desider
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de&s
MINISTRY OF DEFENCE

DSEi supplement

DSEi – top UK defence event of 2011

Youngman provides the RAF with a perfect platform

Youngman Group, one of Europe's leading designers and manufacturers of bespoke access solutions, has successfully completed yet another custom-built product for the defence sector.

A requirement existed to design and manufacture two Prototype Viewing Platforms for the Royal Air Force Aerobatic Team (RAFAT), more commonly known as the Red Arrows, for use at their RAF base in Scampton, Lincolnshire.

The platforms were required for allowing visitors to safely view the front cockpit area of the Hawk TMk1 aircraft. At the time of the on-site consultation/ survey a number of constraints and design criteria were briefed to the Youngman design team.

Manoeuvrability was a key issue with the platform needing to be of a lightweight construction with a small footprint that took up as little space as possible. The addition of lockable swivel castors and levelling jacks were also important features in manoeuvrability and safety.

Advertisement feature

In order to reduce the risk of younger viewers falling into the cockpit area the height of the platform could not exceed one metre, while the stairway needed to be 750mm wide to accommodate access and egress at the same time.

An intermediate handrail, low step riser and anti-slip platform were all required, again for safety.

A safe working load was also important, being set at a desired weight of 364kg to allow a maximum of four people on the platform at any one time. The aesthetics were the final point for consideration, with RAFAT wanting a platform that provided visual impact when against the aircraft.

The new Prototype Hawk TMk1 viewing platforms met all the criteria set out by RAFAT, and the product was delivered and successfully tested by the Youngman installation team and the technicians of the Red Arrows at RAF Scampton on 27 June 2011.

This all follows a previous project for RAF Waddington for the design, manufacture and installation of over-wing stagings for its now withdrawn Nimrod aircraft.

A number of constraints and design criteria for the staging were briefed into the Youngman design team by the MOD which included requirement once again for a lightweight and mobile access solution, able to carry loads of up to 350kg, and providing access for personnel and equipment at either end.

Access to the aircraft's existing door hatches also had to be maintained while maintenance was being carried out.

DSEi – the top UK defence event of 2011

- The latest land, maritime and air applications of defence and security products, technologies and services
- More than 1,300 exhibitors from 45 different countries
- Record level of support from the prime contractors
- Record number of UK small and medium-sized enterprises exhibiting
- Visiting warships include *HMS Dauntless*, a Royal Navy Type 45 destroyer, and *HMS Tyne*, a River class offshore patrol vessel; a brand new K130 Class corvette, *FGS Braunschweig* from the Federal German Navy; and the Dutch survey ship, *HMNS Snellus*
- Anti-piracy themed waterborne demonstrations
- Major new feature areas –
  - ◊ Robotics & Unmanned Systems Showcase with demonstration of asymmetric warfare technology
  - ◊ Security Zone focusing on key themes including cyber attack
  - ◊ Static display of latest military vehicles in the Vehicle Display Area
- Air platforms on show include AgustaWestland Wildcat helicopter, BAE Systems' Mantis and full scale mock-up of the Joint Strike Fighter
- Free return bus service between MOD Abbey Wood and ExCeL for DE&S MOD staff (for details contact Katrina McCabe on DES Sec-Internal Comms-Mgr3)

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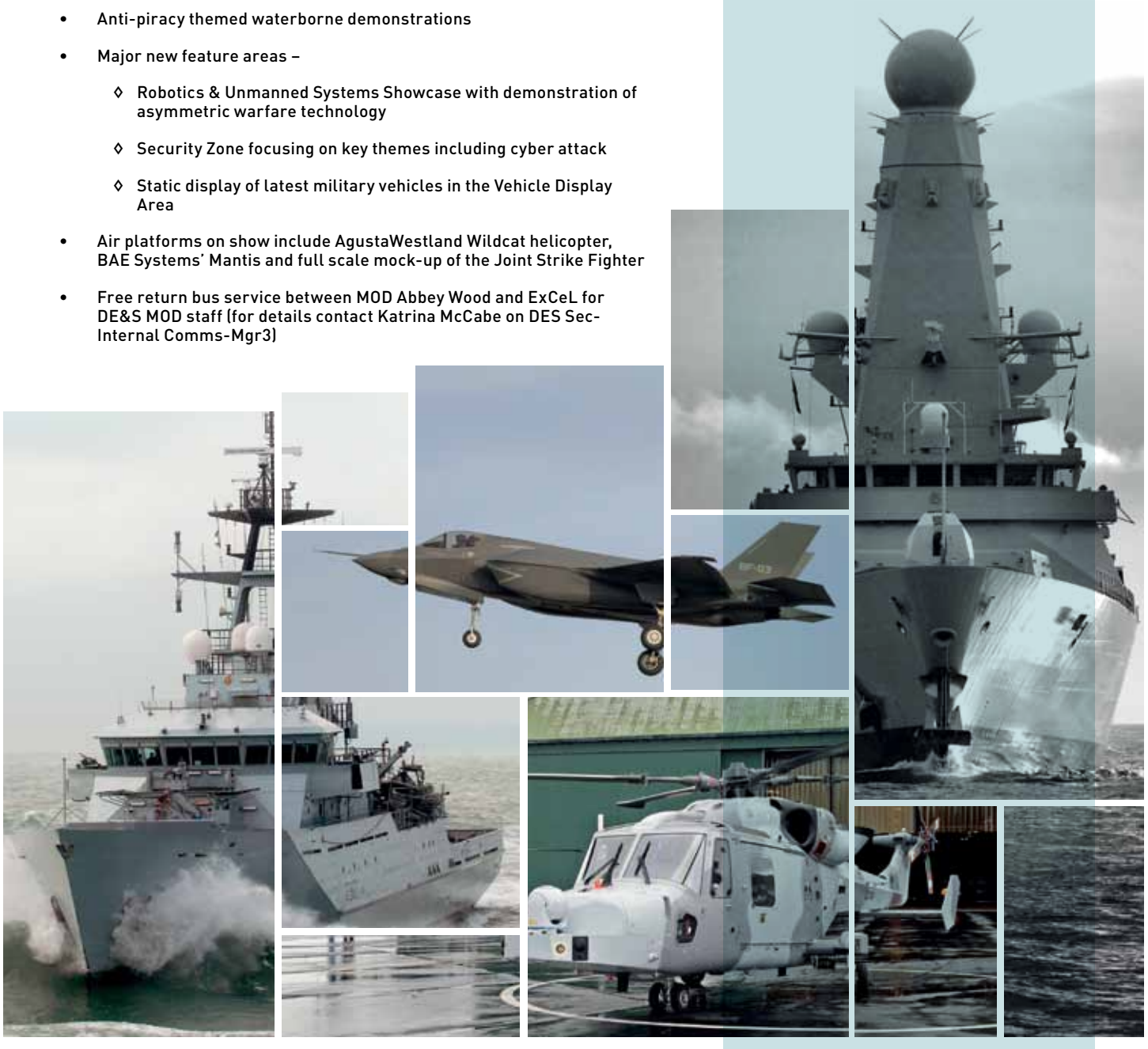

