many hard working and committed teams within DE&S and the CEO Commendations are a great opportunity to celebrate some of the incredible achievements that these teams have made. I

would say that if you are part of a team, or have observed one that has had a distinguished year, then it is definitely worth touting your successes and being put forwards for this award. At times of challenge we all have to pull that much harder and it is right and important to recognise and reward our teams for going the extra mile!

Have the team/team members built on their success?

Since receiving this award the team have refocused back onto delivery of the new programme established during the negotiations and are working diligently with the supplier to ensure progress to plan and solid Governance in line with the recent transformation initiatives.

HMS Prince of Wales has left the Rosyth basin marking a huge milestone in the Queen Elizabeth Class carrier build programme at the dockyard.

The departure, on September 19, from Rosyth to the anchorage in the Firth of the Forth was a remarkable operation with just 50 centimetres either side of the ship at the narrowest part of the entrance and was undertaken using nine tugs in support.

The ship remained at anchor in the Forth for three days to complete final checks before sailing under the iconic Forth Bridges at low tide on Sunday, September 22.

For the ship, this is the culmination of five years' construction work in Rosyth. The assembly phase began in No 1 dock in Rosyth on September 9, 2014, just weeks after the undocking of her sister ship HMS Queen Elizabeth.

HMS Prince of Wales was structurally complete in just over three years and was flooded up, undocked and moved to her fitting-out berth in the non-tidal basin on December 21, 2017.

In preparation for sea trials, the last few months have seen the completion of the testing and commissioning of most of the ship's systems and



Pictured: HMS Prince of Wales left Rosyth last month
(Picture by LPhoto Alex Ceolin)

accommodation. The first meal was served in July, enabling ships staff to move on board in August.

When fully operational, and with their fixed and rotary-wing aviation assets integrated, the two QEC carriers – HMS Queen Elizabeth and HMS Prince of Wales – will enable the UK to project unprecedented levels of power and influence on a truly global stage over the next 50 years.

Both aircraft carriers were constructed using a block build approach across six shipyards around the United Kingdom. The sheer scale of the carriers meant that no single yard was

large enough to build them in their entirety, making it one of the largest maritime build programmes in the United Kingdom. QEC Head at DE&S, Mark Dannatt CBE, said: “We have had a dedicated project team based in Rosyth and in Bristol who have worked towards this significant milestone for the duration of the QEC project. The QEC programme has overcome extraordinary technical challenges to block build the carriers from six sites across the UK. Delivering a project unique in its scale and complexity has taken the highest levels of project management professionalism,

determination and team-work HMS Prince of Wales will conduct extensive contractor sea trials for approximately nine weeks before entering her home port of Portsmouth later this year. The ship will be commissioned into the Royal Navy at the end of 2019. HMS Queen Elizabeth sailed out of Rosyth in 2017 and is currently deployed in Canada and the USA for the first operational tests with the UK F-35B Lightning II Joint Strike Fighter jets. This is ahead of full operations in 2021.

Director of Ships Acquisition at DE&S, Henry Parker, said: “The build of the QEC carriers has

been one of the most complex maritime programmes for DE&S. The departure of HMS Prince of Wales from Rosyth marks the culmination of many years hard work and dedication from DE&S personnel, working as a team alongside industry and naval colleagues.

“This remarkable and significant milestone and would not have been achieved without our highly skilled staff and I would like to thank everyone involved.”

HMS Prince of Wales sets sail from Rosyth

DE&S team procure new Thermal Imaging System to sustain Challenger 2 Main Battle Tank capability

Pictured: A thermal imagery camera has been identified for Challenger 2, pictured during unrelated trials at Bovington earlier this year (Picture Beth Squire)



A DE&S team have recently completed a series of rigorous trials to identify a thermal imagery camera that will provide the Challenger 2 Main Battle Tank with superior situational awareness during darkness and low visibility.

The trials, carried out as part of the Thermal Imaging Sustainment Project (TISP), resulted in DE&S' Vehicle Support Team installing a modified Catherine MP camera to improve the capability of Challenger 2.

