

NTSA's Training Industry *news*

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Current *news*

Going Global

Reprinted from *Aviation Week & Space Technology*

Two of the U.S. Air Force's new Global Hawk Block 30 aircraft are conducting imagery intelligence missions over Japan following the massive earthquake that struck off the island chain's northeast coast on March 11. This marks the Northrop Grumman Global Hawk's fourth combatant region of operations abroad—the Pacific, Central Command (supporting Iraq and Afghanistan), European Command and Southern Command (over Mexico and South America). Talks are now under way to potentially fly new Block 30 versions from Naval Air Station Sigonella in Italy to monitor activities in Libya, Bahrain and other areas of unrest in Africa and the Middle East, according to program officials.

The two unmanned aerial systems are flying out of Andersen Air Force Base in Guam and providing imagery along with U-2 aircraft from Osan Air Base in South Korea. The second unmanned aerial system arrived there in early January, said Gen. Gary North, who oversees U.S. Air Forces in the Pacific.

DARPA, U.S. Continue "Chimney" Testing

Reprinted from *Defense News*

Excitement is growing around a new chimney technology designed to better protect vehicles from roadside bombs, as the U.S. Defense Advanced Research Projects Agency (DARPA), the U.S. Army and Marine Corps continue to gather promising results from blast tests. Developed with DARPA funding by Maryland-based Hardwire, the chimney has gone through blast testing at Aberdeen Proving Ground, Maryland, over the last several months.

"We consider this promising technology and we're very anxious to continue to test it," Army Secretary John McHugh told members of the House Appropriations defense subcommittee. The chimney, which is no wider than a laptop computer and runs straight through the vehicle, works like a pressure relief valve. McHugh said he viewed videos of the blast testing in the office of Gen. George Casey, the Army chief of staff. In the videos, the Humvees barely leave the ground after enormous explosions

take place directly beneath them. Meanwhile, the Marine Corps plans to test the modified vehicles' mobility at Twentynine Palms, California, according to sources.

Mini-Weapons Add Punch to Small UAVs

Reprinted from *Aerospace Daily & Defense Report*

A new generation of highly accurate mini-weapons is being developed for small, unmanned aerial vehicles for use against personnel and light vehicles. One factor in development is the need to weaponize small unmanned aerial vehicles such as the RQ-7 Shadow from AAI Corporation, in use by the U.S. Army and Marine Corps, which cannot carry a 100-pound Hellfire missile.

Raytheon's latest offering in this area is the small tactical munition, a 13-pound glide bomb with GPS and semi-active laser guidance that can hit fixed and moving targets in all weather. Don Newman, program director for advanced weapons at Raytheon, says it is not a prototype but a producible weapon, and the company can take immediate orders.

Being small does not mean the small tactical munition is cheap. "When you have a precision weapon with GPS and seeker, most of the cost is in the nose," Newman said. "You've got the same precision as a larger weapon, just in a smaller package."

Mass production would bring costs down, and the small tactical munition also could increase the weapon load of the larger RQ-1 Predator and M1-9 Reaper unmanned aerial vehicles, both from General Atomics. "You could replace one Hellfire missile with 6-8 small tactical munitions," Newman says.

Pirates Undeterred by Recent NATO Actions

Reprinted from *Jane's Defence Weekly*

Warships operating as part of international naval deterrence efforts have scored some recent successes in liberating hijacked vessels and rescuing their hostages, even as the Somali-based pirates lunge deeper into the Indian Ocean to catch their prizes. Such actions, however, have left the pirates undeterred. Danish warship *HDMS Esbern Snare*, an Absalon-

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President's *notes*

Rear Adm. Fred Lewis, USN (Ret.)

For NTSA Members:

Modeling and simulation stakeholders and the 2011 Leadership Summit met jointly on February 7th in Chesapeake, Virginia, to explore avenues of establishing M&S as a national enterprise, through creation of national awareness of the vital importance of the technology. The meeting focused on the possibility of constructing a comprehensive action program and corresponding organizational structure as a vehicle to further the objective. During the day-long session, attendees heard from speakers in the areas of public awareness, education/workforce, professional knowledge, funding and cross community/organizational cooperation. These subject matters were then vigorously discussed during Q&A and open discussion.

The central problem was agreed to be that M&S, through its success in permeating much of human learning and human activity, may have become so structurally embedded in all technology that recognition of its signal, individual contribution has been overlaid. This results in M&S not being accorded the scientific and professional attention it deserves as a distinct discipline and community of practice. Means to address this shortcoming were discussed, including education (where and how to introduce M&S curricula); how to create a body of knowledge; and enhancement of certification of M&S professionals to emphasize the distinct nature of the technology.

The issue of funding for such an ambitious effort was also addressed, with recognition that one hurdle is the large and rapidly growing number of institutions of all kinds which are embracing modeling and simulation of one sort or another, but which are doing so in relative isolation. It was also acknowledged that while defense and national security applications are, for the time being at least, the single largest M&S field, other communities are evolving rapidly and in some cases unpredictably. It was emphatically agreed that the M&S community at large must remain agnostic, embracing all M&S applications. Nevertheless, it was also acknowledged that there may be an element of parochialism, and therefore reluctance, on the part of some of the emerging communities as they contemplate whether to join with the national security establishment in nationwide promotion of the technology.

After much productive if sometimes divergent discussion, the meeting arrived at the conclusion that a time factor must be built into the effort to ensure momentum toward the eventual goal. That goal was summed up as a dedication to having M&S nationally recognized as a discipline, a profession, an industry and a market with its own identity and that it is critical to meeting national socioeconomic and technical challenges.