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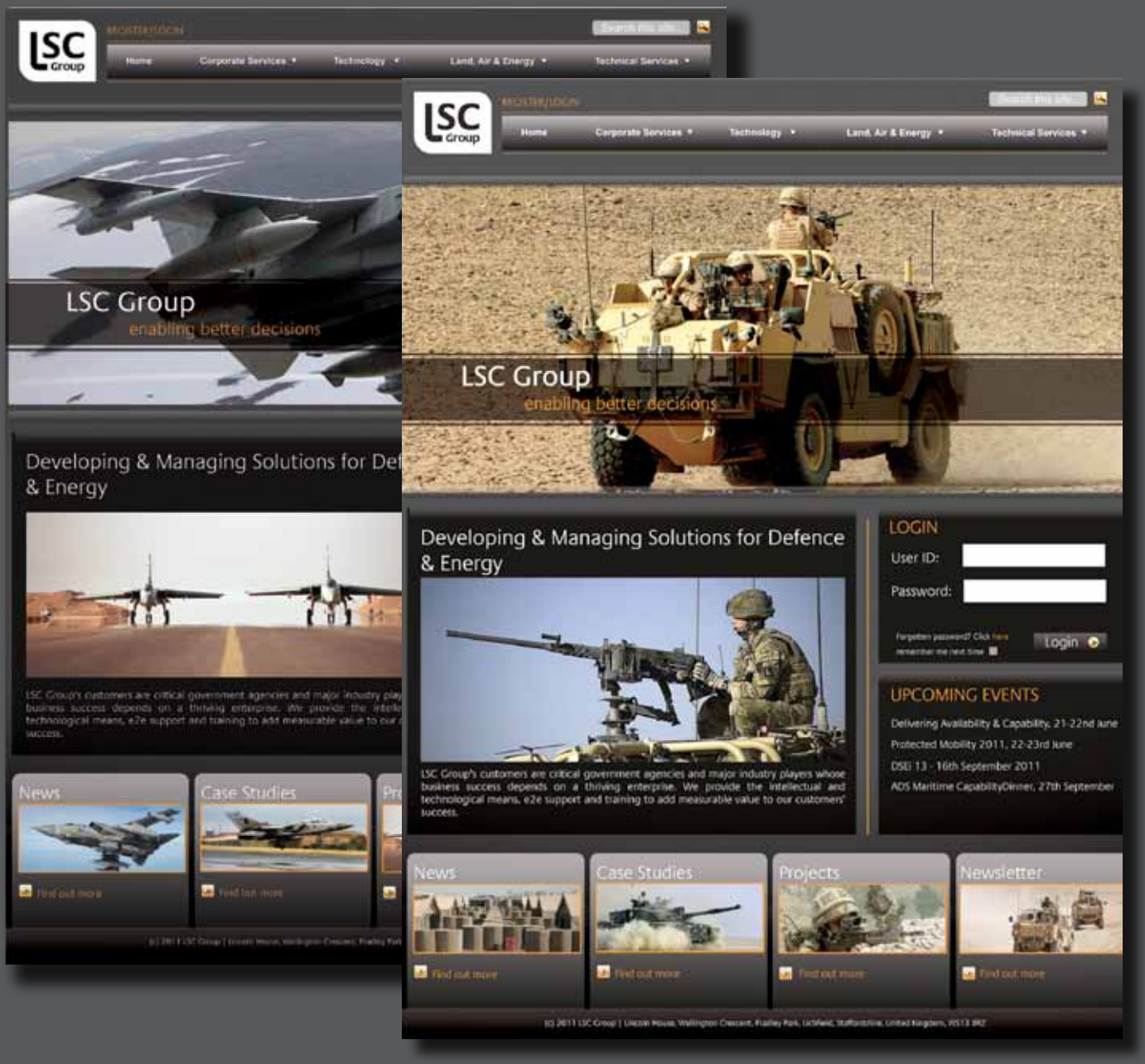
Microsoft Office SharePoint Services (MOSS), part of project Alamein, is providing a solution to meet the collaborative working and document management challenges across the MOD.



