



FLIGHT *to* *the* FUTURE



Army Aviators chart path forward with a focus on
balancing capabilities and costs

by Kris Osborn

READY FOR DELIVERY

The multiyear procurement contracts for the CH-47F Chinook and UH-60 Black Hawk M are examples of how the Army is lowering production costs, increasing acquisition program stability, and delivering key technological enhancements for aviators. Here, a row of mostly new F model CH-47 Chinooks awaits delivery at Hunter Army Airfield, GA, April 10. The aircraft were delivered to the 1st Battalion, 52nd Aviation Regiment, 16th Combat Aviation Brigade by the Cargo Helicopter Project Management Office within Program Executive Office (PEO) Aviation. (Photo by Randy Tisor, PEO Aviation.)

Army Aviation senior leaders outlined a multipronged set of priorities aimed at a prosperous future for aircraft, aviators, and the broader Joint Force, emphasizing the need to sustain and upgrade the current fleet, reset and repair war-damaged aircraft, and invest intelligently in next-generation technologies, at the Army Aviation Association of America (AAAA) Professional Forum and Exhibition, April 1-4 in Nashville, TN.

“I can assure you that those who work on the acquisition side in this fiscally challenged environment are trying to do what’s right for the Army. We will deliver the world’s finest equipment,” LTG William N. Phillips, Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT), told an audience of military and industry attendees. “The Army Aviation portfolio is healthy. The importance

of aviation is understood by our senior leaders. We have to sustain a level of funding that ensures healthy Army Aviation.”

Phillips cited the multiyear procurement contracts for the CH-47F Chinook and UH-60 Black Hawk M model helicopters as examples of how Army acquisition is lowering production costs, increasing program stability, and delivering key technological enhancements for aviators.

Highlighting efforts to identify savings and locate efficiencies wherever possible in today’s budget environment, Phillips said the Chinook and Black Hawk contracts have saved \$449 million and \$886 million, respectively.

“We will work to sustain multiyears. They allow industry to implement efficiencies and work with their sub-tier suppliers,” Phillips said.

CAPABILITIES AND COST LIMITS

Overall, the Army plans to continue investing roughly \$7 billion per year in Army Aviation over the next five years, Phillips said, in a strategy that seeks to balance fiscal constraints with sustainment, reset, and modernization efforts such as the current Future Vertical Lift (FVL) science and technology (S&T) program, designed to engineer more capable, next-generation aircraft by 2030.

Now in the early stages of a broad industry-government developmental effort, the FVL program is geared toward exploring the “realm of the possible” with respect to next-generation air vehicle configurations and mission equipment such as onboard sensors and electronics. The idea is to build several demonstrator vehicles by 2018 as part of a longer-term plan to engineer a faster, more fuel-efficient helicopter with new levels of





“THE ARMY AVIATION PORTFOLIO IS HEALTHY. THE IMPORTANCE OF AVIATION IS UNDERSTOOD BY OUR SENIOR LEADERS. WE HAVE TO SUSTAIN A LEVEL OF FUNDING THAT ENSURES HEALTHY ARMY AVIATION.”

high/hot performance ability, endurance, and survivability.

The first portion of the FVL effort, aimed at building a helicopter that can sustain speeds greater than 170 knots while maintaining an ability to hover, will focus upon a medium-class attack/utility variant.

“I think FVL can also fill a gap that we will face in our training. I think we can use that FVL platform to augment the training cycle,” said MG Anthony G. Crutchfield, Commanding General, U.S. Army Aviation Center of Excellence and Fort Rucker (AL).

BALANCED METHOD

Phillips and MG Tim Crosby, Program Executive Officer (PEO) Aviation, talked about the Army Aviation investment strategy in terms of a balanced approach that stresses affordability, recognizing that there will be funding limitations while simultaneously preserving the fleet and supporting the need to modernize.