Several action items resulted from the discussion which will now become the focus of ongoing effort:

- Clarification of a vision statement
- Response to Congressman Forbes' request for an M&S primer
- Continuation of steps to establish an agenda addressing outcomes and advocacy
- Enhancement of communications within the current group
- Establishment of a smaller working group to refine the ongoing agenda
- Reconvening of the full group within six months

In conclusion, I pledge the ongoing support of the National Training and Simulation Association to the effort, and my determination to see it through.

Upcoming *events*

Registration is open for these upcoming events.

MAY 10-12, 2011 • ITEC 2011 • KOELNMESE • COLOGNE, GERMANY

MAY 24, 2011 • 2011 USAF ADVANCED PLANNING BRIEFING TO INDUSTRY (APBI) • HOLIDAY INN FAIRBORN • DAYTON, OH

MAY 30 - JUNE 2, 2011 • SIMTECT 2011 - ASIA-PACIFIC SIMULATION AND TRAINING CONFERENCE AND EXHIBITION • MELBOURNE CONVENTION & EXHIBITION CENTRE • MELBOURNE, AUSTRALIA

JUNE 15-16, 2011 • 2011 TRAINING & SIMULATION INDUSTRY SYMPOSIUM (TSIS) • RENAISSANCE ORLANDO AT SEAWORLD • ORLANDO, FL

JUNE 23, 2011 • M&S EXPO ON CAPITOL HILL RAYBURN FOYER, RAYBURN HOUSE OFFICE BUILDING • WASHINGTON, D.C.

AUGUST 2-4, 2011 • ADL IMPLEMENTATIONFEST 2011 • ROSEN CENTRE HOTEL • ORLANDO, FL

NOVEMBER 29-DECEMBER 2, 2011 • I/ITSEC 2011 ORANGE COUNTY CONVENTION CENTER • ORLANDO, FL

Please visit www.iitsec.org for more information or contact Barbara McDaniel at (703)247-2569 or bmcdaniel@ndia.org



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The Global marketplace

Russia Eyes Panhard Armored Vehicles

Reprinted from *Defense News*

Russian government agencies, departing ever further from the decades-held principle of buying domestic, are mulling the purchase of hundreds of “vehicle blinde leger” (VBL or light armored vehicles) made by Panhard General Defence for the Russian border guard service.

Panhard is in talks with Russian authorities over a possible sale of up to 500 VBLs, and is negotiating as a first step, said Charles Maisonneuve, who directs marketing and communications for the Paris company. “Russian military industry doesn’t produce an LMV equivalent to the VBL,” Maisonneuve said. Russia’s arms export agency, Rosoboronexport, said that it is not involved in talks with Panhard.

A source in the Russia defense industry said that the negotiations are being conducted by the Federal Security Service, or FSB, of which the Federal Border Guard Service is a part. FSB officials declined immediate comments.

The four-meter-long, 3.1-ton VBL is a wheeled all-terrain fully amphibious vehicle that carries two to three people and a variety of light weaponry depending upon variant. Crew protection is rated at NATO’s lightest standardized agreement level. The vehicles debuted in French service in 1990 and today are in service in 17 countries; their deployment record includes peacekeeping operations in Bosnia, Kosovo and Somalia.

Lockheed Working on New Product Features

Reprinted from *Aerospace Daily & Defense Report*

Lockheed Martin is working on some new product features to fulfill specific requirements for some F-35 overseas customers. Australia has asked that the Royal Australian Air Force’s F-35s be capable of using both the “probe and drogue” and “boom and receptacle” aerial refueling systems, says Tom Burbage, Lockheed executive vice president in charge of the F-35 Joint Strike Fighter program.

U.S. Air Force fighters are equipped for boom-and-receptacle refueling, while U.S. Navy and Marine Corps fighters use the probe-and-drogue method. But the Royal Australian Air Force has

ordered Airbus Military A330MRTT tankers, which have both refueling systems.

Burbage says another unique requirement that Lockheed is working on is a drag chute. Canada and Norway will be operating F-35s on runways that will have to deal with significant ice and snow, so each nation has asked that a drop chute be developed, he says.

The drop chute and refueling requirements are being worked on and will be “available when the customer needs it,” Burbage says, adding that this will come in either 2017 or 2018. Lockheed is confident it can fulfill these requirements, he says, adding that “it’s not a complex problem.”

South Korea to Buy Global Hawk

Reprinted from *Aerospace Daily & Defense Report*

The U.S. and South Korea have reached a handshake agreement for the sale of the Global Hawk unmanned surveillance aircraft, according to program sources. The sale, which could take place as soon as this year, will include four of the high-flying unmanned aerial vehicles. Though the Global Hawk is designed to carry a variety of payloads, including imagery sensors, radars and signals intelligence collectors, South Korea has been approved for the Block 30I version, which includes an electro-optical/infrared system.

Several countries in Asia have been interested in buying the Global Hawk, including Japan, South Korea and Singapore. A version of the Global Hawk is being developed for the German Luftwaffe’s signals intelligence collection demands, and NATO has selected the Block 40 platform to carry its next-generation air-ground surveillance sensor. However, the range and payload capacity of the aircraft—nearly 3,000 pounds—subject it to the restrictions of the missile technology control regime.

Japanese Wants Long F-X Production Run

Reprinted from *Aerospace Daily & Defense Report*

A Japanese industry group is urging the government to keep the country’s planned F-X fighter in production until 2028, raising the stakes for the three Western companies competing for the

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class command and support ship operating as part of a NATO task force, freed a hijacked fishing vessel on 11 February, taking 16 suspected pirates into custody and liberating two Yemeni hostages, according to a NATO statement. AK-47 assault rifles, rocket-propelled grenade launchers and ammunition were found on board.

However, pirates continue to attack merchant vessels plying the world's most valuable shipping lanes. On 12 February the Maltese-flagged MV *Sinin* bulk carrier was seized some 350-nautical miles east of Oman in the North Arabian Sea. Days earlier, Italian-flagged MV *Savina Caylyn* was hijacked 670-nautical miles east of Socotra Island in the Indian Ocean. Maritime analysts say the pirates are raising the stakes with greater numbers of weapons and more sophisticated tracking devices aboard both their smaller skiffs and the larger motherships—often vessels that have been seized earlier.