LSC Group is helping the MOD to get the most out of MOSS, configuring it further to meet individual needs and providing support post implementation. Solutions that provide you with confidence that the information you need is available at the click of the button.

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Get set for Foxhound

Due to enter service later this year, the Foxhound Light Protected Patrol Vehicle will provide an unprecedented balance of protection, weight and agility for a vehicle of its class.

Able to move freely though the narrow alleyways, tracks, bridges and culverts which criss-cross the current area of operations while minimising damage to the local infrastructure, Foxhound is the culmination of investment both in and with UK industry to meet an exceptionally difficult technical challenge.

Having begun as a blank sheet of paper, the Foxhound programme went from expressions of interest to concept vehicle evaluation trials in less than a year, with a £180 million contract for 200 vehicles being awarded just seven months after the completion of the trials – a massive achievement for the MOD and industry.

Following tough competition Force Protection Europe was selected as the preferred bidder for the Foxhound programme in September 2010, with contract award following in November 2010.

Since then, the prototype vehicles have been through a series of critical design reviews, reliability growth trials and most recently a series of blast trials, all geared towards ensuring that the production vehicles which are due to begin rolling down the manufacturing line this autumn will meet the demanding capability requirements.

Some restricted user training for Foxhound has already taken place, laying the ground work for when the first vehicles enter service later this year; these will be followed by the first vehicles being deployed to operations in 2012.

The latest in a series of Urgent Operational Requirements based on platforms new to the MOD, Foxhound is benefitting from lessons learned in UOR procurement since 2006. The challenge of an earlier starting point in a development programme than other UORs such as Mastiff, means Foxhound's reliability development has been acknowledged as a key factor in maturing a vehicle design.

Other key lessons learned that have been incorporated into the programme are the need for a clear Systems Requirement Document with properly prioritised and realistic system requirements; clear identification of those capability areas that can be traded to provide delivery of a solution within UOR timeframes; the need for a joint approach with industry regarding areas such as risk and production schedules, coupled with a realistic trials methodology, and the need to ensure that there is the potential for growth and future development paths.

The programme continues to benefit from the joint working practices embodied by the MOD and Force Protection Europe. Despite the pressure of delivering this new vehicle to operations as rapidly as possible the programme has also managed to adjust to incorporate the latest lessons learned and upgrades required for operations, while maintaining the same set of Key User Requirements originally defined for the programme.

Colonel Nick Wills, Protected Mobility team leader in DE&S, has said: "This programme is the culmination of a huge body of work delivering protected vehicles for the current operation. The team involved, in DE&S, in Dstl and industry have worked in parallel from the start to compress delivery timelines and focus on the real need in theatre.

"The key however remains the detailed planning to ensure that the vehicles can be introduced to service and supported correctly form the start, and as recent experience shows, that often remains the biggest hurdle.

"But again lessons have been learned from the current fleet and applied to this project in order to mitigate as much as possible the stress of introduction into service direct to operations."

Dressed (and equip

The Individual Capability Group in DE&S' Land Equipment Operating Centre equips and supports the soldier with integrated combat equipment for success in dismounted close combat. Its teams (Dismounted Soldier Systems, Personal Combat Equipment and Light Weapons, Photographic and Batteries, and the Integrated Soldier System Executive), all work with suppliers across industry to deliver and support what is needed now and in the future. The adoption of a soldier system approach enables benefits to be gained on the dismounted soldier's burden, in the areas of weight, power and cognitive load. Some key recent areas of activity are set out below.

Future Integrated Soldier Technology (FIST).
FIST capability is in-service and proving to be a success with the users. Key to this has been proactive engagement with industry through the DE&S team and the Prime Contract Management Office (Thales). Dorset-based Shield UK have been busy with the CQB sight that mates to four sighting systems within the FIST suite, one of which is the FIST Thermal sight – itself specially developed by Qioptiq in St Asaph, north Wales to meet the stringent weight, size and performance constraints demanded by the user.

Operational Black Bag
The Black Bag is issued to troops deploying on operations and contains many personal equipment items – added to their standard kit. It is valued at around £3,000, and contains such essentials as anti-microbial underwear and socks, shorts, trousers, t-shirts, combat shirts, knee pads, multi-tools, torches, ballistic eyewear, load carriage, hydration system and day sacks as well as camouflage gear in the new multi-terrain pattern design. Also included is the latest generation of Osprey body armour and combat helmet. In addition, soldiers can choose their preference of winter and summer boots from market-leading manufacturers Lowa and Meindl. Everything in the Black Bag has been trialled and approved by the Infantry Trials and Development Unit which is staffed by personnel just back from operations.

