Army Guide monthly

10 (85) October 2011

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Defence Industry

Oshkosh Defense Introduces TAK-4i Intelligent Independent Suspension System

OSHKOSH, Wis. -- Oshkosh Defense, a division of Oshkosh Corporation (NYSE:OSK), has launched its next-generation Oshkosh TAK-4i™ intelligent independent suspension system to redefine ride quality, mobility and maneuverability standards for off-road military vehicles.

The system's design leverages 10 years of operational experience in Iraq and Afghanistan, as well as the proven success of the Oshkosh TAK-4® independent suspension system, which has been used on more than 20,000 military vehicles to date.

"The Oshkosh TAK-4 system has brought unparalleled mobility to the battlefield on medium, heavy and MRAP vehicles," said Rob Messina, vice president of Defense Engineering for Oshkosh Defense. "Our engineers have taken mobility performance one step further with the TAK-4i to give troops a critical advantage in maneuverability, speed and durability as they navigate the off-road terrain that dominates today's battlefields."

Oshkosh developed the TAK-4i intelligent independent suspension system after studying military vehicles in action and calculating requirements for optimal speed, mobility and reliability on the battlefield. The TAK-4i system, which has completed more than 50,000 test miles with exceptional reliability, is scalable for use on light, medium and heavy tactical wheeled vehicles. With TAK-4i, a vehicle's height can be adjusted to maximize transportability and reduce the time and effort it takes to field vehicles.

The TAK-4i system delivers 20 inches of independent wheel travel, which is 25 percent more than other vehicles fielded with the U.S. military, for new levels of off-road mobility. Improved shock absorption results in increased speed and significantly better ride quality for Warfighters who often travel off-road for hours at a time. The TAK-4i system is used on the Oshkosh Light Combat Tactical All-Terrain Vehicle (L-ATV) and the Oshkosh Light Combat Tactical Vehicle (LCTV), which are designed to deliver the protected mobility needed on remote, rugged and hostile landscapes.

Oshkosh vehicles including the MRAP All-Terrain Vehicle (M-ATV), Palletized Load System (PLS) A1, Medium Tactical Vehicle Replacement (MTVR) and Logistics Vehicle System Replacement (LVSR) use the Oshkosh TAK-4 independent suspension system and have delivered proven off-road mobility in Iraq, Afghanistan and other challenging landscapes around the world. Oshkosh was also selected by the U.S. military to retrofit its TAK-4 system on MRAP vehicles produced by other manufacturers to deliver urgently needed off-road performance.

Defence Industry

BAE Systems Upgrading Howitzers for Chile

ARLINGTON, Virginia -- BAE Systems has received a $15.8 million contract to refurbish and upgrade 12 M109A5 howitzers for the Chilean Government through a foreign military sales contract.☐

"The howitzers will provide the Chilean Army artillery units with a significant capability increase to deliver precise and effective artillery support to the Chilean Army," said Joe McCarthy, vice president and general manager of Combat Vehicles at BAE Systems. "The M109 family of vehicles has a rich history of providing high performance and reliability. It is a combat-proven system that has played a vital role in providing fire support during various military operations with both the U.S. Army and its allies."

The M109A5 Self-Propelled Howitzer provides an affordable increase in fire power, as a new production vehicle or an upgrade to earlier configurations of the M109 howitzer. The howitzers' M284 cannon and M182 mount extend the firing range by 25 percent more than previous versions of the M109 howitzers. The M109A5 is easily customized to specific mission requirements, including increased ammunition stowage, improved ammunition handling, position and navigation systems, and automated fire control and communication systems. The M109A5 also offers improvements in critical areas such as reliability, maintainability and crew safety.

Under this contract, the U.S. Government will provide the howitzers to the Chilean Government and BAE Systems will perform the refurbishment and upgrade work. Refurbishment of the vehicles includes replacing obsolete equipment and restoring the vehicle to a "like new" condition. The company will also incorporate digital data connectivity and gun positioning and navigation systems to provide faster emplacement time, swifter response time to calls for fire and improved survivability.

"The work on this contract not only supports the Chilean Army's modernization program, but it also strengthens the cooperative relationship between the United States and Chilean Armed Forces. We look forward to providing continued support to Chile's Armed Forces in the future," said McCarthy.

In addition to the recent M109A5 contract, BAE Systems assisted Chile with a program to refurbish the M113 Armored Personnel Carrier from 2003 to 2005.

Work on this M109A5 contract will be performed by the existing workforce at BAE Systems facilities in York

and Fayette, Pennsylvania and Aiken, South Carolina. The work will begin in August 2011 and is anticipated to be complete in October 2012.

Contracts

U.S. Upgrades and Orders More Lightweight BAE Systems Howitzers

HATTIESBURG, Mississippi –- The U.S. Department of Defense has ordered 70 BAE Systems lightweight M777 howitzers to begin equipping the U.S. Army's Infantry Brigade Combat Teams (IBCTs).

Valued at $134m (J87m), the order takes the U.S.-UK production program to Oct. 2013 and a total of 1071 guns.

Mike Smith, managing director of BAE Systems' Global Combat Systems Weapons business commented: "Bringing M777 to the IBCT's will enhance their ability to carry out an ever-expanding range of missions. This latest order reinforces the system's credentials while continuous development of sub-system enhancements underlines our determination to keep M777 the howitzer of choice."

Weighing in at less than 4200kg, the revolutionary M777 is the world's first artillery weapon to make widespread use of titanium and aluminum alloys, resulting in a howitzer which is half the weight of conventional towed 155mm systems. As a result, it can be deployed by medium-lift helicopters quickly and beyond the reach of roadside bombs to otherwise inaccessible areas, extending its reach over the theater of operations.

