

# NTSA's Training Industry *news*

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## Current *news*

### President, Democrats Spar Over Education Support

Reprinted from Aerospace Daily & Defense Report

President Bush and congressional Democrats clashed over many issues raised in Bush's final State of the Union address January 28, including a major issue of importance to the U.S. aerospace industry: funding math and science education and research. Both sides promoted the fact that they hashed out a related new law last year, but they blamed each other for not funding the policy initiative.

"To keep America competitive into the future, we must trust in the skill of our scientists and engineers and empower them to pursue the breakthroughs of tomorrow. Last year, Congress passed legislation supporting the American Competitiveness Initiative, but never followed through with the funding," Bush told lawmakers.

"The president's American Competitiveness Initiative has never included a specific science education component, and his budget last year proposed cutting funding for K-12 education activities at the National Science Foundation," responded Rep. Bart Gordon (D-Tennessee), chairman of the House Science and Technology Committee. "This year, the president's FY09 budget needs to better reflect the priorities of the America COMPETES Act, which he signed into law last year."

COMPETES authorizes \$43.3 billion toward 40 programs over FY08-10, ostensibly aiming to boost U.S. science, math, research and technology capabilities and the domestic work force in light of growing competition from China and India.

### GWOT Demands Strain Defense Budget

Reprinted from Aerospace Daily & Defense Report

On the same day the Center for Strategic and Budgetary Assessments held a pre-federal budget release press briefing, the Government Accountability Office published a report on the budget effect of Global War on Terrorism (GWOT) funding, with both concluding that the weight of future GWOT funding commitment is growing too heavy for the government to bear.

The Defense Department has requested \$189.3

billion in appropriations for GWOT in FY08. As of December 2007, Congress provided the Defense Department with about \$87 billion, including \$16.8 billion for mine resistant ambush protected vehicles.

The magnitude of future GWOT costs, GAO said, will depend on a number of direct and indirect costs, and, "in some cases, decisions that have not yet been made." Some of those decisions may involve an entirely new way of thinking about defense.

The Defense Department is "wrestling" with problems like how the long battle with radical Islamists will play out over time, the slow resurgence of "great powers" and the possibility of a world in which there are numerous regional nuclear powers, said Robert Work, Center for Strategic and Budgetary Assessments vice president of strategic studies. Increasingly, [those problems] will force the Defense Department to make explicit choices ... and force a more integrated approach to these problems."

### Analysts: Defense Cuts Unlikely

Reprinted from Aerospace Daily & Defense Report

With both the White House and Congress focusing on reviving the U.S. economy this election year, there's little chance any Pentagon program will suffer serious budget cuts in FY09, a panel of budget analysts said in January.

Speakers at a pre-budget briefing at the Center for Strategic and Budgetary Assessments (CSBA) said many thorny problems—such as curbing the deficit and where to allocate shrinking defense dollars—will most likely be passed on to the next White House occupant.

"There's no indication there will be cuts in significant programs," said Steven Kosiak, CSBA's vice president for budget studies. He noted a Congressional Budget Office report indicating that defense spending would have to rise \$50 billion to \$70 billion above current spending to meet all the services' modernization plans.

There's little incentive for a lame duck administra-

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# President's *notes*

Rear Adm. Fred Lewis, USN (Ret.)

## For NTSA Members:

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These are busy days both for the National Training and Simulation Association and for the International Training and Simulation Alliance. We are seeing the technology we all represent expanding and growing in dramatic ways around the globe, with every sign that this trend will accelerate even more rapidly over time. We at NTSA have always been vigorous in our support of the international component of our most significant activity, I/ITSEC, and we are being rewarded with healthy growth in worldwide participation each year in Orlando. It is also fascinating to see the steady increase in the variety of training applications represented at this event--testimony to the fact that our technology is finding applications in many exciting new fields. In 2008, we are confident that the world will again be represented at I/ITSEC, which, in keeping with all recent years, promises to be the largest and most vibrant yet.

Our international role extends far beyond I/ITSEC, however. NTSA is a member of the International Training and Simulation Alliance, a grouping of training and simulation associations that share common goals. The mission of ITSA is to enhance international awareness of, and support for, simulation and related technologies as vital to many aspects of national security and preparedness, as well as to economic progress. ITSA provides a forum for sharing information, research, and technology across regional and national boundaries to broaden and deepen the development of simulation applications. Other ITSA members are the European Training and Simulation Association (ETSA); the Korea Training Systems Association (KTSA); and the Simulation Industry Association of Australia (SIAA).

