

desider

Jan 2012 Issue 44



MINISTRY OF DEFENCE

the magazine for defence equipment and support

Typhoon spreads its wings



Joint Combat Aircraft makes progress [See inside](#)



Superblock takes shape



Happy landings



Southward bound



Perfect partnering



In the footsteps of Brunel

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Picture: Katsuhiko Tokunaga

cover image

Typhoon excelled in its first front line operations, as did those from DE&S and industry who did so much to support it. Pictured above is a Typhoon soaring over the Gulf as it takes part in the Dubai Air Show.

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Bernard Gray

Chief of Defence Materiel

'As soon as any decisions are reached I want DE&S to be the first to know'



Welcome back to the start of another year. I hope that you all enjoyed a well-deserved break over Christmas and the New Year and have returned to work rested and ready for a year that will be an extremely important one for all of us in that it will mark the start of a process that will take us towards a stronger and more able DE&S.

You will all be aware of the work that has been undertaken by The Materiel Strategy team in scoping the extent of the problem we are faced with in equipment acquisition and the potential solutions to it. Your support to the process has been of significant value and assistance to the team in preparing the Ministerial Submission that went to Secretary of State before Christmas. This set out the potential options for the future on which I have kept you briefed through my town hall sessions during 2011. I look forward to continuing to update you face to face. Ministers will choose an option to take forward in due course.

Change brings uncertainty. I recognise this and I want to assure you that as soon as any decisions are reached, I want DE&S to be the first to know. Not only about the work that will be needed as the organisation evolves but also the implications for personnel.

On the subject of change, I made a very important announcement before Christmas about new appointments to the Board. Michael Bradley, who comes from industry, will be taking up the post of DG Resources at the end of this month. Pete Worrall, with whom many will be familiar, has been confirmed as Chief of Materiel (Joint Enablers) after spending a few months on temporary promotion in the post. Both will make a huge contribution to the future of DE&S. Michael will bring significant financial expertise at senior level in business and

industry while Pete brings immensely valuable knowledge of military procurement in the UK and overseas.

At the same time the Board will be saying goodbye to Trevor Woolley, who has made a major contribution to the work of DE&S. I know you will join me in applauding his work here, as Chief of Corporate Performance and more recently as DG Resources.

I feel it is also worth noting the great pleasure I took last month in attending the MOD's Apprentice Awards 2011 and meeting and talking afterwards to the many splendid apprentices from DE&S who had won awards. Some of you may remember that Pete Worrall began his MOD service as an apprentice. His success is a reminder that an MOD apprenticeship can still be a pathway to the top jobs in the department.

The Minister for Defence Equipment, Support and Technology, Peter Luff, has recently written to a number of defence contractors to congratulate them for their support during Operation Ellamy. His letters are a useful reminder to us all of the strength and depth of the UK's defence industries and their overseas partners – and their determination to deliver when our Armed Forces are in action.

I would like to take this opportunity to complement the Minister's note to industry with my own heartfelt congratulations to all of you who worked so successfully in support of Operation Ellamy. That our Armed Forces had the equipment and support they needed was a testament to your continued hard work and commitment. This support was carried through alongside and on top of the very demanding and continuing work done across DE&S to supporting current operations worldwide. Well done.

Carrier prog

Decisions taken to refocus investment were 'well-informed' says public watchdog

THE MOD has welcomed Parliamentary watchdog reports that say building the second of the two aircraft carriers 'makes financial sense'.

Defence Secretary, Philip Hammond said that as part of Government efforts to bring MOD finances back into balance the focus had been firmly on the future of the two carriers, *HMS Queen Elizabeth* and *HMS Prince of Wales*, during the Strategic Defence and Security Review in October 2010.

"When this Government came into power, the *Queen Elizabeth* class carriers were already £1.6 billion over budget," he said.

"As part of an overall package of measures taken in the Strategic Defence and Security Review we have reduced overall spending on the Carrier Strike Programme by £4.4 billion over the next ten years.

"The National Audit Office (NAO) and the Public Accounts Committee have both acknowledged that our decision to build a second aircraft carrier makes financial sense.

"Converting one of the *Queen Elizabeth* class aircraft carriers to operate the more capable Carrier Variant of the Joint Strike Fighter fast jet from 2020 will maximise our military capability and enhance interoperability with our allies.

"Operating the more cost-effective Carrier Variant fast jet will, in the long-term, offset the conversion costs and provide us with aircraft that have a longer range and carry a greater payload.

"Until our new carrier capability comes into service, we can utilise our extensive basing and over-flight rights to project decisive air power, as we showed during the Libya campaign."

On current plans the second of the two carriers is due to be mothballed after it has been completed later in the decade.

Mr Hammond was replying to a supplementary report on the carriers, issued on 29 November by the NAO.

At the same time the House of Commons Defence Committee produced its latest view on the carrier project.

Having seen briefing papers held by the National Security Secretariat in the Cabinet Office the NAO said the strategic policy decision to refocus investment in

programme 'is making financial sense'



Shaping the carrier's deck:
pages 17-19

both carriers and their combat aircraft was 'well-informed'.

The briefings examined implications for affordability, military capability and interoperability with allies of all the carrier options. Papers were supported by analyses of the industrial implications and the choice between retaining Harrier or Tornado aircraft.

The NAO says it will become apparent whether the MOD can secure value for money in implementing the strategic policy decision only when the MOD fully develops and costs detailed delivery plans to support robust investment decisions, probably later this year.

But the report voiced concerns that, without real terms increases in defence funding in the latter half of the decade and continuing difficulties in balancing the budget, Carrier Strike might be vulnerable to further changes in strategic direction.

The Public Accounts Committee meanwhile has described carrier construction as "going well."

"The majority of build targets have been met and the project is on track to be within budget."



SUPERBLOCK 03 – the first main section of the 65,000 tonne carrier is rapidly coming together at Babcock's shipyard in Rosyth.

The 12,163-tonne mid-section of the hull, which comprises Centre Block 03, four sponson units, and Lower Block 03, is being assembled using the Goliath crane, pictured left, one of the largest in Europe.

Completion of this first main section of the ship, which includes parts of the hangar and the flight deck, marks a key milestone in the build progress for the *Queen Elizabeth* class.

The next main block – Superblock 02 – is expected to complete assembly towards the end of this year, while progress on the second carrier, *Prince of Wales*, is also continuing, with lower blocks under construction at Govan, Portsmouth and Appledore.

Head of DE&S Capital Ships, Commodore Steve Brunton, said: "Build progress on *Queen Elizabeth* continues at such a pace that we are really starting to see the ship take shape now and getting a first glimpse of the truly awe-inspiring vessel she will become."

Queen Elizabeth superblock roars ahead at Rosyth

NEWSREEL

Workforce reductions

THE MOD is still unable to say whether it can avoid compulsory redundancies as part of reductions in the civilian workforce, Defence Under-Secretary Andrew Robathan has told Parliament. Around 15,500 paid releases are needed to achieve 25,000 civilian reductions announced in the Strategic Defence and Security Review. The first early release scheme is expected to yield 5,500 exits by this March – 2,589 had left by the end of last October – with the second to achieve another 10,000 exits by March 2014.

Charlotte is top engineer

AN officer who has kept the Apache attack helicopters flying in Afghanistan and Libya has been named Young Woman Engineer of the Year. Captain Charlotte Joyce, of 4 Regiment Army Air Corps, was honoured by the Institution of Engineering and Technology. Capt Joyce's job is to manage the day-to-day maintenance of Apaches, at the unit's base in Wattisham and on operations.

Next up at seminars

JONATHAN Slater, DG Transformation and Corporate Strategy, is next to host a Defence Academy seminar at Abbey Wood on 11 January. Bookings to admin.hq@defenceacademy.mod.uk or tel 961614828.

DfT takes on quest for search-and-rescue deal

An RAF Sea King in familiar search-and-rescue mode



PROCUREMENT OF the new UK-wide search-and-rescue helicopter service provided by civilian crews will be carried out by the Department for Transport.

The service is currently provided by helicopters of the Royal Air Force, Royal Navy, and Coastguard.

This approach will allow the Armed Forces to focus activity on front line operations.

"The Royal Navy and the RAF crews have shown great dedication and professionalism in delivering an exemplary search-and-rescue service for many years, and we owe them all great thanks for this," said Transport Secretary Justine Greening.

"Looking forward, we are confident that, building on nearly 30 years of civilian service provided under

contract to the Maritime and Coastguard Agency (MCA), a fully civilian service will be able to maintain the same standards in the future."

The Department for Transport will procure a contracted helicopter service for a period of approximately ten years.

The RAF and Royal Navy will continue to provide coverage until the replacement for this capability is in place.

Ms Greening said it is intended that the contract will require this to be the first part of the new service to become operational.

She added: "This will ensure that the MOD is able to meet its previously announced intention to withdraw from service and retire its fleet of Sea King helicopters by March 2016.

"The replacement for the

capability currently provided by the Maritime and Coastguard Agency will follow on from this. This transition will ensure continuity of service."

Modern helicopters operating from ten full-time bases can meet current service requirements and provide faster flying times, as well as a more reliable service.

Ms Greening added: "It is my intention that search-and-rescue operations will cease at RAF Boulmer in 2015 and at MCA Portland when the interim arrangements that were announced in July expire.

"Other operations at RAF Boulmer will be unaffected by this."

Award of the new contract is expected to take place next year to give the future service provider time to mobilise the new capability.



Jonathan takes charge at Dstl

JONATHAN LYLE will be the new Chief Executive at the Defence Science and Technology Laboratory (Dstl) from March.

Mr Lyle, left, currently Dstl's Director of the Programme Office, succeeds Frances Saunders.

At the inception of DE&S in 2007, Mr Lyle was appointed as Director General Helicopters, with

responsibility for all new and in-service helicopters.

During 2008 and 2009, he was Director of the College of Management and Technology at the Defence Academy, Shrivenham.

He was also Head of the Royal Corps of Naval Constructors from 2007 to 2011 and was appointed to his present role last March.

The UK's first test aircraft rolls out in the US
Picture: Randy Crites

First UK JCA is on its way

TRAINING AND operational testing by the UK on the Lockheed Martin F-35 Lightning II – the Joint Combat Aircraft – is another step closer.

The first international F-35, known as BK-1, has rolled out of the factory in the US. It is scheduled to be delivered to the UK this spring.

Although the aircraft is a short take-off vertical landing (STOVL) version – the UK is buying the Carrier Variant – it will play an important role in the UK's test programme.

Preliminary fuel system checks, ground and flight tests have still to be carried out before UK delivery.

Group Captain Harv Smyth of DE&S' Joint Combat Aircraft team and the

■ JCA lands on *HMS Queen Elizabeth*: pages 17-19

THE JOINT Combat Aircraft (JCA) team is gearing up for the delivery of the UK's first F-35 this year.

"Our major effort is that of airworthiness and acceptance, ensuring that the whole air system is safe and ready for British pilots and engineers to operate," said Gp Capt Harv Smyth, Washington-based UK national deputy.

"This focus is helped enormously since the UK is fully embedded within the programme, more so than any other international partner, and has been since the programme's inception: the US-based portion of our team, which is almost 50-strong across all ranks, is populated with staff from the RAF, the Royal Navy, Dstl and QinetiQ.

"It's an exciting time as F-35s are being tested at Patuxent River and Edwards Air Force Base and will very soon start operational conversion unit training at Eglin in Florida."

The programme has completed more than 1,350 test

Testing to begin on first UK F-35 later this year

programme's UK national deputy, said: "Delivery of this aircraft to the UK in 2012 will be a major milestone, and we look forward to starting to operate the first British F-35s.

"The F-35 family ideally matches the UK's future combat air capability needs, since it provides a world-class fifth generation air system, which is capable of operating from land and our new *Queen Elizabeth* class aircraft carrier."

The UK will play a vital role in the F-35's global production, follow-on development and sustainment over the next 40 years.

"This first F-35 for the first international programme partner is symbolic of the proud partnership we share with the United Kingdom," said F-35 Executive Vice President Tom Burbage.

"Working together in a spirit of collaboration, we are providing the RAF and Royal Navy with unmatched capabilities, while delivering advanced technology sector jobs to the UK."

The programme has nine partner nations: US, UK, Italy, Netherlands, Turkey, Canada, Australia, Denmark and Norway. In October 2010, Israel selected the F-35A as its next generation fighter. Japan and the Republic of Korea are currently considering the F-35 for their fighter fleets.

DE&S team at forefront of development

flights and more than 2,135 flight hours across all three variants. The UK team has been involved in first F-35B shipborne tests on board a US carrier, and the first Electromagnetic Aircraft Launch System (EMALS) catapult launch of an F-35C at Lakehurst, New Jersey.

The UK will initially take delivery of two F-35Bs, the short take-off, vertical landing (STOVL) variant, purchased before the decision to change from the B to the C-model.

These STOVL aircraft will be used to conduct initial pilot and engineer training before playing

a key role in joint operational testing with the US. The plan sees the UK take delivery of its first C-model in 2014.

