

COMBAT SUPPORT AND COMBAT SERVICE SUPPORT

Under the **Program Executive Office for Combat Support & Combat Service Support (PEO CS&CSS)**, project managers, together with their reporting product managers and product directors, are responsible for Army systems and some joint service programs across all phases of their life cycle.

Program phases fall into the areas of: pre-systems acquisition (concept refinement or technology development), generally consisting of research and development programs and prior to a Milestone B; systems acquisition (between Milestone B and full materiel release); systems after full materiel release (in production and fielding phases); and two types of sustainment (operations and support)—systems that have completed fielding, are no longer in production and are managed directly by the project manager and systems that have completed fielding, are no longer in production and are managed by an Army Materiel Command commodity command, but for which the PM is the life-cycle manager.

PEO CS&CSS Project Managers include: Project Manager Force Projection, Project Manager Joint Combat Support Systems, Project Manager Tactical Vehicles and Project Manager Mine Resistant Ambush Protected Vehicles. A representative sampling of their programs follows:

Project Manager Force Projection

The **Project Manager Force Projection (PM FP)** encompasses the Product Director Army Watercraft Systems (PD AWS), Product Manager Bridging, Product Manager Combat Engineer/Material Handling Equipment (PM CE/MHE), Product Manager Force Sustainment Systems (PM FSS), Product Manager Petroleum and Water Systems (PM PAWS), and Product Director Non-Standard Vehicles (PD NSV).

Product Director for Army Watercraft Systems

With an understated motto of “Sail Army,” the **Product Director for Army Watercraft Systems (PD AWS)** provides “a flexible and responsive fleet, projecting and sustaining America’s forces through the 21st century.” PD AWS is responsible for the life-cycle management of Army watercraft. This includes engineering, production, fielding, initial logistics support and modernization/modification of the Army’s fleet of watercraft and associated support equipment, all of which enable the warfighter to rapidly project and sustain the nation’s armed forces.

The **Logistics Support Vessel (LSV)** provides worldwide transportation of combat vehicles and sustainment cargo. The 313-foot LSV class vessel, designed to carry 2,280 tons of deck cargo, has a beam of 60 feet and a molded depth of 19 feet. It provides intratheater movement to remote underdeveloped coastlines and inland waterways. The LSV is the primary joint logistics over-the-shore (JLOTS) vessel. It also assists in unit deployment and relocation. The LSV fleet service life-extension program includes changes to command, control, communication, computers, intelligence, surveillance and reconnaissance (C4ISR) and integrated bridge systems, hull and engineering systems, and force protection upgrades as well as improvements to crew messing and living spaces and deck equipment.

The **Landing Craft Utility (LCU) 2000** provides worldwide transport of combat vehicles and sustainment cargo. It also supports intratheater and tactical resupply. The LCU 2000 has a length of 174 feet, beam of 42 feet and loaded draft of 9 feet. The LCU 2000 can carry 350 tons of deck cargo. The LCU 2000 fleet is nearing completion of a C4ISR upgrade, which provides state-of-the-art communication equipment, navigational equipment and safety of life-at-sea electronics.

The **Large Tug (LT) 128’** is used for transoceanic/coastal towing operations and for assisting with the docking/undocking of large ships. The LT 128’ is outfitted to provide salvage, rescue and firefighting assistance to other vessels and shore installations on a limited basis. The LT 128’ fleet recently completed an extensive modification program, which included lowering the pilothouse and upgrading the fuel tank systems and bow fendering.

The **900 Class Small Tug (ST)** mission is to move logistical supplies and equipment in harbor and inland waterways. The small tug also provides the capability to assist larger tugs in docking and undocking all types of ships and watercraft and can be used in routine harbor utility work.

The **Landing Craft Mechanized (LCM8)**, used in utility work, features a specialized Mod 2 program. This provides additional capabilities of command and control, personnel transfer and light salvage.

The **Modular Causeway System (MCS)** provides a means of moving cargo from ship to shore across unimproved beaches in areas of the world where fixed port facilities are unavailable, denied or otherwise unacceptable. MCS sections are International Organization for Standards (ISO)-compatible modules. Four configurations are derived from basic modules: roll-on/roll-off discharge facility, causeway ferry, floating causeway (FC), and the warping tug.