The TISP system provides crews with a higher resolution picture for a longer duration and removes significant key servicing costs. The thermal imaging camera, produced by Thales, can also be integrated onto the Ajax and Warrior vehicles.

During trials the camera ran for more than 114 hours whilst still providing a clear sight picture. Daryl Lowrie, who managed the project at DE&S, said: "During trials, live firing and continued fielding the feedback received from the user community has been overwhelmingly positive. The TISP

During trials, live firing and continued fielding the feedback received from the user community has been overwhelmingly positive

Daryl Lowrie,
Thermal Imaging
Sustainment Project lead
at DE&S

system will enable Challenger 2 to continue to provide the power behind the Army's punch."

Staff Sergeant Adam Smiles, a gunnery instructor who supported and assessed the Royal Tank Regiment on their recent live firing period at Castlemartin Ranges, said: "When using the new TISP the picture was clearer and not only could you make out targets, you could also see with great detail vegetation, wildlife and freshly made vehicle tracks which of course could be fantastic when needed during operations. In summary the TISP is a much-welcomed piece of equipment by all."

Challenger 2 has been in service since 1998 and has proven its value in combat. It is currently deployed in Estonia. While its primary role is to destroy armour it also can engage both hard and soft targets and operate across a spectrum from high intensity conflict, counter insurgency to peace keeping roles.

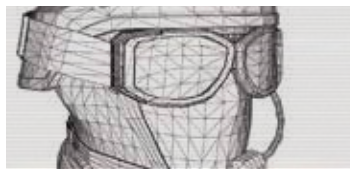
The vehicle is primarily equipped with an L30 120mm rifled tank gun, with a 7.62mm

co-axial chain gun and a 7.62mm pintle mounted general purpose machine gun also available.

Optical and thermal imager sights are provided for both the commander and gunner while the sighting systems, turret and gun are fully stabilised, enabling rapid target engagement when static and on the move.

Director Land Equipment at DE&S, Major General Colin McClean, said: "Challenger 2 is an excellent Main Battle Tank with an impressive operational track record. The thermal imaging system that TISP delivers will sustain that capability out to the delivery of Challenger 2 Life Extension Programme. I am delighted how well the customer, DE&S and industry worked together to make this project such a success, so I congratulate them all."

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Robust Global Navigation Systems contract placed

Pictured: R-GNS was one of several announcements made at DSEI last month (Picture by PO(Phot) Si Ethell)



DE&S has signed a contract worth £67 million with Malvern-based QinetiQ to provide the Robust Global Navigational System (R-GNS), Defence Minister Anne-Marie Trevelyan announced at DSEI.

An innovative step-up in assured capability to existing GPS receivers used in defence global GPS navigation systems for the armed forces, R-GNS will build on existing technology which serves the armed forces well, to deliver increased levels of capability that will greatly improve the resilience of positioning, navigation and timing in military environments.

R-GNS is innovative as it is designed to be small and light, and resilient to false signals and jamming threats. It will provide accurate assured position, navigation and time data to applications both at home and abroad and across defence equipment, including communication, missile and situational awareness systems.

Announcing the contract as part of her key note speech, Minister of Defence Procurement Anne-Marie Trevelyan said: "Whether it's soldiers conducting operations in remote environments or fighter jet pilots flying in contested airspace, our armed forces depend on

This exciting and innovative technology has been made possible through the close cooperation of engineers from DE&S, DSTL and QinetiQ

Tim Rowntree,
 Director Engineering and
 Safety at DE&S

satellite navigation technology.

"These state-of-the-art receivers will help to ensure our armed forces can defend UK interests wherever and whenever they are threatened."

The programme will develop hardware and software that will accept open source signals from any satellite-based navigation system, remaining effective in hostile environments, where jamming can become more sophisticated and prevalent.

Andy Hooper, DE&S Future Capability Group – Pre-Concept Delivery team leader, said: "This innovative technology will deliver resilient position, navigation and timing information to the armed forces.

