

# NTSA's Training Industry *news*

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## Current *news*

### U.S. Losing Ground in Computer Sim Technology

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High-powered computer simulations, once the province of a handful of supercomputers, have become available to scientists around the world on a variety of platforms, but a government-sponsored study found that our universities are not preparing students with the skills to adequately use these rapidly evolving resources.

The United States, a world leader in the development of architectures and algorithms for simulations, is losing this lead as the technology becomes ubiquitous. The world of computer simulation has become flat, allowing anyone access to the computing power to do advanced modeling and simulation from anywhere, according to the report, titled "International Assessment of Research and Development in Simulation-Based Engineering and Science."

"It is therefore critical that the U.S. exploit new computer architectures, especially those developed here, before those architectures become ubiquitous," said Sharon Glotzer, professor of chemical engineering at the University of Michigan and a leader of the team doing the report.

The study was conducted by a team of university researchers for the World Technology Evaluation Center. It was funded by the National Science Foundation, the Defense and Energy Departments, NASA and the National Institute of Standards and Technology.

### Russia Withholding Plutonium Needed by NASA

Reprinted from *Space News*

Russia has reneged on an agreement to deliver a total of 10 kilograms of plutonium-238 to the United States in 2010 and 2011 and is insisting on a new deal for the costly material vital to NASA's deep space exploration plans. The move follows the U.S. Congress' denial of President Obama's request for \$30 million in 2010 to permit the Department of Energy to begin the painstaking process of restarting domestic production of plutonium-238.

Bringing U.S. nuclear laboratories back on line to produce the isotope is expected to cost at least \$150

million and take six years to seven years from the time funding is approved.

NASA for decades has relied on plutonium-238 to fuel long-lasting spacecraft batteries known as radioisotope power systems that transform heat from the decaying plutonium into electricity. The Pluto-bound New Horizons probe was launched in 2006 with 11 kilograms of the material onboard, and the Mars Science Laboratory rover will carry 3.5 kilograms when it launches in late 2010.

The United States stopped producing plutonium-238 in the late 1980s. While U.S. nuclear laboratories remain able to process and package the material for use in radioisotope power systems, the Department of Energy has been meeting NASA's demand from a dwindling stockpile supplemented by periodic purchases from Russia's shrinking supply.

### Army Fields New, Better M4, M16 Magazine

Reprinted from *Aerospace Daily & Defense Report*

The U.S. Army has begun fielding 500,000 of a projected seven million new 5.56mm 30-round improved magazines for the service's fleet of M16 and M4 weapons that PEO Soldier says will deliver "a significant increase in reliability for the battle-tested M16 and M4 weapons systems."

The office says "the improved magazine effectively reduces the risk of magazine-related stoppages by more than 50 percent compared to the older magazine variants."

Lt. Col. Chris Lehner, product manager for individual weapons, explains on the PEO web site that the system has a heavier, more corrosion resistant spring that, "along with a new follower design that does not tilt inside the casing," makes it a more durable system overall.

The new follower also "incorporates an extended rear leg and modified bullet protrusion for improved round stacking and orientation. The self-leveling/anti-tilt follower minimizes jamming while a wider spring coil profile creates even force distribution. The performance gains have not added weight or cost to the magazines."

*Current News cont. on page 4*



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# President's *notes*

Rear Adm. Fred Lewis, USN (Ret.)

## For NTSA Members:

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As has become customary in recent years, I have the pleasant duty to report that I/ITSEC 2009 exceeded by considerable margins the metrics we had set for the event. Particularly gratifying and significant was the large number of new exhibitors we hosted. This, in my view, is a clear indication that modeling and simulation is of increasing interest to new players--firms which see opportunity in an industry which, due to its inherent advantages, is swimming against a still-strong adverse economic tide.

I see no reason why this trend should not continue. In particular, modeling and simulation are becoming increasingly important to a wide variety of health care applications--from first response and battlefield conditions to clinical training of all kinds, from obstetrics to anesthesia, as well as any number of critical care areas. We are now beginning to see our larger corporate members using their long experience in other M&S applications, as well as economies of scale, to spin off healthcare units in recognition of the growth potential of this sector.

All this is a result of the continual maturation of our technology, which is now allowing modeling and simulation training, with all its attendant advantages, to move into ever-wider fields of application. In recognition of the rapidly emerging prominence of M&S healthcare training, I/ITSEC 2010 will for the first time feature a healthcare pavilion which will group together most of the exhibitors in this field. Such a concentration will facilitate the location on the exhibition hall floor of what we anticipate to be a large number of healthcare exhibitors, while at the same time providing symbolic evidence of the importance of this dynamic new application.

In fact, as our technology continues to move into other new learning areas, such as transportation and emergency preparedness planning, I foresee the possibility of several such subject matter groupings at future I/ITSECs, all mirroring the success of last year's STEM pavilion, which united a number of STEM-related

activities in a central area of the exhibit hall floor. This grouping emphasized the significance we attach to this issue of critical national importance.

The recently-concluded Modeling and Simulation Leadership Summit in Virginia Beach continued what has become a tradition of success, attracting over 200 representatives from industry, academia, research organizations, the government and military. This despite one of the worst winter storms in recent Virginia Beach history. This fifth iteration of the annual Summit had as its theme "Realizing the Promise of House Resolution 487", which recognized modeling and simulation at a critical national technology. An intellectually rigorous and stimulating keynote address was followed by an equally valuable panel discussion. Participants in the panel represented fields as diverse as electrical and computer engineering, space exploration, standards and testing, and health-care--testimony, again, to the range of today's M&S applications.

Later in the day, four working groups clustered around key subject matter areas reported back to the Summit as a whole, putting forth a number of well-defined and creative measures which will serve as a means of moving forward toward development of a national plan for modeling and simulation. In particular, it was decided to press the Department of Labor to include M&S as a distinct professional category in the Department's Occupational Outlook Handbook. In light of the upcoming review and revision of the previous Administration's No Child Left Behind program, it was further decided to incorporate this into a broad STEM initiative in the planning stages this year and next. Look for a complete report on the Summit in forthcoming Newsletters and on line at [www.trainingsystems.org](http://www.trainingsystems.org).