The **Barge Derrick (BD) Crane 115 Ton** is used primarily for discharging heavy loads beyond the capacity of a ship’s gear and assisting in salvage operations. The crane provides the lift and reach needed to discharge the heaviest of the projected Army cargo—the M1A2 main battle tank—from the centerline of the large, medium speed roll-on/roll-off ships.

The **Product Director for Army Watercraft Systems (PD AWS)** is committed to developing, acquiring, fielding and sustaining highly capable equipment that meets emerging watercraft requirements. The Army watercraft community provides a variety of systems and platforms that operate in geographical environments bounded, influenced and accessed by ports, littorals and waterways. Army Watercraft Systems provide critical capabilities that support full spectrum land combat operations by extending the ground commander’s available maneuver space. These functions include the capability to conduct amphibious and riverine operations and providing logistics support to joint operations and campaigns including joint over-the-shore operations and intratheater transport of time-sensitive, mission-critical personnel and materiel. The watercraft solutions documented in the current Army Watercraft Systems Strategy are designed to provide capability to ma-

Logistics support vessel (LSV)



U.S. Navy/MC3 Kristin L. Grover

neuver in all tactical and operational environments; to rapidly make the transition between operations, missions and engagements; to support decentralized forces; and to rapidly deploy and sustain forces, equipment and materiel to multiple locations worldwide. Efforts to develop Army watercraft capability for the future will focus on the creation and maintenance of an Army watercraft portfolio that delivers the speed, agility and operational payload needed to maneuver operationally ready forces and provide commanders with the ability to deliver combat power at the time and place of their choosing.

Product Manager Bridging

The Product Manager Bridging is committed to developing, acquiring, fielding and sustaining gap-crossing solutions that meet the warfighters' requirements. PM Bridging works with other defense organizations on a range of existing and emerging bridging systems including the Wolverine Heavy Assault Bridge (HAB), Armored Vehicle Launched Bridge (AVLB), Improved Ribbon Bridge (IRB), Bridge Erection Boat (BEB), Common Bridge Transporter (CBT), Rapidly Emplaced Bridge System (REBS), Dry Support Bridge (DSB) system, M3 Medium Girder Bridge (MGB), Joint Assault Bridge (JAB), Assault Breacher Vehicle (ABV), Improved Boat Cradle (IBC), Bridge Adapter Pallet (BAP) and Line of Communication Bridge (LOCB). The Dry Support Bridge system and the Improved Ribbon Bridge provide representative examples.

The **Dry Support Bridge (DSB)** provides the Army with assault and support bridging for gaps of up to 40 meters. The DSB replaces the outdated, manpower- and time-intensive medium girder bridge (MGB) with a mechanical system capable of emplacing a 40-meter bridge with 14 soldiers in 90 minutes or less. In addition, the DSB will improve current bridge load-carrying capacity, raising it to military load classification (MLC) 96 for wheeled traffic, such as an M1 tank uploaded on a heavy equipment transporter. The DSB is designed for transportation as a palletized load by the CBT, palletized load system (PLS) trailers or service support units equipped with PLS trucks. Testing is under way to increase the length to 46 meters.

Assault bridging and gap crossing are supported by the **Assault Breacher Vehicle (ABV)**, which provides an in-stride complex-obstacle-breaching capability based on the M1A1 Abrams tank hull for Heavy brigade combat teams (HBCT). The M104 Wolverine Heavy Assault Bridge system is a legacy bridge system using the M1A2 SEP platform to horizontally launch and recover a 26-meter bridge under armor. Thirty-six low-rate initial production systems were procured before the program

was terminated in 2000. The Joint Assault Bridge program will provide an M1A1-based platform to launch and recover the legacy Armored Vehicle Launched Bridge (AVLB) scissor bridge and replace AVLB launchers in combat engineer units. The Rapidly Emplaced Bridge System (REBS) provides bridging capability to Stryker BCTs.

