

### Coast Guard Modernizes Acquisition System

Coast Guard Lt. Tony Migliorini

SPECIAL TO AMERICAN FORCES PRESS SERVICE (NOV. 7, 2008)

WASHINGTON—A newly transformed Coast Guard directorate has reached its full operating capability in recent weeks, working to modernize the Service's acquisition system and build its operational assets for the 21st century, a senior officer said Nov. 7.

Coast Guard Rear Adm. Gary Blore, assistant commandant for acquisition and chief acquisition officer, participated in a roundtable discussion with online journalists concerning the Coast Guard's modernized acquisition program.

The acquisition directorate manages all major Coast Guard acquisition projects. Among the 22 major projects now under way are the HC-144A "Ocean Sentry," a medium range surveillance aircraft, the Response Boat-Medium, and the flagship of the Coast Guard's new fleet, the National Security Cutter.

The first National Security Cutter, *Bertholf*, is operating off the West Coast, Blore said. *Waesche*, the second such cutter, has been christened, and fabrication work has started on a third, named *Stratton*. The National Security Cutter is the largest and most technically advanced cutter to be built for the Coast Guard, he said.

Blore said four boats in the Response Boat-Medium program have been delivered, and that a new facility that officially opened in Green Bay, Wis., "will allow us to go to a full operating capability on that project of about 30 boats per year until we get to 180 boats."

The modernized acquisition program will allow the Coast Guard to mitigate many of the potential problems that can occur during a major acquisition project, Blore said. The Fast Response Cutter project will be a fixed-price contract to control costs, and the Coast Guard will have personnel onsite to be directly involved with the manufacturer throughout the project, he said.

Blore credited Coast Guard Commandant Adm. Thad W. Allen with being a driving force behind modernizing the acquisition process.

"Coincidentally with my arrival, Admiral Allen became the commandant and started us on a path of acquisition reform," he said.

*Migliorini serves at the Coast Guard Headquarters Office of Public Affairs.*

### Department of Defense Releases Selected Acquisition Reports

DEPARTMENT OF DEFENSE NEWS RELEASE (NOV. 17, 2008)

The Department of Defense has released details on major defense acquisition program cost, schedule, and performance changes since the June 2008 reporting period. This information is based on the Selected Acquisition Reports (SARs) submitted to the Congress for the September 2008 reporting period.

SARs summarize the latest estimates of cost, schedule, and performance status. These reports are prepared annually in conjunction with the president's budget. Subsequent quarterly exception reports are required only for those programs experiencing unit cost increases of at least 15 percent or schedule delays of at least six months. Quarterly SARs are also submitted for initial reports, final reports, and for programs that are rebaselined at major milestone decisions.

The total program cost estimates provided in the SARs include research and development, procurement, military construction, and acquisition-related operation and maintenance (except for pre-Milestone B programs, which are limited to development costs pursuant to 10 U.S.C. §2432). Total program costs reflect actual costs to date as well as future anticipated costs. All estimates include anticipated inflation allowances.

The current estimate of program acquisition costs for programs covered by SARs for the prior reporting period (June 2008) was \$1,642,568.5 million. After subtracting the costs for two final reports (ERM and MM III GRP), and adding the costs for four new programs (EA-6B ICAP III, GPS IIIA, IDECM, and JCA) from the June 2008 reporting period, the adjusted current estimate of program acquisition costs was \$1,651,157.9 million. For the September 2008 reporting period, there was a net cost decrease of \$2,865.6 million (-0.2 percent), due primarily to the termination of the Armed Reconnaissance Helicopter (ARH) program during the Nunn-McCurdy certification process.

For the September 2008 reporting period, there were quarterly exception SARs submitted for five programs. The reasons for the submissions are provided below.

#### Army

ARH (Armed Reconnaissance Helicopter)—Program costs decreased \$4,748.0 million from \$5,259.7 million to \$501.7 million (-90.5 percent), due to program termination during the Nunn-McCurdy certification process.

	<b>Current Estimate (\$ in millions)</b>
<b>June 2008 (89 programs)</b>	<b>\$1,642,568.6</b>
Less final reports on two programs (ERM and MM III GRP)	-2,835.9
Plus initial reports on four programs (EA-6B ICAP III, GPS IIIA, IDECM, and JCA)	+11,425.2
<b>June 2008 Adjusted (91 programs)</b>	<b>\$ 1,651,157.9</b>
<b>Changes Since Last Report</b>	
Economic	\$ 0.0
Quantity	-3,062.0
Schedule	+876.9
Engineering	+72.2
Estimating	+562.9
Other	0.0
Support	-1,315.6
<b>Net Cost Change</b>	<b>\$ -2,865.6</b>
<b>September 2008 (91 programs)</b>	<b>\$1,648,292.3</b>

