Army Guide monthly

5 (32) May 2007

- Force Protection Industries to Deliver Armored Vehicles to Canadian Forces
- Teledyne Brown Engineering Joins Raytheon Team in Bid for Army's Integrated Battle Command System
- Wire Obstacle
- Armor Holdings, Inc. Receives $32 M Order for Pinzgauer Light Tactical Armored Vehicles
- Further Viking Armoured Vehicle Buy Will Protect UK Troops
- CAESAR and Stryker MGS Gaining Share of The Self-Propelled Artillery Market
- U.S. Marine Corps Awards General Dynamics $44 M Contract for Expeditionary Fighting Vehicle Materials
- General Dynamics Receives $245 M for Mine-Protected Vehicle Work
- Raytheon Awarded Contract to Develop Composite for Infrared Windows and Domes
- U.S. Army Awards General Dynamics $101 M for Additional Stryker Vehicles and Maintenance Support
- ATK Launches Force-on-Force Training System for Military and Law Enforcement Markets
- U.S. Army Awards General Dynamics $14 M for Abrams Tank System Technical Support
- Armor Holdings, Inc. Receives $60 Million Armor Component Order for Up-Armored HMMWV
- Unconventional Warfare
- Raytheon's MicroLight Radio Selected for U.K. Army's FIST Program Testing
- Situational Awareness
- Patria AMV Platforms Selected in South Africa
- Smiths Detection to Help Protect Swedish Defence Forces Against Chemical Warfare Agents
- Raytheon Delivers Active Protection System Radar on Time, on Budget

www.army-guide.com

Defence Industry

Force Protection Industries to Deliver Armored Vehicles to Canadian Forces

LADSON, S.C.-- Force Protection, Inc. today announced it has received an $8.867 million contract award to produce Buffalo and Cougar mine-protected vehicles for the Canadian Expeditionary Force Command (CEFCOM). Marine Corps Systems Command will administer the contract under a foreign military sales agreement (FMS).

The order, which marks the first contract between Canada and the SC-based manufacturer, calls for five Buffalo and five Cougar vehicles, spare parts, training, and field service representatives. Vehicle deliveries are scheduled to begin no later than August 2007.

“We are pleased to be recognized once again as a world leader in blast and ballistic protection that effectively counters the global threats of insurgent ambushes and improvised explosive devices,” said Force Protection Vice President for Program Management Damon Walsh. “This initial, urgent order will go directly to CEFCOM for immediate deployment. Based on past performance, we know it will save Canadian lives.”

Force Protection’s armored vehicles have been deployed in support of U.S. and Allied engineers, explosive ordnance disposal teams and other first response units in Iraq and Afghanistan since 2003. They have an unmatched record for troop safety, having withstood in excess of 2,000 explosive attacks in more than 100,000 days of heavy combat operations.

Defence Industry

Teledyne Brown Engineering Joins Raytheon Team in Bid for Army's Integrated Battle Command System

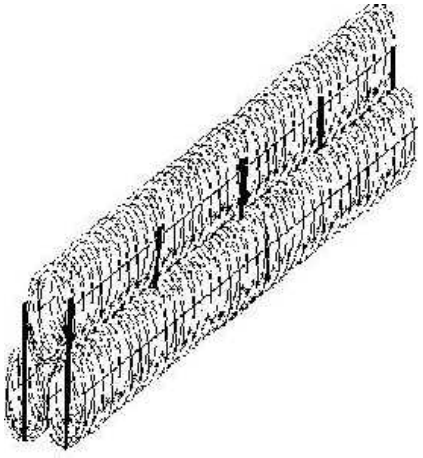
Teledyne Brown Engineering, Inc., a wholly owned subsidiary of Teledyne Technologies Incorporated based in Huntsville, Alabama, has joined the Raytheon Company-led team in a bid for the U.S. Army Integrated Battle Command System (IBCS).

Teledyne Brown Engineering joins General Dynamics C4 Systems, Davidson Technologies, Inc., and IBM as members of Team IBCS. This world-class team will leverage its combined domain expertise while employing innovative, industrywide best practices to provide the U.S. Army a transformational, affordable and extensible air defense solution for integrated air and missile defense.

