



In the News

AMERICAN FORCES PRESS SERVICE
(JAN. 10, 2006)

ARMY CONTINUES CHANGING, IMPROVING BODY ARMOR

Jim Garamone

WASHINGTON—The Army will continue to improve body armor issued to soldiers, and will begin manufacturing side-panel inserts to the interceptor ballistic armor, officials said.

The side panels, which weigh 3 pounds, will be made of the same material as the small-arms protective inserts. Army Col. Thomas Spoehr is in charge of fielding body armor. He said the Interceptor body armor now issued to servicemembers protects against most of the threats they face in Iraq and Afghanistan today.

"It's the best body armor in the world," Spoehr said.

And the proof is in the number of people who are alive today because of the armor. One documented account from June 2003 showed an Iraqi shooting a soldier at point-blank range in the chest with a shotgun. The young soldier picked himself off the ground and arrested the Iraqi.

The Army is making changes to the protection system, Spoehr said, but has to be careful to balance changes with mission. "You could outfit a soldier from head to toe in armor, and he would be completely useless," he said. "We have to be sensitive to the weight burden we put on soldiers in that arduous environment over there. Every ounce that we put on the back of a soldier could mean the difference between their ability to accomplish the mission or not."

Weight is a huge factor. The average infantryman carries 85 pounds of gear into battle, according to officials at the Infantry School at Fort Benning, Ga. This includes weapons, ammunition, water, protective gear, and so on. The Interceptor armor—the vest and SAPI plates, along with neck and groin protection—weigh in at about 16 pounds.

But the improvements planned for the Interceptor armor will increase the weight. Enhanced SAPI plates will add 3 pounds to the weight, and side-panel plates another 3



Interceptor Body Armor with Deltoid and Axillary Protector
Image courtesy PEO Soldier.

pounds. Other shoulder and side protection adds 5 pounds. Wearing all pieces of the Interceptor armor could add about 27 pounds to the soldier's burden.

By comparison, the "flak vest" of Vietnam came in at about 25 pounds, and the original flak vest worn by airmen during World War II weighed around 40 pounds, Air Force Museum officials said.

But in addition to weight, commanders have to look at constriction and how much ability soldiers have to move their arms and legs and get in and out of vehicles quickly, Spoehr said. "It's not as simple as going to a catalog and ordering it," he said.

He said the commander has to control this factor. The body armor is modular, and commanders can assess the threat and how much armor soldiers should wear.

"We're going to be producing a new side-armor plate," Spoehr said. "If the mission doesn't accommodate wearing that new side armor plate, then the commander can direct, 'Don't wear that today.'" For example, while the side armor adds 3 pounds, it does provide more protection. "We want to give that type of an option to commanders," Spoehr said.

Army officials said they continue to monitor all aspects of fielding the armor. A check of the books revealed that 8,000 of the vests did not go through inspection, Spoehr said. The Army recalled those vests on Nov. 12, 2005, and would not issue them. No piece of armor will be issued to soldiers without undergoing a painstaking inspection process, he emphasized.

Garamone is with the staff of American Forces Press Service.



AIR FORCE PRINT NEWS (JAN. 10, 2006) **WYNNE: AF NEEDS TO RECAPITALIZE**

Master Sgt. Mitch Gettle, USAF

WASHINGTON (AFPN)—With the combination of aging and heavily used equipment, the Air Force needs recapitalization across the board, Secretary of the Air Force Michael W. Wynne said.

In past discussions about Air Force recapitalization, aircraft usually took center stage. Although aircraft still need to be recapitalized, there has been a shift.

“The Air Force recapitalization program is not focused simply on aircraft,” Wynne said. “Where we know we have advanced technologies, we want to introduce them; where we know we have emerging missions, we want to satisfy them.”

One emerging mission will be an increase in intelligence gathering using unmanned aerial vehicles and space assets.

“We need more UAVs and we need [intelligence, surveillance, and reconnaissance] platforms in space because this is really where the decision making starts,” he said.

All Air Force recapitalization efforts must be data-driven. The secretary wants airmen and acquisition entities enabled to take aggressive action and be accountable for those actions.

“We need to have data to make our investment decisions,” he said. “I need to provide them the kind of information upon which they can make credible decisions.”

The F-22A Raptor, C-17 Globemaster III, and C-130J Hercules have brought more reliability to the fight and probably a future decline in maintenance activities, Wynne said.

“I’m finding out that the C-17 requires far fewer maintenance hours, and the F-22A is probably 40 percent more reliable,” he said. “So [these better reliability rates] are leading us to a re-evaluation of how we do operations throughout the process.

“All this is about continuing to introduce innovation,” Wynne said. “It will change the Air Force character without a doubt. But that’s what we do. We as airmen like to push technology and change our mission over time.”