The enthusiasm, energy and creativity in evidence at the Summit were further proof that our community of practice is in robust good health. Success, no less than failure, brings challenges. If I/ITSEC 2009, the Leadership Summit, and future initiatives in the works are any indication, those challenges will be met in style.



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# The Global marketplace

## UAE C-17 Deal Advances

Reprinted from *Aerospace Daily & Defense Report*

The United Arab Emirates plan to procure four Boeing C-17 airlifters has taken another step forward with the formal foreign military sale notification now submitted to Congress for parts of the transaction. The foreign military sale deal would cover the logistics element of the acquisition, with the aircraft to be bought under direct commercial sales terms. The value of the logistics contract is estimated at up to \$501 million.

The Pentagon says the UAE is considering use of the airlifters not just for regional transport, but also “to support U.S. and NATO airlift requirements in Afghanistan.” The UAE military already has been quietly supporting Afghanistan operations, having deployed unmanned aircraft to Helmand province to provide additional intelligence, surveillance and reconnaissance capacity to the International Security Assistance Force.

## Beyond Borders

Reprinted from *Aviation Week & Space Technology*

Both Boeing and Lockheed Martin project significant boosts in military sales in the coming years owing to international purchases. Lockheed Martin Chief Financial Officer Bruce Tanner says about 15 percent of the company’s sales are now to international customers. Those are expected to increase to 20 percent, due in part to robust interest abroad in the C-130J transport, he says.

Dennis Muilenburg, chief executive officer of Boeing Integrated Defense Systems, says he anticipates similar results. Military sales abroad for the company now stand at 16 percent, and he expects they could go as high as 25 percent.

## Israeli UAVs Proliferate in Afghanistan Theater

Reprinted from *Defense News*

German Bundeswehr plans to deploy the Israel Aerospace Industries Heron-1 in Afghanistan mark the latest in a growing trend by NATO nations to lease or urgently procure locally produced unmanned aerial vehicles in support of Operation Enduring Freedom.

The leasing contract with the German Federal Office of Defense Technology, announced

October 28 by the industrial team of IAI and Rheinmetall, follows similar deals that allow Canadian and Australian forces to operate IAI Herons in Afghanistan through MacDonald Dettwiler and Associates.

Over the past 28 months, six NATO nations have tapped three Israeli unmanned aerial vehicle systems to support missions in Afghanistan under contracts ranging from emergency procurement and direct leasing to power-by-the-hour deals via third-party contractors.

## Norway Hopes for \$3.5B in F-35 Work

Reprinted from *Defense News*

Norway anticipates \$3.56 billion in contract spinoffs from the F-35 Lightning II combat fighter procurement program against a backdrop of deepening talks between the country’s defense industries and the aircraft’s supplier, Lockheed Martin.

The government’s expectation of a multibillion-dollar bonanza for Norwegian industries emerged after 50 of the country’s defense and technology systems groups met with Lockheed Martin representatives during the U.S. company’s Global Business Opportunity Days.

The conference included one-to-one meetings with Norwegian company chiefs to discuss the prospect of generating long-term strategic industrial partnerships centered on the aircraft program as well as the underlying potential for Norwegian manufacturers to deliver components to unrelated projects being run by Lockheed Martin.

## BAE Ponders North American Marketing

Reprinted from *Aerospace Daily & Defense Report*

Manufacturer BAE Systems is formulating its marketing of the Mantis medium-altitude long-endurance unmanned aerial vehicle demonstrator air vehicle in the U.S., following the recent kickoff of test flights of the U.K. version. Mark Brown, BAE Systems vice president of unmanned aerial systems, is positioning the Mantis as a next-generation unmanned aerial vehicle. “When we talk about Mantis specifically, you’re talking about a theater/strategic platform that has the ability to

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### **NASA Ponders Post-Shuttle Reorganization**

Reprinted from *Aerospace Daily & Defense Report*

Managers across NASA are looking for an “innovative and inspirational” way to deal with budget realities facing the agency, and are working on a plan to merge the spaceflight and exploration mission directorates into a single unit as the shuttle era draws to a close.

Headquarters mission-directorate chiefs and field center directors met behind closed doors to ponder organizational adjustments that likely will be necessary once President Obama issues his long-awaited space policy. The spaceflight/exploration merger was one topic of discussion. A day later, Obama met with NASA Administrator Charles Bolden to discuss the nation’s new direction in space and the options for it presented by the human-spaceflight review panel headed by former Lockheed Martin Chief Executive Officer Norm Augustine.

The two leaders “spoke about the administrator’s work at NASA and they also discussed the Augustine Committee’s analysis,” the White House said after that December 16 meeting. While there probably won’t be a public White House space policy position until the FY11 budget request, White House advisors are said to be well aware of the long-term budget conditions that led the Augustine panel to say NASA’s Bush-era Constellation Program of human-exploration vehicle development is unsustainable.

### **SpaceShipTwo Rolls Out at Mojave Air and Space Port**

Reprinted from *Space News*

Virgin Galactic unveiled its passenger-carrying SpaceShipTwo suborbital spaceplane December 7, during a gala celebration at the Mojave Air and Space Port in the California desert. Virgin Galactic officials said they intend to devote 2010 to flight testing SpaceShipTwo and its WhiteKnightTwo carrier aircraft from Mojave and expect to begin flying passengers from New Mexico’s under-construction Spaceport America no earlier than 2011. SpaceShipTwo is designed to carry six passengers and two pilots. Rides to the edge of space are going for \$200,000 a seat.

### **Lawmakers Increasingly Cringe at Future DoD Budget Squeeze**

Reprinted from *Aerospace Daily & Defense Report*

Worried lawmakers on Capitol Hill increasingly are focusing on near-term Pentagon budgets, especially with an expected cut to or perceived sacrificing of procurement, research and development accounts.

The House Armed Services Committee on November 18 heard more forecasts from congressional researchers and Washington think tank analysts that outlined tough expectations, even with modest growth in defense spending. The hearing echoed similar testimony October 2009 when key representatives of the Congressional Research Service and the Congressional Budget Office projected a squeeze on defense investments to the tune of

billions of dollars per year, starting in fiscal 2011 and running most of next decade.

