

desider

the magazine for defence equipment and support

Mar 11 Issue 34



MINISTRY OF DEFENCE



Typhoon clocks up the hours

Lord Levene delivers his first MOD reform [See inside](#)



Specs appeal



Sentinel shines



Corsham's global reach



Testing, testing



Finding the range



cover image

Typhoon, pictured above on take off at RAF Leuchars, has now passed the significant milestone of 100,000 flying hours across the six air forces who operate the leading edge combat aircraft. There are more than 260 aircraft in service with the air forces of the UK, Italy, Germany, Spain, Austria and Saudi Arabia

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32 Typhoon clocks up 100,000 hours

Typhoon aircraft have passed 100,000 hours in service with six air forces across Europe and Saudi Arabia. In the UK, the RAF works with DE&S and BAE Systems to ensure Typhoon is available for protecting and defending national air space.



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Bernard Gray

Chief of Defence Materiel



'The Government has indicated that it does not intend to shrink the UK's strategic ambitions, whatever the current economic difficulties'

clearly said that it will not be able to maintain staffing levels in military or civilian areas, and early release schemes are planned.

None of this makes it any easier for everyone to feel great about coming to work, and it is hard when you are unclear about your future career. Many of you have asked me, both individually and in groups, for guidance about the way forward within DE&S, to help you shape your decisions about what you choose to do in coming months.

Unfortunately, I cannot be as clear as I would like to be, because not all of the issues are yet clear, but I can say this. Some of you may feel that the time is right for you to change direction, and I respect that. But for those of you who wish to stay with the great defence family, there will continue to be great challenge, excitement, and opportunity.

The UK will remain one of the foremost military powers in the world, staffed by the most dedicated, skilled, highly trained personnel, with among the most sophisticated equipment available anywhere. The Government has indicated that it does not intend to shrink the UK's strategic ambitions, whatever the current economic difficulties.

That offers the long term prospect of exciting careers and the opportunities for meaningful service. There will be turbulence ahead, we can all see that. But there is also life beyond that turbulence, and I would like to work with all of you to create that future DE&S through our Conversation on Change. It is our chance to shape our future.

Since I last wrote a *desider* foreword to you, I have held another set of town hall meetings in Abbey Wood, visited Information Systems and Services at Corsham, PJHQ at Northwood and the Atomic Weapons Establishment at Aldermaston, met my opposite number in France, worked with Defence Board colleagues in Main Building on next year's budget and the Investment Approvals Board on projects, started work on our Conversation on Change in Abbey Wood, and been for my first encounter with the Public Accounts Committee.

It's been a busy few weeks, and my one regret is that I have not had enough time to wander the floorplates and get to know more of you informally. I hope to set that straight in coming weeks and months, but in truth, I don't see the pace slackening off for quite some time.

There is a tremendous amount of change running through the MOD at the moment. The implementation of the SDSR, grappling with the implications of the MOD's budget settlement in shaping what resources we have and where we apply them, working with Lord Levene's Defence Reform Unit which may fundamentally reshape the way the department is organised, and trying to deliver on our core job of supporting our Armed Forces on operations and in training, and delivering their new equipment is hugely challenging for us all.

As well as being incredibly busy, I recognise that this is also a time of great uncertainty for many people. In a time of great change, one of the few certainties is that the MOD has

NEWSREEL

FSTA passes fuel test

THE Airbus Military A330 has successfully passed fuel to receiver aircraft using the Fuselage Refuelling Unit (FRU) for the first time – meaning that all of the aircraft's refuelling systems have now been demonstrated.

In a three hour sortie from Getafe near Madrid on 21 January, the Future Strategic Transport Aircraft variant for the RAF conducted a series of 'wet contacts' with two F-18 fighters of the Spanish air force at around 15,000ft and up to 325 knots.

The FRU is a probe and drogue similar to those fitted under the wings, but with a higher rate of fuel transfer, and which is also developed and supplied by Cobham of the UK.

Deterrent taking shape

REPLACEMENT Vanguard submarines will be powered by a pressurised water reactor, as was the case with previous classes of submarine, Defence Secretary Dr Liam Fox has announced. Precise configuration of the reactor is under consideration as part of the Initial Gate decision. Specialist high strength steel needed for the hull structure for the first boat is included as a long-lead item in the Initial Gate business case for the programme, he added. This is due to the length of time needed for the mill run. The order must be placed prior to Main Gate in order not to put at risk the in-service date.

Prime Minister puts C-17 seal on Afghan airbridge



Above: one of the RAF's fleet of seven C-17s

Left: Mr Cameron on board the latest C-17 which has arrived at RAF Brize Norton

Below: meeting RAF personnel



PRIME MINISTER David Cameron has welcomed the seventh C-17 transport aircraft to the RAF.

Mr Cameron was at RAF Brize Norton for the arrival of the aircraft which will bolster the airbridge between the UK and front line operations.

Mr Cameron said: "What I am looking at today is the investment that we're making to make sure that we succeed in Afghanistan, and make sure we have got the very best airbridge between Britain and Afghanistan."

"This aircraft can carry three Apache helicopters, or take a whole Chinook helicopter."

"It's a very efficient piece of equipment and it's very good news that we are investing in this – evidence that we're giving our Forces the capability, the flexibility and the mobility that they need to do the job that we ask them to."

"It's lovely to be here and say thank you to the people who are here working very hard to make sure the airbridge between Afghanistan and Britain is open and working well."

The C-17 can carry loads up to 70 tonnes and will join six other aircraft which make up the RAF's 99 Squadron.

Defence Secretary, Dr Liam Fox, said: "The RAF's C-17 fleet has provided outstanding service in support of operations and humanitarian relief efforts around the world."

"The fleet has already clocked up an impressive 65,000 flying hours during its missions. The C-17 is a real workhorse in the RAF fleet."

Estates sees Lord Levene deliver his first MOD reform

A SINGLE organisation to manage defence property has been created which will deliver better strategic management of the military estate, as well as savings of £1.2 billion over the first four years.

The Defence Infrastructure Organisation (DIO) will bring together all those working on estate and infrastructure activity from across the MOD.

This is the first change by the Defence Reform Unit under Lord Levene to overhaul the structure of the department.

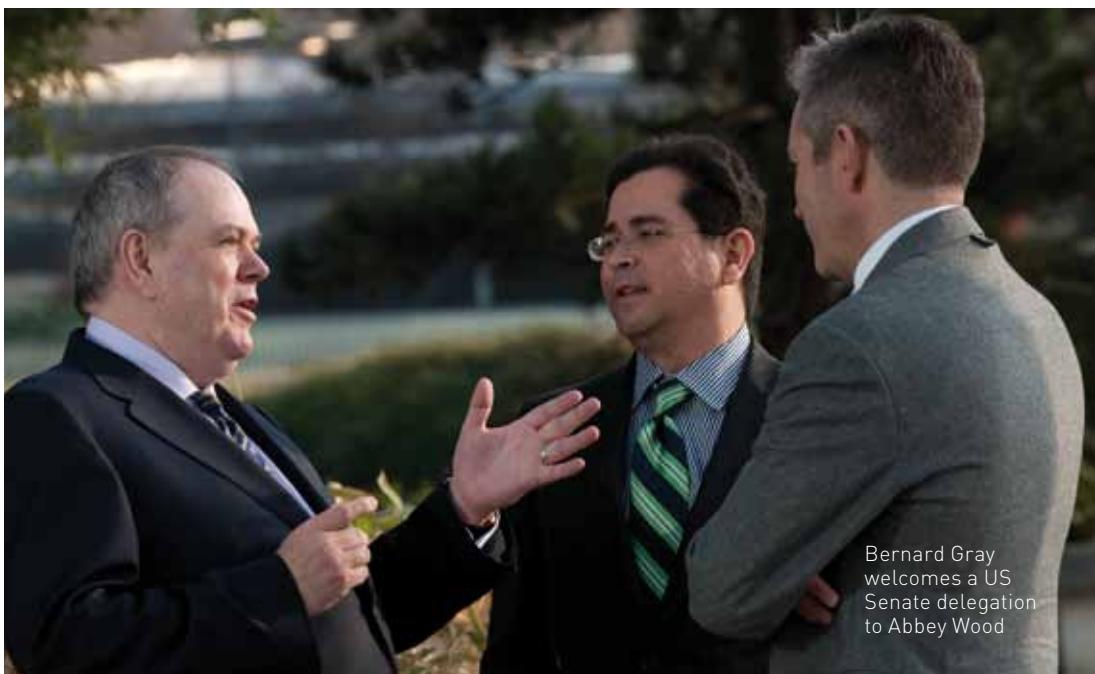
Defence Secretary Dr Liam Fox said: "Our Armed Forces and their families deserve the best possible facilities in which to live, work, and prepare for operations, within the current financial situation."

A single infrastructure organisation will provide effective support to our military personnel and better strategic management of the defence estate."

The new organisation will manage the majority of infrastructure services across defence and take on the estate management responsibilities of its predecessor Defence Estates, overseeing the physical maintenance of buildings and equipment including support services, such as cleaning and catering, as well as energy and water for the estate.

From 1 April, DIO will bring together roughly 7,000 staff, the vast majority of whom are civilian.

The MOD expects a reduction of about 2,500 posts by 2014.



Future DE&S structure is still in the pipeline

DE&S IS a fundamental part of what the MOD does. And there will be rewarding careers for those who remain with the organisation when it emerges from its restructuring.

These were two of the main messages to staff from Chief of Defence Materiel Bernard Gray at his latest town hall session at Abbey Wood on 14 February.

"We are the intelligent customer group for the MOD, we manage the risk and the supplier base in delivering materiel for defence needs. I think that is an important role and goes beyond brigading contracts," he said.

"If our supply base messes up we end up with the problem. If the supply base promises to deliver and then fails to deliver then it's our problem and not just theirs. We have a role to play to reduce risk. We also need to manage risk, individually and collectively. This is an area of potential development for us."

Another area for change was the way that MOD approached the overarching equipment budget, he said. Planners tended to collate optimistic views of pricing and the funding across large numbers of projects, without taking fully into account the impact of aggregating too much activity at one time. The problem was at the aggregate level, not at the individual project level, he said.

Mr Gray said he hoped an informal consultation document would be published in about three months, based on conversations with staff now under way, and the intention was that by late spring there would be an overall vision of what the future DE&S would look like.

"It is still a time of particular uncertainty – it's a very difficult time for defence overall. People want me to say that there is some clarity and certainty and whether we can understand where we are going," he said.

'I think there will be some interesting and exciting careers here'

"The problem I have to report back is that very few of these positions have been resolved. It is unsettling for everyone because of the uncertainty of our direction of travel."

Mr Gray thanked those who attended a week of focus group sessions last month. "We asked you what DE&S was for. I actually think that is fundamental – unless we are clear about what we do and what we don't do it will be difficult for us to focus

our efforts," he said. "There were a number of common themes. What is the vision from the top? You also wanted to know the senior management thought processes. I understand that.

"You wanted to know about the future of the MOD and DE&S and our place in that. There is an Early Release Scheme that is intended to begin the process of staff reduction. I am conscious that people's decisions in light of this have a bearing on the future organisation's role."

Mr Gray said he had appointed Maj-Gen Chris Deverell to work with Head of Business Change Rachel Baguley, and the Chief of Staff on determining what the future DE&S structure should be.

"When we know what the organisation will look like I think there will be some exciting and interesting careers here," he said.

"The defence budget is out of balance; there will be a significant job on our hands to get it back in balance.

"But there will continue to be substantial Armed Forces in the UK which will still need to be supported by DE&S and that's not going to go away. This is an opportunity to participate in creating that organisation. It will mean change, but we will end up with a stronger organisation at the end of it."

NEWSREEL

Contracts beef up Bowman

THREE contracts have been signed with General Dynamics UK to help Bowman users operating in Afghanistan increase their ability to counter the threat of improvised explosive devices through better information sharing. With a value of £33 million, the three contracts will provide:

- Improved connectivity between Forward Operating Bases and Patrol Bases.
- Improved tactical situational awareness
- Improved shared situational awareness

"These latest contracts demonstrate that our customer has every confidence that Bowman is doing the job we promised it would, and it is the platform from which many other operational advantages can and are springing", said Andrew Browne, vice president of C4I at GD UK.

F-35 tests moving on

BAE Systems' new F-35 Lightning II test pilot Peter Wilson has become the first non-US pilot to fly the Carrier Variant of the aircraft, the UK's chosen F-35 variant. BAE Systems are playing a key role in the F-35 flight test programme.

"Flying the F-35 felt exactly like it does flying the simulators I have trained on for the past five years," he said. "This really is testament to the work that has been done in terms of modeling and simulation and it gives me huge confidence, not only in the aircraft but in the training package that precedes it."

NEWSREEL**Final end of the Harriers**

THERE are no plans to retain the retired Harrier aircraft as a reserve or an emergency capability, Minister for Defence Equipment, Support and Technology Peter Luff has told MPs. "The Harrier fleet is currently in storage and is receiving minimum maintenance including anti-deterioration measures to keep the aircraft in an airworthy condition for possible sale," he said. "It is too early to say what the final disposal arrangements will be and any associated storage costs will be considered as part of that process."

Contract value

FROM 12 May last year to 31 December, 1,401 MOD contracts started which exceeded the EU public procurement threshold of £40,000, to a total contract value of up to £3.8 billion. Of these, 804 had been let non-competitively, with a total value of up to £0.9 billion, according to figures released in Parliament. Figures are not yet available for this year.

Reissue

JSP 520 – the MOD's safety and environmental management of munitions, has been reissued in two parts, policy and guidance leaflets. JSP 520 addresses the five main elements of a management system – policy, organisation and arrangements, planning and implementation, measuring performance and audit, and performance review. Details of the updates can be found by typing JSP 520 in the Defence Intranet search panel.

Grizzly comes in from the cold!

AIRBUS MILITARY'S second A400M development aircraft – Grizzly 2 – visited Kiruna in northern Sweden for four successful days of cold weather trials on the powerplant in temperatures down to -21 degrees Centigrade last month.

The A400M was accompanied by an Airbus

A340-300 carrying support equipment and the personnel team. These tests followed preliminary cold weather work in Hamburg last December and will be followed by further tests in more extreme temperatures at Kiruna and other places this spring and next winter.

New food hits the spot

'Quick, easy and well thought out for the needs of the soldier'

New food tested by its severest critics – front line soldiers

Report:
Hannah Swingler

TROOPS ON the front line have given a thumbs-up to new improved operational ration packs, including a lightweight version and a host of new menus.

Designed for troops on patrols lasting 12 hours or less, the new lightweight pack weighs less than one kilogram. It includes food that can be eaten quickly on operations or conveniently carried in webbing pouches and pockets.