FBCB2 (Force XXI Battle Command Brigade and below)—The SAR was submitted to reflect schedule delays of greater than six months. Specifically, follow-on test and evaluation slipped six months from May 2009 to November 2009 to coincide with the Army Software Blocking 2+ Operational Evaluation. Program costs increased \$357.8 million from \$3,371.1 million to \$3,728.9 million (+10.6 percent), due to an increase in quantity of 6,955 units from 73,463 to 80,418 (+\$162.5 million) and associated schedule, engineering, and estimating allocations\* (+\$58.9 million). In addition, there were increases in support associated with the quantity increase (+\$138.5 million).

**Air Force**

AEHF (Advanced Extremely High Frequency)—Program costs increased \$2,576.6 million from \$5,645.3 million to \$9,938.6 million (+35.0 percent) to reflect cost increases, which have resulted in a critical Nunn-McCurdy unit cost breach currently undergoing certification review.

**DoD**

Chem-Demil-ACWA (Chemical Demilitarization-Assembled Chemical Weapons Alternatives)—The SAR was submitted to reflect schedule delays of greater than six months. Specifically, the Pueblo “begin operations” milestone slipped 23 months from January 2015 to December 2016, and the Blue Grass “begin operations” milestone slipped 49 months from January 2017 to February 2021. DoD is currently evaluating the cost impacts of these schedule slips.

Chem-Demil-CMA (Chemical Demilitarization-Chemical Materials Agency)—The SAR was submitted to reflect schedule delays of greater than six months. Specifically, the Pine Bluff Explosive Destruction System (PBEDS) complete operations milestone slipped 34 months from December 2008 to October 2011, pending the ongoing technology selection process. There were no cost changes.

\* Note: Quantity changes are estimated based on the original SAR baseline cost-quantity relationship. Cost changes since the original baseline are separately categorized as schedule, engineering, or estimating “allocations.” The total impact of a quantity change is the identified “quantity” change plus all associated “allocations.”

**New Effort Taps Best Commercial Practices for Defense Acquisition**

*Donna Miles*

*AMERICAN FORCES PRESS SERVICE (NOV. 19, 2008)*

WASHINGTON—When a shopper goes online to make a purchase, a click of the mouse will identify which retailers offer the product and at what price, and how much they’ll charge to deliver it to the buyer’s doorstep.

U.S. Transportation Command’s new Corporate Services Vision is bringing that model to the military acquisition process, a senior TRANSCOM official said.

The initiative taps into the best practices being perfected in the commercial sector and puts them at the fingertips of warfighters and those who support them, said Robert J. Osborn II, TRANSCOM’s deputy director for distribution portfolio management, command, control, communications, and computer systems.

Corporate Services Vision is in the process of being rolled out, and will streamline the processes used to do everything from arranging troop transportation to ordering spare parts and tracking their delivery, Osborn said. Instead of having to go into different systems to order equipment and track shipments, users will have access to a virtual one-stop shopping experience.

"Today, if you are trying to order transportation for something, track your shipment, [or] find out if it has been delivered, there are multiple systems you have to log onto to get the information you need," Osborn said. "Then it is up to you as the user to collate that information."

Corporate Services Vision is changing that, integrating myriad redundant and often incompatible systems into a single operation across the enterprise, he said. This will simplify the acquisition process, saving money and making many of the steps all but transparent to the user.

Osborn compared the effort to what a consumer experiences when buying an item online. The buyer simply keys in an item name to determine which vendors offer the product and at what price. Then the buyer selects a vendor and designates how quickly he wants delivery and how much it will cost. Finally, the buyer pays by credit card and receives a code to track the shipment to delivery.

The queries that drive these transactions—to vendors and transportation companies—are transparent to the user.

That's what the Corporate Services Vision will bring warfighters, Osborn said. "We are changing the onus of you as a user [having] to go to different systems to find out your information," he said. "Now you will log onto a Web site, a browser we are providing, and you will be able to conduct business based on what capabilities you need."

Ultimately, this will benefit warfighters by allowing them to concentrate on their mission, not on how to get what they need to accomplish it, he said.

"If you are at the front of the spear out in the field trying to do your job, now that information is being given to you so you can concentrate on making the right decision based on what your job is, rather than spending your time trying to get information," Osborn said.

### **FCS Launcher to Protect New Class of Navy Ship**

*Sam P. Tricomo*

ARMY NEWS SERVICE (NOV. 19, 2008)

MILWAUKEE—The Non-Line of Sight Launch System being developed as part of the Army's Future Combat Systems has been selected for use aboard the first of the U.S. Navy's Littoral Combat Ships, the *USS Freedom*.