Cyberwarfare and Electronic Attack Interest Congress

Reprinted from *Aerospace Daily & Defense Report*

A string of defense-related congressional hearings has revealed a lot of bad news and a bit of promise for proponents of cyberwarfare and electronic attack. China is annually increasing its defense budget by about 12 percent and its expanding economy will continue to support those investments, says Rep. Randy Forbes (R-VA), chairman of the House Armed Services Committee's readiness subcommittee. He identified a "voracious appetite for natural resources [that] threatens adjoining nations [and] serves to destabilize regional order." Beijing also is challenging U.S. advantages in the maritime, aviation, space and cyberspace venues.

Continuing that dire message, the Pentagon's top cyberwarrior, Army Gen. Keith Alexander, told the House Armed Services

Committee that he rated U.S. Cyber Command as average in its ability to protect the military's thousands of networks. To improve, "We are working extremely hard on building the hardening part of our networks," he says. Yet, some cyber threats are being ignored because no one has told Cyber Command and the National Security Agency to take on the task.

Yet there are some bright spots tucked away in the days of testimony. F-22s are finally getting long-delayed upgrades. Raptors coming off the production line are wired for Increment 3.1 pre-planned upgrades to add synthetic aperture radar ground-mapping capability, self-targeting of precision bombs using onboard sensors and carriage of eight small diameter bombs. The capability is being added this year.

Rocket Maker Sees NASA Stalemate Causing More Layoffs

Reprinted from *Aerospace Daily & Defense Report*

The U.S. government's ongoing failure to devise a spaceflight plan for NASA after the shuttle fleet is retired raises the specter of more workforce cuts in the 50-year-old U.S. launch industry, with serious industrial-base implications for the nation, according to the head of rocket-engine manufacturer Pratt & Whitney Rocketdyne (PWR).

"To me the shuttle ending is just a huge scenario that in the history of spaceflight this country has never faced," said PWR President Jim Maser after attending a chief executive officer meeting called by top NASA management. "I don't think people understand what we in business will have to do to accommodate that without a follow-on, because we're going to have to significantly reduce staff, and [the Defense Department is] going to have to carry a lot more than they're used to carrying."

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program. Meanwhile, full-scale development of an indigenous follow-on fighter, known as i3, should begin between 2015 and 2017, the Society of Japanese Aerospace Companies recommends.

There is a sign that industry expects Japan to order the Lockheed Martin F-35 for the F-X program, because the Society fails to advocate extensive modification for the F-35, whose brand-new technology is tightly controlled by the U.S. government. The option of modifications has been open for two of the competitors, the Eurofighter Typhoon and Boeing F/A-18E/F Super Hornet.

Japan is expected to build much of the winning F-X aircraft domestically. Whoever wins, the prize will be bigger if the government follows the society's advice to build until 2028, greatly surpassing the stated program goal of delivering about 50 fighters to replace Japan's remaining F-4EJ Kai Phantoms. The winning type would then become a partial replacement for Japan's 20 F-15s.

The follow-on fighter, for which preparatory production work would begin in 2026, would emerge from the i3 technology acquisition effort. Work on some of the technologies has begun,

including studies for an advanced engine. That preparatory research should continue until 2017, the Society says, while the country test flies its ATD-X stealth technology demonstrator from 2014-16.

U.K.-Canada Frigate Talks

Reprinted from *Defense News*

Britain is in talks with Canada about a possible joint program to develop a frigate for their respective navies, according to U.K. Defence Minister Gerald Howarth. Responding to questions from parliamentarians, Howarth said the British government is in "close discussion with the Canadians" on a possible collaborative program to develop the global combat ship, destined to replace Type 23 frigates in Royal Navy service by the start of the next decade. The minister said Australia, Malaysia, New Zealand and Turkey have expressed interest in the warship program, to be called the Type 26 in Royal Navy service, when Defense Secretary Liam Fox recently visited the various countries.

Training & Simulation *report*

SAIC Delivers Two Turnkey Virtual Systems to USAF

Reprinted from SAIC Press Release

Science Applications International Corporation is delivering two turnkey virtual systems to the U.S. Air Force Medical Support Agency using SAIC's on-line interactive virtual environment (OLIVE) platform. The two systems provide virtual family support and the use of avatars in delivering mental healthcare to airmen and women on the front lines of combat action to mitigate the familial, societal and emotional effects of war.

The virtual family support system includes a military base and customized, three-dimensional homes where deployed airmen and women can participate in everyday family life activities like communicating and interacting with family members, helping children with homework, playing games and more.

The mental health system includes a virtual reality system for educating U.S. Air Force mental healthcare providers and individual therapists at Wright Patterson AFB on using OLIVE in family therapy, psychotherapy, post traumatic stress disorder assessment, medical triage, mass disaster, domestic abuse and sexual abuse counseling.

USAF to Save on Costs with Flight Training Cuts

Reprinted from *Jane's Defence Weekly*

U.S. Air Force officials have proposed cutting the service's flight training budget in an effort to scale back costs, according to the recently released Defense Department FY2012 budget request. Under the proposals, fighter and bomber flight training will bear the brunt of the cuts with pilots flying 16,144 fewer hours (a reduction of around five percent) than in 2011, saving the service some \$272 million.

In total (including all aircraft types), the Air Force's flight training time will fall to about 1.19 million hours—down by 22,045 hours from 2011. The U.S. Air Force promises to make up the lost flight training by having aircrews spend more time in "advanced simulator training" according to the budget proposal.