The goal of IBCS is to provide an open architecture that enables the warfighter to take advantage of any sensor and any shooter integrated fire control network. The Army's vision is to move toward a network-centric system-of-systems capability for integrating sensors, shooters, and battle management command, control, communications and intelligence systems for Army air and missile defense.

Term of the day

Wire Obstacle



In the military science of fortification, wire obstacles are defensive obstacles made from barbed wire, barbed tape or concertina wire. They are designed to disrupt or delay an attacking enemy. Depending on the requirements and available resources, wire obstacles may range from a simple barbed wire fence in front of a defensive position, to elaborate patterns of fences, concertinas, 'dragon's teeth' and minefields hundreds of metres thick.

One example is the 'low wire entanglement', which consists of irregularly placed stakes that have been driven into the ground with only some 15 cm (six inches) showing; the barbed wire is then wrapped and tightened on to these. An enemy combatant running through the barrier, which is hard to see, is apt to trip and get caught.

Wire obstacles first saw significant military use during the Second Boer War, and reached their pinnacle during World War I. Relatively elaborate obstacles were also used in some phases of the Korean War, and continue to be used on the Korean Demilitarized Zone, and a few other borders. However the more fluid nature of modern war means that most obstacles used today are relatively simple, temporary barriers.

Tanks can generally flatten unmined wire obstacles, although some are designed to stop vehicles, and the heavier obstacles can sometimes stop light armoured vehicles. Wire obstacles can also be breached by intense artillery shelling or Bangalore torpedoes.

Defence Industry

Armor Holdings, Inc. Receives $32 M Order for Pinzgauer Light Tactical Armored Vehicles

Armor Holdings, Inc., a leading manufacturer and distributor of military vehicles, vehicle armor systems and life safety and survivability systems serving military, law enforcement, homeland security and commercial markets, announced today the receipt of an order valued at approximately $32 million from the United Kingdom Ministry of Defence for additional Pinzgauer Protected Patrol Vehicles.

The Company stated that the new deliveries will be completed in 2007 with work performed at the Armor Holdings Aerospace and Defense Group's Pinzgauer facilities located in Guildford, Surrey UK, with vehicle armoring support to be provided by the Aerospace and Defense Group at its facilities located in Fairfield, Ohio.

It is the second order the UK Ministry of Defence has placed for additional Pinzgauer model armored vehicles in support of British deployed forces.

Contracts

Further Viking Armoured Vehicle Buy Will Protect UK Troops

The UK Ministry of Defence has awarded BAE Systems a contract for an additional 21 BvS10 Viking armoured all-terrain vehicles. The UK's Royal Marine Commandos took delivery of an earlier batch of 108 in July 2003.

The BAE Systems Hagglunds armoured all-terrain vehicles will be used for transporting equipment for the Watchkeeper unmanned aerial vehicle. Production deliveries will commence second half of 2008 with prototype vehicles being delivered at the end of 2007.

The Viking was selected due to its high load capacity, protection and mobility. Hagglunds' director for marketing and sales, Arne Berglund, says: "The performance, reliability and cost efficiency of the BvS10 is good news, both for the soldiers in the front line and the taxpayer."

Defence Industry

CAESAR and Stryker MGS Gaining Share of The Self-Propelled Artillery Market

The international market for self-propelled artillery remains a highly competitive and dynamic environment. In its annual analysis "The Market for Self-Propelled Artillery Systems," the Forecast International Weapons Group projects that the market will produce over 4,500 self-propelled artillery systems, worth more than $13.51 billion, through 2016.

Dean Lockwood, a weapons systems analyst at Forecast International, notes that most armies tend to rely on tried-and-true older designs, such as the classic BAE Systems Land & Armaments (formerly United Defense LP) M109 series. Newer designs tend to borrow liberally from this benchmark design. According to Lockwood, "Reflecting the basic design concept of the M109 style of self-propelled howitzer, the Samsung Techwin K9 Thunder program continues to stand out as the clear market leader." Forecast International expects the K9 Thunder (along with its licensed TUSpH Storm program in Turkey) to account for 19.17 percent of all self-propelled howitzer production worldwide, worth a commanding 28.24 percent of the market, through 2016.