BAE Systems' facility at Hattiesburg, Mississippi, is responsible for final integration and testing of the weapon system. The prime contract management of the M777 program and manufacture and assembly of the complex titanium structures and associated recoil components are undertaken at Barrow-in-Furness in the United Kingdom.

Contracts

Jenoptik wins another major order worth more than 30 million euros for the new PUMA infantry fighting vehicle.

Krauss-Maffei Wegmann is placing an order for the supply of nearly 400 GTdrive systems (weapons stabilization systems). Jenoptik`s total share of the PUMA project now exceeds 70 million euros.

The order for GTdrive systems from Krauss-Maffei Wegmann has significantly increased Jenoptik's supply package for the new PUMA infantry fighting vehicle for the German Army. At the beginning of this year Jenoptik had announced the order to supply starters/generators as well as other key electrical subsystems for the PUMA worth a total of nearly 40 million euros. Jenoptik's share of the project now exceeds 70 million euros and will contribute to the sales of the Defense & Civil Systems division through to the year 2020.

The figure of 70 million euros does not include after-sales and maintenance services throughout the entire deployment period for the PUMA infantry fighting vehicle; these services will be ordered and billed separately over and above the volume deliveries.

Jenoptik received the current order in September 2011 from its development and project partner, Krauss-Maffei Wegmann GmbH & Co. KG. It includes the electrical turret-weapons stabilization system GTdrive. The decades of experience and resultant know-how which the Defense & Civil Systems division has accumulated with its turret-weapons-drive and stabilization technologies, both during simulations and in subsequent use in various heavy armored vehicles, has been successfully transferred to the stabilization of a smaller turret and weapons caliber on the PUMA infantry fighting vehicle.

In Germany Jenoptik is one of the key suppliers of subsystems and components to the defense industry. The Defense & Civil Systems division focuses on the areas of vehicle and aircraft equipment, drive and stabilization technology, optoelectronic instruments and systems for the defense and security industry, software, testing and control systems plus a comprehensive range of services. In the military land vehicles area the Jenoptik Group has a successful track record, extending back over decades, in supplying part systems and components for vehicle platforms to leading systems companies. Examples of these are the Leopard II battle tank, the PzH 2000 self-propelled howitzer and the Boxer.

Contracts

General Dynamics Awarded $243 Million to Produce 115 More Double-V Hull Stryker Vehicles

STERLING HEIGHTS -- The U.S. Army TACOM Lifecycle Management Command has awarded General Dynamics Land Systems, a business unit of General Dynamics, $243 million to produce and deliver an additional 115 Stryker combat vehicles equipped with double-V hulls (DVHs).

The double-V hull was developed on an accelerated timeline to provide Stryker-borne soldiers increased protection from the effects of roadside mines and improvised explosive devices.

Recent Army reports indicate that deployed vehicles with the new double-V-hull design are providing significantly increased protection and survivability to soldiers. About 300 double-V-hulled Stryker vehicles have been delivered so far, under a contract awarded in July 2010 for the production of 450 double-V-hull vehicles. Engineers and production workers at General Dynamics Land Systems conceived, engineered, manufactured and delivered the first operational vehicles to the Army in about 14 months. Initial deliveries were made in May 2011. Under the new contract, General Dynamics will also provide production sustainment support and obsolescence management services. Work will be performed in Anniston, Ala., London, Ontario, Canada, and Lima, Ohio. Deliveries will be completed by September 2012. General Dynamics will deliver double-V hull Stryker vehicles in six variants under this award: Infantry Carrier, Medical Evacuation Vehicle, Engineers Squad Vehicle, Fire Support Vehicle, Commanders Vehicle and Mortar Carrier Vehicle. Other configurations of the Stryker include: Anti-tank Guided Missile, Reconnaissance Vehicle, Nuclear Biological Chemical Reconnaissance Vehicle and Mobile Gun System. The Stryker family of vehicles is known for high performance as well as versatility, mobility and survivability. The Stryker's commonality reduces the Army's logistics footprint and minimizes costs. The Stryker is fast, capable of reaching speeds in excess of 60 mph, and it is lighter, smaller and more readily deployable than any other Army combat vehicle.

Robots

Army Orders Up 315 Recon Scout XT Robots from ReconRobotics

ReconRobotics announced today that it has been awarded a $4.8 million contract from the U.S. Army Rapid Equipping Force for 315 Recon Scout XT micro-robot kits and an equal number of SearchStickTM devices.

The SearchStick enables warfighters to convert any Recon Scout Throwbot into a pole camera, which warfighters can use to see over compound walls, onto rooftops and into culverts. ReconRobotics plans to complete deliveries of these micro-robot systems by October 31, 2011.

Recon Scout XT micro-robots are deployed at the fire-team level i.e., one robot for each four to six-man fire team, to maximize situational awareness and standoff distance during route- and compound-clearing operations. More than 2,000 of the company's Recon Scout systems have been deployed by the U.S. military and international friendly forces, and by hundreds of law enforcement agencies, worldwide. Warfighters use the Recon Scout system to determine the layout of the enclosed spaces, identify potential IEDs and the fix the location of friendly, indigenous or enemy personnel.

The company's Recon Scout XT weighs just 1.2lbs (540g), and yet it can be deployed in five seconds and thrown up to 120 feet (36m). The XT can be controlled with a single button and can be recharged in the field using standard 5590 or 2590 batteries.

