



Figure 1. An Abrams tank with 2nd Battalion, 198th Armored Regiment, fires a 120mm projectile during battalion hasty-defense live-fire training at the National Training Center, Fort Irwin, CA. The unit is part of 155th Armored Brigade Combat Team, Mississippi Army National Guard. (Photo by SSG Shane Hamann, 102nd Public Affairs Detachment)

Force Modernization of the Armored Brigade Combat Team

by COL Dawson A. Plummer, MAJ K. Derrick Rice and CPT Horace H. Peek V

The force-modernization efforts directed by Army Chief of Staff GEN Mark A. Milley are gaining momentum throughout our formations as the Army transitions from the old method of waiting for technology to evolve to a perceived final endstate to one focused on providing interim solutions and upgrades.

In the past, when technology reached its perceived endstate, the Army executed 100-percent fielding of selected future platforms and equipment and then integrated all armored brigade combat teams (ABCTs) at the same time. Now the focus is to provide interim solutions and upgrades to a select few ABCTs and to Army Prepositioned Stock (APS), and then conduct phased fielding of advanced upgrades to the initial platforms in the remaining brigade combat teams (BCT). This is an important step in Army modernization due to lessons-learned from missed opportunities when integrating advanced technologies in the past.

The modernization effort begins with the flagship platform of the ABCT, the Abrams M1A2 Systems Enhancement Package Version 3 (M1A2SEPV3) tank, which is an upgrade of the Army's previous main battle tank, the M1A2SEPV2, that entered service in 2007. The new M1A2SEPV3 tank incorporates improved network capabilities, power generation and increased sustainability with the addition of the Under Armor Auxiliary Power Unit. In the near term, the Army will develop and field the Abrams variant to APS in Europe. Then, starting in Fiscal Year (FY)

2020, the Army will field the variant tank to five ABCTs at the rate of one brigade set per year. Units can expect to see the M1A2SEPV3 tanks by the end of 2020.

Abrams upgrade

The Abrams will receive an upgrade to its world-class main gun in the form of the advanced multi-purpose (AMP) smart round. The AMP round combines the effects of four different legacy main-gun rounds into a single cartridge with the added effect of defeating enemy anti-tank guided missile (ATGM) teams at extended ranges. This increased capability provides crews with similar responses to enemy threats as previous technology, but it greatly reduces the logistical friction of accounting for and carrying multiple cartridge types. Beginning in 2020, ABCTs will start to receive the AMP round to dramatically increase their tank crew's effectiveness and survivability, resulting in overmatch with peer and near-peer adversaries.



Figure 2. The M1 Abrams is America's sole main battle tank and is considered the best tank in the world. It sports a 120mm main gun and is powered by a 1,500-horsepower turbine engine that makes it highly maneuverable. The M1 has been consistently tested at U.S. Army Yuma Proving Ground, AZ, since its first development in the late 1970s because it is being constantly improved. There are some 8,000 Abrams tanks in the inventory. (Photo by Mark Schauer)

Another combat-tested ground platform, the Bradley Infantry Fighting Vehicle (IFV), is being upgraded to maintain overmatch with peer and near-peer adversaries. The M2A4 Bradley increases electrical capacity in preparation for hosting future technologies. The loss of capability that resulted from adding force-protection packages has been rectified with engine and powertrain upgrades to retain mobility. The Army will equip an APS set in Europe and five ABCTs with the M2A4 Bradley IFV, matching the fielding plan for the Abrams SEPv3. Each ABCT will receive 138 M2A4 Bradley IFVs through a mix of the four mission roles: infantry, cavalry, engineer and fire support. Fielding will be limited to five BCTs, pending the first unit to be equipped with the Next-Generation Combat Vehicle's Optionally Manned Fighting Vehicle.

Army senior leaders started initiatives Sept. 29, 2016, to pursue vehicle-protection system (VPS) materiel solutions and announced efforts to purchase a BCT's worth of systems for units in the European theater by 2020. This decision marks a major step in achieving a capability with significant scientific and technological advances compared to our adversaries. A little more than a year later, Army leaders determined they needed to field an interim VPS solution for the Abrams, Stryker and Bradley. They decided to rapidly assess off-the-shelf VPS systems to fulfill an urgent operational need.

The Army is assessing multiple VPS systems for its platforms. The Trophy VPS is designed to supplement the armor of both light and heavy armored fighting vehicles. The system intercepts and destroys incoming missiles and rockets with a shotgun-like blast. The system can simultaneously engage several threats, arriving from different directions; is effective on stationary or moving platforms; and is effective against short- and long-range threats such as rocket-propelled grenades (RPGs) and ATGMs. It has three elements providing threat, detection, tracking, launching and intercept functions. Trophy was designed to be effective in open or closed terrain, including urban areas, and can be operated under all weather conditions. Trophy APS is scheduled to be installed on Abrams tanks across four different ABCTs by the end of FY2020.