Competing with the classic M109 design is the emerging class of wheeled designs, optimized for the rapidly deployable medium force option. Designs such as the General Dynamics Land Systems Stryker Mobile Gun System (MGS) and the Nexter (formerly Giat Industries) CAESAR offer the advantages of lighter weight and enhanced mobility, as well as lower production and maintenance costs. Lockwood notes that "over the past six years, our outlook for the combined market share of wheeled designs has grown steadily. We now expect the wheeled systems to account for 8.36 percent of all new production, worth 9.05 percent of the market, through 2016."

Normally, the Forecast International Weapons Group does not factor modernization and retrofit programs into market analyses, limiting its forecast calculations to new-production systems only. However, the Paladin is a unique case. Strictly speaking, the M109 is no longer a factor in this market in terms of new production. Yet, the U.S. Army's ongoing M109A6 Paladin rebuild program is so complete that the end system is virtually a new-production item. Lockwood explains that "for the purposes of our analysis, we treat the ongoing M109A6 Paladin rebuild effort as equivalent to a new production program." Forecast International is projecting that the M109A6 Paladin rebuild program will account for 6.62 percent of all new production, worth 1.12 percent of the market, through 2016.

Despite the uncertainties of the post-Cold War world, new threat scenarios, and transformational military doctrines, conventional tube artillery continues to offer an unmatched capability to reliably deliver accurate and effective fire under all conditions - when and where the infantryman needs it.

Contracts

U.S. Marine Corps Awards General Dynamics $44 M Contract for Expeditionary Fighting Vehicle Materials

The U.S. Marine Corps Systems Command in Quantico, Virginia, has awarded General Dynamics Land Systems, a business unit of General Dynamics , a $43.8 million contract for the delivery of Expeditionary Fighting Vehicle (EFV) spare parts and systems for developmental testing.

This contract is a modification to the existing Marine Corps' Systems Development and Demonstration (SDD) contract.

EFV

The Expeditionary Fighting Vehicle (EFV) possesses the ability to launch forces from 20-25 nautical miles out to sea and transport them to shore at speeds in excess of 20 knots (three times the current platform's speed). EFV provides the elements of flexibility and tactical surprise critical to establish battlefield dominance. Its inherent land mobility will generate uninterrupted momentum to attack the enemy's critical vulnerabilities.

Contracts

General Dynamics Receives $245 M for Mine-Protected Vehicle Work

Joint venture with Force Protection, Inc., shares $490 million program award

General Dynamics Land Systems, a business unit of General Dynamics, has received a work order for $244.5 million of a $490 million contract awarded to Force Protection, Inc. on April 24 to produce 1,000 vehicles for the U.S. Marine Corps' Mine Resistant Ambush Protected (MRAP) vehicle program.

Force Protection and General Dynamics have formed a joint venture, Force Dynamics, to share in the production and program management of the MRAP contact.

Contracts

Raytheon Awarded Contract to Develop Composite for Infrared Windows and Domes

The Defense Advanced Research Projects Agency has awarded Raytheon Company a two-year, $7.5 million contract to develop an improved composite material for infrared windows and missile domes.

The contract calls for the development of significantly enhanced materials and manufacturing processes compared to those currently in use for windows and aerodynamically shaped domes in the 3-5 micron mid-wave infrared band.

The Phase 1 contract is being performed for the Office of Naval Research as part of DARPA's Nano-Composite Optical Ceramics program. The objective is to develop a processing method for the manufacture of infrared transparent missile domes capable of higher speed operation and greater particle impact resistance than sapphire, the current material. If options are exercised in subsequent phases, the full program has a potential value of $14.4 million.

