

# Army Guide monthly



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## Exhibitions

## Navistar Defense Displays Its Latest Military Vehicles at Expodefensa



BOGOTA, Colombia -- Navistar Defense, LLC highlights its latest in International® brand military vehicles this week at the Expodefensa international defense and security expo in Bogota. As part of the display, the company is featuring its new Special Operations Tactical Vehicle.

The International® Special Operations Tactical Vehicle is the company's vehicle entry for the U.S. Special Operations Command (SOCOM) Ground Mobility Vehicle (GMV) 1.1 program. The vehicle's highly-mobile, mission-ready platform is engineered specifically to carry large payloads while handling the roughest mission terrain with off-road racing speeds and performance. The vehicle is also transportable inside a CH-47 helicopter.

"The Special Operations Tactical Vehicle is ready for production and engineered to handle the demanding off-road missions of special operators throughout the world," said Archie Massicotte, president, Navistar Defense. "Our sophisticated design provides ready-to-roll transportability while providing unprecedented mobility."

The Special Operations Tactical Vehicle includes an armored occupant safety cell with scalable armor packages to meet multiple threat levels. A variety of body styles are offered to meet different police and government needs. The vehicle can be integrated with a full government furnished Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) suite.

Navistar has fielded more than 34,000 military vehicles in the last eight years in 26 countries. This military vehicle fleet includes nearly 9,000 MaxxPro Mine Resistant Ambush Protected (MRAP) vehicles used by U.S. and Coalition forces in Iraq and Afghanistan to defend against roadside bombs and other ballistic threats.

Navistar International Corporation is a holding company whose subsidiaries and affiliates produce International® brand commercial and military trucks, MaxxForce® brand diesel engines, IC Bus™ brand school and commercial buses and Navistar RV brands of recreational vehicles. It also is a private-label designer and manufacturer of diesel engines for the pickup truck, van and SUV markets. The company also provides truck and diesel engine service parts. Another affiliate offers financing services. Additional information is available at [www.Navistar.com/newsroom](http://www.Navistar.com/newsroom).

## Defence Industry

## Honeywell Extends Strategic Relationship With US Army For Support Of The M1 Abrams Main Battle Tank

Honeywell has been awarded two contracts worth a combined \$221 million to continue its highly successful support of the U.S. Army's M1 Abrams main battle tank program.

Honeywell's AGT1500 vehicular gas turbine engine is the proven power source for the M1 Abrams and provides the tank with superior power and torque, low noise, and smokeless operation, contributing to the tank's unmatched combat performance.

The first contract is a \$111 million, 18-month follow-on agreement through December 2013 for continuation of the Total InteGrated Engine Revitalization (TIGER) program, a collaboration between Honeywell, the U.S. Army's Abrams Project Management Office, the Army's Tank-automotive and Armaments Command (TACOM), and the Anniston Army Depot (ANAD). This contract continues to leverage Honeywell's expertise in maintenance and product improvement for the AGT1500 M1 Abrams engine to extend operational life and reduce life-cycle costs for the Abrams tank.

The second contract is valued at \$110 million for the production of 125 new Honeywell AGT1500 engines from September 2012 through October 2015. This contract extends Honeywell's relationship with ANAD in Alabama where new AGT1500 engines are assembled and tested.

Honeywell's TIGER program provides comprehensive maintenance and continuous improvements to the battle-proven AGT1500 engine, which results in enhanced durability and lower operational costs for Abrams tank operators. Since the inception of the TIGER program in 2005, the Abrams fleet of tanks has seen improvements in the following areas:

- Twice the durability of pre-TIGER engines
- Significantly improved on-time parts delivery to the TIGER warehouse at the Anniston Army Depot
- Depot cost avoidance savings through a disciplined approach to repairing engines in the field when possible, rather than sending all engines back to the depot
- Significantly reduced life-cycle costs due to online, visual work instructions, easily accessible electronic records of assembly and maintenance, and application of tailored repair work scopes based on engine condition

Tom Davis, vice president, Honeywell, U.S. Army Programs "Honeywell's integrated approach to support for the Abrams fleet of tanks incorporates demand and supplier management, product support, and condition-based maintenance to reduce our customers' life-cycle costs. When combined with the Department of Defense's significant investment in infrastructure and its hands-on repair and overhaul experience, the Honeywell and Army enterprise team delivers higher-quality, more reliable AGT1500 engines for the U.S. Army, Marine

Corps and international customers.”