Contracts

BAE Systems Receives $21.9 Million Contract to Provide MRAP Maintenance in Afghanistan

ARLINGTON, Virginia – BAE Systems received a $21.9 million contract award from the U.S. Marine Corps for ongoing maintenance, updates and repairs to Mine Resistant Ambush Protected (MRAP) vehicles. The award will be used to expand the universal MRAP maintenance workforce in Afghanistan supporting Operation Enduring

Freedom (OEF).☐

"Protecting the lives of our brave young men and women is something we take very seriously and expanding our labor force will aid in soldiers' and Marines' safety and success abroad," said Robert Houston, vice president of Support and Technical Services at BAE Systems.

This contract allows BAE Systems to provide a staff of 48 personnel in Afghanistan, working on upgrading, repairing and maintaining all MRAP vehicles. The workforce will ensure troops have ongoing, sustained field support with the latest safety technology.

"This contract allows us to continue the important work of supporting our troops overseas. We consider their mission to be our mission," said Chris Chambers, vice president and general manager of BAE Systems' Tactical Wheeled Vehicles product line.

BAE Systems will perform all work on this contract in Afghanistan, with completion expected by December 2012.

Contracts

BAE Systems Receives $270 Million for Bradley Upgrade Materials

YORK, Pennsylvania –- BAE Systems will purchase material items in preparation for the conversion of 245 Bradley Operation Desert Storm Situational Awareness (ODS-SA) vehicles through a $270 million contract from U.S. Army Contracting Command – Warren.☐

The company will use the acquired items to upgrade the vehicles to have improved situational awareness ability, which highlights BAE Systems' robust support and technical services capabilities in supporting customers' requirements.

"As one of the most survivable vehicles in theater, the Bradley has remained a vital asset to our armed forces for several decades," said Joe McCarthy, vice president and general manager of Combat Vehicles at BAE Systems. "The items purchased through this contract will help ensure that our soldiers are operating a vehicle that has updated technological enhancements and capabilities."

The Bradley ODS-SA vehicle features the latest digitized electronics for optimum situational awareness, network connectivity and communication within the Heavy Brigade Combat Team. Bradley ODS-SA's proven durability and commonality of design reduces the logistics burden, while enhancing battlefield performance to meet a variety of mission requirements.

The contract for material procurement has been awarded in advance of the Bradley ODS-SA vehicle conversions effort, anticipated to take place at the beginning of 2012.

The work will be performed by the existing workforce at BAE Systems facilities in York and Fayette, Pa., and is anticipated to be complete in April 2014 if all options are exercised. A portion of the vehicle teardown efforts will be performed at the Red River Army Depot in Texarkana, Texas.

Bradley Fighting Vehicles continue to provide outstanding survivability, mobility and lethality to U.S. soldiers in various urban combat situations. The Bradley fulfills five critical mission roles – infantry fighting vehicle, cavalry fighting vehicle, fire support vehicle, command vehicle and engineer squad vehicle – for the U.S. Army's Heavy Brigade Combat Teams.

BAE Systems will display the Bradley Fighting Vehicle at the Association of the United States Army (AUSA) Annual Meeting & Exposition in Washington, D.C., Oct. 10-12.

Defence Industry

Lockheed Martin's JLTV Meets Mine-Resistant Vehicle Protection Levels at 40 Percent Less Weight

DALLAS, TX -- Recent government blast tests demonstrated that Lockheed Martin's Joint Light Tactical Vehicle (JLTV) meets protection standards for IED-protected vehicles, while weighing approximately 40 percent less than other all-terrain models deployed in theater.☐

Lockheed Martin's JLTV succeeded in its blast tests, which used explosions commonly tested against many existing mine-resistant fleet vehicles.

"Our improved v-hull design is demonstrating its merit, having now surpassed Technology Development protection targets set by our customer," said Scott Greene, vice president of ground vehicles in Lockheed Martin's Missiles and Fire Control business. "Our team has produced a remarkable family of vehicles that strikes the right balance between weight and force protection."

The results verified Lockheed Martin's JLTV can protect soldiers from powerful blasts and still be transported by vertical lift, a new mobility option for the Army and Marines at this protection level. Previous U.S. Army and Marine Corps tests showed JLTV can be transported by CH-47 and CH-53 helicopters.

"In addition to being helo-transportable and mine-resistant, our JLTV design also brings another important advantage to the battlefield: improved mobility. Its lightweight, agile design will help soldiers to evade enemies and avoid threats," Greene said.

The government results mirrored Lockheed Martin's company-funded blast tests on its improved vehicle design. The Engineering and Manufacturing Development (EMD) vehicles feature evolutions in cab size and more affordable component materials.

Separate from those above-threshold tests, Lockheed Martin conducted over 20 blast and 200 ballistic component tests before Technology Development started.

"We anticipated blast protection requirements would increase for the EMD phase of the JLTV program, and we designed for it," said Kathryn Hasse, JLTV program director in Lockheed Martin's Missiles and Fire Control business. "We are acutely focused on providing enhanced force protection, performance and payload in an affordable vehicle system."

Lockheed Martin is pursuing the JLTV program, a joint services effort to return advanced mobility, protection and payload to deployed troops by replacing and complementing the aging High Mobility Multipurpose Wheeled Vehicle (Humvee) fleet. The JLTV program creates a common family of vehicles consisting of the Combat Tactical Vehicle and Combat Support Vehicle, both with multiple variants and associated companion trailers.

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.

Defence Industry

IMPAS Armor Protection

Armor plate processor MTL Group (UK) will be showcasing their new add on armor branded IMPAS LITE and IMPAS ADVANCE this month at AUSA 2011 (Washington D.C).

IMPAS which stands for Interchangeable Modular Perforated Armor System is a cost effective alternative light weight solution to composite and ceramic add on armor with greater flexibility and better multi-hit capabilities.