*USS Freedom* was commissioned Nov. 8 during a ceremony in Milwaukee in which the ship's sponsor was Birgit Smith, the widow of Medal of Honor recipient Sgt. 1st Class Paul Ray Smith of the 3rd Infantry Division, who was killed in Iraq.

The 378-foot *Freedom*—along with its sister ship, *Independence*, being built in Mobile, Ala.—represents a new class of ship for the Navy. The littoral combat ships are designed to operate quickly in shallow water to counter threats in coastal regions, known as littoral areas, Navy officials said. They said the ships are specifically designed to counter mines, submarines, and fast in-shore attack craft.

At the core of the new ship's capability to counter the coastal threats is the NLOS-Launch System, said Allan Ashley, the Navy liaison at the NLOS-LS Project Office. He said the launch system is scheduled to be evaluated aboard the new ship during tests set for early 2009.

NLOS-LS is being developed as part of the Army's FCS program to provide soldiers with a rapidly deployable precision-fires delivery system. NLOS-LS is one of the first FCS components slated to be fielded and is scheduled for delivery to infantry brigade combat teams in 2011.

The NLOS-LS consists of a rapidly deployable networked container launch unit that houses 15 precision attack missiles. Through the network, NLOS-LS can accept remote mission commands and conduct firing operations without the use of an attendant crew and attack a variety of targets. The unit is platform-independent, officials said, and can quickly be installed on ground, manned, and unmanned vehicles.

In the Navy application, four 15-missile NLOS-LS container launch units are integrated together into one 60-missile mission module. Littoral combat ships will have weapons zones for up to three mission modules per ship. Therefore, depending on the operation, as many as 180 NLOS-LS precision attack missiles may be available to the ship's captain to counter the threat of fast inshore attack craft.



Sea Cadets stand in formation as the crew of the littoral combat ship *USS Freedom* (LCS 1) mans the rails during her commissioning ceremony at Veterans Park in Milwaukee, Wis., Nov. 8. *USS Freedom* is the first of a new class of Navy ship and its weapons will include the NLOS-Launch System, being developed as part of the Army's Future Combat Systems.

Photo by Navy Mass Communications Specialist 2nd Class Katherine Boeder

Adapting the NLOS-LS for Navy use represents commitment among military services to ensure warfighting success by continuing to develop the joint warfighting force concept and building jointness in early, FCS officials said. They said in the case of NLOS-LS, this is being done at the system development and demonstration phase of acquisition.

"The U.S. Navy is moving toward using a sea-based approach—being able to deploy and control enough resources from an offshore location that we will not need to rely on a foreign country to establish a base of operations," said Ashley, the NLOS-LS Navy liaison.

Ashley said the NLOS-LS is critical to protecting the littoral combat ship itself. He said it is also crucial to counter a range of threats, including Marine landing operations, maritime special operations missions, and counter-piracy activities.

"In short, NLOS-LS not only protects our ship and sea-based assets," Ashley said, "but our Marines and Navy SEALs as they go ashore and conduct other operations in the littoral battlespace."

Although the ship was formally commissioned this month, it was actually launched in September 2006. The first test-

ing to determine the system's ability to track against fast in-shore attack craft was completed in August in the waters off Eglin Air Force Base on the Florida panhandle.

*Tricomo serves with the FCS Public Communications Office in Warren, Mich.*

### **Contractor Answers Nation's Call for Mine-Resistant Vehicles**

*John J. Kruzal*

*AMERICAN FORCES PRESS SERVICE (NOV. 21, 2008)*

SEALY, Texas—Conventional military wisdom holds that enemies have a vote in combat. But manufacturers of the mine-resistant, ambush-protected vehicle have worked to disenfranchise them.

When the Defense Department in July 2007 requested nearly \$1.2 billion from Congress and asked for an influx of MRAPs for troops in Iraq, BAE Systems was one contractor that answered the call, a response that culminated at the facility this week.

"The question was how many can you build and how fast can you build them?" said Paul Mann, the MRAP joint program

manager at BAE, which capped off its end of production with a retrospective feting.

The MRAP's unique V-shaped hull diffuses blasts away from the vehicle's underbelly, which has proven an effective countermeasure against the roadside bombs that have killed and injured scores of troops since operations began in Iraq and Afghanistan.

Invoking Defense Secretary Robert M. Gates' plea to industry for an additional 2,650 MRAPs, Mann said that when the Defense Department made force protection its No. 1 acquisition priority, it spurred workers into action.

BAE responded by kicking into high gear, more than doubling its production from about 15 Caiman trucks per day to roughly 35. In total, it has produced more than 5,000 MRAP vehicles—2,868 Caimans and 2,182 RG33s—under Army and Marine Corps contracts over the past 22 months.