Staying Safe at Home

Reprinted from *Defense News*

U.S. Navy exchanges, commissaries, gas stations and entry gates shuttered their doors at times during the week of February 21 as naval installations reacted to mock attacks and threats as part of an annual anti-terrorism exercise. The drills, part of the force-protection security exercise Solid Curtain/Citadel Shield, were designed "to test what exactly are your threat points," said Capt. Rick Williamson, who commands Naval Base San Diego, California.

Scenarios at U.S. naval installations across the country were designed to have sailors practice how to react and respond to a

wide range of possible threats, from gunmen and hostage situations to protesters and toxic gas attacks, and lots of reports of bomb threats, suspicious surveillance and infiltrators.

In San Diego, home to 59 naval ships and 11 miles of piers and quay walls, the four-day exercise involved sailors, civilian security personnel, base workers and one of the Navy's more unusual members: a dolphin. An Atlantic bottlenose dolphin named Fathom joined in the scripted play, helping San Diego harbor police and security crews with Naval Base San Diego track down reports of suspected terrorists in San Diego Bay who were intent on attacking ships along the waterfront with mines or improvised explosive devices.

The Marine Mammal Program has more than 100 bottlenose dolphins and sea lions, many of which have deployed to the Arabian Gulf for missions including waterfront security. "They do very well at this," Brian Weisman, a biosystems technician with the Marine Mammal Program run by Space and Naval Warfare Command's Systems Center in San Diego, said of the dolphins. "Using their echolocation, they can detect and locate swimmers at great distances very quickly."

Training Spacefliers

Reprinted from *Space News*

The fledgling suborbital transportation industry presents unique challenges for a business that prides itself on knowing how to prepare fighter pilots and astronauts for arduous missions. "We know how to conduct astronaut training," said Brienna Henwood, director for space training research at the National AeroSpace Training and Research (NASTAR) Center. However, training astronauts is far different from training scientists, educators or tourists planning to travel to a height of 100 kilometers in suborbital vehicles.

Study Targets Personnel Stress Responses and Adaptability

Reprinted from *Aerospace Daily & Defense Report*

Pentagon researchers are studying how people adapt to changing situations, in an effort to shape a more flexible future force capable of sustaining effective operations during a degraded military environment—which includes the breakdown of networks, loss of communications and physical stress.

Adaptability is also important in adjusting to a period of shrinking defense budgets and uncertainty about the mix of missions that will meet the needs of both irregular and conventional warfare. Initial analysis by the Army suggests about 25 percent of people are inherently adaptable and thrive on chaos. Another 25 percent cannot practically be trained to adapt well in any situation. The

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Maser estimates that NASA, the White House and Congress have “four to eight months” to choose a way forward for the U.S. space agency and begin sticking to it. After that, he expects “hundreds” of layoffs at PWR as he begins to roll up unfunded rocket engine programs like the J-2X cryogenic upper-stage engine.

Flight Paves Way for Global Hawk Autonomous Refueling

Reprinted from Aerospace Daily & Defense Report

Autonomous refueling of one high-altitude, long-endurance unmanned aircraft has taken a step forward with a close-proximity flight by a NASA-owned Global Hawk and an aircraft simulating another Global Hawk acting as a tanker. At 45,000 feet Scaled Composites’ manned Proteus, simulating the tanker, flew to within 40 feet of the unmanned Global Hawk, acting as the receiver. The flight was conducted to reduce risk for DARPA’s KQ-X autonomous high-altitude aerial refueling demonstration, planned for 2012.

The concept uses reverse-flow refueling, says Geoff Sommer, KQ-X program manager for prime contractor Northrop Grumman. The receiver deploys a hose and drogue and flies level in a race-track pattern while the tanker, equipped with a refueling boom, approaches from behind and below and maneuvers to connect with the basket and “push” fuel to the receiver.

Sommer says DARPA has an option to extend the program to demonstrate a Global Hawk can stay aloft for seven days with daily aerial refueling. “Air-to-air refueling is a relatively low-cost and low-risk way to increase the endurance of unmanned aerial vehicles,” he says.

U.S. Army Empowers Small Units from “Bottom Up”

Reprinted from Jane’s Defence Weekly

Fielding and equipping programs for the U.S. Army are to shift toward empowering small units and supporting so-called “bottom up” modernization. Service leadership at the annual Association of the U.S. Army conference indicated an upcoming paradigm shift that will stress more closely coordinated efforts to increase capabilities and decrease burdens for tactical small units.

Lt. Gen. Michael Vane, head of the Army Capabilities Integration Center, explained there are many programs producing useful tools for individual soldiers, but no single organizational construct that ensures these products are integrated and complementary. Fielding equipment for small units has historically been driven by a given year’s budget and its separate line items for different systems, but now the army is trying to take a more organized approach, Gen. Vane told reporters on 24 February.

Accordingly, the army plans to release in May an initial capabilities document for tactical small units, which officials believe will help the service view small units as “a system” and lead to better incremental acquisition decisions.

Official Chinese Defense Budget Rises 12.7 Percent.

Reprinted from Jane’s Defence Weekly

China has increased its defense budget by 12.7 percent to CNY601 billion (\$91.4 billion) in Fiscal Year 2011, Beijing announced in March. The increase represents a resumption of the double-digit growth which was interrupted last year in the midst of the global economic downturn. Li Zhaoxing, spokesman for the annual session of China’s national legislature, said at a press conference in Beijing that the increase of CNY67.6 billion over FY10 accounted for about six percent of the country’s total expenditure. *Jane’s* estimates the expenditure to be equal to around 1.5 percent of gross domestic product. In comments similar to those accompanying previous budget announcements in China, Li said that the bulk of the military expenditure would be allocated towards “moderately improving armament, military training, human resource development, infrastructure of grassroots units and the living standards of the servicemen.”