Product Manager Combat Engineer/Material Handling Equipment

The Product Manager Combat Engineer/Material Handling Equipment (PM CE/MHE) coordinates and supports a wide range of combat engineer and materiel handling equipment. Program exam-

ples include new systems like the High-Mobility Engineer Excavator, Engineer Mission Module-Water Distributor, Paving Machine, Backhoe Loaders, Hydraulic Excavators, Light and Medium Dozers, Light and Heavy Loaders, Grader, Asphalt Mixing Plants, Route Remediation Equipment, Enhanced Rapid Airfield and Construction Capability, Route Clearance and Interrogation Systems, and Skid Steer Loaders. These programs support the current engineer forces within Stryker, Heavy and Infantry brigade combat teams, engineer support companies, vertical and horizontal companies, asphalt and concrete teams, and multirole bridge companies. PM CE/MHE also supports the Transporta-

Low cost aerial delivery system (LCADS)



tion, Quartermaster, Medical, Aviation, and Military Police Corps.

The High-Mobility Engineer Excavator (HMEE-I) is a nondevelopmental military vehicle that will be fielded to the Army's brigade combat teams and other selected engineer units, replacing the Small Emplacement Excavator (SEE), whose life cycle ended in fiscal year (FY) 2005. The high mobility of the HMEE-I provides an earth-moving machine capable of maintaining pace with the Army's current and future combat systems.

The HMEE-I is a diesel-engine-driven, self-propelled, four-wheel-drive vehicle with a hydraulically operated front-mounted loader bucket and a hydraulically operated rear-mounted backhoe bucket. The HMEE-I has a 1.5-cubic-yard front-loader bucket, a 0.28-cubic-yard backhoe bucket, a 14-foot digging depth and a climate-controlled cab. The HMEE-I was designed to

maintain pace with maneuver units and has a top speed of 60 mph.

Another recently emerging activity with a broad range of engineering applications involves the development of Engineer Mission Modules. Permanently mounted on standard logistics flatracks, the modules are loaded via truck load-handling equipment, which allows drivers to configure their systems for a specific mission. By using fewer trucks and more modules, the concept provides a cost-effective means of modernizing the fleet of engineer construction equipment. PLS flatrack configurations in production include the M5 bituminous distributor, which has a capacity of 2,800 gallons; the M6 concrete mobile mixer, which has a capacity of 5 cubic yards when used on the PLS truck or trailer and 8 cubic yards when used on the ground as a batch plant; and the M6 dump body, which has a capacity of 12 to 14 cubic yards. Currently under development are the XM9 2,000-gallon water distributor for use with the Heavy Expanded Mobility Tactical Truck-Load Handling System (HEMTT-LHS) and the XM10 3,000-gallon water distributor for use with the PLS truck. Other modules under consideration include a fuel module, a well-drilling system and a chemical decontamination unit.

Product Manager Force Sustainment Systems

The **Product Manager Force Sustainment Systems (PM FSS)** has life-cycle management responsibility for cargo aerial delivery equipment, field feeding and field services systems, Force Provider base camp, and shelter systems consisting of shelters, heaters, and camouflage netting.

The **Joint Precision Air Drop System (JPADS)** is a family of systems. The Joint Precision Air Drop System 2,400 pounds (JPADS 2K) has recently been type classified and is presently being fielded to authorized units. It allows conventional mili-

tary aircraft to accurately drop sensors, munitions, and/or a huge range of supplies onto the battlefield while minimizing the risk to aircraft and the possibility of enemy detection of aircraft drop zones. The systems use gliding parachute decelerators, global positioning system (GPS)-based guidance, navigation and control, weather data assimilation and an airdrop mission-planning tool to deliver cargo with near-pinpoint accuracy. The first combat JPADS cargo airdrop took place at the end of August 2006. Based upon theater feedback, increased capabilities are being incorporated to reduce the retrograde burden and provide terrain avoidance and even greater accuracy. The Joint Precision Air Drop System 10,000 pounds (JPADS 10K) is currently in development and testing. JPADS 10K production is expected to start in FY 2012.