"The quality and quantity of your commitment to this mission will never be forgotten by the armed services," Mann told the Sealy plant workers gathered in a facility room for the day's event.

A news report in June cited roadside bomb attacks and fatalities in Iraq as decreasing by almost 90 percent since June 2007, according to Pentagon records and interviews with military leaders.

Dennis M. Dellinger, BAE's president of mobility and protection systems, spoke from an unarmored 5-ton medium tactical vehicle that doubled as a stage in a facility warehouse.

"Today's celebration is about the fact that there are scores of soldiers that will be able to come home in one piece because of the work you've done," he said.

Dellinger said it's "no coincidence" that the MRAP program led to a decline in combat casualties.

"A number of factors went into that, but one certainly was putting the right kind of protection into the vehicles that they traveled around in," he said. "It was an amoeba if you will, in that we kept adjusting as the threat adjusted."

Praising the people involved in the push—from the concept and design teams, to the manufacturers, testers, and government assessment personnel—Dellinger said everybody who contributed to the process should be proud.

"[This] was something that probably was not matched anywhere else in military production history since at least World War II," he said of the speed of production that met time and cost requirements.

Chris Chambers, the vice president of medium/heavy vehicles department of mobility and protection systems, described the encouraging track record of the Caiman vehicle, the last of which rolled off the Sealy lot this week.

The vehicle, which holds up to 10 troops, has been targeted in hundreds of attacks—everything from small-arms fire to smaller roadside bombs—including significant attacks that involved large makeshift explosives, he said.

"They've done very well," he said of the vehicles' resilience to attacks. "They're very reliable."

Providing an eyewitness account of the Caiman's durability under fire was William Thibaux Jr., an equipment operator who serves as a petty officer 2nd class in the Navy Reserve. While serving in Iraq last year, Thibaux said, he saw the effects on a convoy of Marine MRAPs hit by a makeshift bomb.

"Of the seven that were in that vehicle, only one walked away with a broken leg," he recalled. "If you would have seen the vehicle, you would have thought everyone would have died, ... but everyone survived."

Besides its contribution to force protection, BAE has other ties to the military. It is a recipient of the Employer Support of the Guard and Reserve award, a Defense Department honor that highlights employers who convey exceptional levels of support to National Guard and Reserve forces on their payrolls.

The company also employs retired servicemembers like Bob German, an inventory control supervisor. German, a retired Marine Corps corporal, has a son who recently enlisted in the Army and is likely to deploy within the next year, he said.

"Knowing that lives actually do depend on the vehicles we build here, and that we are actually saving lives, is phenomenal," German said. "I get a knot in my throat every time I think about it. You never know if the vehicle we build could be carrying my son or friends of my son's or kids I watched grow up."



MARINE CORPS BASE QUANTICO, Va.—With the base of the frame only 2.5 feet in width and low noise signature, the K-MAX has the ability to deliver cargo with the possibility of not being noticed by the enemy. Photo by Marine Lance Cpl. Meloney R. Moses

### New Aircraft Boasts New, Improved Capabilities

Marine Lance Cpl. Meloney R. Moses

MARINE CORPS NEWS (NOV. 26, 2008)

MARINE CORPS BASE QUANTICO, Va.—Military helicopters over Quantico, are a common sight, yet many individuals watching do not automatically assume there is no one inside.

Kaman Aerospace Group demonstrated the K-MAX Unmanned Multi-Mission Helicopter at the Marine Corps Air Facility Nov. 20 to highlight its potential benefits to future battlefield operations.

“It is the best aircraft made for lifting,” said Bill Hart, the safety pilot aboard the aircraft during demonstration. “It’s not the fastest, but we are trying to increase the speed and weight capability, which requires more testing.”

The K-MAX exhibited the ability to support the weight of 6,000 pounds of cargo with its multi-hook capacity and auto landing and drop off capabilities, essentially unmanned.

The craft is contractor-supported, managed by a ground controller using a hand-held tablet computer system with electric actuators inside the craft and standard helicopter controls for easy alternating from unmanned to manned.

“There are switches inside that allow me to take over fast and easy, if I need to,” said Hart.

The unmanned aircraft systems requirements officer of the combat development directorate/fires and maneuver integration division, Maj. Thomas Heffern, explained that the Marine Corps is more interested in the capabilities and vision than the actual aircraft.

The vision for the K-MAX is to deliver cargo to Marines and move logistics around the battlefield without excessive manpower, said Cliff Gunsallus, the vice president of engineering for Kaman.

As demonstrated and explained during the air show, the K-MAX also has the ability to quickly change its route when it is alerted of a threat.