Chinese Air Power

Reprinted from Aerospace Daily & Defense Report

A new Rand Corporation study declares that a “future Chinese air force campaign would, under most likely scenarios, seriously test the United States and its allies in a conflict. According to a Rand statement, the authors find that Chinese military analysts are focusing on developing specific, practical concepts for its air forces, like attacking an enemy air force on the ground before it can take off. The authors say China will also aim to achieve air superiority by destroying or suppressing enemy ground-based air defense systems and air defense command systems—meaning the U.S. could not consider its Pacific bases as sanctuaries.

Happy Customers, Fewer Managers Key to Flexibility

Reprinted from Aerospace Daily & Defense Report

Fewer meetings, less bureaucracy and a laser-like focus on user needs are among the characteristics shared by successful companies and military programs, according to a report from the Defense Science Board. Led by chairman Paul Kaminski, the Pentagon’s former acquisition chief, the Defense Science Board studied successful and unsuccessful commercial companies and military programs in an effort to make the military more adaptable.

Other themes shared by successful enterprises included dividing tasks among small groups and reducing management layers—all moves intended to speed products to the user, according to the Defense Science Board’s study on “Enhancing Adaptability of U.S. Military Force.”

Amazon was picked for its willingness to extend itself and anticipate change while others tried to catch up following the dot.com bust. Apple, meanwhile, created a culture of innovation focused on future challenges. Google made the list for putting all its employees involved in product development into small teams with about three

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Contracts

MYMIC LLC Selected for Joint Staff Support

Reprint from MYMIC Press Release

The Naval Surface Warfare Center, Indian Head Division, has selected Portsmouth-based technology company, MYMIC LLC, to provide the Joint Chiefs of Staff (J8) with information technology and modeling and simulation services. The three year contract awarded to MYMIC LLC is potentially valued at \$29.9 million for the base and two option years, if fully executed.

The Joint Chiefs of Staff J8 conducts studies and assessments to ensure the Chairman of the Joint Chiefs of Staff receives and provides the best military advice on departmental force structure and resource issues. Additionally, unique information technology system development and support is required

to document Joint Requirements Oversight Council planning and decisions to support the Chairman of the Joint Chiefs of Staff.

SAT Study

Reprinted from *Aerospace Daily & Defense Report*

The U.S. Air Force's Space and Missile Systems Center has awarded a \$1.5 million contract to Space Systems/Loral (SS/L) to study how commercial technologies and best practices can be applied to military communications needs. Palo Alto, California-based SS/L is primarily a commercial satellite manufacturer, although it is also a leader in hosted payloads for government/military customers. The contract came from the Air Force's Milsatcom Systems Directorate.

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remaining half will be the target of Pentagon training plans "seeking to develop and improve the adaptability traits ... through a more tailored approach to individual training," a new report from the Defense Science Board contends. "The testing for adaptability could and should influence job and team assignments."

The Defense Science Board's new report "Enhancing Adaptability of U.S. Military Forces," contends the services must screen their personnel to find those who adapt easily to chaos either naturally or with training.

Israeli Battle Lab Peers Into Future of War

Reprinted from *Defense News*

Secured in a stark British colonial-era compound within walking distance of sushi bars and stylish eateries, engineers and war fighters at the Israeli Army's Battle Lab are simulating the tools and tactics for future war. In a recent two-week exercise on "the Hill" in suburban Tel Aviv, brigade-level commanders and operations officers from the Israel Air Force gamed the coordinated use of new and uniquely equipped unmanned aerial vehicles for future air-land battles.

Known here by its Hebrew acronym MAHATZ, the Center for Land Warfare Research combines functions of the U.S. Army Training and Doctrine Command's Futures Center and Analysis Center, with a bit of the Pentagon's Program Analysis & Evaluation Office thrown in for good measure. Subordinate to Israel's Ground Forces Command, the multidisciplinary center serves as a feasibility incubator for the nation's future land arsenal. By applying theoretical and technical realms to existing doctrine, budgetary and operational constraints, the Center for Land Warfare Research can validate or nix new designs before costly programs are initiated.

Candidate weapons that appear to meet initial operational

research criteria are tested under realistic, fog-of-war simulations generated by actual intelligence data, and played out by battle-hardened soldiers and commanders. Following thousands of simulations over months, Battle Lab directors hone the so-called man-machine interface, then recommend a specific weapon or a particular organizational or operational concept.

Towering Ambitions

Reprinted from *Aviation Week & Space Technology*

FAA is set to accelerate the training of air traffic controllers as the agency nears completion of a nationwide simulator deployment program. The final four MaxSim training systems, developed by simulating specialists Adacel, will be installed at sites around the U.S. by the end of this year as part of a concerted effort to ramp up controller hiring and training. The FAA currently has 14 systems at its Oklahoma City training academy and 22 others at or near major U.S. airports, including the Hawthorne facility close to Los Angeles International.

"We are training and hiring new controllers throughout the U.S., and at least 11,000 are being hired over the next 10 years," says William Withycombe, FAA Western-Pacific regional administrator. The MaxSim system—each of which incorporates nine 73-inch high-definition televisions that feature 270-degree out-the-window views—is "an important new tool for training new and veteran controllers. This device gives us an opportunity to improve safety of operations and efficiency. We can simulate just about anything with this," he adds.

RAF Mulls C-17 Simulator Acquisition

Reprinted from *Aerospace Daily & Defense Report*

The U.K. Royal Air Force is considering acquiring a simulator for

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its Boeing C-17 Globemaster IIIs as the service starts examining requirements beyond near-term operational demands. Although operational tasking, mainly for Afghanistan, is taking up as much as 90 percent of the RAF's C-17 flying hours, Wing Cdr. David Manning, the officer commanding 99 Squadron, which operates the airlifter, says he is starting to look at the unit's long-term needs. In part, he says, such a review is necessary because the organization was initially set up to operate four leased C-17s but has seen its mission change to operating seven C-17s until at least 2030. All the aircraft are now owned outright.

