

# Army Guide monthly



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## Defence Industry

### British Army Warriors get protection and mobility upgrade



Telford, UK. -- British Army Warrior vehicles in Afghanistan are now better protected and more mobile thanks to a fast-paced major package of upgrades developed and delivered by BAE Systems. □

More than 70 of the infantry fighting vehicles have received a J30m upgrade following a series of orders placed with BAE Systems by the UK Ministry of Defence. Further upgrade kits have also been supplied.

BAE Systems has previously developed and produced over 70 UOR (Urgent Operational Requirement) modifications for Warrior to prepare them for operations in Kosovo, Iraq and now Afghanistan. These were designed mainly to enhance protection to the vehicle crews in the face of rapidly-changing threats and to better meet harsh local environmental conditions.

Approximately 30 new upgrades, known as TES(H) (Theatre Entry Standard - Herrick), have now been designed, developed, manufactured and fitted onto Warrior vehicles. Their primary aims were to further improve crew protection and restore vehicle mobility that had been reduced as a result of increases in vehicle weight from under 30 to around 40 tonnes.

TES(H) was developed, tested and managed by the Vehicles Readiness & Sustainment team at BAE Systems' Telford site. BAE Systems co-ordinated fitting the new parts at the nearby DSG (Defence Support Group), Donnington facility. All vehicles have now been delivered for use in training and on operations.

The roll-call of British sub-contractors on the programme includes Allen Vanguard (Tewkesbury), Astrum, Remown (both Co Durham), Caterpillar Defence Products (Shrewsbury), Dana Spicer (Birmingham), GKN Driveline (Telford), Icon Plymer (Nottingham), MTL (Rotherham) Thales Optronics (Glasgow), Thyssen Krupp (Birmingham), Tinsley Bridge (Sheffield) and W A Lewis (Shrewsbury).

Lt Col Tony Marinos of Headquarters Infantry said: "With the dynamic nature of operations in Afghanistan, partnered, timely approaches such as this project, which quickly take on board lessons learned from the front line, can give our troops the fine-tuned equipment they need to do their jobs as safely and effectively as possible."

BAE Systems' business lead for Warrior David Jones commented: "The fast pace on TES(H) has been made possible by our knowledge of Warrior and painstaking

planning between DE&S, DSG, ourselves and our supply network to ensure that these vehicles were ready for the front line as quickly as possible."

#### TES(H) includes:

A modular armour system to allow quick and easy fitment of "mix and match" armour packages to meet changing threats. Many of these packages have been developed under previous UORs

- Enhanced seating and armour to further improve mine protection.
- Up-rated suspension and ride height to restore cross-country mobility.
- Lower lower-ratio final drive to increase low-speed mobility and climbing performance
- Motorsport derived carbon-fibre brakes, providing significantly reduced stopping distance.
- In addition, more than a dozen UORs developed specifically for Afghanistan have been fitted.



## Defence Industry

### JSC Plant Leninskaya Kuznitsa Starts Production Of UAG-40 Automatic Grenade Launcher



Ukraine, Kyiv -- Leninskaya Kuznitsa UAG-40 Automatic grenade launcher (AGL) shoots for the distance of over 2000 meters. It is an effective armory against the enemy, thin-skinned equipment and against protective shelter.

UAG-40 is the first portable automatic grenade launcher. UAG - 40 reposes on the tripod before shooting. The total weight of the grenade launcher with tripod is less than 30 kilograms. Tripod's design allows spewing shells from unprepared sites.

High level of portability and no need to prepare operating site allows quick change of firing position both in the open air and in an urban environment. Using UAG-40 can be resulted with flame efficiency of ground campaign.



## Defence Industry

### Thales creates Thales Communications & Security

Thales announces the creation of Thales Communications & Security, a company combining the joint skills of Thales Communications and Thales Security Solutions & Services in the fields of defence, security and ground transportation.

This merger reflects the growing convergence of information management issues in these areas. By combining these globally recognised skills, this company offers Thales major benefits for catering even more efficiently to the needs of its customers.

In a world that is increasingly open, more complex and at the same time more vulnerable to new threats, it is vital to be able to make the right decisions in timely fashion in order to protect the public, sensitive sites and highly critical data. To this end, the requirements of the armed forces and the security services are converging on improving the way in which information and the associated technologies are managed.

At the same time, the control and command solutions and the means for supervision dedicated to defence and security systems are increasingly drawing on common or complementary technologies.

In order to better take account of this environment, Thales is merging the activities of two subsidiaries: Thales Communications - leader in secure information and communication products and systems for the armed forces and security services; and Thales Security Solutions & Services - leader in security systems for the general public, for critical infrastructures and for travellers.

"In concrete terms, Thales' mission is to 'simplify complexity' in order to provide decision-makers with relevant, clear and immediate information about their environment," explains Pascale Sourisse, CEO of Thales Communications & Security. "The creation of Thales Communications & Security makes us even more efficient by combining the skills of two highly complementary companies. It will also allow us to stimulate innovation and offer our customers a wider range of technologies. In all, this venture encompasses almost 7000 people spread over 9 R&D and industrial sites, all set to serve our customers in France and abroad."