“What we’re trying to preach is balance, because we don’t want to kill all

of our investment programs. We need to have an investment program for the long term. We are preaching balance and accepting some risk. We are focused on FVL, which will bring substantial fuel savings and an increase in horsepower. Technology is changing real fast, and we want to sustain, maintain, and modernize,” Crosby told reporters at AAAA. “With the budget and the things we are facing, we can’t have everything that we want, so we are taking appetite suppressants. We’re taking on risk in some areas, and we have put together a strategy that we believe is achievable.”

In the area of fuel efficiency and horsepower, Phillips referred to the Improved Turbine Engine Program, a developmental effort to construct a more powerful, fuel-efficient Black Hawk and Apache engine that exceeds the performance capabilities of today’s T700-701D engine.

Preserving a “sacred trust” to serve and protect Soldiers by delivering key, performance-enhancing, and at times life-saving technologies is implicit in Army acquisition, Phillips said. To that

end, he said, energy efficiency, budget-conscious decisions, and next-generation capability and survivability equipment figure prominently in the service’s procurement strategy.

“We cannot allow anything to come between this trust,” Phillips emphasized.

In particular, he cited the deployment of currently fielded survivability technologies protecting aviators, such as the Common Missile Warning System, a flare-based countermeasure system, and the Advanced Threat Infrared Countermeasures (ATIRCM), an infrared, laser-jammer countermeasure system designed to thwart more advanced threats such as heat-seeking missiles by throwing them off course.

“Aviation survivability equipment saves lives. We can’t rest on our laurels. At the end of the day, we have to focus on making sure we stay ahead of the threat,” Phillips said, referring to the now-in-development Common Infrared Countermeasures, a lighter-weight, more-capable next-generation version of “ATIRCM-like” technology to equip aircraft by 2018.

CRITICAL CAPABILITIES

The Common Missile Warning System (CMWS), a flare-based countermeasure system, is one of a number of currently fielded aircraft survivability technologies that deliver key performance-enhancing, and at times life-saving technologies to Soldiers in combat. Here, Soldiers with the 1st General Support Aviation Battalion, 171st Aviation Regiment conduct CMWS training in conjunction with Man Portable Air Defense Simulators at Yankee Range in McMullen County, TX, Nov. 1, 2011. (Photo by SFC Daniel Griego, 100th Mobile Public Affairs Detachment.)

“THE AAS PROGRAM IS REAL. FLIGHT DEMONSTRATIONS WILL SHOW US WHAT IS IN THE ART OF THE POSSIBLE. ONCE WE HAVE THE ANALYSIS IN OUR HANDS, WE’LL MAKE A DECISION ABOUT HOW TO PROCEED.”

SCOUT INITIATIVE ADVANCES

Phillips and Crosby both discussed the rationale for the Army’s path forward on the Armed Aerial Scout (AAS) demonstration, an initiative to assess industry’s ability to engineer a scout/reconnaissance aircraft able to meet most of the identified AAS requirements affordably.

The Army released its Request for Information (RFI) to industry on April 25. The planned demonstration is scheduled to begin in August or September and will take place at each of the multiple contractors’ facilities.

Placing a premium on affordability, Crosby explained that the Army’s approach to a potential AAS program or scout/reconnaissance requirement will consist of a number of options, depending upon the results of the demonstrations. One possible outcome, which Crosby described as the Army’s baseline approach, could be a Service Life Extension Program (SLEP) for the OH-58 Kiowa Warrior; a SLEP would involve construction of a new air vehicle for the current fleet of OH-58 scout/reconnaissance helicopters above and beyond the existing Cockpit and Sensor Upgrade Program.

Crosby cited an AAS analysis of alternatives that, he explained, validated

the need for a manned reconnaissance platform and affirmed that a developmental program was needed for the AAS because there was no current solution that could meet the requirements.

Industry innovations and recent technological advances, however, may prove able to provide an affordable AAS option, Crosby and Phillips indicated.