Although there is still interest in pockets of the RAF in acquiring an eighth airlifter, a tight budget has raised doubts this will be possible. Manning says there would certainly be use for an eighth aircraft. The C-17 production line remains open until around 2014, so there is some time for the U.K. to consider whether to place another order.

But Manning says the simulator acquisition is currently his highest priority. The RAF has been relying on two simulators acquired by the U.S. Air Force at Altus AFB, Oklahoma. But having one in the U.K. would add flexibility, in particular if the mission set for the RAF C-17s expand. The airlifters are used now exclusively for transport roles, with missions such as air drop and paradrop not on the agenda. But that could change after the heavy pace linked to Afghanistan begins to wind down.

Iraq's Training in Doubt as U.S. Preps to Leave

Reprinted from Defense News

The Iraqi Army launched a massive full-spectrum training program in January, but the late start has left observers questioning whether U.S. soldiers will have enough time to train the Iraqis to protect their borders before leaving this year. Iraqi generals say their forces have learned how to fight insurgents. Now, they want their troops to learn to fight off attacks from their Middle East neighbors.

"The Iraqi army was trained on counterterrorism for the last six or seven years, but now they need to be trained as a regular army because eventually the army will leave the cities and the police will take over, and the Iraqi army has to be ready to act as offense and defense," said Gen. Ali Gadan, commander of Iraqi ground forces.

This training will help determine whether the Iraqi army will remain stable and build on the efforts of U.S. soldiers over the past eight years, or whether it will crumble when the U.S. goes home, said Lt. Gen. Robert Cone, deputy chief of U.S. Forces-Iraq. The U.S. soldiers have 10 more months to teach Iraqi soldiers the basics and train future trainers to continue the program after U.S. soldiers leave.

India Faces Snags in Outsourcing Training

Reprinted from Defense News

India is planning a major push to improve training on new weapons, devoting 10 percent of the budget for new defense projects

to training operators and maintainers, a Defense Ministry official said. Yet one proposal—outsourcing the various training missions to industry—faces several obstacles.

The three military services have been ordered to review current methods, upgrade facilities and launch periodic reviews. Moreover, the military will seek to upgrade its training infrastructure every 10 years, starting with reviews of doctrine, manpower and equipment, the official said.

Among the new ideas under consideration is outsourcing certain training, perhaps by creating "simulator parks" for specific purposes. Government officials are open to the idea of creating the simulator parks through public-private partnerships, but several hurdles exist. None of India's state-owned defense firms has so far been able to demonstrate a simulator that sufficiently addresses the military's needs, he said.

The official said military commanders are not yet thinking much about outsourcing training. The official also said that while most of the military's major weapons and systems are imported, most training and simulation gear to support it is produced by Indian ordnance factories and state-owned companies. Much of the gear has proved difficult for the military to maintain and service. The original equipment manufacturers have repeatedly asked to be able to supply the gear, the official said.

Saab's Virtual Sim Buy

Reprinted from Defense News

Saab has signed an agreement to acquire assets from the Czech company E-COM, which develops and produces virtual simulators. The assets acquired will allow the Swedish company to offer customers more training and simulation products. "E-COM has a strong product portfolio and know-how within virtual training and simulation, and it has entered into the international market very quickly," said Henrik Höjer, head of training and simulation with Saab's Security and Defence Solutions unit. "By combining our product portfolios, Saab gains an even stronger position and broadens its market offering." E-COM, which employs 120, has delivered many different simulators to the Czech Army and also exports to the U.S., Germany, United Arab Emirates and Singapore. E-COM will continue to exist following the acquisition in a reduced format.

CAE-Built Dhruv Simulator Arrives in India

Reprinted from Aerospace Daily & Defense Report

India's Hatsoff helicopter training facility announced February 2 the arrival of a simulator cockpit for the civil/conventional variant of the Dhruv helicopter. The cockpit was designed and built at CAE Inc.'s manufacturing facility in Montreal.

The Dhruv simulator cockpit will be installed and integrated with the CAE-built full-mission simulator currently in operation at Hatsoff. The simulator features CAE's roll-on/roll-off cockpit

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Major Program *report*

U.S. Air Force, Boeing Sign KC-X Contract

Reprinted from *Aerospace Daily & Defense Report*

David Van Buren, the U.S. Air Force's top acquisition executive, says that the contract with Boeing to develop the KC-46A aerial refueler has been signed, marking a major step in the Air Force's decade-long pursuit of a KC-135 replacement. Boeing, which won the \$3.5 billion contract after more than a year of competition since the Air Force released its KC-X request for proposals, declined to say whether work has begun. The Air Force on February 24 announced that the company's 767-based KC-46A won over EADS North America's A330-based option. Van Buren declined to identify why Boeing won the deal, noting only that the company did undercut EADS in its price by more than one percent; the government adjusted the prices of the bids based on military construction needs, fuel burn and each aircraft's performance in an operational modeling tool. Those prices have not been released by the government.

USMC Aims to Put ACV on Rapid Acquisition Schedule

Reprinted from *Jane's Defence Weekly*

The U.S. Marine Corps commandant believes the Marines' amphibious combat vehicle program could produce a usable system in less than four years. "Before I leave office four years from now—really three-and-a-half years—we will have a program of record, we will have steel, it will be a vehicle and I'll be able to drive it." Gen. James Amos told Congress during a budget hearing on March 1.

The amphibious combat vehicle is intended to replace the expeditionary fighting vehicle, which Pentagon officials plan to terminate as they say it is simply too expensive. Gen. Amos believes an aggressive timeline for the amphibious combat vehicle is achievable because of support from the Defense Department acquisition community, particularly from Pentagon acquisition chief Ashton Carter.