The revelations have conservative lawmakers warning of dire consequences while Democratic leaders, who often blame the George W. Bush Administration’s role in creating the situation, wonder about the consequences if the Obama Administration can even hold to a truly flat Defense Department budget. “It is critical that we understand the budget constraints that are likely to shape the FY11 budget, both in that specific fiscal year, and over the future years’ defense program that will accompany it,” House Armed Services Committee Chairman Ike Skelton (D-MO) said. “The picture is not a pretty one.”

### **Displaced Auto Workers Getting a Chance with Navy**

Reprinted from *Aerospace Daily & Defense Report*

Qualified displaced auto workers in Detroit, Michigan, will soon be receiving follow-up calls from the U.S. Navy to schedule interviews for various engineering positions as well as spots in the Naval Acquisition Associates Program, a two-year developmental program designed to prepare mid-level professionals to transition to Navy acquisition careers. Naval Sea Systems Command had so much success with its first attempt to recruit out-of-work automotive professionals in April that it returned to Michigan in late October to do it again. Over 700 candidates attended the event, which was recently expanded to include three other system commands: Space and Naval Warfare Systems Command, Naval Air Systems Command and Marine Corps Systems Command.

### **U.S. Army Compiles Afghan Briefing Book**

Reprinted from *Defense News*

Afghanistan’s complex population, unforgiving terrain and sparse infrastructure make for a tactical classroom that is hard to duplicate back home. The U.S. Army has learned some hard lessons during eight years of war in this challenging environment. Now, as 30,000 more troops prepare to deploy to Afghanistan, many of those lessons are online in a new resource called “Afghan Commander AAR Book.”

The book was released in September by the “Currahees” of the 4th Brigade Combat Team, 101st Airborne Division, whose 12-month deployment ended in March. The 50-page document is a compilation of recommendations and lessons, an after-action review (AAR) with input from 19 key company commanders. The report is available online at password-protected <http://cc.army.mil> and <http://pl.army.mil>.

The captains were asked to respond to questions on a variety of topics including maintaining good relationships with local leaders, physical fitness, morale and equipment. One thing most of them noted is the vast differences across the country, differences that include the Afghan people, their infrastructure, levels of development and security situations, and the punishing Afghan terrain.

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# Contracts

## **Air Traffic Control Radar Simulator Chosen**

Reprinted from UFA Inc. Press Release

UFA Inc. announced in November 2009 that NAV CANADA has selected UFA's ATCoach® ATC Radar Simulation products for installation at nine sites in support of NAV CANADA's controller training program. NAV CANADA will deploy the UFA ATCoach and ATVoice products to all seven Canadian Area control centers, the NAV CANADA Technical Support Center in Ottawa and the NAV CANADA Training Center in Cornwall. The company-wide deployment will include over three hundred simulation positions fully-equipped with UFA's ATVoice voice recognition and response technology. UFA's ATCoach radar simulator will be used in both stand-alone mode and integrated with NAV CANADA's automation systems, CAATS, to allow for all levels of training with a single simulation product suite.

UFA has already completed delivery of eleven ATC tower simulators based on the UFA ATTower® and ATVoice products. UFA's state-of-the-art ATC training simulators equipped with the ATVoice voice recognition and response technology will allow NAV CANADA to achieve cost savings while improving and maintaining the highest level of controller training.

NAV CANADA will utilize the same simulation technology currently in use by the Federal Aviation Administration in the United States on both the en route automation modernization and the standard terminal automation replacement system programs, and by the Deutsche Flugsicherung in Germany at their training center in Langen and all area control centers.

## **ETC Awarded ADMS Simulator Delivery Contract**

Reprinted from ADMS Press Release

Environmental Tectonics Corporation's Simulation division announced the award of a contract to deliver multiple ADMS Stinger high reach extendable turret (HRET) training simulators to Rosenbauer USA.

Rosenbauer, the world's largest exporter of fire-fighting vehicles, developed an HRET for airport rescue fire fighting vehicles called Stinger. The Stinger is a vehicle mounted penetrator nozzle on a joystick-controlled hydraulic boom arm. It is used to penetrate the aircraft fuselage to apply agent directly to interior fires and for fighting exterior fires.

The Stinger simulator is a portable desktop training device that consists of a computer and turret console with actual Rosenbauer turret joystick and switches. The simulator will allow airport rescue fire fighting vehicle operators to train on scenarios that cannot be realistically or economically repli-

cated in conventional training. Several training scenarios will be included to train fuselage penetration and fire fighting. One of the scenarios involves the new double deck Airbus A380.

## **Ukraine Seals Major Defense Contract with Iraq**

Reprinted from *Jane's Defence Weekly*

Ukraine has signed a major contract to supply the rebuilt Iraqi security forces with vehicles and aircraft, the state-run arms export bureau confirmed from Kiev. Varying estimates of the size of the deal put its worth at between \$2.4 billion and \$2.8 billion, making it the largest contract signed by Ukrspetsexport since Ukraine's independence from the Soviet Union.

Published reports outlined an inventory that would draw on equipment from more than 80 Ukrainian firms to fulfill a requirement for 400 armored vehicles and some 10 aircraft. Specifics revealed in reports by the Russian state-run Ria Novosti included BTR-4 armored personnel carriers and Antonov An-32 "Cline" military transport aircraft. Former Ukrainian defense minister Anatoly Grytsenko, currently the head of the Ukrainian parliament's security and defense committee, was quoted as saying that the deal also included repair and maintenance work on two Mil Mi-8T "Hip-C" helicopters.

## **USAF Buys Global Hawks**

Reprinted from *Defense News*

The U.S. Air Force placed a \$303 million order with Northrop Grumman for five RQ-4 Global Hawk high-altitude unmanned aircraft systems. Under a production contract, the company will build two Block 30 systems and three Block 40 systems for the 303rd Aeronautical Systems Group at Wright-Patterson AFB, Dayton, Ohio. The contract includes a ground station and two sensor suites to be retrofitted into previous production aircraft, Northrop said. The contract runs through 2011.