Pelvic protection
A first-of-its-kind pelvic guard system has been issued to troops serving on Operation Herrick, to help mitigate the potentially-devastating effects of IED blasts and shrapnel. The clothing, manufactured by Hawk Protection, consists of three layers or 'tiers.' Tier 1 is underwear, manufactured from a ballistic woven textile and providing an initial level of protection. Tier 2 is a Kevlar pouch and provides similar protection to Osprey soft body armour, but to the groin area. Tier 3 further enhances protection to the pelvic girdle and down to the knee – for those working at the highest end of the threat spectrum.

ped) for success

Sharpshooter Assault Rifle

The new Sharpshooter Assault Rifle (L129A1) supplied by St Albans-based Law Enforcement International (LEI) Ltd, provides precision effect out to 600metres and suppressive fire far beyond. The L129A1 is in service in Afghanistan and meets the need for greater accuracy at longer ranges while still being effective in the close quarter battle. This new capability, described by the Royal Marines as "hoofing", has proved so successful on operations the initial procurement of 480 has been increased.

A400M – meeting 21s

Providing both tactical and strategic airlift capability, the all new Airbus Military A400M represents the next generation of military transport aircraft

Designed to meet the needs of the world's Armed Forces in the 21st century, the A400M will be able to fly higher, faster and further while still retaining extremely impressive handling and manoeuvrability, as anyone who has seen it displayed will attest.

Its soft and rough landing strip capabilities are exceptional. The cargo hold has been designed to accommodate most of the increasingly large, heavy armoured and IED-protected military vehicles now in the inventory.

This superior payload and cargo capacity can also be employed for humanitarian disaster relief efforts, and the aircraft's austere operating capability means that cargo can be delivered directly to the point of need. A400M will progressively take over roles from C-130J and will also provide aerial delivery, Aeromedical and passenger carrying capabilities. Additionally, it will also be capable of air-to-air refuelling and tanking.

Being developed as part of a six-nation European collaborative programme involving Belgium, France, Germany, Spain, Turkey and the United Kingdom, the A400M makes use of cutting-edge technologies. The wings are a first for an Airbus-built aircraft, being constructed largely of composite material (carbon fibre reinforced plastic) and are the largest single span composite wings ever made. Nevertheless, they are designed to have great survivability properties.

The A400M is assembled in Seville from component parts manufactured across partner nations, with the wings being made in Filton, Bristol. In addition to the wings, the UK is a significant supplier of components across the whole of the aircraft and these are integrated into the numerous advanced aircraft systems. These components are supplied by small and medium-sized enterprises and include: electronic systems, aerials, forgings, landing gear sub-systems and lighting, to name but a few.

The A400M is also important for British jobs and skills, including 900 staff employed on the project by Airbus at Filton. In total, around 8,000 UK jobs are estimated to have been created or secured as a result of A400M.

The A400M has also received accolades from those fortunate enough to have had the opportunity to fly in the aircraft, or even to take the controls.

DE&S Director Air Support Tim Rowntree said: "Everything about it is truly world class, 21st century capability. With its huge turboprop engines and massive propellers, many had feared that the aircraft would suffer from noise and vibration. Not at all! As the engines ran up, it was so quiet and smooth I found it hard to believe that the props were actually turning. But then it eased forward to the runway and lifted effortlessly into the sky. In the air it handled with the agility and precision of an aircraft a fraction of its size."

Sqn Ldr David Catlow, A400M project team Requirements Manager, was the first RAF pilot to fly the A400M and said: "My first impression of the A400M was its sheer size. For an aircraft that weighs up to 140 tonnes it is very responsive, much more so than other transport aircraft I have flown. Its rate of climb is just awesome, with a truly state-of-the-art glass cockpit that is more advanced than the A380. Our pilots will just love this aircraft."

Sqn Ldr Graeme Gault, an Equipment Capability Desk Officer in MOD Main Building added: "The fly-by-wire controls are a complete quantum change from the Hercules. I think it has got the potential to be a really, really impressive aircraft."

On the occasion of the first UK landing by A400M at its future main operating base in July 2010, Gp Capt Dom Stamp, Station Commander RAF Brize Norton, said: "I have often heard it said that if it looks right it probably is right; the A400M certainly looks right to me."

st century needs

A400M facts and figures:

Overall length:	45.1m
Wingspan:	42.4m
Cargo hold volume:	356m³
Cruise speed:	Mach 0.68 – 0.72
Max Operating Altitude:	41,000 feet
Max Ferry Range:	4,200 nm
Max Payload:	32,000 kg

Main picture: Airbus Military

Typhoon – outstandi

The RAF's multi-role fighter Typhoon, currently performing UN-backed sorties over Libya, has "truly come of age", according to Secretary of State for Defence Dr Liam Fox.

Dr Fox said: "The performance of Typhoon in its first multi-role contribution to operations has been fantastic.

"The outstanding performance of Typhoon is increasingly impressing those countries who are considering upgrading their fleets."

