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Defence Industry

Study faults army vehicle use of transport in iraq puts troops at risk, internal report says

The Army has deployed a new troop transport vehicle in Iraq with many defects, putting troops there at unexpected risk from rocket-propelled grenades and raising questions about the vehicle's development and $11 billion cost, according to a detailed critique in a classified Army study obtained by The Washington Post.

The vehicle is known as the Stryker, and 311 of the lightly armored, wheeled vehicles have been ferrying U.S. soldiers around northern Iraq since October 2003. The Army has been ebullient about the vehicle's success there, with Gen. Peter J. Schoomaker, the Army chief of staff, telling the House Armed Services Committee last month that "we're absolutely enthusiastic about what the Stryker has done."

But the Army's Dec. 21 report, drawn from confidential interviews with operators of the vehicle in Iraq in the last quarter of 2004, lists a catalogue of complaints about the vehicle, including design flaws, inoperable gear and maintenance problems that are "getting worse not better." Although many soldiers in the field say they like the vehicle, the Army document, titled "Initial Impressions Report - Operations in Mosul, Iraq," makes clear that the vehicle's military performance has fallen short.

The internal criticism of the vehicle appears likely to fuel new controversy over the Pentagon's decision in 2003 to deploy the Stryker brigade in Iraq just a few months after the end of major combat operations, before the vehicle had been rigorously tested for use across a full spectrum of combat.

The report states, for example, that an armoring shield installed on Stryker vehicles to protect against unanticipated attacks by Iraqi insurgents using low-tech weapons works against half the grenades used to assault it. The shield, installed at a base in Kuwait, is so heavy that tire pressure must be checked three times daily. Nine tires a day are changed after failing, the report says; the Army told The Post the current figure is "11 tire and wheel assemblies daily."

"The additional weight significantly impacts the handling and performance during the rainy season," says the report, which was prepared for the Center for Army Lessons Learned in Fort Leavenworth, Kan. "Mud appeared to cause strain on the engine, the drive shaft and the differentials," none of which was designed to carry the added armor.

Commanders' displays aboard the vehicles are poorly designed and do not work; none of the 100 display units in Iraq are being used because of "design and functionality shortfalls," the report states. The vehicle's computers are too slow and overheat in desert temperatures or freeze up at critical moments, such as "when large units are moving at high speeds simultaneously" and overwhelm its sensors.

The main weapon system, a $157,000 grenade launcher, fails to hit targets when the vehicle is moving, contrary to its design, the report states. Its laser designator, zoom, sensors, stabilizer and rotating speed all need redesign; it does not work at night; and its console display is in black and white although "a typical warning is to watch for a certain color automobile," the report says. Some crews removed part of the launchers because they can swivel dangerously toward the squad leader's position.

The vehicle's seat belts cannot be readily latched when troops are in their armored gear, a circumstance that contributed to the deaths of three soldiers in rollover accidents, according to the report. On the vehicle's outside, some crews have put sand-filled tin cans around a gunner's hatch that the report says is ill-protected.

Eric Miller, senior defense investigator at the independent Project on Government Oversight, which obtained a copy of the internal Army report several weeks ago, said the critique shows that "the Pentagon hasn't yet learned that using the battlefield as a testing ground costs lives, not just spiraling dollars."

Asked about the report, Army officials who direct the Stryker program said they are working to fix some flaws; they also said they were unaware of some of the defects identified in the critique. "We're very proud of the Stryker team," said Lt. Col. Frederick J. Gellert, chief of the Army's Stryker Brigade Combat Team Integration Branch in Washington, but "it hasn't been something that's problem-divorced."

According to the latest Army figures, 17 soldiers in the Stryker combat brigade have died in Iraq in 157 bomb explosions, but no delineation is made for those who perished inside the vehicle and those who were standing outside it; an additional five soldiers have died in two rollovers. No current figure was provided for those who perished in grenade attacks, although one officer said he thought it was fewer than a handful.

Neither the lessons-learned report nor more recent Army data state how many soldiers have been wounded while inside the vehicle. The report states that in one case, a soldier was struck by shrapnel that penetrated both the vehicle's armor and his own body armor; in another case, an entire crew escaped with minor injuries after a vehicle sustained nine grenade hits.

The criticisms of the Stryker's first performance in combat seem likely to give new arguments to critics of the Army's decision in 1999 to move away from more heavily armored vehicles that move on metal tracks and embrace a generation of

lighter, more comfortable vehicles operated at higher speed on rubber tires.

Senior Army officers in Iraq, like those at the Pentagon, have been surprised by the intensity of hostilities there since mid-2003, and lately some officers have said they depend on heavy armor to protect their soldiers in urban warfare, even though tanks in Iraq have also suffered unexpected damage.

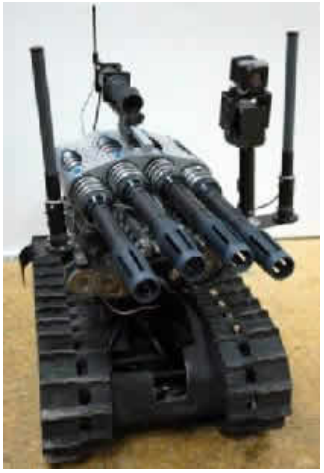
But Maj. Gen. Stephen M. Speakes, the Army's director of force development, said that when he rode in the Stryker for the first time, he "marveled at how much nicer it was" than riding in a Bradley vehicle or an older troop transport, the M113, which he likened to being inside an aluminum trash can being beaten by a hammer. He said the Stryker was "amazingly smooth" and quiet by comparison.

In a report completed at the time of deployment, the Pentagon's operational test and evaluation office rated the Stryker vehicles sent to Iraq "effective and survivable only with limitations for use in small-scale contingencies." Congressional auditors at the General Accounting Office in December 2003 said the first brigade "did not consistently demonstrate its capabilities, indicating both strengths and weaknesses."