Gp Capt Smyth added: "Now that we have decided to switch to the C-model, our attention has become acutely focused towards the generation of a 'cats and traps' capability with our new *Queen Elizabeth* carrier.

"This is groundbreaking business for the RAF and Royal Navy, since the UK has not operated a 'cats and traps' carrier since the 1970s, so we are learning new things every day, and meeting new challenges.

"That said, with the help of our US colleagues, who are incredibly supportive of our carrier enabled power projection aspirations, I'm confident we can deliver a truly joint, fifth generation, airpower capability, that will form an integral part of Future Force 2020."



An F-35C (CF-3) makes the first EMALS catapult launch at Lakehurst, New Jersey

Ellamy – industry earns a pat on the back

RAF movements personnel load Storm Shadow missiles into a Hercules aircraft to transport them back from Gioia del Colle, Italy

Minister praises companies for support to DE&S and UK operations

TWENTY UK and overseas defence companies have been congratulated by Minister for Defence Equipment, Support and Technology Peter Luff for the contribution they made to the success of Operation Ellamy – the UK's share of coalition operations in support of the United Nations mandate on Libya.

The Minister wrote to top executives congratulating them and their workforces for the considerable additional efforts they had made to meet the MOD's requirements during the operation.

The companies ranged right across the industries that support the defence of the UK, from the biggest, such as BAE Systems, EADS, Babcock and Eurofighter GmbH, to smaller companies with just a handful of staff.

Mr Luff said: "As Nato has now brought to a close its operation in Libya, I wanted to write to thank these companies and their workforces, and some key individuals who made a special contribution, for the tremendous support they provided the United Kingdom. I told the companies I

would be grateful if they could pass on my appreciation to their subcontractors who worked hard to support these operations.

"When the UK and its allies started military operations, Colonel Gaddafi's forces were hours away from inflicting a humanitarian catastrophe on Benghazi, and Misratah was besieged with snipers and under heavy artillery attack.

"Nato action has saved countless lives. Although the work in Libya is not yet done, companies and workforces can be proud of what they have helped to achieve."

BAE Systems was congratulated for its support for RAF Typhoons, Tornados, VC10s, helicopters and for pre-deployment support for the destroyer *HMS Liverpool*.

Babcock Marine was praised for ensuring the timely availability of Tomahawk cruise missiles to Royal Navy submarines and for bringing forward the maintenance of the helicopter carrier *HMS Ocean*, so that she could be deployed rapidly.

Rolls-Royce won plaudits for working on fuel for Typhoon engines and increased

output at its plant in Filton, Bristol to better support Tornado aircraft, as well as supporting VC10 engines.

EADS won praise for providing vital secure communications facilities for RAF Typhoons.

Northrop Grumman was praised for fielding an initial deployed fleet of three RAF Sentry airborne early warning and control aircraft complete with a supply chain solution.

Hewlett Packard was applauded for IT support and successful implementation of its Advanced Mission Planning Aid enabling fast jets, transport aircraft and helicopters to fly safely. Deployed swiftly, RAF Tornados were able to complete numerous missions crucial to the success of operations.

Raytheon was congratulated for maintaining high levels of availability for RAF Sentinel surveillance aircraft while Ultra Electronics provided additional training and resources at very short notice to keep Litening III pods fully supported in theatre.

Below: homeward bound – RAF vehicles are readied for the return from Gioia del Colle

Other companies congratulated include:

- Cammell Laird, for outstanding support to *HMS Ocean* through a successful Assisted Maintenance Period in Malta;
- MBDA France, for working to support Storm Shadow and Brimstone;
- QinetiQ, for working with BAE Systems and Selex Galileo to enhance Typhoon's operational capability.
- Selex Galileo, for its work with BAE Systems and QinetiQ to enhance Typhoon's operational capability;
- Defence Optical Systems, for delivering Night Vision Goggles;
- Eurofighter, Eurojet, Panavia and Turbo Union, for their work with UK companies in support of operations;
- Goodrich, for ensuring availability of RAPTOR air and ground elements. Personnel at RAF Marham and Malvern also ensured that the Exploitation

System at Malvern was ready to receive imagery in good time.



Rolls-Royce spreads the word on Ellamy support

Engine serviceability helps towards near-100 per cent success rates

Report: Tim Lewis

DEFENCE AND aviation specialists were offered an insight into the challenges of support to Operation Ellamy when Rolls-Royce hosted a media visit to its Bristol aero engine plant.

DE&S Director Combat Air, Air Vice-Marshal Simon Bollom, was on hand to join senior company staff in highlighting the excellent support provided to RAF operations and the success it helped to bring about.

AVM Bollom praised the combined efforts of Rolls-Royce and RAF personnel in launching 1,450 sorties into Libya, achieving almost 100 per cent success rates in the face of a dramatic increase in flying hours.

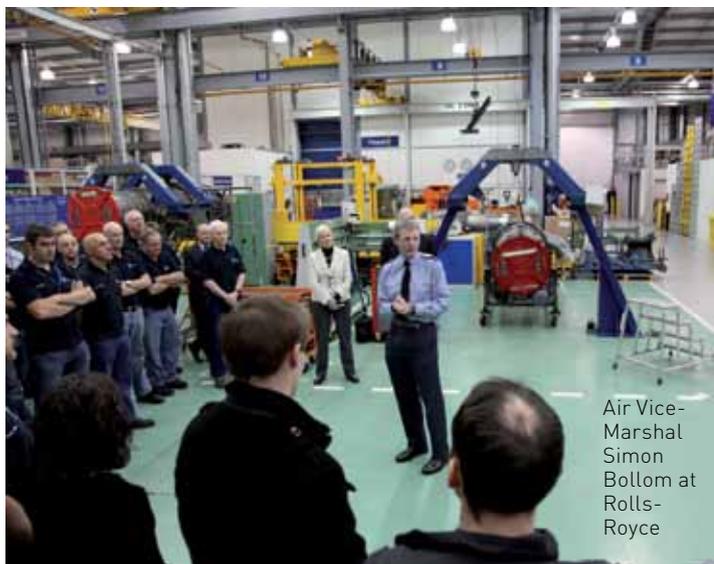
With 1,600 additional hours flown an engine serviceability of 100 per cent was achieved, with one Typhoon EJ2000 engine exceeding 1,000 hours without the need for removal.

Completely revised support arrangements introduced in the last few years had led to greatly increased company turnover while halving costs to the customer.

Robust support for the VC10's veteran Conway powerplants had been an essential ingredient in Operation Ellamy's success, while the Tornado GR4 fleet had been supported through a doubling in its planned flying hours.

Journalists were shown engine production facilities and a new Typhoon engine under test before visiting the 24/7 Operations Centre that supports Rolls-Royce engines worldwide.

The visit provided a convincing demonstration of how a flexible and open partnering arrangement can bring significant benefits to both manufacturer and customer.



Air Vice-Marshal Simon Bollom at Rolls-Royce

Minister takes check on Foxhound progress

DEFENCE MINISTER Peter Luff has been briefed on Foxhound, the new protected patrol vehicle earmarked for delivery this year.

Mr Luff, Minister for Defence Equipment, Support and Technology, visited Force Protection Europe and subcontractor Ricardo UK Ltd at Shoreham-by-Sea, Sussex, to see the Foxhound assembly line.

The Minister saw the first five vehicles undergoing final inspection at FPE's collocated facility having left the Ricardo assembly line. These would be sent to Millbrook for the completion of reliability growth trials before delivery to the Army.

He then visited the Ricardo assembly line where he saw the next 11 vehicles in production. Ricardo has been subcontracted for the assembly of Foxhound, for which a separate production line has been built.

Mr Luff was also shown the engine production line for the McLaren MP4-12C sports car, which had been developed by Ricardo. He was then taken for a test drive.

Abbey Wood was also on Mr Luff's agenda, below, when he enjoyed a working lunch with the Harrier and Pegasus termination team, hosted by Combat Air commercial head Robert Swales.



NEWSREEL

Weapons clearance

THE UK is contributing £1.5 million to fund civilian experts helping in a weapons disposal programme in Libya, Defence Secretary Philip Hammond has revealed in a Parliamentary answer. As part of this commitment, the MOD has provided a small team of UK military specialists to work alongside the Libyans and United States in preventing the proliferation of surface-to-air missiles.

Export drive

DEFENCE Minister Peter Luff expects further interest in Typhoon following the Libyan campaign in which it showed exceptional levels of reliability, performance, accuracy and cost-effectiveness. "It has been selected by India for the final phase of its medium multi-role combat aircraft competition. It is also competing in a number of other important markets, including Japan, Malaysia, Qatar, and Switzerland," he told Parliament.

Flying again

TRAINING flights of Tucano and Hawk T Mks 1 and 2 aircraft resumed last month following safety and engineering checks after the death of a Red Arrows pilot in November.

A new river

HTMS Krabi, based on designs of the River class vessels used by the Royal Navy, has been launched in Thailand for the Royal Thai Navy. BAE Systems supplied the design of the 90-metre offshore patrol vessel.

Advertisement



Sharing skills

Supporting the defence recovery pathway

Interserve is proud to work with the Defence Employment and Opportunities Team (DEOT) to offer wounded, injured and sick service personnel a range of recovery work placements or vocational schemes to help them either return to duty or to make a smooth transition into an appropriately skilled civilian life.

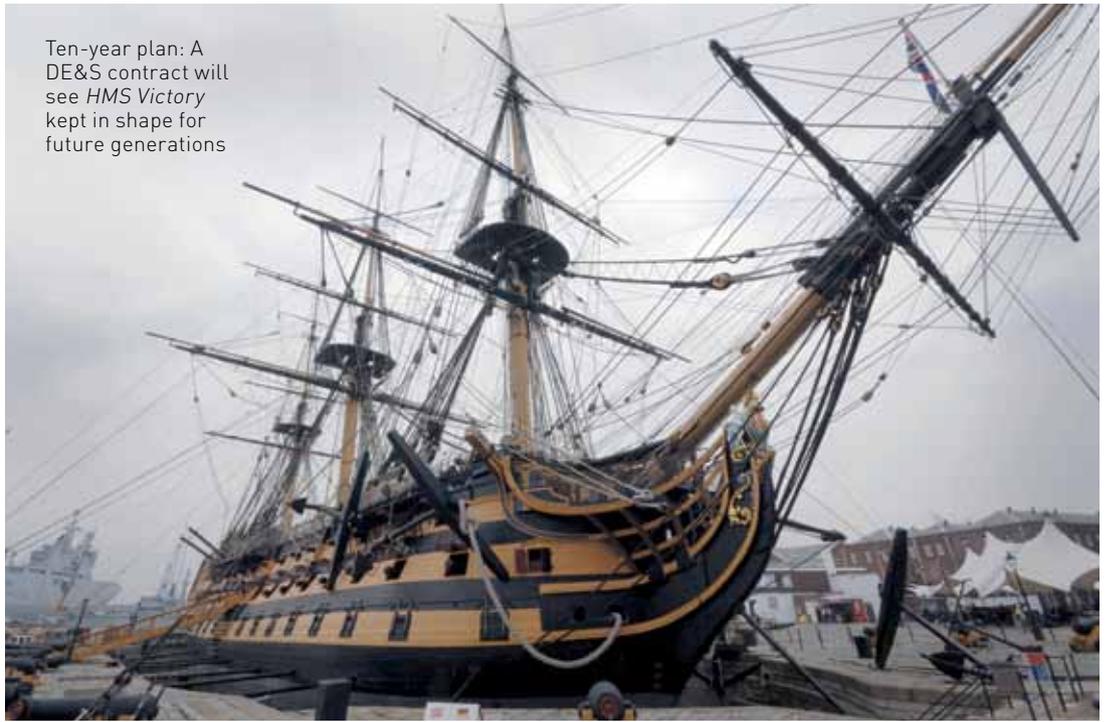
The scheme will match the skills of eligible personnel to the extensive range of challenging roles across the entire Interserve organisation.

However, our partnership goes beyond simply providing job opportunities for service personnel. As a support services and construction business, we rely on the quality, commitment and dedication of our team. We therefore welcome the many valuable skills and experiences that these individuals will bring into our organisation.



www.interserve.com

Ten-year plan: A DE&S contract will see *HMS Victory* kept in shape for future generations



Victory takes on ten-year plan to stay shipshape

HMS VICTORY, the world's oldest commissioned warship, is to be returned to her former glory thanks to a ten-year restoration programme.

It will be the most extensive restoration of the 246-year-old warship since she was repaired after the Battle of Trafalgar in 1805 as Lord Nelson's flagship.

The work will be done by BAE Systems Surface Ships at Portsmouth under a £16 million contract.

Restoration will include: the ship's masts, rigging and bowsprit; replacing side planking and removing decayed timber to replace with hand-fitted teak to maintain the structural integrity and the unique profile of the vessel.

Captain John Newell, head

Report: Hannah Swingler

of the *HMS Victory* support team at DE&S, said: "This is a great opportunity to carry out the repairs needed to preserve the ship for the nation long term."

"BAE Systems Surface Ships has assembled a world class team and we look forward to working with them."