Typhoon's rapid deployment last March to Gioia del Colle in southern Italy is testament to the deployability, versatility and relevance of this world-class fourth generation aircraft, which entered operational service with the RAF in 2007. More impressive has been the operational achievement of Typhoon as an air-to-ground fighter-bomber, not just as an air-to-air capable aircraft.

Technological advances have played an important role in the development and production of Typhoon and, as a result of the Strategic Defence and Security Review's confirmation in 2010 that Typhoon would form part of the UK's future fast jet force, further weapon upgrades are now under consideration to enable the aircraft to employ a greater variety of air-to-ground munitions in future.

When Chief of the Air Staff Air Chief Marshal Sir Stephen Dalton delivered the keynote address at the RUSI/Chief of Staff's Air Power Conference in July 2011, he said: "Typhoon has also now been proved operationally as an air-to-ground platform, and we are working hard to expedite its full multi-role, combat-ISTAR capability as quickly as possible, particularly by equipping it with Enhanced Paveway II to provide an additional, low collateral weapon option. The growing maturity of Typhoon as a combat-ISTAR platform represents a real and important boost to our combat capability."

To quote one of the Gioia-based RAF pilots: "The aircraft is spectacular. You could not find a more comfortable aircraft to fly. The cockpit is large by fast jet standards and the information from the radars is displayed easily and accessibly. This allows you to function at 100 per cent capability throughout the sortie, not plagued by fatigue or a lack of situational awareness."

The Typhoon aircraft is based on a common requirement, agreed by the four partner nations (UK, Germany, Italy and Spain), with joint development and production undertaken by two prime contractors, Eurofighter GmbH (for the weapon system) and Eurojet TURBO GmbH (for the engines). Both prime contractors are consortia composed of Eurofighter or Eurojet Partner Companies from each of the participating nations. In the UK's case, these are BAE Systems and Rolls-Royce.

The Typhoon programme brings significant economic and industrial benefits to the UK, providing highly skilled engineering capability in aerospace, both within large defence companies and across the wider supply chain. Fenn Night Vision Ltd is working on Typhoon's night vision solution, while Lightfoot Refrigeration Co Ltd has provided coolant replacement rigs.

The Typhoon Maintenance Facility at RAF Coningsby has generated work for a number of companies: Industore Ltd has been contracted to supply and maintain storage units, Automatic Protection Ltd to supply and maintain fire suppressant systems and Airchannel Ltd to supply airline hose reels. Staging to enable repair and maintenance of Typhoon aircraft has been supplied by T B Davies (UK) Ltd.

The UK's aerospace industry is well placed to continue performing significant work required for updates of Typhoon's capability and to service exports of Typhoon. Employment on Typhoon extends further though than manufacturing components for the aircraft and the final assembly line.

BAE Systems and Rolls-Royce are taking an increasing role in long-term contracts to implement more efficient and integrated arrangements for current and future support provision of the Typhoon fleet.

ng export potential

The sale of Typhoon to Austria and Saudi Arabia is an endorsement of this highly capable aircraft, with the aircraft currently being evaluated by numerous countries across the world. It recognises the aircraft's outstanding potential in the export market and also helps to generate benefits for the UK aerospace industry. Export customers stand to benefit from the partner nations' initial investments in developing the Typhoon aircraft, establishing effective through-life support models and ensuring that there is a flexible baseline for future development of the aircraft.

Typhoon is currently competing in a number of competitions around the world where air forces are seeking to move to the next levels of capability. In India it has been downselected for the final phase of that country's Medium Multi Role Combat Aircraft project; the world's biggest fast jet competition with a requirement for 126 aircraft. It is also being considered by Qatar as part of the Air 4000 project and Japan as part of the FX programme.

Future R

The First Sea Lord's vision for the future of the Royal Navy sees an interoperable, globally deployable, information-orientated, agile and capable Royal Navy of sufficient size to fulfil its commitments that is focused on warfighting, maritime security and international engagement. Built on a foundation of quality people, this operationally versatile navy will be capable of contributing to all operations at sea, on land, in the air and across the seams of those environments as an integral part of a Joint Force. Flexible, multi-role units at high readiness will be used to achieve military effect at home and overseas as part of Britain's forward defence. Working as single units, or in a task group, most likely centred on an aircraft carrier that will deliver carrier-enabled power projection, the Royal Navy will provide early and persistent presence and offer political options and strategic choice throughout all stages of a crisis, whether diplomatic, humanitarian or military.

Type 45 Destroyers

The Type 45 is succeeding the Royal Navy's long-serving Type 42 destroyers, with the UK variant of the Principal Anti-Air Missile System (PAAMS) (named Sea Viper by the Royal Navy) providing the backbone of the Royal Navy's air defences for the next three decades.

Sea Viper is a 360° omni-directional system providing multi-layer air defence to maritime units. It incorporates three separate mission capabilities in a single naval air defence system – ship self-defence for protection of the Sea Viper warship; local area defence for nearby ship defence; and medium and long-range air defence. With this capability the Type 45 is able to engage a large number of targets simultaneously and defend aircraft carriers or groups of ships, such as an amphibious landing force, against current and future threats from the air.