### **Thales Communications & Security: first-rate skills, high potential for growth**

The creation of Thales Communications & Security makes it possible to extend and accelerate the cooperation that was already in place between the teams of Thales Communications and Thales Security Solutions & Services. This cooperation has already borne fruit on several projects, both in France (e.g., the new Ministry of Defence at Balard, Paris) and for the export market (e.g., the security system for Mexico City). The new entity offers multiple benefits for its military and civil customers:

- high-performance and competitive technical and technological solutions to meet evolving market needs;
- diversified, high-value-added skills, with teams that are experts in complex, cross-functional project management;
- a reinforced industrial platform and greatly increased R&D/innovation capacity.

Thales Communications & Security therefore has all it takes to win new market share both in France and internationally, thanks to strengthened teams, a broader

customer base and improved competitiveness.

With Thales Communications & Security, Thales consolidates its position as European number one in secure information and communication systems on the global markets for defence, security and ground transportation.

### **Thales Communications & Security: some statistics**

Thales Communications & Security, the head office of which is sited at Colombes (France), is a company with a headcount of approximately 7000, and whose employees are spread over 9 sites. Thales Communications & Security concentrates over half of the Group's business (around €3 billion) on C4I (Command, Control, Communications, Computers and Information) systems for defence and security.



## **Army**

### **Patria`s mortar systems have not been used to fire cluster ammunition in Libya**



During the last weeks Patria has been increasingly contacted about the possibility that Patria`s Nemo 120 mm mortar system or Patria Hdgglunds` AMOS 120 mm mortar system would have been used in Misurata, Libya to fire 120 mm cluster ammunition (MAT-120) produced by a Spanish company Instalaza S.A. Patria strongly rejects this possibility. None of AMOS or Nemo mortar systems are in use of the parties in Libya.

And Patria does not develop, produce or sell cluster ammunition products.

The suspicion has likely been created by a misinterpretation of publicly available information. A small quantity (305 pcs live plus 230 pcs of inert ammunitions) of MAT-120 rounds were imported to Finland in 2005-2007 for for the program for the Finnish Defence Forces. Patria and the Finnish Defence Forces terminated that program in 2009.

The left-over ammunitions (136 pcs live) are owned and stored by the Finnish Defence Forces. No MAT-120 ammunition imported by Patria has been exported out from Finland.

Patria Hdgglunds has a licensing agreement with a US company, AAI Corporation, concerning AMOS. However, under this agreement, no AMOS mortar



systems have been produced by AAI. The export of Patria Hdgglunds know-how or components related to AMOS are also under the Finnish export control mechanisms.

Rotherham.

Escorted by the Lord-Lieutenant for South Yorkshire, HRH The Duke of Kent was greeted by MTL Group Managing Director Dr. Henry Shirman and the High Sheriff of South Yorkshire.

The Duke was among the invited guests who celebrated the occasion at the J5m state-of-the-art manufacturing facility, which was acquired to meet MTL Group's growing presence in the steel engineering sector. Key markets include Defence, Construction and Renewable Energy.

Dr. Henry Shirman led the Duke on a tour of the Grange Lane facility, which supplies blue chip OEMs with laser cut parts up to fully machined fabrications.

Following a sustained period of sales growth since a management-buy-out, MTL Group has doubled its manufacturing space which has been supported by a major growth in export sales.

The facility comprises four manufacturing bays which house all of MTL Group's manufacturing under one roof. This includes the world's largest robotic press brake and the UK's largest Waterjet and Bevel laser cutting machines.

Dr. Henry Shirman said:

"MTL Group is delighted to welcome His Royal Highness the Duke of Kent and our guests to the official opening of our new manufacturing facility."

"His Royal Highness was very impressed with the state-of-the-art facilities and praised MTL Group on its contribution to UK manufacturing"

One area of particular interest to the Duke was MTL Group's support in supplying armoured steel for UK Defence vehicles. Most recently manufacturing and supplying the V shaped hull for the new Foxhound vehicle which will replace the Snatch Land Rover from 2012 in high threat locations.

Following a short introduction by Dr. Shirman, HRH the Duke of Kent declared the building open in front of a strong crowd of more than 200 of MTL Group's employees.

## Exhibitions

### DTM to showcase Springback Six APC at DSEI 2011



DTM, a privately owned South African armoured vehicles company, will be proudly exhibiting the Springback Six armoured and landmine protected vehicle at the leading defence exhibition DSEi, to be held in Excel London from 13-16 September 2011.

Visitors will have the opportunity to view the Springback Six at stand N3-140.

The range of Springback armoured personnel carriers have been designed for ease of operation and repair, using internationally available drive-line components for assured reliability as well as availability of parts. With ballistic protection of B6 upgradeable to B7, the all-steel armoured v-shaped hull can withstand a TM57 landmine or equivalent under the hull or two under any wheel. This permanent 4x4 vehicle not only boasts exceptional manoeuvrability but with its powerful MWM engine also handles effortlessly on the open road. Special attention has been given to the ergonomics of the driver and its 10 passengers.

As South Africans we look forward to showcasing our Springback Six APC to the defence industry at DSEi 2011.