“There may be something out there that can get us better off than we are with the SLEP today. The only way we are going to know that is by having a demonstration,” Crosby said. PEO Aviation recently conducted an Industry Day where participants were able to ask questions about the AAS demonstration process.

“This is not a fly-off. It is an opportunity for us to see what the SLEP is, what the AAS requirement is, and is it worth taxing some other system in our portfolio to pay for it. Is the improvement worth the investment?” Crosby asked. A decision regarding a path forward is expected later this year, he said.

“The AAS program is real. Flight demonstrations will show us what is in the art of the possible. Once we have the analysis in our hands, we’ll make a decision about how to proceed,” Phillips said.

The Army is proposing to conduct market research through the RFI, coupled with a voluntary flight demonstration, to inform a capabilities decision and a recommendation for an affordable, achievable materiel solution.

MANNED UNMANNED TEAMING

Phillips also cited what he called “highly valuable” Manned Unmanned Teaming (MUM) technology demonstrated this spring during the Apache Block III Initial Operational Test and Evaluation (IOT&E) at Fort Irwin, CA; the Apache Block III is engineered with what’s referred to as Level 4 MUM, a technology whereby Apache pilots can not only view feeds from nearby unmanned aircraft systems (UAS) scanning surrounding terrain, but can also control the UAS sensor payload and flight path.

The Gray Eagle UAS participated in the MUM exercises during the IOT&E.

“With Level 4 UAS control inside an Apache, pilots can see the battle space they are going to operate in miles away,” Phillips said.

REDUCED VISIBILITY

Another topic of growing interest and importance in Army Aviation is degraded visual environment (DVE). The DVE phenomenon is described as



A HIGHER LEVEL OF INTEGRATION

Through Level 4 Manned Unmanned (MUM) Teaming, unmanned aircraft systems (UAS) work with attack helicopters such as the Apache Block III attack helicopter, which is engineered with a technology that permits Apache pilots to view feeds from nearby UAS scanning surrounding terrain as well as to control the UAS sensor payload and flight path. Here, the MQ-1C Gray Eagle UAS is ready for takeoff Sept. 15, 2011, during the MUM System Integration Capability exercise at Michael Army Airfield, Dugway Proving Ground, UT, where it demonstrated its MUM capabilities. (U.S. Army photo by SPC Latoya Wiggins.)

“an environment of reduced visibility of potentially varying degree,” said Layne Merritt, Assistant PEO Aviation for Engineering and Technology, who is tasked with S&T research and management of DVE within Army Aviation.

“Brownouts are just a small part of DVE. We have to address the holistic environment of reduced visibility,” Merritt said.

The DVE system integrates aircraft pilotage augmentation systems, sensors, flight controls, and pilot information or cuing devices. The objective of a DVE system is to expand the range of environments in which the aircraft safely conducts its missions when visibility is limited. “This must be accomplished through a combination of improved situational awareness in limited visibility conditions, enhanced

stability and control of the aircraft in all flight regimes, and reduced cognitive workloads when task-saturated,” Merritt said.

Through the Project Manager’s Office for Aviation Systems, PEO Aviation is responding to an Urgent Operational Needs Statement and will launch a year-long assessment of the Helicopter Autonomous Landing System, a 94-gigahertz radar that can see through smoke, sand, dust, and fog. The assessment will help to determine a formal program-of-record approach and implement a DVE solution for the entire Army Aviation fleet.

The Army has allocated \$257 million in S&T funding through 2016 to address DVE. Operating in DVE is ranked as

the No. 1 priority in the list of threats, according to Army officials. “We’re optimistic in the Army’s support of this effort,” said Merritt.

For more information, see “Read On” on Page 128.

Sofia Bledsoe, PEO Aviation Public Affairs Officer, contributed to this article.

KRIS OSBORN is a Highly Qualified Expert for the Assistant Secretary of the Army for Acquisition, Logistics, and Technology Office of Strategic Communications. He holds a B.A. in English and political science from Kenyon College and an M.A. in comparative literature from Columbia University.