"It is a credit to the Future Capability Group project managers, engineers and commercial staff, who worked closely with DSTL and QinetiQ to place this contract. I'm extremely proud of the cooperation of everyone to commence delivery of this important capability."

The R-GNS is designed by QinetiQ in their Malvern facilities. Over the course of the 10-year programme, the contract will create 70 jobs in QinetiQ, with an additional 25 jobs throughout the rest of the UK supply chain.

Tim Rowntree, Director Engineering and Safety at DE&S, said: "This exciting and innovative technology has been made possible through the close cooperation of engineers from DE&S, DSTL and QinetiQ. We have made rapid progress, and I'm very grateful to everyone involved for making this happen."

This capability will be available for other platform and weapon-system projects to exploit by integrating it into their navigation system designs.

It is planned that the R-GNS will be fully operational for use by the armed forces by 2023.

Anti-drone capability development announced at DSEI

Pictured: The research and development programme will explore technical mitigations to the current threats posed by hostile drones (Picture courtesy of Leonardo)



DE&S has selected Leonardo to support a multi-million-pound research and development (R&D) programme to better understand counter drone technology.

Building on previous R&D undertaken with the company in this area, Leonardo will support the RAF to explore technical mitigations to the current threats posed by hostile drones through the evaluation of mature and evolving sensor and effector technology.

Starting in early 2020 and supporting 20 jobs across the company, the primary integration work will be mainly undertaken by Leonardo at its Basildon (Essex) and Southampton sites, with real-time testing undertaken at several MOD locations within the UK.

The three-year programme will examine and inform how the RAF can detect, track, identify and defeat rogue drones. It will also support the RAF in responding to current and evolving threats and ensure it keeps pace with technology over time.

The primary aim of the R&D programme will be to help understand and inform

With the increase of small affordable aircraft widely-available on the open market and drone technology evolving rapidly, it is vital that our military are protected against the misuse of such aircraft

Tim Rowntree,
Director of Engineering and
Safety at DE&S

requirements for a potential future core RAF counter-drone capability.

Leonardo will work alongside the newly established Future Capability Group (FCG) at DE&S (see page 21), which has been set up to help DE&S and defence be more agile and innovative in delivery and keep pace with technology development.

Tim Rowntree, Director of Engineering and Safety at DE&S, said: "With the increase of small affordable aircraft widely-available on the open market and drone technology evolving rapidly, it is vital that our military are protected against the misuse of such aircraft. "This programme of work will undertake vital research and development on behalf of the RAF to explore the current threat posed by hostile drones and how this is likely to evolve in future, as well as evaluating a range of technologies that could form a future RAF counter-drone capability."

Announcing the programme at DSEI, Defence Secretary Ben Wallace said: "Last year at Gatwick and Heathrow we saw the peril drone technology poses to our airspace. Today I can announce that the RAF will be working

with Leonardo on a three-year programme, looking at how to detect, track, identify and defeat rogue drones as this technology continues to evolve."

60 second spotlight

"There are two things that may surprise people. The first is I had my chest and back waxed for charity"



Do you or someone you know deserve their 60 seconds in the spotlight?

Email
louisa.keefe101@mod.gov.uk

Bruce Moreton-Cox

Job:

Admin Specialist in Air Platform Systems (APS) and Public and Commercial Services Union Health and Safety Representative.

Your route into DE&S?

I was at RAF Innsworth working in the mail room then moved into the guardroom. Whilst there I applied for a job at Abbey Wood as the job description matched my skill set and came with a salary increase. However, when I got to Bristol I discovered the job came with further duties.

Your claim to fame?

I am a big Teardrop Explodes fan (an English Post-punk/Neo-Psychedelic band formed in Liverpool by Julian Cope in 1978). During a gig in Bristol I took a photo of Julian Cope

singing a song with a bag on his head and a Trading Post record shop Stroud, bag under his arm. He has used the photo in one of his autobiographies and I even got credited on one album as his archivist. I also collect autographs and have met many celebs and music heroes of mine.

Your advice to anyone?