## Defence Industry

### MTL Group official opening by HRH The Duke of Kent



Project manufacturing specialist MTL Group was delighted to welcome HRH The Duke of Kent to its new 300,000 sq. ft. manufacturing facility in

## Defence Industry

### General Dynamics UK selects Thales sights for Scout SV

General Dynamics UK, the prime contractor for the Ministry of Defence's Scout SV programme has selected Thales UK to supply the primary and secondary sighting systems for Scout, the reconnaissance variant of SV.

Lockheed Martin UK, the Scout SV turret sub-contractor, will integrate the sights onto the turret for the Scout SV programme.

"General Dynamics UK has selected the most advanced and appropriate systems for Scout to give our soldiers the best equipment they can possibly have," commented Steve Rowbotham, vice-president of General Dynamics UK. "Our choice of suppliers on the SV programme reflects our dedication to delivering the best

vehicle for the end user. In the case of the primary and secondary sights for the Scout turret, Thales UK's sight technology was judged to be the best for the job."

The primary sight is mainly for the use of the vehicles' commander. It enables the commander to maintain a 360° view of his surroundings has a thermal imager to identify targets and has a Wide Area Search And Detect (WASAD) capability that automatically detects and tracks potential targets from their thermal signature, alerting the crew to their presence. The primary sight also includes provision for an optional Laser Target Designator (LTD) and the Scout SV demonstration phase will mark the first use of a vehicle-mounted, under-armour LTD by the British Army.

The secondary sight is for the gunner and gives him the ability to detect and identify targets at extended ranges and accurately engage targets at the full range of the main armament. It also includes a high-definition colour TV camera for daylight use, as well as a long-range day optical channel.

Both sights are integrated with a Sensor Processor Unit which, combined with the sights' stabilisation systems, enables the vehicle's turret to be rapidly traversed onto the target whilst on the move, providing an unsurpassed hunter-killer capability for vehicles in this class. Both sights have fully digital video outputs, in accordance with the UK MoD's new Vetronics Infrastructure for Video Over Ethernet (VIVOE) standard, facilitating connection into the vehicles' electronic architecture for onward distribution.

Alex Cresswell, managing director of Thales UK's land defence business, said: "Thales UK looks forward to working closely with General Dynamics UK to deliver this significant capability into service on schedule and to specification."

The Scout reconnaissance vehicle will be a key variant in the British Army's SV fleet when it goes into service. It will serve alongside other SV variants including Protected Mobility, Repair and Recovery vehicles, all based on the common-base platform developed by General Dynamics UK.



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## Future Technologies

### **ATK Receives \$77 Million Contract to Develop Next-Generation Ammunition for U.S. Army Abrams Main Battle Tank**

MINNEAPOLIS -- ATK has received a \$77 million, three-year contract to develop and qualify the M829E4 120mm Advanced Kinetic Energy (AKE) tactical tank round for the U.S. Army.

At the completion of this contract, ATK will have completed the second phase of the Engineering Manufacture Design (EMD) work required to qualify the new round for use with the Army's M1A2 SEP Abrams Main Battle Tank. Upon qualification, the round will enter full-rate production.

"During our 30 years of program experience partnering with the Army, we have type classified 10 of

the 12 120mm tactical and training rounds for the Abrams tank. This experience makes ATK uniquely qualified to develop this next generation capability for the Army," said Bruce DeWitt, Vice President and General Manager for ATK Advanced Weapons Division. "ATK provided the 120mm ammunition that helped 'upgun' the Abrams from a 105mm to a 120mm main gun and we look forward to working with the Army to maintain the Abrams' standing as the world's dominant tank."

The M829E4 is the Army's fifth generation, 120mm kinetic energy cartridge. The round is being developed to provide the Abrams M1A2 SEP (System Enhancement Package) with heavy armor defeat capabilities that allow the tank crew to engage and destroy threat Main Battle Tanks protected with advanced, explosive reactive armor at extended ranges as well as in Military Operations in Urban Terrain (MOUT), mountain, and nontraditional battlefields. The round will allow for the use of fewer rounds and allow for faster enemy engagements - factors that will ultimately increase crew and platform survivability.

Having successfully completed the first EMD phase, ATK was selected to advance to the second EMD phase based on an industry competition that included the results of a ballistic demonstration test and shoot-off and final proposal used to provide the best value decision for the Army.

Since 1980, ATK has delivered more than four million rounds of 120mm tactical and training tank ammunition to the U.S. Army, U.S. Marine Corps, and allied militaries. Through its proven, system-level contracting approach that reduces the risk to the customer, ATK has delivered a constant supply of 120mm ammunition that is consistently reliable and affordable.

ATK is an aerospace, defense, and commercial products company with operations in 22 states, Puerto Rico, and internationally, and revenues of approximately \$4.8 billion. News and information can be found on the Internet at [www.atk.com](http://www.atk.com).