## **Bollinger Secures Cutter Contract**

Reprinted from *Jane's Defence Weekly*

The United States Coast Guard has awarded a contract to Bollinger Shipyards for \$141 million to construct three *Sentinel*-class fast response cutters. The 15 December 2009 contract option comes after Bollinger passed a recent critical design review as part of a September 2008 contract win for Bollinger to provide design and testing of the first of the planned 58 153-foot vessels. In total Bollinger has the option to build up to 34 fast response cutters for an expected contract award of \$1.5 billion over six to eight years if all options are exercised.

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“It is impossible to lump any two locations in Afghanistan into a single category, said Capt. James Bithorn of A Company, 1st Battalion, 506th Infantry, in his feedback. “This one fact must drive company commanders to mentally prepare and train their company for several different types of campaigns. There is no single or easy answer.”

### **France-Russia Warship Deal**

Reprinted from *Defense News*

Lithuania has joined Estonia in pressing France to explain plans to sell an assault ship to Russia, which have sparked jitters in the Baltic states amid tensions with their Soviet-era master Moscow. Russian and French officials have confirmed Moscow is in talks to buy a Mistral helicopter-carrier assault vessel along with a license to produce at least four others. If it happens, the deal would be unprecedented since World War II. Moscow has long insisted on producing all its own military hardware.

### **Afghan National Army Faces Logistical Challenges**

Reprinted from *Aerospace Daily & Defense Report*

One of the most vexing issues for NATO trainers trying to stand up the Afghan National Army (ANA) is logistics, and setting up a system that allows the ANA to supply its soldiers with food, clothing, ammunition, and shelter without NATO assistance. Maj. Gen. Richard Formica, commander of the Combined Security Transition Command-Afghanistan, the organization charged with training the Afghan Army and police, is working the problem, and says that when it comes to Afghan forces, “typically at most levels they don’t plan well, they’re more spontaneous.”

While the ANA has a system for resupply in place, Formica says that “we want to force that system to work. We’ve asked the mentors along the chain to work with them at each level to try to force it to work. The reality on the ground is when you get ready to go do an op, if they don’t have it and we can give it to them we give it to them so we can go do the op. But it would be a lot worse to just sit on the [forward operating base] and not do ops.”

Part of the problem is that the ANA has yet to stand up its own logistics and resupply units, as a result of the rush to train and field combat troops. Formica says, “In their defense, it’s only been the last couple of years that we started fielding Afghan [combat service support] Kandaks in the brigade, and that was a deliberate decision made to field the infantry guys first. So now they’ve got combat service support Kandaks in the brigades, and we’re trying to make that work.”

### **Iranian Exercises Reveal Flaws in Air Defenses**

Reprinted from *Jane’s Defence Weekly*

Iran’s recent series of air and missile defense exercises have revealed serious flaws in the capabilities of the Islamic republic to defend its nuclear installations from attack, international experts told *Jane’s*. The three-phase exercises that ran from 22-27 November

were hailed as proof that it would be “impossible for enemy jets to enter [Iranian] territory” by their coordinator Brig. Gen. Ahmad Mighani, commander of the Air Force.

This positive spin would seem to obscure some of the critical short-comings of Iran’s ground-based air defense systems, the age and technical deficiencies of which were clearly visible in photographs released by Iranian state media during and after the tests. Aside from the Russian made Tor-M1 (SA-15) air defense system, the entire assembly of Iranian equipment would prove no match for the sophisticated air fleets and electronic warfare systems operated by Israel or the United States, analysts have concluded.

A first-ever test in semi-combat conditions of two important, indigenously manufactured systems reportedly produced a marked operational failure, thereby allowing the attacking aircraft to penetrate the country’s defensive shield, according to analysts who spoke to *Jane’s*.

### **Somali Pirates Change Their Tactics**

Reprinted from *Jane’s Defence Weekly*

The hijacking of the Greek-owned MV Maran Centaurus more than 600 nautical miles northeast of the Seychelles attests to a change in tactics by Somalia-based pirates that will be matched by their international pursuers, an EU Naval Task Force spokesman told *Jane’s* on 1 December.

A year of successful deterrence and disruption operations in collaboration with the combined maritime force and other partners has reduced to zero the number of successful hijackings of merchant ships sailing through the Gulf of Aden and an internationally recognized transit corridor. This, however, has pushed the pirates deeper into the Indian Ocean, where the 29 November taking of the crude oil tanker and 28 crewmembers marked the latest incident in a pattern that began to emerge following the traditional lull of the monsoon season.

“Shipmasters have been advised to stay 600 miles off the coast if they don’t need to come close,” the EU official told *Jane’s*. “What we’re seeing is that they’re being attacked 800-900 miles outside what was classified as a danger zone, and this one sailed through the corridor safely, came out the other end and was captured. It was well outside the danger zone and was still taken.”

### **Experts Doubt Chinese Stealth Fighter Timeline**

Reprinted from *Aerospace Daily & Defense Report*

Contrary to predictions by the People’s Liberation Army Air Force’s deputy chief, Gen. He Weirong, China is unlikely to field a new fighter with F-22-like capabilities within 10 years, according to U.S. aerospace industry and U.S. Air Force officials. The new Chinese fighter is in development and may soon make its first flight, He says. Its operational introduction may take eight to 10 years. The new Chinese fighter could come from Avic Defenses Chengdu facility, which developed China’s latest J-10 fighter, or from Shenyang. He says the PLAAF will emphasize development

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# Training & Simulation *report*

## **Malaysian Joint Staff Trains for Decision Support**

Reprinted from Rolands & Associates Press Release

The Malaysian Armed Forces joint theater level simulation project team recently completed four weeks of specialized training at the R&A Simulation Center in Del Rey Oaks, California, in preparation for local, national and international training exercises and operational plan evaluations using the joint theater level simulation (JTLS). JTLS version 3.4, recently updated by R&A for the Malaysian Armed Forces, was used for the training. R&A engineers prepared and delivered a unique set of lectures and hands-on training for the Malaysian Armed Forces at their modeling and simulation center near Monterey, California. The presentations were developed specifically for the Malaysian Armed Forces requirements and culminated with focused training.

Unique to this training was R&A's specialized approach to establishing a local network in the hotel whereby the Malaysian Armed Forces attendees could install and execute JTLS off site. The project team returned to Kuala Lumpur having independently set up and executed several JTLS distributed networks with multiple players. This aspect of JTLS training has been found to be extremely valuable to all users with limited staffs and that want to take their scenarios to locations remote from their main simulation centers.