Be nice to people and treat them as you would expect to be treated. I would also ask people to consider joining a union. Unions are not just about going on strike, they are here to make your working life better.

What do you do when you're away from work?

Listen to music and go to live concerts. I am also part of a community garden group and like to take part in quizzes.

What are you most proud of?

I have raised, with the help of my team, a lot of money for charity with Christmas and Easter raffles. I would say it must be in excess of £3,000 during the 11 years I have been here.

If you were sent to a desert island, what three things would you take with you?

My music collection as I could not be without it, milk, which is my favourite drink, and I'm sure a sharp knife or multi tool would be needed.

What irritates you the most?

Rudeness and problems with IT.

What is your favourite place in the world?

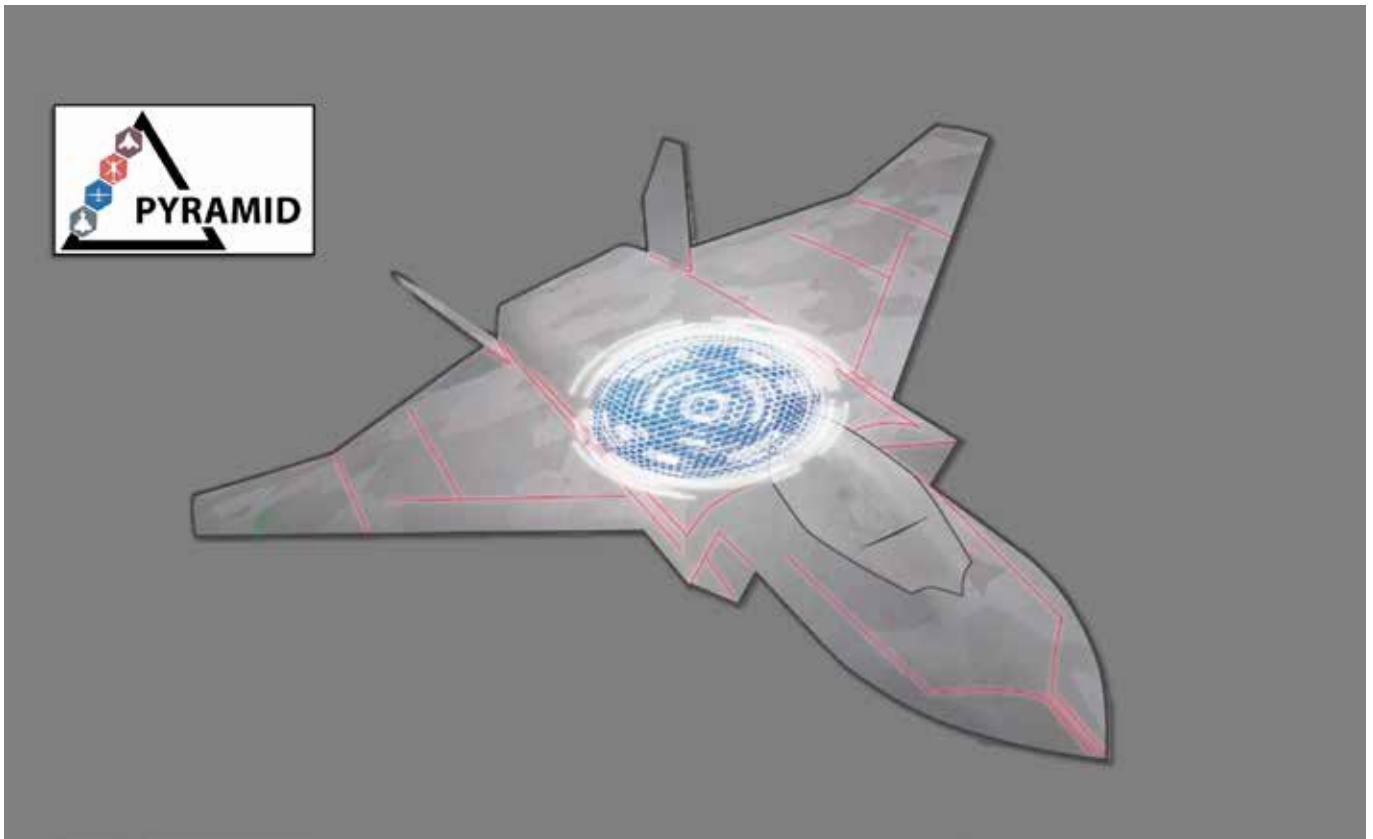
It would either be Cam and Dursley in Gloucestershire, where I have lived since I was six-weeks-old, or Gweek in Cornwall, where my gran had a thatched cottage that we would visit every year on holiday as a child.