Certain information discussed in this press release constitutes forward-looking statements as defined in the Private Securities Litigation Reform Act of 1995. Although ATK believes that the expectations reflected in such forward-looking statements are based on reasonable assumptions, it can give no assurance that its expectations will be achieved. Forward-looking information is subject to certain risks, trends and uncertainties that could cause actual results to differ materially from those projected. Among those factors are: the challenges of developing next-generation ammunition; changes in governmental spending, budgetary policies and product sourcing strategies; the company's competitive environment; the terms and timing of awards and contracts; and economic conditions. ATK undertakes no obligation to update any forward-looking statements. For further information on factors that could impact ATK, and statements contained herein, please refer to ATK's most recent Annual Report on Form 10-K and any subsequent quarterly reports on

Form 10-Q and current reports on Form 8-K filed with the U.S. Securities and Exchange Commission.



## Contracts

### LMT to deliver armoured cabs to German Army



Pretoria-based Land Mobility Technologies (LMT) will next week start delivering armoured cabs to Mercedes Benz Special Trucks in Germany for fitting to a undisclosed number of Actros heavy recovery vehicles ordered for immediate use by German troops in Afghanistan.

The cabs are being manufactured by LMT at its Waltloo factory. The company says it received the contract in March 2011. Mercedes Benz, announcing the order in May, said the supply of the vehicles “will substantially enlarge the capabilities of the Bundeswehr.”

The companies say the vehicles will be of the same configuration and with the same high level of protection as the 120 successfully operated by the Canadian Forces in Afghanistan since March 2008.

“The vehicles will ensure the best available protection in wheeled logistics vehicles for the German soldiers in operation, Mercedes Benz said in its may statement. “With the heavily-armoured Actros 4151 AK 8x8, Mercedes-Benz is setting new standards in special-purpose logistics vehicles. The Actros provides Level 4 ballistic protection and Level 4b mine protection according to STANAG 4569. Thanks to its extremely effective armour against blasts and shrapnel, the Actros is also setting standards when it comes to protection against IED's and car bombs.

“The systems of the heavily-armoured Actros 4151 AK 8x8 have been further optimised on the basis of many years of experience. Thanks to their excellent cab protection, high-performance chassis and tried-and-tested bodies, the vehicles are able to offer a deployment availability of over 95%.”

Mercedes Benz adds the armoured cab can be tilted forward so as to guarantee access to the engine compartment, which is also armoured. A new seating system with 5-point seat belts provides the optimum basis for protecting the occupants against attack, including from the side. At the same time the seats offer both secure support when driving off-road as well as good freedom of movement. A high-performance air conditioning system helps to ensure optimum temperatures are maintained, even in extreme climatic

conditions.

A particular challenge faced by heavy recovery vehicles is the distribution of axle loads in all deployment situations - from heavy-duty recovery applications through to driving when empty. While the weight of the armoured cab lies across the front axles only, in recovery situations the weight of the raised, towed vehicle places a load on the rear axles which can act like a huge lever. The Actros 4151 AK 8x8 Recovery vehicle, however, has been designed in such a way as to ensure a substantially uniform axle load distribution and also enable safe handling in both heavy-duty recovery situations and also when driving unladen, the company says.

The protected Special Vehicle has a weight of 33.500 kg, a length of 10.530 mm, a width of 2.800 mm and a height of 3.400 mm. The wheelbase of the Mercedes-Benz Actros 8x8 is 5.580 mm. The BlueTec 5-V8-engine of the type OM 502 LA has a power of 375 kW/ 510 hp.

The recovery technology consists of the wreckerbody made bei Empl, three Rotzler-winchers and a Hiab-front-crane. The Rotzler-winchers have a max. tractive power of 25 to with a cable-length of 100 m. The Hiab-crane has a lifting capacity of 7.500 kg with 2,60 m. The arm of the Empl-wrecker has a lifting height of 5m and a lifting capacity of 16 metric tons. The wrecker capacity while driving is more than 12mt.



## Defence Industry

### BAE Providing 519 Gunner Protection Systems for USMC



Louisville, Kentucky -- BAE Systems received an \$18 million delivery order to provide 519 Marine Corps Gunner Protection Systems for the Medium Tactical Vehicle Replacement and the High Mobility Multi-Wheel Vehicle (HMMWV) which will support U.S. Navy requirements.

The Marine Corps Gunner Protection System (MGPS) is also known as the Marine Corps Transparent Armored Gun Shield (MCTAGS) system.

“Our tested and proven gunner protection system not only protects our warfighters from harm, but it also gives them enhanced situational awareness on the battlefield,” said Robert Houston, vice president of Readiness and Sustainment at BAE Systems. “While the U.S. Marine Corps has been the dominant user of the gun protection



system capability, the U.S. Army and U.S. Navy have also used the systems in combat and experienced positive results."

The Medium Tactical Vehicle Replacement will receive 135 gun protection systems and the HMMWV will receive 384.

The gunner protection system kits further enhance survivability by providing improved target acquisition capability and protection from small arms fire and improvised explosive device (IED) fragments. BAE Systems' transparent armored gun shield units have been configured for a wide range of vehicles, including Bradley, M1 Abrams, M113, Medium Tactical Vehicle Replacement, HMMWV Logistics Vehicle System, Assault Amphibious Vehicle - Personnel and for the Stryker Common Ballistic Shield. The additional contract order will bring the total number of MCTAGS kits sold to 11,157, since the program started in 2005.

The kits will be assembled at the BAE Systems facility in Louisville, Kentucky, with the Battery Powered Motorized Traversing Unit to be assembled at the company's Fairfield, Ohio facility. Delivery is anticipated to be complete by the end of 2011.