Independent groups and a loose-knit group of retired Army officers who dislike the Stryker vehicle have alleged that the Stryker's 2003 deployment was motivated partly by the desire of the Army and the manufacturer, General Dynamics, to build congressional support for buying additional brigades. But Speakes said that was nonsense and that the brigade was deployed in Iraq simply because the Army needed it.

Defence Industry

Metal Storm 'On Target' with Live Fire Demonstrations in US



Metal Storm has successfully completed a series of live fire demonstrations held at the US Army's range facility at Picatinny Arsenal in New Jersey.

The demonstrations consisted of multiple live firings of a purpose-built version of the Metal Storm 40mm weapon system mounted on a Talon unmanned ground vehicle (UGV). During the demonstrations approximately 100 guests saw the Metal Storm equipped Talon engage a variety of targets, including simulated personnel, an infantry carrier and a bunker, with pyrotechnic rounds.

The purpose of the demonstration was to showcase the technical and operational capabilities of the Metal Storm 40mm weapon system combined with a robotic platform currently in use by the US military. The demonstrations were attended by senior scientific and technical personnel from the US Department of Defense as well as selected defense industry representatives.

The Metal Storm 40mm weapons system employed in the demonstrations was a specially designed 4 barrel array loaded with 4 rounds per barrel and utilizing significant design and engineering improvements, including improved cartridge reload and recoil management systems. It also incorporated an optical targeting system integrated with a purpose-designed mount which provided 2-axis control, stability and accuracy in aiming and operating the weapon.

Metal Storm's Chief Executive Officer, Mr. David Smith, said the demonstrations had achieved their objective in generating a positive response from key defense industry personnel. "Our system performed extremely well and we are delighted with the positive feedback and interest expressed by those attending. We already have a number of new potential opportunities under discussion as a result of the demonstrations and our technical staff has gathered very valuable data on the performance of the system. This is the outcome we were aiming for." he said.

The demonstrations were held as part of a Cooperative Research and Development Agreement (CRADA) that the US Army Armament Research, Development and Engineering Center (ARDEC) has with Metal Storm. Under the terms of this agreement, Metal Storm develops rapid fire weapons technology while ARDEC demonstrates and evaluates such technology for potential US Army use.

Personnel from the Medium Caliber Ammo Branch of ARDEC attended the live fire demonstrations to observe the functionality of the system. Under the CRADA they will be working with Metal Storm on the development of a range of munitions for use in the Metal Storm 40mm weapon system.

The live fire demonstrations at Picatinny Arsenal did not include firings from the Dragonfly DP4X unmanned aerial vehicle (UAV) as previously planned because of operational restrictions on the range which prevented in-flight live fire trials being possible. Arrangements are currently being made for in-flight test-firings and demonstrations to be held in the next few months at another location.

Defence Industry

British Ministry of Defence places major order with MAN Nutzfahrzeuge

Following successful contract negotiations with the

British Ministry of Defence (MoD) MAN ERF UK Ltd has been awarded an order for just under 5200 trucks.

Following successful contract negotiations with the British Ministry of Defence (MoD) MAN ERF UK Ltd has been awarded an order for just under 5200 trucks.

The contract is worth € 1.5 billion and also provides for an option for approximately 2100 further vehicles. Deliveries of the vehicles will commence in 2007 and be completed in 2013. In October of last year MAN ERF UK Ltd was given the status "Preferred Bidder", thereby beating three international competitors.

The vehicles are models from the high-mobility off-road ranges HX and SX with two and three/four axles respectively. The chassis will be assembled at the Vienna plant of MAN Nutzfahrzeuge Osterreich AG in Austria. The order ensures a continuous workload for the Vienna plant and thus helps to safeguard jobs. The high local content of the vehicles comes from the bodies, which will be completely produced in the UK. The local body manufacturers involved include Marshall SV Ltd, EKA, Fluid Transfer, Andover Trailers and Atlas Cranes.

This year MAN Nutzfahrzeuge is celebrating 90 years in military vehicle production. Right from the start the armed forces with their specialised requirements relating to the engineering of the vehicles were among the company's customers. Military vehicles from MAN are in operation in more than 65 countries. The high-mobility SX and HX ranges were developed specifically for off-road use in the military sector. They prove themselves in civilian duties too, however, for example in disaster relief or as expedition vehicles.

Future Technologies

GM Delivers First Fuel Cell Truck to U.S. Army

HONEOYE FALLS, N.Y. --- General Motors Corp. and the U.S. Army today announced they are partnering to introduce the world`s first fuel cell-powered truck into U.S. military service.

The U.S. Army took delivery of the crew cab pickup at the GM research facility outside of Rochester, NY, where the vehicle`s two fuel cell power modules were made. Marking the occasion was Sen. Hillary Rodham Clinton (D-NY), who was instrumental in securing the funds in the 2005 Department of Defense appropriations on behalf of GM`s experimental truck." "The work that GM is doing here in Honeoye Falls represents extraordinary promise for New York State and indeed the entire nation.

Securing the funds to make this project possible was a critical step in the right direction. I`m thrilled to have helped and been able to play a role in today`s announcement," said Senator Hillary Rodham Clinton. The modified Chevrolet Silverado is equipped with two 94 kW fuel cell stacks, capable of generating 188 kW and 317 foot-pounds of torque, or roughly the motor torque generated by GM`s 5.3 liter V-8 engine. "Fuel cell vehicles are a good match with U.S. Army goals," said Elizabeth A. Lowery, GM`s vice president for Environment and Energy. "We are committed to the development of new technologies that will improve fuel consumption and reduce vehicle emissions.

Fuel cell systems are both clean and quiet, and therefore, can provide a battlefield advantage. "Our partnership with the U.S. Army will familiarize the military with the next-generation of commercially-developed fuel cell technology, will help us drive down costs, create potential for future joint development of fuel cells and promote the development of a hydrogen infrastructure." The U.S. Army has the largest fleet of vehicles in the world. Improving fuel economy and reducing the logistics of the fuel supply chain could save millions of dollars. For example, it cost the U.