Defence Sales Manager Simon Hurst said:

"IMPAS is an innovative state of the art product which is suitable for both RHA and aluminum hulls. One of the key benefits is that the solution is a low cost lightweight armor that can be rapidly fitted to any vehicle platform".

"We have identified the USA as a key market in which MTL Group can provide a high quality vehicle protection system at affordable prices".

IMPAS LITE AND IMPAS ADVANCE offer an effective alternative lightweight solution to composites ceramics for Stanag Level 1, 2 and 3 protections. IMPAS has been used for many international military upgrade programmes including the M577 and Ridgeback.

MTL Group will also be showcasing its Design for Manufacture (DFM) service. An example of this can be seen on a blast floor which is displayed at AUSA and has been manufactured in one piece using the world's largest robotic press.

"DFM is a service MTL Group offer where we work with customers to identify the 3 core objectives which are lower weight, lower manufacturing cost and improved protection." Hurst said.

MTL Group is a global supplier of parts manufactured from armor in both steel and aluminum offering a full turnkey process ranging from cut and pressed armor kits up to fully fabricated vehicle hulls/cabs.

MTL Group will be exhibiting at AUSA on the UK Pavilion (ADS) on Stand 8233.

Future Technologies

Navistar Defense Unveils Light Tactical Vehicle Ready for Production

WASHINGTON, D.C. -- Navistar Defense, LLC today unveiled its International® Saratoga™ light tactical vehicle at the Association of the United States Army (AUSA) Annual Meeting and Symposium.

The company designed the vehicle for superior survivability, mobility and transportability to target the gap between the current High Mobility Multi-purpose Wheeled Vehicle (HMMWV) Modernized Expanded Capacity Vehicle (MECV) and Joint Light Tactical Vehicle (JLTV) programs. The vehicle is ready for

production to meet today's mission needs.

"Defense budgets are shifting and the circumstances demand that industry anticipate what our warfighters need rather than wait for a written requirement," said Archie Massicotte, president, Navistar Defense. "Finding a gap in the market is what we do in the commercial world and we are at it again for the sake of our warfighters. The government needs options and the Saratoga is an affordable solution – available now." The Saratoga light tactical vehicle has a high degree of commonality with fielded vehicles and incorporates Navistar's automotive and manufacturing expertise. The company has also designed and tested its own proprietary geometry survivability solution for the vehicle. Considering material mix, vehicle structure and hull shape, the Saratoga offers a more survivable solution for the light tactical vehicle class while also meeting 76" transportability height. The vehicle meets the most demanding performance needs and has undergone more than 25,000 miles of automotive testing. The Saratoga incorporates the MaxxForce® D6.0L V8 engine, automatic engaging limited slip differentials, Allison 2100 SP 6-SP Automatic Transmission and air independent suspension for added control. "We believe the Saratoga is a turning point for tactical wheeled vehicles just as the Battle of Saratoga is considered the turning point of the American Revolutionary War," said Massicotte. "The warfighter needs it today and we are ready."

Exhibitions

AMPV on show at AUSA: A new dimension in battlefield mobility

Outstanding levels of tactical, operational and strategic mobility, compelling combat effectiveness and maximum survivability are key requirements imposed on modern military vehicles today – whether they are designed primarily for combat, command and control, mission-specific roles or transport.

In contemporary conflicts, where the threat is often asymmetric yet deadly, protecting troops deployed in harm's way from hostile fire, IED attacks, CBRN agents and even extreme climates conditions has become a top priority for commanders worldwide: around the clock and in every branch of every service.

This is reflected in the current procurement plans of the armed forces of many nations, including the Bundeswehr's GFF/GTF project to develop protected C4I and mission-specific vehicles as well as protected transport capacity.

Under this programme, Rheinmetall and Krauss-Maffei Wegmann (KMW) of Germany have joined forces to develop a highly protected family of armoured multipurpose vehicles (AMPV) in the weight class up to 9 ton. Their design and layout take full account of operational experience accumulated by the German armed forces in Afghanistan and elsewhere. Engineered exclusively to meet the needs of the modern military, the AMPV family consists of two separate branches.

The AMPV,a prototype version of which is currently undergoing qualification by the German armed forces, is slightly over five metres long, two metres wide and two metres high. Empty, it weighs 7.3 tons and can carry a two-ton payload. The highly protected vehicle cell consists of a self-supporting steel hull with composite armour. Spall liners, reinforced flooring and cellular design offer excellent protection against mines and IEDs; while add-on armour modules supply extra ballistic protection.

High mobility likewise contributes to a vehicle's overall battlefield survivability, and the AMPV design reflects this. The vehicle's robust chassis, featuring independent wheel suspension, is engineered to withstand maximum punishment. An automatic transmission, permanent all-wheel drive, automatic differential locking management and combat wheels with a central tyre inflation system combine to assure superb mobility even in the toughest terrain.

A patrol version of AMPV (with an unprotected load space) will be available, as well as mission module carriers with a safety cell extending all the way back to the rear of the vehicle. For enhanced lethality, a remote control weapon station up to calibre .50 can be mounted on any AMPV vehicle.

Extremely compact, all members of the AMPV family largely consist of identical components, especially the logistically relevant parts of the vehicle. Moreover, their essentially uniform, highly ergonomic design makes all AMPV vehicles easy to operate as well as facilitating logistics and training.

Exhibitions

BAE Systems Introduces New Gun Shield to Ease Transport of Vehicles

WASHINGTON, D.C. –- Responding to the need to make gun shields easier to transport on vehicles, BAE Systems developed the Marine Corps Transparent Armored Gun Shield – Reducible (MCTAGS-R), a gunner protection system collapsible for shipment. The new gun shield will be on display at the Association of the United States Army (AUSA) 2011 Annual Meeting & Exposition in Washington, D.C.