AMERICAN FORCES PRESS SERVICE (JAN. 11, 2006) **MISSILE DEFENSE PROGRAM MOVES FORWARD**

Steven Donald Smith

WASHINGTON—The Missile Defense Agency continues to move forward in its efforts to protect the nation against a ballistic missile attack.

In December, the Missile Defense Agency placed its eighth interceptor missile into an underground silo at Fort Greely, Alaska. Two more interceptors have already been emplaced at Vandenberg Air Force Base, Calif. These anti-ballistic missiles are designed to destroy attacking long-range enemy ballistic missiles.

“The interceptors are part of an integrated system of ground-, sea-, and space-based sensors, ground- and sea-based radars, and an advanced command and control, battle management and communication system designed to detect and track a hostile ballistic missile, then launch and guide an interceptor to destroy the target warhead before it can reach its intended target in any of our 50 states,” MDA spokesman Rick Lehner said.

The interceptors “can be brought to alert status in an emergency but they are not yet on 24/7 alert,” Lehner added. “‘Shakedown’ training sessions are still ongoing by U.S. Strategic Command and U.S. Northern Command.”

An airborne laser is also being developed and tested. The ABL weapons system is a chemical oxygen iodine laser fitted to a heavily modified Boeing 747. The laser will destroy a missile by heating its metal skin until it cracks, causing the boosting missile to fail, according to the missile agency’s Web site.

The anti-ballistic missiles in Alaska and California use “hit-to-kill” technology: They destroy incoming enemy missiles by physically colliding with them. This task often has been described as hitting a bullet with a bullet.

“It’s difficult hitting something that is traveling at 15,000 miles per hour, especially when trying to avoid decoys and other interference,” Lehner said. “Many people think that we have always had the capability to shoot down a missile that was aimed at a city or town in the U.S., but it is only very recently that we have developed the technology.”



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The Missile Defense Agency has tested its hit-to-kill interceptor technology many times over the past several years. "A total of nine planned ground-based intercept tests have taken place since 1999; five have resulted in successful intercepts," Lehner said.

Eight sea-based tests since 2002 have resulted in seven successful intercepts, he added.

The road to building a missile defense shield has been long and arduous. The history of missile defense can generally be divided into two eras. The first spanned three decades from the end of World War II to 1976, when the United States briefly instituted the Safeguard missile defense system. Nuclear-tipped interceptor missiles defined this era, MDA chief historian Lawrence Kaplan said.

According to the agency's Web site, "The origins of the U.S. missile defense program may be traced to the Nazi missile program of World War II, which included plans for the world's first intercontinental ballistic missile. Learning of these German plans after the war, the U.S. Army Air Forces, predecessor of today's U.S. Air Force, began long range studies of interceptors that could destroy attacking ballistic missiles."

The Safeguard complex in North Dakota was an operational anti-ballistic missile system that defended American intercontinental ballistic missile silos. It did not defend American cities. The complex was deactivated in 1976 after being operational for less than four months. Congress shut it down due to technical limitations and the restrictions on missile defenses contained in the Anti-Ballistic Missile Treaty.

The ABM Treaty was a bilateral treaty that sprung out of the Strategic Arms Limitation Talks between the United States and the Soviet Union begun in the 1960s. The treaty was signed in 1972, and it limited certain types of technological advances and testing, among other things.



The eighth ground-based interceptor missile is lowered into its underground silo at Fort Greely, Alaska, Dec. 18, 2005. The interceptor is part of a missile defense system designed to intercept and destroy long-range ballistic missiles.

Photograph courtesy Missile Defense Agency.

The second era of missile defense began on March 23, 1983, when President Reagan gave a landmark speech in which he proposed the Strategic Defense Initiative with the intent of making nuclear missiles "impotent and obsolete."

The media famously dubbed Reagan's initiative "Star Wars."

The SDI goal was to develop non-nuclear missile defenses to neutralize Soviet missiles. The U.S. was concerned that the Soviets had developed a first-strike capability, which would allow them to launch a knockout blow against U.S. interceptor missiles and then destroy the United States with a second volley of ICBMs.

On a personal level, Reagan hated the concept of mutually assured destruction, which was a cornerstone of U.S.-Soviet relations at the time. "It is better to save lives than avenge them," he said.

A paradigm shift has taken place since the end of the Cold War and the terrorist attacks of Sept. 11, 2001. With this shift in mind, President Bush withdrew the United States from the ABM Treaty, freeing the U.S. from its restraints.



“The circumstances affecting U.S. national security have changed fundamentally since the signing of the ABM Treaty in 1972,” according to a White House fact sheet. “The attacks against the U.S. homeland on Sept. 11 vividly demonstrate that the threats we face today are far different from those of the Cold War.”