The food is being delivered under a £140 million contract signed with Hampshire-based Purple Food Services, unveiled in **desider** before Christmas.

The latest meals feature new selections of food in the multi-climate ration packs as well as the ten-man versions used by

military chefs feeding troops in more remote tactical bases.

Private Ryan Salmon from D Company, 2nd Battalion The Parachute Regiment, said: "The new 12-hour ration pack is a great change from the normal rations.

"It contains beef jerky and a sandwich which is great for a quick meal, the chemical water heater and main meal are good when you are on short ops; and you can get a quick warm scoff and not worry about messing around with a cooker."

Private Shaun Stranack from Support Company, 2nd Battalion The Parachute Regiment added: "The new 12-hour ration packs taste great, are quick, easy and efficient and the contents have

been well thought out for the needs of the soldier."

Every ration pack is nutritionally tailored to suit troops' needs in different environments and developed to ensure they are provided with the 4,000 or more calories a day they need to keep their energy levels up while on active service.

Captain Jeremy Rigby RN, head of DE&S' Defence Food Services, said: "This demonstrates our ongoing commitment to respond to feedback from our troops in Afghanistan. We are making sure we give them food they enjoy while maintaining the high nutritional content – as well as making the packs as light and convenient as possible."

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NEWSREEL**Carriers count their crew**

THE number of crew members currently planned for the carrier variant-configured *Queen Elizabeth* class carriers is 760, responsible for running the ship and its systems. The number of additional air wing personnel will vary according to operational deployment and the aircraft on board at the time, Armed Forces Minister Nick Harvey has told Parliament.

MRA4 disposal

NIMROD MRA4 aircraft are being dismantled by Metal and Waste Recycling Ltd, one of the contractors used to dispose of surplus defence equipment in accordance with European Union procurement regulations, Minister for Defence Equipment, Support and Technology Peter Luff has told Parliament.

Tank crossing

COSTS of work on tank crossings as part of the project to provide safe access for military vehicles across Salisbury Plain's training area will be around £2.4 million, excluding VAT, according to figures in Parliament.

Abroad on ops

THE 9,500 service personnel in Afghanistan at the end of January made up the bulk of those deployed overseas on operations, according to the latest figures. There were 1,300 at sea, 150 in Bahrain, 30 in Cyprus, 100 in Iraq, 450 in Oman, 150 in Qatar, 1,500 in the South Atlantic and 50 in the UAE. Figures, fluctuate daily and are in addition to Forces permanently abroad.

More joined-up thinking from carrier builders



Now you see her: the first two giant sections are prepared for moving together

CONSTRUCTION OF the first of the two new aircraft carriers for the Royal Navy, *HMS Queen Elizabeth*, has taken a huge step forward as workers at BAE Systems' Govan yard moved two giant sections of the hull together for the first time.

The structure is so big that it fills an entire hall at Govan and now extends beyond the doors onto the yard, providing a spectacular view from across the River Clyde.

It took a team of 20 staff and

remote controlled transporters an hour to move 1,221 tonnes of steel over 100 metres across the shipyard.

The hull section was then manoeuvred carefully into position to line up with the rest of the block.

The two sections brought together form the mid section of the hull up to the hangar deck and is referred to as Lower Block 03.

Workers will now continue to outfit the block, which on

completion will weigh more than 9,300 tonnes and stand more than 23 metres tall, 63 metres long and 40 metres wide.

She is set to embark on the next stage of her journey to Rosyth in the latter part of this year, where *HMS Queen Elizabeth* will be assembled in the dry dock.

BAE Systems is also constructing the main stern section at its yard on the Clyde, which is the largest and most complex section of the carrier.

Stores play big part in carrier programme

A WAREHOUSE near Glasgow is playing a crucial role storing around 3.5 million internal fittings and other equipment before installation on the *Queen Elizabeth* class aircraft carriers. Since the facility – the Central Warehouse run by Wincanton Logistics – went live last May, more than 950 deliveries, covering nearly 3,000 different line items (or 3,522,155 separate items) have been received.

The warehouse covers 150,000 square feet, consisting of a large area of racking and a bulk storage area for larger items.

Around 75 per cent of the warehouse's capacity has been used, storing everything from high-

tech electronic components to fire fighting equipment.

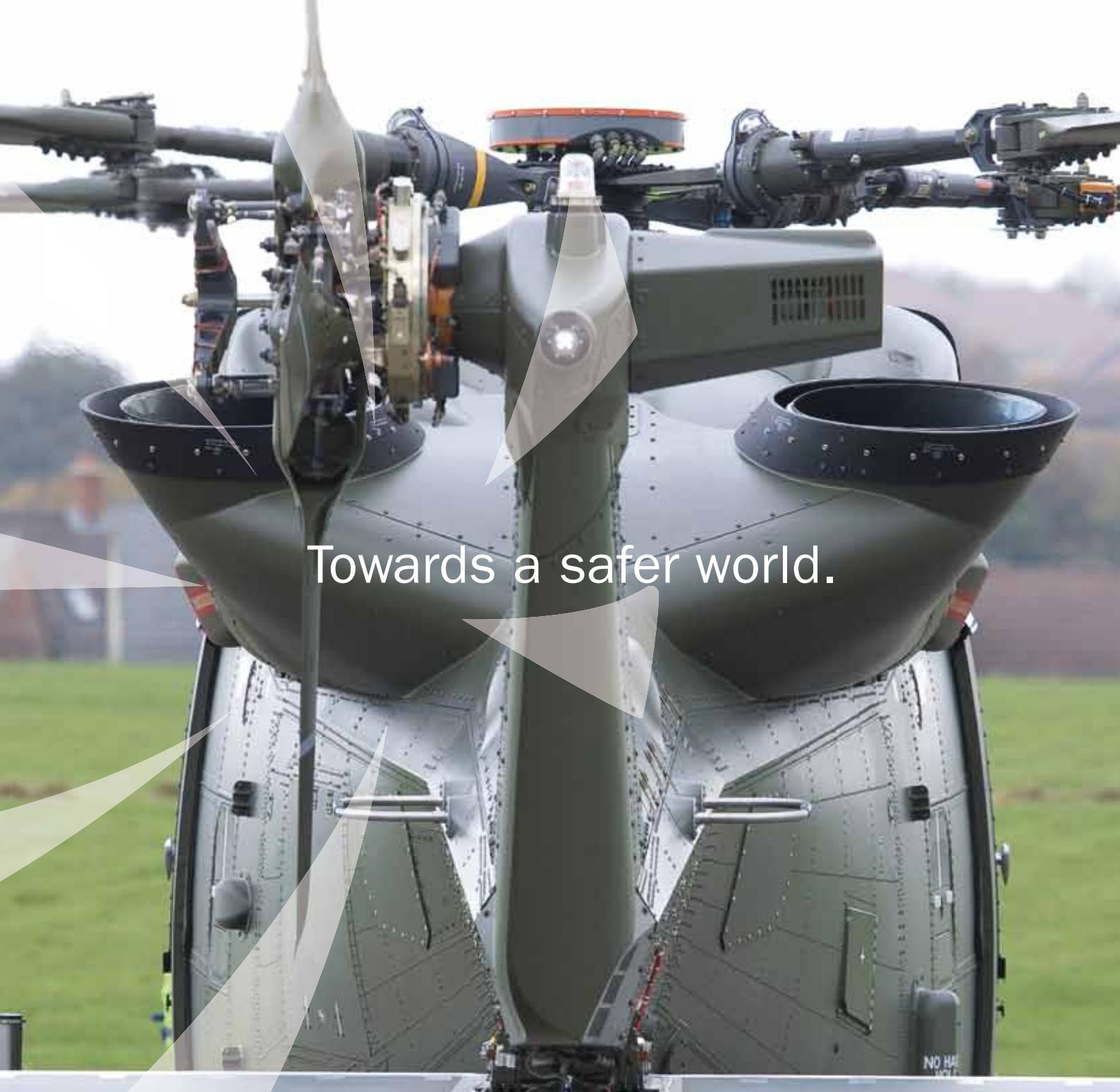
The equipment is supplied to all shipyards involved in the build programme – Appledore, Birkenhead, Govan, Portsmouth, Rosyth and Tyne – as required.



□ Score Marine will supply and manage around 12,000 valves of various types and specification for the new carriers.

As part of the Score contract, Rotork will supply more than 1,200 valve actuators, mostly for the operation of ball and butterfly valves on duties encompassing sea water, fresh water, chilled water, fuel and fire-fighting systems.

□ Brand-Rex will provide a complete fibre communications infrastructure for the carriers. The company's fibre optic network will provide the robust infrastructure for all IP based communications requirements – from voice and data systems to sophisticated aircraft deployment.



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Delivering greater capability...

Three AW159 Wildcat pre-production development aircraft are now conducting extensive flight trials

The first production aircraft is on schedule to fly by April 2011

The AW159 Wildcat Programme remains...

...on time and on budget.

NEWSREEL**Company expands**

MARITIME design and engineering company BMT Group is set to broaden its capabilities in the Asia-Pacific region with the acquisition of port and harbour engineering specialists, JFA Consultants of Perth, Western Australia.

Going it alone

THERE are no plans to involve other nations in the Combined Joint Expeditionary Force of France and the UK, according to Defence Secretary Dr Liam Fox. Exercises aimed at increasing levels of interoperability between the two country's forces are planned this year.

Armour boost

THE next planned update to body armour will be through the Virtus programme currently in its assessment phase, Minister for Defence Equipment, Support and Technology Peter Luff has announced.

Union talks

DEFENCE Undersecretary Andrew Robathan will continue to lead talks with trades unions over civilian personnel reductions. Further meetings with the unions were scheduled for the end of last month.

Gen Parker

In a story on page 14 of February's *desider* magazine we inadvertently misspelt the name of Commander in Chief Land Forces General Sir Nick Parker. We apologise for any embarrassment caused.

Final range-finding units delivered ahead of target

THE FINAL batch of SSARF (Surveillance System and Range Finder) units have been delivered to DE&S two months ahead of programme schedule.

The last units were handed over by Thales UK to Colonel Bill Pointing, leader of the Dismounted Soldier Systems (DSS) team.

A total of 707 SSARF units have now been built at Thales UK's optronics facility in Glasgow under the terms of a £30 million contract awarded in February 2008.

Despite an aggressive delivery schedule, the Thales programme, engineering and manufacturing teams, all working closely with their counterparts at DE&S, have successfully concluded the prime equipment element of the contract.

Col Bill Pointing said: "The SSARF project has been a great success; Thales and the DSS team have incorporated the experience of delivering the earlier Surveillance and Target Location System urgent operational requirement into this important programme and delivered excellent kit early, which the user is already exploiting on operations."

SSARF units are the size of a large pair of binoculars and used in a similar way. They combine



Colonel Bill Pointing of DE&S accepts one of the last batch of SSARF units from Stuart Boulton, left, managing director of Thales UK's optronics business

daylight and thermal vision with eye-safe laser range finding while embedded military global positioning satellite and azimuth angular referencing provide accurate target location data for mortar and artillery fire control.

SSARF has now been deployed operationally and is providing UK troops with an ultra-lightweight, compact, multi-role, night vision target locator capability.

Alex Cresswell, in charge

of Thales UK's land defence business, said: "Delivery of the final SSARF units ahead of schedule amply demonstrates what can be achieved when companies such as Thales and the MOD work together in close co-operation.

"Ultimately, Thales' goal is to provide troops with reliable, leading edge and affordable equipment and we are delighted the SSARF units are now achieving this operationally."

Diamond swings back to the Clyde



Diamond, the Royal Navy's third Daring class destroyer, made a return to the River Clyde last month.

The 7,500-tonne warship made her way to Loch Striven to make a brief refuelling stop before continuing her journey round the top of Scotland.

She was en route to Aberdeen, the city with which she is affiliated.

The Type 45 destroyer is currently undergoing sea trials before she is formally commissioned into the Royal Navy in May.

Diamond was built in the Govan shipyard on the River Clyde and was launched on 27 November 2007.

The ship was accepted off contract at Portsmouth last year and is expected to enter service in 2012.

BRITISH TROOPS will be able to improve their shooting skills using the latest generation of live fire training equipment.

DE&S has signed a £37 million contract with Lockheed Martin UK to deliver the Small Arms Range Targetry System (SARTS), which will provide live-fire training to soldiers.

They will be able to practice on the system with a variety of weapons currently used on operations in Afghanistan including the SA80 and the L129 Sharpshooter rifles as well as machine guns and the L115A3 Long Range Rifle.

Project leader Nick Taylor of DE&S' Joint and Battlefield Trainers, Simulation and Synthetic Environments, said: "Our troops face a variety of threats from the enemy on operations including small arms fire.

"So we must make sure our personnel have the best possible training to prepare them for the realities of the front line and this contract will help to achieve that.

"We want to ensure that British Forces are the best-prepared in the world and to maintain this we must have the best training equipment and methods available.

"Live fire training is essential to ensure that soldiers can operate small arms with maximum effectiveness.

"There is no substitute for this experience and this new system will help to improve the training troops receive."

Targets can pop up in a split second or move at high speed on tracks to test a soldier's reaction times and the sound of enemy fire is also simulated to make the experience more realistic.

SARTS also features highly accurate marking systems that provide instant feedback for trainers on a shooter's performance.

It will be used by the Army, Royal Marines and RAF Regiment personnel. The first SARTS will be installed at the small arms ranges at Sennybridge, used by the Infantry Battle School, Brecon, next March.

A total of 140 static and field firing ranges at 50 UK and overseas sites will be installed under the contract by March 2013.



Equipment sales earn UK £650m

THE MOD has earned more than £650 million in revenue from sales of defence equipment since 1997, Minister for International Security Strategy Gerald Howarth has told MPs.

Total sales included six Wessex helicopters, 12 former Royal Navy patrol vessels, four former conventionally powered patrol submarines, seven former mine countermeasures vessels, three former Type 22 frigates and three Type 23 frigates, two former Royal Fleet Auxiliary Landing Ships Logistic and 20 Rapier air defence missile systems.

The biggest sales were for former Royal Navy frigates and submarines, MPs were told in a written answer. Four submarines to Canada in 1998 earned £227 million, Type 22 frigates *London* and *Coventry* to Romania earned £116 million, while *Sheffield* to Chile earned a further £27 million.

Three former Type 23 frigates, *Norfolk*, *Grafton* and *Marlborough*, earned a further £134 million.

Troops set to be sharper shooters

Report:
Tim Foreman



CDM briefed on ISS during Corsham visit

BERNARD GRAY made his first visit as Chief of Defence Materiel to DE&S' Information Systems and Services in Corsham on 4 February.

The visit was hosted by Director ISS Maj Gen Tim Inshaw and included a tour of the Global Operations Security Control Centre (GOSCC) and the new office accommodation that comprises the Corsham New Environment.