S. Army up to $400 a gallon of gas to ship fuel to Iraq and Afghanistan. GM has a history of working with the military on their transportation needs. The automaker produces more than half of the non-tactical military vehicles purchased each year. The U.S. Army will evaluate the experimental truck until July 2006 at an Army base in Ft. Belvoir, Va. The vehicle will be used to deliver packages but will not be used in combat. Rigorous testing is planned in different climates and locations around the U.S. to assess performance and give the military first-hand experience with hydrogen and fuel cells.

Despite weighing 7,500 pounds, the GMT800 accelerates in a similar fashion to a V-8 powered production truck, but produces no tailpipe emissions. Fuel cells chemically convert hydrogen into electricity and water. Three 10,000 psi compressed hydrogen storage tanks, provided by Quantum Technologies, will provide a range of 125 miles, even though the vehicle was not optimized for range. General Motors Corp., the world`s largest automaker, has been the global industry sales leader since 1931. Founded in 1908, GM today employs about 324,000 people around the world. It has manufacturing operations in 32 countries and its vehicles are sold in 200 countries.

In 2004, GM sold nearly 9 million cars and trucks globally, up 4 percent and the second-highest total in the company`s history. GM`s global headquarters are at the GM Renaissance Center in Detroit.

Defence Industry

RAFAEL supplies armored WOLVES to the IDF

The Israel Ministry of Defense has confirmed it has

placed an order for the WOLF, Light Armored Vehicle (LAV). RAFAEL Armament Development Authority Ltd, designer of the WOLF, will act as prime contractor with the "Hatehof" company serving as main subcontractor.

The contract is valued at about $14M.

The WOLF is a multi-purpose LAV built on the frame of a 4X4 commercial vehicle with an automatic gearbox. The armor envelope is built independently from the chassis, so it is possible to use the same armor envelope on another chassis (of the same model) when the chassis goes out of service. By modifying the interior section of the WOLF, it is possible to change the function of the vehicle; i.e. to an ambulance, rescue vehicle, logistics or command vehicle.

The WOLF is intended to replace the IDF's existing light, logistic, troop transport vehicles such as the Command Car. It will provide improved safety and protection to those troops being transported.

The production of the WOLF will take place mainly at "Hatehof" in Israel and at "Force Protection" in the US, owing to their special expertise in vehicle manufacturing. The combined production in Israel and the US enables, on the one hand, greater employment possibilities in developing areas within Israel and the use of FMF funds on the other.

Army

Nato Sees U.S. Military Changing Strategy

STUTTGART, Germany - U.S. forces stationed in Europe will increasingly shift their stance toward Africa and the former communist countries in eastern Europe as they move to counter terror threats in those areas, the top European commander said.

Marine Gen. James. L. Jones, who serves as NATO supreme commander and the head of the U.S. European Command, outlined changes to transform the 60-year U.S. military presence on the continent during an interview Friday with the Associated Press.

"The difference between the EUCOM of the 20th century - which I regard as the Cold War century - and the EUCOM of the 21st century is the family of threats that it faces, ranging from terrorism to radical fundamentalism to narcoterrorism to illegal trafficking of all sorts," Jones said at EUCOM headquarters in Stuttgart.

European Command, or EUCOM, isn't directly involved in operations in Afghanistan and Iraq, but plans to consolidate forces and shift them further south and east are in direct response to the threats developing from those conflicts.

Many of the changes, like consolidating different Army headquarters under one roof in Wiesbaden, are simply a continuation of post-Cold War cutback that began in the 1990s following the collapse of the Soviet Union.

But deeper changes are on the way, as the U.S. looks less to large, fixed bases like those it has had for decades in Germany, to smaller, more bare-bones installations where troops could be moved quickly for training or to deal with a crisis.

Of the currently 112,000 military personnel stationed in Europe, only about 40 percent are expected to remain on five main bases, most of them in Germany.

The large air bases at Ramstein and Spangdahlem, as well the nearby support community of Kaiserslautern, will remain hubs. The Army will concentrate on existing posts in Wiesbaden and Grafenwoehr. EUCOM headquarters will remain in Stuttgart, while both the Army and Air Force will remain in Aviano, Italy.

But increasingly the focus is shifting toward Africa, seen as a potential haven for Islamic extremists who have been ousted from places like Afghanistan.

Already five such agreements exist with countries in Africa, including the predominantly Muslim nations of Algeria, Morocco and Tunisia.

In Europe, the focus in increasingly turning to the new NATO members of the former Warsaw Pact. A special Eastern Europe Task Force would involve rotating troops on a regular basis for training exercises, including some with local militaries.

Bases in Bulgaria and Romania, both of which hosted the U.S. military during the Iraq war, have been earmarked to host forces, but would differ from those in Germany in that they would offer only skeletal infrastructure and no families would accompany troops there on their tours of duty.

Defence Industry

Russia Slams Planned Siemens Stake in Strategic Company

Russia's parliament on April 8 passed almost unanimously a resolution warning the government against plans to allow German industrial giant Siemens to purchase a controlling stake in the strategic engineering company Silovye Mashiny.

"Selling a controlling share in Silovye Mashiny (Power Machines) could lead to an inability to meet the state's military procurement orders and the spread of secrets," the resolution in the lower house of parliament, the State Duma, said.

Nikolai Pavlov, a deputy of the nationalist Rodina party, said: "The sale of Silovye Mashiny must not be allowed."

The vote, passed by a 377-1 vote with one abstention,

came on the eve of a visit by President Vladimir Putin to Germany.

Silovye Mashiny mostly makes energy equipment, but some of its plants also produce parts for the Russian defense sector, including the nuclear fleet.

In addition to national security concerns, such a sale could prompt domestic energy price rises, the deputies warned.