Vice Admiral Charles Montgomery, Second Sea Lord and Commander in Chief of *HMS Victory*, said: "*HMS Victory* is an icon for the Royal Navy and the nation as a whole. This restoration will enable future generations to experience a warship that has an enduring and far-reaching effect on international history."

Repairs will be carried out by Team Victory made up of shipwrights and other specialist staff employed by BAE Systems. Staff from Bell Rigging based in London and Gloucester-based T Neilson & Co who specialise in wooden shipbuilding skills are also included.

John O'Sullivan, BAE Systems' project manager, added: "During recent removal of the top sections of the masts we kept *HMS Victory* open to the public and it's our intention to keep the ship open as we carry out the rest of the work. The restoration will give the visiting public the opportunity to gain an even greater insight into the build of this iconic vessel."

Turks pay respects on famous warship

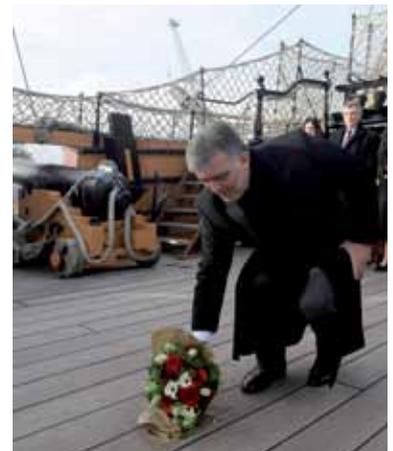
ABDULLAH GUL, President of Turkey, right, lays flowers on the spot where Nelson fell at the Battle of Trafalgar, during a four-day state visit to the UK.

Mr Gul and his wife Hayrunnisa had lunch on board *HMS Victory*, hosted by Vice-Admiral Charles Montgomery in the Great Cabin.

Type 45 destroyer *HMS Dauntless* also played a part in enhancing UK and Turkey defence co-operation by hosting a tour of the ship for Mr Gul.

He took a close look at the operations room and spacious bridge with its hi-tech navigation system. He was also shown the 4.5-inch gun on the upper deck and the large hangar which can accommodate a Merlin helicopter.

The President visited the Royal Navy Cemetery at Haslar, Gosport, to attend a wreath-laying ceremony at the Turkish naval cemetery there.



Test success sees C-130J upgrade move step closer

FLIGHT TESTING for the 'common core' development of avionics upgrades to the Hercules C-130J aircraft have finished more than six weeks ahead of schedule.

Favourable weather and better than expected availability of the US Air Force trials aircraft enabled more than 3,700 test points to be completed.

The Block 7 Upgrade project, as it is known, is being delivered via the broader C-130J Collaborative Upgrade Programme.

This allows the UK and six partner nations – Australia, Canada, Denmark, Italy, Norway and the USA – to achieve value for money by sharing development costs to deliver capabilities that might otherwise be unaffordable.

The project is being developed and delivered by Lockheed Martin at Marietta, USA.

This software-intensive project will provide a major overhaul of the aircraft avionics system by introducing a new Flight Management System as well as enhancing capability with a Joint Tactical Integrated Data Link.

With the USA as the lead customer, the joint testing has been led by the USAF Flight Test Centre and Lockheed Martin with participation from partner nations.



Upgrade: new avionics will help enhance capability of the C-130J. Above, the US test aircraft takes to the skies

Contributions from RAF test pilots, QinetiQ engineers and the Block Upgrade team within DE&S' Hercules/TriStar team have helped the UK influence the joint testing programme.

Test results are now being analysed to determine acceptability of the software.

Agreement of the final design to meet the UK's specific requirements will clear the way for a trial kit installation on an RAF aircraft, scheduled to begin in the summer.

Andrew Sneden, DE&S'

programme manager, said: "Block 7 is an extremely complex project, in terms of the technical challenges and working with a number of international partners to deliver the project.

"Although there will undoubtedly be challenges to face before the upgrade is fielded to the front line, the end of 2011 saw a number of significant milestones achieved on a project that will ultimately provide excellent value for money and contribute to a world class air transport capability."

NEWSREEL

Backing for Astute

SEA, a subsidiary of the Cohort technology group, has been chosen by BAE Systems to provide two additional External Communication Systems (ECS) for the Royal Navy's *Astute* submarines. The work is valued at more than £9 million and will be carried out over the next 42 months. SEA will provide ECS for *Artful* (boat 3), *Audacious* (boat 4) and *Anson* (boat 5). SEA is working with Thales Underwater Systems, Selex Communications and Aish Technologies.

Ark sale

ARK Royal will not be sold to China or any other government, Defence Minister Peter Luff has reaffirmed. "*HMS Ark Royal* is being disposed of by commercial tendering to the most appropriate bidder, either for use in a non-military capacity or for recycling," he said. Work to evaluate a number of bids is under way but no decisions have been made.

Programme board eyes Spanish assembly



A400M'S PROGRAMME Board has seen progress on the final assembly line in Seville during the six-monthly get-together of the next generation airlifter's seven launch nations plus OCCAR and Airbus Military.

DE&S Chief of Materiel (Air), Air Marshal Kevin Leeson, chaired the meeting, also attended by Director Air Support, Tim Rowntree and Air Support Commercial Head, Robin Philip.

Members saw MSN 006, the final production standard trials aircraft due for first flight shortly, and the fuselage of MSN007. This fuselage section, alongside wings shipped from Filton, is one of the major assemblies received for the final assembly of the first A400M, scheduled for delivery to the French air force in March 2013.

During the visit Robin Philip was presented with a model of an A400M by Airbus Military for his significant contribution to the programme.

Left: Programme Board members in front of the MSN 007 nose fuselage

Talent is back – in budget and ahead of schedule

TRAFALGAR CLASS submarine *HMS Talent* is ready for the Fleet again following the largest and most complex Revalidation and Assisted Maintenance Period (RAMP) programme to date, in-budget and two weeks ahead of contractual delivery date.

The RAMP is the first to have been undertaken since the Contracting for Availability approach to *Trafalgar* class submarine support was introduced last year, geared to optimising submarine availability.

Talent has received more than 25 combat system and mechanical upgrades during the 13 month maintenance by Babcock at Devonport.

Upgrades have included: Communications Coherency in Submarines (CCSM) final increment stage two for fully network-enabled communication capability; Sonar 2076 stage 5 for increased capability; a first-of-class fit of the Defence Information Infrastructure (DII) providing a coherent infrastructure for information sharing and collaborative working across the defence sector network; and the Warship Electronic Chart Display and Information System (WECDIS).

As part of the Contracting for Availability approach, areas of focus include planning, monitoring and control, cost performance, risk management and facility management interfaces, as well as safety – all these were key features of this RAMP.

DE&S project manager Commander Martin Gill said: “*Talent’s* RAMP has been a great success. Babcock has demonstrated that, by working with MOD, ship’s staff and major contractors, many difficulties inherent within a maintenance period as complex as a RAMP have been overcome.

“Through the hard work of the whole team we have delivered a greatly improved platform back to Navy Command ahead of schedule.”

HMS Talent re-emerges after maintenance by Babcock in Devonport



■ T-Boat partners: pages 20 and 21

Partnership works to keep the sub costs down

A PROJECT to deliver new and more efficient ways of working in the submarine area is celebrating ten years of success.

The Submarine Collaborative Working Environment Project celebrates its anniversary with an outstanding track record of delivering business transformation and cost savings.

John Eddison of DE&S’ In-service Submarines said the Babcock-supplied CWE had allowed DE&S’ Submarines area to bring in more efficiencies.

“The system has allowed us to securely share data with our industry partners and has helped remove outdated paper-based processes,” he said.

“This has allowed us to reduce manpower effort and to significantly improve cycle times across the extended submarine enterprise.

“To date we have saved more than £28 million, a major achievement.”

Over the ten years the CWE has also won a range of international awards including:

- 2005 Gold Award for Global Excellence in Business Process Management.



Key customers and personnel, from left: Alan Yates (Subs), Andy Dunn (Babcock), Chris Rowley (Babcock), Capt Pat O’Neill (Subs), John Davis (Ships) and Nicole Flooks (Babcock)

- 2009 UKCeB Excellence Award in the category of Business Improvement and Transformation.

- 2010 Silver Award for Global Excellence in Business Process Transformation.

Chris Rowley of Babcock Marine and Technology said the success of the CWE had been based on the combination of MOD and industry experts working closely with the IT delivery team from LSC Limited.

“This combination of

business and IT expertise has continuously driven innovation and real business benefit over the ten years,” he said.

“Looking to the future, the current CWE service is being expanded to provide a maritime CWE capability for both submarine and surface ships and we look forward to achieving even greater benefits over the coming years.”

More information on the Submarine CWE contact Alan Yates DES SM BusInfo-DTL or on 0117 9133131.



Protector heads south

Southward bound: DE&S staff have worked hard to get *HMS Protector* ready for the South Atlantic

THE NEWEST ship in the Royal Navy has left Portsmouth on her maiden deployment.

HMS Protector, the distinctive chartered red and white ice patrol ship, plugs the gap left by the UK's longstanding Antarctic vessel *HMS Endurance*, which has been out of action since the end of 2008.

For the next three years *Protector* will work in and around the Antarctic region, supporting British scientists, conducting inspection work for the UK Government and gathering data on waters that are poorly or inadequately charted.

During her three stints around the ice this Austral summer (December to March) *Protector* will survey Deception Island, Elephant Island, and lesser-well-known sites such as Dundee and Detaille Islands and Andvord Bay.

She will also help scientists and transport stores to bases in the region.

Commander Cris Crossley of DE&S Surface Combatants said: "Although 90 per cent of *Protector* had been left as it was when she started her charter, fitting that final ten per cent of specialist Royal Navy equipment, such as communications, boats and davit, the WECDIS electronic chart kit, an ice radar and the specialist surveying equipment, has been extremely demanding.

"This was overseen by a small team in Director Ships who have managed the design, procurement and installation of

this kit in less than nine months.

"That is an impressive achievement as this ship was not an Urgent Operational Requirement but handled under normal DE&S rules."

Commanding Officer Capt Peter Sparkes said "*Protector's* a fantastic ship with a fantastic

ship's company who have worked extremely hard to allow us to go on deployment. They've had to transform her in a few months and it's been a big ask, but for most of us this is the chance of a lifetime. This is a great ship which will serve us very well down in the ice."

Ship completes WECDIS fit



THE LAST installation of WECDIS (Warship Electronic Charts Display and Information System) was carried out on *HMS Protector* in November.

It brought to an end the project to fit the navigation system to 91 Royal Navy vessels.

Lockheed Martin UK Integrated Systems' Vice President and Group Managing Director Rod Makoske is pictured shaking hands with Lt Cdr Andy Storey with DE&S Senior Project Officer John Cobbe, ship DE&S Project Officer Commander Cris Crossley and Lockheed Martin UK - Integrated Systems WECDIS chief engineer Tom Smoker in the background.

The WECDIS project has been a major step forward in capability for the Navy, enabling safe transition from paper charts to digital navigation.

NEWSREEL

Women set to serve on subs

WOMEN will serve on submarines for the first time in the Royal Navy's history. The decision follows an 18-month review of the legal, operational, health, social, technical and financial issues of allowing women to serve on submarines.

Women had previously been excluded due to concerns about higher levels of carbon dioxide in a submarine being a risk to female health. Such fears are now believed to be unfounded.

Defence Secretary Philip Hammond said: "This represents another step in making the best use of the talent from which it can recruit."

The first female submariners are expected to take up their posts towards the end of 2013.

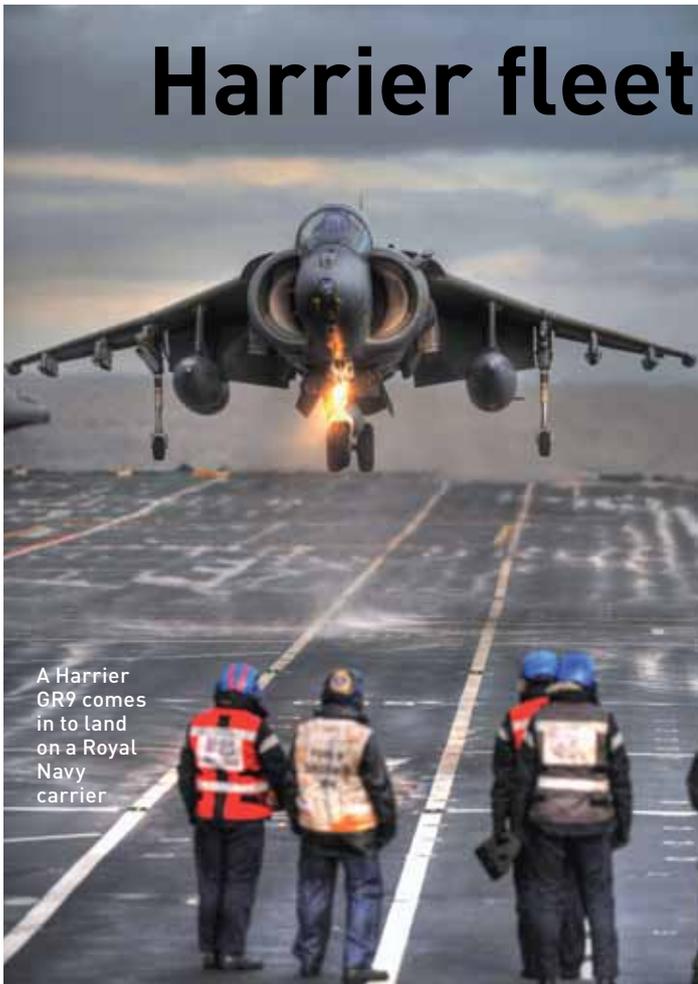
Quick returns

BAE Systems has been awarded a contract worth £38 million to optimise the RAF Typhoons' availability for operations.