“We are looking at this as a potential capability to mitigate against threats,” said Heffern. “In the next five years or so this could potentially save men for more important jobs.”

Selling for around \$7 million, the K-MAX, which has one engine and can hold 228 gallons of fuel, adding 1,550 pounds to the already 12,000-pound helicopter, is currently limited in quantity with only 22 operating worldwide in seven countries to date.

Moses serves at Marine Corps Base Quantico, Quantico, Va.

### Re-Invigorating Nuclear Enterprise a Top Priority

Air Force Staff Sgt. Matthew Bates

AIR FORCE NEWS SERVICE (DEC. 4, 2008)

LOS ANGELES—Maintaining accountability and improving stewardship of the Air Force’s nuclear program is the top priority, said the Service’s 19th chief of staff recently.

Gen. Norton Schwartz said the Air Force has gone through some “rough” air in the realm of nuclear deterrence, but the Service is already on the path to recovery.

"The nuclear enterprise is getting a lot of my own and Secretary of the Air Force Michael B. Donley's attention," he said.

As a result, Air Force officials have a rigorous accountability and "back to basics" approach for compliance, precision, and reliability within the nuclear arena. The goal is to restore the Air Force's nuclear mission to the standard of excellence for which it was known throughout the entire Cold War.

"We will train, organize, and inspect to that standard," Schwartz said. "The bottom line is we lost focus, and we're bringing that focus back."

One way the Service plans to accomplish this is by setting up a nuclear-only major command, called the Global Strike Command. This organization will include both the 8th and 20th Air Forces and will be responsible for the management of the Air Force's nuclear assets.

"We will have the nuclear missiles and the nuclear-capable bombers in the same organization, and the focus will be on the nuclear mission," Schwartz said. "We're going to make sure that we're focusing on doing our nuclear mission the right way, which is the Air Force way."

In addition to establishing this new command, Air Force leaders also created a new Air Staff directorate, or A10, for nuclear matters. Called the Strategic Deterrence and Nuclear Integration Office, and led by Maj. Gen. C. Donald Alston, the office will be the focal point on the Air Staff for the Air Force nuclear enterprise.

"The new directorate provides policy oversight, increased institutional focus, and staff integration for nuclear issues," Schwartz said. "The A10 will be instrumental in managing the overall nuclear enterprise and will be directly involved in implementing the Air Force nuclear roadmap as well as preparing to stand up Air Force Global Strike Command."

Other changes to the Air Force's nuclear enterprise are also under way. The Nuclear Weapons Center at Kirtland Air Force Base, N.M., has been revitalized and expanded, with clearly understood chains of command to prevent repeats of past problems, the general said.

"The Nuclear Weapons Center now has complete control over the whole sustainment supply chain," Schwartz said. "That wasn't the case earlier, and so now we will have a single entity that is responsible for ops and employment and a single entity that is responsible for sustainment."

The chief of staff also pointed to efforts within the Air Force to develop a more centralized inspection process to ensure nuclear material is handled properly.

The general has been impressed with the progress made in the past three to four months and looks forward to tackling the other large nuclear enterprise issues such as how the Air Force can systematically rebuild its nuclear expertise within its ranks of airmen through training and career development.

According to the general, all these changes are a vital part of Air Force stewardship of the strategic nuclear deterrence capabilities, which serves as an important national security backdrop for America and its allies.

"While today's fight is vitally important to our Air Force, the capabilities that we provide in support of our nation's nuclear deterrent force is just as, if not more, important," he said.

"We have to return our focus to the fundamental capabilities of supporting deterrence," he said. "Air Force capabilities help dissuade and deter our adversaries, and it is always best to win without fighting."

*Bates writes for Defense Media Activity-San Antonio.*

### **Gates: Procurement System Must Be More Responsive to Current Requirements**

*Donna Miles*

*AMERICAN FORCES PRESS SERVICE (DEC. 15, 2008)*

WASHINGTON—The military procurement system needs to broaden its focus beyond high-end, high-tech systems so it's better prepared to meet warfighters' current requirements, Defense Secretary Robert M. Gates wrote in the January/February issue of *Foreign Affairs* magazine.

Gates' article, titled "A Balanced Strategy: Reprogramming the Pentagon for a New Age," cites an almost 50-year trend in which the military opts for lower numbers of increasingly more capable systems.

"In recent years, these platforms have grown ever more baroque, have become ever more costly, are taking longer to build, and are being fielded in ever-dwindling quantities," he said.

The problem, Gates said, is that the dynamic of exchanging numbers for capability is approaching a point of diminishing returns. "A given ship or aircraft, no matter how capable or well equipped, can be in only one place at one time," he said.