Siemens and the Russian holding Interros, current owner of Silovye Mashiny, announced last July an agreement to create a joint venture that would control about 71 percent of the Russian turbine manufacturer.

The deal was announced at a meeting between Putin and German Chancellor Gerhard Schroeder, but it has yet to win an all-clear from Russia's anti-monopoly authorities.

On Wednesday, Russia's economic development minister, German Gref, gave his backing, saying that Siemens had promised 250 million euros ($323 million) in investments.

Defence Industry

RTI Announces Titanium Howitzer Goes into Full Production

NILES, Ohio --- RTI International Metals, Inc., announced today that the M777A1 titanium howitzer program has begun full rate production. BAE Systems, the prime contractor, has received an $834 million contract to supply the Army and Marines with 495 M777A1 lightweight howitzers over the next four years.

The award follows the development and production of 94 guns under a low rate initial production contract. RTI is the principal titanium supplier to the program, providing not only mill products, but also kitted titanium components utilizing its facilities in Houston and the U.

K. With the majority of the gun`s components made of titanium, the M777A1 is 7,000 pounds lighter than the system it replaces. RTI International Metals, headquartered in Niles, Ohio, is one of the world`s largest producers of titanium. Through its various subsidiaries, RTI manufactures and distributes titanium and specialty metal mill products, extruded shapes, formed parts and engineered systems for aerospace, industrial, defense, energy, chemical and consumer applications for customers around the world.

Defence Industry

LynuxWorks Selected as Embedded Operating System Vendor for Army`s Future Combat Systems Program

SAN JOSE, Calif. --- LynuxWorks Inc. today announced it was chosen as the embedded operating system vendor by General Dynamics Advanced Information Systems for the U.S. Army`s Future Combat Systems (FCS) program`s Integrated Computer System (ICS).

Under terms of the contract, LynuxWorks` Linux-compatible LynxOS-178 safety critical real-time operating system (RTOS) will be used to meet the performance and reliability needs of the FCS, a family of advanced, networked air- and ground-based military systems for use by the Army`s Future Force. As the command, control, communications, computing, intelligence, surveillance and reconnaissance (C4ISR) infrastructure used across all FCS platforms, General Dynamics` ICS will provide computer processing, networking, information assurance, and data storage resources necessary to support the network-centric operations of FCS.

A Linux-compatible, open standards operating system is required to meet the Army`s needs for real-time information and safety-criticality. LynuxWorks enables developers to easily move FCS applications between those that have been developed for standard Linux environments and those targeted for embedded RTOS platforms with no costly or lengthy porting process. In addition, FCS`s developers can utilize LynuxWorks` Luminosity, a Linux, Windows and Solaris-based integrated development environment (IDE) powered by the open source Eclipse IDE platform, giving developers complete control over creating, editing, compiling, managing and debugging C/C++, Ada and Java embedded and real-time applications.

"Open standards are critical to the architectural approach of the ICS," said Bob Morris, vice president of sales and marketing, LynuxWorks. "With Linux binary compatibility and POSIX conformance, LynuxWorks` LynxOS-178 will help facilitate the affordable, rapid deployment of advanced technology to increase interoperability across the FCS program." The FCS program is moving toward Linux conformant development to create one common, unified Army platform for various applications and services. With the

use of POSIX conformant and Linux compatible software, the Army has enhanced flexibility, as well as assurance that future technology insertions and enhancements occur seamlessly.

"This contract not only represents a significant milestone for our company but also for the open standard embedded software movement," said Dr. Inder Singh, CEO and chairman of LynuxWorks. "Linux is rapidly becoming the leading de-facto open standard embedded platform in both military and commercial systems requiring a high degree of interoperability and software reuse. Our unique product strategy provides common Linux compatible and POSIX conformant software interfaces across our entire technology portfolio as well as a single common Eclipse-based development environment, all of which provide a powerful solution for network-centric warfare programs across military services.

I am confident that LynuxWorks will continue to meet the unique needs for next-generation defense systems." General Dynamics Advanced Information Systems, headquartered in Arlington, Va., is a leading provider of transformational mission solutions in command, control, communications, and computers, intelligence, surveillance and reconnaissance. Customers include those in the defense, intelligence, homeland security and homeland defense communities. LynuxWorks is a world leader in the embedded software market, providing operating systems, software development products and consulting services for the world`s most successful communications, aerospace/defense, and consumer products companies.

Established in 1988, the company is a technology leader in the real-time operating systems (RTOS) industry, and a founding member of the Embedded Linux Consortium (ELC). LynuxWorks` headquarters are located in San Jose, California.

Defence Industry

Czech Government Approves Major Military Order

The Czech government on April 13 gave the green light to the purchase of as many as 234 armored personnel carriers, in what will probably be the military's largest contract to date, a government spokesman said.

The Czech government on April 13 gave the green light to the purchase of as many as 234 armored personnel carriers, in what will probably be the military's largest contract to date, a government spokesman said.

The contract is expected to cost approximately 20 billion koruna (669 million euros, $861 million), spokesman Jindrich Marek said, adding the Defense Ministry would announce a tender by the end of April.

According to Deputy Defense Minister for Armaments Jaroslav Kopriva, the first machines could be delivered in two years.

The Defense Ministry will commit to ordering 199 APCs with the option of buying another 35 according to the military's needs, and it will take four to five years to acquire all the machines, he added.

According to Czech news agency CTK, however, only three types of machines meet the military's demands: the Piranha, built by the Swiss firm Mowag, the Pandur made by Austrian firm Steyer-Daimler-Puch and Finland's Patria.

The new machines will have to meet certain criteria and will have to be able to be transported in large transport planes as the military wants to use them in foreign missions.

A purchase of 243 APCs for 25 billion koruna was originally planned, but delayed in light of heavy criticism from opposition politicians.

The new APCs will replace the OT-64s that have been used by the military over the last 40 years.