Mr Gray was briefed fully on ISS'

ongoing support to operations being provided by ISS delivery teams and industry partners.

He was also briefed on the ISS operating model and portfolio approach to service acquisition (incorporating Defence Core Networks Services) in addition to the latest news and views from a selection of the ISS business units, including the Network Technical Authority and Defence Information Infrastructure.

Advertisement

MILLBROOK**It's good to talk!**

Much has been made in the media recently of the Armed Forces' cuts and their likely impact on the most critical part of the military - the operative at the front line. Here, Julian Bryan of Millbrook Proving Ground, one of the world's leading military transport test and development facilities, takes a look at how increased communications between every tier of the supply chain can help to minimise the impact of those cuts in theatre...

In light of the Government's spending review, it is critical now that we are all endeavouring to make sure that any impact from those efficiencies is minimised, both in terms of the quality of equipment at the frontline and indeed morale. The way that can be done, across the supply chain, is through better partnership and communication.

"In terms of better partnership, it's about the different arms of the supply chain working closer together - industry, the end user and the purchasing arm of the MOD. Interoperability between not only the industry but also the three services and also partner nations is critical. Indeed, NATO policy has always emphasised the importance of that tenet.

"Communication is also paramount, now more so than ever. The newly appointed Chief of Defence Material, Bernard Gray has commented that communications are key part of his plan for DE&S. As a result, it is critical that lines of contact exist between each tier of the supply chain and that those links are robust and open to people expressing their opinion. This will further help to improve kit at the front line and therefore benefit the end-user in theatre".

For more information visit www.millbrook.co.uk or call 01525 404242



New software updates medical admin system



Minister runs rule over Audacious

PETER LUFT, above right, Minister for Defence Equipment, Support and Technology is pictured during a visit to Barrow-in-Furness to see the *Astute* submarine programme.

He is pictured with Nigel Whitehead, group managing director of BAE Systems Programme and Support. The submarine in the background is *Audacious*, the fourth in the *Astute* class.

RFA CARDIGAN BAY has returned to Falmouth for maintenance after three years in the Gulf.

While away the ship was maintained by members of the Cluster Support team, a joint venture between A&P and the MOD based in Falmouth.

Kevin Murray, Cluster Support leader for the MOD, said: "Providing maintenance to the ships while they are on long term deployment demonstrates the flexibility and advantages of the MOD working jointly with industry. It's cost-effective because it minimises down time, making sure the vessel is available for operational requirements."

Work included equipment upgrades to cooling and weapons systems, dry docking, operational support and general upkeep, and took place in ship yards in Dubai and Bahrain.

MAINTENANCE OF front line medical records continues to improve with release of new software to Camp Bastion's medical centre.

Initial release of the new application came in January for the treatment facility, which is now the equivalent of a major trauma centre in a district general hospital.

The application will be introduced to the hospital to replace the existing system, creating automated patient and hospital administration.

Bought under a £5 million contract last September with UK-based Logica, the Whole Hospital Information System (WHIS) will mean that patients' records will be more readily accessible to medical staff and authorised personnel.

Mike Stapley, leader of DE&S' Information Systems and Services' Application Services team in charge of introducing the system, said: "This is a huge step forward for the hospital in Camp Bastion and the introduction of this new application will greatly reduce the administrative burden on staff.

"Although the previous system worked well, the increase in the hospital's use by personnel from across the coalition, along with members of Afghan forces and, in some cases, local civilians, has led to a greater need for automated information management.

"This new software application will now enable medical staff to access notes swiftly and see a complete view of usage of hospital beds and resources."

The application, which is already being used by some NHS Trusts in the UK will mean patients can be tracked through the hospital from entry to discharge with information being entered only once into the system, but used many times.

A second release of functionality is planned for the end of 2011, which aims to provide interoperability with radiology and pathology systems.

Bay completes three-year task



Hard at work: RFA Cardigan Bay has been in the Arabian Gulf for three years

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LTPA

T&E begins here

The screenshot shows the homepage of the LTPA website. At the top, there's a banner with the text "LTPA T&E begins here". Below the banner, the main content area has several sections:

- LTPA capabilities:** Describes the LTPA (QinetiQ) delivered innovative and efficient test and evaluation of military and civil aircraft, land or sea assets.
- Sites & Ranges:** Describes the LTPA (QinetiQ) delivered 44 land and 4200 coastal or naval sites around the UK for test, evaluation and training support.
- News:** A section with the latest news items.
- Innovation:** A section with information about training systems and sensors.
- Features:** A green bar at the bottom left containing links to "Capabilities", "Innovation", "Case Studies", "Sites and Ranges", "Facilities", and "News".

Features

- Capabilities
- Innovation
- Case Studies
- Sites and Ranges
- Facilities
- News

www.LTPA.co.uk is designed to be the starting point for all MOD teams who have a T&E requirement. It aims to give you all the information you need about the Long Term Partnering Agreement (LTPA) between QinetiQ and MOD for test, evaluation and training support.

To find out how the LTPA can meet your T&E requirements, go to:

www.LTPA.co.uk

www.LTPA.co.uk is a QinetiQ registered domain name.

Farewell to the RAF's oldest in-service aircraft



Picture: Geoff Lee
www.planefocus.com

THE OLDEST in-service aircraft in the RAF retired at the end of January.

Operated by the RAF at Cranwell the Hawker Siddeley 125 Dominie, pictured above, provided training for all rear crew. It was originally procured in the 1960s to train navigators and served for more than 45 years.

Group Captain David Waddington, Station Commander at RAF Cranwell, said: "Retiring any aircraft from service is always a poignant moment but it is also a time to commemorate the outstanding service the Dominie has provided to the RAF."

Cancellation of the Nimrod MRA4 and a reduction in the number of Tornado GR4s has resulted in the RAF ceasing any further weapons system officer (formerly navigator) training following graduation of the current course. It has also removed the requirement to train weapons system operators in the sensor operator role for the next few years.

Where airborne training is now required the King Air aircraft at RAF Cranwell will be used.

Wendy leads the way

WENDY Barnes will hold the next lunchtime seminar at Abbey Wood. The DE&S non-executive director will be speaking on 11 March in the Central Facilities Building from 1-2pm.

Future seminars include Simon Jewell of BAE Systems (18 May); Minister for Defence Equipment, Support and Technology Peter Luff (22 June); Susan Scholefield, DG Human Resources and Corporate Services (19 July); Sir Ian Andrews, former 2nd PUS (15 September); Jacky Ridley, Chief Executive Defence Vetting Agency (20 October); Jon Thompson, DG Finance (24 November).

Bookings to admin.cmt@defenceacademy.mod.uk or tel 96161 4828.

Search engine: an RAF search-and-rescue Sea King on exercise



MOD and DfT make joint announcement on future of search-and-rescue helicopters

Opening salvo in fight to beat anti-ship missiles

THE UK and France are developing an off-board decoy which can defeat advanced anti-ship missiles.

Accolade is a bilateral research project with DE&S' Underwater and Electronic Warfare team as the contracting authority.

Thales, awarded a £14.4 million contract, is working on a complete decoy, consisting of a carrier and electronic warfare payload, fired from a launcher and sent clear of the ship.

Once the decoy slows down from the ballistic trajectory, the positional vehicle begins jamming.

As a missile nears the target ship the decoy can be manoeuvred into position, where it aims to 'distract' or disturb the range and accuracy of the missile seeker guidance system.

If the missile seeker is already locked onto the ship in final attack phase, the decoy can 'seduce' the seeker by presenting a larger radar cross signature, in comparison to the host platform, which draws the missile away from the ship.



Trevor McKerlich, DE&S' overall project manager, front left and Daniel Gilderthorp, Thales project manager, with members of the joint team

The contract was launched in January and involves flight and laboratory testing of the prototype.

Field and sea trials will be conducted before contract completion in May 2014.

The decoy is planned for Type 45, Type 23 and new Type 26 vessels for the Royal Navy and two classes of frigates for France's Marine Nationale.

DE&S' overall project manager Trevor McKerlich of the Underwater and Electronic Warfare team, said: "Accolade is bringing together the UK and France to deliver naval decoy capabilities.

"This contract award proves both nations can work closely together while driving down procurement costs in a challenging financial climate."

TRANSPORT SECRETARY Philip Hammond told MPs in a written statement on February 8: "On 16 December I and my right honourable friend the Secretary of State for Defence announced that information had come to light regarding the preferred bid in the Search And Rescue Helicopter competition which required clarification.

"In mid-December, the preferred bidder in the SAR-H competition, Soteria, voluntarily came forward to inform the Government of irregularities regarding the conduct of their bid team which had only then recently come to light.

"The irregularities included access by one of the consortium members, CHC Helicopter, to commercially sensitive information regarding the joint MOD/DfT project team's evaluations of industry bids and evidence that a former member of that project team had assisted the consortium in its bid preparation, contrary to explicit assurances given to the project team.

"Since December, our two departments have been working with Soteria to understand better the situation and its implications for the procurement process. In addition, the MOD Police are investigating how the commercially sensitive information came to be in the possession of the bidder. It would be inappropriate to comment further on the details of the investigation until it has finished.

"However, even without the outcome of that investigation, the Government have sufficient information to enable them to conclude that the irregularities that have been identified were such that it would not be appropriate to proceed with either the preferred bid or with the current procurement process."

Helicopter move will boost front line support



DE&S' HELICOPTERS Operating Centre has successfully completed all phases of its collocation.

In 2008 the centre had staff spread across five sites with Chinook and Puma/Gazelle teams split between Abbey Wood and Yeovilton. Now, the centre has successfully completed collocation, reducing to three main sites with Chinook and Puma/Gazelle now together at Abbey Wood. To make such a major

change manageable, the programme was delivered in two phases. The first in early July last year involved the Sea King team moving from Sherborne, an expensive privately rented site, to Yeovil to collocate with AgustaWestland, their main industry partner. They also joined Merlin, Apache and the Joint Modification Service at the same place.

This was followed in late July by Rotary Wing Support Group (RWSG) who moved from Middle Wallop to Yeovilton enabling closer working with the rest of the Helicopters centre.

The second phase, under the overarching DE&S collocation programme, last month saw Special Projects Multi Air Platforms (SPMAP), Chinook and Puma Gazelle teams collocated from Yeovilton to Abbey Wood.

Since then, as part of additional business transformation, Puma Gazelle and Puma HC2 have also now merged into a single team under a single leader and now called Puma 2 Gazelle (P2G).

As well as improving communication, the consolidation from five sites to three has significantly reduced infrastructure costs, thus releasing money for the front line.

Pete Worrall, DE&S Director Helicopters, said: "This has been a major and at times daunting change programme noting the impact on individuals and the fact that the collocating teams are heavily involved in support to operations."

"Today, the addition of SPMAP, Chinook and P2G Project Teams at Abbey Wood, coupled with the earlier moves of Sea King and RWSG, is a major step forward in our drive to increase efficiency and effectiveness in supporting the front line.

"It has been achieved by hard work and commitment of those staff collocating, the Helicopters collocation team managing the move and the DE&S collocation team supporting us and I am very grateful to them all for enabling collocation to be successfully achieved."



Pete Worrall, centre, welcomes the teams to Abbey Wood

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Ammunition supplies – the successes mount up

A NEW factory producing ammunition for the front line opens for business this month.

The factory at Washington in Tyne and Wear will take over machining of large calibre tank, mortar and artillery ammunition from a nearby site at Birtley.

BAE Systems' Global Combat Munitions is making the move to the site of an old Dunlop factory.

The company is spending £75 million on the new site and 350 employees will make the move in batches until the end of this year.

The move is part of the MASS programme (Munitions Acquisition, the Supply Solution), DE&S' long term £2 billion contract with the company to secure supplies of ammunition to the front line.

The keys for Washington were handed over in January. Once fully operational the facility will house a modern 250-tonne forge run remotely from a control room.

It will also carry out machining of large calibre tank, mortar and artillery ammunition using robotic machining cells and new, environmentally-friendly, paint and treatment capabilities.

"These are exciting times for our people," said site boss Lee Smurthwaite. "All the Washington buildings are now complete and we want to get on with the move."



Forging ahead: BAES' new forge at Washington which can turn out a shell body every minute

"We are taking employees round the new plant with their managers because we want their suggestions on layouts and workflow."

Colonel Andy Gibson, leader of DE&S General Munitions team, said: "Our troops require high-quality ammunition delivered in a timely fashion and the MASS contract between the MOD and BAE Systems is delivering just that."

"We see this as a deal which is good for the taxpayer, good for local jobs and most importantly, good for the front line."

Charlie Blakemore, BAES'

Global Combat Systems managing director, added: "MASS allows us to take a long term view and BAE Systems is investing more than £120 million over the next five years to accelerate transformation of our munitions sites into modern, safer, highly automated, energy efficient and flexible facilities."

Sunderland City Council has awarded factory prime contractor Bowmer and Kirkland, and architect Archial, a building excellence award 2011 for the best commercial building under its local control.

MASS facts

- MASS, a long term partnering agreement, was signed with BAE Systems in August 2008.
- It covers around 60 per cent by value and 80 per cent by volume of the general munitions consumed annually by UK Forces in operational theatres and on training ranges.
- Ammunition covered includes small arms, medium calibre, mortar bombs, tank, artillery and naval gun shells.
- MASS is worth at least £2 billion over 15 years, with potential to exceed £3 billion depending on the tempo of future operations.
- Under the agreement, BAES is carrying out a five-year £120 million transformation to modernise its three sites at Glascoed (south Wales), Radway Green (near Crewe) and Birtley (County Durham).
- This will guarantee a long-term sustainable UK based munitions production capability.
- Supply of high quality munitions under MASS has been outstanding with on time delivery performance of 99.95 per cent in 2009 followed by 98 per cent in 2010, compared to around 70 per cent under previous contractual arrangements.

Pyeroy wins more contracts on Kent's Rosyth refit

PYEROY LTD has been awarded a series of support contracts by Babcock worth more than £2 million to provide services for the refit of HMS Kent over the next eleven months at Rosyth.

The work will see Pyeroy's marine division providing scaffolding access, containment, painting, insulation and cleaning services for the Type 23 frigate.

This is being undertaken for the main refit contractor and dockyard operator, Babcock, and is an essential part of a maintenance programme that will improve the physical coatings throughout the ship as well as all her weapon and machinery systems.

This latest set of contracts follows on from a similar series of work packages carried out by Pyeroy on Type 23 frigate HMS Argyll which underwent a major refit at Rosyth from September 2009 through to last July. She is now back in the Fleet.



Lessons learned: HMS Argyll is back in the Fleet

Final homecoming



HMS CHATHAM made her final homecoming to Plymouth last month after 20 years' service across the globe.

Well-wishers waved the frigate home – all four Type 22 frigates are being decommissioned as part of last October's Strategic Defence and Security Review – as she sailed across Plymouth Sound.