In some government and scientific quarters, there are misgivings about the need for missile defense. Simply put, some people don’t believe the technology is yet ripe and they don’t see the threat; therefore, they can’t justify the monetary allocation. To missile defense advocates, however, the threat is all too real.

“Iran and North Korea are two countries that have been spending a great deal of time and money to develop several different types of advanced ballistic missiles, including a type that could possibly reach the U.S. homeland with a weapon of mass destruction in the near future,” Lehner said.

Iran has successfully flight-tested its medium-range Shahab-3 missile, and is believed to be developing nuclear capabilities.

In August 1998, North Korea caused a stir when it fired its Taepo Dong-1 missile over Japan. This was especially troubling because “the North Koreans demonstrated important capabilities associated with ICBMs, including staging and the use of a third stage on the missile,” according to MDA’s Web site.

“There are more than 30 countries now with ballistic missiles,” Lehner said, “with ranges varying from short to long-range. Many are hostile to the U.S., or our friends and allies.”

AIR COMBAT COMMAND NEWS SERVICE (JAN. 13, 2006) **LANGLEY CELEBRATES RAPTOR'S INITIAL OPERATIONAL CAPABILITY**

2nd Lt. Rachel Sherburne, USAF

LANGLEY AIR FORCE BASE, Va. (AFPN)—The 1st Fighter Wing held a ceremony here today to celebrate the F-22A Raptor’s initial operational capability. The event comes after the 27th Fighter Squadron was officially declared IOC on Dec. 15 by Gen. Ronald E. Keys, commander of Air Combat Command.



LANGLEY AIR FORCE BASE, Va. (AFPN)—“We did it!” Ralph D. Heath tells the crowd gathered at the F-22A Raptor’s initial operating capability ceremony held on Jan. 13, 2006. Heath is the executive vice president of Lockheed Martin’s aeronautical division. The IOC declaration means the Air Force’s fifth generation fighter is ready for war.

Photograph by Senior Airman Austin Knox, USAF.



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The IOC declaration proves the F-22A is mission-ready. The base now has 19 Raptors.

The 27th FS—the Air Force’s oldest fighter squadron—is now the first operational unit to fly the Service’s newest fighter aircraft.

“This next generation fighter can now be employed by combatant commanders and the national command authority for various missions both at home and in other areas of responsibility,” wing commander Brig. Gen. Burton Field said.

Guest speaker at the event was Gen. John Corley, Air Force vice chief of staff. Dr. James Roche, former Air Force secretary, and retired Gen. John Jumper, former Air Force chief of staff, also attended the event.

“I can’t thank each of you enough. You all played a critical role,” Corley said. “Your children and children’s children will reap the benefits of the technology [of this aircraft].”

Field praised the cooperative efforts of the many people it took to see the F-22A reach the milestone.

“This aircraft, and more importantly, the people who have brought it to the realm of operational flying, deserve to celebrate and be celebrated,” Field said.

Sherburne is with 1st Fighter Wing Public Affairs at Langley.

ARMY NEWS SERVICE (JAN. 17, 2006) ARMY SELECTS UNIT TO TEST FCS

Alyce T. Burton

WASHINGTON—The Army has selected Fort Bliss, Texas, as the location for its Evaluation Brigade Combat Team, or EBCT, which will evaluate and test leading-edge technology for the Future Combat Systems program.

Fort Bliss was selected because of its access to White Sands Missile Range, N.M., which provides the requisite

land, airspace, and facilities for EBCT soldiers to fully train, evaluate, and test FCS capabilities, said Lt. Col. Michael Johnson of the Army Transformation Office, G3, at the Pentagon.

Fort Bliss is the Army’s second-largest post with almost 1.2 million acres of land in both Texas and New Mexico. Its garrison headquarters is in El Paso, Texas.

The EBCT will be made up of about 3,500 soldiers, Army officials said.

“The Evaluation Brigade Combat Team is a key milestone in the FCS program and will enable the Army to evaluate technologies and develop tactics, techniques, and procedures that will maximize the program’s value to the force,” said Secretary of the Army Francis J. Harvey.

The EBCT’s mission will be to evaluate operational concepts and conduct testing and training of FCS equipment in realistic environments while providing continuous feedback, Johnson said. He said this feedback will allow the Army to determine what, if any, adjustments and/or



Its optical sensor package in the raised position, a Packbot climbs a debris mound during a Future Combat Systems demonstration last fall. The robotic vehicle is one of the FCS technologies that has been leveraged for the current force. U.S. Army photograph by Steve Harding.



improvements will be needed to continue to develop the best equipment for soldiers.

The FCS program is the core of the Army's modernization program, officials said. It consists of 18 manned and unmanned systems connected by a secure network designed to enhance soldiers' capabilities.

The EBCT will be created from a heavy brigade combat team coming from the 1st Armored Division. It will be ready to support FCS evaluation and training in June 2007, Army officials said. They said the first fully equipped FCS unit is expected in 2014.