The **Low Cost Aerial Delivery System (LCADS)** is another family of aerial delivery products that are on the opposite end of the technology spectrum from JPADS. By means of simplified designs and use of commercially available low-cost materials, PM FSS has fielded an array of expendable parachutes and containers. These parachute and container assemblies are a cost-effective means of battlefield resupply and humanitarian aid. Purpose-built for one-time use, these items are uniquely suited for employment in combat environments where the recovery of aerial delivery equipment is either impractical or puts soldiers at risk. At 50 percent less cost than legacy aerial delivery equipment, LCADS provides tangible savings. In addition, because LCADS parachutes come prepacked from the manufacturer, there is no need for skilled parachute riggers to maintain and prepare this equipment. This reduces parachute rigger manpower requirements, resulting in a smaller logistics footprint in the theater of operations. The LCADS Low Velocity version is currently the highest demand cargo parachute for theater, with recent user demand averaging 3,000 units per month.

The **Multi-Temperature Refrigerated Container System (MTRCS)** provides the capability to transport and store refrigerated and frozen products in a single container. The MTRCS will be used by quartermaster subsistence platoons at corps level and by brigade combat teams to support ration distribution and storage. The MTRCS consists of an insulated 8-foot by 8-foot by 20-foot ISO container with an engine-driven refrigeration unit that will allow operation on the move. Two compartments inside the container are separated by a moveable partition, allowing the container to be tailored to the specific load. The result is more efficient space utilization and reduced transportation requirements. The MTRCS is constructed to inter-



face directly with the HEMTT-LHS for transport. Fielding of the MTRCS was initiated in September 2010.

For the field services area, the **Mobile Integrated Remains Collection System (MIRCS)** transforms mortuary affairs operations by providing a system that is responsive, deployable, agile, versatile and sustainable. The MIRCS provides a mobile facility for the initial processing and storage of human remains on the battlefield. It is a self-contained, expandable, ISO-compatible shelter with a receiving/processing area, administrative area, refrigerated storage for 16 remains and storage for operational supplies. It has an onboard power generator and freshwater and wastewater storage areas, and includes all components necessary to deploy, move and operate in support of the full spectrum of military and peacetime disaster-support operations. The MIRCS is constructed to interface directly with the HEMTT-LHS for transport. Fielding of the MIRCS was initiated in September 2010.

In response to the needs of the warfighter and combatant commanders, the **Force Provider Base Camp System**, initially developed as a deployable rest and recreation system, has been repurposed into an expeditionary base camp for sustainment of the soldier on the front lines, becoming affectionately known as the

Army's "home away from home." The expeditionary configuration features a 600-person module in component sets that can be divided into four equal company-size submodules. It incorporates the use of an air-beam-supported Tent, Extendable, Modular Personnel (TEMPER) shelter, and TRICON-based hygiene, laundry and feeding systems. The four equal submodules enable the commander to deploy 150 personnel to four separate locations without sacrificing any capability. This gives the commander great flexibility in deciding where to base combat power. The air-beam TEMPER shelters make setting up the billeting and administration tents easy, reducing the time it takes to establish an entire 600-person camp from weeks to just a few days. The tent's air beams are inflated with an air compressor, similar to filling an automobile tire with air; it takes less than 30 minutes to set up each tent. In addition, other recently incorporated features provide the ability to transport by air all necessary equipment for a complete 150-person camp in a single C-17 aircraft. After reaching its final destination, the submodule can be fully operational in less than four hours with a trained crew of eight personnel, providing quality latrine, shower, laundry, billeting and feeding facilities for the warfighter.

PM FSS has sponsored and initiated a collaborative effort to explore off-the-shelf

solutions and emerging technologies that could be deployed immediately to improve the energy, water and waste efficiency and reduce environmental risks of life-support areas outfitted with Force Provider modular equipment sets at tactical small-unit base camps. Specific areas of focus include improved environmental liners and shade for shelters, energy-efficient rigid wall shelters, wastewater treatment and reuse, smart power distribution and waste-to-energy systems.