She was joined by the support ship *RFA Fort George*, pictured right, which is also being retired.

HMS Chatham's commanding officer, Commander Simon Huntington, said: "These ships are the longest serving frigates in the Royal Navy and given the requirement to reduce the number of surface units it is sensible to decommission our older assets."

HMS Chatham's sister ships *HMS Cornwall*, *HMS Cumberland* and *HMS Campbeltown* will continue to support operations in the Middle East and in UK waters until later this year.

HMS Chatham was laid down at Swan Hunter in 1986 and was launched in 1988.



□ *RFA Fort George* commanding officer Captain Jamie Murchie has saluted the work of his replenishment ship, above, as it unloaded equipment and cargo on its final visit to Plymouth.

"The ship's multi-role and flexibility has been the key to her success in humanitarian and operational tasks over the years," he said. *RFA Fort George*, one of two auxiliary oiler replenishment class ships, was built by Swan Hunter and entered service in 1994. She is being withdrawn because of a need to reduce the number of auxiliaries required to support a reduced fleet.



Rescue system all set to take flight



International rescue underwater: the system's remote vehicle is set to take to the air

THE FASLANE-BASED Nato Submarine Rescue System (NSRS) is off to Norway this month on its final test.

The high-tech system will be packed up and flown for the first time to prove that it can be sent to a submarine in distress anywhere in the world within just 56 hours.

"The system works," said Brian Grant, base manager for the NSRS. "We've proved that time and time again in various exercises. The one thing we've never done though is transport the entire system by plane and that's what we're doing for this exercise."

"The first step will be to load everything onto the back of 28 lorries. Once we've done that we will move them to Prestwick airport where the equipment will be put onto two Boeing C-17 Globemasters and three Antonov 124 aircraft."

"Everything will be flown out to Norway and from there we will unload the planes and get the system put on board a mother ship. To help us we have a Babcock support mobilisation team of 12 people, plus a team of welders who are always on standby should we get called out for real."

"This is just the final tick in the box so that Rolls-Royce, who operate the system, can prove to the MOD that they've got a working system that can be deployed anywhere."

Jointly owned by the UK, French and Norwegian navies, the NSRS is made up of a remotely operated vehicle to locate a submarine in trouble, the rescue vehicle itself which can dive up to 610 metres and evacuate 15 people at a time, and a portable decompression and medical support unit which can take up to 68 people.

DE&S adds specs-appeal!

Report:
Hannah
Swingler



TROOPS IN Afghanistan are to be issued with enhanced anti-blast protective combat sunglasses and goggles to protect their eyes from the after effects of bomb blasts.

The Sawfly Military Eyewear System and the Bullet Ant Goggle System, both designed to provide powerful ballistic protection from dirt and debris thrown up by Improvised Explosive Devices, will also protect soldiers' eyes from the harsh elements of the front line.

Bought under a £3.4 million interim contract with Canadian firm Revision, the sunglasses and goggles will be issued to all troops due to be deployed to theatre this September.

Colonel Peter Rafferty, leader of DE&S' Personal Combat Equipment team, said: "All troops currently in Afghanistan are issued with protective eyewear as standard and these new additions are an enhancement over what is already out there."

"In addition to the ballistic protection these items offer, IEDs are a significant threat to our troops in theatre and the debris and dirt thrown up from a blast can be just as harmful to troops as the initial blast or fragmentation itself."

"This protective eyewear is the best chance they have of minimising injuries to the eyes while still maintaining situational awareness and thus the ability to do their jobs."

Jonathan Blanshay, chief executive of Revision, added: "The focus behind all Revision eyewear is to meet and exceed the stringent requirements set forth by our military customers. It's an honour to be supplying UK troops with what we believe to be the best performance-enhancing eye protection products."

Above: Revision Sawfly eyewear. Right: Ant goggles



THE GLASSES are just the latest in a series of improvements made to troops' personal kit to mitigate the threat from IED's in theatre.

Upgraded kneepads were issued to troops last September and protective combat gloves with knuckle protection and weapon friendly grips are also due to enter service later this year.

An enhanced version of the popular under body armour combat shirt with ballistic material added to the collar and cuffs and improved protective pads in the forearms is under development for issue in the near future.

Advertisement



Support in the most challenging of climates

The fast response and mobility of the armed forces is critical to the success of every mission and posting, it is therefore essential that the support services behind the scenes are as responsive to the needs of troops.

Critical to the delivery of such services is the ability to adapt, understand and overcome the challenges faced by individuals, particularly when they are posted in some of the world's most challenging environments.

It is here that the experience of Interserve in providing a whole range of services from cleaning, catering and equipment maintenance, to base relocation and complete facilities management, plays an important role.

Having supported troops in countries like Cyprus and The Falkland Islands, we are experienced at delivering practical solutions that help to combat the added pressures of operating in challenging climates.



MOORINGS FOR a barge used in Sea Viper missile firing trials have been recovered from the seabed off France by a DE&S team.

The Catenary Anchor Leg Mooring system, known as the Longbow CALM, was successfully recovered from the Banc du Magaud off the Isle de Levant, France on 16 January.

It had been used to provide a mooring for a modified barge used as a platform for live firing trials of the missiles which will equip the Type 45 destroyers.

DE&S' Salvage and Marine Operations team was tasked with recovering the equipment from the seabed.

Removal of the eleven-metre diameter, 175-tonne buoy took two weeks using the commercially chartered ship *Normand Pioneer*.

This involved the use of remote operated subsea vehicles (ROVs) and removal of more than 1,200 tonnes of subsea chains, anchors and wires in depths of up to 200 metres.

Recovery was hampered by strong currents and the requirement to accurately cut the



Barge moorings removed as missile tests complete

100mm diameter subsea chain using a ROV mounted underwater cutting disc.

As the Longbow mooring had been in a marine protected area close to the Pelagos Sanctuary for Mediterranean marine mammals, Salvage and Marine Operations project officers made sure removal did not disturb the local ecosystem.

"As well as achieving a 50 per cent saving in project costs, the successful completion of the recovery of the Longbow CALM returns a piece of the Mediterranean seabed to its original condition," said a team spokesman.



Above: concentration at mission control as the ROV patrols the depths. Top left: ready to get down to work
Top: back in port, mission accomplished

Shipshape Bulwark is now back in the Fleet

AMPHIBIOUS LANDING ship HMS *Bulwark* has returned to the Fleet on time and on budget after completing sea trials following an eleven-month upgrade and maintenance by Babcock.

It was the ship's first docking period since being commissioned into the Royal Navy in April 2005.

The £30 million refit under the Surface Ship Support Alliance, the alliance between DE&S, Babcock and BAE Systems, has benefited from knowledge and experience gained on sister vessel *HMS Albion*.

The 450,000 staff hour refit has

involved overhaul of 1,625 items of equipment, manufacture of 1,557 items, and shipping of 398 tonnes of equipment on and off the ship.

More than 200 hull valves have been removed and replaced; 93 tanks opened, cleaned and surveyed; 21 miles of electrical cable installed; and 8,000 litres of paint applied to the ship's outer bottom.

HMS Bulwark now has improved aviation facilities and upgrades to the welldock, including full tactical night-vision capability by her landing craft and aircraft.

"A number of challenges have been addressed during the refit, including an extra 16 alterations and additions during the project, and completion of the refit within the same timeframe as *Albion* despite an additional 70,000 hours involved," Babcock project manager Mike Weeks said.

"Successes have included achievement of all key milestones, an excellent safety culture, the adoption of a single integrated plan, and efficiency improvements such as the dockside services contract arrangements, as well as an excellent partnering relationship."



**Getting
fired up
to lead
the hunt –
Foxhound
goes
through
its paces**

Pictures: Andrew Linnett



Pages 22 and 23



Foxhound to be another lifesaver

'Our job is to ensure that the maximum protection to our troops is as safe as possible' – DE&S programme manager Nick Fox



Report: Steve Moore
Pictures: Andrew Linnett

Foxhound makes a splash down under too

THE FIRST batch of Foxhounds will be delivered for training later this year with final vehicles to be completed by next spring.

Force Protection Europe's vehicle made its first full public appearance last month at the International Armoured Vehicles exhibition at ExCel in London.

Designed, developed and built in the UK by survivability specialist Force Protection Europe, together with Team Ocelot partners automotive specialist Ricardo plc, Thales, QinetiQ, Formaplex, DSG and Sula, Foxhound is regarded as the most highly protected and agile vehicle of its size and weight that is available today.

It moved from concept to development over a remarkably short timeframe for a military vehicle. David Hind, Managing Director, Force Protection Europe, said, "Our prime goal for this year is to meet the MOD's schedule for the LPPV programme. However Ocelot's success has also generated international interest in this ground breaking vehicle, which we hope to see being developed for other markets; the first of these is Australia as we prepare to send two Ocelots – a utility and a command variant – down under for testing in the Land 121 Phase 4 Project for the Protected Mobility Vehicle – Light prototype."

It may be many miles from the front line – or from anywhere for that matter – but a prime example of the next generation of light protected patrol vehicles is moving rapidly through its latest set of trials.

Foxhound is the patrol vehicle which will be used by UK ground forces as they move around towns, villages and the surrounding countryside in Afghanistan. Around 200 will be built at a cost of £180 million to replace the current fleet of Land Rover-based vehicles, giving troops extra protection against the roadside bomb while still allowing them to be agile and effective in keeping the peace in Afghanistan.

But it is at Millbrook's proving ground in Bedfordshire that the vehicle is going through its paces. And while testing is going well, DE&S staff are conscious that, as part of the urgent operational requirement programme, time is short to iron out any problems before Foxhound goes into production later in the year. The first vehicles are likely to be delivered for training at the end of this year and for deployment next year.

For programme manager Nick Fox, deputy leader of DE&S' Protected Mobility team, his time at Millbrook is just the latest stage in the quest to advance vehicles to the front line.

"We are right at the front end of the programme now, conducting reliability growth tests here at Millbrook," he said. "It is a process to understand if there are any weaknesses in the design of the vehicle before it goes into theatre. It's all about getting the niggles out of the platform to make sure it's 100 per cent."

"Next we go into a whole range of trials with the user including the fit of the communications equipment which

aims her

**vehicles provide the
troops and keep them as
programme manager**

will go inside the vehicle. We have meetings with the users to understand how the user will stow all their kit. Work on generic vehicle architecture (enabling crew to manage power and handle data efficiently on the vehicle, and for it to be adapted when necessary) on this platform will be done by Thales by mid-year and then there are a lot more tests and user trials.

"Then we have air transportability tests for safe stowage inside aircraft. We have to make sure we can safely fire weapons from the vehicle, and safely stow ammo inside. We have to make sure the soldiers will fit inside the vehicle with their kit, and that they are comfortable and that we understand and meet their requirements."

Nick added: "We still have some more mobility work to do to tick off against the requirement document. And a lot more work before we hand it over to the user and get it approved by the sponsor (Capability Ground Manoeuvre).

"That's the vehicle side. We are also concentrating on the support area too including training, spare parts and the publications that we will need to go with the vehicle. It's ok delivering the vehicle as we see it at Millbrook, but it has to be supported too."

Nick and his team are proud of a vehicle which has made it from scratch

to the current stage in a matter of months. "When we started the programme we conducted a market survey to see if there was anything which could do the job on the open market," he said. "It had to meet a very challenging requirement. And there wasn't. A number of companies approached it with a clean sheet of paper. As they were not restrained by legacy designs, so much more could be done. Industry have invested a lot of money in this programme. It has been really rapidly developed."

Force Protection (Europe) has led the way with its Ocelot vehicle. Designed, developed and built in the UK, FP has been joined by automotive specialists Ricardo, Thales, QinetiQ, Formaplex, DSG and Sula to make what industry boasts is the most highly protected and agile vehicle of its size and weight available today.

The result, after only around a year of development, is Foxhound. "We have taken what we have achieved so far in the protected patrol vehicle area – from heavy vehicles like Mastiff, to the medium vehicles such as Husky. This is the light part," said Nick, "which is a really challenging requirement, a very lightweight vehicle (of around eight tonnes) but with very high protection levels. The lessons we have learned from other programmes have helped us develop the technology for this vehicle."

Its V-shaped hull can withstand serious mine blasts while Formula One technology sees crew members and

vital kit cocooned in a fully composite pod, the like of which has saved many racing drivers from serious injury and worse over many years. With four-wheel steering it is light, agile and easy to drive. And at just over two metres wide it scores highly over other UK patrol vehicles

"One of the issues we have with the larger vehicles is that when they are in the forward operating areas of Afghan villages it is not as easy for them to get around," said Nick.

"So this vehicle will be able to operate in these areas and won't annoy the local Afghan population by damaging their drains or bridges. It has a very tight turning circle, which means it can virtually turn on itself."

All of which can be seen during trials at Millbrook, who are contracted by DE&S for the Foxhound trials. "Millbrook is an all-in-one 24-7 testing facility which has everything we need to stretch the vehicle in terms of its mobility," said Nick.

"They have all the surfaces that you might encounter anywhere in the world. Obviously we have not got the environment because we are in 'sunny' Bedfordshire but in terms of putting the stresses and strains into the vehicle you can test the drive train and structures and put it through its paces."

"From hills to dips, you name it, it's here, so it provides us with a one-stop shop for all our testing needs. Since the demise of in-house testing in the MOD, companies like Millbrook and others provide us with everything we require."

Trials continue through most of the year. Nick's team, responsible for the vehicle's through-life support, is already looking forward. "It would give me the greatest pleasure when this vehicle saves lives," he said.

"Our job is to ensure that the vehicles provide the maximum protection to our troops and keep them as safe as possible. Should they experience an IED event and do not get injured then we have achieved our objective – that's what we are here for."



Lessons learned: programme manager Nick Fox with Foxhound at Millbrook

Foxhound and the impact of battlefield testing

When Foxhound starts to roam the front line next year, input from Millbrook may well be forgotten.

But technicians and engineers at the 700-acre testing site close to the M1 in Bedfordshire will have played a huge role in making sure the light protected patrol vehicle can do the job it is supposed to do.

Trials of the Force Protection (Europe) vehicle are well on course, results of which will inform the build process when it takes place later this year.

And it will be Millbrook's input – in a contract with DE&S which runs to the end of the Foxhound testing programme – which will be vital to the final product, according to the proving ground's Julian Bryan.

"On Foxhound we have already had a significant impact helping the manufacturer, engineers and end customer realise the maximum potential from this vehicle. If our customers believe in our engineering judgment and our knowledge and the rigorous processes we apply in our operations here, then the end result will be a more successful vehicle. And the more enlightened – the MOD among them – listen to us."