AMERICAN FORCES PRESS SERVICE (JAN. 24, 2006) DOD TAPS INDUSTRY KNOW-HOW IN ONGOING COUNTER-IED EFFORTS

Donna Miles

WASHINGTON—Deputy Defense Secretary Gordon England called on what he called some of the best minds in the country to help come up with new solutions to the threat improvised explosive devices pose to U.S. troops.

Speaking to some 600 leaders from industry, academia, the national laboratories, and all branches of the military at a two-day industry conference focused on the IED threat, England challenged participants to find better ways to counter what has become terrorists' weapon of choice in Iraq and, more recently, Afghanistan.

"We owe it to the troops," he told the group.

IEDs are the leading cause of U.S. combat deaths and injuries in Iraq, the deputy said. Every IED attack represents an attack, not just against the troops, but also against the will of the American people, he said.

The Joint Improvised Explosive Device Defeat Organization and the National Defense Industrial Association are cosponsoring the two-day IED conference at the Ronald Reagan Building and International Trade Center to exchange information and explore solutions. In addition to briefing industry leaders about current and evolving challenges, defense and military leaders at the forum are encouraging participants to help come up with new ways to confront IEDs.

But technical solutions alone won't resolve the IED problem, England told the group. Defeating IEDs requires new technology, new tactics, new techniques, and new

training methods, he said. Because the enemy is so adaptable in using these devices, the technologies, tactics, techniques, and training designed to counter them have to be adaptable, too, England said.

The IED industry forum comes days after DoD gave permanent status to the Joint Improvised Explosive Device Defeat Task Force and represents another step in the ongoing counter-IED effort. England signed a memo Jan. 18 that elevates the task force former Deputy Defense Secretary Paul Wolfowitz established in mid-2004, to the Joint Improvised Explosive Device Defeat Organization.

The status change is designed to help the group operate more effectively as it carries out what defense officials acknowledge has come to be viewed as a long-term mission that continues to expand to better meet the threat.

Defense Secretary Donald Rumsfeld appointed a retired four-star general to lead the organization and bring what he called "a senior commander's operational perspective to the overall IED effort." Retired Army Gen. Montgomery Meigs, former commander of U.S. Army forces in Europe and NATO's peacekeeping force in Bosnia, took control of the IED task force in early December.

Under Meigs' leadership, the newly named Joint IED Defeat Organization will continue to expand the scope of its efforts. That includes the establishment of a new IED center of excellence at Fort Irwin, Calif., to take lessons learned in Iraq and develop strategies to defeat IEDs, England said in his Jan. 18 memo. The center will also provide a venue for integrating, training, experimenting, and testing new IED defeat equipment and concepts, he wrote.

Satellite centers will be housed at each of the Services' major training installations, officials said. The center will be crucial in linking U.S. training centers with troops in theater, to share lessons learned, strategies and concepts, a senior military official told reporters on background in early December.

"This is meant to be a defeat of the entire IED system," the official said. "We want to make sure that we continue and do even a better job of sharing the best practices amongst all of our troops, our forces that are deployed, and also on the training end of this."

These latest developments are part of DoD's ongoing efforts to address the challenges IEDs pose, officials said. Since October 2003, the department's IED initiative has



evolved from an Army organization of about 12 people to a joint task force to a permanent joint organization with \$3 billion committed to the effort. The Joint IED Defeat Organization is made up of representatives from all Services as well as retirees, all dedicated full-time to defeating the IED threat. "We are reaching out to get the very, very best people that we can, get them involved in this, and then keep them involved ... so that we ... preserve continuity of the effort," the senior official said.

IEDs are not the new threat that many perceive them to be and actually have been used all over the world for decades. One of the first coordinated, large-scale uses of the devices was during World War II, when Belarusian guerrillas used them against the Nazis to derail thousands of Nazi trains.

AMERICAN FORCES PRESS SERVICE (JAN. 26, 2006) THREAT REDUCTION AGENCY OPENS NEW HEADQUARTERS

Maj. Susan Idziak, USAF

FORT BELVOIR, Va.—The agency charged with reducing threats against American forces celebrated the opening of its new headquarters building, the Defense Threat Reduction Center here today. The new center consolidates five separate locations and more than 1,400 people assigned to the Defense Threat Reduction Agency in the Washington metropolitan area into a single, secure facility.

James A. Tegnelia, agency director and host of the ceremony, introduced Marine Gen. James E. Cartwright, chief of U.S. Strategic Command, as "part-owner" of the facility in his position as the operational commander responsible for combating weapons of mass destruction.

DTRA provides capabilities to reduce, eliminate, and counter the WMD threat, and mitigate its effects. DTRA's "new triad" mission consists of offensive and defensive strategies and infrastructure. These are underpinned by intelligence and command and control. Cartwright said all these missions continue to be critical.