During the 11th Defense Service Asia (DSA) Exhibition and Conference in Kuala Lumpur, Malaysia, April 21-24, ITSA sponsored a one-day Training and Simulation Seminar. Organized by ETSA, and its Executive Director, Richard Curtis, the event focused on issues specific to Malaysia, Thailand, Indonesia, Singapore, and other South East Asian defense forces. U.S. participants included Dr. Jim Blake, PEO/STRI, who gave the keynote address, and Brian Hicks, Program Manager, Fleet Aircrew Simulator Training and Navy Aviation Master Plan, NAWCTSD Orlando. The ITSA event stimulated a spirited exchange among the delegates, especially the Malaysian military attendees who were

candid, energetic, interested and participatory. Interoperability was the theme of the day and there were some promising developments for training cooperation between Malaysia and the U.S. as well as Australia. The overall DSA event attracted over 20,000 visitors to 712 exhibition booths, with 109 countries sending delegations. The involvement of the European Training and Simulation Association was critical to the success of the ITSA seminar. In the future, we expect to significantly augment ITSA's presence and impact at international events such as Defence Services Asia. Look for ITSA and ITSA member associations at SimTec in Australia, ITEC in Stockholm, and Eurosatory in Paris.

We are also busy expanding two other initiatives. The Certified Modeling and Simulation Professional (CMSP) certification program is experiencing healthy growth--a gratifying trend, as the need for qualified professionals in our field is expanding as the technology itself grows and generates demand. There are currently more than 300 CMSPs, and the pace of applications is on the rise. Plans for the immediate future call for a comprehensive review of the CMSP exam, and an outreach campaign to inform and educate industry professionals, as well as government customers, about the significance of the CMSP credential. Several academic institutions, including the University of Central Florida and the University of Alabama at Huntsville, offer continuing education courses on preparing for the CMSP exam, and the proliferation of such programs will undoubtedly continue. (Visit [www.simprofessional.org](http://www.simprofessional.org)).

Finally, as many readers will already be aware, we now have SimTV up and running as the world's only television web site dedicated to the modeling and simulation industry and community of practice. This site is designed to be the worldwide hub for the training industry, with participation from all involved sectors. As the site is developed, you will notice an increase in the quantity of content as well as its variety. We hope to have categories for serious gamers, medical applications, academic and research institutions, and other areas where modeling and simulation are playing increasingly important roles--as well, of course, for our corporate clients for whom the site is primarily designed. We welcome your comments (and involvement)--just go to [www.simtv.org](http://www.simtv.org).

# NTSA

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# The Global marketplace

## Lockheed Martin Wraps Up F-2 Contract

Reprinted from Aerospace Daily & Defense Report  
Lockheed Martin has received its 12th and final annual production contract from Mitsubishi Heavy Industries (MHI) to manufacture components for Japan's F-2 close air support fighter. The \$250 million contract covers the last eight of the 94 aircraft ordered by Japan's air force. Lockheed Martin, MHI's principal partner in the program, is to provide aft fuselages, wing leading-edge flaps and stores management systems. It also will provide 80 percent of all lift wing boxes, avionics, and avionics support equipment.

## Iraqis Spending More on Equipment, Forces

Reprinted from Aerospace Daily & Defense Report  
The Iraqi government plans to spend billions of dollars more on equipment and increase the size of its forces, the U.S. commander in Iraq told Congress April 8. Army Gen. David Petraeus' comment comes as Iraqi leaders are increasingly being criticized on Capitol Hill for letting the U.S. shoulder the bulk of their country's security needs.

Also, since March the Iraqi government has purchased more than \$2 billion in military equipment and services of U.S. origin under the Foreign Military Sales program, Petraeus told a Senate Armed Services Committee hearing on coalition progress in Iraq. And since September 2007, the delivery of equipment has improved as the Foreign Military Sales system has improved under congressional prodding, Petraeus said.

The commanding general further applauded congressional support for additional intelligence, surveillance and reconnaissance assets in pending off-budget supplemental spending requests, "as ISR is vital to the success of our operations in Iraq and elsewhere."

According to the general, more than 540,000 individuals serve in Iraqi security forces; half of Iraq's 18 provinces are under direct control of the Iraqi government; and the number of Iraqi combat battalions capable of taking the lead in operations—"albeit with some coalition support"—has grown to significantly more than 100.

## Morocco Signs Frigate Deal

Reprinted from Aerospace Daily & Defense Week  
Morocco signed a \$750 million contract with France for a Fremm-type 5,000-metric ton frigate on April 18. The surface combatant Morocco is getting will most likely be the second ship in the construction program of Fremm frigates for the French Navy, sources say.

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tion or lawmakers facing re-election in tough economic times to cut spending, said Stanley Collender, managing director of Qorvis Communications and a former Budget Committee staffer in both the House and Senate.

The stimulus bill acts like a "get-out-of-jail-free card" because it lets lawmakers address immediate economic woes rather than confront deficit reduction needs. "In a stimulus situation ... offsetting a tax cut or a spending increase is counter stimulus and therefore exactly the wrong economic policy," Collender told defense reporters at the CSBA briefing.

### UGVs Meet a Growing Range of Battlefield Needs

Reprinted from Defense Technology International

Recent advances in robotic technology, along with greater acceptance of autonomous vehicles by commanders and tacticians, are stepping up the pace of development in unmanned ground vehicles, leading many to believe the robots could be an integral part of land forces within a decade.