The patent pending MCTAGS-R is the first height reducible gunner protection kit designed to meet vehicle

shipping height requirements. MCTAGS-R is part of the BAE Systems Modular Gunner Protection System family of protective armaments and provides the same level of protection from small arms and IED fragments as the currently fielded MCTAGS kit. MCTAGS-R can be adapted to any tactical vehicle.

"The unique system allows the gun shield to collapse for storage during transport by ship, air and rail by reducing the height of the system to just six inches above the top of a vehicle," said Justin Stone, MCTAGS-R program manager at BAE Systems. "We listened to the needs and concerns of our customers to design this new collapsible gun shield that provides a high-level of protection for the gunner and makes transporting the shield much easier."

The gunner protection system enhances survivability by providing target acquisition capability and protection from small arms fire and improvised explosive device fragments. MCTAGS-R has been configured for installation on the M1114 and M1151 HMMWVs, Medium Vehicle Replacement, Logistic Vehicle System Replacement, Mine Resistant Ambush Protected vehicles and Joint Light Tactical Vehicle.

MCTAGS-R will be displayed on the Joint Light Tactical Vehicle at the BAE Systems booth #6043 during the AUSA 2011 Annual Meeting & Exposition, October 10 - 12 at the Walter E. Washington Convention Center in Washington, D.C.

Future Technologies

Ricardo and TARDEC fuel efficient military vehicle rolls ahead

The FED ALPHA vehicle as part of the Fuel Efficient Ground Vehicle Demonstrator (FED)Ricardo today announced that it has completed the build of the FED ALPHA vehicle as part of the Fuel Efficient Ground Vehicle Demonstrator (FED) programme for the U.S. Army's Tank Automotive Research, Development and Engineering Center (TARDEC) – the company has been awarded a contract for the testing phase, which is currently underway.

"We are extremely pleased to be able to continue supporting TARDEC in its objective to increase the fuel efficiency of the U.S. Army's vehicle fleet," said Robert Ellis, director for military vehicle programmes for Ricardo's US subsidiary, Ricardo Inc. "The FED programme represents an ideal application of Ricardo's expertise in armoured vehicle design and fuel efficiency improvements."

the FED ALPHA vehicle as part of the Fuel Efficient Ground Vehicle Demonstrator ()The goal of the FED programme, launched in late 2008, is to improve military vehicle technology, reduce fuel consumption on the battlefield and reduce the nation's dependence on oil. Ricardo has applied its expertise in the design, development and manufacturing of special vehicles, and advanced automotive technology to create a demonstration vehicle that maximizes fuel economy while maintaining the capability and performance of light tactical wheeled vehicles.

The FED ALPHA includes numerous fuel-saving features, including:

- A Cummins I4 engine that Ricardo calibrated specifically for tactical vehicle fuel efficiency in Ricardo's Detroit Technology Campus engine test facilities
- Goodyear Fuel Max low rolling resistance tyres specifically designed for the FED ALPHA
- A high efficiency 28-volt permanent magnet integrated starter-generator from Kollmorgen that enables electric accessories and 20 kW of power for on-board equipment
- An Alcoa Defense lightweight aluminium structure, armouring, and underbody blast shield which support and protect the vehicle while reducing weight
- An improved driveline that utilizes a unique carrier and differential assembly from Ricardo and AxleTech International, including non-geared hubs and REM Chemicals Isotropic Superfinished gears to reduce friction and increase fuel efficiency
- Accelerator feedback pedal and fuel economy display to inform drivers how to operate the vehicle to produce the best fuel economy
- A 6-speed automatic transmission from Aisin

In early July 2011, the FED ALPHA was on display for two days in the centre courtyard of the Pentagon. Since that time, FED ALPHA has been successfully completing government testing at the U.S. Army's Aberdeen Proving Grounds in Maryland. One key facility that is paramount to validating the fuel economy of the vehicle is Aberdeen Test Center (ATC) Roadway Simulator. This facility is the world's largest automotive test simulator and designed to perform vehicle dynamics, powertrain performance, shock and vibration testing in a laboratory environment. This facility enables the FED ALPHA to be tested in a highly controlled environment so that small changes in fuel economy can be verified.

ATC will test the FED ALPHA over the drive cycle that TARDEC and Ricardo developed during the first phase of the programme. This unique cycle is comprised of various real world type activities (convoy, urban assault, cross-country and extended idle) that a typical

military vehicle would encounter on a mission-to-mission basis. The real world testing of the FED ALPHA will assist in demonstrating and advancing the various technologies that could be utilized to improve fuel efficiency for other U.S. Army vehicles.

The FED ALPHA vehicle as part of the Fuel Efficient Ground Vehicle Demonstrator (FED)"The FED ALPHA vehicle is the culmination of Ricardo's total vehicle system methodology," said Wes Scharmen, Ricardo's chief programme engineer for FED. "Each technology that made its way onto the vehicle was properly vetted to ensure that it aided in achieving the program goals of making a fuel efficient and creditable military vehicle."

Army Power and Energy along with TARDEC will be showing the FED ALPHA vehicle at the 2011 AUSA Annual Meeting & Exposition in booth 4224. This event is open to the public and held on October 10-12 at the Walter E. Washington Convention Center, Washington D.C.

Exhibitions

Rheinmetall Artillery: Accurate and effective fire support for a strong army

Thanks to its indirect fire capability, artillery remains indispensable in modern combat operations, even in asymmetric conflicts.

The precision and firepower of cannon artillery offer a wide array of operational possibilities, ranging from a show of force in the form of a few well-targeted warning shots to the use of special smoke/obscurant ammunition for screening the movements of friendly forces, and from blocking off key areas of terrain to breaking up enemy infantry formations and destroying high-value enemy assets.