The secretary recognized that many high-end weapons and units can be used in low-end operations. Strategic bombers have provided close-air support for riflemen on horseback. M-1 Abrams tanks have routed Iraqi insurgents in Fallujah and Najaf. Billion-dollar ships track pirates and deliver humanitarian aid. And as the Army moves its Future Combat Systems program forward, it's spinning out parts of it now to support troops in Afghanistan and Iraq. FCS is a modernization program aimed at providing soldiers the best equipment and technology available as soon as practical.

But in light of the situations the United States is most likely to face in the future, Gates said, it's time for the defense establishment to consider the requirements to support those efforts up front, not after the fact. This includes relatively low-tech equipment suited for stability and counterinsurgency missions.

Gates recalled the struggles the military encountered to field up-armored Humvees; mine-resistant, ambush-protected vehicles; and intelligence, surveillance, and reconnaissance assets to Iraq.

"Why was it necessary to go outside the normal bureaucratic process to develop technologies to counter improvised explosive devices, to build MRAPs, and to quickly expand the United States' ISR capability?" he wrote. "In short, why was it necessary to bypass existing institutions and procedures to get the capabilities needed to protect U.S. troops and fight ongoing wars?"

Gates said it's time to think hard about how to institutionalize the system that procures these capabilities so they can get fielded quickly.

The secretary noted the difference between what defense planners too often strive for and what's really needed. "The Department of Defense's conventional modernization programs seek a 99-percent solution over a period of years," he said. "Stability and counterinsurgency missions require 75-percent solutions over a period of months."

So the challenge, he said, is to recognize where the 99-percent solution is needed, and where the 75-percent one will do.

"The Defense Department has to consider whether, in situations in which the United States has total air dominance, it makes sense to employ lower-cost, lower-tech aircraft that can be employed in large quantities and used by U.S. partners," he said, as one example.

Task Force ODIN—Observe, Detect, Identify, and Neutralize—in Iraq stands as an example of this concept, he noted. The Army aviation battalion stood up in 2006 to conduct reconnaissance, surveillance, targeting, and acquisition operations to counter improvised explosive devices. Since then, the unit has mated advanced sensors with turboprop aircraft to produce a massive increase in the amount of surveillance and reconnaissance coverage.

Gates said officials need to extend this mind-set more broadly throughout the Defense Department.

"The issue then becomes how to build this kind of innovative thinking and flexibility into the rigid procurement processes at home," he said. "The key is to make sure that the strategy and risk assessment drive the procurement, rather than the other way around."

Gates' article calls "balance" a defining principle in the Pentagon's new National Defense Strategy. The strategy strives for balance between:

- Prevailing in current conflicts and preparing for other contingencies;
- Instituting nonconventional capabilities while maintaining a conventional and strategic edge; and
- Retaining core traits that have made the military successful while shedding those that hamper its effectiveness.

"The United States cannot expect to eliminate national security risks through higher defense budgets to do everything and buy everything," Gates wrote. "The Department of Defense must set priorities and consider inescapable trade-offs and opportunity costs."

*This is the second article in a series based on Defense Secretary Robert M. Gates' article, "A Balanced Strategy: Reprogramming the Pentagon for a New Age," published in the January/February 2009 issue of Foreign Affairs magazine.*

### Engineers Develop Cost-Saving Repair for Damaged Helmets

Mindy Cooper

AIR FORCE MATERIEL COMMAND NEWS RELEASE (DEC. 17, 2008)

WRIGHT-PATTERSON AIR FORCE BASE, Ohio—Air Force and University of Dayton Research Institute engineers together have identified Joint Helmet Mounted Cueing System, or JHMCS, display unit materials and processing issues and developed a repair capability for damaged systems.

Responding to high failure rates, the repairs are intended to return damaged units to service at substantial cost avoid-

ance to the Air Force and Navy. In addition, implementation of recommended materials and processing changes by the original equipment manufacturer could potentially reduce or eliminate field failures of newly acquired assets.

Program managers for the system from Aeronautical Systems Center's 641st Aeronautical Systems Squadron asked Air Force Research Laboratory's materials and manufacturing directorate engineers to determine if a repair capability could be developed to address failures to the helmet's electronic and optical display. Engineers were also asked to investigate the manufacturing process of display units to determine if any materials and processing practices were contributing to failures and whether particular changes to discovered materials and processing deficiencies may lead to a more rugged, robust system.

By developing a method to repair currently damaged assets, engineers said they have eliminated the need to replace damaged systems, estimated at \$60,000 per unit. With the current number of damaged assets, a repair cost of only \$1,000 per unit translates into a cost avoidance of \$18 million. Just as important, the engineered fix prevents a JHMCS display unit shortage.

