Army Guide monthly

1 (100) January 2013

www.army-guide.com

Army

401st Completes M1114 Vehicle Transfer to Afghan National Army

A historic mission for the 401st Army Field Support Brigade came to an end, Nov. 12, when AFSBn-Bagram issued 49 M1114 vehicles to the Afghan National Army, under a Foreign Military Sales case.

The 49 vehicles were the last of more than 950 vehicles that were involved in the program that lasted about two and one-half years. Before the vehicles were turned over to the ANA, they were completely checked and restored to a fully mission capable status at AFSBn-Bagram and Camp Lindsey near Kandahar. In some cases, the vehicle was practically rebuilt from the ground up, while other vehicles required only minor repair and refurbishment.

"Almost every component [of the vehicle] was touched," said Michael A. Fiame, 401st AFSB equipment specialist. "The suspension, tires, whatever was needed."

For approximately one year, AFSBn-BAF conducted a maintenance mentorship program in which Afghan soldiers worked alongside battalion mechanics to learn more about the vehicles and improve their proficiency in maintaining them. They worked on the very vehicles that were turned over to the ANA under the sales case.

"The M1114 transfer was an opportunity for me to see first-hand why I volunteered to come to Afghanistan," said Tarracne C. Fortner, AFSBn-Bagram support operations. "Working with Lieutenant Colonel Wardak was my first experience working with an Afghan military professional. I'm glad I was afforded that opportunity."
By Summer Barkley

Term of the day

Missile Tank

A missile tank is an armoured fighting vehicle fulfilling the role of a main battle tank, but using only guided missiles for main armament. Several nations have experimented with prototypes, notably the Soviet Union during the tenure of Nikita Khrushchev (projects Obiekt 167, Obiekt 137MI, Obiekt 155MI), but only the West German Jaguar 2 saw service as a standard vehicle, although the Soviet IT-1 missile tank also saw limited service.

The term is sometimes applied more loosely to conventional main battle tanks which are capable of launching anti-tank guided missiles, to supplement their main gun for very long-range fire. Examples of these are the U.S.-German prototype MBT-70, the defunct U.S. M551 Sheridan and French AMX-13, and several Soviet, Russian, and Ukrainian tanks: T-64, T-72, T-80, T-80U, T-80UD, T-84, BM Oplot, and T-90. The Israeli Merkava main battle tank is believed to have a missile fire and guidance capability.

Term of the day

Muzzle Reference System

The muzzle reference system is an electronic device that is intended to measure the current value of a tank barrel bend in order to take it into account when firing the gun and therefore to improve the accuracy of firing.

The electronic signal proportional to the measured angle value is transmitted into the tank's fire control system that allows to indemnify the firing errors by correction of the relevant aiming angles. The measurement error of an up-to-date muzzle reference system does not usually exceed 0.1 mrad. The system consists of a reflector ("mirror") installed at the gun muzzle end and a measuring unit installed on the barrel near the gun mantlet. All modern main battle tanks are fitted with a muzzle reference system.

Defence Industry

Elbit Systems to Supply the Israeli Ministry of Defense with Cardom Artillery Systems

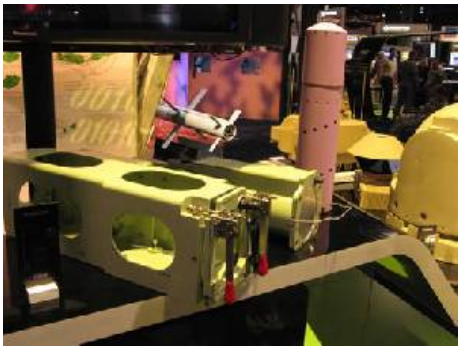
Elbit Systems Ltd.'s (the "Company") subsidiary, Elbit Systems Land and C4I Ltd., was recently awarded a contract by the Israeli Ministry of Defense ("IMOD") to supply Cardom artillery systems (known in the Israel Defense Forces as "Keshet"). The contract, to be performed over six years, was part of the Company's December 31, 2012 announcement regarding a total of approximately $315 million in IMOD awards for several contracts in different areas. The Cardom award is a follow-on to a contract for the Israeli Defense Forces ("IDF") awarded in September 2011.