Sea Viper comprises a Multi Function Radar (MFR), a sophisticated Command and Control sub-system (C2), and a dual missile Vertical Launch Sub-system (VLS), containing a combination of 48, ready-to-fire Aster 15 and Aster 30 missiles.

The UK version of the missile system differs from the system selected by France and Italy with respect to the Multi Function Radar (MFR). Whereas France and Italy opted for the Empar MFR, the very specific requirements of the Royal Navy have resulted in the development of the Sampson MFR by BAE Systems Mission Systems.

The Type 45 is the world's first fully-integrated, all electric propulsion front-line warship, with an on-board power plant capable of generating enough electricity to power a small city. Without a gear box and powered by the extremely efficient Rolls Royce WR21 Complex Cycle Marine Gas Turbines and high speed diesels, she is faster and more manoeuvrable than her predecessors. The gas turbines are derived from the Rolls Royce RB211 and Trent 600/800 range of aero engines used in civil and commercial operation.

Higher accommodation standards for all crew members than on previous Royal Navy ships provide a much improved environment. The Type 45 has a crew of about 190 sailors, with additional space to accommodate up to 74 extra personnel (RN personnel conducting other short term tasks or an embarked military force). Modern technology is the main enabler that permits the Type 45 to operate with such a small ship's company by comparison with the Type 42's 270.

The Type 45 is able to incorporate future equipments and weapon systems, if required, in order to meet the changing demands of defence operations over the life of the class without major re-work to the ship structure.

oyal Navy 2020

Global Combat Ship

The Global Combat Ship (GCS) will be a highly capable multi-role warship that can operate across the spectrum of warfare from complex warfighting scenarios to more benign constabulary duties. The Royal Navy's version of the GCS, the Type 26 GCS, will replace the Type 23 frigates as soon after 2020 as possible and will remain in operational service well into the second half of this century, meeting the future demands of the maritime environment. The GCS design supports three variants (Anti Submarine Warfare (ASW), Air Defence (AD) and General Purpose) that are capable of global operations. Versatile and modular in design, all variants will share a common, acoustically quiet hull and realise economies of scale from a rationalised build and procurement process as well as substantial through life cost savings, especially in training, maintenance and logistic support.

The GCS offers a valuable opportunity for an international partnership and the UK is keen to learn more about other nations' requirements. Partner nations will be offered a long term partnership with the Royal Navy and the UK's shipbuilding industry based on shared design, procurement, training and support. Key decisions will be made on the shape of the core platform design later this year but beyond this there remain opportunities to influence a variety of sub-systems.

Potential partners have an opportunity to influence the platform design, optimising for commonality and following open system architecture principles. They have the option of indigenous build, including maximising support to indigenous equipment suppliers of GCS equipment and potential synergies with RN training can be discussed. A partnership will also open up vocational and academic training programmes such as tailored apprenticeships and graduate training, invites agreed offset packages and the ability to spread through life support costs between partners.

Fundamentally, the Type 26 GCS will protect a maritime force from submarine (ASW variant) and air threats (AD variant – no UK requirement). All variants will contribute to maritime force projection by providing maritime fires and conducting embarked military force operations and will contribute to sea control through protecting itself and other vessels from air, surface, submarine and asymmetric threats. This warship will be interoperable with joint and multinational contingent forces, survivable in a threat environment and deployable globally, either independently or as part of a maritime force. It must also be sustainable, meeting environmental emission measures, while minimising support and through life costs (a feature of the current design) and it must be flexible in role and adaptable to meet future threats.

To match these requirements the GCS will take full advantage of a modular approach to design and capability: missile silos and the medium calibre gun will deliver a range of munitions dependent on the desired effect; a flexible mission space can accommodate a range of boats, Unmanned Underwater Vehicles, Unmanned Surface Vehicles, containers and helicopters, while additional accommodation to that required for the core complement, can be used to embark other government department personnel or other military capability teams. These options are enhanced by aviation facilities that can support a heavy lift helicopter, while accommodating a 2 x light or 1 x medium lift helicopters in the hangar. These capabilities and capacity for four boats mean that the GCS is versatile across the full range of operations, including maritime security, counter piracy, counter terrorist related activity, humanitarian and disaster relief work and homeland security. Its Unmanned Airborne Vehicle will support this activity through improved Intelligence, Surveillance, Targeting and Reconnaissance.

There are clearly many opportunities for SMEs in the gestation of GCS and a GCS T26 business industry day was hosted by the project team on 5 July to pave the way for that co-operation.

Scout – a programme making progress

The Scout Specialist Vehicle (SV) is no longer something that just sits on the drawing board or in computer aided designs thanks to solid progress made on the project.

Little over a year since signing the SV demonstration phase contract between the MOD and General Dynamics UK, the first test version of the reconnaissance variant, Scout, has begun to take shape.

And the latest major milestone achieved since July last year is the first successful combining of the vehicle's turret and base unit.

This has been hailed by the Scout SV industry team as a great success as it proves the vehicle design, the systems integration between the two sections and the teamwork between prime contractor General Dynamics UK and turret design authority Lockheed Martin UK are sound.

Dr Sandy Wilson, president and managing director of General Dynamics UK, who witnessed last month's event, said: "Mating the turret and base unit at such an early stage of the demonstration phase once again demonstrates our dedication to working towards delivering the Scout SV capability to the British Army as soon as is possible.