That opinion on vehicles extends to helping choose the platform in the first place. "We are an independent testing authority with great knowledge about vehicles," said Julian. "The question the MOD asked was, can we get a vehicle that could do what the Land Rovers used to do but now can't do?"

The choice was Ocelot – renamed Foxhound by DE&S. Now it's up to DE&S, its partnership with Millbrook

and others, and 50-miles of purpose built tracks which simulate just about every surface anyone could encounter to help the vehicle towards production.

"Foxhound will be taken out on the facilities, driven for hundreds of kilometres, washed down, then someone will get underneath and tell us what is good, bad and ugly," said Julian. "The whole point is that we get to a stage where we understand any weaknesses the vehicle has and where it's at from a competence perspective. By the end of April we will know where we're at. Then it will be time to go and build some."

He added: "We do structural, repeatable Battlefield Mission testing on

all vehicles and have done for 10-12 years. We do a proper evaluation of a vehicle here.

"Husky is a good example where a lot of its development work was done at Millbrook. In the field it has turned out to be some people's weapon of choice. I put that down to a serious amount of testing and making sure it's working properly.

"There will always be equipment which goes wrong but you try to iron out as many of the problems as you can. We have finally got people to realise that, even in a really compressed timescale like you have on the urgent operational requirement programme, you can do a lot of work here."



Millbrook-proved: Husky operating on patrol in Afghanistan

What the BEEP!

Callsign W31 is doing a CTR on a suspected arms cache.

They're under camouflage and have been on task for seven hours when an enemy section arrives.

They start up the comms ready to send the co-ords for an air strike... and in the absolute silence of the desert, a tiny electronic 'beep' warns of a low battery.

The enemy section hears it, the mission is compromised immediately and heavy contact initiated.

W31 needs to bug-out and head for the ERV.

Right NOW.

You would think that removing the warning 'beep' from your rugged tablet computer wouldn't be that difficult.

But the standard Rugged PC industry is set-up for large volume serial manufacture and therefore will not always accommodate small changes.

At Getac, we have the flexibility and agility to be different. And it allows our customers to be different too.

We'd have supplied the right tool for the job. Meaning no 'beep', the ability for custom military connectivity, bespoke managed services and Information Assured solutions are just some of our capabilities on offer from Getac through our partner.

We've got great technology, smart people and a brilliant partner, and we're focused on delivering the solution you want, not the one we want to sell.



Oh...and like so much of what we offer, our 'beeps' are optional.

Visit us or our partner SBL for a beep-free discussion.



Rugged Mobile Computing Solutions

Corsham unveils its global

ISS' Global Operations and Security Control Centre delivers and assures information and communication services for UK Armed Forces around the clock

The Global Operations and Security Control Centre (GOSCC) has successfully moved into the Corsham New Environment, having previously been nearby on the same site at Basil Hill.

The move was a complex programme of relocating personnel and a vast array of IT and associated systems.

The new GOSCC contains 15km of cabling and fibre optics that all had to be connected to the right place at the right time. The fact the GOSCC was commissioned on time and with no impact to the provision of services is

testament to the massive effort from all involved with planning and executing this move. Now fully commissioned it is business as usual for the GOSSC.

Around 200 people work in the GOSCC, a mix of military, MOD civilian and contractor personnel from major industry partners involved in supporting the Defence Network, including Fujitsu, BT DFTS, Cassidian, EADS, Babcock and Paradigm. Their role is to deliver, manage and defend the Defence Network and provide worldwide assured communications for the MOD around the clock, 365 days a year.

Many of the services delivered by DE&S' Information Systems and Services involve multiple providers. Accurately translating the operational impact of a fault to the service providers and co-ordinating repair efforts are key enablers in ensuring faults are managed correctly.

Having a common, open-floor working environment with industry partners fully embedded in the team allows all those involved in any incident to quickly come together around the table and rapidly agree how to resolve the incident or establish an acceptable workaround.

Providing all-round support means the GOSCC never sleeps and is always manned by a core duty team, split equally between military staff and industry partners. The primary focus of the Duty Ops team is the support of ongoing operations on behalf of UK and coalition forces.

To ensure that operational pressures and requirements on the ground in Afghanistan are understood in the GOSCC, a member of the team is co-located with the Joint Force Commander (Information Systems) (the tri-service



Above: Atlas staff John Clark and Costanza Calabrese work alongside DE&S personnel in the centre

Below: a panoramic view of the centre showing the giant operations screen



Global reach

Pictures: Andrew Linnett



Split level: the main operations room at Corsham

in-theatre commander responsible for co-ordinating delivery of information and communication services to all UK forces in Afghanistan). Based in Camp Bastion, GOSCC Forward manages all faults in-theatre and balances the requirement for down time for maintenance and defect rectification against the needs of the troops on the ground. A daily teleconference is conducted between the team back in the UK and GOSCC Forward to ensure that requirements and priorities of the Command in Operation Herrick are fully understood.

Defending the Defence Network is also a 24-hour a day job and the Defence Computer Incident Response Team is an integral and vital part of the Duty Ops team. With the number of threats to computer networks increasing day after day, the team constantly monitors the network for signs of attack and will take immediate action to defend it when required.

This multitude of services provided by ISS makes working in this environment a challenge. Sgt Jason Musty from Duty Ops highlighted its diversity. "On an average day I will be on the phone to a Ghurkha signaller in Nepal discussing the provision of DII services," he said. "And five minutes later I'll be examining circuit diagrams with BT engineers investigating how we deliver video teleconferencing."

Global reach from Corsham.



Above: the Corsham centre's upper level

Below: Captain Mark Bentley monitors information and communication service provision from his bank of terminals



DE&S-supported aircraft and surveillance systems are proving vital in the fight to bring stability to Afghanistan. Sqn Ldr Paul Lipscomb of the RAF describes how they are helping in the fight to capture insurgent contraband



Below: Sentinels line up on the hard standing in the Middle East. Sentinel recently clocked up its 300th operational sortie in Afghanistan
Above: Sentinel returns from another successful mission

Pictures: Sgt Corrine Buxton

Sentinel aircraft continue to play a key role in helping Afghan security forces and coalition troops crack down on Taliban activity in Afghanistan.

The aircraft, operating the Airborne Standoff Radar or ASTOR System, supplies identification and tracking information to ground commanders to identify insurgents and illegal activity.

UK ground based combat operations are expected to cease by the end of 2014. But the requirement for air support to the Afghanistan government after that is still to be decided.

While Sentinel will be withdrawn from service when its work in Afghanistan is done – as laid down by the Strategic Defence and Security Review last autumn – there is plenty still to do.

The Sentinels from RAF Waddington continue to provide vital intelligence to troops on the ground to enable the seizure of large quantities of insurgent contraband. During one eight-day period the aircraft enabled interception and seizure of 5,000kg of illegal narcotics, 700kg of homemade explosives, numerous AK47 automatic rifles, rocket launchers, grenades and suicide bomb vests.

Airborne Mission Commander Flight Lieutenant Vicky Elliff said: "Clearly detaining insurgents means we can gather intelligence to help combat illegal smuggling of narcotics which is used to fund further acts of violence. Furthermore, it allows the Afghan Forces to demonstrate the progress being made in security and stability operations, dissuading criminal activity and prosecuting those caught undertaking it."

In the hunt for terrorists and criminals, Sentinel can track solitary suspicious vehicles across hundreds of kilometres of Afghan terrain. Using its high tech radar, it can capture imagery over a huge area of territory which can be relayed in real-time to commanders on the ground.

Airborne Imagery Analyst Sergeant



Mark Sumner said of a recent operation: "The Sentinel was able to track one vehicle and co-ordinate coalition and Afghan search teams standing by on board helicopters. Due to the need to transit over large distances and difficult terrain, the rapid air mobility offered by the helicopters allowed ground troops excellent manoeuvrability. We guided the helicopters onto a vehicle which was confirmed as suspicious and stopped."

DE&S' Sentinel team leader Group Captain Mike Smith recalled that the Sentinel project had almost been threatened by its own success. "Having deployed on Operation Herrick as a trial in late 2008 and early 2009, customer demand for the aircraft's product was so great that the deployment became enduring from June 2009, well ahead of the planned initial and full operating capability.

"Not surprisingly this placed significant strain on a still maturing support solution and it was only through the concerted efforts of the project team, the prime contractor Raytheon Systems and HQ No2 Group staff, that Sentinel is now achieving significant success on operations. Notably, Sentinel flew its 300th operational mission last year."

Not all missions result in interceptions of suspicious vehicles or people. As with conventional policing operations, sometimes better intelligence can be made by following insurgents to reveal more of the terrorist network. In some cases the intelligence chain passes the ball from one asset to another. From Sentinel's wide area scan a narrower field of view can subsequently be achieved via RAF Reapers, parented by RAF Waddington, but operated from Creech Air Force Base in the United States.



Above: mission commander, Flt Lt Vicky Elliff, foreground, and her colleagues spend many long hours interpreting and exploiting the information that Sentinel gathers up

Below: Sentinel flight crews are no strangers to the skies above Afghanistan



Under a blood red sky – Sentinel helps crack down on insurgents



The regeneration game

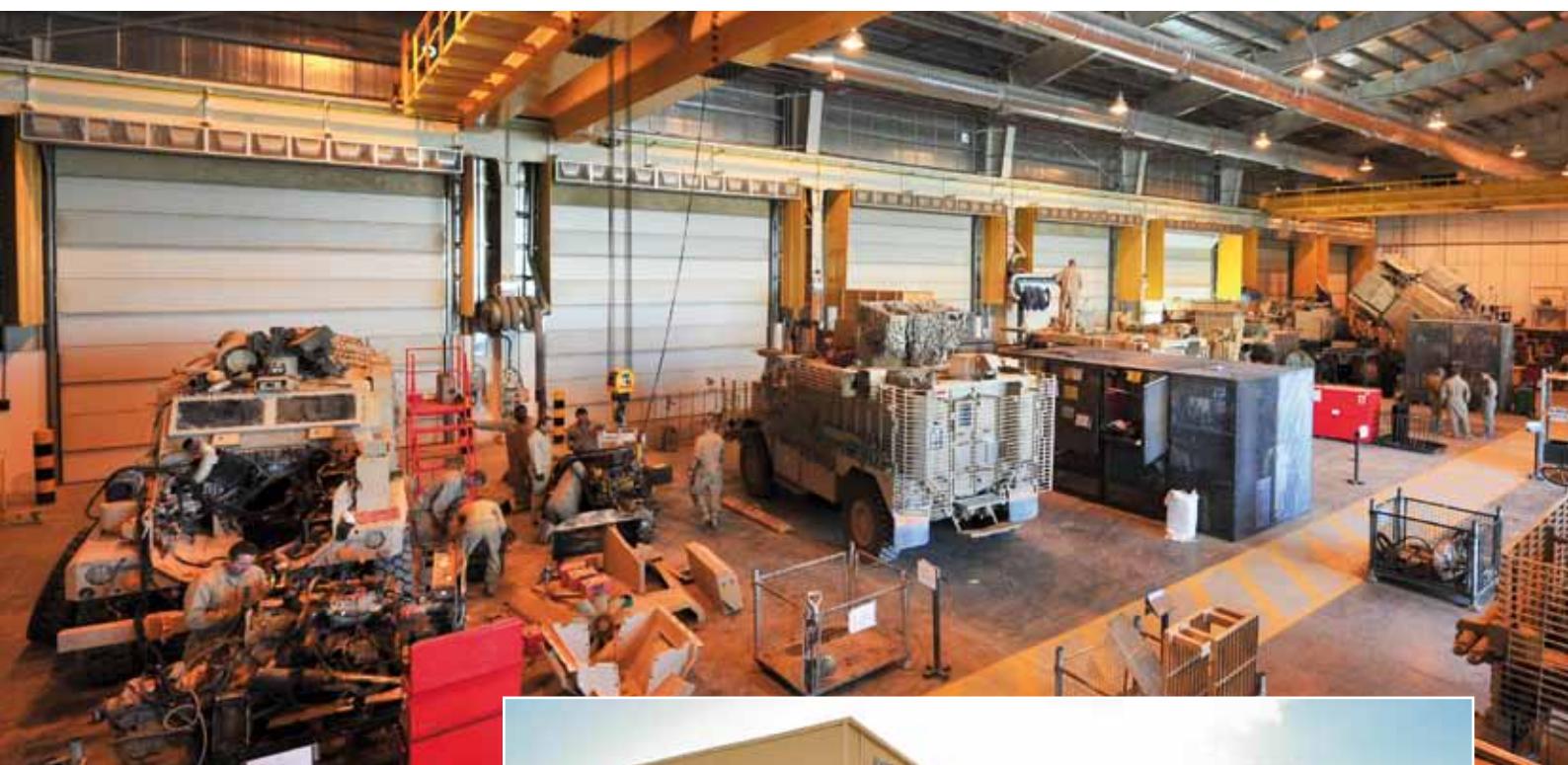
**Need your vehicle
refreshed? Too
expensive to ship
it home? Want it
back quickly?
Camp Bastion is
the place for you**

Shipping vehicles in need of an overhaul back from Afghanistan to the UK is time-consuming and expensive. Vehicles can be away from the front line and critical operations for months at a time.

Now, as part of Permanent Joint Headquarters (PJHQ) Equipment Sustainability System (ESS) programme, vehicles can be repaired and refreshed in Camp Bastion, reducing costs and maintaining capability where it is most needed. And, where the work was previously being done in a hot and dusty tent, a new permanent temperature-controlled facility means staff from the Defence Support Group (DSG) have joined members of the Royal Electrical and Mechanical Engineers in having excellent conditions in which to work.

Nearly 40 staff from DSG started work in Camp Bastion late last year on a number of vehicles needing serious refresh. Later this year staff will increase to around 100 as more vehicle experts are added to the programme and more vehicles become eligible for regeneration.

DE&S land vehicle teams are currently being urged to



Above: vehicles lie ready for the regeneration programme which will see them back at work as soon as possible.

Right: the facility at Camp Bastion is one of the largest on a UK operational base



make use of the purpose-built facility. The regeneration plan began four years ago as more and more vehicles showed the strain of working in the extreme conditions of Afghanistan.

"The fleets were being worked very hard and vehicles could not survive in the long term in the harsh environment in which they had to work," said Lt Col Phil Croager of PJHQ, the ESS Programme officer.

"The question was, how could we keep the fleets as fit as possible in the long term? Our alternatives were to do the work in the UK, which is what was happening, do it in a third country, or do it in theatre."

"PJHQ took it forward, with an initial business case in June 2009 for a facility for the people to work in. A contract was let for the facilities in March 2009 and completed on schedule in late 2010. Before then it had been an interim facility based in a tent in Camp Bastion working on a reduced fleet of vehicles including Warrior, Viking and Jackal. We used it as a proving ground; it proved the process could work."