Using autonomous vehicles to protect humans from battlefield dangers is hardly new. Engineers have experimented with the concept since at least the early 1980s. Unmanned ground vehicles already play a role in security and ordnance disposal, but the next

decade will see numerous types, including large armored platforms, enter service to meet needs ranging from cargo transport and convoy protection to combat operations and security patrols.

A variety of efforts are underway to prove the potential of unmanned ground vehicles. Programs for autonomous convoys, scout vehicles that search for roadside bombs and ambushes, unmanned round vehicles that release smaller unmanned ground vehicles for close-quarter operations and even heavy engineering vehicles show remarkable progress.

There are, to be sure, problems that must be overcome. One issue is the almost instinctive mistrust humans have of robots that operate autonomously. But as the capabilities of unmanned round vehicles grow and their presence becomes common, even mundane, experts say they will be indispensable to a well-equipped army.

### Another "Speed Bird"?

Reprinted from Aviation Week & Space Technology

Supersonic flight across the North Atlantic may be resurrected in 2014. Reno, Nevada-based Aerion Corporation has begun taking orders for its twin-engine supersonic jet that can carry up to 12 passengers and fly more than 4,000 nautical miles at a maximum

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cruise speed of Mach 1.6. The company has secured letters of intent worth \$1.5 billion from customers in Europe, the Middle East, Asia and the U.S. The airplane is tentatively scheduled for certification in 2014. Aerion is attempting to recruit an OEM partner by 2008 to proceed with the program.

Through its agent, Zurich-based ExecuJet Aviation Group, Aerion is offering 40 early, pre-launch delivery positions at \$80 million per airplane, and Aerion is offering another 35 jets in the U.S. at the same price. Aerion officials say the airplane could be scaled up to become a potential replacement for the supersonic Concorde. Aerion says the jet will cruise at Mach 1.5 over land without creating a sonic boom, but current FAA regulations prohibit supersonic flight over land in the U.S.

### **Make Way for UAVs**

Reprinted from Aviation Week & Space Technology

Pentagon advocates and operators of unmanned aerial vehicles are increasingly frustrated with civilian agencies as attempts to gain access to U.S. airspace languish. The Defense Department has 5,300 unmanned aerial vehicles in inventory and many thousands of flight hours' experience in the U.S., Iraq and Afghanistan, but the search for ways to move them quickly from home base to emergency locations is stalled.

U.S. operators, including those who provide fire-fighting services, say there's no problem with the aircraft, ground stations and air traffic control. But a staggering amount of time is taken up with "FAA negotiations, contingency landing planning, frequency coordination, GPS jamming coordination and mission and weather planning," says a longtime unmanned aerial vehicle specialist. Others complain that NASA has "abdicated leadership" in trying to get airspace access for unmanned aerial vehicles.

### **Spotting the Sniper**

Reprinted from Defense News

Alarmed last fall by an increase in sniper attacks in Iraq and Afghanistan, the U.S. Defense Department began pushing hard to develop better countersniper technology. A "war-fighter-wearable" sniper detector is arriving in combat zones now.

This new sniper spotter "needs only one gunshot to accurately locate snipers," says the spotter's developer, QinetiQ North America, a branch of the British technology firm. It's the only countersniper system that's small enough to meet a U.S. Army requirement for "a single sensor on a single soldier," said Don Steinman, QinetiQ's director of transition programs.

In less than one-tenth of a second after a shot is fired, the spotter will indicate the direction and distance of the shooter, Steinman said. It's accurate to within 7.5 degrees out of 365 degrees, and within 15 percent on distances ranging "well beyond 500 meters," he said.

QinetiQ calls the sniper detector "ears." The Army calls it

SWATs, for soldier wearable acoustic targeting system.

### **Virtual Assistant**

Reprinted from Aviation Week & Space Technology

Jenn, a talking virtual assistant, debuted February 6 on Alaska Airlines/Horizon Air web site. The carrier says it's the first airline to adopt the ActiveAgent toll developed by Spokane, Washington-based NextIT, and beta testing indicated it would help reduce the time required for customers to complete an online task. About half of Alaska's ticketing is sold through its web site, according to the carrier.

After the Jenn bar is activated, the homogenized face of a young woman appears on a section of the monitor screen and welcomes inquires. Users can type questions, and Jenn responds verbally or in writing and provides related web links, as well as asks follow-up questions when required.

### **Cyber Experts See Need for Government Cooperation**

Reprinted from Defense Daily

As the nation's dependence on cyber networks increases and threats to its computer assets grow, the Air Force has a need to beef up partnerships with other agencies and a need to smooth out policies that would allow the nation to go on the offensive.

Lt. Gen. Bob Elder, the commander of the 8th Air Force and Joint Functional Component Commander for Global Strike and Integration at Strategic Command, said he worries about a number of onslaughts to the nation's networks: data manipulation, data loss or espionage, and how to clean military networks without taking them offline.

The military is working on solutions like auditing the system to find vulnerabilities so it can guard against them and detect software tampering. In addition, airmen are given laptop and desktop "tools" to counter threats and then are drilled with dummy threats to see if they use the tools to fix the problems, Elder said on Tuesday at a panel discussion at the National Press Club sponsored by the Air Force Association's Eaker Institute.