The contract covers development work which will improve post flight turn-around times through the use of a ground-based Engineering Support System (ESS).

The system uses aircraft performance data captured during sorties by the aircraft's on-board weapon system and is then downloaded electronically, post flight, to the ESS. The ESS enables RAF Typhoon support staff to process and analyse the data more efficiently, so that the aircraft can be quickly returned to the front line.

Harrier fleet sold to the US



A Harrier GR9 comes in to land on a Royal Navy carrier

THE SALE of 72 Harrier aircraft to the US has been confirmed by the MOD.

Airframes and associated spares of the decommissioned aircraft will be used as a major source of spares to support the US Marine Corps Harrier AV-8B fleet of aircraft.

The value of the sale is \$180 million (around £110 million). Added to the savings made from retiring the Harrier fleet from service, this sale takes the total estimated receipts and savings to the MOD to around £1 billion. This will enable investment in a more modern and capable mixed fast jet fleet, including the Joint Strike Fighter.

Peter Luff, Minister for Defence Equipment, Support and Technology, confirmed the sale to the House of Commons.

He said: "Harrier served this country with great distinction but retiring it eight years earlier than planned was the right decision.

"Had we taken the decision in the Strategic Defence and Security Review to decommission Tornado instead we would not have been able to carry out the missions that were required simultaneously in Libya and Afghanistan. It was essential to retire older, less capable aircraft to allow us to invest in more modern, cutting-edge fast jets.

"As our operations over Libya proved, we have the capability to project decisive air power and can utilise our extensive basing and over-flight rights to great effect.

"The sale of Harrier is evidence of our commitment to working closely with our allies and represents a good deal for both countries."

The money will be retained by the MOD and reinvested in key priorities of the defence budget. Two Harriers will be offered to museums to preserve the RAF's and Royal Navy's heritage.

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Left to right: PO Simon Scott-Munden of the MJDI Training Development Team, demonstrates MJDI to Brig Alan Clacher, Hd Log NEC, Rear Admiral David Steel and Maj Gen Ian Copeland.

Inventory management closer to the front

DE&S' NEW system for managing the defence inventory has reached its initial operating capability (IOC).

Management of the Joint Deployed Inventory (MJDI) will enhance UK support to operations in a joint approach to support chain management across the services, throughout DE&S and into industry.

MJDI will provide the single defence inventory management system forward of the base depot and will be easier to use for up to 18,000 users from front line, project teams and industry.

It will provide a near real-time stock planning and management capability, with emphasis on supporting deployed operations. MJDI's release will be managed in stages between now and the middle of the year, completing full implementation by 31 March 2014.

The DE&S project team held a coffee reception at *HMS Excellent* in Portsmouth to mark IOC. The event was attended by Director Joint Support Chain, Maj Gen Ian Copeland; Rear Admirals David Steel and Peter Hudson; Head of Logistics Network Enabled Capability, Brig Alan Clacher; and senior representatives from suppliers Hewlett Packard and Steria.

Members of the project team and industry partners described the successful partnership that led MJDI to declare IOC, ten days ahead of schedule. Maj Gen Copeland congratulated all who were involved on their achievement.

But he warned: "The future holds significant challenges in implementing such major changes across defence."

In October MJDI will begin roll out to support Operation Herrick 17 and next year will expand further to Herrick 19.

Conference to focus on procurement

THE ANNUAL conference of the Chartered Institute of Purchasing and Supply's Special Interest Group will be split between Andover (7 February) and Abbey Wood (8 February).

It will feature speakers John Collington (Government Chief Procurement Officer), David Shields (Managing Director of Government Purchasing Services) and John Fernau (Head of Procurement at the Olympic Delivery Authority). Further information via the intranet, or group mailbox: DES Comrcl-CIPS-SIG(multiuser). Places at the Abbey Wood conference may be booked using Event Booking.

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DE&S helps GD UK end year on a high

MORE THAN 70 people from DE&S, the Armed Forces and UK Government joined General Dynamics UK for the end-of-year showcase of the company's technologies.

The company held its fifth annual Joint Internal Research and Development (JIRAD) demonstration at its Edge UK facility in Newbridge, South Wales.

JIRAD shows off the technologies developed in response to current operational needs. The focus was again on operational issues in Afghanistan. Themes included operations room solutions; tactical base solutions; surveillance systems; embedded teams and tactical communications; and support services.

"JIRAD demonstrated the 'art of the possible' for current, new and developing technologies appropriate to operations in Afghanistan and beyond," said Brigadier Alan Hill, Head of Information Superiority, Army HQ, following the event.

Staff insight helps move Materiel Strategy forward

DE&S STAFF have been given a first-hand insight into what life is like working in a Trading Fund and a Government Owned-Contractor Operated (GOCO) organisation at a Materiel Strategy open forum.

Rachel Baguley, Head Materiel Strategy, hosted the session at DE&S headquarters at Abbey Wood which included representatives from Dstl and AWE (the Atomic Weapons Establishment) sharing their experiences of becoming, respectively, a Trading Fund and a GOCO. Around 150 DE&S staff were able to question the Dstl and AWE representatives.

The Materiel Strategy set out five potential options for the future operating model of DE&S and highlighted three that have been judged most appropriate for further detailed consideration – Trading Fund, Executive Non-Departmental Public Body (ENDPB) and GOCO. Jenni Henderson, Operations Director at Dstl, explained how her organisation operates and how it feels to work in a Trading Fund.

Dstl provides science and technology research and advice, mainly to MOD but also to other government departments and more widely across defence and security.

Keith Hall, Head of Production Engineering at AWE, talked about his experiences of working for AWE, a GOCO.

AWE is responsible for the safe and secure delivery of nuclear warheads to the nuclear



Defence reform sees Joint Forces Command taking shape

AIR CHIEF Marshal Sir Stuart Peach, above, is the first Commander of Joint Forces Command (JFC).

The creation of the Joint Forces Command was a key recommendation in Lord Levene's Defence Reform report, which was published last June as part of a wider package of comprehensive reform.

In his new role, Air Chief Marshal Peach is responsible for commanding and generating allocated joint capabilities.

Air Chief Marshal Peach will initially focus on establishing the Joint Forces Command at initial operating capability by this April, before full capability by April 2013.

He said: "The strategic purpose of the Joint Forces Command is to optimise the delivery of joint capabilities. This is something I have been passionate about throughout my career and I relish the opportunity to command people drawn from across defence and deliver change in this area."

Defence Secretary Philip Hammond added: "As a significant part of the work underway to reform defence, the Joint Forces Command will help deliver effective, affordable defence of the UK and her interests."

defence programme. Formerly part of MOD, the decision to turn it into a GOCO was made in 1989 and its Vesting Day took place in 1993.

Rachel Baguley closed the 21 November session. She said: "All the options we're looking at are designed to bring the best out of

our workforce."

The Materiel Strategy Team is hoping to arrange another open forum with a representative from an ENDPB.

Questions on the Materiel Strategy and Open Forum slides can be found on the DE&S intranet – The Materiel Strategy.



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All hands on deck!

A simulator at BAE Systems, Warton, is hosting tests to design the deck of a *Queen Elizabeth* class carrier. Steve Moore reports

It may be the size of four football pitches and supported by the best part of 65,000 tonnes of steel but, from three miles out, it's tiny and the target area for landing looks even smaller.

Add in your 150-knot speed, a keen wind, a rolling sea state, a touch of mist, a black night, and you can see why landing an aircraft on a ship is probably the most difficult task most pilots will ever face.

Welcome to the deck of one of the *Queen Elizabeth* class aircraft carriers, due in service by the end of the decade. Well, not quite the real carrier, which is in construction in Rosyth. This is BAE Systems' simulator at Warton, the only one in the world where the F-35 aircraft meets the future pride of the 2020 Royal Navy.

But this is not about training pilots, nor honing the skills of the personnel whose deck-based task is to guide the aircraft in safely.

This is about designing the flight deck, making sure its massive array of coloured lights and lenses, deck markings and arrestor gear make for the safest environment for recovering the aircraft.

Tests are at an advanced stage using US Navy F-18 pilots, hugely experienced in take off and landing from carriers. This is something new for the UK. Our carriers, remember, have operated the short take off and landing Harriers for more than a generation. Skills in landings are, shall we say, a little rusty.

Tests will inform the Aircraft Carrier Alliance on design of the deck. With every simulated landing, DE&S' Joint Combat Aircraft team learns more about the behaviour of the F-35's Carrier Variant (F-35C) which the UK will be operating, a decision firmed up by the Strategic Defence and Security Review.

Pictures: Andrew Linnett



'A win/win for the carrier and aircraft teams'

■ continued from page 17

"Basically we are dealing with a completely different method of landing," said Pete Symonds of the Aircraft Carrier Alliance.

"With STOVL landing you stop and land; CV landing is land and stop. So it's a completely different set of lights in completely different positions. Then the aircraft is different. We've built a new model into the system as clearly the control laws are different with many different characteristics including an arrestor hook."

The team has adapted well to the changes though. "From the ship point of view it has been an easier task to organise the lighting system as we are now following how the Americans do it. The American layouts have been our starting point and we're trying to improve on them," said Mr Symonds.

"And we're helped by the fact that the actual size of the carrier flight deck was driven by the requirement to be adaptable. The STOVL ship could have been smaller but the adaptable design was driven by the size of the runway, which was needed to recover the aircraft.

We've taken the flight deck, and started again. After the decision was made to move to the Carrier Variant we had a period of looking at variable equipment selection before we started the work. We now have the flight deck at what we call level two maturity, so effectively the big bits are already fixed. The design of the flight deck is pretty well sorted." Testing will soon move to other simulators to test recovery of helicopters to the carriers.

From DE&S' Joint Combat Aircraft point of view the F-35C will be equally capable from sea or land. "The current focus for the JCA team is ensuring the aircraft is integrated onto the carrier in the most optimal way," said Wg Cdr Willy Hackett, the team's UK Requirements Manager.

"This aircraft will be the first stealth platform to operate from an aircraft carrier which will bring new challenges. Recovering an aircraft to a small moving airfield, especially at night or in poor weather, has always focused the mind of any pilot who has flown at sea.

"The F-35 will bring new technology which in time will make landing on an aircraft carrier just another routine part of the mission. On entry into service

the aircraft will be equipped with Joint Precision Approach and Landing System (JPALS) which will guide the aircraft down to a point where the pilot can take over and land the aircraft manually. Future upgrades intend to allow JPALS to actually land the aircraft without pilot input in very poor weather."

He added: "A new flight control system, combined with new symbology in the helmet mounted display, looks to drastically reduce pilot workload on a manually flown approach. This technology is being investigated by the US and UK, and if successful will see a major reduction in the training required to keep pilots competent at landing on aircraft carriers from the middle of the next decade.

"Once this new technology is invested in the F-35C the pilot will be able to focus on the mission to an even greater extent than is possible now in the current generation of carrier variant aircraft. UK JCA squadrons will therefore be more operationally focussed than current generation sea-based aircraft and will keep UK airpower at the front rank of military powers."

So who wins from the current carrier

Landing on the QEC carrier – what the pilot sees

AIRCRAFT APPROACH the stern as the carrier steams into the wind. Pilots aim for the second or third of the arrestor wires, the safest, most effective target, *writes Steve Moore.*

Aircraft are guided by deck personnel – the Landing Signal Officers – via radio and the collection of lights on deck.

When the aircraft has landed the pilot powers up the engines to make sure that, if the tailhook doesn't catch a wire, the plane is moving fast enough to take off again.

Pilots will look at the Improved Fresnel Lens Optical Landing system – the lens – for guidance, a series of lights and lenses on a gyroscopically stabilised platform. Lenses focus light into narrow beams directed into the sky at various angles.

Pilots will see different lights, depending on the plane's angle of approach. On target, the pilot will see an amber light in line with a row of green lights. If the amber light is above the green, the plane is too high; below green it is too low. Much too low and the pilot will see red lights.

So how did I do? My first attempt saw my F-35 scream way past the carrier, too fast, too high, and with no hope of landing. A second was just as wayward, overshooting by a distance and just missing the island superstructures necessitating a stomach-churning go-around.

A third and final approach needed a last-second drop in height, allowing me to find the last of the arrestor wires, ending in a landing more akin to Fosbury than any of the elite pilots who have been using the simulator for their landings. What was that about four football pitches?