"Now we will be giving vehicles depth maintenance every two years which will extend their in-theatre lives. That is where cost reduction comes in. The alternative was to fly them back to the UK. Costs avoided from that will fund regeneration in theatre."

The contract with DSG leading the way for three years is in place and the equipment is being pushed through. Support vehicles, quad bikes, Mastiff and Ridgback are among vehicles only recently added to the programme.

"We are still going through a learning process though with each new platform that comes to us," said Lt Col Croager. "It can take six months to get a feel for the fleets. But we want to work as closely as we can with the project teams. And I'm sure the project teams can see the benefit too. If we can deliver the vehicles rapidly back to the front line then it reflects well on them. We can provide the teams with a full report on the state of the vehicle and what spares were consumed. They can use this information to develop their support for the future."

"It is a good opportunity for teams but I need their buy-in to give me the spares, tools and technical documents. If I get these, I'll provide the manpower."

DSG is now carrying out up-armouring, depth repair and forward logistic planning, while discussions indicate that additional work in the near future will include electronics and components for land and air platforms.

The interim project costs were around £6 million while the new infrastructure cost £28 million. The contract with DSG is worth around £44 million but cost reductions are expected to realise £15 million a year beyond the contract costs. "But it's more about keeping capability on the front line," said Lt Col Croager. "Making sure vehicles are in theatre doing the work they are supposed to be doing and not back in the UK for months at a time."

The new facility was opened by Defence Secretary Dr Liam Fox earlier this year. "This is going to provide us with cutting edge facilities and ultimately save us money," he said.

"Excellence and savings are words we are going to use quite a lot in 2011 and this is a perfect example of it. Congratulations to everybody in making the project work so successfully, within budget and on time. That is something the rest of the MOD needs to learn well from and I congratulate you on what is a great achievement."



Right: a support vehicle is handed back for front line work by Lt Col Phil Croager, on the left, in excellent order

Soaraway success

It's 100,000 hours and counting for Europe's multi-role aircraft in service with six air forces across the globe



Typhoon, the largest procurement programme which the UK has been involved in, has now passed the significant milestone of 100,000 flying hours across the six air forces who operate the leading edge multi-role combat aircraft.

The 100,000th hour was achieved in collaboration with the air forces in the UK, Italy, Germany, Spain, Austria and the Kingdom of Saudi Arabia with a combined fleet of more than 260 in-service Typhoons – the largest number among the new generation fighters available in the world today.

In the UK, the RAF working with DE&S and BAE Systems' support, ensure Typhoon is available for full operational duty, protecting and defending the national air space 24 hours a day, seven

days a week. The role of the aircraft includes air defence and air interception.

The UK's contribution to the 100,000 flying hours was achieved through the combined efforts of the RAF at RAF Coningsby in Lincolnshire, RAF Leuchars in Scotland, and Mount Pleasant in the Falkland Islands and also in a range of operational deployments that tested the readiness, durability and reliability of Typhoon.

Chris Boardman, BAE Systems' Managing Director responsible for Typhoon, said: "This is a significant achievement for Typhoon and the partner nations' air forces. Such a milestone demonstrates the extensive operational capability of the aircraft within the UK and in differing environments overseas. It also increasingly highlights

the importance of Typhoon for Nato air defence responsibilities."

Typhoon is Europe's largest military collaborative programme which delivers unrivalled combat capability coupled with improved situation awareness, high survivability and the most advanced array of integrated sensors.

BAE Systems continues to work with Eurofighter GmbH on Typhoon export sales globally.

Number 6 Squadron at RAF Leuchars has represented the RAF in marking 100,000 in-service flying hours.

Leuchars became the RAF's second Typhoon main operating base last September with the stand up of 6 Squadron. Since then the squadron have been preparing to take up the Quick Reaction Alert (Interceptor) North mission – Leuchars' primary air defence role.

Wg Cdr Roddy Dennis, commander of 6 Squadron, said: "100,000 flying hours is a significant milestone for Typhoon and we at 6 Squadron are proud to have played our part in reaching it. The squadron is privileged to operate this highly capable aircraft and we are fully focused on making the best possible use of it as we continue with our preparations to take responsibility for the QRA operational task at RAF Leuchars."



THE LARGEST team inside DE&S – the Fast Air Support Team (FAST) – marks its formation on 1 April.

FAST will have around 550 staff and an annual budget of more than £2 billion. It will consist of the Aircrash Escape and Survival (AE&S), Harrier, Joint Propulsion, Tornado and Typhoon project teams.

Formation of team marks the culmination of two years' work on Project Unity, which managed the merger of the five teams and the collocation of approximately 70 staff to Abbey Wood.

Project Unity aimed to identify and exploit opportunities to improve business practices and increase efficiency in the newly formed FAST. Benefits include collocation of platforms and functions at Abbey Wood, enabling a more strategic and cross-platform negotiating capability, and synergistic organisational benefits including the saving of more than 60 posts in the 'golden box' functions of finance, commercial and business management.

Air Commodore Hugh Donohoe, formerly Head of Typhoon, will be Head of FAST with responsibility for through life acquisition and support of the RAF's current fast jet fleets as well as the tri-service responsibilities of the AE&S element.

Air Cdre Donohoe said: "The main objective of FAST is to provide the best support

Part of the team: Tornado GR4 will be supported by DE&S' new Fast Air Support team

Typhoon joins other fast jets to create improved support team

possible to our in-service combat air fleet and we can achieve this by having a single interface with our operational customer. There will no doubt be many challenges with having such a large team and broad portfolio, especially with

ongoing support to Tornado in Afghanistan, managing the disposal of Harrier and continuing to bring Typhoon into service while developing the capabilities of this exceptional aircraft.

"However, I am very confident that FAST will continue to be a success and I say continue advisedly since some areas, such as finance, have already been operating as a virtual team for the past year."



Above: Wing Commander Roddy Dennis, right, commander of 6 Squadron, receives a plaque on behalf of the RAF and its Typhoon squadrons from John Fearnley, a representative of Eurofighter GmbH, to officially commemorate 100,000 flying hours, which was achieved in January.

Pictures: Geoff Lee
www.planefocus.com



Up periscope!



Clyde workshop gets ready for next generation of Royal Navy submarines

UPGRADE WORK has seen the mast and periscope workshop at Clyde naval base ready to tackle the Royal Navy's next generation of submarines.

The workshop, responsible for maintenance, repair and installation of submarine masts, periscopes and radio systems, underwent overhaul of its two overhead cranes. It is now capable of lifting *Astute* class submarine mast raising equipment.

Clyde will soon be responsible for support and maintenance to every submarine in the Fleet.

The workshop facility consists of two main workshops, a periscope tower, machine shop, 12 miscellaneous rooms and is manned by a staff of nine Babcock and seven Royal Navy personnel.

The team is in charge of every aspect of maintaining submarines' periscopes and masts, from getting them off the vessel in the first place, to stripping them down to clean the lenses and repair wear and tear from operating in one of the harshest environments in the world.

"It's a challenging job," said workshop manager Les Atack. "Periscopes are delicate pieces of equipment and to get one out of a submarine and then transport it safely to our workshop is a job in itself.

"Luckily we have a dedicated team here and if you tally up their combined experience it comes to many decades – most have served onboard submarines in the past and some still do."

Top: HMS *Astute* is pictured outside Clyde naval base.

Right: Clyde's mast and periscope shop supports the current fleet of Royal Navy submarines



The technical work begins in the scrupulously clean workshop. "When you're dealing with periscopes, cleanliness is vital," said Les. "The slightest speck of dust or dirt particle on the graticule lens, for example, gives us a problem.

"If a submarine commander is looking through a periscope and sees a speck in the top right corner, for example, how does he know if it's dirt or an enemy aircraft? Lives could depend on us getting it right."

The arrival of the first *Astute* boat brings new technology into play. "The *Astute* mast raising equipment is heavier than the previous safe working load of the overhead cranes and that is why we've had

the upgrade of the workshop," said project controller Stevie Latimer.

"All in all it was more than two weeks of continuous work to finish the job. The overhead crane can now lift an extra ton in weight which will allow the workshop to safely lift the mast raising equipment for the *Astute* boats."

The *Astute* class boats are the first Royal Navy submarines not to be fitted with hull penetrating masts and periscopes. Instead, all masts, including the two visual system masts incorporating the latest optical technology, and mast raising equipments are fitted outside the submarine pressure hull.

Work starts to sharpen up Clyde shooting skills

BUILDING WORK for Clyde's new firearms training centre is under way.

Once finished – work is expected to take a year – the £3.9 million facility will be used by Royal Marines, sailors and MOD policemen to hone their marksmanship skills.

Assistant Head of Projects for the base, David Thorpe, said: "I am pleased to have secured approval for this extremely important project, with the help of a large number of people across the base. I would single out Elaine Hamilton, my requirements manager, and the Defence Estates project manager, Dave Carlisle, for their hard work.

"The end product will be a

modern, fit for purpose facility that will enable firearms training to be delivered in an appropriate environment."

Work will be carried out by Henry Brothers through the prime contract with Turner Estates Solutions and the £3.9 million build is expected to finish early next year.

Work on a new incident command and control centre began last year through the same contracting arrangement.

There are around 30 projects planned to make Clyde the submarine centre of specialisation, with the total value of the work being around £380 million.



Aim high: personnel in firearms training at Clyde

DE&S sites up their game to meet conservation target

DE&S SITES are playing an important role in helping the MOD meet a key Government target for conservation.

The latest figures for the start of 2011 show that nearly all of DE&S' sites of special scientific interest (SSSI) in England are now in 'favourable' or 'unfavourable recovering' condition.

This is in line with an ongoing commitment that 95 per cent of all MOD SSSI sites should be in target condition.

SSSIs are nationally important wildlife areas that have been established around the country and maintaining the quality of these habitats is a requirement under law.

Significant progress in the last few years is the result of work undertaken by estates and facilities managers in partnership with Defence Estates, Natural England and contractors.

Within DE&S, JSCS Gosport is among the sites that have improved over the last 12 months. The site is an essential munitions complex stretching across nearly 500 acres and is also the perfect home for a variety of wildlife.

Techniques are being used to boost biodiversity including leaving space during maintenance for nesting skylarks and making sure rare plants such as early purple orchids are not disturbed.

Kevin Cooper JSCS Gosport's Environment Manager said: "In addition to a vital defence role, the site also provides a unique habitat for rare and endangered wildlife."

"A lot of effort has been put in to reach our SSSI target and we will have to work hard to maintain it."

There are a dozen SSSIs in the DE&S estate and other notable successes include improvements at the Defence Fuels Group West Moors site in Dorset.

DE&S sites in Scotland have also reached the 95 per cent SSSI target for the first time this year.

Trainees celebrate development

THIRTEEN TRAINEES are celebrating after graduating from the Trainee Accountant Development Scheme.

The DE&S trainees have spent the past two years working towards completing the CIMA managerial level qualification.

They participated in two 12-month placements and undertook a variety of learning and development activities.

The scheme covered subjects, from learning DE&S basic finance to the wider MOD business.

David Noble, Director Finance, who sponsors the scheme, presented the trainees with their certificates.

They have now passed a C2 competence-based interview along with presenting a portfolio covering the core and functional evidence they have accumulated.

This graduate programme is part of continuing professionalism of the finance function in DE&S.

All the trainees have been placed as Band C2s within finance.

Successful graduates are: Richard Shea, Ruth Lynes, Lucia Hogwood, Megan Thompson, Lesley Haig, Robert Grounds, Joanna Hulley, Alison Negus, David Fox, Michael Wharrie, Simon Webster, Thomas Vincett, Matthew Plant.



JFI is used by forward air controllers and artillery forward observation officers for gathering targeting information

DE&S' Artillery Systems team has overhauled working behaviours to provide a better service to the front line.

With an ethos of 'keep it simple', the team has been reviewing its Programme and Project Management (PPM) processes, focusing on tools, techniques and behaviours, to make sure it can deliver its outputs as effectively as possible.

Supported by BMT Hi-Q Sigma and using Office of Government Commerce methodology, and tools and techniques aligned with the Association of Project Managers and the Acquisition Operating Framework, the project team came up with a series of improved processes.

They included the start of weekly project manager reviews, a new dynamic reporting pack,

the introduction of monthly programme manager reviews, and tools and template training.

All of these improvements have been put in place on Artillery Systems projects like Joint Fires Integrator - Firestorm - which was procured as an urgent operational requirement and is deployed in Afghanistan.

But perhaps the key benefit from the review of processes is the reminder that such improvements ultimately mean a better service to the front line.

Ed Plaster, project manager for the improvements, said: "Within an environment of increasing constraints, it's essential to ensure teams are focused in delivering priorities in the correct order.

"We've learnt many lessons as we enter a new era of working and we've found a calmness and

open level of communication we've not previously experienced.

"Although PPM does not deliver traditional outputs, like a piece of equipment, the delivery of a change of behaviours is a proud achievement for the team.

"It's enabled a more consistent working culture where everyone understands the expectations and transfers skills to one another to maintain the momentum of continuing improvement."

Mike Horrell, the team's deputy leader, added: "Ensuring every member of the team is part of the change and continually reinforcing the benefits has been instrumental in its success.

"The change initiative is already producing tangible improvements across the team and it's a potential blueprint for other teams across DE&S."

Artillery team keeps eye on the front line ball

DE&S trio puts orienteering skills to the test

CAPTAIN MARK Bentley of DES at Corsham led home the field in the Royal Signals Orienteering Championships at Washers Pit, Shaftesbury, last month.

Ft Lt Geoff Ellis, also from DES Corsham, attended the event for training and emerged the fastest of all comers.

He is hoping to lead the Combined Services team to success against the British Universities.

Mark puts the success of the Corsham orienteers down to the ability to train together and learn from each other's strengths.

The team event took place at Thorney Island. As there are insufficient Royal Signals orienteers at DES Corsham, Mark called up support from Geoff and Lt Col Chris Sanderson, also of DES.

On paper this team looked extremely strong, and so it proved on the day. The speed of decision making, dividing up the controls, saw them out in the fast Thorney Island terrain minutes before their rivals.

All three team members finished within seconds of each other to emerge comfortable winners.

Over the two days there was some extremely varied terrain that tested a variety of orienteering skills.

**Fund set
to mark
125 years**

OFFICIALS HAVE been visiting some DE&S sites promoting the Civil Service Benevolent Fund to mark the fund's 125th anniversary.

And they have launched a microsite with information on the fund along with a film which shows the value and importance of the fund's volunteers.

The microsite is at http://www.csbf.org.uk/125_year while the film can be viewed at http://www.csbf.org.uk/volunteer/making_lives_better



A race in the country
IT WAS best foot forward as personnel from Clyde naval base joined a large field at nearby Helensburgh for the Scottish Services Cross-Country League.