On the personnel side, the Air Force is making "cyber-officer" a career track and embedding "cyber" as a component of service exercises and in weapons school as the Air Force establishes Cyberspace Command.

As cybersleuths look for who is responsible for breaches to the network, they are also looking to build partnerships not just with other services within the Defense Department but also with agencies like the National Security Agency, the Homeland Security Department and law enforcement, he said.

### **Close Air Support Improves with A-10C**

Reprinted from Defense Technology International

The Lockheed Martin A-10—the only U.S. Air Force jet designed from the wheels up for close air support—has been a star player

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in Iraq and Afghanistan by escorting convoys, flying cover for patrols and coming to the aid of pinned-down troops. In recent months the A-10 has assumed an expanded role, deploying to Iraq's western Al Anbar province for the first time to support the Marine Expeditionary Force, flying more missions over Baghdad to support surge operations and continuing its critical responsibilities in Afghanistan.

In the midst of this activity, the Warthog community is testing and fielding the first new model of the A-10 since its introduction in the late 1970s. The A-10C—the result of the \$400 million Precision Engagement program—adds sensor and weapons capabilities, and dovetails with programs to reinforce, re-wing and perhaps eventually re-engine many of the 350 Warthogs in the active and reserve Air Force.

Improvements to the A-10, along with new terminals for the growing ranks of forward air controllers, herald a minor revolution in close air support. In coming years, air and ground forces will

take advantage of high technology to work more closely together.

The 90-day A-10C upgrade is performed at Ogden Air Logistics Center, part of Hill AFB, Utah, often during scheduled depot maintenance or when a jet is at Hill for structural or wing work. Ogden has delivered around 60 A-10Cs, and aims to wrap up the program in 2009.

### **New Technology Chips Away at Language Barriers**

Reprinted from Defense News

Technology is helping to overcome millennia-old language barriers. U.S. soldiers in Iraq are able to communicate with Iraqis to an ever greater degree through new electronic devices. Conversations may be as simple as the one-way, English to Arabic translation of basic commands at checkpoints, such as “stop” and “get out of the car.” Or they may be more complex two-way conversations.

Since the war began in 2003, the Pentagon and private companies have poured millions of dollars into speech translation

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## **Who's** *where*

■ **Michael L. D'Addio** has been elected chief executive officer of Quantum3D, San Jose, California. He has more than three decades of experience building successful companies. He founded two companies—Corvus Systems and Videonics—and subsequently took them public in 1981 and 1994, respectively. He then served as chairman and chief executive officer of a third public company, Focus Enhancements, until 2002. Still a member of the board of directors at Focus Enhancements, D'Addio's career has revolved around enabling companies to maximize their customer and shareholder value. He also serves on the National Council of Northeastern University and holds an A.B. in mathematics from that institution.

■ **Anatoly Belov** has been named general director of Russia's MiG. He was a senior development manager at Irkut. Belov succeeds **Sergei Tsivilev**.

■ **Jeffrey Q. Palombo** has been appointed vice president and general manager of the Land Forces division of Northrop Grumman Corporation, Rolling Meadow, Illinois. He has been vice president of infrared countermeasures for the Defensive Systems division.

■ **Lt. Gen. John (Mark) Curran**, USA (Ret.), has become vice president, Huntsville operations for New York-based L-3 Communications. He was deputy commanding general/futures director of the Army Capabilities Integration Center.

■ **Brig. Gen. Peter F. Hoene**, USAF, has been appointed director of command and control programs at the Defense Information Systems Agency, Arlington, Virginia. He has been serving as commander of the 350th Electronic Systems Wing of the Air Force Materiel Command, Hanscom AFB, Massachusetts. **Brig. Gen. Everett H. Thomas**, USAF, has been named commander of the command's Nuclear Weapons Center, Kirtland AFB, New Mexico. He has been vice commander of the U.S. Air Force Warfare Center of the Air Combat Command, Nellis AFB, Nevada.

■ **James David Bryan** has been named president of ManTech International Corporation's Defense Systems group, Fairfax, Virginia. He was sector vice president, executive customer relations for Global Defense C4I and Space for Northrop Grumman Corporation.

■ Former Marine pilot **Mike Kurth** has been appointed managing director of Boeing Defense UK: the newly-structured UK subsidiary that took effect January 1, 2008. As head of the division Kurth will, Boeing said, “be responsible for coordinating all of Boeing's defense activities and business development in the UK, working with **Sir Roger Bone** [president of Boeing UK].” Kurth, who joined Boeing after 25 years of service in the Marine Corps, will be assisted in his new role by retired major general **Jonathan Bailey** and **Brian Moran**.

# Training & Simulation *report*

## Sim for All

Reprinted from Defense Technology International

“Half of today’s warfighters grew up with a game controller in their hands,” says Drew Lytle, group manager for Microsoft’s new ESP platform. “They’re ready to learn in this manner. Textbooks don’t cut it.”

However, traditional simulations don’t meet the need either. At this summer’s DARPA Tech convention in Anaheim, California, the U.S. Defense Advanced Research Projects Agency outlined a project called RealWorld to develop “simulation without software.”