Udi Vered, General Manager of Elbit Systems' Land and C4I Division commented: "This additional IMOD contract attests to the maturity and the quality of the Cardom's operational performance in the IDF and other armies worldwide. We are witnessing a growing global demand for the supply of advanced artillery systems and we hope that additional customers will select our solutions to address their artillery needs".

Cardom integrates a 120mm mortar with innovative fire control, navigation, automatic aiming and propulsion systems. Considered among the most advanced systems of its kind in the world, Cardom is operational in the IDF as well as various armies in Europe, the United States and other countries. The systems have also been deployed in combat zones.

Future Technologies

Raytheon`s Quick Kill APS defeats one of the most lethal armor-piercing Rocket Propelled Grenades



As the U.S. Army prepares for formal testing to evaluate a system to protect combat vehicles from shoulder-fired and tube-launched Rocket Propelled Grenades (RPGs), Raytheon Company's Quick Kill™ Active Protection System (APS) has again shown its maturity and accuracy in a series of tests.

In a recent test, held in December 2012, the Quick Kill APS demonstrated its protective capability by successfully defeating an extended set of threats, including one of the most lethal RPG threats by destroying it in mid-flight. All testing is in preparation for formal government evaluations in early 2013 to demonstrate the system's unique RPG-defeat capabilities.

"Raytheon's APS is based on the same radar technology deployed to perform sense and warn operations at active Forward Operating Bases. It has been extremely successful in providing timely warning against rocket and mortar attacks," said Jeff Miller, vice president of Combat and Sensing Systems for Raytheon's Network Centric Systems business.

"With Quick Kill," he added, "Raytheon has matured a highly advanced system, offering our forces an unprecedented force protection capability that is essential to the future survivability of combat vehicles. This technology is ready and could begin fielding within a year."

The Quick Kill system consists of a multi-mission, fire-control radar that detects and tracks incoming threats, combined with hard-kill countermeasures that serve as a hit avoidance system, enabling multi-tracking and multi-engagement of enemy fire for vehicle and squad protection.

The system's vertical launch countermeasure is unique in its ability to engage threats fired from any angle or elevation, providing all weather, full 360 degree hemispherical vehicle and crew protection with each countermeasure.

In previous tests, the system demonstrated its ability to defeat multiple threat types both from a stationary and an on-the-move platform – and it showed its multi-threat capability by defeating two simultaneous threats.

Term of the day

Infantry Tank

The infantry tank was a concept developed by the British and French in the years leading up to World War II. Infantry tanks were tanks designed to support the infantry in the attack.

To achieve this they were generally heavily armoured to allow them to operate in close concert with infantry even under heavy gun fire. The extra armouring came at the expense of speed, which was not an issue when supporting relatively slow moving foot soldiers (infantry).

Once the infantry tank-supported attack had broken through heavily defended areas in the enemy lines, other

tanks such as cruiser tanks or light tanks, were expected to exploit their higher speed and longer range to operate far behind the front in order to cut lines of supply and communications.

Contracts

General Dynamics Awarded $65 Million by the Colombian Ministry of National Defence for Light Armoured Vehicles

LONDON, Ontario, Canada -- The Colombian Ministry of National Defence has awarded a USD$65.3 million contract to General Dynamics Land Systems-Canada for 24 Light Armoured Vehicles (LAVs) for the Colombian Army. General Dynamics Land Systems, the Canadian company's parent corporation, is a business unit of General Dynamics (NYSE: GD).

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

This contract was a priority acquisition by the Colombian Ministry of National Defence and provides a new capability for the Army. Vehicles provided under this contract will be the LAV III version with double-V hull technology and add-on armour that provides crew members with the latest in protection against mine blasts, IEDs and other threats. All vehicles will be equipped with a Rafael Remote Controlled Weapon Station. Deliveries will be completed by May 2014.

Dr. Sridhar Sridharan, senior vice-president and general manager for International Operations, General Dynamics Land Systems, said, "We are proud to have been selected by the Colombian military to meet their armoured vehicle requirement and look forward to establishing a long-term relationship with this very important customer."

Term of the day

Cavalry Tank

The cavalry tank (also called cruiser tank or fast tank) was a tank concept of the inter-war period. This concept was the driving force behind several tank designs which saw action during the Second World War.