The run was started by Commodore Mike Wareham, Clyde's Commander, accompanied by VIP visitor Captain Ian Stidston, Director of Naval Physical Development and head of the Navy's Physical Training Branch.

Runners from the RAF took the overall title.

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Project skills keep Alun ahead of the game

THE MOD'S top graduate – Alun Miles of Abbey Wood – has enhanced his project management knowledge with attendance at a leading conference for project managers.

Alun, electrical systems manager on the Type 45 destroyers programme, was graduate of 2010 on the MOD's project management development programme (PMDP).

The programme is designed to improve project management skills and attain professional qualifications. The aim is to train, educate and develop people to improve delivery of projects throughout the MOD linked directly to the PPM Licensing Programme.

"After being accepted on the scheme I found the courses the PMDP organised very informative and educational, and meeting and talking with other members most beneficial," said Alun.

"One of the biggest benefits of being part of the PMDP is the 'networking' with other members. The sharing of experiences and knowledge was a key factor in me passing the APM exam and achieving a level one licence. Being a member of the PMDP has enhanced my professional development."

"Attendance at the conference and awards was a very useful experience. Not only did I manage to listen to some very experienced and knowledgeable project managers but I also got to learn of their experiences on how they successfully manage projects. I am hoping to use



Top graduate Alun Miles, right, is pictured with Vic Jenkins

this knowledge for the benefit of the MOD."

Vic Jenkins, PPM head of profession, said he believed in the importance of project management to the MOD.

"I see the value that well-managed projects deliver to defence and the contribution that well-trained, experienced and enthusiastic project managers can make to military operations and the effectiveness and efficiency of the department as a whole," he said.

"I wholeheartedly support the PMDP and the members who make it successful. Alun is one and I am really pleased that he found the conference and awards ceremony to be another source of useful information and inspiration."

Reporting of accidents and incidents

DE&S' INCIDENT notification Cell (DINC) has now collocated to Abbey Wood.

All staff must report non-equipment accidents/ incidents, near misses, notifiable diseases and dangerous occurrences to the cell or via the local notification route.

Accident/incident details can be e-mailed to DES SE CESO-OHSE-DINC-OFFICE, faxed to 9352 32901 (0117 9132901) or phoned to the smart number 9679 82954 (03067982954).

In the event of an incident involving a DE&S site, personnel or equipment, which has potential for enforcement action the relevant director under whose line manager it falls and DINC are to be notified without delay.

Where such an incident results in a fatality the notification must be immediate and include the head of safety and environmental protection.

Further information on the DE&S DINC webpage and from Jane Laver (DES SE SEP-DINC-Man).



Home of the BATTLEFIELD MISSION

Millbrook is an independent world-leading organisation specialising in the development, enhancement and research of military vehicles, as well as being home to the MoD **Battlefield Mission**



Team raffle aids hospital youngsters

THE CHILDREN'S ward at Bath's Royal United Hospital has benefited to the tune of £100 after a charity raffle and quiz by DE&S Safety and Environmental Protection staff.

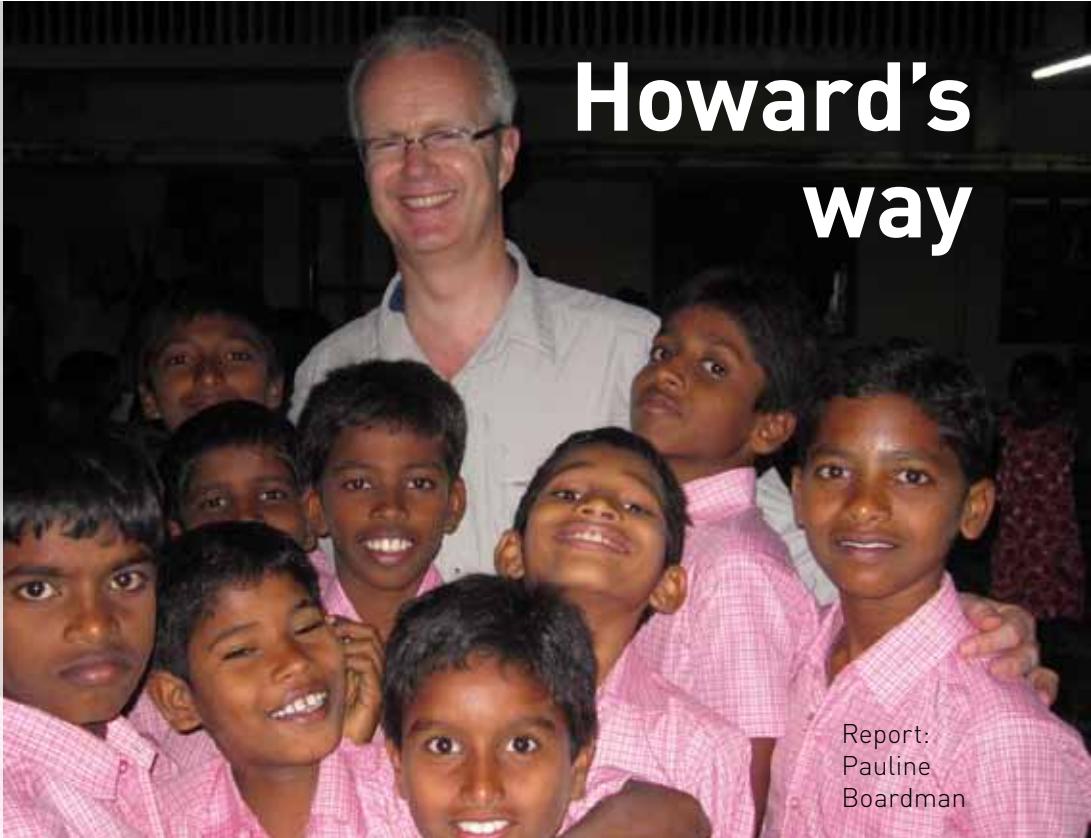
Twenty-three prizes were donated by staff for the raffle with the money going to buy board games, building bricks and soft toys for the children to help them learn to play and work together.

It is hoped that the team will continue to raise money for the next Christmas charity with a number of events being organised throughout the year along with another raffle and quiz.

For further information:
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www.millbrook.co.uk/military

For most of the year he's head of safety and engineering at DE&S. Then he turns his hand to transforming the lives of some of India's poorest children, children who are reaping the benefits of . . .



Howard's way

Report:
Pauline
Boardman

THE LIVES of some of India's poorest children are being transformed by the work of one of DE&S' Directors.

Howard Mathers, Director Safety and Engineering, is Treasurer of the Children's Homes in India Trust (CHIT), which raises money to run two children's homes in Andhra Pradesh, southern India.

Providing solar panels for India while, bottom, Howard with school staff and trustees



Howard is just back from his annual visit to the homes, where he and other CHIT trustees spent time with the children, met staff and assessed the progress of specific projects.

The homes provide a haven for 250 children, of whom about 40 are orphans, the others mainly from struggling single-parent families.

"All are extremely poor and would face a life as illiterate, probably itinerant, farmworkers or labourers," Howard said. "Or they may just end up begging."

"We passionately believe that education is key to breaking the cycle of poverty so, as well as the homes, we fund a school which takes children from ages seven to 18. And we support those capable of pursuing further or higher education."

Four years ago, Howard and the other CHIT trustees embarked on a scheme to convert the school's teaching from the local Telugu language to English.

"It's a major transformation, and it will take time, but it will give the children much greater opportunities," Howard said. "For those who are already learning English, it seems to be giving them much more confidence."

CHIT has made other major differences over the past year to the lives of the children and their families.

During their recent trip the trustees spent £500 on multivitamins for the children. Food prices in India have been soaring, with the price of vegetables rocketing 10-15 per cent in the last few months because of crop failures. Cost increases mean balanced diets are increasingly difficult to manage.

In previous years, Howard and his fellow trustees have installed solar heating to preheat water for cooking rice, bought buffalo which produce very rich milk and updated computer capability.

All this is achieved in the spare time of the six trustees who make up CHIT. The charity has no presence in India, other than the staff of the homes and the school, who are employed by a local charity.

CHIT needs to raise around £90,000 a year to cover costs, 95 per cent of which goes directly to India. The trustees fund all expenses for the trips they take.

"We work with people who have, in effect, fallen out of the system. They have no opportunities, and are leading rather grim lives. Then, through CHIT's work, you see them grow to be happy and positive."

"I see for myself how some of the children develop. One lad started with us and is now in his third year of a pharmacy degree, other people are doing Masters degrees in subjects like economics, and there are a number of girls training to be nurses. It's incredibly energising."

For more information about CHIT, visit www.chitonline.co.uk



Youngsters are invited to world of Watchkeeper

SPECIAL NEEDS youngsters and their teachers from Aberporth have been given a guided tour of Parc Aberporth, the new centre of excellence for Unmanned Air Vehicles at West Wales Airport.

The youngsters were shown around the site by Geoff Price from DE&S' Unmanned Air Systems team and Ian Walker and Andy Coburn from Thales UK.

Watchkeeper flight trials are being carried out at Parc Aberporth, which was developed by QinetiQ in conjunction with the airport.

The visitors watched videos of Watchkeeper in flight, were shown around a Watchkeeper on the ground, saw its ground control station and also visited a helicopter. This was followed by a short drive along the runway in a spare Pinzgauer 6x6.



'Ultra fit'
Dave
heads for
Dead Sea
Marathon

GOSPORT-BASED Dave Newcomb will be putting his best foot forward for charity next month in a bid to raise cash for Help for Heroes.

Dave, 39, of the Joint Support Chain, has been running marathons for 15 years but has now put himself forward for the 50km Dead Sea ultra marathon in Amman, Jordan, on 8 April.

"I have taken part in a number of races in the past, notably the London Marathon and the Snowdonia Marathon. The Dead Sea Marathon will be my first 'ultra' event," he said.

"Help for Heroes is a charity that I am very passionate about helping."

Dave is trying to raise at least £2,000 and colleagues can make donations at <https://www.bmycharity.com/davenewcomb>

DINs - released this month

Defence Instructions and Notice (DINs) are defence-wide instructions, guidance and notices for military and civilian staff, containing up-to-the-minute information to help people carry out their duties. Some of the latest issued on Defence Equipment and Support are:

2011DIN04-015: DE&S is responsible for all tri-service ocean and coastal towing ('blue water' towing) and transportation of ships using semi-submersible vessels and barges. This DIN offers guidance for those involved in towage or heavy lift transport of ships and submarines.

2011DIN04-014: This provides information on distribution and fielding plan for the C-IED Sub Unit Training Packs to support individual all-arms C-IED training. It provides outline dates of the delivery of the programmes.

2011DIN04-010: Light Weapons, Photographic and Batteries team are cleansing equipment ranges and legacy engineer equipment is being retrospectively declared out of service, allowing disposal of stock.

2011DIN04-009: This DIN introduces into service a sample cylinder for testing breathing air against the required MOD specification used by adventurous training divers. To facilitate a common sampling system and process available to all adventurous training centres Defence Fuels Group is introducing a sample cylinder available via the group's managed gas supply contract.

Further information and more details on the latest DINs see:
<http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/CivilianAndJointService/AtoZ/DinsIndex2011.htm>

Staff set to shape the DE&S way forward

DE&S STAFF have been updated on the change agenda the organisation faces following SDSR and offered the chance to feed ideas into the process.

The Business Development Team held an open forum on 28 January at Abbey Wood.

The event began with a presentation by Rachel Baguley, Head of the Business Development team.

Key factors affecting DE&S were highlighted, including the outcome of the SDSR and how the organisation would feed into this, Lord Levene's Defence Reform review and the arrival of Bernard Gray.

Mr Gray's key messages were set out including his belief that his report on defence procurement was a starting point.

The first major point CDM wants DE&S staff to think about is what the organisation is for and what value it adds.

Mr Gray is keen staff are involved in the change process and present their views through the Change Exchange e-mail on the Business Development website, upcoming Operating Centre consultation exercises, by making a GEMS suggestion or attending future business development focus groups.

Following the presentation staff were invited to share their thoughts.

Topics included whether the changes DE&S makes will represent value for money and how this will be quantified, the need to identify what the organisation does well and what could be improved, and how any future reduction in posts will be managed and communicated to staff.

The need to retain skills and the ability to train staff was also discussed as well as the importance of internal and external communication.

The next open forum is on 24 March.



Charity cash comes rolling in – thanks to generosity of Beith

WORKERS AT Defence Munitions Beith have raised cash for a charity caring for former service personnel.

Stephen Neil, Head of Establishment at Beith presented £750 to Linda O'Malley of Erskine on behalf of the workforce who raised the cash from hot dog sales, sponsored runs and raffles.

Erskine, founded in 1916 with one hospital, now has five residential care homes and four supported employment workshops in Scotland.

Pictured: Stephen Neil, head of Beith, presenting the cheque to Linda O'Malley of Erskine

Clyde workers take look at further education

WORKERS at Clyde naval base were introduced to the world of further education when members of the Open University paid a visit.

While at the site university staff held two presentations – a morning one aimed at those with engineering experience and an afternoon one focused on the OU's Business School.

Both presentations were fully attended with the afternoon session gathering particular interest as it was the first time the Business School had visited the base.

"The great thing about studying for a degree with the Open University is that you do not need any formal educational qualifications to apply," said Lieutenant Commander Ewan Wharrie of the base's education centre.

"They have some fantastic degree courses, but it's not just degrees, they have a wide range of certificates and diplomas too – around 600 modules.

"The OU Business School is offering a Master of Business Administration course and there are also modules in everything from accounting and finance, to management, leadership and technology management."

During the day the Open University also set up a stall in the base's retail mall, pulling



Course fishing: Open University's Bruce Heil introduces Leading Rate Danni Crossley to some of the courses available

in passers by on their way to lunch.

"The Open University is really the perfect choice for a lot of our workers here at Clyde," continued Lieutenant Commander Wharrie.

"Around 70 per cent of existing OU students are

studying while in employment and service personnel can use enhanced learning credits towards their course.

"The day has been a great success and I am sure we will see many base workers take up the learning challenge as a result."

Company fundraising will help Forces' families

DEFENCE EQUIPMENT, Support and Technology Minister Peter Luff was on hand to accept cash from the LSC Group following a year of fundraising.

LSC Group, a wholly owned subsidiary of Babcock, presented a cheque to former Chief of Defence Materiel General Sir Kevin O'Donoghue, Chairman of the Soldiers, Sailors, Airmen and Families Association (SSAFA Forces

Help), their 2010 corporate charity at a SSAFA Corporate Friends event held in Central London.

Fundraising included 30 of the senior management team walking up Mount Snowdon, raising more than £4,000.

George Webb, Managing Director of LSC is pictured on the far right presenting the charity money to General Sir Kevin and Mr Luff.