Modeling and simulation is in a rut, say DARPA and the U.S. Army, RealWorld’s sponsor. There are more needs than there is money or time to meet them, and traditional techniques don’t yield solutions fast enough.

DARPA’s RealWorld program manager, Dan Kaufman, summed up the needs: “I want it tomorrow. I don’t want to spend more than an hour to learn the system. It must be deployable, preferably on a laptop, and be usable by every warfighter.”

RealWorld, aimed at creating a system where any user can construct a custom simulation to rehearse a mission or for after-action review, is an ultimate solution—but it is still some way off. RealWorld is slated to transfer from the Army to DARPA in 2009 and go into development in 2010-15. In the meantime, Microsoft Corporation is moving into the gap with ESP.

On the surface, Microsoft’s venture is a one-step evolution from the company’s 20-year-old flight simulator franchise and the convergence of two trends in simulation: increasing performance and higher fidelity in consumer gaming software, and the migration of commercial and military simulation from specialized hardware to PCs.

Indeed, the first release of ESP is aimed at military and commercial aviation training. Microsoft is selling and licensing the product as a platform on which software developers build training tools. ESP provides the developer with two components: a realistic, feature-rich outside environment, automatically adjustable for seasonal weather and lighting conditions; and the ability to model vehicles, including cockpits, realistic system functions and handling characteristics—all of which have been done in the game-playing and experimental world for years.

ESP connects with live weather sources and digital terrain data, supports 30 users at a time and can work with voiceover internet protocol connections. Applications in aviation include basic flight training, cockpit familiarization, procedures training and mission rehearsal, as well as research and development—for quick-look analysis of cockpit designs, for example, or even runway lights.

The most important aspect of what Microsoft is doing, though, may not be apparent in the 1.0 release due to reach customers

early next year. Simulation is simulation, on the ground or in the air. Future versions, which could roll out in a couple of years, will expand into ground and maritime operations, indoor and avatar-centric simulations,” Lytle says. Avatar-centric means simulations that present human actors in a human-scale environment, rather than aircraft in the sky.

One example in the commercial world suggests the size of the market as Microsoft sees it. “Think about a retail enterprise with 60,000-80,000 forklift drivers,” says Lytle. They could use an immersive simulation environment to screen applications.”

Avatar-centric simulations have broader applications, including customer service.

## Virtual Rides Give Soldiers Up-Close View of Battlefields

Reprinted from Defense Technology International

In response to the need to study modern battlefields, the U.S. Army’s Combat Studies Institute rolled out its Virtual Staff Ride program in 2005, which transforms battles in Iraq—21 in total, from the invasion to ambushes—into fluid 3D animation programs. They work like traditional staff rides, except instead of physically touring a battlefield, officers sit in a room in front of a large screen, which displays realistic computer-generated scenes.

One of the most striking features about the virtual staff ride is realism. The detail and the 360-degree view of the battle space, including ground-level and aerial shots, provide an unparalleled vantage point.

Tavis Hanson, a systems analyst at the Combat Studies Institute who designs virtual staff rides, says he uses colored, submeter commercial satellite imagery as much as possible for each program and builds graphics on top of that. Submeter means one pixel represents less than one meter on the ground. Getting the imagery right can be tough, though, especially when designing programs of engagements outside Baghdad. Here the best satellite imagery is often one-meter, black and white Army imagery, “which means I have to recolor, and it’s not as clear,” he says.

To build each program, Hanson used MetaVR 3D visualization software from MetaVR Inc. of Brookline, Massachusetts, and Terra Vista terrain database generation software from Presagis Inc. (formerly Terrex) of Richardson, Texas. It takes two to three weeks to develop a program, depending on the amount of detail necessary and how geospecific an area must be.

The virtual staff ride program is available for road shows. As long as an Army unit provides travel costs, personnel from the Combat Studies Institute will use a laptop computer and a high-resolution projector to show a staff ride. “We tailor presentations to what the unit wants,” says Kennedy. “And we do only a couple of select programs.”

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# Contracts

## Defense Intelligence

Reprinted from Aerospace Daily & Defense Report

Science Applications International Corporation announced that it was a prime contract award winner under the Defense Intelligence Agency's high-profile Solutions for Intelligence Analysis program, potentially a \$1 billion indefinite-delivery/indefinite-quantity contract to provide military intelligence collection and analyses. The December award, which identified a few large primes who will later vie for task orders, came after a major newspaper report highlighting the defense contract in light of growing wariness on Capitol Hill over outsourcing federal work, especially post-9/11 national security efforts.

## Information Assistance

Reprinted from Aerospace Daily & Defense Report

General Dynamics was awarded a \$140 million contract to develop and integrate the maritime and fixed-site joint tactical radio capabilities and provide information assurance services for the Lockheed Martin airborne maritime and fixed-site joint tactical radio system team.