Denel Landsystems, General Dynamics Land Systems and Rheinmetall Denel Munitions are cooperating in a project, that could result in equipping the highly mobile Stryker Brigade Combat Teams with a 105mm self-propelled howitzer based on the 8x8 Stryker vehicle to serve as a future artillery effector. In this project Denel Landsystems is responsible for the T7 turret and the gun, General Dynamics Land Systems for the vehicle and Rheinmetall Denel Munition for the ammunition as well as a Unimodular Charge System.

At AUSA, Rheinmetall is presenting its innovative ammunition for this new weapons system. The Group's new 105mm M1130 base-bleed (BB) and M1131 Boat Tail (BT) projectiles are insensitive high explosive pre-formed fragment (IHE PFF) shells, developed by Rheinmetall Denel Munition. They are based on the Igala M0125 IHE PFF rounds made by Rheinmetall Denel Munition. Their effect on semi-hard targets is comparable to that of a 155mm high explosive shell.

Trials in South Africa demonstrated that the Igala, when fired by the 105mm long-range Light Experimental Ordnance (LEO) cannon from Denel Land Systems and propelled by a five-module RDM XM24A42 charge, can attain a maximum range of over 33 kilometres. By way of comparison, when fired from a 105mm M119A2 Light Gun with a conventional seven-zone M67 propelling charge, the longest range attained by the ammunition was 13.8 km.

Exhibitions

The Mobile Modular Protection System (MMS) - assuring flexible, highly effective ballistic cover, when and where it is needed

Compelling levels of tactical, operational and strategic mobility, outstanding combat effectiveness, and maximum survivability - all of these are key requirements for modern military systems, whether they operate on land, at sea or in the air.

Moreover, they apply equally to offensive and defensive assets. Just like tanks and helicopters, military installations and other stationary facilities often need to be hardened as well - even when they are occupied only temporarily. Rheinmetall offers a wide range of innovative solutions in this domain.

An excellent example of this is the Mobile Modular Protection System (MMS), which Rheinmetall is presenting at AUSA. Whether it is used for reinforcing

mobile checkpoints, for hardening shelters in forward operating bases or protecting portholes and machine gun positions on board ships, the MMS assures maximum flexibility in all climate zones, meeting the need for swiftly deployable protection in accordance with STANAG 4569, even in difficult terrain.

The MMS basic model is designed to serve as a mobile fighting position. Consisting of seven modular elements, it features an internal radius of two metres. In terms of handling and design, it fully complies with the company's KISS principle: keep it simple and safe. Thanks to its modular, self-explanatory design, two people can assemble it in less than thirty minutes.

Compared with conventional sandbag defences, the advantages of the composite material used here are by no means restricted to rapid deployability and antiballistic effectiveness: it is also much lighter, with the basic model weighing just 1,800 kilograms.

Another major advantage is its operational flexibility. The system's modularity means that it can be readily adapted to meet the specific dimensions and level of protection required by the user.

Finally, Rheinmetall's MMS lends itself to applications other than purely military ones. It can be deployed to protect critical infrastructure, for instance, or in a law enforcement role - whenever and wherever a high degree of ballistic protection is required.

Exhibitions

Rheinmetall's innovative DM11 tank round: a new dimension in advanced multipurpose firepower for the Abrams MBT

Combining unsurpassed survivability, compelling mobility and massive firepower, main battle tanks continue to form the backbone of strong modern armies. Designed primarily to take on and defeat enemy heavy armour, tank units today are more likely to find themselves operating in an asymmetric warfare context.

They still have to be ready to face enemy armour, of course, but main battle tanks now are far more likely to have to contend with lightly armoured tactical vehicles, enemy positions behind masonry and concrete walls or in bunkers, dismounted fighting forces, ATGM teams, helicopters, mines, and other material targets typical of military operations in urban terrain.

Rheinmetall's answer to all of these threats is the DM11, its latest 120mm HE tank round. Thanks to its three-mode fuse, super quick impact, time delay and airburst, the DM11 MPHE is designed to provide a single-round capability for addressing all threats, now and in the future.

The DM11 is thus a perfect match for the altered operational requirements of modern main battle tanks.

In 2007, the United States Marine Corps issued a Universal Urgent Need Statement for programmable 120mm multi purpose tank ammunition.

As a result of the competition, the USMC selected the DM11 in 2008, awarding Rheinmetall with an order for 10,000 rounds of DM11 ammunition in summer 2009. In the same year the DM11 passed the German Safety Certification as well as four United States Safety Boards (WSESRB).

To date, Rheinmetall has supplied the Marines with 1,390 DM11 cartridges for the M1 Abrams system tests and the introduction of a data link in compliance with the Joint Configuration Board-JCB and doctrine definition.

The USMC is already using the DM11 in theatre. In 2012 another 1,512 DM11 rounds will be delivered to the Marines. The German Government and the USMC are actually jointly conducting pilot lot testing of the DM11.

The German Army is set to field the DM11 in 2012. The armed forces of a number of other NATO nations intend to introduce the DM11 as well, as do several other countries.

The DM11 "as is" already meets more than 90% of the performance specification for an 120mm Advanced Multi Purpose (AMP) Ammunition, recently solicited by the US Army.

Contracts

Textron Marine & Land Systems Awarded Armored Security Vehicle Reset Contract

NEW ORLEANS -- Textron Marine & Land Systems, an operating unit of Textron Systems, a Textron Inc. company, announced today that it has been awarded a competitive contract by the United States Army Tank-automotive and Armaments Command (TACOM) to reset 392 M1117 Armored Security Vehicles (ASV).