## Defence Industry

### Specialist Vehicle pulls more than its weight in trials for British Army



London, United Kingdom – Specialist Vehicle (SV) is already pulling more than its weight as the core of the British Army’s future Armoured Fighting Vehicle (AFV) programme. The Mobile Test Rig (MTR) for the SV programme, which was rolled out by General Dynamics in June, has towed a total of 92 tonnes train weight over 300km providing early confidence in SV’s ability to deliver the full-load power-pack performance required to meet the vehicle’s anticipated growth path over the next 30 years.

The MTR’s Gross Vehicle Weight was 30 tonnes for the test. The additional 62-tonne load was provided by three towed vehicles, including two military AFVs – an ULAN PT5 at 28 tonnes and a SK105 Light tank with 105mm cannon at 18 tonnes – and a truck ballasted to 16 tonnes. This test, one of several, used the three vehicles as a rolling dynamometer with the brake retarders energised on the towed vehicles, to provide the drawbar load on the MTR required to achieve maximum power and torque.

Conducted at the General Dynamics European Land Systems facility in Austria, this testing demonstrated two key characteristics of the SV design: that the automotive systems – tracks, wheels, suspension, engine, gearbox and cooling group – can deliver the performance to support the programme’s growth path over the next 30 years; and that this SV platform, in its Recovery variant, will be capable of towing all other current British Army vehicles – a key role in the programme’s Recce Block 1.

This stress testing also provides early evidence of the SV’s ability to cope with environmental operating extremes. This is of particular importance for assured operation in high ambient temperatures, the ability to climb steep gradients and the ability to operate in a combined condition of high ambient temperatures at high altitude.

The MTR will also undertake an extensive series of operational and tactical (O&T) mobility trials to demonstrate the ability of the vehicle’s automotive systems to meet the demanding mobility requirements of the SV programme. O&T trials will be conducted at a series of increasing gross vehicle weights to show the platform’s inherent growth capability up to the mandated

maximum GVW of 42 tonnes, providing early confidence in the programme of SV’s capability to deliver through-life growth.

Once the O&T trials phase is concluded at the end of 2012, the MTR will be shipped to test facilities in Seville, Spain, where the vehicle will be put through a gruelling Accelerated Life Testing (ALT) schedule designed to replicate pre-defined battlefield missions. On completion of the ALT activities, MTR will have covered a total of 10,000km and will have provided crucial reliability and performance data to inform the design and manufacture of the six prototype SV platforms.

The MTR programme of trials has been designed to provide proof-of-design and de-risking in advance of the main trials programme, which will feature the six Recce Block 1 prototype vehicles (3 Scout, PMRS, Repair and Recovery). This rigorous and demanding trials-and-acceptance programme will ensure that users will benefit from the key advantages of the SV’s common base-platform approach, including a lower cost of ownership and smaller logistics footprint thanks to the commonality of its components across the fleet and the reliability that will allow the Army to use SV far from its base for extended periods of time.

## Defence Industry

### GD Awarded \$133 M to Upgrade 66 Additional LAV III Vehicles by Government of Canada



The Honourable Rona Ambrose, Minister of Public Works and Government Services and Minister for Status of Women, announced today that the Government of Canada has awarded a contract modification valued at \$133.5 million to General Dynamics Land Systems-Canada to upgrade an additional 66 LAV III vehicles. This award modifies a contract previously announced in October 2011 to upgrade 550 LAV III vehicles, valued at \$1 billion.