The Army's **Base Camp Systems Integration Laboratory (SIL)**, managed and operated by PM FSS, will enable the Army and the joint services to evaluate future technologies in a live soldier environment, providing solutions to reduce the energy demand and logistical burden on base camps in Afghanistan. The 4-acre SIL, located at Fort Devens, Mass., is fully instrumented to measure water, fuel and power usage; forging the path for increased energy efficiency and base camp commonality. Improving our soldiers' quality of life and better facilitating the missions of units at base camps are just some of the SIL's objectives.

Product Manager Petroleum and Water Systems (PAWS)

The **Product Manager Petroleum and Water Systems (PAWS)** is responsible for a

range of petroleum laboratories, petroleum storage and distribution systems, water purification and treatment systems, and water storage and distribution systems.

The **Petroleum Quality Analysis System-Enhanced (PQAS-E)** is a fully integrated fuel laboratory installed in an environmentally controlled ISO shelter, mounted on an XCK2000E1 trailer with support equipment, supplies and a tent. The PQAS-E is a complete petroleum laboratory capable of B-2 level testing on kerosene-based and diesel fuels. System software provides an information database/expert system for the technician to consult in interpreting test results and in making recommendations for the disposition of fuels. Data acquisition equipment includes a modem that allows the PQAS-E to quickly transmit test results. The tent structure serves as a customer service area where samples can be received, logged and stored prior to processing.

The **Modular Fuel System (MFS)** is a key enabler for petroleum distribution operations in modular force brigade combat teams and support brigades and was developed specifically for use with the Palletized Load System (PLS) and the Heavy Expanded Mobility Tactical Truck (HEMTT)-Load Handling System (LHS). The MFS capitalizes on PLS/LHS enhanced mobility, speed of download and multicommodity capabilities. The flexibility of the MFS, which includes 14 ISO-certified 2,500-gallon capacity tankrack modules (TRM) and two 600-gallon-per-minute pumprack modules (PRM), allows for multiple modes of operation to distribute fuel. The MFS is a rapidly deployable and recoverable fuel storage/distribution system able to receive, store and issue fuels on the battlefield. The



system has a 35,000-gallon capacity. The system can be manifolded and placed into operation in one hour or less using four trained 92F personnel. It can also be disassembled and packed for transport in one hour or less. Each TRM has onboard storage compartments for hoses, nozzles, fire extinguishers and grounding rods. Each PRM has a diesel-engine-driven centrifugal pump, filter separator, sufficient hoses, refueling nozzles, valves, fittings and an auxiliary pump for gravity discharge operations, and fittings to establish eight retail and/or bulk dispensing points (total of 16 points per system). The system can also be fitted with a fuel additive injector. The Army does not have any legacy storage/distribution system that can compare to the increased mobility, capability, compatibility, maintainability, sustainability and performance of the MFS. The TRM can also be used in conjunction with the HEMTT Tanker. This configuration enables brigades to carry and distribute their required fuel supply while minimizing personnel and prime movers.

The **Fuel System Supply Point (FSSP)** consists of fabric storage tanks of various sizes, pumps, filter separators, fittings and hoses. The systems are containerized in ISO-compatible modules. The FSSP is the primary system for receiving, storing and issuing fuel within a theater of operation

and can be tailored to situational requirements. The FSSP has the flexibility to provide storage and delivery of fuel for a few thousand to hundreds of thousands of gallons. It is capable of rapid emplacement and recovery and can be transported to the operational site by a wide variety of methods.

The **Lightweight Water Purifier (LWP)** is a complete water purification system that consists of feed water pump; hoses; ROWPU elements; pre-filter, high-pressure pump; 3-kilowatt tactical quiet generator; 1,000-gallon water storage and distribution system; and control panel. It purifies up to 125 gallons per hour from a freshwater source and 75 gallons per hour from saltwater and NBC-contaminated sources. It will be mounted on skids that can be lifted by four people and will normally be transported in a two-soldier cargo Humvee. The LWP can be transported by UH-60 helicopter or C-130 fixed-wing aircraft. The LWP provides potable water for a wide range of military operations and is deployed with small units and special operations forces and for use in temporary medical facilities.