The base contract value is $19.8 million but could

expand with the exercise of two option years and for emergent work, depending on the condition of vehicles inducted into the program.

The Reset Program, administered by TACOM Life Cycle Management Command, is designed to reverse the effects of combat stress on ASVs while also giving the Army, if desired, the ability to apply vehicle survivability, safety and mobility enhancements. The program's objective is to return these ASVs to fully mission-capable, combat-ready assets, regardless of their current condition. Work will be performed at Textron Marine & Land Systems in New Orleans.

There are two one-year contract options—option year one includes work on an additional 225 vehicles, and option year two involves work on another 167 ASVs. If both options are exercised, reset activities could continue through August 2014.

In 2008, Textron Marine & Land Systems, in collaboration with Red River Army Depot, executed a six vehicle ASV reset pilot program for TACOM. In 2010, Textron successfully refurbished an additional 12 ASVs.

"We value the trust our Army customer has in our team to apply its knowledge and experience in getting these ASVs back into the hands of our Soldiers as quickly and efficiently as possible," said Textron Marine & Land Systems Senior Vice President and General Manager Tom Walmsley.

"As the result of our initial ASV reset work, we've developed a comprehensive set of procedures, tooling and test equipment for M1117 vehicles. These resources, together with personnel uniquely qualified to apply lessons learned from ASV production and reset efforts, decreases execution risk, and reduces overall program costs for the Army," added Walmsley.

Textron Marine & Land Systems has delivered 3,327 M1117 ASVs to the U.S. Army, as well as related vehicles to military and police forces in Iraq, Colombia and Bulgaria. These vehicles have consistently achieved exceptional operational readiness and combat availability rates greater than 90 percent over the life of the U.S. Army program. Through September of this year, Textron Marine & Land Systems also has achieved 73 consecutive months of on-time ASV deliveries to the U.S. Army.

Current U.S. Army ASV missions include Military Police operations in support of convoy protection, checkpoint security, perimeter security and reconnaissance, as well as Field Artillery Combat Observation and Lasing Teams (COLT) with the M1200 Armored Knight configuration.

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Contracts

Alcoa Defense To Supply ArmX Aluminum Armor Kits To Oshkosh For HEMTT

WASHINGTON -- Alcoa announced today that it will supply ArmX aluminum armor kits to Oshkosh Defense for the Heavy Expanded Mobility Tactical Truck (HEMTT) A4. The c-kit armor provides blast protection for the underside of the vehicle. The announcement was made yesterday at the AUSA show in Washington, DC.

"We are excited about partnering with Oshkosh to provide kitted ArmX assemblies, which provide excellent blast protection against improvised explosive device (IED) threats," said Alcoa Defense President David Dobson. "We offer the complete value proposition of latest products and program management to provide highly engineered subassemblies to our OEM partners if they desire."

Alcoa provides all elements of R&D through design and fulfillment to allow for unique solutions to move to market quickly. "Though these assemblies are complex, through our knowledgeable program management, we are meeting our customers' lead times at 100 percent delivery performance," says Victor Marquez, General Manager of Alcoa Transportation Products, where the kits are fabricated.

ArmX armor plate was formed with special practices to fit the HEMTT's c-kit blast shield. Original equipment manufacturers (OEMs) can purchase ArmX forgings or plate, or they can acquire complete ArmX subassemblies that can easily be integrated into their vehicles.

"We made Oshkosh's design concept for their HEMTT blast shield a reality by producing the 14 subassembly components," said Dobson. "Our aluminum manufacturing expertise allowed us to take two-inch thick ArmX plate, which is made from the ballistic temper of alloy 7085, and form it into complex shapes. Alcoa's unique capabilities in bending thick plate while maintaining its strength is unmatched by other manufacturers."

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Training And Simulators

Meggitt is preferred bidder for US Army live-fire targetry

Meggitt Training Systems has been selected as one of five suppliers to provide equipment for live-fire training ranges at US Army installations worldwide in a fixed price contract worth up to $475 million over the next five years.

The "indefinite delivery/indefinite quantity" (IDIQ) contract for the US Army's Targetry Systems programme is with TACOM, the US Army Contracting Command in Warren, Michigan—one of the Army's largest weapon systems research and development organisations.

Meggitt will manufacture and install stationary and moving infantry and armour target mechanisms and control systems and provide product support.

Contracts are open to competition among the winning bidders, which, with Meggitt Training Systems, number Lockheed Martin, Action Target, Strategic Systems and Saab Training.

Meggitt has already won initial contracts for installations at the Fort Stewart Modified Record Fire and Detroit Arsenal Test #5 ranges.

Ronald Vadas, President of Meggitt Training Systems, commented: "Our selection is testament to the strength of our 15-year relationship with the US Army and we look forward to continuing to respond to its evolving range development and modernisation requirements."

Defence Industry

Ka Band SOTM Mobile Communication Terminal

AT Electronic Communication International is pleased to announce the immediate availability of the Ka Band SOTM Mobile Communication Terminal.

The SOTM integrated system has been comprehensively tested and is equipped with a parabolic reflector, tracking device and a patented control system.

In conjunction with other products available from AT Electronic and Communication International, an end to end integrated solution is available for deployment to meed the most demanding applications.

Also available are VSAT converters for the Ka, Ku and X bands.