"The fact that it happened at the first attempt only goes to show that the MOD chose the right team to deliver Scout SV."

Roddy Malone, the DE&S Combat Tracks Group project manager for SV, said: "The programme is making good progress and is five months ahead of contracted schedule.

"SV will deliver game changing reconnaissance and the programme is flexible enough to adapt to future requirements.

"Scout SV is no longer something that just sits on the drawing board or in computer aided designs. There are now tangible examples of progress."

The 1.7 metre turret ring means that the Scout turret is designed to maximise space for the soldiers inside. This gives soldiers considerable room for modern display screens, comfort for long periods inside the turret and ease of movement, even while wearing full body armour.

With the need for military electronics ever-expanding on operations, the open electronic architecture allows significant growth for upgrades.

The 'mule' base unit, known as PT3, is based on a mature ASCOD vehicle already in service with the Austrian Army.

The 1.7 metre race ring, specifically designed by General Dynamics UK for Scout, was integrated onto the vehicle by General Dynamics European Land Systems at its Simmering facility in Austria.

The vehicle was then transported to General Dynamics UK's Pershore facility in Worcestershire to undergo a series of tests and prepare it to accept the EDU turret. It was then transferred to Lockheed Martin UK's facility in Ampthill, Bedfordshire last month for the integration of the turret.

In parallel, the first EDU turret was being built at Rheinmetall Landsysteme in Gersthofen, Germany. Rheinmetall Landsysteme designs, develops and manufactures the Scout SV Turret structure for turret design authority Lockheed Martin UK.

Following a successful first build of the turret, the mandated CT40 Cased Telescoped Cannon System was integrated into it and fired for the first time in May, five months ahead of schedule. It was also subsequently transported to Ampthill where it has been undergoing extensive testing and preparation for integration with the PT3 mule base unit.

The Scout SV will have the best protection available in this vehicle class, both as it is delivered and as it grows to meet future threats. The vehicle will be immediately capable of delivering load-carrying growth potential of up to 42 tonnes thanks to a modern, proven drivetrain.

This means SV can be equipped to meet future threats likely to appear over its 30-year life, without the need to upgrade its engine or transmission during that time.

The key advantages that the Scout SV will deliver will include:

- A modern high-performance drivetrain, which is good for the 30-year life of the vehicle and thereby obviates the need for a mid-life upgrade;
- Load-carrying potential of up to 42 tonnes, which provides the ability to meet future threats likely to appear over its life;
- A Common Base Platform that will support all variants such as an Armoured Personnel Carrier, Protected Mobility vehicle, a Repair vehicle and a Recovery vehicle;
- A proprietary open electronic architecture, available across all variants, which will make the SV fleet easier to maintain, ease the training burden, and play a key role in lowering costs throughout the life of the vehicles;
- The advanced turret design which, because of its internal space and leading ergonomics, delivers improved survivability and fightability for its crew.

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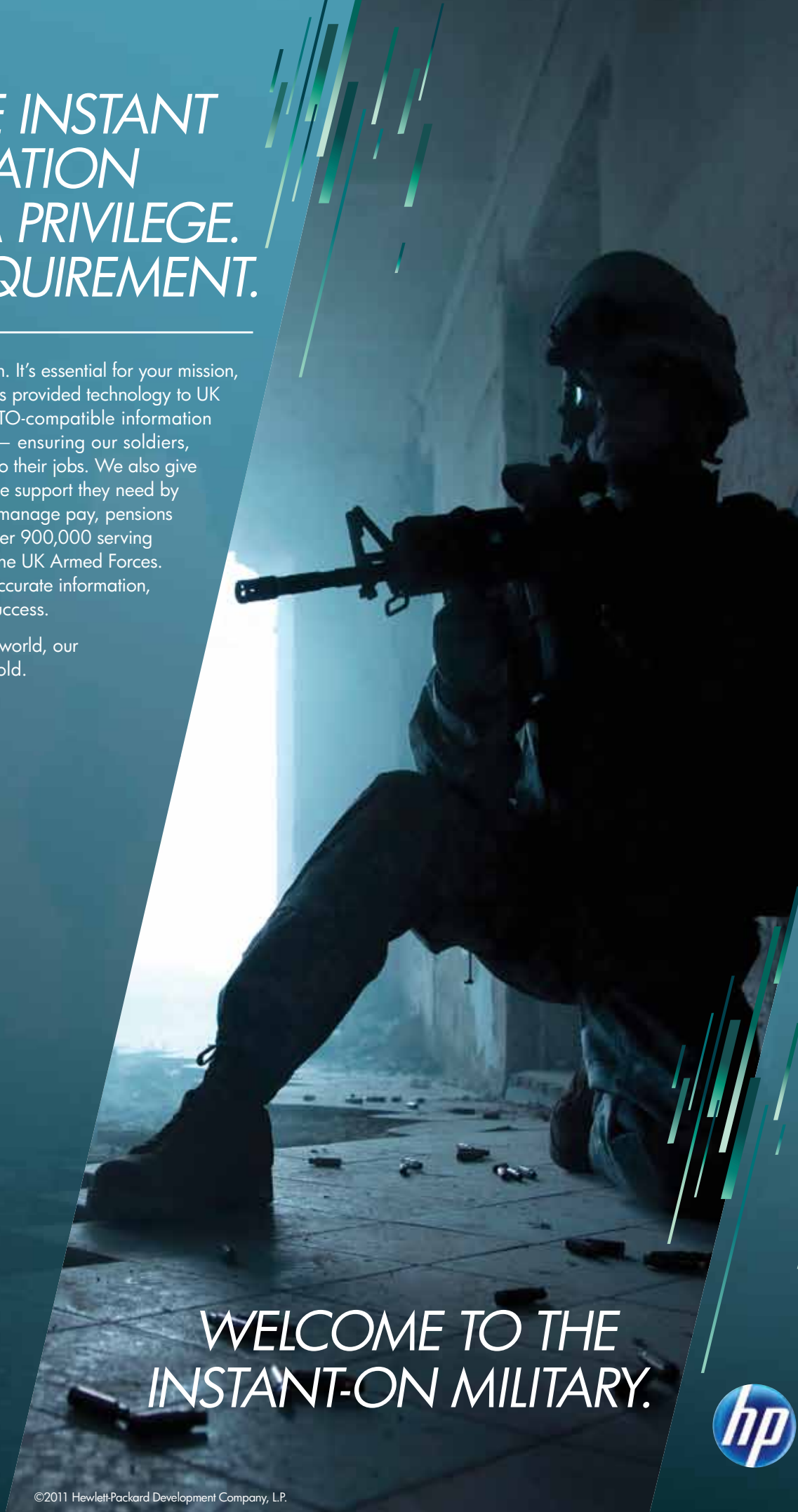