What would surprise people about you?

There are two things that I think may surprise people. The first is that I have had my chest and back waxed for charity. I am also part of the DE&S Occupational Health Safety and Welfare steering group that aims to ensure DE&S is a safe place to work.

DE&S has key role in building a Pyramid for UK defence

Pictured: Pyramid aims to reduce the cost and complexity of software for current and future air platforms (Picture courtesy of Team Tempest)



DE&S is working with the Defence Science and Technology Laboratory (Dstl) and industry on a revolutionary project which aims to reduce the cost and complexity of software for current and future air platforms while improving their interoperability.

Mission systems software is becoming ever more complex and expensive. Technological advances mean software has to be rapidly adapted to respond to evolving threats and capability needs.

This is why the MOD is developing a reusable and open mission system architecture along with a suite of reusable, functional software components for current and future systems.

Known as Pyramid, this approach will make upgrades simpler and reduce software development costs, as well as the time it takes to implement capability enhancements.

It will also allow international development partners to develop their own software, capabilities and customisations while easily integrating their own mission systems.

Reflecting this huge potential, the UK is committing a considerable proportion of the £2

We see Pyramid as the future for air, and potentially for wider defence

Chris Melton,
FCAS Assistant Head
at DE&S

billion investment across Future Combat Air System Technology Initiative into developing Pyramid.

The project has now reached sufficient maturity to increase focus on the underlying business models and technical exploitation routes. The MOD's Combat Air Acquisition Programme seeking to replace capabilities currently provided by earlier models of Typhoon is intended to be one of the first new platforms to adopt Pyramid and is targeting an Initial Operating Capability by 2035.

Chris Melton, FCAS Assistant Head, DE&S, said: "We see Pyramid as the future for air, and potentially for wider defence. Our joint vision is to make Pyramid the standard for the UK, whilst gaining wide adoption across Europe. This will radically transform how the entirety of Defence can achieve and maintain capability advantage, at pace and affordably.

"Previously, Mission Systems software was bespoke to each platform, such as Typhoon or F-35 Lightning, and was not designed to be compatible with the wider platform portfolio. But through Pyramid, each software component will be compatible with multiple platforms across

Combat Air and Air Support."

The development of Mission Systems contributes significantly to the overall cost of a new air system, but the ability to re-use Pyramid software can dramatically reduce this cost. Ultimately, this will lower the overall cost of future air systems. Reduced whole life costs are also achieved by designing the architecture to rapidly accommodate functional updates, capability enhancements and hardware refreshes.

Team building, a sporting challenge and staff getting their hands dirty



A team of six military from DE&S and the Submarine Delivery Agency sailed a Joint Services yacht down to Alderney, via Cherbourg, as part of their annual Adventurous Training, a key benefit of the Regular and Reserve Forces employment package.

The mixed experience crew, which included members of the DE&S Soldier, Training and Special Programmes team, contended with electrical storms, cyclonic winds and on-the-fly equipment repairs during their journey back and forth across the Channel.

Missing the optimal tidal window through the Needles due to impromptu repairs to the boom, the team left

around 10 hours later than planned, meaning an overnight sail was needed, which resulted in a demanding second night on board for two new sailors.

Having made it safely across to Cherbourg the crew sailed for Alderney to learn about how the Channel Islands fitted into Hitler's Atlantic Wall - his attempt to prevent the Allies landing on mainland Europe - and to appreciate some of the undamaged fortifications left behind.