## Boeing & Lockheed Martin Join DARPA Vulture Program

Reprinted from Aerospace Daily & Defense Report

Boeing and Lockheed Martin have been awarded contracts by the Defense Advanced Research Projects Agency to study an unmanned aerial vehicle that could stay aloft for up to five years. They join Aurora Flight Sciences, which announced on April 14 it had received a contract under Phase 1 of DARPA's Vulture program.

Under the year-long first phase, the three contractor teams will define the operational system and design both sub-scale and full-scale demonstrators. The sub-scale demonstrator, to be capable of flying for three months, would be built and tested during Phase 2, which is scheduled to run to mid-2012. A full-scale unmanned aerial vehicle capable of flying for at least a year would be built under Phase 3.

DARPA's goal for Vulture is to demonstrate the technology for an unmanned aerial vehicle that could stay on station in the stratosphere for five years with a 1,000-pound surveillance or communications payload. 5kW of onboard power and sufficient loiter speed to maintain position for 99 percent of the time against winds encountered at 60,000-90,000 feet altitude.

Aurora and Boeing both have proposed solar-powered

unmanned aerial vehicles. Details of the Lockheed Martin Skunk Works' design are not yet available. Aurora will unveil its concept, called Odysseus, on April 23. The company has teamed with BAE Systems, Draper Laboratories and Sierra Nevada Corporation.

## Signed and Sealed

Reprinted from Aviation Week & Space Technology

The Romanian government has a contract for seven C-27J airlifters. The \$318 million deal has provisions for in-service support of the Alenia Aeronautics-built tactical airlifter. The package also includes a flight simulator to be located in Bucharest. Aircraft deliveries are to commence late next year. The C-27J customer list also includes Italy, Greece, Lithuania, Bulgaria and the Pentagon, with firm commitments for 117 aircraft.

## Powerful IEDs Renew U.S. Interest in MRAPs

Reprinted from Defense News

The number of Iraqi roadside-bomb attacks featuring a particularly deadly kind of explosive spiked in January to March, renewing U.S. Army plans to buy heavily protected mine resistant ambush protected (MRAP) vehicles. In 2006, enthusiasm for the 14- to 24-ton vehicles soared among Defense Department officials and lawmakers, who laid plans to buy up to 23,000 across the services. But the fervor waned toward the end of 2007 amid mobility problems and uncertainty about how many vehicles would be needed.

Then came January, and a spate of attacks that used explosively-formed penetrators, whose molten metal warheads can penetrate light armor, said Christine Devries, a spokeswoman for the Pentagon's Joint IED Defeat Organization.

In mid-February, Army generals in Iraq sent a report asking for more MRAP vehicles to Lt. Gen. Raymond Odeirno, commanding general of III Corps, who signed the report and forwarded it to Army Headquarters in Washington.

The report led the Joint Requirements Oversight Council, which sets procurement numbers for the Office of the Secretary of Defense, on February 22, to raise the ceiling for Army purchases of MRAP vehicles by 2,000 to 12,000, said Lt. Col. Martin Downie, Army spokesman.

The Army still wants ultimately to buy 17,770 of the vehicles, Downie said.

# Major Program *report*

## Raptor Rebirth?

Reprinted from Aviation Week & Space Technology

December 2007 was a good month for the F-22. Air Combat Command declared full, world-wide operational capability for the 40 F-22s of Langley AFB's integrated 1st Fighter Wing and ANG 92nd Fighter Wing. The two units have 80 trained pilots. Meanwhile, 50 lawmakers have written to Defense Secretary Robert Gates to press for continued production of the F-22 beyond the 183 approved.

## Israeli Air Force Wants Squadron of F-35s Quickly

Reprinted from Aviation Week & Space Technology

Israel plans to keep its aerial domination of the Middle East intact, and that includes buying Lockheed Martin's F-35 Joint Strike Fighter, accelerating its first deliveries, and deciding whose advanced equipment will be packed into the stealthy strike aircraft.

A senior Israeli Air Force official says those major areas of concern appear to be on the right track because of an "understanding" with U.S. officials. Washington's representatives are more ambiguous, saying that there has been no official change to Israel's F-35 program.

"The plan is that we will get the F-35 as soon as it's possible," the senior Israel Air Force official says. He says the service will end up with more than 100 F-35s, but he would not confirm the size of the purchase or that Israel is asking that the initial delivery date be accelerated by two years to 2012. The Israeli Air Force wants the Joint Strike Fighter "the minute it is available."

"Israel has a unique requirement, it doesn't operate in a coalition, [and it has a] different kind of strategic relationship" with the U.S. than the other F-35 partners," says Tom Burbage, Lockheed Martin's vice president and general manager for the F-35s. However, he says the overseas release of the first export will be no sooner than 2014.

## Ospreys Proving Mettle in Counter-IED, Medevac Missions

Reprinted from Aerospace Daily & Defense Report

The U.S. Marine Corps' V-22 Osprey aircraft are helping thwart improvised explosive device attacks in Iraq, as well as rescuing casualties in record time, the service reports. "While conducting an Aero Scout Mission, the MV-22 supported the largest interdiction of an enemy arms cache in Area of Operations Denver," Marine Maj. Eric Dent said. "The interdiction eliminated several vehicle-borne improvised explosive devices and a large depot of explosives."