Buildings are only tools, Kenneth J. Krieg, under secretary of defense for acquisition, technology and logistics, said during the ceremony. The new facility brings together in one place the intellectual property to safeguard America and its allies from weapons of mass destruction, he said.

Sen. Richard G. Lugar, who co-authored cooperative threat-reduction legislation with then-Georgia Sen. Samuel A. Nunn starting back in 1991, thanked DTRA personnel for making the world safer by being on the frontlines of fighting WMDs, the "number one security threat of the United States."

Strategic Command is the Defense Threat Reduction Agency's lead customer, Krieg said. But in the acquisition world, it's also vital to pay attention to investors. Krieg called Lugar DTRA's lead investor and said the senator "expects us to return on his investment."

Dale E. Klein, assistant to the secretary of defense for nuclear, chemical and biological defense programs, called DTRA the "go-to agency."

"If you have a problem with weapons of mass destruction, just dial 1-800-DTRA," he said.

Five areas will continue to be important to the mission of combating WMD as DTRA develops and grows, Klein said: situational awareness, WMD threat reduction, force protection, the leverage of global assets, and adaptability.

The DTRC's new operations center, with its increased communications capabilities and 24/7 operations, will allow the agency to more effectively support its customers, said Robert Wood, chief of DTRA's Combating WMD Operations Center. A new collaborations center, which provides the capability for real-time science and technology collaboration with DoD and non-DoD organizations, will also help the agency leverage round-the-clock situational awareness and provide decision support of worldwide WMD and related activities.

Construction on the six-story, \$107 million, 317,000-square-foot DTRC building began April 1, 2003, and was completed Sept. 23, 2005. About 200 DTRA personnel and guests attended the hour-long ribbon-cutting ceremony, held in the foyer of the new building. DTRA personnel throughout the new center, and in Russia, Japan, Germany, Albuquerque, N.M., and other locations viewed the ceremony via streaming video.

Idziak is assigned to the Defense Press Office.



DEPARTMENT OF DEFENSE NEWS RELEASE (JAN. 26, 2006) DOD RELEASES FISCAL 2005 TOP CONTRACTORS REPORT

The Department of Defense announced today that the fiscal 2005 report of “100 Companies Receiving the Largest Dollar Volume of Prime Contract Awards (Top 100)” is now available on the World Wide Web. The Web site address for locating this publication and other DoD contract statistics is:

< http://siadapp.dior.whs.mil/procurement/historical_reports/statistics/p01/fy2005/top100.htm > .

According to the new report, the top 10 Defense contractors for fiscal 2005 were:

	<u>(In Billions)</u>
1. Lockheed Martin Corp.	\$19.4
2. The Boeing Co.	18.3
3. Northrop Grumman Corp.	13.5
4. General Dynamics Corp.	10.6
5. Raytheon Co.	9.1
6. Halliburton Co.	5.8
7. BAE Systems PLC	5.6
8. United Technologies Corp.	5.0
9. L-3 Communications Holdings, Inc.	4.7
10. Computer Sciences Corp.	2.8

In fiscal 2005, DoD prime contract awards totaled \$269.2 billion, \$38.5 billion more than in fiscal 2004.

AIR FORCE MATERIEL COMMAND NEWS SERVICE (JAN. 27, 2006) HIGH-SPEED AIR VEHICLES DESIGNED FOR RAPID GLOBAL REACH

Michael P. Kleiman

KIRTLAND AIR FORCE BASE, N.M. (AFPN)—For an aircraft to achieve hypersonic speeds, ranging from 6,000 to 15,000 mph (Mach 9 to Mach 22), and reach altitudes between 100,000 to 150,000 feet, it needs an airframe structure designed to survive intense heat and pressure.

Such technology is in development by scientists and engineers with the Falcon hypersonic technology vehicle, or HTV, program.

Started in 2003, the joint Air Force and Defense Advanced Research Projects Agency endeavor consists of two objectives: to develop hypersonic technology for a glided or powered system and advance small, low-cost, and responsive launch vehicles.

Other partners participating in the program include NASA, the Space and Missile Systems Center, Sandia National Laboratories, and the Air Force Research Laboratory’s air vehicles and space vehicles directorates.

Both AFRL organizations have been working on the project’s hypersonic technology vehicle portion at Kirtland, specifically focusing on technologies for the glided system.

“We have made great progress and are on track for the first glided hypersonic test vehicle flight in 2007,” said Russ Partch, the Falcon HTV-1 manager. “It will enable a revolutionary capability to quickly respond to events anywhere around the world.”

Planned for a less-than-one-hour flight in September 2007, the Falcon HTV-1 is set to complete its inaugural voyage over the Pacific Ocean. Attaining Mach 19, the vehicle will briefly exit the Earth’s atmosphere and re-enter flying between 19 and 28 miles above the planet’s surface. Demonstrating hypersonic glide technology and setting the stage for HTV-2 represent the primary focus of the lower risk, lower performance initial flight.