Phase 1 goals include achieving mid-wave infrared optical transmission exceeding that of spinel with mechanical properties greater than those of sapphire. These efforts will include the development of new classes of infrared materials for windows and domes based on multi-phase nano-composites designed to be substantially stronger than existing single-phase infrared materials.

Contracts

U.S. Army Awards General Dynamics $101 M for Additional Stryker Vehicles and Maintenance Support

The U.S. Army TACOM Life Cycle Management Command has awarded General Dynamics Land Systems, a business unit of General Dynamics, $101 million in two separate contracts for additional Stryker vehicles and support.

The first award, a contract modification valued at $42 million, is for 23 additional Stryker Command Vehicles (CVs). The Stryker CV is a mobile C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance) platform operating as a fast-moving, armored tactical operations center for the Stryker Brigade Combat Team.

The second contract, which is a modification of an existing delivery order, was awarded April 24, and is valued at $59 million. It covers parts and support for the

Stryker vehicle and remote weapon station system.

Training And Simulators

ATK Launches Force-on-Force Training System for Military and Law Enforcement Markets

MINNEAPOLIS -- Alliant Techsystems, has unveiled a new training system for military and law-enforcement markets. ATK's Force-on-Force training system uses a marker round that is fired from duty weapons equipped with special 9mm conversion kits, also developed by ATK.

The Force-on-Force training system is the most complete product line ever developed for military and law enforcement markets.

Using ATK's Force-on-Force system, trainees engage each other in realistic scenarios while wearing protective clothing that prevents injury, yet allows them to feel the impact if they are "shot" during the exercise.

"The accuracy and realism of ATK's Force-on-Force training system gives the military and law-enforcement communities a terrific new way to train and ensure they are prepared for the real-world situations they will encounter," said Mark DeYoung, President, ATK Ammunition Systems Group. "We developed our Force-on-Force training system after extensive consultation with the user community and firmly believe it will rapidly become a training system of choice for police departments across the country and in Europe, as well as fill a training role with our nation's military."

For added realism, ATK's Force-on-Force training round was developed by the company's engineers to be superbly accurate and create a muzzle flash when fired. ATK's Force-on-Force round is also the first of its kind to offer a completely lead-free propulsion system. This is an important consideration when training occurs in a confined indoor training facility.

In addition to the ammunition, conversion kits and clothing, ATK will provide professional training services and mobile "shoot houses" where Force-on-Force exercises can be conducted. Force-on-Force production will occur at ATK's facility in Anoka, Minnesota.

Contracts

U.S. Army Awards General Dynamics $14 M for Abrams Tank System Technical Support

The U.S. Army Tank-Automotive and Armaments Command on May 4 awarded General Dynamics Land Systems, a business unit of General Dynamics, a $14 million contract modification for Abrams tank system technical support (STS).

STS funds engineering studies on Abrams tanks with the purpose of identifying improvements and conducting the change-out of obsolete parts, while keeping Abrams main battle tanks current to their base configurations. The STS program's objective is to maintain Abrams tanks at high operational readiness rates.

Contracts

Armor Holdings, Inc. Receives $60 Million Armor Component Order for Up-Armored HMMWV

Armor Holdings, Inc., a leading manufacturer and distributor of security products and vehicle armor systems serving military, law enforcement, homeland security and commercial markets, announced today the receipt of new orders from AM General valued at $60.4 million under a blanket purchase agreement to provide armor components for the M1151, M1152 and M1165 Up-Armored HMMWV programs.

The Company stated that the work will be performed in 2007 by the Armor Holdings Aerospace and Defense Group at its facilities located in Fairfield, Ohio.

Armor Holdings has successfully transformed their business in Ohio to support high volume armor component production and remains committed to AM General's on-going effort to rapidly deliver the Up-Armored HMMWV in order to meet the demands of increased deployments.

Term of the day

Unconventional Warfare

Unconventional warfare (UW) is the opposite of conventional warfare. Where conventional warfare seeks to reduce an opponent's military capability, unconventional warfare is an attempt to achieve military victory through acquiescence, capitulation, or clandestine support for one side of an existing conflict. On the surface, UW contrasts with conventional warfare in that: forces or objectives are covert or not well-defined, tactics and weapons intensify environments of subversion or intimidation, and the general or long-term goals are coercive or subversive to a political body.