According to AFRL's Erik Ripberger, the materials research engineer managing the program, military fighter pilots wear HGU-55/P helmets modified with a JHMCS. The JHMCS display unit allows the pilot to look at a selected target, lock on, and engage.

"This system projects visual targeting and aircraft performance information on the display unit's visor, enabling the pilot to monitor this information without interrupting his field of view, effectively increasing the pilot's situational awareness," Ripberger said. "The visor is also critical for face and eye protection in the event of an ejection.

"Because the performance of the system is so crucial to the pilot's safety and mission, it is imperative that the structural integrity of every display unit is maintained," he continued. "Since no repair capability previously existed, any damaged display units were categorized as beyond economical repair and taken out of service. Due to the high failure rate of these systems, the Air Force and Navy are suffering a shortage of display units."

Most in-service damage occurs to the Relay Optics Mount Assembly, a composite shell that houses all electronic and optical components of the display units. The Relay Optics

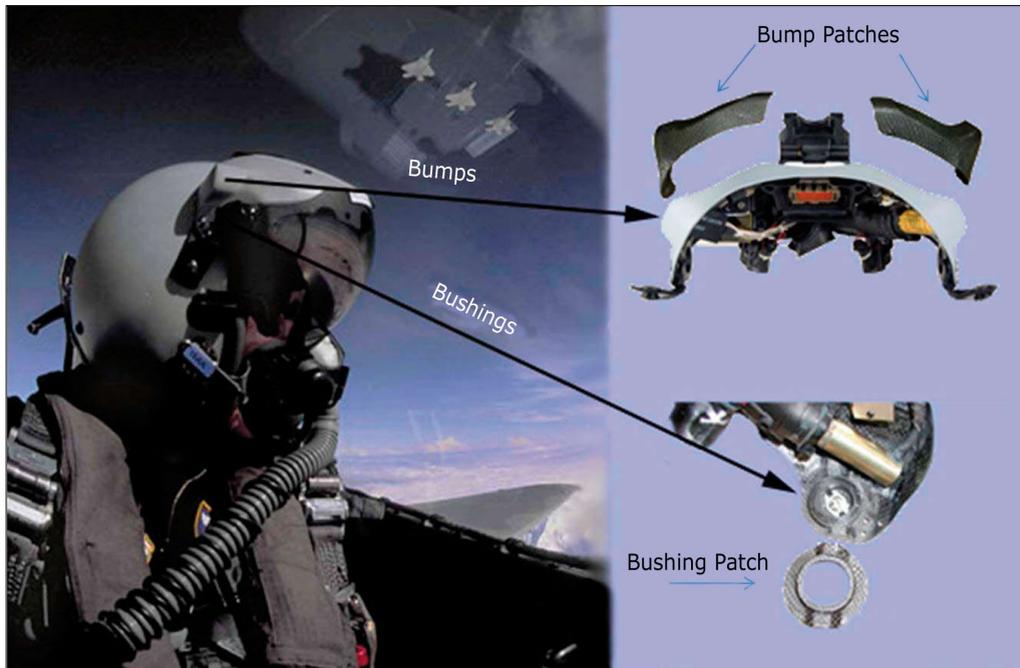
Mount Assembly consists of inner and outer composite shells, each fabricated from two layers of carbon fiber fabric infused with epoxy resin. The inner and outer shells are adhesively bonded to form the Relay Optics Mount Assembly.

Four locations on the Relay Optics Mount Assembly, the left and right bumps as well as the left and right visor mount bushings, are incurring the most damage. The left and right bumps, located at the top, aft portion of the Relay Optics Mount Assembly, are areas which sustain significant impact damage as a result of pilots striking their helmet on the canopy and canopy frames during flight maneuvers. The visor mount bushings secure the visor to the display unit while allowing the visor to pivot up and down over the pilot's face. The visor mount bushings are mounted to the Relay Optics Mount Assembly at the visor bushing mounts. Although not completely understood, engineers believe bushing damage is associated with load transferred to the bushing area during impacts or helmet donning/doffing.

Supported by laboratory testing, engineers recommended several key display unit manufacturing materials and processing changes. First, they recommended the manufacturer change the carbon fiber fabric style to a tighter weave and modify the orientation in which it is laid over the tooling to reduce or eliminate splaying in the bump areas. Second, engineers suggested the grit blast media used by the manufacturer be replaced with the materials and manufacturing directorate recommended media to prevent Relay Optics Mount Assembly shell thinning during blasting operations. Third, engineers recommended the manufacturer incorporate materials and manufacturing directorate standard best bonding practices coupled with a more comprehensive method for applying adhesive to and preparing the surfaces of the visor bushing and visor bushing mount bond surfaces. Lastly, engineers recommended a Relay Optics Mount Assembly visor bushing mount design change which would significantly increase the visor bushing mount bond surface area.