“This is a very unique vehicle. During the early part of the flight, it acts like a spacecraft. In the middle phase, it re-enters the atmosphere like the space shuttle, and in the latter stage, it flies like an aircraft,” Partch said. “It is an interesting mix of challenges and technologies.”

For the second demonstration, scheduled for 2008 or 2009, the Falcon HTV-2 will feature a different structural design, enhanced controllability, and higher risk performance factors during its high-speed journey. Like its predecessor, the system will reach Mach 22 and then finish its one-hour-plus mission over the Pacific Ocean.

On the other hand, the third and final Falcon HTV, slated for 2009, will be a departure from the previous demonstrations. The reusable hypersonic glider will lift off from NASA’s Wallops Flight Facility at Wallops Island, Va., and then more than an hour later, be recovered in the Atlantic Ocean.

In addition, the HTV-3, flying at Mach 10, will be designed to achieve high aerodynamic efficiency and to validate external heat barrier panels that will be reusable.



“The HTVs will prove technologies for global reach vehicles that can get a payload to the area of interest quickly in support of the joint warfighter,” Partch said.

Currently, program staff at the space vehicles directorate are helping develop a thermal protection system for the HTV structure to withstand 3,000-degree temperatures and incredible exterior pressures, 25 times more than those experienced by the space shuttle. An important component of this critical technology, the all-carbon aeroshell, must keep from being crushed or burned up in this environment. To keep the vehicle interior cool, an advanced multilayer insulation is being created for long flights. Researchers are also designing tools to enhance HTV navigation and maneuverability for robust aerodynamic performance.

“We are now starting to build the HTV-1’s critical flight hardware components,” Mr. Partch said. “The entire test vehicle will be integrated at the Lockheed Martin Corporation’s facility in Valley Forge, Pa.”

With its initial flight vehicle project progressing rapidly, the Falcon HTV program is poised to meet the challenges of achieving unprecedented hypersonic technology validation in flight and demonstrating operationally responsive space lift. The results of these three experimental flights will have a significant impact in the development of future military delivery platforms and launch systems.

Kleiman is with Air Force Research Laboratory Space Vehicles Directorate Public Affairs at Kirtland AFB.

U.S. MARINE CORPS PRESS RELEASE

(JAN. 9, 2006)

NEW HEAVY LIFT HELICOPTER STARTS DEVELOPMENT

NAVAIR PATUXENT RIVER, Md.—A new heavy lift helicopter is now officially in the pipeline for the Marine Corps following a Dec. 22, 2005, deci-



Artist’s drawing of the Falcon Hypersonic Technology Vehicle, or HTV-1.
Image courtesy Russ Partch.

sion by Kenneth R. Krieg, under secretary of defense for acquisition, technology and logistics to authorize the heavy lift replacement program here to begin a \$4.4 billion development program for the aircraft.

A “Cost Plus Award Fee” contract for the system development and demonstration phase, estimated to be approximately \$2.9 billion, is expected to be signed with Sikorsky in March 2006. An initial system development and demonstration contract worth \$8.8 million to Sikorsky was signed January 3. A follow-on ISDD contract is expected in several weeks. An exact figure for that contract is not yet known. The ISDD contracts cover continuing risk-reduction efforts and sub-system selection (including cockpit, engines, fuselage, etc), while the SDD contract covers most aspects of research, design, test and evaluation efforts performed by Sikorsky for the new helicopter.

Fleet Marines should start receiving the first of 156 new marinized heavy lifters, to be called the CH-53K, in 2015—which is none too soon for the program manager, Marine Col. Paul Croisetiere, or the Marine Corps, which has been relying heavily on the aging CH-53E Super Stallion in the increasingly relevant heavy lift mission.



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“Since the first Gulf War, Marine Corps vertical heavy lift has been getting further and further away from the original requirement it was developed to meet, a behind the lines logistics support aircraft,” Croisetiere explained. “From the Scott O’Grady rescue mission in the Balkans to delivering critically needed combat support in Afghanistan, Iraq, and the Horn of Africa, we’re wearing out the aircraft because it has been in incredibly high demand since the mid ‘90s. The CH-53E has proven to be extraordinarily relevant to the execution of our national security strategy, Navy and Marine Corps warfighting concepts, and the associated need for capable heavy lift,” he said.

Because the current aircraft has performed such yeoman service outside the spotlight, it hasn’t been given the attention squeaker wheels in the Defense Department arsenal have over the years.