The cavalry tank formed part of a doctrine paired with the "infantry tank", a much slower but better armoured design intended to work in concert with the infantry in punching holes through enemy lines for the cavalry tanks to exploit.

The cavalry tanks were intended to be fast and mobile, and operate independently from the slow-moving infantry, heavier infantry tanks, and artillery.

The cavalry tank was designed to be used in way similar to cavalry in its heyday and thus speed was a critical factor, and to achieve this the cavalry tank designs were lightly armoured and armed.

Exhibitions

ROTZLER Premium Solutions for Military Applications at IDEX 2013 show

ROTZLER is exhibiting first class solutions for Military Applications at the IDEX Defence Exhibition in Abu Dhabi from 17 - 21 February 2013.

IDEX is the only international defence exhibition and conference in the MENA region demonstrating the latest technology across land, sea and air sectors of defence. It is a unique platform to establish and strengthen relationships with government departments, businesses and armed forces throughout the region.

ROTZLER heavy duty winches and recovery systems provide highest reliability and safety in critical situations and keep vehicles mobile, even in harshest environments. For military operations, such as recovery and self-recovery, ROTZLER offers the whole range of products and services:

- Recovery winch systems
- Heavy Duty Twin Winch Systems
- Hoisting winch systems
- Control systems
- Project planning
- Systems integration
- Accessories
- After sales service

The ROTZLER expert team will be on hand at the ROTZLER booth in Hall 08, at the German Pavillon, booth 08-D07.

Contracts

GDLS-Canada Awarded $24 M LAV-A2 Contract by USMC

General Dynamics Land Systems-Canada has been awarded a USD$24 million contract to produce 13 Light Armored Vehicles (LAV-A2) for the U.S. Marine Corps. General Dynamics Land Systems, the Canadian company's parent corporation, is a business unit of General Dynamics .

The LAV-A2 is a mobile, survivable and lethal system for conducting a variety of functions, including security, reconnaissance, offensive and defensive operations as part of the Marine Air-Ground Task Force. The eight-wheeled vehicle operates on land and water. It is equipped with enhanced armor protection and an automatic fire-suppression system for crew protection, as well as a robust suspension for mobility.

Vehicle production will be performed at the General Dynamics Land Systems-Canada operations in London, Ontario, with the existing workforce. The first delivery is scheduled for June 2014 and the last delivery will be made in October 2014.

The Marine Corps has ordered 253 LAV-A2 vehicles since 2007. Over 800 units of an earlier version of the Light Armored Vehicle entered service with the Marine Corps in the 1980s and continue operational deployment today.

"General Dynamics Land Systems is proud of its heritage with the Marine Corps and is committed to serving the Corps with cost-effective mission-critical products and services," said Michael Bolon, senior vice president, Marine and Navy sector at General Dynamics Land Systems.

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

Future Technologies

LM JLTV Undergoes Successful Design Review

Lockheed Martin's family of Joint Light Tactical Vehicles successfully completed a top-to-bottom government design review in late December, well ahead of the first Engineering and Manufacturing Development (EMD) JLTVs that will begin rolling off the assembly line this spring.

The Design Understanding Review, which was held December 18 through 20, assessed all elements of Lockheed Martin's JLTV design and confirmed its overall maturity and requirements compliance.

"We are focused on ensuring that our servicemen and women get the very best equipment for the mission," said Scott Greene, vice president of Ground Vehicles for Lockheed Martin Missiles and Fire Control. "Our JLTV is affordable both to buy and to operate. It provides proven performance with room to upgrade capabilities as required and is ready for production."

In refining its EMD design, the Lockheed Martin team optimized a JLTV model already proven in government testing. The production-enhanced JLTV maintains the proven force protection, transportability and reliability of the earlier Technology Demonstration model, while significantly reducing weight and cost. Lockheed Martin's JLTV design reflects improvements from more than 160,000 combined testing miles.

The JLTV family of vehicles is designed to replace and supplement the existing fleet of Army and Marine Corps Humvees. Compared to existing vehicles, JLTV will provide greatly improved crew protection, lower logistical support costs, superior fuel efficiency and state-of-the-art connectivity with other platforms and systems. Government tests show the Lockheed Martin design equals the high blast-protection standards of much larger mine-resistant vehicles serving in combat today.