Another night sail took the crew northwards to Lulworth Cove, Dorset, before a steady passage back to Gosport, pausing briefly to take in the impressive Queen Elizabeth Class aircraft carrier moored in the opposite harbour.



Tony Rowley completed a gruelling sporting challenge to raise more than £500 for The Harry Johnson Trust – a charity he has supported for three years.

The Trust offers help and support to children and teenagers who receive care from the Oncology Team at the Princess Royal Hospital in Shropshire, which is located just two miles from Tony's desk at MOD Donnington.

It was established in 2014 by Harry's family following his death aged seven when he lost a nine-month fight with Double Hit Non-Hodgkin's Lymphoma.

On what is dubbed the 'Long Weekend,' Tony undertook a 100-mile cycle through Shropshire, 25 miles on a static rower and a 14-hour 50 mile walk along the Telford T50 50-mile Trail, during which he recorded an astonishing 104,813-steps.

Tony completed a planned 25-mile canoe paddle down the River Severn, postponed after the river burst its banks, four weeks later. The route from Shrewsbury Weir to Ironbridge took six hours and 30 minutes.

Tony said: "This incredible Trust is run by volunteers, relying on donations to fund its support to the children and their families. As such I was delighted to do my bit and be able to present a cheque to Harry's mum."

Ten Commercial officers from the C17 Command Support and Airborne Equipment project team at DE&S have enjoyed volunteering at a community farm.

The group ditched the comfort of their warm office and attended Grimsbury Community Farm in Kingswood near Bristol to muck in and help the farmer tend to his animals, repair buildings and generally give something back to their community.

As part of a team building exercise the commercial officers were soon reinforcing walls, painting side boards, building shelves and filling in holes in the concrete floors.

Those not so confident in their DIY skills set to work picking vegetables to be sold in the on-site café to help raise funds towards the running of

the community farm.

After a hard day's graft, the group were rewarded with feeding the resident pigs and thanked by farmer Michael O'Shea.

Volunteer Samantha Wall said: "It was a very rewarding day especially when we were thanked by the farmer who said there's always a need for more pairs of voluntary hands in order to keep the farm running. It was brilliant to feel like we had made a difference."



"I can't thank doctors enough" says Liann



DE&S employee Liann Wescott organised a bake sale to raise money for the Bristol Children's Hospital after staff saved her daughter's life.

Earlier this year Liann's daughter Hallie had brain surgery and encountered some major complications. The surgeons and their team worked incredibly hard to stabilise her condition and save her life.

Now Liann, a project manager in Land, and her husband are raising money for The Grand Appeal - a charity that aims to help the hospital save lives and supports sick children and their families during their time of need.

Liann said: "I wanted to give something back to the hospital. The staff work endlessly to help families

stay together and I can't thank them enough."

Liann was amazed at the amount of cakes she received, including the brilliant Wallace and Gromit cake – the two Aardman animated heroes who spearhead the charity. In total, a fantastic £637.20 was raised.

Liann's husband also completed a Tough Mudder wearing a weighted vest, and the couple have raised more than £2,500 to raise awareness of the amazing work the charity does and say thank you to the surgeons and Neurophysiology Department.

MOTTO the MOD Lottery June winners

£10,000	Angela Nolan, Cheadle Hulme
£2,500	Paul Roberts, Donnington
£1,000	Helen Peterson, Bristol
£500	Michael Powney, Bristol
£250	Jennifer Fear, Warminster
£100	Deborah Duffett, Andover
	Angus Hay, Inverness
	Karen Campbell, Pirbright
	Ian White, Faslane
	Andrew McIntyre, Bristol
	Stephen Cornwell, Feltham
	Lilian Cartmill, Glasgow
	Susan Daysh, Winchester
	Rose De Freitas, Oxford
	Amanda Knowles, Corsham
	Zoe Pudlo, Bristol
	Alan Scanlon, Plymouth
	Delorisa Menns, Birmingham
	Daniela Divito, Fareham
	Linda Graham, Andover
	Neil Asbridge, Liverpool
	Adrian Nash, London
	Sally Stonehouse, Gosport
	Anne Donnachie, Coulport
	Marcia East, Bicester

Mark Champion, site manager at Defence Munitions Gosport, marked 25 years organising an annual golfing match by leading his team to victory.