The V-22 was vital to mission success, Dent said. "The Aero Scout Mission, into an extended range area, would not have been possible if not for the MV-22's enhanced capabilities," he said.

The Osprey's selling points include speed and range—it initially was meant for combat, search and rescue operations—and those attributes are paying off on other missions, the Marines say. "In the casualty evacuation example, two MV-22s responded to a combat casualty call for evacuation over 85 nautical miles away," Dent said. "The mission was successfully conducted within an hour—a feat no other platform could have accomplished."

The Marines have taken some flak from analysts and Washington think tanks for relying on Osprey development to fulfill some of their aircraft needs. There was more consternation when the service decided to deploy the V-22s into Iraq last fall. But so far, the Marines say the aircraft has met or exceeded expectations.

## Upcoming *events*

Registration is open for these two upcoming NTSA events. For complete details, including lodging and registration, please visit [www.trainingsystems.org/events](http://www.trainingsystems.org/events).

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for complete details or contact Patrick Rowe at  
(703) 247-9471 or [prowe@ndia.org](mailto:prowe@ndia.org) for more information.

*Training from page 7*

The Combat Studies Institute is expanding its offerings. It is putting one together for Operation Anaconda in Afghanistan, and in the spring of 2008 will roll out rides for Iraq showing the 2004 Sadr uprising in Najaf, Operation Phantom Fury in Fallujah in 2004 and the 3rd Armored Cavalry Regiment's operations in Tal Afar in 2005.

### **U.S. Army Taps Cultural Intelligence**

Reprinted from Defense News

As the U.S. Army adds postwar operations to its core roles, service leaders are changing training and doctrine to emphasize the gathering of "cultural intelligence" and its dissemination on the service's new battlefield networks, service leaders said. Released at the end of February, the Army Field Manual 3-0 emphasized stability operations, a mission that was once an afterthought but that is currently straining the force in Iraq and Afghanistan.

"If you go back to 2001, we were kind of talking about combat operations sequentially followed by operations other than war or whatever we called it then. What we have come to realize, through experience primarily, is that you cannot separate the two," said Gen. William Wallace, commander, U.S. Army Training and Doctrine Command, Fort Monroe, Virginia. "As we have matured our thought, it did not take us very long to recognize that we needed a better appreciation of the culture, and a better appreciation of the human aspects of the terrain in which we are operating."

Soldiers engaged in counterinsurgency missions need to understand the tribal, ethnic, religious and economic fabric of the area, Wallace said. It's happening already, largely through the brute experience of the war zones.

"I have talked to young captains, lieutenants and sergeants who understand the intricacies and inter-connectivity of economics, governments, tribes and ethnicities to a degree that five or six years ago I would not have thought possible. Today, we've got young folks who understand this, understand its importance and complexity," he said.

The Army is working to do more, especially in the realm of training. For example, officials at the Joint Readiness Training Center in Fort Polk, Louisiana, have added more interactions with trainers playing "local citizens" during soldiers' mission rehearsals, said Rickey Smith, who directs the Army Capabilities Integration Center, Forward.

The service also created human terrain teams of five soldiers, academics and cultural experts who help brigade-level infantry units interact with locals.

"Human terrain teams combine military expertise with cultural anthropologists, folks that have studied regions of the world and understand the inter-relationships of cultures and peoples that can provide direct advice to commanders as to what to do and, importantly, what not to do in their area of operations," Wallace said. "Some of them [team members] are civilian academics such

as Ph.D. anthropologists and reservists who have volunteered to be part of these teams.

After fielding the first team in Afghanistan in February 2007 and five teams in Iraq last summer, the Army has been swamped with demand for more, he said.

### **Welcome to HD World**

Reprinted from Defense News

L-3 Link Simulation & Training's latest product has inserted brains, gaming technologies and massive parallel processing power into the real-time simulated environment to create a smart, ultra-realistic synthetic world. What the company calls HD World debuted at the industry's biggest training and simulation conference, I/ITSEC 2007 in Orlando, Florida, late last year. Using a specially-created exhibit booth, the company demonstrated the integrated simulation system throughout the show and said it would be ready to begin fielding the system this year.

HD World is a military synthetic environment that combines high-definition database creation technologies with physics-processing systems and image generation. It's designed to recreate the urban environment in all its complexities and human nuances while using commercial off-the-shelf projection systems.

Most importantly, it adds physics-based interactions and artificial intelligence to the blend so that the hundreds of thousands of entities that typically populate an urban environment—people, vehicles, planes and other objects—know how to behave realistically without being instructed.

A crowd of people crossing a road full of slow-moving traffic will weave in and out and avoid bumping into each other or the vehicles. If a bomb explodes in a busy shopping area, people will fall injured or flee for safety. Vehicle entities are embedded with the physics of the suspension systems that would underpin the real vehicles they represent. When they hit a bump or pothole, he simulated vehicle bounces or crunches exactly as the real one would.