The LAV III Upgrade Project will now modernize 616 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. These improvements will provide crew members greater protection against mine blasts, IEDs and other threats.

The LAV III’s automotive performance, handling characteristics and payload capacity will be optimized with mobility system upgrades including 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.

"Helping to protect the men and women of the Canadian Forces is a privileged role, and we understand our responsibility and what is at stake," said Danny Deep, vice president of General Dynamics Land Systems-Canada. "The upgraded LAV III will provide our Canadian soldiers with one of the most advanced and modern vehicles of this type in the world. It will also provide much-needed job stability throughout Canada's high-value defence sector."

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 500 Canadian suppliers. All regions of Canada will benefit from this work, which is expected to be completed in 2017.

## Defence Industry

### Lorica selected as preferred supplier for Turret Armour to Warrior CSP



Lorica Systems UK Limited (Lorica) today announced it has been chosen by Lockheed Martin UK for final negotiations as the preferred turret armour supplier for the demonstration phase of the UK MoD Warrior Capability Sustainment Programme (WCSP) and is now in final negotiations with Lockheed Martin.

The WCSP program will provide a range of upgrades to the Warrior Armoured Fighting Vehicle, with the aim of extending the vehicles' service life beyond 2035. Lorica is an armour and survivability Joint Venture between Marshall Land Systems of Cambridge and Plasan of Israel.

The key requirements of the project are to meet future threat levels and challenging weight targets, whilst demonstrating that armour can be effectively integrated to match the turret profile. Lorica specialises in a low-weight approach to flexible armouring solutions. The WCSP programme is ideal for their skill base.

Tim Vaughan, Head of Business Development for Lorica comments, "It has been a tough competition

against some very strong companies. We are delighted to have been chosen to work with Lockheed Martin and we very much look forward to protecting British Soldiers in the future."

Marshall Land Systems specialises in the design, manufacture, integration and product support of defence vehicles and integrated shelters. Plasan is a global provider of advanced light weight vehicle armour for the defence and security industries designed to maximise the survivability of the platform, its systems and vitally, the crew. The integrated, platform independent armour offers a high level of protection from a range of threats and significantly enhances platform and crew survivability.

## Term of the day

### Jagdpanzer



Jagdpanzer is a name given to German self-propelled anti-tank guns.

It typically refers to anti-tank variants of existing tank chassis with a well-armoured casemate fixed superstructure, mounting an anti-tank gun with limited traverse in the front, and usually classed by the western Allies of World War II as a tank destroyer.

The Jagdpanzer designs followed on from the more lightly armoured Panzerjäger ("tank hunter") designs which took an anti-tank gun and mounted it on top of a tank chassis with supplementary armour fitted around the gun crew. Also a lot of experience was gained from the Sturmgeschütz series of assault guns for infantry support, which already used heavily armored casemates, completely enclosing the vehicle's crew—although they were associated to the artillery, they were very often used in the anti-tank role.

On the battlefield, the Germans sometimes had to retreat, or try to feign one. Their line of retreat would then preferably pass the location of their anti-tank units who would use their superior firepower to stop the enemy, perhaps even make possible a counter-attack. Due to the lack of a turret and the armour being concentrated at the front, the ideal combat situation for Jagdpanzer units was in the planned ambush, and the skill of the commander of such units lay in correctly choosing and preparing such places long before needed.

## Training And Simulators

### Commanders and Officers in the Royal Netherlands Army will Train in a Variety of Fighting Scenarios with the Help of

## Elbit Systems` New Command and Staff Trainer (CST)



Elbit Systems Ltd. announced today that it has supplied an advanced training and simulation solution for the Royal Netherlands Army (RNLA). The system enables all levels of staff training with support for joint NATO missions. RNLA operational units will use the system during 2013 for command and staff exercises. In addition, the trainer will facilitate concept development and experimentation (CD&E) as well as mission rehearsal events.

