Modernization Priorities

By MG David J. Francis

Large Scale Combat Operations (LSCO) significantly increase the demand for the enduring, first order capabilities of Army Aviation; 'See' (reconnaissance and security), 'Move' (air assault, air movement and aeromedical evacuation), and 'Strike' (close support and interdiction).

MG David Francis, commanding general of the Army Aviation Center of Excellence (in aircraft right seat) adjusts his helmet in preparation for a flight demonstration of the Degraded Visual Environment Pilotage System (DVEPS) by CW5 Adam Jarvis of the Systems Integration and Management Office, U.S. Army Special Operations Aviation Command at Fort Campbell, KY, November 16, 2020.

The ability to successfully employ Army Aviation against near-peer adversaries hinges on the ability to improve its reach, survivability, lethality, and sustainment in order to provide these fundamental capabilities to the Army in the future operational environment.

To maintain or regain overmatch with the threat, both technically and tactically/operationally/strategically, it is critical that we keep modernization priorities aligned with the rest of the force in order to avoid the creation of gaps across capability sets.

Army Aviation is a fundamental part of the Combined Arms Team and this is reflected in the fact that Aviation continues to remain in the top tier of the Army's overall modernization strategy. To support this strategy, the Aviation Enterprise has laid out a road

map that provides the Army the capabilities they require to meet the Multi-Domain Operations (MDO) Way Point 2028, Aim Point 2035 and beyond.

These capabilities are formed around the Future Attack Reconnaissance Aircraft (FARA), the Future Long Range Assault Aircraft (FLRAA), Future Tactical Unmanned Aircraft Systems (FTUAS), and the Modular Open Systems Architecture (MOSA).

Future Attack Reconnaissance Aircraft (FARA)

The first priority is the Future Attack Reconnaissance Aircraft (FARA) which fills a critical Army gap for reconnaissance. This calls for a light attack reconnaissance aircraft with significantly increased reach (speed, range, & endurance), lethality, and survivability.

This scout replacement will serve as the focal point of the FARA Ecosystem, inclusive of employing Long Range Precision Munitions (LRPM) and Air Launched Effects (ALE) critical to the Penetration and Dis-integration phases of Multi-Domain Operations (MDO) making the lower tier of the Air Domain decisive.

Future Long Range Assault Aircraft (FLRAA)

The Future Long Range Assault Aircraft (FLRAA) continues to leverage the highly successful Joint Multi-Role Technology Demonstrator (JMR-TD) program to drive the innovative development of a replacement for the UH-60 with increased speed, range, payload, and endurance. This is critical to the Exploitation phase of MDO.

Not only will FLRAA have significantly more capability in the Assault and MEDEVAC mission sets with its extended reach, it will also bring a measure of lethality with the ability to employ ALE.

Future Tactical Unmanned Aircraft Systems (FTUAS)

The Future Tactical Unmanned Aircraft Systems (FTUAS) provide revolutionary advances in maneuverability, agility, lethality, reach, and survivability. It will replace the Shadow UAS in Brigade Combat Teams with an expeditionary system that can fight on the move with ground units. Able to conduct point landing and take-offs, it requires no runway and is rapidly deployable. The crew and equipment are transportable by CH-47 and can conduct 24 hour continuous operations for 96 hours with interchangeable payloads.

Modular Open Systems Architecture (MOSA)

Fundamental to the entire modernization plan is the Modular Open Systems Architecture (MOSA). The ability to rapidly respond to threat driven environmental changes across both air and ground fleets has been a challenge based on proprietary operating systems. MOSA provides revolutionary advances in system architecture, facilitating rapid changes to digitally-enabled capabilities needed to operate in a highly contested battlefield. It provides an increased ability to rapidly and affordably evolve aircraft avionics and

mission equipment through an "in skin" open system architecture with government defined standards facilitating a quicker response to threat based environmental changes.

Targeted Modernization

As in any change of this magnitude, the modernization of the aviation fleets will be phased over time. In order to maintain the capabilities the Army require as FARA and FLARA are fielded, a targeted modernization of our current aircraft fleet will take place to carefully balance the overall capability of the force.

Degraded Visual Environment (DVE) / Degraded Visual Environment Pilotage System (DVEPS)

Ground forces can't be constrained by aviation – we have to be able to cross the Line of Departure when they do… or before. While we have made significant inroads to owning the night, especially with the arrival of white phosphor NVGs, there are still a number of physical conditions we cannot operate in. Not including night, there are ten different environments (eight ambient or artificial and two aircraft-induced) that we still must address.

To that end, we are working closely with USASOAC on their successful development of the Degraded Visual Environment Pilotage System (DVEPS). This is a directed requirement (DR) system that provides situational awareness during takeoff and landing in DVE using a forward looking, multi-sensor fused image to assist in hazard avoidance. We are working towards an Environment Exploitation System (EES) Program of Record (POR) to further exploit our ability to operate in MDO.

Project Convergence

Army Futures Command is constantly measuring our current capabilities against an unknown-future threat, and Project Convergence is how they are doing that. They have leveraged one of the tenets of MDO – convergence (the ability to integrate effects across all domains to decisively overmatch any adversary) as the measuring stick for this process.

Army Aviation is bringing emerging technologies, such as ALE, LRPM, and UAS, into this operational environment and we are learning the most effective locations to employ our capabilities and how to organize them for combat in MDO.

Our modernization priorities are aligned in order for Aviation to enable the Army mission; deploy, fight and win our nation's wars by providing ready, prompt and sustained land dominance by Army forces across the full spectrum of conflict as part of the joint force. With the rise of near peer adversaries, we have to field modernized platforms and systems that enable us to maintain our overmatch with the threat. Simultaneously, we must selectively employ targeted modernization of our current fleet which will be part of our capability set with FARA and FLRAA for years to come.

Above the Best!

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