The **Forward Area Water Point Supply System (FAWPSS)** is a portable, self-contained, potable water storage and distribution system. Its 3,000-gallon capacity can support personnel in forward areas of the

battlefield, arid regions or other environments where potable water is needed.

The **Load Handling System Compatible, Water Tank Rack (Hippo)** represents the latest technology in bulk water distribution systems. The system is a mobile hardwall system providing potable water to theater and brigade units. The Hippo consists of a 2,000-gallon water tank rack with pump, filling stand, and a 70-foot hose reel with bulk suction and discharge hoses. It is fully functional mounted or dismounted and is transportable when full, partially full or empty. The Hippo prevents water from freezing at minus 25 degrees Fahrenheit and is compatible with the HEMTT-LHS and the PLS truck and trailer. The Hippo replaces the Semi-trailer Mounted Fabric Tank (SMFT). It provides the Army with the capability to receive, store and distribute potable water for cooking, drinking, showers and cleaning purposes.

The **Unit Water Pod System (Camel II)** consists of an 800- to 900-gallon storage capacity tank, heater unit, government-furnished M1095 medium tactical vehicle (MTV) trailer, and contractor-developed components mounted to or carried by the trailer. Under the Stryker brigade combat team (SBCT) concept, the Camel will provide a maneuvering company operating in a temperate environment more than two days of water at a minimum sustaining consumption rate. The Camel is the unit's primary water distribution system and will be used by units at all echelons throughout the battlefield. The Camel II system replaces the M107, M149 and M1112 series 400-gallon water trailers (Water Buffalo).

Product Director Non-Standard Vehicles (PD NSV)

The newly established **Product Director Non-Standard Vehicles (PD NSV)** provides the Afghan National Security Forces (ANSF) cradle-to-grave life-cycle management of commercial Light and Medium Tactical Vehicle fleets. The PD NSV portfolio includes the currently fielded Ford Ranger and Navistar vehicle fleets as well as any future procurements. The goal of PD NSV is to provide the ANSF the capability and capacity to be self-sustaining and independently able to conduct security operation missions. PD NSV's mission is a critical part of the overall Afghan transition plan.

Project Manager Tactical Vehicles

Offices within the **Project Manager Tactical Vehicles (PM TV)** include: Product Manager Light Tactical Vehicles (PM LTV), Product Manager Medium Tactical Vehicles (PM MTV), Product Manager Heavy Tactical Vehicles (PM HTV) and Product Manager Armored Security Vehicle (PM ASV).



Humvee

Product Manager Light Tactical Vehicles (PM LTV)

The **Product Manager Light Tactical Vehicles (PM LTV)** is responsible for the Army's **High Mobility, Multipurpose Wheeled Vehicle (Humvee)** family of vehicles and **Light Tactical Trailers (LTT)**. The Army's requirement for Humvees is 157,000 vehicles, and more than 250,000 have been built and are in service worldwide.

The versatile Humvee is the Army's most ubiquitous vehicle, providing a common, light tactical wheeled capability. The

Humvee is the Army's (and other services') primary light wheeled vehicle for combat, combat support and combat service support missions. Humvees of all variants (but mostly up-armored versions) are currently deployed in support of operations in Iraq and Afghanistan.

The Humvee family of vehicles consists of multiple configurations built on a common chassis to support weapon systems, command-and-control systems and field ambulances, and to provide ammunition, troop and general cargo transport. It is currently equipped with a high-performance,

Light medium tactical vehicle



6.5-liter, turbo-charged diesel engine, electronic automatic transmission and four-wheel drive. It is air-transportable and low-velocity-airdrop (LVAD)-certified (except for the maxi ambulance variants). The Humvee can be equipped with a self-recovery hydraulic winch and can support payloads from 2,500 to 5,100 pounds (including crew and pintle loads), depending on the model.