Moreover, the commandant hopes to forgo the typical acquisition process—which, he said, would not produce a vehicle until 2024—and instead go through a rapid fielding program similar to the mine-resistant ambush-protected-class vehicles, which the Defense Department rushed into Iraq in 2007 after it was declared it was a top priority. To meet rapid fielding needs, multiple mine-resistant ambush protected variants were fielded.

New Bomber Requirements Begin to Emerge

Reprinted from *Aerospace Daily & Defense Report*

The bomber segment of the long range strike family of systems has yet to be defined, much less designed, but clues are accumulating about what the U.S. Air Force is asking for. The aircraft needs less

than a day's endurance, it has to be stealthy and it must be able to carry weapons both internally and externally. It also will likely have a large active, electronically scanned array radar for surveillance and some sort of associated capability for defensive electronic attack of enemy aircraft and air- or ground-launched missiles.

There will eventually be 80-100 of them as part of the total of 150 bombers operated by the Air Force. Of these, 90 will be combat-coded. Initial operations of the first unit are slated for 2024-26. The aircraft will be expected to operate for 50 years. Its missions will include electronic attack (which means a long-range weapons capability against electronic systems), strike, and command and control.

Vice Chief Cites Abrams as Model for New Infantry Carrier

Reprinted from *Aerospace Daily & Defense Report*

U.S. Army Vice Chief of Staff Gen. Peter Chiarelli thinks the M1 Abrams tank is a good model on which to base the service's upcoming ground combat vehicle, since the Abrams has remained relevant and useful across a range of scenarios even though it has been in service for more than 30 years. The Abrams "has had incremental builds" while remaining "a platform that still shows great potential for growth," Chiarelli said February 23 during a speech at the Association of the U.S. Army symposium in Fort Lauderdale, Florida.

This modular, elastic approach is one that the ground combat vehicle infantry carrier plans on adopting in everything from its armor kits to its electronics and communications systems. BAE Systems, General Dynamics and SAIC all are leading industry teams vying for the contract. The ground combat vehicle is set to be fielded starting in 2017. "I think we have learned the right lessons" from the failed manned ground vehicle, the ground combat vehicle's predecessor and one of the failures of the Army's ambitious Future Combat Systems, he says.

Northrop Cuts Steel for Next Ford-Class Carrier

Reprinted from *Aerospace Daily & Defense Report*

Northrop Grumman cut some of the first bits of steel February 25 for the aircraft carrier now designated CVN-79, the second of the next-generation Ford-class carriers, formerly known as the CVN-21. The Ford-class carriers use essentially the same hull as their predecessors, the Nimitz-class ships, but with a series of ship-wide modifications that are meant to cut manpower and costs while making operations more efficient.

The Navy's fiscal 2012 budget request includes \$555 million in construction funding and another \$137 million for research and development for the Ford-class ships. That is just the ante cost

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for the development and construction of carriers, the Navy's most expensive surface ship to build and deploy.

USAF Outlines Long-Range Strike Family

Reprinted from *Defense News*

The U.S. Air Force's nascent long range strike family of systems will include a new standoff missile and a new conventionally tipped intercontinental ballistic missile to go along with the new long-range penetrating bomber. "The bomber is just a part of that family of systems; it is not all of it," said Maj. Gen. David Scott, director of operational capability requirements. Scott declined even to call the aircraft the premier component. "I think you need them all." The Air Force hopes to set up a program office soon, Scott said.

The standoff weapon would be an air-launched cruise missile that would replace both the nuclear-tipped ones used by the Air Force Global Strike Command and the conventional versions used by the regular Air Force. The proposal is set to go before the Air Force requirements oversight council in March, Scott said. Once the requirements are cleared, an analysis of alternatives will begin. The new ballistic missile, dubbed the conventional prompt global strike weapon, would be designed to strike any point on the globe on very short notice.

F-35 Acing Tests, Pilots Say

Reprinted from *Defense News*

Military and civilian test pilots in the F-35 Joint Strike Fighter program said they are making good progress in testing the stealth aircraft's ability to fly at various speeds and altitudes, take off and land vertically, and operate its avionics. Testers said the new single-engine warplane has been reliably tested up to Mach 1.2 in maneuvers up to 1 G. They are testing its ability to handle maneuvers of up to 5 Gs—five times the force of gravity—and angles of attack up to 20 degrees.

Once those flights can complete, the U.S. Air Force and Navy can begin training instructor pilots, and the Marine Corps can begin training fleet pilots to fly the aircraft, said squadron leader Steve Long, a British Royal Air Force test pilot assigned to the Joint Strike Fighter program. Long, who has flown the F-35 as fast as Mach 1.3, holds the record for the plane's fastest flight. Ultimately, the test program will push the aircraft to 50,000 feet, Mach 1.6 and 700 knots. The B model will reach a top speed of 630 knots. The A model will be cleared to 9 Gs, the B model to 7 Gs, and the C model to 7.5 Gs.

Testers have completed 23 vertical landings with the B model. After 42, the short-takeoff, vertical-landing plane can begin trials aboard an amphibious assault ship, said Lt. Col. Matt Taylor, a Marine Corps F-35 test pilot assigned to Naval Air Station Patuxent River, Maryland. "We've done more vertical landings in the month of January" —13— "than we did last year. So this

is coming fast now," he said. The test pilots said the program has focused on common speeds and maneuvers, not extreme edges of the flight envelope, so they can release it to instructor pilots at Eglin Air Force Base, Florida.

Australia's JSF Boss Outlines Acquisition Schedule

Reprinted from *Defense News*

Australia's plan to buy up to 100 F-35 Lightning II Joint Strike Fighters is progressing well in the wake of the program's restructuring, according to the new head of Australia's New Air Combat Capability Project Office. Air Vice Marshall Kym Osley took over the job of navigating Australia's Joint Strike Fighter project in December, just as the 2010 Technical Baseline Review of progress wrapped up.