"With HD World, we have integrated advancements across multiple commercial-off-the-shelf technologies that are enabling creation and display of simulation content that will enable warfighters to gain training credit equivalent to live training," said Frank Delisle, L-3 Link vice president of engineering and technology.

In setting out to develop HD World, Delisle said, the main objective was to create an environment with lots of real entities. "The key was how to enable it and really do it in real time. All of that content, plus all those behaviors has to be done in real time, and it's the real-time processing that has always been the bottleneck.

*Current News from page 6*

research, and the results are paying off in steadily improving translation gear. The U.S. Defense Advanced Research Projects Agency has been investing in the technology at a rate of \$15 million to \$20 million a year.

What translation systems can do now “is two or three times more” than they could do in the early years of the war, said Craig Schlenoff, an electronics engineer with the Intelligent Systems Division of the National Institute of Standards and Technology.

The most advanced systems are designed to translate questions from English to Iraqi Arabic and answers from Arabic back to English.

### **NanoSAR Sharpens Vision of Small UAVs**

Reprinted from Defense News

A small Utah company has flown a tiny synthetic aperture radar in an unmanned aerial vehicle in an effort to bring nighttime and all-weather surveillance capabilities to small, non-loitering unmanned aerial vehicles.

A two-pound NanoSAR radar flew in a ScanEagle unmanned aerial vehicle over an Oregon test range in January. The radar—weighing less than a tenth as much as the smallest standard synthetic aperture radars—promises to give small unmanned aerial vehicles the ability to conduct surveillance despite clouds, fog, rain, smoke, sandstorms and other conditions that dim the vision of optical and infrared sensors, said Adam Robertson, NanoSAR program manager at ImSAR, a Salem, Utah, radar maker.

The little radar takes up about as much space as a shoebox in the 40-pound, four-foot-long, 10-foot-wide ScanEagle. Until now, synthetic aperture radars have been bulky and heavy, requiring a large unmanned aerial vehicle or a piloted aircraft.

### **Pentagon Eyes Unmanned Systems to Fill ISR Gap**

Reprinted from Janes Defense Weekly

The U.S. Defense Department is planning to increase its use of unmanned systems to fill major gaps in the Pentagon’s ability to conduct effective intelligence, surveillance and reconnaissance missions (ISR), according a new report. One of the top priorities listed in the Pentagon’s recently released “Unmanned Systems Roadmap: 2007-2032” is improving the integration of data collected by unmanned systems to ensure combatant commanders have timely access.

“DoD is collecting information but, because of the limitations that our architectures have, it’s not always discoverable to the broad user base,” said Dyke Weatherington, deputy director of the Pentagon’s Unmanned Aerial Systems Task Force. The newly-released roadmap calls on the Defense Department to improve the dissemination of ISR to combatant commanders by better labeling the data collected by unmanned systems, Weatherington said.

“The tagging of data—metadata, as it’s sometimes called—to raw information products allows a much broader user base to surf

those databases, find that information and then make it more readily accessible to them,” Weatherington said.

The new roadmap also discusses specific missions that unmanned systems should be focusing on in the future. One of those is detection of mines at sea and also mines and improvised explosive devices on land. Weatherington said the Pentagon is focused on improving sensors for unmanned systems that could be used to detect these threats.

### **U.S. Army Deploys “Non-Lethal” Strykers in Iraq**

Reprinted from Janes Defense Weekly

The U.S. Army has deployed a unique version of the Stryker armored vehicle outfitted with an array of non-lethal technologies. Don Jarosz, a spokesman for the service’s Tank-Automotive Command Life Cycle Management Command, confirmed that the service sent three full spectrum effects platform (FSEP) vehicles to Iraq in October. The new vehicles are operated by the 4th Brigade, 2nd Infantry Division: a Stryker-based unit.

Fielding FSEP paves the way for future integration of non-lethal technology on combat vehicles. Among other things, FSEP is equipped with floodlights, laser dazzlers and a loud speaker system. It is supposed to provide an alternative to lethal armament in “escalation-of-force” scenarios around checkpoints and traffic control points. Jarosz said the FSEP would enable soldiers to accomplish their mission “without resorting to deadly force.”

The U.S. military has struggled to reduce civilian casualties in Afghanistan and Iraq, particularly around roadblocks and near convoys. Earlier in 2007, the Center for Army Lessons Learned at Fort Leavenworth, Kansas, issued a new handbook on the application of graduated force at checkpoints. The service has also revised training procedures at places like the National Training Center at Fort Irwin, California.

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*Global from page 3*

This ship, to be assembled by France’s DCNS naval shipbuilding company at Lorient, France, is to be diverted to Morocco so that it can be delivered early. To compensate, France is expected to add an extra unit to one of the next batches of *Fremm* ships (the French Navy having a requirement for 17).

The *Fremm* frigate for Morocco will basically be identical to the French Navy configuration, including largely Thales-supplied combat system and sensors (sonars and the Heracles S-band multifunction radar), MBDA MM 40 Exocet anti-ship missiles and Aster 15 anti-warfare missiles, and an Oto Melara 127mm main gun.

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