Mark has been central to the ongoing success of the Bartlett Trophy challenge golf match against the Mayor of Gosport's Golf Society since 1994.

Donated to the Royal Naval Armament Depot (RNAD) – now DM Gosport - in 1989 by Bartlett's Newsagent, the trophy is played for at Stokes Bay Golf Club.

Only once, in 1999, has the match been played elsewhere, when Mark, as Captain of the Golf Society, elected to play the match on the newly built 9-hole golf course that had been constructed in the Frater Area of DM Gosport.

Last year a competitive duel between DM Gosport and Mayor of Gosport's teams saw the Mayor's team win on the last hole so this year was sweet revenge.

Mark said: "It was a hot sunny day and our team proved too good on the day with DM Gosport winning three out of the four matches. I and my golfing partner Jim Brotherton were both lucky enough to seal our win on the 18th hole."



Case Study

Lisa Young, Business Change Manager within DE&S, gives her insight into some of the benefits of working for the organisation

Name:

Lisa Young

Job title:

Business Change Manager

How long have you worked for DE&S?

I started with the Defence Procurement Agency in 1999 so have been with DE&S since its inception in April 2007.

Why did you choose to pursue a career in DE&S?

For the variety of job opportunities, potential for career advancement and professional development. I've been lucky enough to be promoted four times and had roles within project management, HR and change management.

What does your role entail?

It's two-fold, firstly to establish a change management approach for DE&S and promote the use and value of change management to help embed changes in DE&S; and secondly a bit more 'hands-on' supporting major change programmes, using change management tools and techniques, to support people on their change journey. Ultimately, it is about helping the major changes that DE&S are undergoing to successfully land in the business and become 'business as usual.'

What are the opportunities to develop and progress within your function?

Change management is about to become a much more recognised discipline across the Civil Service and MOD, with a new Centre of Excellence just standing up in MOD Main Building – I'm fully involved in sharing our DE&S good practice and our DE&S Approach to Managing Change to help set it up. I have also been encouraged and fully supported

to get formal training and professional qualifications in my field.

What do you most enjoy about your job?

The relationships with people. There is a real buzz when you can help people move from denial on their change curve to a place of acceptance and support. The most successful way to do that is to listen to their concerns, talk about the expected benefits of the change and how they will be supported through it and beyond. It only works if you speak with honesty and integrity or else you won't be believed. Change is often scary.

What's your ambition?

For DE&S to be recognised as a champion of managing change well. Personally, I want to be a leading light in making that happen.

What's your greatest achievement in your role to date?

With my colleague Al Collar, together we created the DE&S Approach to Managing Change, which is not only being used across DE&S to great effect but has also been adopted and further developed for use by MOD-wide and will potentially be rolled out across Government.

Why would you recommend DE&S to others as a great place to work?

The wealth of opportunities to do different types of roles, take up new learning opportunities and develop new skills, or you can bring your existing knowledge and experience and be a specialist in a single role for many years – I prefer the former, but both are accepted and valued.

What are the social benefits of working for DE&S?

Well I met my wife here! About 15 years ago and not through our working lives necessarily (she's an aeronautical engineer) but through playing sport at Abbey Wood. We met at MOD Sports Day on a hockey pitch but have played football together for many years since. Also, great laughs competing in football and rounders competitions at the CSSC Games and several years at the MOD 10-pin Bowling Championships, although not particularly successfully!



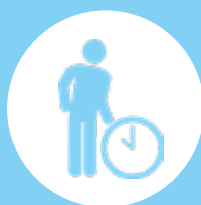
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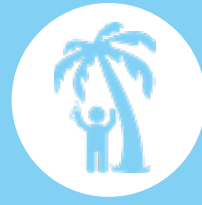
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