Pictures: Andrew Linnett

testing? Back to Mr Symonds – “Well actually it’s both the Aircraft Carrier Alliance and the Joint Combat Aircraft teams,” he said. “From the aircraft side the team has to be satisfied it is safe to operate the aircraft at sea efficiently. So in terms of the JCA safety case, it is critical that we are able to demonstrate safe F-35C recovery operations.

“From the ACA perspective, we have to prove that the ship is safe to operate the aeroplane so we have to provide sufficient visual landing aids to demonstrate to our safety case that it works. Both teams must be confident that what we will be putting on the deck works. We will be making sure it is a win/win for both teams.”

- The flight deck has about 250 metres of runway distance for landing aircraft. A runway on land would be around 12 times longer. And doesn’t move.
- Landing on a carrier deck pitching up and down by up to 30 feet in a rough sea can be daunting enough. A pilot has to place the aircraft’s tailhook in a precise part of the deck 150 feet long by 30 feet wide to catch the arrestor wires, and do it at night too.
- The arresting wire system can stop a 25-tonne aircraft travelling at 150 miles per hour in just two seconds in a 300-foot landing area. Deceleration is up to 4Gs.



Two of the Royal Navy's *Trafalgar* class submarines are reaping the benefits of major upgrades to their combat systems following their latest maintenance periods.

DE&S Submarine Combat Systems Group have joined contractors Babcock in successfully delivering major packages of work during the Revalidation Assisted Maintenance Periods (RAMPs) for *HMS Trenchant* and *HMS Talent*, the last of which completed last month. The result is a significant uplift in the operational capabilities of both submarines.

The size of the combat system work packages for each RAMP was a step up from those undertaken in previous RAMPs which needed closer working between the Combat Systems Group, Babcock and the Project Contract Manager team at Devonport, with a review of processes by all concerned.

The nature and complexity of the system upgrades meant that some new equipments were immature when accepted into the package, still having to achieve the qualifications required to be fitted on a submarine. Guidance information needed to be fully developed and contractual and financial elements finalised.

Inter-dependencies between each of the individual upgrades meant all the individual parts of the work had to be delivered for the whole to be achieved. Failure by an individual project to deliver was not an option. To delay the upgrades until the next appropriate fit opportunity would deny Fleet a capability advantage.

This approach was met with scepticism by some who did not fully understand how quickly combat system equipment has to evolve and be updated to remain current in the face of new technology and obsolescence. The latest capability has to be delivered to the front line.

Along with the normal maintenance and defect rectification that takes place during a RAMP, 14 interdependent combat system alterations and additions were completed on *Trenchant* and 14 on *Talent* together with a sizeable package of work on legacy combat system equipment.

The volume of work required a large number of independent project teams at Abbey Wood to deliver their element of the project on time. Sound co-ordination and proficient programme management by the Submarine Combat Systems Group was vital in ensuring they delivered on their promises and therefore built on the confidence and rapport that developed as the projects evolved.

Project staff admitted that things did not always run smoothly, with plenty of trust and a pragmatic and flexible approach from Babcock and the project managers needed due to unforeseen events and some risks being realised.

The expertise and unique capability of Babcock in delivering submarine support, offering solutions to emergent problems, without doubt ensured that

T-boats feel be industry partn

HMS Trenchant pictured undergoing maintenance at Devonport



Benefit of DE&S' Vessels

success was achieved in partnership with the DE&S Submarine Combat Systems Group.

Submarine Combat Systems Group team leader Captain Pat O'Neill said: "While I was always confident in the delivery of these extensive work packages others were less certain of the outcome. I am therefore very pleased that through excellent team working and professionalism the MOD and industry team has succeeded.

"It is vitally important that with fewer submarines than we once had, but with many operational commitments still to be met, we are able to deliver combat system updates at any scale within the normal maintenance cycles, and we have demonstrated this on these platforms.

"They now sail with systems that deliver the latest capability requirements and at the same time embody new technology which will dramatically decrease future support costs and enhance system reliability."



HMS TRENCHANT

- First of class upgrade to Sonar 2076 to reduce through life costs and provide increased functionality.
- First of class fit of a new search periscope and communications antenna and associated control unit.
- First of class installation of improved cooling arrangement for additional equipment carried to support military tasking.
- To provide a fit to receive capability for additional equipment to support military tasking.
- To upgrade the communications office to the latest standards providing full functionality for the Communications Coherency for Submarines programme including an intra-platform fibre-optic LAN.
- To install a digital navigation system to replace a paper chart-based navigation and plotting system.
- To replace interface equipment between all submarine launched weapons and the combat system to overcome obsolescence.
- To install a facility for the remote operation of communications office equipment.
- Installation of new equipment to support improved shore connectivity of IT and TV when alongside.
- Modification of non-watertight bulkheads to support new equipment fits and re-site of a large number of legacy equipment.

HMS TALENT

- First Submarine DII installation.
- Upgrade to Sonar 2076 to reduce through life costs and provide increased functionality.
- Install a new type search periscope and communications antenna and associated control unit.
- Installation of an improved cooling arrangement for additional equipment carried to support military tasking.
- To upgrade the WT office to the latest standards providing full functionality for the Communications Coherency for Submarines CCSM programme including an intra-platform fibre optic LAN.
- To install a digital navigation system to replace a paper chart-based navigation and plotting system.
- Replace Echo Sounders 778 and 780 with Echo Sounder 800.
- To replace the interface equipment between all submarine launched weapons and the combat system to overcome obsolescence.
- To replace the mast and periscope desiccation (dry-out) panel with a new type panel.
- Installation of new equipment to support improved shore connectivity of IT and TV when alongside.

Typhoon on Op Ellamy – the ultimate teamwork

Pictures: Andrew Linnett

When the performance of Typhoon on operations over Libya last year was described as spectacular it was music to the ears of the hundreds of staff involved in Typhoon throughout DE&S and industry.

With the words coming from one of the pilots operating as part of the UK's contribution to Nato operations over the north African nation, it was doubly satisfying.

"You could not find a more comfortable aircraft to fly," said the pilot. "The cockpit is large by fast-jet standards and information from radars is displayed easily and accessibly. This allows you to function at 100 per cent capability, not plagued by fatigue or lack of situational awareness."

There was more: "As a service we've been fortunate to have at our disposal an aircraft that fulfils the RAF's mantra of being agile, adaptable and capable."

For RAF ground engineers at RAF Coningsby, their industry partners at BAE Systems at Warton and, not least, those working for DE&S' FAST (Fast Jet and Air Support) team, repatriation of the aircraft and all its support equipment brought to a close a good job well done.

"Operation Ellamy

showed to the guys working back in depth maintenance that the performance of the jet – the product that we've provided and you've seen doing all the fancy stuff in air shows – is ultimately a weapons delivery platform," said Martin Topping, BAES' head of maintenance and upgrade at Warton. "It does what it says on the tin and does it with an extremely high success rate; figures quoted in and around 99 per cent of static targets and 98 per cent moving targets destroyed – fantastic. That sort of feedback is a real boost to the team back here and encouragement to redouble efforts and recognise that it is a worthwhile product to get involved in."

For BAES staff in the joint team the news of Typhoon's performance on Operation Ellamy was an even bigger boost. Mr Topping said: "Morale is exceptionally important. Anything that we can glean from a morale-boosting story that we can feed back to keep people



Left: Martin Topping

Above: FS David Birch and DE&S' FAST production manager Gary Moore in conversation at Warton



chipper, keep them focused, keep them delivering a decent product is good for us. I heard from a squadron leader who was the first one to drop ordnance off a Typhoon over Libya. His media cuttings were all over our internet so that was a good unique insight into how the kit was used. The aircraft, as designed, is really, really good.

“It’s testament to the joint industry and service team at Coningsby who did a cracking job supporting Op Ellamy but likewise keeping us fed with what we needed to do. It would be very easy to divert a lot of attention to support forward maintenance and ignore depth but basically you would be postponing a problem. There was real recognition of that by those guys.

“And likewise when requests came in to us for supersonic fuel tanks etc the Warton team all rallied round to make sure we fully supported the front line. It could quite easily have been a success story in Libya but with three years of ramifications to mop up and catch up. But from the schedule delay point of view there were nil problems. And that can only be heaped on the guys in spades as a cracking effort.”

While Operation Ellamy attracted the Typhoon’s headlines, work continued on upgrade of the rest of the Typhoon fleet from its Tranche 1 standard. Mr Topping leads the BAE team while Gary Moore is production manager on behalf of the FAST team. He provides contract management, product assurance, certification, and help to solve issues that may arise. Flight Sergeant David Birch provides RAF liaison.

In 5 Hangar at Warton the retrofit of Tranche 1 aircraft is going well, bringing the original aircraft up to Block 5 standard, with enhanced defensive aids capability, enhanced air to surface capability and forward-looking infra-red, all modifications not available when the first Typhoons were delivered to the RAF. All the aircraft used in Operation Ellamy were of the most advanced standard.

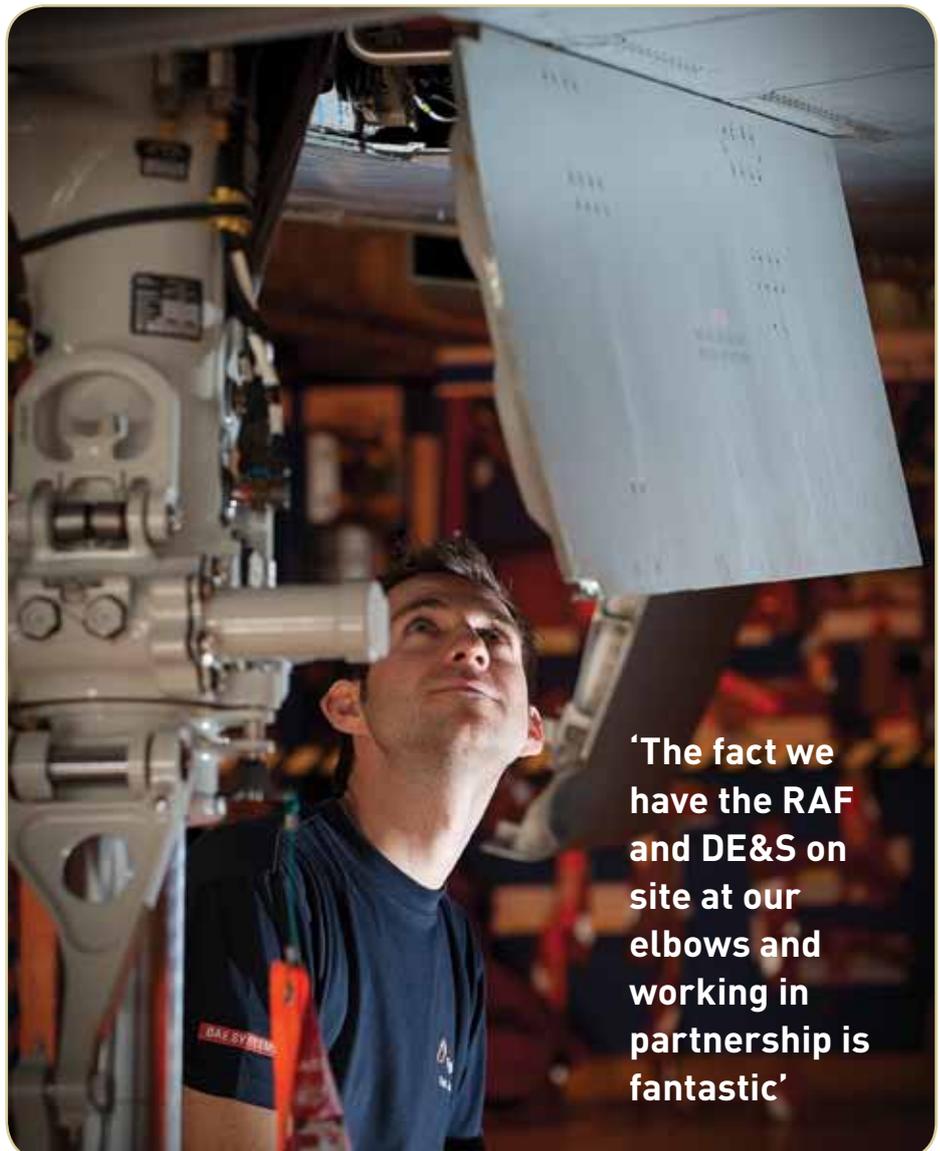
Forty-eight of the Tranche 1s have come back for work at Warton with only a dozen of those left to be completed by the end of 2012. Elsewhere in Warton,

hundreds more staff are assembling nearly 90 Tranche 2 aircraft.

Partnership is important. Mr Topping said: “The whole ethos of the TAS (Typhoon Availability Support) contract was for BAES to take away the element of monotony of supporting aircraft, getting it away from the front line, allowing the RAF to concentrate on what it does best, which is using the platform, and having industry supporting that with all

the might we can put behind it with our knowledge of contracting and suppliers.

“For me it works well. The fact that we are able to have people from the RAF and DE&S on site, at our elbows and working in partnership is fantastic. I go overseas and look at what other countries have got and the relationships are nothing like what we have here in the UK. And we do like to call it UK plc. We are all striving for the same thing.”