## **A Virtual Environment Teaches Real Science**

Published by permission of *Johns Hopkins Magazine*

Just last year, Room 10 at Chesapeake High School in Baltimore County could have served as the model for the uninspiring classroom. Two-chambered, built with blocks painted off-white, and without windows, it was a place where students sat quietly at desks copying instructions from a chalkboard. Students returning for this school year could be forgiven for not recognizing the place. Now, the walls glimmer with colors in motion—the glow of state-of-the-art computers that surround students with visual graphics and dynamic gaming technology.

The rear chamber has been outfitted with a series of wide screens and work stations that mirror the effect of sitting in a cockpit. There, groups of students in math and science attempt to unlock the secrets of the geography surrounding Mount St. Helens, the volcano that erupted in 1980, wiping out hundreds of square miles of plants and thousands of animals, and killing 57 people. Once a by-the-books business classroom, Room 10 is now abuzz with action more akin to video games than lectures.

With software created by the Applied Physics Laboratory and educational programs developed with the help of Johns Hopkins' Center for Technology in Education, the project, named Seahawk, gives kids the chance to fly virtual planes over the rubble of the

former peak, pilot boats in nearby mountain lakes, or get behind the wheel of a four-wheel-drive vehicle. Students at this public high school in an aging, working-class suburb of Baltimore virtually test air and water quality, investigate what types of plants and animals have returned to the region, and calculate the effects humans have had on the land surrounding the volcano.

## **Officials: Progress with Integrating Missile Defense Warning**

Reprinted from *Aerospace Daily & Defense Report*

U.S. defense officials on December 16, claimed they were about a year ahead of schedule in developing a joint program that consolidates integrated air and missile defense training across all military services and levels of combatant command. In a teleconference with reporters, representatives from U.S. Joint Forces Command (JFCOM), Strategic Command (STRATCOM) and the Navy's Fleet Forces Command declared success with tying together "75 percent" of command structures, from national security leaders on down.

The last tier—"the shooter," like the Aegis ship or Army battery—remains the toughest level, and they could not provide a date by which they expect to finish the simulation-based training architecture. "That will be a little bit tougher nut to crack and we'll demonstrate that eventually," said Patric McVay, a JFCOM/STRATCOM liaison. "We've got some work to do with the Missile Defense Agency."

The effort, called "All Things Missile", stems from a recognition that U.S. missile defense remains a somewhat fragmented capability within the Defense Department, with the military branches still in the early phases of adopting programs and procedures developed by the Missile Defense Agency. "In the past, we've all tried to develop individual solutions," explained Gregory Knapp, executive director of JFCOM's Joint Warfighting Center and Joint Training Directorate.

## **H1N1 Simulation Modeling Shows Successful Vaccine Rollout**

Reprinted from M&S Congressional Caucus Newsletter

Rapid distribution of the H1N1 vaccine is vital to reducing the spread of the influenza virus. The Canadian Medical Association used a pandemic outbreak simulation model to project how many people would be infected under different disease control situations. The simulation accounted for the timing of vaccinations, school closure and the effect of pre-existing immunity to the virus. The Canadian Medical Association concluded that administering vaccinations not only protects those who received the vaccination but also healthcare systems which would not have to cope with a pandemic outbreak of the virus. The simulation models varies

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satisfy intelligence, reconnaissance and surveillance requirements and also be a weapons carrier.” Brown said.

Mantis is the largest autonomous vehicle ever built in the U.K., with a wingspan of 65.6 feet. Were BAE to build the Mantis for a U.S. market, a second, separate production line would be launched. Whether that line were based in the U.S. or in the U.K. is “an open question,” Brown said.

### **India Explores New Buy of Carrier Fighters**

Reprinted from *Defense News*

India has asked four foreign aircraft makers for preliminary bid info on a new purchase of carrier-based fighter jets, even as it

continues a year of talks about buying more MiG-29Ks, Defense Ministry sources said.

The Navy is awaiting delivery of 16 MiGs ordered in 2004 for \$700 million. The deal includes an option to buy 30 more for the same \$48 million apiece by 2015, a senior ministry official said. The official declined to say whether India would exercise its option.

He said the requests for information had gone in early December to Boeing, which makes the F-18 Super Hornet; Lockheed Martin, for the Joint Strike Fighter; BAE Systems, for the Eurofighter; and Rosoboronexport for the Su-33. The planes would arm the three aircraft carriers that the Navy plans to have by 2016.

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of reconnaissance/early warning, strike, strategic airlift, and air and missile defense. The J-10 began large-scale service in 2006.

While replicating the F-22 seems unlikely, aerospace officials with insight into the stealth fighter programs contend that building an F-35-like aircraft (with larger signature and less aerodynamic performance) could be a threat to the U.S. if they are built in the 1000s. “Even fourth generation fighters, when pitted against 187 F-22s in large numbers, will eventually wear [the stealth fighters] down,” an aerospace industry official says. “They only carry eight air-to-air missiles. They don’t have to match Raptor capabilities if they build an advanced fighter in F-35 numbers.”

It is not considered an impossible technological leap for China to build an F-35-like fighter with some stealth capabilities in 10 years.

### **Last Manned U.S. Tactical Plane? Not Yet**

Reprinted from *Defense News*

Though the U.S. military has fielded many new unmanned aircraft in recent years the Pentagon is far from sending the last manned war plane into combat, Air Force Lt. Gen. David Deptula said December 3. “We haven’t even seen the horizon yet” on the last manned tactical aircraft, Deptula, Air Force deputy chief of staff for ISR, said.

As the defense community debates the future of combat tactical aviation, Deptula said that fielding a fleet of totally unmanned, or even autonomous, combat planes is many years away. That’s because no sensor package is capable of “360-degree situational awareness that can process information” and decide how to respond better than the human brain, he said.

Vice Adm. Jack Dosett, deputy chief of naval operations for information dominance and the director of naval intelligence, said the sea service “will walk our way into” unmanned tactical aircraft because “there are some significant challenges ahead.”