Current production Humvees are built on the expanded capacity vehicle (ECV) chassis. The ECV variants were first introduced in 1995 as the M1113 Shelter Carrier, providing up to 5,100 pounds of payload, and the M1114 Up-armor Humvee (UAH), to provide crew protection from small-arms fire, overhead fragmentation from artillery and mortar shells, and underbody from antipersonnel/antitank mines. Current production variants of the Humvee family include the M1151A1 ECV Armament Carrier, M1152A1 ECV Cargo/Troop/Shelter Carrier, M1165A1 ECV Command and Control Carrier and the M1167 ECV TOW Missile Carrier vehicles. Like the M1114, the M1151 has a rooftop weapon station that can accommodate an M60 machine gun, M2 machine gun, Mk

19 grenade launcher or the M240/M249. Unlike most earlier models, these latest versions are also designed for the application of additional armor packages over their base protection levels, as the mission profile dictates.

Humvee new production for the Army ended in December 2010, although production for the other services and foreign military sales customers will continue into early 2012. Included in the Army production is a new M997A3 ambulance configuration, built on the ECV chassis, which is planned specifically for the Army National Guard to meet its homeland security and natural disaster relief missions. Because of the large numbers of Humvee variants found throughout the Army and the continued need for their service into the foreseeable future, plans are currently being developed for a competitively awarded recapitalization program, which will modernize and extend the useful life of the Army's Humvees. This Humvee competitive recapitalization program will improve protection and automotive performance.

The **Light Tactical Trailer (LTT)** is the Humvee trailer. It has been tested and approved (materiel released) for use per the

Humvee mission profile. The LTT comes in three variants: M1101 (LTT-L), M1102 (LTT-H) and heavy chassis (LTT-HC). The Army has met the LTT requirement of 49,367 trailers. The on-hand quantity including the current FY 2010 procurement will be 50,115 trailers. There are no production funds in FY 2011 and beyond.

Product Manager Family of Medium Tactical Vehicles (PM MTV)

The **Product Manager Medium Tactical Vehicles (PM MTV)** is responsible for the **Family of Medium Tactical Vehicles (FMTV)**, including Light Medium Tactical Vehicles (LMTV), Medium Tactical Vehicles, FMTV specialty vehicles and FMTV trailers.

The medium truck fleet has historically accounted for more than half of the Army's single-lift payload capacity. In redefining this vital fleet, Army planners took the opportunity to focus on a family approach; that is, to combine both 2.5-ton and 5-ton payload classes into a single acquisition program that would yield a logistically significant degree of component commonality across all medium fleet variants.

The Army's requirement for medium trucks is now more than 83,000 vehicles. These vehicles are required across the entire spectrum of combat, combat support and combat service support units. They must perform roles such as unit mobility, field feeding, water distribution, local and line-haul transportation, maintenance platforms, engineer operations, communication systems, medical support and towing artillery pieces. All medium vehicles must be capable of operating worldwide on primary and secondary roads as well as on trails, and cross-country in weather extremes from minus 50 to 120 degrees Fahrenheit.

The FMTV achieves extraordinary commonality by sharing many subsystems and components in the 4x4 (LMTV), 6x6 (MTV)

Heavy equipment transporter system (HETS)



and companion trailer configurations. The trucks share, for example, common engine assemblies (with different horsepower ratings), cooling systems, transmissions, intake and exhaust systems, front axles and suspension systems, tires and wheels, cab assembly, vehicle control gauges and much more. They differ primarily in number of axles (two versus three) and standard cargo bed size (12 feet versus 14 feet) to accommodate different payload ratings (2.5 tons versus 5 tons) and body styles.

The FMTV deviates from predecessor vehicle designs by having its tilt cab over the engine. This design approach contributes to the Army's goal of significantly improving the deployability of units, since a typical FMTV vehicle is some 40 inches shorter than the vehicle it replaces, requiring less space aboard deploying aircraft or surface shipping. This reduced length also contributes to a shorter turning radius and better offroad mobility. Offroad mobility is further enhanced by a standard central tire inflation system (CTIS) and state-of-the-art suspension.

