



APACHE UPGRADE

Apache attack helicopters will soon start receiving a new high-tech Ground Fire Acquisition System, which uses cameras and infrared sensors to immediately locate the source of ground fire. (U.S. Army photo courtesy of PEO Aviation.)

VALUE ADDED

New aviation equipment and designs, combined with lower costs, provide better value for taxpayers and help bring troops home

by Kris Osborn

Recent technological advancements are allowing Army aviation to provide an increase in efficiency, as well as new capabilities for Soldiers. The work that the aviation community has done to drive down costs and achieve efficiencies “is exactly what we need to do, and we just need more work to obtain greater efficiencies across a broad spectrum of aviation industry,” said LTG William N. Phillips, Principal Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT).

Phillips, citing DOD’s push to achieve or identify \$100 billion in savings by FY16, noted Army aviation’s creation of a “solid plan.”

Multiyear contract approaches and other techniques for finding efficiencies have produced \$450 million in savings for the CH-47F Chinook helicopter; \$700 million (pending congressional approval) for the UH-60 Black Hawk; and \$2.5 billion overall throughout aviation systems, Phillips said during the 2011 Army Aviation Association of America (AAAA) Annual Professional Forum and Exposition, April 17-20 in Nashville, TN.

“One of our challenges for now and the future is to make sure that we take advantage of every dollar that the American taxpayer and Congress give us,” Phillips said.

HIGH OPERATIONAL TEMPO

Having flown more than 4.5 million hours since 2003, the Army aviation community has an operational tempo (OPTEMPO) five times that of peacetime.

According to Phillips, the Army has 623 manned and unmanned aircraft in theater today. It delivered more than 250 new aircraft and 317 new unmanned

aerial systems to the field in 2010 while maintaining mission readiness rates of approximately 84 percent across the fleet.

In the face of this high OPTEMPO, Phillips emphasized the importance of aviation reset. Reset efforts have benefited from the implementation of condition-based maintenance techniques and the use of diagnostic devices to track the health of an aircraft’s systems and electronics, he said.

Phillips also noted the delivery of the 100th CH-47F Chinook aircraft, current construction of the first AH-64D Block III Apache aircraft, and fielding of new UH-60M Black Hawk and UH-72 Lakota helicopters. Over the past 12

months, the Army has fielded 118 new Black Hawks and 54 new Lakotas.

These accomplishments come as the Army continues to develop an “aerial tier” for its tactical battlefield network, using technologies such as high-bandwidth waveforms, satellites, and software-programmable radios to connect disembodied Soldiers across the force in real time to on-the-move vehicles and higher-echelon command posts, Phillips added.

Army aviation helps in thickening the combat network by hoisting tactical radios into the air and furthering their reach, such as with a Rifleman Radio inside an RQ-7 Shadow Unmanned Aerial System or in a Black Hawk.

100 CHINOOKS AND COUNTING

The Army recently took delivery of the 100th CH-47F Chinook helicopter aircraft, seen here on display during the 2011 Army Aviation Association of America Annual Professional Forum and Exposition in Nashville, TN in April. (U.S. Army photo by Kris Osborn, ASAALT.)



“WE MUST WORK HARDER AND QUICKER TO GET THE NETWORK ONBOARD AIRCRAFT SO WE CAN HELP SOLDIERS ON THE GROUND COMMUNICATE. FIELDING THE NETWORK IS THE HIGHEST-PRIORITY PROGRAM THAT WE HAVE IN OUR ARMY, AND AVIATION IS A KEY PART OF THAT.”

“We must work harder and quicker to get the network onboard aircraft so we can help Soldiers on the ground communicate,” Phillips said. “Fielding the network is the highest-priority program that we have in our Army, and aviation is a key part of that.”

MODERNIZING AIRCRAFT

State-of-the-art avionics, automated flight controls, and a digital cockpit GPS map display are highlights of the new Chinook “F” model helicopters, the latest modernized cargo aircraft. It is built by the Army and its industry partner, Boeing, which constructed 126 units, service officials said.

Engineered with a Common Avionics Architecture System (CAAS) cockpit, the CH-47F Chinook has five multifunctional digital displays, giving pilots key situational and navigational information and aiding in the aircraft’s mission of delivering supplies and troops at high altitudes in mountainous terrain, explained LTC Brad Killen, CH-47F Product Manager in Program Executive Office (PEO) Aviation.

The aircraft’s digital automated flight control system can help stabilize flight and help the aircraft fly a given route by itself, especially when combined with the functionality of the CAAS cockpit, Killen said.

The new construction of the “F” model Chinook uses a “one-piece,” monolithic airframe, whereas previous models were built using rivets, Killen said.

Overall, the Army plans to field at least 440 CH-47Fs by 2018, he said.

This year marks the 50th anniversary of the Chinook helicopter, which completed its first flight in September 1961.

GROUND FIRE DETECTION

Apache attack helicopters will soon be outfitted with a new high-tech Ground Fire Acquisition System (GFAS), which uses cameras and infrared sensors to immediately locate the source of ground fire, service officials said.

The sensors built into GFAS detect muzzle flashes from the ground, allowing Apache pilots to identify immediately the location and distance of ground fire, explained MAJ Justin Highley, Assistant Product Manager Longbow Apache.

Next spring, 1st Battalion, 101st Aviation Regiment from Fort Campbell, KY, will become the first unit equipped with GFAS, he said.