Unconventional warfare seeks to instill a belief that peace and security are not possible without compromise

or concession. Objectives include inducement of weariness, curtailment of civilian standards of living and civil liberties associated with greater security demands, economic hardship linked to the costs of war; hopelessness to defend against assaults, fear, depression, and disintegration of morale. The ultimate goal of this type of warfare is to motivate an enemy to stop attacking or resisting even if it has the ability to continue. Failing this, a secondary objective can be to emasculate the enemy before a conventional invasion.

Limited conventional warfare tactics can be used unconventionally to demonstrate might and power, rather than to substantially reduce the enemy's ability to fight. In addition to the coercive use of traditional weapons, armaments that primarily target civilians can be used: atomic weapons, urban incendiary devices, white phosphorus or other such weapons. Special forces, inserted behind an enemy's front line, can be used unconventionally to spread subversion and propaganda, to aid native resistance fighters, and to ultimately build environments of fear and confusion. Tactics of destroying non-military infrastructure and blockading civilian staples are used to decrease the morale of civilians and, when applicable, also the soldiers in the field through concern for their families. Globalization dissenters broadly criticise the managed-trade system as a planet-wide version of the blockading tactic of unconventional warfare.

UW is one of the nine core missions of U.S. Army Special Forces. The United States Department of Defense defines UW as a broad spectrum of military and paramilitary operations, normally of short duration, predominantly conducted by indigenous or surrogate forces who are organized, trained, equipped, supported, and directed in varying degrees by an external source. It includes guerrilla warfare and other direct offensive, low visibility, covert, or clandestine operations, as well as the indirect activities of subversion, sabotage, intelligence activities, and evasion and escape.

Contracts

Raytheon's MicroLight Radio Selected for U.K. Army's FIST Program Testing

Raytheon Company's MicroLight radio has been selected by the Thales Prime Contracting Management Office, acting on behalf of the United Kingdom Ministry of Defence, as the core communications system for the operational effectiveness trials in the assessment phase of the U.K.'s Future Integrated Soldier Technology, or FIST, program.

FIST is a tri-service program to enhance the combat effectiveness of infantry teams in the 21st century. MicroLight is a family of wideband, software-defined radios that simultaneously provide voice, data, video, situational awareness and tracking information.

The U.K. trials for FIST are a welcome opportunity to demonstrate MicroLight's ability to perform in the most challenging environments. In addition to being available now, MicroLight provides an ad hoc networking solution suited to the dynamic operations carried out by infantry soldiers engaged in close combat situations today.

Raytheon is partnering on FIST with Cobham Defence Communications. Cobham is providing the battle management system.

Raytheon Company, with 2006 sales of $20.3 billion, is a technology leader specializing in defense, homeland security and other government markets throughout the world. With a history of innovation spanning 85 years, Raytheon provides state-of-the-art electronics, mission systems integration and other capabilities in the areas of sensing; effects; and command, control, communications and intelligence systems, as well as a broad range of mission support services. With headquarters in Waltham, Mass., Raytheon employs 73,000 people worldwide.

Cobham plc, with 2005 sales of 1bn pounds sterling, is an international aerospace and defence company that specializes in the provision of components, subsystems and services that keep people safe, improve communications and enhance the performance of aerospace and defence platforms. With headquarters in Wimborne, Dorset, U.K., Cobham employs 10,000 people worldwide.

Term of the day

Situational Awareness

Situational awareness (SA) is the mental representation and understanding of objects, events, people, system states, interactions, environmental conditions, and other situation-specific factors affecting human performance in complex and dynamic tasks.

In terms of cognitive psychology, SA refers to the active content of a decision-maker's mental model or schema of his or her ongoing task situation, its purpose being to enable rapid and appropriate decisions and effective actions. Achieving and maintaining SA involves the acquisition, representation, interpretation and utilization of any relevant information in order to make sense of current events, anticipate future developments, make intelligent decisions and stay in control.