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## Contracts

### Oshkosh Defense to Supply 400 Additional M-ATVs to U.S. Forces



OSHKOSH, WI -- Oshkosh Defense, a division of Oshkosh Corporation, will build and deliver an additional 400 MRAP All-Terrain Vehicle (M-ATV) base variants with integrated underbody protection following an order from the U.S.

Army TACOM Life Cycle Management Command (LCMC). This delivery order was announced by the Department of Defense on June 30. Oshkosh has received orders to deliver more than 8,700 M-ATVs of which more than 8,000 life-saving M-ATVs have been delivered for operations in Afghanistan. Oshkosh also received an order to continue Field Service Representative (FSR) support for the M-ATV in theater.

"The battle-proven Oshkosh M-ATV is designed and built to give troops the best combination of protection and mobility on the battlefield," said Ken Juergens, vice president and general manager of Joint Programs for Oshkosh Defense. "As we provide M-ATVs, we also ensure they are always battle-ready with support from our factory-trained FSRs, who use their expertise to help sustain vehicles in and out of theater, as well as provide technical guidance and training for troops."

The M-ATV is designed to provide exceptional protection and superior mobility for operations on unimproved road networks and rugged off-road terrain in places like Afghanistan. The M-ATV bolt-on design permits in-theater installation of the latest armor technology to meet mission demands and the ever-changing and increasing threats in theater. The vehicle uses the Oshkosh TAK-4® independent suspension system to provide added flexibility, allowing the M-ATV to take on additional bolt-on armor and protection kits while maintaining a payload of up to 4,000 pounds. The M-ATV family of vehicles also includes the Special Forces Vehicle (SFV), Multi-Mission Vehicle (MMV), tactical ambulance and 2.5 ton cargo vehicle to deliver protected mobility for a wide array of operations in unforgiving terrain.

Factory-trained Oshkosh FSRs go where they are needed worldwide, including in-theater, and provide a direct link to the company and its parts network. FSRs provide vehicle-specific expertise to not only maintain vehicles, but also to provide technical guidance and help train troops so military can perform more vehicle service in-house.

The M-ATV order is valued at more than \$207 million. Vehicle deliveries are expected to begin in October and be completed by November. To date, the FSR order is valued at more than \$31 million and will continue the support of more than 90 FSRs in theater through March 2012.



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## Defence Industry

### Navistar Defense To Produce Second Round Of MRAP Recovery Vehicles

WARRENVILLE, Ill. -- Navistar Defense, LLC today announced that it received a delivery order for 140 International® MaxxPro® Recovery vehicles with rocket-propelled grenade (RPG) nets from the U.S. Marine Corps Systems Command.

The order for \$142 million also includes parts and support for the Mine Resistant Ambush Protected (MRAP) vehicles. Navistar received its first MaxxPro Recovery vehicle order in November 2010.

"Many mission types require MRAP survivability protection and that includes warfighters running vehicle recovery and support missions," said Archie Massicotte, president, Navistar Defense. "To meet urgent needs, we completed delivery of the last MaxxPro Recovery vehicle order two months ahead of schedule. We are proud that these vehicles are performing well and we will work swiftly again to deliver these additional trucks."

The MaxxPro Recovery vehicle is based on the same International® WorkStar® platform that lends its flexibility to the company's growing family of vehicles. MRAP ballistic, mine and improvised explosive device (IED) protection aids two- to three-man crews as they retrieve damaged or mission-disabled vehicles and carry out other support missions.

The company will produce the vehicles at its West

Point, Miss., facility where assembly of the recent MaxxPro Dash and Dash ambulance orders is currently being conducted. Recovery vehicles will be integrated into the running assembly line and will be delivered in October and November 2011.

“Today’s orders are within our \$1.9 billion guidance for fiscal year 2011 and add to our total vehicle fleet of more than 32,000 vehicles,” said Massicotte. “Our vehicles are in use in 26 different countries, and as we move forward, we will continue to provide fleet support whenever and wherever they may be operating.”

## Exhibitions

### General Dynamics European Land Systems presents the new Medium Trackway Bridge (MTB), the PIRANHA 3 and the EAGLE at DSEI 2011

VIENNA -- General Dynamics European Land System (GDELS) will present the Medium Trackway Bridge (MTB), the latest member of its bridge family, the PIRANHA 3 with an Overhead Weapon Station and the EAGLE light tactical vehicle with a Remote Control Weapon (RCW) station at the DSEI 2011 exhibition in London from 13-16th September 2011.

#### MTB - Medium Trackway Bridge

General Dynamics developed the Medium Trackway Bridge (MTB) in response to the increased need for an autonomous gap-crossing capability for ground forces. The MTB is a lightweight, aluminium-made modular bridge for military and civil vehicles up to MLC 40. The MTB is designed to produce bridge lengths of 2, 4, 6 or 8 meters. The individual bridge modules can be transported directly on the tactical vehicle and can easily be launched and retrieved from the same vehicle by its own crew with a simple launching adapter. With a team of 4 soldiers the launching / retrieving time for a 4 m MTB is approximately 10 minutes. The MTB enables tactical vehicles with little or no gap-crossing capability to enhance their manoeuvrability on the battlefield without relying on bridge engineer units, resulting in active protection by avoiding potential risk areas.