WELCOME TO THE INSTANT-ON MILITARY.

Hawk on the mark

The Hawk T Mk 2 provides a modernised cockpit environment and advanced avionics to enable higher quality training to be delivered to the RAF's fast jet pilots making them better prepared to transfer to front line aircraft.

Advanced systems handling and information management in the cockpit have become increasingly important aspects of fast jet training. The RAF's 28 aircraft will be based at RAF Valley.

A £160 million Design and Development Contract (Operational Capability 0 Standard (OC0)) was placed with BAE Systems in December 2004 for the Hawk T Mk 2. The Design and Development Contract was amended in May 2008 to provide a further upgrade in capability known as Operational Capability 2 (OC2), embodiment to be undertaken post delivery. OC2 introduces in-cockpit simulation of sensors, weapons and threats across a network of up to ten collaborating Hawk TMk2 aircraft.

BAE Systems was awarded a £450 million contract to build 28 Hawk T Mk 2 aircraft in October 2006 with the aircraft being built at BAE Systems site at Brough, East Yorkshire.

Fast jet training, utilising the Hawk T Mk2, is one of the first training packages to be implemented under the UKMFTS (UK Military Flying Training System) programme under which Ascent (the training service provider) will deliver all the necessary elements for advanced Fast Jet training. This includes the ground based training environment (i.e. full mission simulators, flight training devices, desktop trainers, mission planning systems and virtual briefing rooms and associated classrooms) as well as the squadron building and the hangers to house the Hawk T Mk2 at RAF Valley. Release to Service at the full OC2 standard was achieved in February 2011 and all Hawk TMk2 aircraft at RAF Valley have this enhanced capability.

Mk2 will be step change in capability – as big as the step up from the Mk1 to the Typhoon

The aircraft uses the Rolls Royce Adour Mk951 Turbofan engine, with its Full Authority Digital Engine Control, coupled with advanced navigation/attack training systems, enables the Hawk to simulate training missions flying front line combat aircraft like Typhoon, Gripen, F-35 lightning 11, F/A-18 and F-16, but at a fraction of the costs.

The increased capability of the Hawk is reflected in the nose profile, which has been refined to accommodate sensors and avionics. The wing section has been revised to include a combat flap setting while new mission computers have allowed the integration of new systems and capabilities such as Autopilot, Ground Proximity Warning System, Traffic Collision Avoidance System, Data-link, Mission Data Loading and Recording System and Digital Moving Map. Training scenarios are further expanded by the introduction of an on board simulation capability and the addition of the digital data recording system which enhances the debriefing capability.

"The new T Mk2 is an absolute step change. The difference between the Mk1 and Mk2 with this software upgrade, is almost as big a jump as the step up from the TMk1 into the Typhoon," says Wing Commander Braid, formerly officer commanding 19 Squadron. "The pilots are experiencing a totally different training environment. Now the navigating and flying is the easy part. The real challenge is trying to interpret the information and interact with the technology."

A contract for the in-service support of the Hawk T Mk2 was awarded to BAE Systems in March 2010. This is a contractor's logistic support arrangement including on-base maintenance, fleet management, spares management and re-provisioning, repair and all other ancillary activities needed to provide the required aircraft availability and covers the period to 31 March 2014.

There is also scope for additional work to be undertaken under the contract, including weekend or out-of-hours flying and support for landings outside of RAF bases. As the contract has been placed with the aircraft designer, it also includes post design services.

Full course capability for the Hawk T2 at RAF Valley is due to start next April.

The Hawk T2, the latest RAF fast jet trainer