Robots

United Defense Awarded $30.9 Million Army Contract to Develop and Integrate Robotic Technologies for Armed Vehicles

Competitive win follows FCS Armed Robotic Vehicle and Marine Corps Gladiator awards.
SANTA CLARA, CA, April 14, 2005 - United Defense Industries, Inc. (NYSE: UDI) continues to expand its role in unmanned ground vehicle programs and technologies with the award of a $30.9 million U.S. Army Tank-Automotive Research, Development and Engineering Center (TARDEC) Science and Technology Objective (STO) contract.

Under the ARV Robotics Technology (ART) STO contract – awarded by the Army's Tank-automotive and Armaments Command (TACOM) United Defense will integrate state-of-the-art unmanned platform technologies leveraged from Army and commercial developments into a representative Future Combat Systems (FCS) ARV platform, and support experimentation and testing of these systems during demonstrations. The platform demonstrators will be used by the ART program as a step toward transitioning ART technologies into the FCS ARV System Development and Demonstration effort.

"We are pleased that TARDEC selected the United Defense approach as the best solution to further unmanned ground vehicle system technologies for ARV," said Buck Tanner, Unmanned Ground Vehicle Program Manger for United Defense Ground Systems Division. "Unmanned ground vehicles will bring a new dimension to the warfighting effectiveness of units of action by providing them with a capability they do not have today. We are committed to furthering technologies that will bring these capabilities to soldiers as soon as possible."

In September 2003 United Defense was selected by the FCS Lead System Integrator to design and develop two Armed Robotic Vehicle (ARV) variants that will reduce soldier exposure in high vulnerability reconnaissance and assault missions. The ARV-RSTA variant will provide Reconnaissance, Surveillance and Target Acquisition for the FCS Units of Action, while the ARV-Assault variant will provide direct and indirect fires under remote control in support of mounted and dismounted operations.

In February, Carnegie Mellon University's National Robotics Engineering Consortium (NREC) and United Defense were selected by the U.S. Department of Defense's Joint Program Office for Robotic Systems to design, develop and produce the Gladiator tactical unmanned ground vehicles (TUGV) for the U.S. Marine Corps. Gladiator will provide the Marines with a tele-operated unmanned ground vehicle for remote combat tasks, increasing survivability by identifying and neutralizing threats and reducing risk to troops

Under the ART-STO, United Defense will focus on tactical mission behaviors to reduce soldier operational burden and interaction, semi-autonomous perception to enhance operations in unfavorable conditions, mobility systems that match manned ground vehicle operating tempos, survivability technologies that secure vehicles against certain threats, and embedded diagnostic systems specific to unmanned systems.

The program will include the delivery of an ART vehicle demonstration platform that is autonomously controlled through an advanced mobility suite, and features a suite of reconnaissance, surveillance and target acquisition (RSTA) sensors. Weapon systems, security systems, advanced tactical behaviors software, and a diagnostic/prognostic suite will be integrated in the demonstrator.

Experiments are planned for September 2006 and March 2008 to demonstrate the robust nature of the technologies. United Defense will also deliver an ART simulation and integration laboratory (SIL) at the conclusion of the second experiment.

Industry subcontractors to United Defense include General Dynamics Robotics Systems (GDRS) and Omnitech Robotics International (ORI).

Defence Industry

EADS Supplies Software for Army Command and Control Information System

KOBLENZ/FRIEDRICHSHAFEN, Germany -- EADS is to supply the German army with software valued at EUR 23 million for its modern "army command and control information system" (FüInfoSys Heer), a system designed to equip the army with a comprehensive range of highly mobile battlefield and command-post facilities over the next few years.

This is a major step towards enhancing the army's command strength while satisfying both the new NATO requirements and the German army's extended range of missions. The new system will be introduced from 2007 onwards, starting with the army's active units.

It will help to create an integrated control structure encompassing all levels of military command, from the division echelons right down to troop level, thus enhancing the army's capacity for network-centric operations. The army command and control information system represents a major contract for EADS, securing jobs at the EADS Friedrichshafen/Immenstaad site for a long time to come, and upholding core skills in this area of defence technology. The Defence and Communications Systems (DCS) Business Unit is the "Systems House" of EADS and is an integrated part of the EADS Defence and Security Systems Division (DS).

DS, with revenues of about EUR 5.2 billion in 2003 and roughly 24,000 employees across nine nations, forms the defence pole within EADS. It offers integrated systems solutions to the new challenges confronting armed forces and homeland security units. It is active in the areas of military aircraft, missile systems, Intelligence, Surveillance and Reconnaissance (ISR) systems with manned and unmanned aerial vehicles (UAVs), battlefield management systems, defence electronics, sensors and avionics, and related services.

Training And Simulators

Kharkiv Morozov Machine Building Design Bureau offers a new training system

Ukrainian enterprise - SOE KMDB - offers a new training system for the personnel of armoured equipment - mobile crew simulator.
The mobile simulator can be a universal means for

training of the armoured equipment personnel.

Owing to original design of the dynamic platform, the designers managed to mount two dynamic simulators with all the requisite systems in a standard 20-foot marine container.

One of them being the driver's simulator, whereas the second one – for the turret crew (commander and gunner). Thus, the complete tank or infantry fighting vehicle crew simulator is mounted inside one container.

It can be transported by any means, designed for transportation of 20-foot containers, and it can be activated for operation and vice versa within the shortest possible time. Up to 20 simulators can be connected in the network for joint elaboration of tactical tasks within one virtual test range. Its serviceability both in stationary conditions of the specialised training centres and in field conditions is ensured by independent power supply source.

All these facilities make it possible to use such simulators not only for training, but also for maintaining of the crew skills and their preparation for fulfilment of particular combat operations at the units permanent places of disposition.

The use of mobile simulators allows to solve a wide range of training tasks – starting with driving training and firing - to practical solution of tactical tasks of the company level, and without deceasing the quality of training, to considerably reduce its terms and cost several-fold.