#### PIRANHA 3 - The workhorse of the PIRANHA FAMILY

Out part of the PIRANHA family of vehicles, the PIRANHA 3 will be on display with the Oto Melara HITFIST Overhead Weapon Station, armed with the 30 mm automatic gun, co-axial 7.62 mm machine gun and the SPIKE anti-tank missile launcher. The most versatile and battle-proven, PIRANHA 3 is widely used by numerous Armed Forces, particularly for operations in peacekeeping missions all over the world. The configuration on displayed is an example of an Infantry Fighting

Vehicle with a three-man crew and up to eight seats in the back. Protected against the most significant threats such as mines, improvised explosive devices (IED) and ballistic attacks, the PIRANHA still provides the

necessary payload for any mission.

#### EAGLE - The New Survivability Standard

To meet the increasing demand for protection and payload, General Dynamics European Land Systems offers the new EAGLE vehicle. Due to its higher payload capacity, it can carry more equipment or heavier protection solutions, depending on the customer's requirements. The vehicle will be shown with the Rafael SAMSON RWS (Remote Control Weapon Station), armed with a 40 mm grenade launcher and a 7.62 mm machine gun. This highly mobile vehicle, with a crew capacity of 4 - to 5 soldiers, offers outstanding protection against ballistic, mine and improvised explosive device (IED) threats. Interchangeable automotive parts and components with DURO armoured or soft-skinned vehicles provide a cost-effective logistics commonality. The Swiss Army has already procured the latest version of the EAGLE in an explosive ordnance disposal role to meet an urgent operational requirement. Moreover, two vehicles, one in a command and control variant and one in a utility/pick-up version, have been bought by the Australian Army for its Land 121 programme trials.

## Defence Industry

### U.S. Army Selects Oshkosh Defense to Recapitalize Heavy Tactical Vehicles



OSHKOSH, Wis. -- Oshkosh Defense, a division of Oshkosh Corporation (NYSE:OSK), will recapitalize 160 trucks from the U.S. Army's Family of Heavy Tactical Vehicles (FHTV) fleet, including Heavy Expanded Mobility Tactical Truck (HEMTT) A4s and Palletized Load System (PLS) A1s, following an order from the U.S. Army TACOM Life Cycle Management Command (LCMC).

Through its recapitalization program, Oshkosh will restore these vehicles to the latest configuration in zero-miles/zero-hours condition at significantly less than the cost of a new vehicle.

“Oshkosh is helping the U.S. military maximize its investments by extending vehicles’ life spans, restoring and modernizing them with the latest technologies and armor packages,” said Mike Ivy, vice president and general manager of Army Programs for Oshkosh Defense. “As trucks have become more advanced – with better protection and improved power trains and suspensions – our recapitalization program has continued providing our customer exceptional value.”

Since 1970, Oshkosh has remanufactured more than 11,000 military vehicles. In addition to recapitalizing its own vehicles, Oshkosh also upgrades vehicles originally built by other manufacturers. Oshkosh has refurbished



more than 2,000 heavy-payload vehicles for the Army's Theater Provided Equipment Refurbishment (TPER) program. The company also has upgraded more than 2,000 Mine-Resistant Ambush Protected (MRAP) vehicles produced by other manufacturers with the Oshkosh TAK-4® independent suspension system to deliver improved vehicle mobility in challenging terrain.

### Recapitalization Programs

To recapitalize HEMTT A4s, the suspension is improved and a fully air-conditioned and armor-ready cab is installed, in addition to a more powerful drivetrain. The vehicles are fitted with new components, new technology and a new "zero hours/zero miles" bumper-to-bumper warranty. The HEMTT A4 is the backbone of the Army's logistics and resupply fleet. It has a 13-ton payload capacity and is available in multiple variants for a wide range of operations. The HEMTT's anti-lock braking system, traction and air-ride suspension allow troops to navigate wherever the mission demands.

The PLS is the backbone of the Army's distribution and resupply system. Built to transport ammunition and other critical supplies needed in battle, the vehicle has been used in front-line resupply missions in Bosnia, Kosovo, Iraq and Afghanistan. The latest PLS configuration features an armor-ready cab that is common with the HEMTT A4, as well as a 600-horsepower engine, electrical upgrades and incorporation of an Oshkosh TAK-4 independent front suspension for improved off-road mobility.

Recapitalization of the HEMTT and PLS vehicles is expected to begin in March 2012 and is scheduled to be completed in September 2012. The order has a value of more than \$50 million.



## Defence Industry

### Australian Defence Minister accepts 800th Bushmaster to roll off the production line



The 800th Bushmaster to roll off the Bendigo production line has been officially handed over to the Hon. Stephen Smith, Australian Minister for Defence.

The handover ceremony at Thales Australia's Bendigo facility was also attended by The Hon. Jason Clare, Minister for Defence Materiel; Steve Gibbons MP,

Federal Member for Bendigo; plus a host of representatives from Bushmaster suppliers and industry associations.

The vehicle is an Australian success story, helping save troops' lives on operations and enabling successful completion of missions in even the most hostile environments.