The Navy continues “early stages” of tests on its X-47B

unmanned combat aircraft. A fact sheet from prime contractor Northrop Grumman says the aircraft will demonstrate “carrier-based launch and recovery in the 2011 timeframe,” and enter service “in the 2020 timeframe.”

Just how the Air Force and other military services should proceed with the next generation of tactical air frames is under consideration in the much-anticipated 2010 Quadrennial Defense Review. Senior Pentagon brass have been grappling with the issues.

“We’re at a real time of transition here in terms of the future of aviation, and the whole issue of what’s going to be manned and what’s going to be unmanned, what’s going to be stealthy and what isn’t,” and how to address the threats has changed even in the past few years, Adm. Michael Mullen, chairman of the Joint Chiefs of Staff, told the Senate Armed Services Committee in May.

At the hearing, Mullen endorsed the notion that the Air Force might be building its last manned fighter. “There are those that see JSF as the last manned fighter,” Mullen told the Senate panel. “I’m one inclined to believe that.”

Deptula, who said the U.S. military is years from having totally unmanned combat planes, nevertheless sees promising developments. Among them are “planes the size of a fly operating in this room watching and collecting information on everything we are doing.”

### **DSB to Study Contracting**

Reprinted from *Defense News*

Former Pentagon acquisition executive Jacques Gansler will lead a Defense Science Board assessment into how the Defense Department buys combat support services. The study, mandated by Congress, comes amid growing concerns in Washington about the Department’s ever-increasing reliance on private-sector workers to do an ever-increasing number of jobs, especially in combat zones, including base patrols, engineering, driving trucks, securing data and preparing meals in war zones.

# Major Program *report*

## **New Bomber to Focus Heavily on ISR**

Reprinted from *Aerospace Daily & Defense Report*

The U.S. Air Force's ISR chief says a new bomber design will be more about intelligence gathering and non-kinetic weapons than about bombing. The arsenal of the "long-range, ISR/Strike" aircraft may eventually include directed energy and network attack, says Lt. Gen. Dave Deptula, deputy chief of staff for intelligence, surveillance and reconnaissance.

Directed energy weapons under development by the Pentagon include a range of lasers and devices that produce pulses of high-power microwaves. Other non-kinetic capabilities include the attack of enemy sensors with very precise, exotic-waveform jamming and the low-power, electronic invasion of networks that link tactical weapon systems such as advanced air defenses.

## **Construction Starts on First Joint High Speed Vessel**

Reprinted from *Aerospace Daily & Defense Report*

Construction started December 17 on the first joint high speed vessel, a ship praised by senior U.S. military leadership for its management up to this point. Rear Adm. Bill Landay, head of the U.S. Navy program executive office for ships, has hailed the joint high speed vessel as a program that has managed to stay on track throughout its development. "Our goal for design maturity was 85 percent," he said. "Our analysis says we're at 87 percent." The program completed an extensive production readiness review October 20 in preparation for the start of fabrication.

The joint high speed vessel is an Army vessel, but will be delivered to the Navy first, in fiscal 2012. The program is a merger between the previous Army theater support vessel and the Navy high speed connector. The Navy has taken the lead on acquisition. The joint high speed vessel fabricator Austal USA Shipyard of Alabama expanded its construction capacity with a modular manufacturing facility, which will have the ability to build both the joint high speed vessel and the littoral combat ship.

## **U.S. Army's GCV Effort Starts to Take Shape**

Reprinted from *Jane's Defence Weekly*

The U.S. Army's much-anticipated ground combat vehicle effort is beginning to take shape after officials detailed the platform's requirements and acquisition strategy during a December briefing for government representatives. Maj. Gen. John Bartley, the Army's Program Executive Officer for integration, said he believes the first production ground combat vehicle — which will be an infantry fighting vehicle — will be complete in seven years.

The ground combat vehicle effort is on its way to becoming a formal procurement program less than a year after the Defense Department terminated its predecessor: a family of manned

ground vehicles being developed under the former Future Combat Systems program.

The new group of vehicles must maximize "protection, system survivability and mobility", while also allowing for significant growth and additional technology to be incorporated in the future, Bartley said. Much of the ground combat vehicle's attributes and specifications are being left for industry to determine based on what is technologically achievable.

Designs for the ground combat vehicle infantry carrier are to account for mobility in diverse environments including urban terrain, Col. Bryan McVeigh, project manager for manned systems integration, said during the briefing. This is likely to result in a smaller platform than a main battle tank-sized vehicle.

A broad lethality requirement would push the infantry fighting vehicle toward a 30mm or 40mm cannon for its main gun, but contractors will be left to choose which weapon is the most feasible. The infantry fighting vehicle variant must also be capable of hosting scalable non-lethal weapons, carry three crew members and a nine-person squad and interface with emerging situational awareness equipment such as the ground soldier system.

## **Independence Day**

Reprinted from *Aerospace Daily & Defense Report*

The U.S. Navy's second littoral combat ship, the future *USS Independence*, was commissioned January 16 in Mobile, Alabama, following delivery of the vessel to the service December 18. The *Independence* is the first littoral combat ship built by the General Dynamics-Bath Iron Works team. The 417-foot high-speed aluminum trimaran will compete with Lockheed Martin's hull form when the Navy downselects to a single ship type. General Dynamics now has until February 2010 to correct most of the trial cards received during the acceptance trials, completed November 19. The ship's propulsion plant, sea-keeping and self-defense performance were deemed "commendable."

## **A400M Finally Takes to the Skies**

Reprinted from *Jane's Defence Weekly*

The Airbus Military A400M transport aircraft made its long-awaited maiden flight from the company's facility in Seville, Spain, on December 11. The first testbed aircraft, MSN001, departed Seville, site of the A400M final assembly line, with three flight-deck crew and three specialist engineers in the main cabin for a flight that lasted approximately three hours. With 14 tons of flight-test instrumentation on board, MSN001 was at 80 percent of its maximum take-off weight for the flight, which was remotely monitored by 100 technical specialists in both Seville and Toulouse.

# Who's where

■ General Dynamics, Fairfax, Virginia, has appointed **Greg Gallopoulos** senior vice president, general counsel and corporate secretary. He succeeds **David Savner**, who is retiring. Gallopoulos has been vice president and deputy general counsel since August 2008.