SA is now a key concept in human factors research, aviation, command and control, and indeed in any domain where the effects of ever-increasing technological and situational complexity on the human

decision-maker are a concern. Having complete, accurate and up-to-the-minute SA is considered to be essential for those who are responsible for being in control of complex, dynamic systems and high-risk situations, such as combat pilots, air traffic controllers, emergency responders, surgical teams, military commanders and the like. Lacking SA or having inadequate SA has consistently been identified as one of the primary factors in accidents attributed to human error.

Contracts

Patria AMV Platforms Selected in South Africa

The acquisition organisation of South African Ministry of Defence has signed a contract with the local defence manufacturer Denel Land Systems, a division of Denel Ltd for the new generation infantry combat vehicle programme. Patria has been selected to supply the vehicle platforms to Denel Land Systems, which also supplies the turrets for the vehicles.

The planned total scope of the programme covers the development, industrialisation and serial production of 264 wheeled infantry combat vehicles in 5 different versions. The contract covers the entire programme, but different phases of the programme will be ordered in phases. The first vehicles will be manufactured in Finland, after which the production will gradually be transferred to South Africa.

Patria has extensive co-operation agreements with South African companies. In addition to Denel, Patria works closely with Land Mobility Technologies Ltd concerning vehicle and logistic engineering and BAE Systems Land Systems South Africa Ltd concerning serial production and life cycle support of the vehicles. Patria will arrange extensive engagement of local working force, services and material purchases from local suppliers as well as other activities producing economic benefits for the local industry.

Patria AMV has outperformed in field tests fulfilling the toughest procurement requirements of modern defence forces. Patria will work in close co-operation with its South African partners to maximise the local content in the program. Patria's technology transfer program will bring considerable engineering, manufacturing and life cycle support capabilities to local industry working as suppliers of local components and services.

Defence Industry

Smiths Detection to Help Protect Swedish Defence Forces Against Chemical Warfare Agents

Smiths Detection, part of the global technology business Smiths Group, has been awarded a contract valued at almost GBP 2 million to supply its Lightweight Chemical Detectors (LCD) to the Swedish defence forces, under the country's Personal Chemical Detection programme.

The LCD is a compact, wearable detector designed to provide protection for troops and civil emergency personnel. It can detect a wide range of chemical warfare agents including nerve, blister, blood and choking agents as well as toxic industrial chemicals. Deliveries of the 450 LCD units plus communications and other accessories will commence this month.

The contract, which includes options for additional LCDs to meet future requirements, was awarded by FMV, the Swedish Defence Materiel Administration. FMV, an independent, civil authority that provides the Swedish armed forces with materiel and systems, carried out extensive trials on the LCD in extreme conditions ahead of the contract award.

Smiths Detection, is a world-leading provider of x-ray technology and systems that detect and identify chemicals, biological threats and explosives. The contract is a landmark in the international deployment of this advanced detector. The selection of Smiths Detection for the PCD programme is a testimony to the quality of the technology, engineering and manufacturing that were thoroughly tested during FMV's selection process.

Future Technologies

Raytheon Delivers Active Protection System Radar on Time, on Budget

Raytheon Company's Network Centric Systems has delivered the first two Multi-Function Radio Frequency System (MFRFS) radars for integration into the Quick Kill Active Protection System that Raytheon is developing for the U.S. Army.

MFRFS is a state-of-the-art, electronically-scanned, solid-state phased array radar system that can detect and

track a full spectrum of threats to current and future Army vehicles. These threats range from rocket propelled grenades fired at close proximity to more distant threats such as kinetic energy projectiles. In addition, MFRFS, the system selected as the common radar for Future Combat Systems (FCS) manned ground vehicles, is capable of supporting a number of radio frequency functions including surveillance, high- band secure communications and combat identification.

Delivery of the MFRFS marks an important milestone in the development of Raytheon's Quick Kill Active Protection System. MFRFS has achieved all milestones to date, and the company is confident it will be integrated successfully on current force platforms.