The Morozov KMDB has been engaged for many years in developing of various training systems for the armoured equipment and supplied them both to the Ukrainian army and to armies of some other countries.

Defence Industry

New Bushmaster Vehicles to Be Deployed to Iraq

Up to 10 new Bushmaster vehicles will be deployed to southern Iraq with the Al Muthanna Task Group to provide additional transport protection for ADF personnel.

Defence Minister Robert Hill said the state-of-the-art vehicles will be used to provide enhanced protection to logistic personnel deployed to the southern province this month. "The Bushmasters will be in addition to the 40 ASLAVs drawn primarily from 1st Brigade in Darwin," Senator Hill said. "The Army`s new Bushmaster vehicles are currently being prepared for deployment and are expected to be loaded for transport to Iraq later this month.

This will be the first operational deployment for the vehicles, although an earlier version was trialed in East Timor. "The vehicles are designed to transport troops and provide protection against mortars and small arms ammunition. They have also been designed to deflect the effects of a landmine explosion, providing a high level of protection to soldiers on the battlefield. "The Bushmasters on the Iraq deployment will also be fitted with enhanced protection against fragmentation. "ADI and the Defence Materiel Organisation have worked hard and consistently over three years to produce a good vehicle that is Australian designed and manufactured and that Army has great confidence in.

" Each vehicle is being fitted with a weapon station capable of mounting the Army`s light machine guns. The Bushmaster can maintain speeds in excess of 90 km/h on Australian roads with a range of more than 500km carrying nine infantry soldiers.

Contracts

General Dynamics Awarded $138 Million for 99 Additional Stryker Combat Vehicles

STERLING HEIGHTS, Mich. - The U.S. Army TACOM Life Cycle Management Command has awarded General Dynamics Land Systems, a business unit of General Dynamics (NYSE: GD) a delivery order valued at $138 million for 99 additional Stryker combat vehicles.

The vehicles will be used to meet Army materiel requirements. This increases the Army's Fiscal Year 2005 Stryker procurement from 576 to 675 vehicles; deliveries will begin in 2006 and continue through 2007.

The vehicles are part of a $4 billion contract awarded in November 2000 to equip the Army's new Stryker Brigade Combat Teams with more than 2,100 Stryker armored vehicles. To date, more than 1,000 Strykers have been delivered.

Stryker Brigade Combat Teams have operated successfully in Iraq since October 2003, demonstrating the value of a force that can move rapidly as a cohesive combined-arms combat team. The armored vehicles enable Stryker Brigade Combat Teams to maneuver easily in close and urban terrain, while providing protection in open terrain. Performance highlights include C-130 transportability; networked command,

control, computing and communications, intelligence, surveillance and reconnaissance (C4ISR) capability; integral 14.5mm armor protection and 152mm artillery airburst protection; self-deployment and self-recovery capability; reduced vehicle acoustic signature; ability to carry a nine-man infantry or engineer squad; and bunker and wall breaching capability.

Stryker is the Army's highest-priority production combat vehicle program and the centerpiece of the ongoing Army Transformation. The Stryker family of eight-wheel-drive combat vehicles can travel at speeds up to 62 mph on highways, with a range of 312 miles. Stryker vehicle configurations include carriers for mortars, engineer squads, infantry squads, command groups, and fire support teams; a nuclear, biological and chemical reconnaissance vehicle; anti-tank guided missile and medical evacuation vehicles; and the Mobile Gun System, a 105mm cannon mounted in a low-profile turret that is integration into the Stryker chassis.

Future Technologies

United Defense Fires 1,000th Round from Non-Line-of-Sight Cannon Demonstrator

Defense Industries, Inc. (NYSE:UDI) announced it has fired the 1,000th projectile from the Non-Line-of-Sight Cannon (NLOS-C) Concept Technology Demonstrator (CTD) at Yuma Proving Ground near Yuma, Ariz.

The NLOS-C is the lead indirect fire support system of the Army's Future Combat Systems (FCS) Program and one of eight Manned Ground Vehicles being developed for FCS. The CTD is a first look at what Army platforms of the future could be and it provides a starting point for the design and development of NLOS-C prototypes during the System Development and Demonstration Phase of FCS.

The development schedule for FCS calls for the first NLOS-C Increment 0 prototype to be delivered by 2008. This latest firing milestone achieved by the NLOS-C Demonstrator confirms that the NLOS-C's development is on schedule.

"Urban and open combat experiences in Iraq and Afghanistan have reconfirmed that our ground forces depend on cannon artillery," said Jim Unterseher, director of Army Programs at United Defense. "The finger-tip firepower proven by the NLOS-C CTD is a leap ahead in cannon artillery responsiveness, lethality and mobility. This latest milestone is another indication that the next generation of cannon artillery has arrived and could be in the hands of our soldiers very quickly."

United Defense designed and fielded the CTD in just six months by using Crusader technology and other existing components. The CTD consists of a BAE M777 39-caliber, 155-mm howitzer integrated onto a 20-ton class platform that features a fully automated ammunition-handling system. The CTD also features a magazine capable of holding 24 cannon projectiles, and a chassis that uses band tracks propelled by a drive system with a diesel engine and hybrid-electric propulsion system designed to improve mobility and reduce fuel consumption.

Since the CTD's first round was fired in August 2003, the system has achieved numerous milestones and has proven the viability of integrating a 155-mm howitzer onto a 20-ton class self-propelled platform.

In November 2003, United Defense incorporated tactical software into the CTD to integrate its robotic ammunition handling and auto-loading systems to create a fully automated 155-mm cannon system that enables a two-person crew to achieve what currently takes five soldiers to accomplish on the battlefield. Within a month following integration, United Defense used the tactical software to successfully complete an eight-round fire mission at a rate of six rounds per minute, marking the first time a fully-automated cannon had been fired using tactical software.

Throughout 2005, United Defense will integrate new, lighter weight FCS cannon components and continue to refine and test the CTD at Yuma Proving Ground and incorporate data from the testing and development into the objective design for the Future Combat System NLOS-C.