■ ManTech International has named **Mark Chadason** a senior vice president for special programs and risk management, serving as the executive officer of the board of directors' Special Programs Oversight Committee. He retired last year from the CIA, where he served as chief of station in European and North African locations.

The company has also named **Sally Sullivan** executive vice president for business development, to lead business growth supporting customers in the U.S. Defense Department, intelligence community and throughout the federal government. Sullivan was the vice president for Defense, Space & Secured Infrastructure at Bechtel National.

■ **Maureen Baginski**, has been named vice president of the intelligence business and national security adviser for Serco, Reston, Virginia. She is the former executive assistant director for intelligence of the FBI. Baginski joins Serco after working at Sparta, where she was president of the national security systems sector. She previously served at the U.S. National Security Agency for 24 years.

■ **Gen. Ronald R. Fogleman**, USAF (Ret.), a former U.S. Air Force chief of staff, has been appointed chairman of Alliant Techsystems, Minneapolis. He has been a member of the board of directors and succeeds **Daniel J. Murphy**, who has also been chief

executive officer and will retire in March. **John L. Shroyer**, who is chief financial officer, also will be interim chief executive officer.

■ **Earle Rudolph** has been named vice president, business development and **Doug Denny** vice president for government relations of Washington-based MDBA Inc. Rudolph was vice president, business development for research strategy of QinetiQ Inc. Denny was manager of the F/A-18 program for Boeing Integrated Defense Systems. **John Pranzatelli** has been named vice president, strategy and business operations. He was vice president, finance and business management for the Northrop Grumman Corporation.

■ **Col. Ward Heinke**, USAF (Ret.), has become director of cyber-defense solutions for Raytheon Information Security Solutions, Falls Church, Virginia. He was commander of the 608th Air Force Network Operations Center, Barksdale AFB, Louisiana.

■ **Leo Quinn** has succeeded **Graham Love** as chief executive officer of QinetiQ, London, the group announced. Quinn was group chief executive of De La Rue. Love, who is stepping down after eight years with the group, will remain a consultant to QinetiQ on the Defence Training Rationalisation project.

■ **Bob Murphy** has been appointed president of BAE Systems Land & Armaments. He succeeds **Linda Hudson**, who was recently appointed president and chief executive officer of BAE Systems Inc., the U.S. branch of the British defense company. Murphy also will serve on BAE's Executive Committee.

■ SAIC, San Diego and McLean, Virginia, announced that **Jim Cuff** will head its Corporate Business Development organization, and that **Glenn San Giacomo** will succeed Cuff as general manager of SAIC's Logistics and Engineering Solutions business unit.

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ways health officials can administer vaccinations and manage the spread of H1N1.

## India's Military Slowly Moving to Simulators for Training

Reprinted from *Defense News*

The Indian military still relies far more on live exercises than on simulators, but this is slowly changing as the force shifts from platform-centric to network-centric warfare, said a senior Indian Defense Ministry official. The Indian Army, Air Force and Navy spend about \$250 million each year to develop and buy simulators, a figure expected to grow to nearly \$400 million in five years,

the official said.

Still, change is likely to be slow for India's manpower-intensive force, one analyst said. "There is unlikely to be a dramatic shift in simulators because of the current psyche of greater reliance on live practices rather than simulated ones," said Rahul Bhonsle, a retired Indian Army brigadier general.

"Given the limited capital interface of the Indian military, reliance will remain on real-time exposure rather than simulators until the standards of the simulation experience replicate real life or provide better learning experience particularly in terms of feedback

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to individuals, subunits and units,” Bhonsle said.

### **Technology Underpins Training Solutions**

Reprinted from *Worldwide Training & Technology*

Technology is an enabler for many training functions. The current generation of combat training jet aircraft, for example, including the Alenia Aermacchi M-346 Master, the BAE Systems Hawk advanced jet trainer and the Korea Aerospace Industries/Lockheed Martin T-50 Golden Eagle, all provide for advanced embedded training systems.

These systems, integrated with the aircraft’s avionics and flight management systems, give instructors the ability to emulate a wide variety of weapons and insert various threats and mission scenarios to enhance training and stress the student where necessary. The so-called glass cockpits, embodying high technology from multifunction displays to advanced head-up displays to moving map displays, are normally configured for the main follow-on aircraft at which the training is aimed—the Eurofighter Typhoon in the case of the Royal Air Force or the F/A-18 for the Australians, for example.

Perhaps the most crucial area in which new technologies are being inserted into training systems is the constructive training arena, in which realistic synthetic environments, powerful computing systems and advanced algorithms combine to provide a high-fidelity training capability for battlefield command functions.

“The overriding theme is to be able to train as you fight by employing advanced technologies aimed at realistic training and integrating powerful solutions for modern conflict situations,” said Torsten Bernström, director of business development, land and armaments for BAE Systems’ Global Combat Systems division in Sweden.

### **Generic Name, Global Sales**

Reprinted from *Defense News*

Pilots of the F-35 Joint Strike Fighter and the United Kingdom’s Military Flying Training System will know it by the Lockheed Martin brand name NX Train, while Lufthansa airline crews call it AirTrack. Among European F-16 partner nations, it’s known as the Viper Training System, but in Australia, the personal computer-based simulation system goes by the AirBook label.

Recently, operators and maintenance personnel of ScanEagle unmanned aerial vehicles began training on a learning system called Envision, the product of a joint venture between a Boeing subsidiary and Corsair Engineering. Behind these and other seemingly disparate systems is a small developer of personal simulation-based learning tools called SimiGon. The company’s technology and backstage strategy of generic branding is starting to pay off through a network of partners and certified suppliers worldwide.

Based in Orlando, Florida, with research and development

facilities in Reston, Virginia, and Herzliya, Israel, SimiGon is the creator of SIMbox, a simulation development management and delivery system. SIMbox provides users the ability to create, modify, manage and disseminate modeling, training, mission rehearsal, battle management and other online learning material.

### **Gaming to Build Security**

Reprinted from *Defense News*

Advances in computerized modeling and prediction of group behavior, along with improvements in video game graphics, are making possible virtual Afghanistan or another “world” in which defense analysts can explore and predict results of possible military and policy actions, University of Maryland computer science researchers say in a commentary published in the November 27 issue of the journal *Science*. Defense analysts “can propose a policy option and walk skeptical commanders through a virtual world where the commander can literally ‘see’ how things might play out,” write authors V.S. Subrahmanian and John Dickerson of the university’s Institute for Advanced Computer Studies.