In August 2012, Lockheed Martin received a $65 million contract from the Army and Marine Corps to continue developing its JLTV design through the EMD phase. Assembly of the first EMD JLTVs is under way at BAE Systems' military-vehicle manufacturing plant in Sealy, Texas.

Term of the day

Ammunition

Ammunition is a generic term derived from the French word "munition," which embraced all material used for war, but which in time came to refer specifically to various types of gun projectiles and their propellants.

The collective term for all types of ammunition is munitions. In the widest sense of the word it covers anything that can be used in combat that includes bombs, missiles, warheads, and mines (landmines, naval mines, and anti-personnel mines) that munitions factories manufacture. The purpose of ammunition is predominantly to project force against a selected target. However, the nature of ammunition use also includes delivery or combat supporting munitions such as

pyrotechnic or incendiary compounds. Since the design of the cartridge, the meaning has been transferred to the assembly of a projectile and its propellant in a single package.

Defence Industry

A new eye for the Leopard

The Attica thermal imaging device from Cassidian Optronics significantly enhances the fighting capabilities of tanks as well as crew safety.

Cassidian Optronics GmbH, previously known as Carl Zeiss Optronics GmbH, will supply the new "Attica" thermal imaging unit for the commander's periscope in the Bundeswehr's Leopard 2 battle tanks. After extensive trials, the German procurement authority BAAINBw (Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support) has awarded this Cassidian subsidiary an order to deliver the "Attica" to a value of almost 7 million euros. The third generation of thermal imaging equipment from Cassidian Optronics thus becomes the standard for the commander's Peri R17 periscope, which is also supplied by Cassidian Optronics.

The use of the Attica thermal imaging device significantly enhances the tank commander's ability to acquire targets, thus improving the safety of the crew. With the Peri R17, the commander is able to supply the gunner with marked targets by day and night, to then be able to acquire other targets without delay. The acquisition of targets can thus be separated from their engagement, which enables quicker reactions.

The Attica system meets the complex requirements presented by today's mission scenarios. This equipment, which has already been selected for the Puma armoured infantry fighting vehicle, is thus developing into a unit which is used across the Bundeswehr, especially in the tank force and mechanised infantry, as well as in the artillery. This results in logistical benefits and a reduction in operating costs when using thermal imaging equipment from the same family of products.

As a consequence of this German decision, other states in the "LEOBEN" association of Leopard user states are also planning procurement of the Peri R17. This will further standardise the level of configuration for the LEOBEN states.

Employing about 800 staff at the German locations of Oberkochen and Wetzlar, and at Irene in South Africa, Cassidian Optronics GmbH develops and manufactures optical and optronic products which are used in military ground, sea and air systems as well as in border and security technologies, but also in non-military high-tech systems and in the aerospace sector. Cassidian Optronics combines the optical and optronic precision technology from Carl Zeiss Optronics with Cassidian's know-how as a global market leader in defence and security technology.

Defence Industry

Textron, Rheinmetall and Kongsberg announce $100 M Contract on Canadian Forces TAPV Program

Textron Systems Canada Inc., a Textron Inc. company, Rheinmetall Canada Inc., and Kongsberg Protech Systems (KPS) Canada today announced a $100 million CAD contract for work to be performed by KPS Canada on the Canadian Forces Tactical Armoured Patrol Vehicle (TAPV) project. This is a sub-contract within the $205 million CAD contract between Textron Systems and Rheinmetall that was announced in October 2012.

This contract will help to sustain 16 jobs and create approximately 16 more jobs – doubling the workforce at KPS Canada's London, Ontario production facility, which opened just over a year ago in November 2011. The contract also fulfills a portion of Textron Systems' participation in Canada's Industrial and Regional Benefits (IRB) Policy arising from the government's purchase of 500 Textron TAPVs.

This contract extends KPS Canada's work with the Government of Canada and strengthens the company's position as the world market leader for remotely controlled weapon stations. Since 2005, the company has been supplying the PROTECTOR M151 Remote Weapon Stations (RWS) to the Canadian Forces. On the TAPV project, KPS Canada will deliver a new technological innovation with the Dual Remote Weapon Station (DRWS). This remote weapon station features two mounted weapons that can be operated by both the vehicle commander and gunner. These capabilities provide additional safety and protection for soldiers in the field by allowing them to operate the DRWS from within the vehicle reducing their exposure to enemy fire.