"The Technical Baseline review has given Australia confidence that the issues [with the F-35] will be rectified before it needs to go through its own OT&E [operational test and evaluation], ahead of IOC [initial operating capability] in 2018," Osley said. "We have received assurances to that effect from our own staff with the JPO [the Pentagon's Joint Program Office], and from the program's principal executive officer, [U.S. Navy] Vice Adm. Dave Venlet."

Australia is set to order 14 F-35A stealth fighter jets, with deliveries beginning in 2014 from low-rate initial production batch six. These planes will be the first tranche. Under current plans, a second tranche of 58 will closely follow the first.



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design, which enables cockpits representing various helicopter types to be used in the simulator. The cockpit for the civil/conventional variant of the Dhruv is the second for the Hatsoff training center and will be ready for training in May. The first cockpit for the simulator represents the Bell 412 helicopter. Training for Bell 412 operators began in July 2010.

Hatsoff (Helicopter Academy to Train by Simulation of Flying) is a 50/50 joint venture of Dhruv-maker Hindustan Aeronautics Ltd. and CAE. Though the facility has yet to be officially inaugurated, it has caught the imagination of Indian civil pilots, who were depending on similar facilities in Dubai until last year. "This is the world's first simulator representing the indigenously developed Dhruv helicopter and we are excited to begin offering simulation-based training that will undoubtedly prove to be a safe and cost-effective method for training Dhruv helicopter aircrews," says Wing Cdr. (Ret.) C.D. Upadhyay, Hatsoff chief executive officer.

The CAE-built full-mission simulator at Hatsoff and the Bell 412 cockpit were certified during 2010 to Level D, the highest qualification for flight simulators, by India's Directorate General of Civil Aviation and the European Aviation Safety Agency.

Who's where

■ CACI International, Arlington, Virginia, announced the appointment of **Daniel Allen** as chief operating officer for its U.S. operations. He comes to CACI from Northrop Grumman, where he was sector vice president and general manager of the Intelligence Systems Division.

■ The board of directors of General Dynamics, Falls Church, Virginia, said it has elected **Mary Barra** a director of the corporation. She is senior vice president of global product development for General Motors.

■ **Karen A. Williams** has become vice president and general manager of Northrop Grumman Corporation's new Defense Technologies Division in McLean, Virginia. Williams was vice president for air and missile defense systems and had been vice president of Mission Support Systems.

■ Honeywell Technology Solutions Inc. of Columbia, Maryland, named **John "J.R." Riordan** director of business development for military space, intelligence and restricted programs in its Defense and Space Group.

■ **John Jolly** will lead General Dynamics Advanced Information Systems' Cyber Division, Fairfax, Virginia, as vice president and general manager. He joins General Dynamics from Northrop Grumman Corporation, where he had program management and strategic planning roles.

■ **Kelly Zelickson** has been named vice president of air and missile defense systems for the Defense Technologies division in Northrop Grumman's Information Systems sector.

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engineers each to meet the goal of speed to market, to encourage relentless experimentation and to cut the need for meetings.

Big Safari is a special Air Force acquisition program that manages sustainment and modification of special mission aircraft like the armed Predator, RC-135W Rivet Joint signals intelligence aircraft and EC-130 Compass Call electronic attack aircraft. It is credited with 60 years of success through long-service employees, quick reaction capability and focus on the "80 percent solution now."

AeroVironment Flies Nano Hummingbird

Reprinted from *Aviation Week & Space Technology*

AeroVironment has flown a prototype flapping-wing unmanned aircraft to complete DARPA's nano air vehicle program. With a 19-centimeter wingspan and weighing just 19 grams (less than one ounce)—including batteries, motors, video camera and communications links—the remote-controlled Nano Hummingbird has hovered for up to 11 minutes on internal power, demonstrated precision maneuvers and transitioned to forward flight at speeds up to 11 miles per hour.

The tailless vehicle uses the flapping wings for both propulsion and control, and is as easy to fly as a model helicopter, says project manager Matt Keennon. Early versions could fly for only 20 seconds, and the final concept demonstrator—which evolved in incremental steps that included 300 wing designs—exceeds expectations, he says. Enclosed in a hard shell shaped to resemble a hummingbird, the vehicle is actually smaller and lighter than the largest known member of the species, AeroVironment said.

Cost of Some U.S. Soldiers

Reprinted from *Defense News*

The cost of equipping a U.S. combat soldier has increased 50 percent in the past decade—and the cost of some kits could quadruple as the Army looks to invest in new technologies in coming years. The cost of outfitting a soldier for combat is \$18,087, up half again what it cost in 2000. The jump is due to higher quality, fire-resistant uniforms; unparalleled body armor and state-of-the-art optics and equipment, said Brig. Gen. (P) Peter Fuller, Program Executive Office Soldier. In coming years, millions will be spent to give soldiers more power and more protection with less weight. A primary area of focus is rechargeable battery packs that will shed up to 22 pounds of batteries from a combat pack. Lighter body armor also is a priority for defense and congressional leaders. Congress, in the 2011 Defense Authorization Act, requires the defense secretary to conduct a study by June 22.

Soldiers will carry improved gear such as better night-vision goggles that add thermal detection. The Army has spent \$770 million to provide the goggles to 50,000 more soldiers. And there is the AN/PPS-26, a lightweight, battery-powered detector that uses radar waves to detect human targets through eight inches of adobe walls or other barriers. The Army will buy up to 9,212 detectors over the next three years. It is expected that one detector will be issued to each infantry squad. While the carbine competition promises to put a better weapon in the hand of every soldier, the cost will likely be less than the \$1,300 spent on each M4. Most competitors have said they can produce a better weapon, or the improved M4A1, at less cost.

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