The trainer is capable for training battalion and brigade and higher levels headquarters in a full spectrum of operations, including military missions training and operations other than war, combined with the civilian sector operations.

The CST system is designed for training battalion, brigade and higher levels, encompassing a wide range of fighting scenarios - both low and high intensity conflicts, as well as other non-military settings, such as operations other than war (OOTW). Furthermore, the CST enables training for civil-military cooperation (CIMIC) – such as military forces operating with municipal authorities, police and medical organizations such as the Red Cross.

Situated at operational headquarters, the CST's advanced high level architecture makes it suitable for the specific needs of every trainee and combines full training with qualitative debriefing. The simulation integrates with command, control and communications systems using Battle Management Language (BML) protocols. With the help of a user friendly interface and advanced artificial intelligence, the trainer also enables minimal use of personnel and thus lowers training costs as well.

Elbit Systems operates across the entire spectrum of military training and simulation systems, in Israel and throughout the world, utilizing its advanced technological capabilities, particularly in the area of software for complex project systems, as well as in the upgrade of military platforms.

### 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.

## Army

### Fifty-one new Foxhound vehicles for the front line



The MOD is investing BJ46m in acquiring fifty-one new Foxhound patrol vehicles for soldiers serving on the front line in Afghanistan.

Minister for Defence Equipment, Support and Technology Philip Dunne made the announcement during a visit to the General Dynamics Land Systems - Force Protection Europe (GDLS-FPE) facility in Telford, which provides spares for the Foxhound vehicle.

The contract announced today is part of an overall investment of BJ340m that the MOD has made in Foxhound since 2010.

This is helping to sustain jobs at the Telford facility, GDLS-FPE's HQ in Leamington Spa, and across the UK in the Foxhound supply chain.

Designed and built by GDLS - FPE in Britain, Foxhound is one of the Army's most agile protected vehicles. It uses leading-edge Formula 1 technology to provide unparalleled protection for its weight and class.

The first Foxhounds were deployed to Afghanistan in June 2012 and are now being used by soldiers operating in mentoring and partnering roles with the Afghan National Security Forces.

During the visit to the spares facility, Mr Dunne and Major Chris Thoms, the requirements manager for protected mobility at the MOD, met with staff who are also providing vital logistical support to the Army in Afghanistan.

Mr Dunne said:

"I was pleased to meet with employees at General Dynamics - Force Protection who have helped make Foxhound a real procurement success story, taking only 40 months to develop it from the initial design to deployment in Afghanistan.

"The work being done by staff here in Telford is ensuring the vehicles can stay on the road and helping our soldiers do the vital job of engaging with Afghan forces and protecting the local population.

"Balancing the MOD's budget means we can now confidently invest in equipment like Foxhound, which has the flexibility and adaptability to operate in a wide

variety of environments, providing capability for the Army well into the future.

"This investment shows the MOD playing its part in delivering growth and sustaining jobs in the West Midlands industrial base."

Speaking in September when Foxhound was first operational in Afghanistan, Chief of Staff for the Bastion Force Protection Wing, Squadron Leader Jim Stewart, said:

"Foxhound is an enormous leap forward in capability; the off-road mobility, enhanced protection and night-vision systems that it offers to the troops on the ground are unmatched in a vehicle of this size."

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## Training And Simulators

### Elbit Systems Delivers ISTAR Trainers and Armored Driving Trainers to IMOD



Elbit Systems Ltd. announced today the delivery of two ISTAR (Intelligence, Surveillance, Target Acquisition and Reconnaissance) Trainers to the Israel Ministry of Defense (IMOD) for the training of surveillance and observation activities to be carried out on Israel's borders. Elbit Systems will also supply Armored Driving Trainers (ADTs) for combat vehicle training during the first quarter of 2013.