"Participation in the TAPV project is of strategic importance to Kongsberg Protech Systems," said KPS Canada's President Jшrn Bшш. "Kongsberg Protech Systems production and participation in the TAPV program will strengthen London, Ontario as a Canadian contributor to the ground based defense industry. KPS Canada and Kongsberg are already a large and reliable supplier in the region, the province and in Canada. This contract has created a unique opportunity for further growth locally."

"We are extremely pleased to be working with Textron Systems and Kongsberg Protech Systems Canada," said Rheinmetall Canada's President and CEO, Dr. Andreas Knackstedt. "Together we will deliver state of the art equipment to the Army, and provide value for taxpayers' money, while creating highly skilled jobs in Canada."

In June 2012, the Textron TAPV Team, led by Textron Systems, was selected to manufacture 500 Canadian Forces Tactical Armoured Patrol Vehicle (TAPV) with options for up to 100 more. The TAPV contract has a value of $603.4 million CAD, with an additional five-year in-service support contract of $105.4 million CAD.

Ottawa-based Textron Systems Canada, as prime contractor, will provide overall TAPV program and configuration management, act as design authority for change management, coordinate vehicle integration activities by Canadian subcontractors, and manage the In-Service Support contract. Textron Systems Canada will also be implementing a Canadian Industrial and Regional Benefits program designed to bring employment to Canadians and new expertise and opportunities to Canadian companies.

“Kongsberg Protech Systems Canada’s DRWS is a key element in our TAPV. As a teammate in implementing the delivery of the TAPV to the Canadian Army, they will help bring economic benefits to Canada,” said Neil Rutter, general manager of Textron Systems Canada. “In the coming months, we will continue to sign agreements with other best-in-class Canadian suppliers who will help us deliver a fleet of Textron TAPVs that provide Canadian soldiers with unmatched performance and protection for decades.”

In addition to Rheinmetall Canada and KPS Canada, the Textron TAPV team includes EODC – Engineering Office Deisenroth Canada (Ottawa, ON).

The Textron TAPV is the most reliable and technologically advanced vehicle of its kind. It draws on the company’s more than 45 years of experience in the design and production of armoured vehicles. The Textron TAPV will provide the Canadian Forces with the optimal balance of survivability, mobility and versatility, while delivering outstanding performance in the world’s most challenging environments. Extensively tested to confirm ballistic, blast, mobility and reliability levels, the Textron TAPV has been engineered to meet and exceed Canada’s requirements.

Defence Industry

Bar Armour

Bar armour, also known as slat armour, cage armour and stand-off armour, is a type of vehicle armour designed to protect against anti-tank rocket-propelled grenade attacks.

Term of the day

Bar Armour

Bar armour, also known as slat armour, cage armour and stand-off armour, is a type of vehicle armour designed to protect against anti-tank rocket-propelled grenade attacks.

It takes the form of a rigid slatted grid fitted around key sections of the vehicle, which disrupts the shaped charge of the warhead by either crushing it, preventing optimal detonation from occurring, or by damaging the fuzing mechanism, preventing detonation outright. It can, however, be defeated by tandem-charge designs, such as the RPG-27 and RPG-29.

Bar armour is favored over traditional plate armour not only due to its effectiveness against shaped-charge warheads, but also due to its much lighter weight, which improves maneuverability.

Term of the day

Self-Propelled Anti-Aircraft Weapon

Self-propelled anti-aircraft weapon, or self-propelled air defense system, is a mobile vehicle with a dedicated anti-aircraft capability.

Specific weapon systems used include machine guns, autocannons, larger guns, or missiles, and some mount both guns and longer-ranged missiles. Platforms used include both trucks and heavier combat vehicles such as armoured personnel carriers and tanks, which add protection from aircraft, artillery, and small arms fire for front line deployment.

Anti-aircraft guns are usually mounted in a quickly-traversing turret with a high rate of elevation, for tracking fast-moving aircraft. They are often in dual or quadruple mounts, allowing a high rate of fire. Today, missiles (generally mounted on similar turrets) have largely supplanted anti-aircraft guns.