Defence Industry

Singapore Military Mulls Using SUVs To Trim Costs

Singapore's military is considering using commercial sports utility vehicles (SUVs) to replace its current fleet of custom-built Land Rovers in a bid to trim costs, the defense ministry (Mindef) said April 20.

"Mindef can confirm that there are plans to replace the existing Land Rovers with commercial off-the-shelf all-wheel drive vehicles," a spokesman told Agence France-Presse, confirming a report in the Straits Times newspaper.

"Many of such vehicles are able to negotiate difficult cross-country terrain and achieve remarkable off-road performance so this narrows the gap between commercial vehicles and military-spec vehicles in terms of maneuverability and mobility," he said.

The spokesman added many of the commercial vehicles under consideration by Mindef are "sold at very competitive prices".

To cut costs further, the military is considering a scheme under which the SUVs will be owned and maintained by the private sector but can be mobilized in

times of emergency or war, the spokesman said.

A second option being explored is leasing out the vehicles to the private sector, he added.

The spokesman declined, however, to say how much the military could save by using commercial SUVs or how many Land Rovers it owns. The Straits Times report said the military has about 3,000 Land Rovers.

Singapore's defense ministry has the biggest share of spending among all government ministries.

In the current fiscal year to March 2006, it has a budget of 9.26 billion Singapore dollars ($5.6 billion) which accounts for 31.2 percent of the 29.68-billion-dollar national budget announced by the government in February.

Contracts

Armor Holdings, Inc. Awarded $31.1 Million for Heavy Truck Armoring

JACKSONVILLE -- Armor Holdings, Inc., a leading manufacturer and distributor of security products and vehicle armor systems serving law enforcement, military, homeland security and commercial markets, announced today that it has received a modification valued at $31.1 million to an existing contract to provide add-on-armor for various types of heavy trucks for the U.S. Army.

The new award was made by the U.S. Army Tank-automotive and Armaments Command for delivery of vehicle armoring in 2005, and includes an option for additional quantities. Work under this contract will continue to be performed by Armor Holdings` facilities in Phoenix, Arizona.

Robert Schiller, President and Chief Operating Officer of Armor Holdings, Inc., said, "We are extremely proud of our success over the past six months in accelerating delivery of heavy truck armor kits which have contributed significantly to soldier safety in these vehicles. We are very pleased to receive this new order for additional quantities of add-on-armor to continue production in support of our troops in Iraq and Afghanistan."

Contracts

$15 Billion Contract in Jeopardy

The Pentagon has warned Boeing Co. that it might terminate the company's contract to replace the more than 100,000 radios in Army vehicles and helicopters, a $15 billion program considered critical to the Army's modernization program.

The program is the first part of the Joint Tactical Radio System that was described in a congressional hearing last month as key to the Army's $124 billion Future Combat Systems, a series of air and ground vehicles, manned and unmanned, connected by wireless computers. The Future Combat Systems program is also managed by Boeing.

The radio program, whose cost is separate from that of Future Combat Systems, was to deliver radios that can operate on all military frequencies and give soldiers wireless connections to transmit video, data and voice communications while on the move. The military now uses 22 types of radios, which operate on different frequencies and often cannot communicate with one another.

"The government wants to avoid termination if at all possible," said Lt. Col. Ellen G. Krenke, a Pentagon spokeswoman. But "the department has concerns about the contract and the progress being made by Boeing ... The show cause [letter] provides notification that the government is considering terminating the contract due to Boeing's anticipated failure to meet cost, schedule and performance requirements."

"This is not routine correspondence," said Steven L. Schooner, a government-contracting expert at George Washington University. "The general purpose of the letter is to put the contractor on notice that the government is considering canceling the contract for default; and default termination is a draconian solution. ... Most of the time ... this is a shot across the bow, this is a legal predicate to them taking the termination action."

Last month the Government Accountability Office said the program began in 2002 with "an aggressive schedule, immature technologies, and lack of clearly defined and stable requirements." The GAO said the program could be delayed two years and require an additional $458 million. If the radios are not ready for the first phase of the Future Combat System in 2008, "surrogate radios may be needed to fill the gap," the GAO said.

In January, the Pentagon told Boeing to stop building the radios until the technology could be tested. The military found that radios powerful enough to carry the desired amount of data would have to be bigger and heavier. The Army also wanted to add security features.

Chicago-based Boeing said it received the letter, which gives the company 30 days to respond. "We are working with our customer to fully understand those concerns in order to prepare a comprehensive response in accordance with the government's request," the company said in a written statement.

Contracts

General Dynamics Awarded $62.5 Million for Abrams Integrated Management Materials

STERLING HEIGHTS, Mich. --- The U.S. Army TACOM Life Cycle Management Command has

awarded General Dynamics Land Systems, a business unit of General Dynamics, a $62.5 million contract for the material associated with the production of 75 Abrams Integrated Management (AIM) tanks.

Initial funding authorized under the contract was $31.25 million. AIM is a joint effort to refurbish M1A1 Abrams main battle tanks involving the U.S. Army Project Manager for Combat Systems; the TACOM Life Cycle Management Command; its Anniston Army Depot, Anniston, Ala.; and General Dynamics Land Systems.

Under the AIM program, M1A1 Abrams tanks are completely disassembled and overhauled to a like-new condition. Refurbished AIM tanks incur lower operational and support costs and report higher operational readiness rates. Work will be performed in Lima, Ohio, and Eynon, Pa., by existing General Dynamics employees. The 75 AIM tanks are scheduled for delivery to U.S. Army units beginning in July 2006.