‘The fact we have the RAF and DE&S on site at our elbows and working in partnership is fantastic’



Prize winners: DE&S apprentices Zoë Cook and David Enchill hard at work

Marching in the footsteps of Telford and Brunel

From a decorative window to building and testing a bomb disposal robot, 2011 was a notable year for the MOD's apprentices.

And, in the words of Bernard Gray, Chief of Defence Materiel, they are an inspiration to future generations to help maintain the prosperity and defence of the United Kingdom.

Compressed air systems, designing, building and testing a motorized go-kart, and rebuilding a car engine all earned awards for a group of nearly 30 of the hundreds of apprentices employed across the country by the MOD. All received their awards at a glittering occasion at Main Building on 1 December attended by Mr Gray and two defence ministers, Defence Under-Secretary Andrew Robathan and Peter Luff, Minister for Defence Equipment and Support.

Leading the way for the young engineers was Apprentice of the Year Wayne Bantick, a 21-year-old final phase apprentice weapons fitter with Defence Munitions in Gosport, whose standards most impressed the judges. Wayne pipped DE&S' Abbey Wood-based Lance Finney to the gold medal, won after a paper sift and a series of interviews. Third was Steve Wilson of Defence Support Group at Donnington.

Wayne was part of a team which designed, built and tested a go-kart, a

DE&S leads way in engineering the MOD's future

new event to the annual competition, testing MOD core engineering competences. Wayne earned his medal with Abbey Wood's Thomas Leach and William Kennedy along with Peter Slater of RAF Alconbury.

Other major winners in a contest dominated by DE&S were Abbey Wood's Hayley Barnden, who earned herself the Elvy and Coast charity award and a place in a Tall Ships crew.

Samuel Jones, an apprentice carpenter at RAF Alconbury, won the Sir Henry Royce Memorial Foundation Medal for designing and producing a decorative window.

And the Sir David Cardwell prize, in memory of a former Chief of Defence Procurement, was won by RAF Menwith Hill's Anthony Walker, who received his award from special guest Lady Cardwell.

"The fact that we have two ministers in the room underlines the importance of these awards," Mr Gray told winners and

their proud families.

"The UK's Armed Forces are the best in the world and to be able to maintain that status, not only do we need great people to be members of the Armed Forces, but our Armed Forces need to be supported by the best technical and engineering skills.

"That's what we have got within DE&S; the apprentices and civil engineers are absolutely critical to the defence effort and are integrated into teams in the UK, on the front line in Afghanistan and across the world."

His thoughts were echoed by Mr Robathan who presented the awards. "The value of apprenticeships to our Armed Forces and our broader economic well-being is as high as ever," he said.

"Sadly, in the modern age, the work of the engineer and the craftsman is not as revered as it should be in the eyes of the public.

"Yet heavy industry generates more cash, more exports, more technology, and more jobs than many of the more fashionable sectors.

"I want engineers and craftsmen to be the wonder of our age as they were in the Britain of Telford and Brunel. It makes the job of today's engineers and craftsmen a vital one, though they don't always get the credit they deserve."

Mr Robathan added: "The engineers



Wayne Bantick, pictured left with his parents, was a proud winner of the main award.

He said: "I was over the moon when I found out I had won. I think the MOD apprenticeship is such a valuable scheme because it is so diverse. It's open to everybody and is good for hands-on and practical learning. The MOD is such a flexible organisation they will do everything to accommodate you."

"I've always wanted to become an engineer as I've always built things with Lego and the apprenticeships just suited my lifestyle. Following my apprenticeship I will have the opportunity to go to Abbey Wood to do a placement with a project team to see what it's like."

of the future are not born; they're made, and they're nurtured. Apprenticeships play such an important role in that. That's why the MOD continues to value and support apprenticeships.

"Our scheme remains an enviable

one. It's a unique opportunity to work on some of the country's most advanced engineering and equipment projects.

"And from our perspective, it's a shrewd investment in our future workforce. You are vital to the defence of

this country, and central to its future prosperity."

The awards, which began in 1952, are now sponsored by DE&S' Apprentice Management team at Abbey Wood.

Tom Nevard Memorial Competition

Mechanical section (machining and general fitting) – Winner (1st phase): Luke Gosling (DSG Donnington). Runner up: Andrew Leadbeater (DM Gosport). Winner (2nd phase): Keith Edwards (DM Gosport). Runner up: Chris Jones (DSG Donnington).

Mechanical section (hand skills and general fitting) – Winner (1st phase): Thomas Breddal (DE&S Abbey Wood). Joint runners up: Andrew Reeves (DM Gosport), Ryan Fox-Novak (DSG Donnington). Winner (2nd phase): Sam Talman (DM Gosport). Runner up: Jack Jones (DSG Donnington).

Mechatronics 1st phase – Winner (paired element): Zoë Cook and David Enchill (DE&S Abbey Wood). Winner (individual element): Zoë Cook.

Electronic 2nd phase – Winner: James Baker (DE&S Abbey Wood).

Joint runners up: Michael Sarr, Thomas Buxton (DE&S Abbey Wood).

Engineering project management team event – Winners: Peter Slater (RAF Alconbury), Thomas Leach (DE&S Abbey Wood), Wayne Bantick (DM Gosport), William Kennedy (DE&S Abbey Wood). Runners up: Matthew Powell (DSG Donnington), Hossein Khoshtaghaza (DE&S Abbey Wood), Lee Dumper (DM Gosport), Richard Johnson (DE&S Abbey Wood).

Elvy and Coast charity award: Hayley Barnden (DE&S Abbey Wood). **Sir Henry Royce Memorial Foundation medal:** Samuel Jones (RAF Alconbury). **Commended:** Keith Edwards (DM Gosport). **Sir David Cardwell memorial prize:** Anthony Walker (RAF Menwith Hill).

Apprentice of the Year – Gold medal: Wayne Bantick (DM Gosport). Silver: Lance Finney (DE&S Abbey Wood). Bronze: Steve Wilson (DSG Donnington).



Pictures: Harland Quarrington

'The British infantryman has never been so well equipped, supported and, protected'



– that's the message from Peter Luff, Minister for Defence Equipment, Support and Technology, who argues that the quest for the right mix of mobility, protection and firepower will continue to drive infantry equipment acquisition. But, he warns in his speech to the Modern Infantry Conference at Bisley, there are challenges to come

In this volatile world the infantry will need to be adaptable as the character of war continues to evolve. And if you want to equip and support them to a first class standard – which it’s my job to do – then you need a force structure that’s fit for the 21st century and a defence programme which is affordable and sustainable.

The Strategic Defence and Security Review sets out a vision of a much more adaptable future. For the Army, the vision is a force structure equipped to operate successfully across the range of possible conflicts we are likely to face in the coming decades.

Historically, the Army’s programmes have been at greater risk of salami slicing – and even termination – from unstable fiscal environments, annual Planning Rounds, and cost growth in other environments.

This is compounded because manpower levels – rather than warship numbers and fast jet fleets – are seen to be the measure of relative Army success or failure in any cuts to Defence.

This is the challenge that I am continually battling with when it comes to infantry equipment. And we now have to begin managing the legacy of Afghanistan. For example, as we plan for the drawdown of combat operations, we are considering which Urgent Operational Requirement (UOR) vehicles should be brought into the MOD’s core equipment programme. UOR acquisitions have made a vital contribution to the success of Operation Herrick, and they have typically been brought into service on or before schedule.

But now the downside of UORs becomes clear. Our enemy’s tactics evolve rapidly. So too must the technology to counter them. That explains why we have spent £2.8 billion on more than 2,000 UOR vehicles, with many variants, to provide our Forces with the equipment they need to meet the specific threats they face in Afghanistan. They have, on the whole, performed magnificently. However, they were procured for ‘The War’, not ‘A War’.

Hard-headed realism will be required

as the Army considers how to marry its future core vehicle requirement against the fleets of vehicles already in service.

We need a balanced forward programme which gives us the freedom to adapt to unexpected changes in the world, not simply because we must make savings in order to meet short-term budget constraints.

That’s why we’ve delegated the task of generating capability to the Front Line Commands through the service chiefs, and why we’ve added Joint Forces Command which will provide essential enablers like ISTAR.

Delivery will be exercised through the Command Plan – binding DE&S, the Front Line Commands, and the wider MOD into a contract. The results must mesh with our White Paper setting out our future policy on equipment, support, and technology for defence and security, and our Materiel Strategy, which will have implications for how we buy military equipment more generally.

That’s the background to any

me from Afghanistan is that the British infantryman has never been so well equipped, supported, and protected. For example, the ‘Black Bag’ – issued to every British soldier deployed on operations – contains more than £3,000 worth of kit from boots up. The Tier One and Tier Two pelvic protection appears to have been outstandingly successful, and very popular with the infantry.

From 3 Commando Brigade I heard, from those who know, that every bit of kit performed above expectations and that no mission was compromised by shortages of equipment. That’s a message we need to take proudly to the British people.

On top of this, new equipment arriving in theatre will have adaptability at its very core. The Foxhound light protected patrol vehicle will be an Army mainstay for decades to come. The first of the 200 on order are rolling into training, ready for deployment this year. It uses traditional materials in a novel way to push the boundaries of vehicle

design and achieve an unparalleled combination of survivability and mobility. It draws on industries beyond defence’s traditional base – for instance incorporating cutting-edge technology from Britain’s world-leading motorsports industry.

Add to this the £1 billion upgrade to the Army’s Warrior Infantry Fighting Vehicle, the backbone of infantry operations and top of Chief of the General Staff’s equipment priorities. As well as improving lethality and survivability, the re-design will allow technologies that don’t yet exist to be inserted as they come on-line. This means we can address evolving

capability gaps and extend the service life of this vehicle beyond 2040. This is the future, now, and it’s adaptability-heavy.

So I believe we can look at the infantry of today and the infantry of the future with greater confidence than has been the case for many years.

Future Force 2020 is our goal. Getting there will be difficult, yet there is no alternative. The Future Army Review will bring the clarity all of us need. I’m confident that equipping and supporting an adaptable infantry will be within our reach, and at a price this country can afford.’



Above: Peter Luff, Minister for Defence Equipment, Support and Technology, chats to WO Russell Smith, a driver of Foxhound during the vehicle’s unveiling at Abbey Wood a year ago

discussion on equipping modern infantry. The infantry is the oldest combat arm in warfare. But for all the battle honours down the centuries, there is a school of thought which believes that the infantry has been relegated to second-class citizens. I don’t believe that’s true.

A counter-insurgency strategy requires boots on the ground: visible to the local community and engaging with them; visible to the enemy and destroying them. Protecting the soldier is an important part of my job – in fact it’s my moral duty.

The view that’s reported back to



Quality Assured



As a world-leading manufacturer of fabrics for military garments, Gore's quality management processes are unique. From research through design and manufacturing, at every step of the way, Gore's quality assurance procedures are focused on ensuring GORE-TEX® products are best in class.

Quality assurance is fundamental to the reputation Gore products have with military users. Waterproofness, breathability, comfort and durability are the four cornerstones of the product promise soldiers rely upon in the field of duty every day. Gore meets its quality promises by an absolute dedication to quality principles, running through the entire supply chain process, from materials sourcing, through specialised manufacturing processes such as Seam Sealing, to robust licensing and factory support for manufacturing partners.

Painstaking testing is then applied to provide assurance that the highest standards are upheld for every single product the company makes.

Quality assurance testing is structured firmly around Gore's "fit for use" principle, ensuring best performance during the physical activities and climatic conditions faced by soldiers.

To fulfil this principle, Gore has a technical development laboratory unique to the textiles industry, where new laminates and suitable manufacturing technologies are developed and refined. Standard tests include waterproofness, breathability, windproofness/air permeability, tear resistance, abrasion resistance, crease resistance, water-and-oil-repellent properties, colour fastness, flammability and care behaviour.

Gore Performance Standards

Gore Performance Standards for protective clothing in the workplace (GPST) are uniformly defined throughout Europe and are an important element of the "fit for use" principle. Clothing for military users that need maximum waterproofness and breathability as well as extreme durability are defined as the highest standard - GPST 2. Ensuring military clothing meets this standard, Gore employs a huge range of tests on all its products. The backbone of testing procedures for outerwear products, however, are the Rain Tower, Climate Chamber and Field Testing.

Rain Tower Test

Within the Gore Performance Standards for protective clothing in the workplace (GPST) the test in the Gore rain tower is the most important test method for ensuring

GORE-TEX® clothing is waterproof under even the most difficult practical conditions.

In order to simulate rainfall as closely as possible, GORE-TEX® clothing is pre-washed, put onto a test manikin, and then exposed to various types of rain. By varying the time, amount of water and the droplet size it is possible to simulate different types of rain ranging from a dense drizzle to a heavy cloudburst. Additional side nozzles simulate windblown rain or storm conditions. Moisture sensors at critical points beneath the item of clothing such as at the shoulders, chest, wrist, stomach, back and front closure, measure incoming moisture and indicate any area in the clothing's construction that is not waterproof.