For further detail on these products please click here. http://vsat-buc.at-communication.com/en/

Defence Industry

General Dynamics Awarded $1 Billion to Upgrade Canadian LAV III Vehicles

EDMONTON, Alberta and LONDON, Ontario – The Honourable Rona Ambrose, Minister of Public Works and Government Services and Minister for Status of Women, and the Honourable Julian Fantino, Associate Minister of National Defence, announced today that the Government of Canada has awarded a contract valued at C$1.064 billion (US$1.052 billion) to General Dynamics Land Systems-Canada to incorporate a comprehensive upgrade package into the Canadian Army's fleet of LAV III combat vehicles.

The LAV III Upgrade Project will modernize 550 vehicles, significantly enhancing their survivability, mobility and firepower and extending the fleet's lifecycle to 2035.

Survivability upgrades will include the introduction of double-V-hull technology, an innovative enhancement developed by General Dynamics Land Systems-Canada engineers, as well as add-on armour protection and energy-attenuating seats. Together, these improvements will provide crew members greater protection against mine blasts, IEDs and other threats.

The upgrades represent the latest armoured-vehicle technologies developed by General Dynamics Land Systems-Canada's engineers and its Canada-wide supplier base. Significant work will be performed at General Dynamics' facilities in London, Ontario, and Edmonton, Alberta, as well as the company's nationwide network of over 400 Canadian suppliers. All regions of Canada will benefit from this work, which is expected to be completed in 2017.

"Canadian soldiers need the best tools for the job and deserve the best protection we can give them," said Danny Deep, vice president of General Dynamics Land Systems-Canada. "This contract will enhance the LAV III fleet's survivability, operational capability and long-term performance through the addition of cutting-edge technologies. It will also provide much-needed job stability throughout Canada's high-value defence sector."

The LAV III's automotive performance, handling characteristics and payload capacity will be optimized by the addition of mobility system upgrades such as a more powerful engine, more robust driveline and suspension, and a height management system (HMS). The 25mm turret's crew ergonomics will be improved by incorporating larger hatches, and its capabilities will be enhanced by the addition of the latest technologies, including improved fire control, thermal, day and

low-light sights, and data displays.

Contracts

General Dynamics Awarded $367 Million to Produce Additional 177 Double-V-Hull Stryker Vehicles

STERLING HEIGHTS, Mich. -- The U.S. Army TACOM Lifecycle Management Command has awarded General Dynamics Land Systems, a business unit of General Dynamics, $367 million to produce and deliver an additional 177 Stryker combat vehicles equipped with double-V hulls (DVHs).

The double-V hull was developed on an accelerated timeline to provide Stryker-borne soldiers increased protection from the effects of roadside mines and improvised explosive devices. Recent Army reports indicate that deployed vehicles with the new double-V-hull design are providing significantly increased protection and survivability to soldiers. This award, combined with previous orders for double-V-hulled Stryker vehicles, will provide the Army with the equivalent of two Stryker DVH brigade combat teams.

Over 320 double-V-hulled Stryker vehicles have been produced so far, under a contract awarded in July 2010 for the production of 450 double-V-hull vehicles. Engineers and production workers at General Dynamics Land Systems conceived, engineered, manufactured and delivered the first operational vehicles to the Army in May 2011, about 14 months after the double-V hull concept was initially proposed to the Army. Deliveries will be completed by July 2013. Work on double-V-hulled Stryker vehicles is performed in Anniston, Ala., Lima, Ohio, and London, Ontario, Canada. General Dynamics will deliver double-V hull Stryker vehicles in seven variants under this award: Infantry Carrier, Medical Evacuation Vehicle, Engineers Squad Vehicle, Fire Support Vehicle, Commanders Vehicle, Mortar Carrier Vehicle and Anti-tank Guided Missile Vehicle. Other configurations of the Stryker include: Reconnaissance Vehicle, Nuclear Biological Chemical Reconnaissance Vehicle and Mobile Gun System. The Stryker family of vehicles is known for high performance as well as versatility, mobility and survivability. The Stryker's commonality reduces the Army's logistics footprint and minimizes costs. The Stryker is fast, capable of reaching speeds in excess of 60 mph, and it is lighter, smaller and more readily deployable than any other Army combat vehicle.

Defence Industry

Elbit Systems to Supply Mortars to the Spanish Army

Haifa, Israel -- Elbit Systems Ltd. (Elbit Systems) announced today that it has won contract to supply mortars to the Spanish Army. The project, valued at $8.5 million, will be implemented over a 12-month period.

The Spanish Army's decision to equip its forces with mortars provided by Elbit Systems was made after a series of successful tests in both Spain and in Israel.

Elbit Systems will be the lead contractor for the project, which will include the installation of CARDOM autonomous recoil 81mm mortars mounted on the back of VAMTAC 4x4 vehicles produced in Spain by UROVESA. The Spanish companies GMV and Spain's General Dynamics Santa Barbara, will also participate in the project.

Bezhalel (Butzi) Machlis, Elbit Systems Land and C4I General Manager, noted: "We are very proud of the Spanish Army's decision to acquire our mortars, following advanced armies like the Israel Defense Forces, the U.S. Army and others." Machlis added:"The selection attests to Elbit Systems' leadership in the field of advanced mortars and we hope, in light of Spain's important role in Europe and within NATO, that other armies will also acquire mortars produced by Elbit Systems."

About Elbit Systems

Elbit Systems Ltd. is an international defense electronics company engaged in a wide range of programs throughout the world. The Company, which includes Elbit Systems and its subsidiaries, operates in the areas of aerospace, land and naval systems, command, control, communications, computers, intelligence surveillance and reconnaissance ("C4ISR"), unmanned aircraft systems ("UAS"), advanced electro-optics, electro-optic space systems, EW suites, airborne warning systems, ELINT systems, data links and military communications systems and radios. The Company also focuses on the upgrading of existing military platforms, developing new technologies for defense, homeland security and commercial aviation applications and providing a range of support services.