Elbit Systems' ISTAR Trainer is a combat support and field intelligence trainer, designed to enable full simulation of real-life battlefield situations for Forward Observers ("FOs") and sensor operators posted in all types of terrain, performing border control and protection activities. The ISTAR Trainer allows FOs to practice joint strike and reconnaissance missions. The scenarios offered by the ISTAR Trainer are realistic situations depicting the actual borders to be observed by each FO. Interoperable with C4I and communication systems, the scenarios include fire planning, ranging and field operation as well as target detection, recognition, identification, acquisition and engagement in diverse environmental conditions, while using a wide variety of day and night sensors. The ISTAR Trainer is already in use; training new users and maintaining the operational readiness of those professionals already in service.

The Armored Driving Trainer (ADT) is mounted on a 6 DOF (Degree Of Freedom) moving platform specifically designed to provide drivers of combat vehicles with a highly realistic driving experience. The system supports driver training in a wide range of combat and non-combat scenarios, as well as in diverse

weather and harsh field conditions, thus creating vital practice situations, such as driving under enemy fire or on dangerous slopes. The ADT is cost effective; saving time and expense, while providing mobile, scalable and modular deployment, multi-platform type support and a network-based and user-friendly interface. Since receiving the current order for ADTs from the IMOD, Elbit Systems has received additional ADT orders from international customers.

Elbit Systems Aerospace Division's VP - Training and Simulation, Alon Afik, commented: "These orders for Armored Driving and ISTAR Trainers position Elbit Systems as a front runner in providing multi-faceted training technologies, such as border protection simulation, sensor simulation and C4I training."

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## Term of the day

### Bore Evacuator



A bore evacuator (also called a fume extractor) is a device on the gun barrel of an armoured fighting vehicle which helps prevent poisonous propellant gases from venting back into the vehicle's fighting compartment when the gun breech is opened to load another round.

Bore evacuators are most often used on large-calibre tank guns and self-propelled guns. Without bore evacuators, hot gases and other combustion residue leaks into the tank's interior, depleting oxygen levels and filling it with a foul odour that can easily induce nausea and distract the crewmen from their tasks. The evacuator is a reservoir that holds the super-heated, high-pressure propellant gases produced by the firing of a shell, then releases them as the shell exits the barrel. When not in use, the atmosphere inside the barrel remains the same as the surrounding environment; thus it is the same, or nearly so, inside the evacuator. As the shell passes through, an opening into the bore takes in the gases, containing them until the shell has exited, then releases them back into the barrel. The openings are angled toward the muzzle, so the stream of still fairly high pressure gas drags both combustion gas in the barrel and fresh air from the open breech toward the muzzle. This reduces the chances of these explosive propellants flowing backwards into the turret, causing combustion as they mingle with oxygen, though this can still happen if the evacuator is poorly designed, poorly maintained, or damaged.

## Defence Industry

### BAE Works with Army Depot to Reset Wheeled Military Vehicles



BAE Systems received a \$37.6 million contract from the Letterkenny Army Depot to provide spare parts and kits for 250 Medium Mine Protected Vehicles, a 6x6 state-of-the-art wheeled military vehicle.

“Over the past several years, we have worked closely with the Letterkenny Army Depot on a variety of programs for our U.S. military,” said Robert Houston, vice president and deputy general manager of Weapon Systems and Support at BAE Systems. “Our partnership on the MMPV program will not only increase the capabilities of the vehicle, but also help to strengthen our partnership with the Letterkenny Army Depot.”

The MMPV has a V-shaped hull that provides superior blast protection against symmetrical, asymmetrical and unconventional explosives hazards. The wheeled vehicle also has a large modular interior, high mobility chassis and extensive equipment options and is an ideal platform for any mission in an explosive hazard environment. Soldier-friendly features include large ballistic windows, a 360-degree situational awareness suite and a rear ramp for the deployment of remotely operated unmanned ground vehicles for use in route and area clearance missions.

The spare parts and kits will be assembled by the existing workforce at the BAE Systems facility in Anniston, Alabama.

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