The Climate Chamber

The wearing comfort of clothing made with high-performance Gore textiles is as important to Gore as its protective functions. Gore carries out physiological clothing tests on a wide variety of clothing systems in the company's own climate chambers, and scientifically evaluates the clothing's effects on the human body and physical well-being. Inside the Gore climate chambers the most varied climatic conditions are easily created.

The temperature range extends from -20°C to +45°C, the humidity is adjustable from 20% to 95%, and varying wind strengths can be simulated. This gives Gore the opportunity – depending on the area in which the functional clothing is to be used later on – to simulate everything from arctic cold, chilly and damp drizzle, desert heat to tropical storms.

According to the level of physical activity likely to be experienced, test subjects are additionally exposed to defined physical stresses on a tread-mill. Electrodes attached to the body collect data relating to the core body temperature, heart rate and sweat rate. Changes in the weight of the clothing and test subject are also measured.

Field Tests

Field tests are an additional indispensable measure for testing the performance of GORE-TEX® clothing in practical conditions. Working closely with military users, Gore maintains consistent contact to continually develop and refine its products to ensure they remain best in class.

For further information go to www.gore-workwear.co.uk

Defender proves she's up to the mark

DEFENDER, THE fifth of six Type 45 destroyers, is back with builder BAE Systems in Scotstoun after a successful first set of sea trials.

Speed, manoeuvrability, power and propulsion systems, 'domestic services' (galley, laundry, messes etc), plus weapons systems and sensors were all tested off the coast of Scotland.

Defender's Senior Naval Officer, Commander Nicholas Boyd, said: "These are the first steps in getting her awesome capability into service and deploying her in support of UK interests worldwide.

"Our remaining time in Glasgow will be busy; primarily working with BAE Systems in getting *Defender* ready for acceptance, but it will also allow us to further broaden our formal affiliation to the city, a link that will endure for the next 35 years."

Defender returns to sea in March and is on schedule to make her debut in her future home of Portsmouth in mid-July. After more trials and training, she'll take her place in the Fleet from early 2013.



... while Diamond wows Wales

THE PEOPLE of South Wales were treated to their first look at *HMS Diamond* – which is now ready to deploy on operations – during a three-day visit to Swansea in November.

The 7,500-tonne Type 45 destroyer had been undergoing Operational Sea Training in readiness for deployment on operations this year, when she tied up alongside King's Dock to take part in regional engagement activities.

Diamond's crew hosted events for students, organisations and sea cadets from the surrounding area and welcomed the public on board to see the impressive capability for themselves.

Commanding Officer, Ian Clarke, said: "I was thrilled to bring *HMS Diamond* to Swansea for the first visit of a Type 45 destroyer to Wales. This will become a familiar sight when our sister ship, *HMS Dragon*, which will be affiliated to Cardiff, is in service.

"Ship visits like this are all about cementing the bond between the Royal Navy and the public; giving us the chance to explain the vital task that we do and showing what life is like on board a modern warship."

Diamond was commissioned into the Royal Navy last May and has passed her basic operational training.



Above: Youngsters get a close up of *Diamond's* helicopter during the ship's visit to Swansea

... and there's a visitor to Duncan in Glasgow

SIR ROBIN Knox-Johnston, the first person to sail single handed and non-stop around the world, has paid a visit to *Duncan*.

Sir Robin served as an officer in the Royal Naval Reserve and spent time on board a previous *HMS Duncan*, a Type 14 *Blackwood* class frigate.

He was given a guided tour of the Type 45 destroyer which is being built by BAE Systems in Scotstoun, Glasgow.

Cdr Phil Game, Senior Naval Officer of *Duncan*, said: "We are keen to maintain links with the heritage associated with *Duncan*, and greatly honoured that someone with the standing of Sir Robin has been able to make the time to visit us while we are standing by in Scotstoun."

Sir Robin's famous round-the-world trip took place between June 1968 and April 1969.

Duncan will begin her first sea trials this summer.

Pictured left are Cdr Stuart Henderson, Sir Robin Knox-Johnston and WO1 Andy Stephenson in front of the ship's newly installed 4.5" Mk8 Mod 1 gun.



New appointments beef up DE&S Main Board

CHIEF OF Defence Materiel Bernard Gray has welcomed two new appointments to the DE&S Board.

Michael Bradley will be Director General Resources while Pete Worrall, having filled the post since last July, is confirmed as Chief of Materiel (Joint Enablers). Both appointments follow open competitions involving candidates from inside and outside the Civil Service.

Mr Bradley has extensive experience at senior level in major UK and international infrastructure companies. He joined DE&S on 3 January, succeeding Trevor Woolley. There will be a handover period of about a month.

Mr Worrall was previously Director Helicopters in DE&S.

Mr Gray said: "I am very pleased to announce these two appointments to the DE&S Board.

"Michael Bradley will bring significant financial experience and an external perspective that will be hugely valuable to this organisation.

"Pete Worrall, whom many will know, brings with him a wealth of experience in military procurement in the UK and overseas.

"I and the Board are looking

forward to working alongside them and to the contribution they will make to DE&S as the organisation faces up to the challenges and opportunities of the future.

"At the same time I know that Board colleagues will join me in paying tribute to the tremendous contribution that Trevor Woolley has made to the work of DE&S both as Chief of Corporate Performance and as DG Resources. I applaud the work he has done and wish him well for the future."

Michael Bradley said: "I am very excited about taking up this appointment and look forward to learning more about the way in which the department goes about its business and to working closely with Bernard Gray and the rest of the DE&S team, as we tackle some of the important financial and operational challenges facing the department."

Pete Worrall added: "I was delighted to be appointed CofM(JE) and I relish the opportunity to work with Board members, DE&S staff and our stakeholders to deliver on our portfolio. As a professional engineer I look forward to applying my skills and experience at Board level."



Michael Bradley, left, spent the last seven years leading and developing the finance function at UK infrastructure maintainer Enterprise during a period of acquisitions and organic growth. Before that he spent nine years with French-listed multinational Alstom in its rail transport business, latterly as finance director for the group's traction business. Much of his early career, after gaining an honours degree in Business Studies and qualifying as a Chartered Management Accountant in 1987, was spent supporting manufacturing businesses.



Pete Worrall, left, graduated in Mechanical Engineering and has worked in Sea, Land, Air, Munitions and Intelligence, Surveillance, Target Acquisition and Reconnaissance environments, with experience of international and European co-operation. In 2000 Mr Worrall was promoted to 1* as leader of Artillery Weapons and Systems projects. In 2005 he was promoted 2* and joined Nato as general manager of the Eurofighter and Tornado Management Agency, in Germany before returning to MOD as Director Helicopters.

Training system up and running



Above: Rear Admiral Clive Johnstone opens the Devonport end of MCTS while, left, warfare staff get down to work

THE ROYAL Navy's new warfare training system is now up and running after the official opening of a second site in Devonport.

The Maritime Composite Training System (MCTS) provides shore-based training for warfare teams from the latest Type 45 destroyers, Type 23 frigates, Type 42 destroyers, assault ships and aircraft carriers.

Its main site at *HMS Collingwood* in Hampshire was opened in the autumn and was followed by the Devonport site on 5 December.

MCTS features banks of flat panel LCD screens faithfully replicating equipment used at sea. The system will be used by around 1,000 new trainees a year and will allow existing personnel to maintain their warfare skills.

Peter Luff, Minister for Defence Equipment, Support and Technology said: "With this system, the UK's sailors will be some of the best prepared in the world, ready to take on the challenges of the future."

MCTS was procured by DE&S' Training, Stores and Boats team.

BAE Systems Mission Systems is the prime contractor, systems integrator and supplier of major elements of MCTS.



As part of the larger 'LogNeckies' Movember team, personnel from DE&S' RAF Stanbridge raised awareness of prostate cancer and other cancers that affect men by growing facial hair for a month.

It proved an easier task for some than others but they can all be very proud of their achievement, raising £200.

Pictured clockwise: Cpl Stu Dennis, Mr Joe Attard, SAC Ryan Harvey, Sgt Mark Bew, Cpl Matt Corner, Cpl Gav Thackeray, FS Giz Martin, Flt Lt Steve Hawkins and Sgt Darren Tucker. Missing from picture SAC Gary Smith and Cpl Harvey Creber.

Good conduct gets its reward

TWO ROYAL Navy staff at DE&S have been presented with Clasps to their Long Service and Good Conduct medals in separate ceremonies.

Royal Navy Warrant Officer 1 Chris Parry, far right, of Maritime Combat Systems, is pictured receiving the Clasp to his Long Service and Good Conduct Medal to mark 30 years of unblemished service.

The presentation was made by Rear Admiral Andy Mathews, DE&S' Chief of Materiel (Fleet).

Meanwhile Lieutenant Alan Powell, below right of DE&S Applications Services at Corsham receives his clasp from Major General Tim Inshaw, Director of Information Systems and Services.



Team's innovation earns recognition

A JOINT DE&S and industry team has won a prestigious team award for engineering and technology innovation.

Delivery of the Mission System for the *Queen Elizabeth* class aircraft carriers is led by BAE Systems at Frimley with an integrated team of DE&S staff and subject matter experts.

And together they have won the Institution of Engineering and Technology 2011 team innovation award. The awards recognise the most imaginative organisations operating in engineering and technology.

The Mission System for the new carriers has to support operational information needs of a large warship and embarked air squadrons along with administrative and personal information needs of up to 1,500 people while deployed at sea.

The team has moved beyond a traditional 'us and them' customer/supplier relationship to a collaborative, alliancing arrangement.

Lead client for Mission Systems over the past two years has been Commander Owen McDermott. "As I leave *Queen Elizabeth* carriers after two hugely rewarding years, I am delighted that the value of the embedded client and the genuine 'one team' and 'best for project' ethos I experienced within the Mission System team has been recognised by such a well respected external professional body.

"Such public endorsement enforces my belief that this is undoubtedly the best way to work with our industry partners, particularly in such large, complex and long-term alliance-based projects."

The award recognised the successful interworking of DE&S and industry teams and also acknowledged that this was underpinned by open and user-focussed engineering approaches employed on the project.



Left to right: Robert Llewellyn, Paul Hicks, Nigel Carter, Keith Vizard, Steve Dowdell, Matt Courtney, Cdr Owen McDermott, Peter Jewson, David Bass, Adrian Gath and Ami Shpiro at the award ceremony in London

Going global enhances prize chances

THE MOD is on the shortlist for a major BT Global Government award in the UK Public Sector Digital Awards this month.

The awards celebrate outstanding work in information and communications technology in local and national government.

The MOD is on the list for the eCND (enhanced computer network defence) project. Staff worked with technical specialists at BT Global Services to design and deploy a cyber-defence solution. Based on commercial off the shelf components, they designed it to meet both exacting national criteria and the MOD's own more stringent requirements.

Wg Cdr Dave Woodfine of DE&S' Applications Services said: "This is great news. The project was long and complex, and I'm thrilled that the team are being recognised in this way."

The awards ceremony, attended by ministers, top civil servants and technology experts, is on 19 January at the London Guildhall.

MOD unveils helping hand

THE FIRST batch of Community Covenant Grant Scheme projects to receive funding from the MOD has been announced.

More than £423,000 has been given to 13 bids to help fund local projects that increase the understanding or support for Armed Forces in the community in which they live.

The £30 million scheme will consider applications for funding between £100 and £250,000.

Some of the successful projects so far include: £85,000 to the Dover Jubilee Tattoo; £50,000 to the British Military Tournament; proposals to run activity days at five Armed Forces bases in Oxfordshire have received £15,000; £10,000 to Royal Wootton Bassett for the town's civic event to commemorate the town's new Royal status; children in Gloucestershire will benefit from £9,880 to fund places on 'Go Ape' children's assault courses, supported by 1st Battalion, The Rifles.

From the Holy See to the high seas

A PADRE at Clyde naval base has swapped the Holy See for the high seas as the new Principal Roman Catholic Chaplain for the entire Royal Navy.

Father Andrew McFadden, 47, pictured right, has for the past two years been the Roman Catholic priest overseeing the spiritual needs of Royal Navy submariners as seagoing chaplain to Commodore Faslane Flotilla at Clyde.

Father McFadden said:

"Submarines are a unique experience; a very specialised group, indeed an elite, but with great heart and humanity.

"I sensed this especially in my time with *HMS Astute*. It has been a privilege to work so closely with the silent service.

"On reflection I sense this is part of my life-long calling – first to be a priest and then to be a priest in the naval service.

"It's about vocation."



On yer bikes! Pompey hosts history of cooking



Left: Dave Myers, on the left, and Si King arrive at *Illustrious* to meet some of the crew, above

TWO PORTSMOUTH-based ships found themselves on television in a tasty look back at the story of food.

A new BBC cookery programme featuring popular chefs The Hairy Bikers saw the duo on board *HMS Illustrious* and *HMS Victory* for their 'war' episode.

The helicopter carrier and the historic warship hosted the war-themed programme, looking at the type of food sailors ate on board Nelson's flagship, with the introduction to the episode filmed on *HMS Illustrious*.