Figure 3. A Soldier assigned to 1st Squadron, 1st Cavalry Regiment, 2nd Armored Brigade Combat Team, 1st Armored Division, Fort Bliss, TX, looks out from a Bradley Fighting Vehicle during gunnery training at Doña Ana Range, NM, Oct. 12, 2018. (Photo by Winifred Brown)

VPS not limited to tanks

VPS will not be limited to the Abrams fleet. The Product Manager-Bradley Fighting Vehicles initiated efforts to characterize a hard-kill VPS. Iron Fist-Light Decoupled (IF-LD) uses optical sensors, radar, computer processing, fire-control technology and interceptors to identify, track and intercept incoming enemy RPGs, ATGMs and recoilless-rifle rounds. IF-LD is composed of two launchers. Each contains two countermeasures and infrared optics for threat firing identification, and radar for accuracy in tracking and interception. Milley approved the fielding of one brigade set to support the European Reassurance Initiative.

A foundation of the new modernization initiative is newer, more lethal, mobile and protected platforms to support multi-domain operations. The armored multi-purpose vehicle (AMPV) is the Army's replacement for the legacy M113 family of vehicles (FoV) that includes mission command, medical treatment and transportation, mortar carrier and general-purpose troop-transport functions for the ABCT. The AMPV is more mobile, survivable and lethal, and it incorporates a more technically advanced infrastructure to improve command and control for the

BCT and its subordinate units than its predecessor. It can keep pace with the other combat vehicles in current ABCTs.

Moreover, AMPV provides mobility and sustainability capabilities similar to the Bradley, supporting combat overmatch. The AMPV will serve as the base and host platform within the ABCT to incorporate new technologies and advanced Army network capabilities. AMPV platforms are currently in developmental testing. Operational testing for AMPVs was done during Summer 2018. The AMPV will replace ABCTs' M113s on a one-for-one basis, with the first unit equipped scheduled for 2022 at a rate of one brigade per year up to 2036. Though the AMPV is similar in many ways to the Bradley FoV, its improvements in protection, power and ability to incorporate new technologies make it the appropriate modern platform for the ABCT and future combat operations.



Figure 4. Soldiers from 4th Squadron, 9th Cavalry Regiment, 2nd Armored Brigade Combat Team, 1st Cavalry Division, Fort Hood, TX, are escorted by observer-controllers from U.S. Army Operational Test Command after completing field testing the AMPV Sept. 24, 2018. (Photo by MAJ Carson Petry, 1st Cavalry Division Public Affairs)

The Joint Light Tactical Vehicle (JLTV) family of vehicles is a joint Army and Marine Corps program that uses a common vehicle platform capable of performing a variety of mission roles while providing protected, sustained and networked mobility for personnel and payloads across the full spectrum of military operations. JLTV consists of two variants: a two-seat utility version and a four-seat version, with three mission packages, including general-purpose, heavy-weapons carrier and close-combat weapons carrier equipped with a tube-launched, optically tracked, wire-guided weapon system. JLTV will be fully amphibious and used for expeditionary operations. JLTV will replace the legacy humvee fleet, providing warfighters with a substantially more protected, mobile and reliable light tactical vehicle.

The fielding of JLTV to an ABCT will occur in FY2019. The 1st Armored Brigade Combat Team, 3rd Infantry Division, will be the first Army unit to receive the JLTV platform.



Figure 5. A JLTV climbs extreme terrain at the U.S. Marine Corps Transportation Demonstration Support Area, Marine Corps Base Quantico, VA.

Takeaway

These upgrades are just a small portion of the current vehicle modernization initiatives that are underway for ABCTs across a number of platforms and their associated systems. These modernization strategies will ensure the ABCT retains overmatch against peer and near-peer threats. They will also better enable the Army to conduct operations across multiple domains as part of the joint force.

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Acronym Quick-Scan

ABCT – armored brigade combat team

AMP – advanced multi-purpose

AMPV – armored multi-purpose vehicle

APS – Army prepositioned stock

ATGM – anti-tank guided missile

BCT – brigade combat team

FoV – family of vehicles

FY – fiscal year

CGSC – Command and General Staff College

IF-LD – Iron Fist-Light Decoupled

IFV – Infantry Fighting Vehicle

JLTV – joint light tactical vehicle

MCoE – Maneuver Center of Excellence

RPG – rocket-propelled grenade

SBCT – Stryker brigade combat team

SEP – Systems Enhancement Package

TCM – (U.S. Army) Training and Doctrine Command capabilities manager

VPS – vehicle protection system