Information from the aircraft’s cameras moves through an Aircraft Gateway Processor into the cockpit, which obviates

the need to change the aircraft’s software, said LTC Jeff Johnson, Product Manager Longbow Apache.

Upon receiving the information on display screens, the aircrew can move their Modernized Target Acquisition Designation Sight/Pilot Night Vision Sensors onto the target at the touch of a button, Johnson explained.

“It is not just about the aircraft, but about getting information to guys on the ground who are in the fight,” he said. “Apache has led the way for other platforms with net-centric operations and situational awareness.”

Pending a successful outcome of the GFAS User Evaluation, the Apache program manager will look at expanding the system’s capabilities, including integrating the technology with Blue Force Tracker display screens, Johnson said.

“GFAS is an offensive targeting system. It is not a piece of aircraft survivability equipment, he said. “It helps us fulfill our mission of closing with and destroying the enemy.”

LAKOTA MISSION PACKAGE

The first light utility helicopter (LUH) equipped with a new state-of-the-art mission equipment package is headed to the Army National Guard (ARNG).



EQUIPPING LAKOTAS

LTC Stephen P. Todd and CW5 Edward C. Aldecoa perform start-up checks on one of the Louisiana National Guard's UH-72A Lakota helicopters at the Lakota production center in Columbus, MS. New UH-72A Lakotas will be equipped with a state-of-the-art mission equipment package, while older versions will be retrofitted. (U.S. Army photo by SGT Stephanie J. Cross.)

The package, positioned aboard the UH-72A Lakota LUH, includes an electro-optical/infrared (EO/IR) sensor, enhanced cockpit screens, high-power illuminator system, analog-digital data downlink capability, and GPS-enhanced moving map displays.

A GPS-guided navigation system aboard the security and support (S&S)-equipped aircraft has moving maps and street addresses, which are useful on domestic missions.

"We put a navigation system in, which allows us to put in a street address, and it will navigate pilots to that precise location," said COL Neil Thurgood, then Project Manager Utility Helicopters.

"The pilots will get all the visual cues on how to get there," said Gregory Barth, LUH Project Management Office Avionics lead. "The moving map is a great addition to this aircraft, as it gives pilots a lot more situational awareness."

In addition, an MX15i EO/IR sensor and Data Downlink included in the S&S package allow pilots to view and share key data in real time with ground personnel, while the aircraft's new RT5000 radio system enables it to transmit simultaneously on multiple bands.

"What's unique about this is, not only can we communicate on all the civil band

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radios, such as police, fire department, hospitals, and first responders, but we can also communicate on the military frequencies," Thurgood said.

The ARNG plans to buy at least 100 UH-72A S&S-package aircraft; 17 will be retrofitted, and 83 will roll new off the production line, Barth said.

The UH-72A is built by EADS North America at its American Eurocopter production facility.

The addition of UH-72As to the Army inventory has freed up at least 23 Black Hawk helicopters for military service overseas, Thurgood said.

"This is important to us," he said. "This is jobs, technical skills, and advanced avionics coming to the United States in support of our military and our industrial base, in support of our mission."

MI-17S FOR AFGHANS, IRAQIS

To enable Iraqi and Afghan forces to continue standing up their own militaries, the U.S. Army is acquiring and sustaining Russian-built Mi-17 helicopters for them, allowing more U.S. forces to return home, service officials said. Both DOD and the Department of State requested the purchases.



PREPARING THE AFGHANS

Members of the Afghan Air Force assigned to the Kandahar Air Wing perform pre-flight checks on an Afghan Mi-17 helicopter before a practice mission at Kandahar Airfield, Afghanistan, April 19. Plans call for acquiring 21 new Mi-17s for Afghanistan. (U.S. Army photo by SSG Bernardo Fuller.)

“We’re buying those systems because our [service members] don’t get to come home until [Iraqi and Afghan militaries] take over the mission and are trained to do it,” said MG William T. Crosby, Program Executive Officer Aviation. “There’s incentive for us.”

The Army’s Non-Standard Rotary Wing program office plans to acquire 21 new Mi-17s for Afghanistan. The office has already bought 22 Mi-17s for Iraq; 14 of those have been delivered, said COL Norbert Vergez, who oversees the project.

In addition, U.S.-based Northrop Grumman is performing maintenance and sustainment on 52 existing Mi-17s in Afghanistan, Vergez said.

“The primary consideration was based on a desire by the customer, in the case of Afghanistan, to have a platform that they were familiar with and that was simple and easy to operate,” Vergez said. “They wanted something that was immediately available for them to assimilate into their armed forces.”

The Mi-17 was originally designed by the Russians in the 1970s and was used by the then-Soviet Army in the war between the Soviet Union and Afghanistan. Since then, the Afghan military has used the Mi-17 and become familiar with the aircraft’s operation.

Vergez said delivery of the Mi-17s allows the Afghan military to gain further independence, which means fewer military troops are needed in Afghanistan.

“There is no air support for Afghanistan other than the Americans as we establish this capability for Afghanistan,” Vergez said. “With every one of these deliveries, we are able to bring Americans home.”

Many presentations from AAAA’s 2011 Professional Forum and Exposition are available at http://www.quad-a.org/index.php?option=com_content&view=article&id=351&Itemid=67.

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