Chris Jenkins, Thales Australia's CEO, said the production milestone achieved by the Bushmaster was the result of Australian ingenuity and manufacturing expertise.

"Our Bendigo facility is unique, not only because it is the home of such an innovative vehicle, but also because we have the engineering and manufacturing skills to evolve the vehicle to meet new threats on the battlefield.

"This local expertise, and that of all the suppliers to the program – the vast majority of which are Australian – gives the Australian Defence Force a significant resource it can use to adapt the vehicle to its own unique needs.

"In addition, new Bushmaster variants such as the Single Cab Utility, as well as new vehicles such as the Hawkei, have only been possible because of the proven capability found in our Bendigo facility.

"The recent Commonwealth order for 101 new Bushmasters has given the Bendigo facility a great boost, and we are vigorously pursuing ongoing opportunities for the Single Cab under Land 121 Phase 3 and the Hawkei under Land 121 Phase 4, as well as export orders."



## Contracts

### \$12 M Bradley Blast-Resistant Fuel Bladder Win

Meggitt, a leading international company specialising in high performance components and sub-systems for aerospace, defence and energy, has delivered its first contract for flexible blast-resistant fuel bladders in a ground vehicle.

The bladders have been installed in the BAE Systems Bradley Fighting Vehicle as part of the BUSK III (Bradley Urban Survivability Kits III) Survivable Fuel Cell (BSFC) package, a series of 'rapid development survivability improvements' designed for the urban battlefield.

The initial contract, worth \$12 million, covers only a fraction of the 4,600 BAE Systems Bradley Fighting Vehicles in service and further contracts are anticipated as the rest of the fleet is upgraded.

The Bradley is made by BAE Systems Land and Armaments in the United States and is designed to transport infantry with armour protection while providing covering fire to suppress enemy troops and armoured vehicles. The Meggitt fuel bladders will be produced for Robertson Fuel Systems who are providing a complete blast-resistant fuel system for the vehicle.

Meggitt's blast-resistant fuel bladders are similar in design to the group's "crashworthy" fuel bladders fitted to the main and auxiliary systems of virtually every US

military helicopter in service. These urethane bladders meet the ultra-rigorous standards of flexibility, strength, impact and cut-and-tear resistance of US MIL-T-27422B and have stopped fuel spillage and reduced fire-related death and injury in survivable helicopter crashes to almost zero. Before installation, over 42% of such helicopter crashes in the US resulted in deaths from fuel fires.

The technology used in this latest blast-resistant model is effective with metal fragments resulting from the detonation of an improvised explosive device (IED) associated with ground combat vehicles. The wound is sealed with a proprietary sealant, which suppresses the ignition source and stops fuel leakage almost immediately.

Chief Executive, Terry Twigger commented:

"This first ground vehicle contract for leak-proof, life-saving fuel containment products evidences real success in our strategy to expanding our market beyond aerospace."

## Contracts

### Elbit Systems Awarded an Israeli Ministry of Defense Follow-on Order for the Digital Army Program



Haifa, Israel -- Elbit Systems Ltd. ("Elbit Systems") announced today that it was awarded a \$40 million order by the Israel Ministry of Defense (MOD) for the follow-on Digital Army Program (DAP).

The total value of this phase of the program is approximately \$300 million and the additional orders are due to be received subsequently. The program will be performed over several years

The DAP enables force coordination at all levels, access to updated situational pictures, improved overall operational capabilities, including survivability and accuracy and more efficient utilization of personnel and other resources. The contract calls for the supply and support of all hardware and software, including command and control stations, data processing and distribution systems.

The DAP currently is in the advanced implementation process of Phase One Of the program

## Contracts

### BAE Systems Awarded \$53 Million From U.S. Marine Corps for MRAP Work



ARLINGTON, Virginia -- BAE Systems received multiple awards from the U.S. Marine Corps totalling more than \$53 million for five separate delivery orders to provide upgrades for RG 33 Mine Resistant Ambush Protected (MRAP) vehicles currently in the field.

"This work is important to ensure that MRAP vehicles deployed with our troops are enhanced to maximize mission effectiveness and are appropriately supported on operations to ensure availability," said Chris Chambers, vice president and general manager of the tactical wheeled vehicles product line at BAE Systems. "Keeping these vehicles capable of performing in increasingly demanding conditions and terrain is paramount, adding to our troops safety and success."

The RG-33 Family of Vehicles (FOV) are highly survivable, mine-resistant vehicles capable of meeting multiple mission profiles with several mission-specific variants. BAE Systems received an award for \$11.8 million for the delivery of Skydex flooring and Vehicle Emergency Escape (VEE) Window assemblies for selected RG-33 vehicles. The Skydex flooring provides additional ballistic shock protection to the vehicle occupants, while the VEE Window allows soldiers to remove the ballistic rear window in seconds and quickly exit the vehicle in an emergency.

Additional funding in the amount of \$5.8 million was awarded for periodic maintenance and updates to the RG-33 FOV technical data package. A total of \$10.8 million was awarded to provide instructor and field service personnel in support of vehicle operation and maintenance training and to support and maintain the fielded RG-33 vehicle fleet. It will also support the field upgrade of the RG-33 SOCOM A0 vehicle to the A1 configuration with independent suspension and other vehicle improvements that allows the vehicle to operate more effectively in the rough terrain of Afghanistan and support mission requirements.