Engineers documented and delivered all materials and processing recommendations and repair processes to the 641st AESS program office. The program office is currently leveraging AFRL's findings to influence the manufacturer to change several of their materials and processing practices.

Engineers worked extensively with the Naval Surface Warfare Center, Crane Division, located in Crane, Ind., to effectively transition the repair technology. Engineers ensured Crane personnel were familiar with all aspects of the manufacture and installation of the doublers and ensured the



A fighter pilot wearing a Joint Helmet Mounted Cueing System is shown on the left. Helmet repairs developed by Air Force Research Laboratory engineers at Wright-Patterson Air Force Base, Ohio, are shown on the right. Air Force graphic image

readiness of their facilities to complete the associated tasks. The repair process has been fully implemented at the Naval Surface Warfare Center. Crane personnel have repaired their first 10 display units, which will be returned to the field by the end of 2008, and are readying to complete the next 100 display unit repairs.

*Cooper is with the materials and manufacturing directorate, Air Force Research Laboratory.*

### Iraqis Improve Logistics Enroute to Becoming Self-Sufficient

*Army Pfc. Lyndsey Dransfield*

*Special to American Forces Press Service (DEC. 17, 2008)*

CAMP LIBERTY, Iraq—Iraqi security forces, aided by U.S. soldiers, have taken another step toward self-sufficiency by securing the supplies and equipment they need to sustain operations.

In the past five years, Iraqi army logistics has struggled to make ends meet for its soldiers. One of the crucial issues involved obtaining spare parts for Humvees, the primary vehicles Iraqi soldiers use on their daily missions.

“It became such an inhibitor that it was an issue brought up in every meeting we went to. It was keeping them off

the road from successfully conducting current operations,” Army Maj. John Joseph, officer in charge of the 4th Infantry Division’s Iraqi security forces logistics cell, said.

A lack of spare parts was not the issue. The Iraqi army had ordered and received the parts, but a plan to distribute them to the battalion and brigade levels did not exist.

“There was a bunch of spare parts sitting unorganized in a warehouse in Taji,” Joseph said.

In September, the Iraqi Ministry of Defense, along with coalition military officials, developed a program that organized spare parts, put them into

packages, and distributed them to the 6th, 9th, 11th, and 14th Iraqi army divisions in Baghdad.

The divisions then developed their own plans to distribute them to the brigade and battalion levels, Joseph said.

Joseph, along with Army Maj. Shane Upton, the officer in charge of the Iraqi security forces logistics cell, has been monitoring the implementation of the program from the beginning, and will see it through its completion at the end of this month.

“This is a true test of the Iraqi army logistics system and the capabilities of the headquarters support companies,” Joseph said.

Many Iraqi soldiers were trained by military police transition teams as mechanics, but the lack of parts prevented them from putting their training to use. Now that the parts are being distributed, mechanics can be pulled from checkpoints and do what they were trained to do—fix vehicles, he said. “The Iraqi logistics system now has a chance to work for itself, which is our goal.”



Iraqi soldiers check the placement of a Humvee tire jack during a training class taught by Multinational Division Baghdad soldiers at Camp Taji, Iraq. U.S. Army photo by Pfc. Lyndsey Dransfield

Although coalition forces played a vital role in the execution of the program, the Iraqi security forces should take credit for the progress, Joseph said.

"We are here to help them execute their system," he said. "We're not here to redesign it or change it in any way. Their system is centralized because it is culturally based, and it's how the Iraqi army functions."

In 2005, coalition forces began implementing the United States' systems to improve Iraq's infrastructure, but "doing things our way was quickly proven to be an unsuccessful endeavor," Joseph said. "[The Iraqis] wouldn't execute our system unless we were hand in hand with them."

When coalition forces leaders realized the plan wasn't working, they quickly changed their actions to support the Iraqi system by providing resources and provoking actions to occur, Joseph explained.

"It is not up to us to do it for them or dictate how their system should work," he said. "We show them some methods; it

may not be methods they adopt, but they're methods that work for us. They can take the best practice out of that and apply it if and how they want."

The key, however, was to let them figure out how to make the system work and to provide assistance where needed. "Our effort didn't change anything about their system," Upton said. "It just promoted their system by helping them push the packages down to those who need them."

The logistics cell is planning a similar program for Iraqi national police in the near future, Upton said.

"The police force also has nontactical vehicles that they use to complete their missions. These parts are in their warehouse and need to be organized," he said. "This isn't a one-time deal. The program is proven to be effective, and will be used throughout the future."

*Dransfield serves in the Multinational Baghdad public affairs office.*