Runners set a hot pace



Runners in the fifth Sangcom half marathon put their best feet forward

MORE THAN 100 competitors took part in the fifth annual Sangcom (Saudi Arabia National Guard Communications) half marathon raising cash for charity.

As in previous years, the six-lap event on the flat and fast course raised money for the Saudi Disabled Children's Society and the Help for Heroes.

This year's event has pledged £8,000 for the charities.

The race, which saw temperatures rise to a warm 19 degrees Centigrade during the run, was started by Ambassador Sir Tom Philips and the 2.6 mile fun run was won by nine-year old Jack Miller in 17 minutes and three seconds.

Hot on his heels was the fastest girl in the race Phoebe Lloyd-Evans who finished in 17 minutes and 23 seconds.

The half marathon was won by Stephen Tomlinson in one hour, 28 minutes. The fastest female competitor was Wendy Hazlewood who finished in a time of one hour, 53 minutes.

Money was raised through direct sponsorship, donations of prizes for a raffle, and entry fees.

Dstl announces DE&S dates

THE DEFENCE Science and Technology Laboratory (Dstl) will host roadshows throughout 2011 in Neighbourhood 2 at Abbey Wood.

Tackling different capability themes, Dstl will demonstrate how its advice and research can be used across defence equipment, support and wider MOD.

Wed 16 March: Maritime
Wed 4 May: Air
Wed 15 June: Counter Terrorism
Wed 27 July: Land
Wed 14 Sept: Weapons
Wed 26 Oct: ISTAR

More information from Claire Burt at DE&S, or visit Dstl on the RLI – <http://collab.dstl.r.mil.uk> (MOD staff only)

Hull specialists earn reward

THE HULL survey unit in Maritime Capability, Trials Assessment in Portsmouth has been rewarded for its contribution to warship safety.

The team has received a

commendation from Vice Admiral Andrew Mathews, Chief of Materiel (Fleet) at DE&S, for its consistently high standard of work throughout the past 12 months.

Despite being lean on manpower the unit met all its targets and also carried out significant work in its fire safety assessment role.

Receiving the award from Vice-Admiral Mathews are: Chief Petty Officer Brian Lloyd, CPO John Preece, Lieutenant Stephen Ryan, CPO Tom Peters and PO Tony Stevens.





Typhoon team puts seal of approval on club lounge

AN RAF charity has seen a refurbished lounge at one of its clubs re-opened by a member of DE&S' Typhoon team.

Wing Commander Emma Dove of Typhoon's Support Strategy team at Abbey Wood opened the lounge at the Royal Air Forces Association (RAFA)

branch at Thornton Cleveleys.

Wg Cdr Dove said: "It is a privilege to be invited as honorary guest to undertake the official reopening of this RAFA branch.

"Thornton Cleveleys has a longstanding association with the RAF, from assisting serving

members during World War Two through to aiding serving and ex members in the Fylde region today."

Left: Wg Cdr Dove presents a framed print of an RAF Coningsby based Typhoon and a Battle of Britain Memorial Flight Spitfire, to RAFA.

Industry moves closer to MOD in Shrivenham course tie-up

INDUSTRY HAS been getting closer to the military by sending delegates on the latest command course.

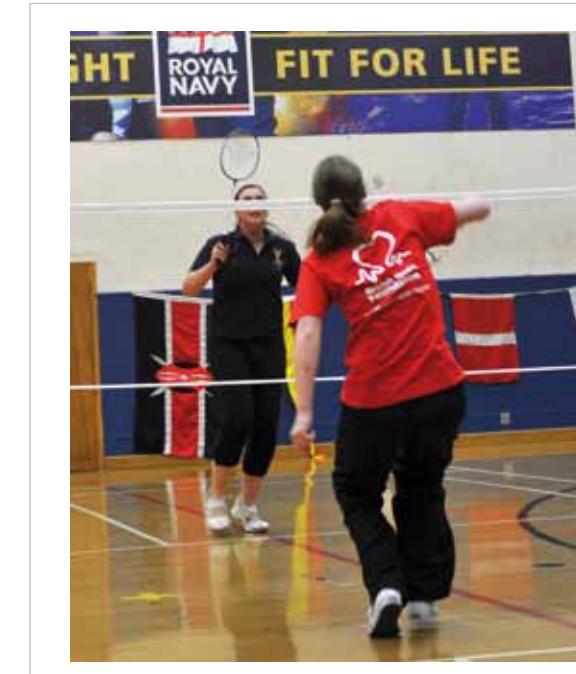
More than 20 delegates from 12 companies took part in the Defence Policy and Strategic Programming module at the Defence Academy, Shrivenham.

Students gained valuable insight into the structure and workings of the MOD and opportunities to network with UK and foreign military students, many of whom will go on to work in key positions in capability, equipment, support and requirement areas of defence.

Guil Johnston from BAE Systems said: "Taking part in the Advanced Command and Staff Course has been a fantastic opportunity and an enjoyable three weeks.

"Learning about current and future defence challenges alongside MOD decision makers of the future presents a unique opportunity to understand the pressures that each are faced with and to explore how we can support each other better in the future."

Ken Beedle from Northrop Grumman added: "It has



Stars put on a champion show

KEEN Badminton players from Clyde naval base gathered at the base's Sportsdrome for the Royal Navy Scotland Badminton Open.

The event, which is a stepping stone to the major Royal Navy and Royal Marines tournament, saw 13 competitors head to the courts to see who would be crowned champions.

In the female singles event Able Rates Lorissa Seville, Tasha Millington, Gail MacLachlan and Becky Cahill faced one another for the championship, with Lorissa and Gail making it through to the final with Lorissa coming out on top 21-14.

In the male singles event Commander Paul Blyth went head to head with Leading Physical Trainer Mike Fleming. The Commander was victorious, beating his opponent 21-12.

been an excellent opportunity to help create a better understanding between industry and the MOD.

"The quality of visiting speakers has been outstanding and the level of discussion and debate stimulating throughout."

Roger Foster from Raytheon said: "A highly

valuable few weeks, with benefits that will undoubtedly reap rich rewards personally and for both industry and MOD, for years to come"

Guest speakers on the course included Tom McKane, Director General Strategy at the MOD; Deputy Chief of Defence Staff(Capability), Vice Admiral Paul Lambert; and

Permanent Under Secretary at the MOD, Mrs Ursula Brennan.

Companies represented included BAE Systems, Northrop Grumman, Raytheon, Rolls Royce, Chemring, AgustaWestland, Fujitsu, Marshall Aerospace, QinetiQ, Selex Comms, Ultra Electronics, and Thales UK.

SAILORS and staff from Clyde naval base flocked to the French Alps for the Royal Navy Winter Sports Association Alpine Championships.

HMS Neptune – the shore establishment at Clyde – was represented at Espace Killy by skiers Commander Nigel Carty, Warrant Officer 1 Gary Nicolson, Warrant Officer 1 George Chapman and Chief Petty Officer Paul Crichton.

Neptune skiers blaze an Alpine trail

The four sailors missed out in the overall team honours after failing to complete the slalom, but did manage to earn golds in the major unit grand slalom and major unit Super 'G' blue riband event. Commander Carty also managed second place in the individual ski masters overall competition.

The base was also represented in

the snowboarding events, with CPO Physical Trainer Scotty Mather earning second place in the intermediate snowboard parallel grand slalom.

Perhaps the biggest achievement, however, was by Able Rate Patrick May, who, in his first championships came overall third in the snowboard slope style category.

New harbour master takes control

THE NEW Queen's Harbour Master has arrived at Semaphore Tower to take over keeping Portsmouth harbour safe and secure.

Commander Nigel Hare has succeeded Commander Stephen Hopper to oversee one of the busiest ports in the country.

A navigator, Cdr Hare has served on global operations, commanded the minehunter *HMS Cromer* and was seconded to the Spanish Navy – which he cites as one of his most enjoyable experiences.

"I have wanted to be QHM for a number of years now," he said. "It is one of the best jobs in the Royal Navy – it is a very hands on job that comes with a lot of responsibility in ensuring that the day-to-day running of the port goes smoothly and safely."

"It is a large operation – I have control of 55 square miles of water including a large part of the Solent with over 150,000 planned movements in and around Portsmouth every year, and that's just counting the military and commercial ships and not including the considerable and important recreational traffic that we look after."

Cdr Hare, who lives in north Hampshire with wife Sandra and their two children, was born in Lewes and joined the Royal Navy in 1980.

In his spare time Cdr Hare is a keen 5-a-side football player and plays lead guitar in a band – Anti Flash – which comprises civilian and military players.

Right: Cdr Nigel Hare



Faslane pays tribute to tragic sub's crew



Above: participants reflect at the memorial service. In the foreground is Captain Philip Buckley, Captain Faslane Flotilla, and Commander Ian Riches, Base Executive Officer



Below: K13 after being salvaged and refitted as K22

SAILORS, ex-submariners and sea cadets met at Faslane Cemetery on Sunday, 30 January to mark the 94th anniversary of the K13 submarine disaster.

Gathering at the memorial obelisk, the participants took a moment to remember the 32 people who perished when the submarine K13 sank in the waters of the Gareloch on January 29 1917.

Around 60 people attended the memorial, including members of the Submariners Association, led by the national president Admiral Sir James Perowne, many of whom had travelled from Northern Ireland, Manchester, Barrow, Aberdeen and Lincoln to be at the event.

Also there to pay their respects were members of the British Legion and HM

Naval Base Clyde representatives Captain Philip Buckley from Faslane Flotilla and Base Executive Officer Commander Ian Riches.

"It was a very poignant occasion and one which drew a tremendous turn out to pay their respects," said Cdr Riches.

The memorial began at Clyde naval base with a church service led by Father Andrew McFadden, Faslane Flotilla's Chaplain.

This was followed by a wreath laying while sea cadets of TS Neptune rang a ship's bell 32 times, once for each life lost.

Commander Riches added: "The K13 disaster may be over 90 years in the past, but there is a strong sense of brotherhood and community in the submarine service, one which keeps us coming back here to remember the events of January 1917."

Timeline of a disaster

IN 1917 the Royal Navy submarine service was in its infancy and K13 was at the height of underwater technology.

The fastest submarine of its day, K13 was constructed by Clydeside builders, Fairfields, to answer the German wartime U-Boat threat.

However, disaster struck when the vessel took on water as she dived in the Gareloch, flooding her boiler room and plunging her to the bottom.

Although 32 people died, another 48 found themselves trapped with no way out.

Captain of K13, Lieutenant Commander Godfrey Herbert, came up with a risky plan. A volunteer would climb into the conning tower, flood it, and open the hatch. A bubble of compressed air would rise to the surface and with it the brave volunteer who, once picked up, would pass on vital information to aid the rescue effort.

That volunteer was Commander Francis Goodhart, captain of sister submarine K14, onboard to witness the sea trials. Lieutenant Commander Herbert accompanied Goodhart to the conning tower where he would release the vessel's high pressure air.

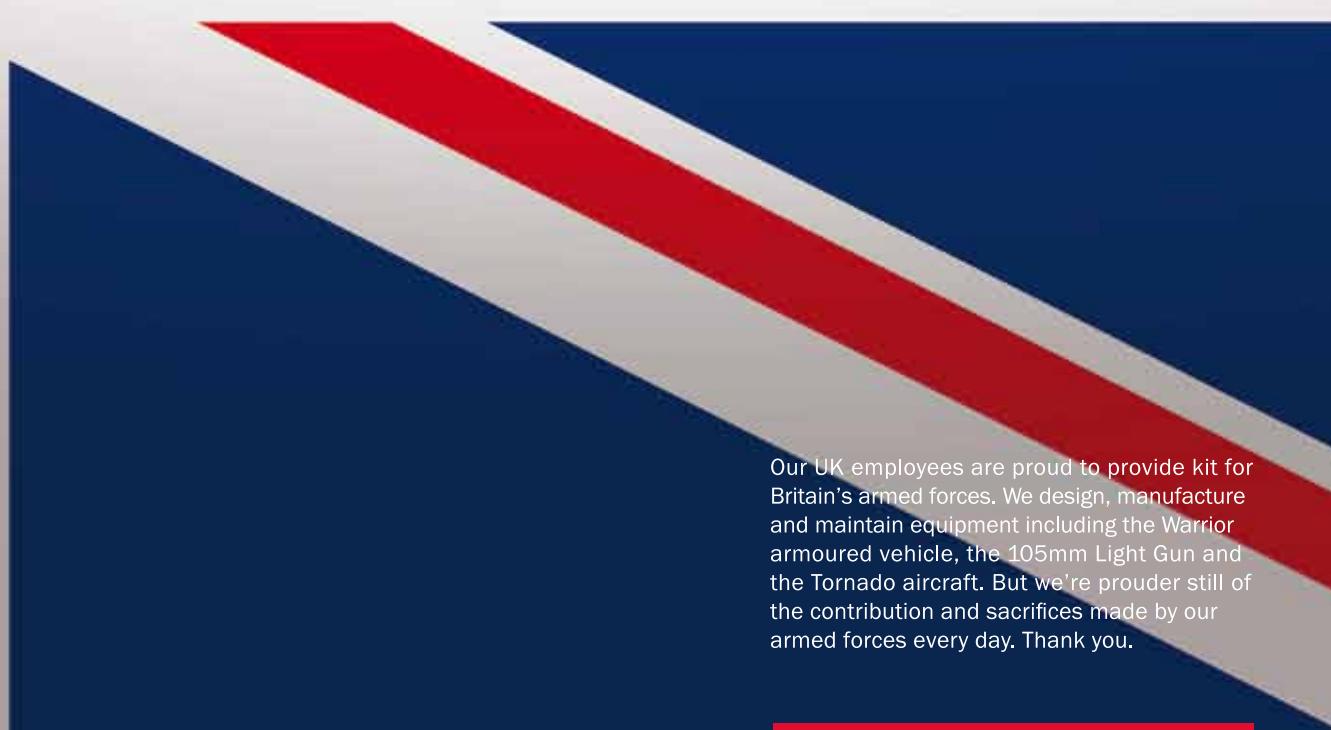
Commander Goodhart was propelled through the hatch but, such was the force, Lieutenant Commander Herbert lost his grip and was swept upwards. He reached the surface alive but Commander Goodhart was found drowned after being knocked unconscious on the submarine's superstructure.

Rescue divers attached oxygen to the vessel and a cable was passed beneath K13's hull, raising her up enough to cut a hole in the bow and rescue the survivors.

PROUD TO SUPPORT OUR ARMED FORCES.



MADE IN BRITAIN



Our UK employees are proud to provide kit for Britain's armed forces. We design, manufacture and maintain equipment including the Warrior armoured vehicle, the 105mm Light Gun and the Tornado aircraft. But we're prouder still of the contribution and sacrifices made by our armed forces every day. Thank you.

BAE SYSTEMS