### **Easing UAV Collaboration**

Reprinted from *Defense News*

The U.S. Air Force Research Laboratory announced the development of a new collaborative simulation capability that aids cooperative unmanned aerial vehicle research. The aerospace vehicles technology assessment and simulation unmanned aerial vehicle toolset eliminates collaborating teams’ reliance on simulation capability variances that may disrupt or degrade common research efforts. The toolset also provides a common framework for each team’s design implementation and testing, while protecting the team’s proprietary information.

### **U.S. Fleet Forces Command Joint & Simulation Training**

Reprinted from U.S. Fleet Forces Press Release

Commander, U.S. Second Fleet, completed a fleet synthetic training-joint (FST-J) in October. It was the culminating event in *USS Harry S. Truman* carrier strike group’s major combat operations predeployment certification. *USS Dwight D. Eisenhower* strike group also participated as part of its sustainment phase and provided the *Truman* strike group the opportunity to train as an expeditionary strike force. Commander, Carrier Strike Group 12, participated in the role as the coalition force maritime component commander, with the staff working from Tactical Training Group Atlantic in Virginia Beach.

The event connected second fleet ships pier-side in Norfolk, Virginia, and Mayport, Florida, with U.S. Air Force units in Oklahoma and Oregon and coalition partners in Germany. Military representatives from Turkey and Italy observed the exercise from the supporting shore commands and pier-side ships, including *USS Harry S. Truman* (CVN 75) and *USS Ross* (DDG 71), in anticipation of the nations’ participation in future FST events.

# M&S awards

## NTSA Presents 2010 Modeling & Simulation Awards at annual Modeling & Simulation Leadership Summit

On Monday, February 1, 2010, the National Training and Simulation Association (NTSA) presented its annual NTSA M&S Awards for Outstanding Achievement in Modeling & Simulation. The awards were presented during a lunchtime ceremony at the 2010 Modeling & Simulation Leadership Summit, held at the Hilton Virginia Beach Oceanfront Hotel in Virginia Beach, VA. The awards were presented by Rear Admiral Fred Lewis, USN (Ret), President, NTSA, and three members of the Congressional Modeling & Simulation Caucus: Congressman J. Randy Forbes (VA-04), Caucus Founder and Co-Chair, Congressman Glenn Nye (VA-02), and Congressman Bobby Scott (VA-03).

Before presenting the awards, RADM Fred Lewis noted that “a record number of nominations were received this year – over 60 – so these awardees truly represent the best in the industry in terms of innovation, creativity, advancing the state-of-the-art, and the value and impact of their work. These awardees have made a significant impact in their respective arenas by applying new concepts and technologies to problems facing their customers and partners.”

NTSA is proud to announce the following winners of the 2010 NTSA Modeling & Simulation Awards:



Congressman Glenn Nye; Congressman Bobby Scott; Mr. Jon Peoble, Raytheon Company; Mr. Jim Rodrigue, Raytheon Company; Congressman Randy Forbes; RADM Fred Lewis, USN (Ret)

### Analysis

*The LVC-BASE Analysis Team, Raytheon Company*

Raytheon's LVC-BASE (Live-Virtual-Constructive Battlefield Analysis and Simulation Environment) Analysis Team developed an innovative, new methodology for testing and analyzing future capability for the Javelin Missile Command

Launch Unit (CLU). By creating a virtual representation of the Javelin CLU - using a commercial serious game engine - the LVC-BASE team created a platform that allowed for detailed user testing of the new Javelin Precision Terminal Guidance technology in order to support immediate Warfighter needs.

### Cross Function

*Department of Arts and Technology, University of Texas at Dallas*

The First Person Cultural Trainer is a TRADOC G2 sponsored game, immersing players into rural, semirural and urban 3D settings within Iraq and Afghanistan. Players interact with 3D non-player characters who display emotions, form opinions, and



Congressman Glenn Nye; Congressman Bobby Scott; Dr. Marge Zielke, University of Texas at Dallas; Congressman Randy Forbes; RADM Fred Lewis, USN (Ret)

change moods and cooperation levels based upon unscripted cultural interactions, with intelligence penetration of IED networks as the goal. Highly composable, this “first of its kind” game combines training for intelligence gathering and cultural immersion at the tactical level.

### Training

*Common Driver Trainer Team. Science Applications International Corporation*

The Science Applications International Corporation Common Driver Trainer team is recognized for exceptional performance in delivering simulation systems for the Common Driver Trainer Mine Resistant Ambush Protected (CDT MRAP) Variant. This state-of-the-art system, which provides a way for soldiers to train on the Army's newest vehicles prior to deployment, saves lives every day in Iraq and Afghanistan by reducing the number of vehicle roll-overs.

### Lifetime Achievement

*Mr. Bill Millsbaugh, Tec-Masters, Inc.*

Mr. Bill Millsbaugh's vision, innovation, technical abilities, and leadership in more than 40 years of analyzing and supporting Field Artillery system development, training, testing, modeling, and experimentation has significantly enhanced the Field Artillery's ability to train and provide the Warfighter with integrated systems. His lifelong dedication to training, analysis, and modeling and simulation has provided the Field Artillery an enduring legacy.

### Lifetime Achievement

*Dr. J. Dexter Fletcher, Institute for Defense Analyses*

Dr. J. Dexter Fletcher is recognized for his leadership, creativity, vision, and continuing contributions to technology and training. His career began with the earliest computer-assisted instruction and evolved through leadership and support of intelligent tutoring systems, networked simulation environments, and on-demand education, training, and performance aiding.

### 2010 Honorable Mentions

- Honorable Mention in the Cross-Function category goes to Dr. Barry Silverman and the ACASA Lab at the University of Pennsylvania for their work on NonKin Village.
- Honorable Mention in the Training category goes to the Alion Science and Technology M&S Team for their support of the Navy Fleet Synthetic Training Program.

**NTSA would like to recognize the following company members for their support throughout the year.**

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