“We currently have an under-resourced fleet,” Croisetiere said. “In the 25 years it has been in service, we have not had the investment necessary to effectively address obsolescence, reliability, and maintainability issues. We also have a significant fatigue life issue looming. A Service Life Assessment Program conducted on the CH-53E determined that the service life is 6,120 flight hours based on the aircraft’s transition bulkhead section (location of the tailboom’s fold point). Based on our current and predicted usage rates, we anticipate the current fleet will start reaching this fatigue life limit in FY11 at a rate of up to 15 aircraft per year. Not only is this an expensive fix, but it will require significantly increased management attention to ensure we have sufficient numbers of aircraft available to meet our operational commitments. We have to start now if we’re going to have new CH-53Ks on the flight line ready for tasking when we start parking the Echoes,” Croisetiere stated.

“Marinized rotary wing heavy lift is a very necessary capability that demands a very capable platform to accomplish,” explained Marine Lt.Col. Stewart Gold, the heavy lift program’s deputy for logistics support. “The ability to deliver very heavy loads in extreme/austere conditions in support of Marine infantry, including combat, anywhere in the world comes at a price. On average, it costs approximately \$15,000 and requires 44.1 maintenance manhours for each flight hour,” Gold said.

Technologies under consideration in the CH-53K, which is being developed as a new-build derivative of the CH-53E, will include a Joint Interoperable “glass” cockpit; high-efficiency rotor blades with anhedral tips; low-main-

tenance elastomeric rotorhead; upgraded engine system; cargo rail locking system; external cargo improvements; and survivability enhancements.

Marine Corps acquisition officials also weighed the option of participating with the Army’s Joint Heavy Lift program. “The Army’s proposed heavy lift requirement to transport the Future Combat System greatly exceeds our requirement,” Croisetiere said. “The actual aircraft hasn’t been designed yet, but initial analysis suggests the joint heavy lifter will be too large to operate from current and programmed amphibious shipping. We may have a use for it, but in more of a logistical role as a possible KC-130J replacement—we still need the CH-53K for tactical heavy lift.”

Joint Heavy Lifters may not be available any sooner than 2025, according to Croisetiere—more than 10 years after the Marine Corps will start parking its current fleet. “We can’t wait for the Joint Heavy Lifter,” he added. “And even if we could, we still couldn’t use it because as currently envisioned, it’s too big to operate from our amphibious ships. It will be an incredible platform, but it won’t be a sea-based vertical lifter.

“With more than twice the combat radius of the CH-53E, the CH-53K uses mature technology to deliver a fully shipboard compatible platform to meet current and future Marine Corps requirements,” Croisetiere explains. “The CH-53E doesn’t even meet the heavy lift requirements that are considered necessary to meet the anticipated threats in 2015. The CH-53K is being designed to carry a cargo load of 27,000 pounds out to a distance of 110 nautical miles, to an altitude of 3,000 feet at an ambient temperature of 91.5° F. One of the more appealing capabilities of the CH-53K will be its performance in mountainous areas in hot-day conditions. If we had it today it would be the perfect aircraft for combat operations in Afghanistan and relief operations in Pakistan.”

Heavy lift program Marines expect to sign a Cost Plus Award Fee contract, worth an estimated \$2.9 billion, with Sikorsky for the system development and demonstration phase of the CH-53K’s development within the next few months, according to Croisetiere.

The first CH-53K, a flight test aircraft, is scheduled to make its first flight in FY11. Initial operating capability, or IOC, is scheduled in FY15 and is defined as a detachment of four aircraft, with combat ready crews, logistically prepared to deploy.



MEDICAL SITUATIONAL AWARENESS ADVANCED CONCEPT TECHNOLOGY DEMONSTRATION LEADING THE ACQUISITION CULTURE CHANGE

Nicole Kratzer

There is a recognized need to make the defense acquisition process more effective and efficient and to deliver quality products to warfighters at lower costs in the shortest amount of time. The Department of Defense is undertaking several initiatives to improve the acquisition process, including a top-to-bottom review of acquisition programs through the Defense Acquisition Performance Assessment; however, more is needed. Deputy Defense Secretary Gordon England recently told the Senate Armed Services Committee, "This is just hard work."

In a speech to the International Test and Evaluation Association Symposium in October 1995, Paul G. Kaminski, then under secretary of defense for acquisition and technology, spoke to attendees about the need for an acquisition culture change. He used the example of Team New Zealand (the America's Cup sailing team that defeated Team Dennis Connor, five races to zero in 1995): The New Zealand team, from a smaller country with a smaller budget and limited resources, used repeated testing and evaluation throughout the development life cycle of the boat *Black Magic*, integrating the designers, testers, and sailing crew into a cohesive team. According to Kaminski, that example could easily translate to the defense acquisition process.

"We must shift our outlook and approach from one of oversight and report, to early insight," said Kaminski. "We need to make sure test and evaluation expertise is made available to the program manager early on so that we prevent problems, rather than try to identify them in a 'gotcha' fashion when we write a test report or at the Defense Acquisition Board review itself. We should be building in quality and excellence from the start, not trying to inspect it two weeks before the test program begins or the DAB meeting occurs."