The Hairy Bikers – Dave Myers and Si King – were keen to contrast historical and modern naval warfare. They spent two and a half hours on board *HMS Illustrious*, recording footage on the jetty (arriving on their trademark motorbikes), on the flight deck and in the main galley.

The bikers chatted to as many of the sailors as they could as they moved around the ship, including chefs in the main galley.

Chief Petty Officer Anthony McTigue said: "It was great to have the opportunity for myself and the catering team on *Illustrious* to meet the Hairy Bikers.

"They were very interested in how we went about catering for such a large number of people onboard and were very keen to meet as many of our team as possible".

Following filming on the base the bikers moved to *HMS Victory* where they were given an idea of what the sailors would have eaten before cooking up something similar for the rest of the episode.

The series, *Hairy Bikers; Best of British*, was shown before Christmas.

Bell tolls for Walney – in Barrow

THE BELL from the former *HMS Walney*, a *Sandown* class minehunter decommissioned at Clyde, has been presented to its affiliated Borough of Barrow.

Members of the Navy's First Mine Countermeasures Squadron (MCM1) presented the bell and other mementos to the borough's mayor, Councillor John Murphy. The bell will now take pride of place in Barrow's Dock Museum.

"It was a pleasure to visit Barrow and observe the island of Walney, from the bell's new location," said Commander David Bence, Commanding Officer of the squadron.

"While it is sad to see the ship decommissioned, we must remember that it was the people that served in her and the work they did which made her special. When we look at this bell, as a representation of the ship that was, it is those people and the maritime contribution they made that we should be thinking of."



Commander Bence presents a memento from Walney to Barrow mayor John Murphy



Spiderman joins in the fun at Clyde

SPIDERMAN, BUZZ Lightyear and a pantomime horse have all been recruited at Clyde, judging by a charity fun run at the base.

Ninety-six people signed up for the run, each paying £2 to enter with monies split between the Royal Navy and Royal Marines Charity and Children in Need.

Organised by Clyde's Sportsdrome, participants had to tackle a five-mile course around the base, with fancy dress encouraged.

First past the post in the men's open category was Royal Marine Captain Chris Moses in an impressive 27 minutes, 45 seconds.

He was followed by Petty Officer Physical Training Instructor (POPTI) Rob Greetham from the Sportsdrome and *HMS Victorious*' Chief Petty Officer (CPO) Iain Walker taking third.

Winner of the ladies open was Writer Naomi Cadman from the base's Uniformed Personnel Office (UPO), second was Lieutenant Commander Louise Wooller from the Queen's Harbour Master organisation, and third was Leading Writer Janine Martindale from the Waterfront Manning Office.

There was also a men's veterans (over 40) category which saw first place taken by POPT Greetham, with Lieutenant Lorna Sutherland from the UPO taking first in the ladies' veterans (over 40).

Among those male veterans who had reached the 50-year mark, Babcock's James Hymes was first, with Sue Carpenter from the Trident Training Facility clinching first in the ladies' category.

The prize for best fancy dress went to Buzz Lightyear, also known as Leading Diver Andy Morgan from Northern Diving Group.

Fancy dress wins the day in five-mile charity run



Dressed to impress: runners at Clyde

Duo provides youngsters with Wishing Well help

HUSBAND AND wife couple Naomi (of Director Finance) and Ed Brown (of Director Ships) took time out from their DE&S day jobs to volunteer with Wishing Well, a small international charity working with children and families in the UK, Romania, India and Tanzania.

As volunteers they travelled to Slatina in south west Romania where they joined Wishing Well's International Volunteer and Community Resource Centre. The Centre supports children from the poorest communities as well as working with children and adults still living in the remaining care institutions.

Naomi and Ed were involved in two

projects while in Slatina to improve the living environment for institutionalised children and to help Roma children into school. Naomi said: "Since the fall of communism and Romania's entry into the European Union the country is no longer perceived as being in need of support or as having social care issues. However, our experience has shown just the opposite."

Ed added: "Improvements are being made in Romania but it remains far less developed than the UK. Volunteering has been a challenging experience but one I would recommend to anyone."

Both intend to return to Slatina this spring.

DSRA LOTTERY WINNERS - OCTOBER

£10,000: Craig Robertson (Andover).
 £ 5,000: Duncan Talbot (Donnington).
 £ 2,000: Carole Palmer-Gayle (Main Building, London).
 £1,000: Amy Tucker (UKHO). £500: Vikas Aggarwal (Abbey Wood). £300: Matthew Butler (Abbey Wood), Duncan Mckellar (Babcock), Helen Stevens (Feltham), Hilda Renshaw (Salisbury). £200: Leigh Barber (Abbey Wood), Beverley Boselli (Salisbury), Colin Cook (Corsham), Deborah Barnes (Abbey Wood), Terence Guy (RAF Wyton), Christopher Hull (Bassingbourne), Mark Collier (Wetherfield), Patricia Wealthall (Nottingham), Susan Clarke (RAF Aldergrove), Philip West (Holywood), Karen Holt (Germany).
 £100: Neil Richards (London), Jackie O'Sullivan (Tidworth), Gary Cashman (Raglan Barracks), Jane Spragg (Foxhill, Bath), Anne Parry (Abbey Wood), Michael Moss (Camberley), Alan Field (RAF Brampton), Susan MacFarlane (Feltham), Hugh Lowry (Swindon), Russell Allen (Yeovilton), Catherine Smith (Bicester), Christopher Wheeler (M'boro Bks), Thomas Evans (Abbey Wood), Jayrajsingh Takooree (Abbey Wood), Timothy Wilderspin (DSG).



Class of 2011: graduates pictured at Abbey Wood

Green light signalled for grad recruitment

THE MOD Commercial function has received the go-ahead to recruit a new cohort of 20 graduates for the Defence Commercial Graduate Programme (DCGP).

The DCGP is an intensive two-year programme providing challenging placements tailored to give successful applicants the widest experience across the commercial function, and the opportunity to develop personal and professional competencies.

Support from personnel and training professionals, as well as a personal commercial mentor, is also provided.

Graduates join the programme at Band D, being assessed for promotion to Band C2 once they have completed their placements.

Applications for the 2012 recruitment campaign can be submitted between 9 January and 3 February on the Civil Service Jobs website, and are open to internal and external applicants with a minimum 2:1 degree in any subject. The DCGP team can be contacted on DGCCC-Enquiries@mod.uk and 0117 913 2809.

ALEX ARCHIBALD will be putting his highly-developed logistic skills to the test when he deploys to the front line.

The Territorial Army lance corporal is an inventory manager with DE&S' Special Projects Multi Air Platforms team at Abbey Wood.

But from April he will be in Afghanistan with the King's Royal Hussars, almost certainly as part of the regiment's group operating the multi-terrain Warthog vehicle.

"It will be an interesting challenge during my year away," said the 24-year-old as he embarked on training at Chilwell, near Nottingham, before joining up with his new colleagues.

"After working at Abbey Wood it will be good to see things from the other side of the fence. Warthog has been a great DE&S success story. And I will be learning a lot about how the Forces work.

"Danger will be part of the job out there, but I wouldn't want to be involved if I wasn't happy about the risks."

After leaving school Alex joined the Territorials at the same time as the Civil Service and became a member of the DE&S team in November 2010 at Yeovilton, moving to Abbey Wood a few months later.

Along with his responsibilities for fixed wing aircraft he manages equipment enabling helicopters to carry underslung loads, a vital front line capability in Afghanistan.

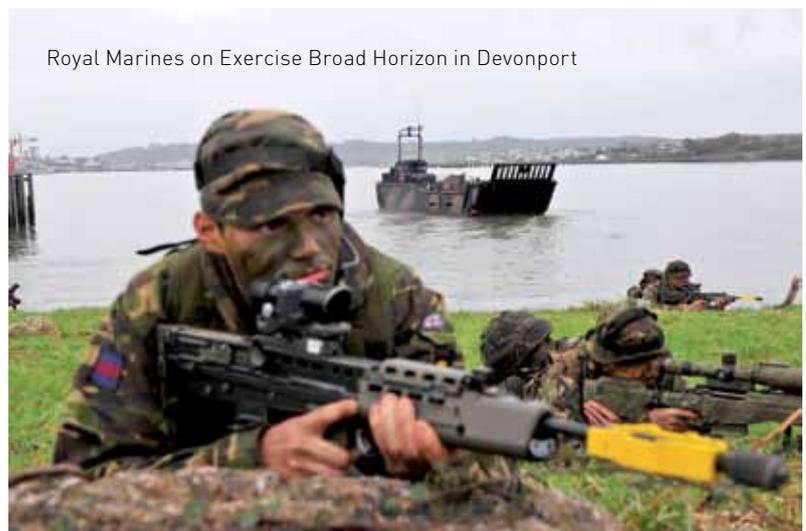
Alex is no stranger to the Forces as his father also works at Abbey Wood. Commodore Brian Archibald is head of DE&S' Surface Combatants.

Alex's team leader, Colonel Andy Allen, said: "Alex is a key member of a small logistic section, but I could hardly say no to this tremendous opportunity of fulfilling his dream of going to war as a Territorial soldier and doing his duty for Queen and Country – all my team wish Alex the best of luck and look forward to his safe return.

"His deployment demonstrates that we place a great deal of value on Reservist Service and with the MOD '3 Month Exercise' concluding that there should be more investment in the Reserves, we are all very proud of Alex and that the project team is doing its bit.

"By encouraging more Reservist service, while ensuring our deploying civil servants are temporarily backfilled in priority, DE&S will undoubtedly raise its consciousness and understanding of the equipment it supports."

From Abbey Wood to Afghanistan – Alex put to the test



Royal Marines on Exercise Broad Horizon in Devonport

Royal Marines invade Devonport!

FLEETS OF landing craft and fast boats churned up the River Tamar at Plymouth and the air around Devonport rang with the sound of gunfire and darkened with the smoke of explosives.

This was the dramatic scene as Royal Marines played out a fast-moving amphibious landing exercise.

The Royal Marines demonstrated their landing craft handling skills on a beach-landing exercise at Devonport as the climax to their training.

A troop of Marines responded to a simulated humanitarian situation in a foreign country where non-combatant residents were under threat from enemy forces urgently needing food, medical and other emergency supplies.

Captain Trevor Smith, Training Officer of 1 Assault Group Royal Marines which oversees the training of the student landing craft helmsmen said: "The fast-evolving exercise unfolds as if a real military operation, in real time. The exercise was devised by a corporal who had only eight hours to come up with the dynamic humanitarian scenario.

"The personnel involved were directed by him according to how the various aspects of the exercise happened, so it was as realistic as possible.

"The lads did very well and it all went as smoothly as can be expected when things are as realistic as possible and the unexpected is part of the test."

Pudsey has a grand old time at Abbey Wood

GENEROUS STAFF at Abbey Wood raised more than £1,000 in aid of Children in Need.

Pudsey Bear made a special appearance on site encouraging people to dig deep for a good cause.

Supported by members of the Bowman and Tactical Communications and Information Systems team, Pudsey managed to collect £1,100 which will be used by the charity to support disadvantaged children and young people in the UK.

Lieutenant Colonel Paul Rennie-Smith said: "The event was a great success and raised in excess of £1,000 for a worthwhile cause. The BATCIS delivery team would like to thank everyone at ABW for their support and kind donations."

This year's children in need raised a record breaking £26 million.



Geoff signs off with a hat-trick

GEOFF ELLIS rounded off a superb year of orienteering by retaining his inter-service orienteering title for a third successive year.

The RAF Flight Lieutenant of DE&S' Networks team at Corsham took the title by his widest margin yet in the competition at Beaudesert, near Cannock.

In great form, Geoff was quietly confident of retaining his title.

And with some strong running early on Geoff was able to catch nearest rival Major Paul McClellan while on the course.

The effect of racing directly against each other saw Paul secure his second successive runners up spot.

In the ladies' race Cpl Sadie Burrow led the way home, taking her second title in four years, but making it the first time when the RAF have topped the podium in both Ladies' and Men's race.

Geoff will lead the Combined Services against the British Students in March.

DINs - released this month

Defence Instructions and Notices (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:

2011DIN04-180: This DIN announces changes to the framework contract arrangements for the supply to libraries, branches, units and establishments in the MOD of commercial web-based on-line databases and other digital media such as CD Roms and licensed DVDs.

2011DIN04-178: As from 1 December a new five-year contract began with BAE Systems Surface Ships for provision of configuration accounting services for Royal Navy and Royal Fleet Auxiliary surface ships. BAE Systems will deliver the service under the DE&S Director Ships contracted out organisation known as the Master Record Data Centre (Ships).

2011DIN04-177: The Territorial Establishment Grant will be withdrawn from April this year and funding will no longer be available to buy Defence Accommodation Stores by the Reserve Forces and Cadet Associations. To ensure an orderly transition for ordering such items by TA units and cadet forces the procedures in this DIN come into immediate effect.

Further information and more details on the latest DINs see:

<http://defenceintranet.diweb.r.mil.uk/DefenceIntranet/Library/CivilianAndJointService/AtoZ/DinsIndex2011.htm>

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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.

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