Contracts

Anniston Army Depot Chooses United Defense to Provide up to $479M of Overhaul Work on Combat Vehicles

ANNISTON, AL, April 25, 2005 - United Defense Industries, Inc. (NYSE:UDI) received four contracts, which could ultimately total $479 million, from Anniston Army Depot for its Steel Products Division to perform "zero hours, zero miles" overhaul maintenance on the M109A6 Paladin Self Propelled Howitzer, the M88A1 Medium Recovery Vehicle, the M992A2 Field Artillery Ammunition Supply Vehicle, and the M9 Armored Combat Vehicle.

The contracts are structured as Requirements contracts, meaning that actual work is only funded under each contract as and when the Army provides a specific work order to United Defense. The company anticipates its first work order this summer. The contracts would permit a maximum of $153.9 million in work orders during the first year, and additional amounts during the two succeeding option years.

Each vehicle or its subcomponents awarded under an order must be overhauled to "like new" condition, in preparation for combat. “By awarding these contracts to United Defense, the Depot will be able to more efficiently manage its overflow workload,” said Mr. Robert Houston, Vice President and General Manager. "We designed, engineered, and manufactured these vehicles. We offer vehicle expertise that no one else has. These contracts were competed and choosing us to execute represents the lowest risk, best value option for the Depot. In addition, by awarding to United Defense, the Depot is building onto the successful Private/Public Partnership that already exists between us on the M113 Family of Vehicles."

Future Technologies

US Army Speeds Up FCS Integrated Computer System Fielding

Boeing and SAIC as the Future Combat Systems (FCS) Lead Systems Integrator (LSI) has awarded a General Dynamics Advanced Information Systems and Rockwell Collins team a $154 million contract modification to accelerate technology development of the Integrate Computer System (ICS).

The ICS is the common computing environment for 17 of the 18 platforms in the FCS family of systems. ICS will be integrated into the current US Army's force and subsequently into the FCS systems. Adding this modification contract the total ICS contract value now stands at $429 million.

This contract modification will allow to get ready the first ICS to years earlier than originally planned. The industry team expects to deliver the first prototype FCS ICS in January 2007. ICS will begin integration into current force's Abrams battle tanks, Bradley fighting vehicles, Humvees and Strykers in 2008. FCS Unit of Action will deploy the ICS beginning in 2014.

FCS uses a groundbreaking system-of-systems approach that brings advanced technologies together to help create an agile Unit of Action. The ICS integrates a wide range of traditionally independent or stove-piped computing applications into a single, integrated, secure processing environment. This provides the FCS-equipped Units of Action with unprecedented processing, networking, data storage and information assurance capabilities.

Training And Simulators

BAE SYSTEMS Successfully Demonstrates WOLFPACK

NASHUA, N.H. -- BAE Systems recently completed its final demonstration of the current phase of the WolfPack program to the Defense Advanced Research Projects Agency (DARPA) and other government officials at the Fallon Range Training Complex in Nevada.

WolfPack is a DARPA Advanced Technology Office (ATO) program which is developing technologies to deny enemy use of communications and radars throughout the battlespace. The networked system will be comprised of autonomous, ground-based monitors/jammers cooperatively linked to avoid disruption of friendly military and protected commercial radio communications and radars.

The final successful demonstration of Phase IV consisted of three segments, each focusing on operational scenarios that tasked the deployed WolfPack to detect, identify, geolocate and jam both radar and

communication emitters.

Preston Marshall, DARPA program manager, stated, "The demonstration proved the validity of the WolfPack concept, which will allow war fighters to operate effectively while denying enemy use of the radio frequency (RF) spectrum. DARPA is excited about the potential capability for the war fighter."

The next phase (Phase V) of the program will improve and increase functionality while creating a smaller, lighter and more power-efficient WolfPack. DARPA is developing long-term plans with the U.S. Army for deployment via airborne and deep-launch devices, and is working with the U.S. Air Force in a distributed suppression of enemy air communications. Initial discussions with the U.S. Navy are taking place for littoral and force protection missions.

The demonstration completes a two-year, $23 million contract from DARPA's Advanced Technologies Office (ATO), and BAE Systems is in negotiation for the next phase.

Defence Industry

CARACAL, a new tactical vehicle for the Bundeswehr Rheinmetall and Iveco Magirus enter cooperation agreement

Rheinmetall and Iveco Magirus have agreed to work together in the field of wheeled, 6 to 8 ton-class armoured vehicles for the German market. As part of this agreement, Rheinmetall Landsysteme GmbH of Kiel, the Land Systems division of the Rheinmetall Group, has obtained the German rights to Iveco's newly developed Light Modular Vehicle (LMV).

Rheinmetall Landsysteme (RLS) will be responsible for adapting the vehicle to the needs of the Bundeswehr, as well as the integration of application-specific assemblies and weapon stations. The agreement also lays the groundwork for possible marketing of the vehicle abroad by Rheinmetall.

The new RLS vehicle will be marketed under the name CARACAL after the Afro-Asian cat; also known as the desert lynx.

During intensive trials the vehicle has already been successfully qualified in extra-European operational scenarios, and is being procured in large numbers by the armies of the United Kingdom and Italy. Under the rubric of its "Armoured Command and Transport Vehicle" project, the Bundeswehr has also announced its interest in the vehicle, which is both well protected and highly mobile. In March of this year, an "expression of interest procedure" was initiated.

Specifically designed to the meet the multifaceted requirements levied on vehicles of this type, the CARACAL will make a major contribution to protecting troops during dangerous deployments. At the same time, the CARACAL fills a previously existing gap in Rheinmetall's portfolio of wheeled vehicles, thereby further reinforcing the company's global status as a competent system supplier and manufacturer of high-quality wheeled tactical vehicles.

The CARACAL is a highly mobile all-terrain four-wheel drive vehicle. It offers a high degree of modular ballistic protection as well as advanced anti-mine features. Powered by a state-of-the-art diesel engine, the vehicle features high-performance single wheel suspension. The versatile CARACAL can carry up to five people and can be used to perform an extremely wide variety of missions, including reconnaissance, command, transport and patrolling; as a weapons platform it can configured in numerous different ways.