Medical Situational Awareness in the Theater Advanced Concept Technology Demonstration is one of the programs within the Department of Defense striving to make this cultural change a reality. Building on lessons learned from previous acquisition programs, the MSAT ACTD pro-

gram office has been integrating, from the beginning, both the Operational Test Agent and the Transition Manager into the development process to help make the program a success.

"We are doing it the best I have ever seen," says Dr. Dan Gower, interim president of the U.S. Army Medical Department Board and the Operational Test Agent for the MSAT ACTD. "First, we have the Operational Test Agent working for the Operational Manager. Second, we have demonstrated trust in the operational tester, and he is an accepted part of the team. He is not just the guy in the black hat that walks in to give you a report card."

Bob Foster, the program executive officer for the Joint Medical Information System and the MSAT ACTD Tran-

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—Paul G. Kaminski

Under Secretary of Defense (Acquisition & Technology)
October 1995

sition Manager agrees: "We are already working with [the technical manager] and the rest of the executive team as an integral part. Most ACTDs do not consider transition until late in the program and that is why they fail. Success means incorporating transition from the beginning."

Test to Learn

For any project, success and utility must be defined as precisely and early as possible. For the MSAT ACTD, success means a Military Utility Assessment that will result in a recommendation to transition to a program of record. To ensure a successful Military Utility Assessment, the MSAT ACTD Joint Program Office held a requirements conference just two months after the MSAT Implementation Directive was signed.

"The Military Utility Assessment requires a clear definition of what utility is as seen through the eyes of the ultimate users of the proposed system," says Gower. "That



is why I pushed so hard for the requirements conference early. This started the process of defining success and utility from the users' perspective. The requirements conference ensured that we can build the product to what the users value." According to Gower, some ACTDs failed because they did not involve the users early enough in the process.

"Further, you need to test early and test often during development of complex systems. Our mantra is that we test to learn and we evaluate to understand," Gower says. This means integrating the operational test agent into all planning processes, not just in the execution of test events.

"The value of bringing me into the process early is that the development team needs to understand the basis of the report card that will be written," says Gower. The first real test of the MSAT Medical Support Enhanced (MSE) tool—the first spiral in the MSAT ACTD development—will be at Exercise Cobra Gold 06 in May 2006. In preparation, Gower and his team have been actively engaged in writing an event design plan and working with the MSAT ACTD Operational Manager in developing the Major Scenario Events List (MSEL).

"We are working with the Operational Manager to figure out how we are going to exercise the MSAT MSE in the context of Cobra Gold," says Gower. "We are working with the White Cells in both Thailand and at the Pacific Command's Simulation Center in Hawaii to ensure the MSELs happen and to ensure the MSELs take on the right parameters. We will also put data collectors with the users to get immediate feedback on the MSAT MSE tool as each problem occurs."

Transition for Success

The MSAT ACTD will be successful only if it transitions to a program of record, which can be a very difficult task because of all the standards that information technology systems must meet (for example, Technology Readiness Level standards and the Defense Information Technology Security Certification and Accreditation Process).

"One of the great things about MSAT," says Foster, "is that we are looking at mature technologies that have already gone through a lot of the transition documentation, so it is already done."

The targeted program of record for the MSAT ACTD is the Theater Medical Information Program, commonly called TMIP, which is part of the Joint Medical Informa-

COBRA GOLD (CG) is an annual multilateral exercise that demonstrates USPACOM's capability to project force strategically by rapidly deploying a Combined Task Force to conduct Joint/Combined operations. The exercise scenario content is designed toward peace operations and consequence management emphasizing the challenges on the war on terrorism. Training is multilateral, multi-Service, interagency, realistic, and geared toward the most likely contingency operations in theater. Due to Southeast Asia Tsunami Disaster Relief efforts, Headquarters, U.S. Pacific Command (USPACOM) has re-scoped CG 06's Command Post Exercise to a Multinational Workshop and Staff Exercise. HQ USPACOM is considering additional Engineering/Medical Civic Action Project sites within the Tsunami affected areas. CG 06 will be the 25th iteration in the CG series.



tion Systems Program Executive Office. Members of the program of record office have already begun working closely with the MSAT ACTD transition manager to develop a measured transition plan. According to Foster the program of record is already requesting funding through the budgeting process for full operational capability and further development.

The next steps toward transition are further refinement of the transition plan to address user evaluations and preplanned product improvement.

"Medical planners are salivating to get actionable information," says Foster. "If MSAT is successful, it will give us a multi-generational leap over what the program of record can do. This equates to a three, maybe four, generation leap ahead in a medical area program that we have never been able to see before."

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