Finally, \$7.1 million was awarded to provide a universal MRAP maintenance workforce in support of Operation Enduring Freedom. The maintenance workforce will be located in Bagram, Afghanistan with completion expected by December 2011.

**Robots**

**U.S. Army Selects Lockheed Martin's SMSS Autonomous Vehicle for Afghanistan Deployment**



The U.S. Army Rapid Equipping Force, through the Robotics Technology Consortium, selected the Lockheed Martin Squad Mission Support System (SMSS) to deploy to Afghanistan for a first-of-its-kind military assessment. SMSS will deploy as the winner of the Project Workhorse Unmanned Ground Vehicle (UGV) competition sponsored by the Army.

The largest autonomous vehicle ever to be deployed with infantry, the 11-foot-long SMSS can carry more than half-a-ton of a squad's equipment on rugged terrain, easing the individual soldier's burden, which can often exceed 100 pounds.

"SMSS is the result of more than a decade of robotic technology development, and we welcome the opportunity to demonstrate this capability in theater, where it can have an immediate impact at the squad level," said Scott Greene, vice president of ground vehicles in Lockheed Martin's Missiles and Fire Control business. "The Army has tested the system's capabilities in three domestic user assessments, and SMSS has been deemed ready to deploy."

As part of the three-month Military Utility Assessment (MUA), four vehicles and a field service representative will support light infantry in theater as the service evaluates how autonomous vehicles can support or ease the equipment burden for deployed troops. A fifth vehicle and an engineering team will remain in the U.S. for analysis and additional support. The Army plans to begin the Afghanistan assessment late this year, after a period of evaluations and training.

"An in-theater assessment is the next logical step in the process of informing the requirements for the Army's future squad-sized UGV developments," Greene said.

A fully-loaded SMSS is internally transportable on board CH-47 and CH-53 helicopters, providing new logistics capability to light and early-entry forces. The SMSS Block I variant, which will be deployed, has a range of 125 miles and features three control options: supervised autonomy, tele-operation or manually driven. The SMSS sensor suite allows it to lock on and follow any person by recognizing their digital 3-D profile (captured by the onboard sensors), and it can also navigate terrain on its own following a trail of GPS waypoints.

In addition to a month-long MUA at Fort Benning, Ga., in 2009, SMSS has been selected for further

evaluation as part of the Army's Expeditionary Warrior Experiment (AEWE) Spiral G in November this year. While SMSS has already demonstrated its ability to reduce soldier loads and provide portable power, the November experiment will evaluate its ability to field a reconnaissance, surveillance and target acquisition mission equipment package.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 126,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation's 2010 sales from continuing operations were \$45.8 billion.



**Contracts**

**GD Awarded \$42 M for RG-31 MRAP Upgrade Work**



London, Ontario, Canada -- The U.S. Marine Corps Systems Command has awarded General Dynamics Land Systems-Canada a \$41.6 million contract modification for the installation of upgrade kits for RG-31 Mk5E vehicles previously delivered under the Mine Resistant Ambush Protected (MRAP) vehicle program.

General Dynamics Land Systems, the Canadian company's parent corporation, is a business unit of General Dynamics.

Contracts to assemble the upgrade kits, which will enhance the survivability and operation of the RG-31 vehicles to the latest production configuration, were awarded earlier this year. Installation work will commence in August 2011 at the MRAP Sustainment Facility in Kuwait and will be completed by October 2012.

The contract was awarded through the Canadian Commercial Corporation, a Crown Agency of the Canadian Government.



**Defence Industry**

**GD Scout SV Begins to Take Shape With Joining of Turret to Test Base Unit**

London, United Kingdom -- Little over a year since signing the Specialist Vehicle (SV) contract between the UK Ministry of Defence and General Dynamics UK, the first test version of the reconnaissance variant, Scout, has begun to take shape with the



successful joining of the Experimental Demonstration Unit (EDU) turret to a "mule" base platform at the first attempt.



The first successful combining of turret and base unit last week further proves the vehicle design, the systems integration between the two sections and the team work between prime contractor General Dynamics UK and turret design authority Lockheed Martin UK. It also highlights the excellent progress achieved by the Scout SV Industry team at an early stage.

"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," commented Dr. Sandy Wilson, president and managing director of General Dynamics UK on witnessing the event. "The fact that it happened at the first attempt only goes to show that the MoD chose the right team to deliver Scout SV."

The key advantages that the Scout SV will deliver to the British Army 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 entire 30-year 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; and
- The advanced turret design which, because of its internal space and leading ergonomics, delivers improved survivability and fightability for its crew.

The innovation of a 1.7 meter turret ring means that the Scout turret is designed to optimise fightability by maximising 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, UK, 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 Amptill, Bedfordshire last week 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 Amptill where it has been undergoing extensive testing and preparation for integration with the PT3 mule base unit.

British troops using 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 that SV is capable of being equipped to meet future threats likely to appear over its entire 30 year life, without the need to upgrade its engine or transmission during that time.