LMTV systems include the M1078 2.5-ton standard cargo, M1079 2.5-ton van, M1080 2.5-ton chassis and M1081 2.5-ton standard cargo (LVAD) [low-velocity air-drop capable]. MTV systems include the M1083 5-ton standard cargo, M1084 5-ton standard cargo with MHE, M1085 5-ton

long cargo, M1086 5-ton long cargo with MHE (crane), M1088 5-ton tractor, M1089 5-ton wrecker, M1090 5-ton dump, M1092 5-ton chassis, M1093 5-ton standard cargo (LVAD), M1094 5-ton dump (LVAD) and M1096 5-ton long chassis.

FMTV special vehicles include the M1087 expandable van, XM1140 high-mobility artillery rocket system (HIMARS) carrier, M1147 FMTV load handling system (LHS) trailer, M1148 FMTV LHS truck, M1157 10-ton dump and XM 1160 medium extended air defense system (MEADS) carrier. FMTV trailers include the M1082 trailer cargo 2.5 ton and M1095 trailer cargo 5 ton. In addition, the office helps coordinate activities on M900 series 5-ton trucks.

Product Manager Heavy Tactical Vehicles (PM HTV)

The **Product Manager Heavy Tactical Vehicles (PM HTV)** addresses programs including the Heavy Equipment Transporter System (HETS), Heavy Expanded Mobility Tactical Truck (HEMTT), Palletized Load System (PLS), flatracks, container handling and mission modules, M915 family of vehicles, fifth-wheel trailers and special trailers.

The M1070/M1000 **Heavy Equipment Transporter System (HETS)** deploys, transports, recovers and evacuates combat-loaded M1 tanks and other vehicles of simi-

lar weight to and from the battlefield. More than 600 have been deployed in support of overseas contingency operations (OCO). The M1070 tractor and M1000 semitrailer replaced the M911/M747 as the Army's latest model HETS. The M1070/M1000 HETS was developed to accommodate the increased weight of the M1 Abrams family of main battle tanks. The M1070 provides line-haul, local-haul and maintenance evacuation on and off the road during tactical operations worldwide.

Unlike previous HETS, the M1070 is designed to carry both the tank and its crew. Approximately 2,311 HETS have been fielded to date. The M1070A1 HET tractor has been updated with a new power train with 200 additional horsepower, single-speed transfer case for ease of operation, and numerous front suspension and drive system updates to increase the safe operating load capacity of the vehicle steering and handling systems. The M1070A1 is designed with an armored A-kit cab and B-kit armor.

The M1000 Semitrailer has been improved with a series of maintainability changes including self-adjusting brakes, central lubrication system at each axle, and a hydraulic system upgrade that reduces trailer raise/lower times and is expected to result in greater reliability. The new configuration HET, model M1070A1, and the



HONORING SERVICE & SACRIFICE

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Heavy expanded mobility tactical truck (HEMTT)

enhanced M1000 semitrailer are in the process of production verification testing.

The **Heavy Expanded Mobility Tactical Truck (HEMTT)** is the workhorse of Army combat divisions. It is the key combat service support enabler for all brigade combat teams. The 11-ton, eight-wheel-drive family of vehicles is designed to operate in any climatic condition.

There are several basic configurations of the HEMTT-series trucks: the M977 cargo truck with light materiel-handling crane; M985 cargo truck with medium materiel-handling crane; the M978 2,500-gallon fuel tanker; the M983 tractor; the M984 wrecker; and the M1120 Load Handling System (LHS) and the M983 Light Equipment Transporter (LET), used in Stryker recovery operations and movement of heavy engineer equipment. The HEMTT is used as a prime mover for the Patriot missile system, M7 forward repair system and tactical water purification system and as the chassis for the M1977 common bridge transporter, M1142 tactical firefighting truck and M1158 HEMTT-based water tender. The HEMTT is also compatible with the PLS trailer.

The HEMTT is augmented by the M989/A1 heavy expanded munitions ammunition trailer (HEMAT) in the transport of the Multiple-Launch Rocket System (MLRS) family of munitions (MFoM). The HEMAT can transport four MFoM pods, each weighing approximately 5,400 pounds. The offroad capability of the HEMTT and HEMAT combination can transport eight MFoM pods. The M989A1 HEMAT is also required to transport six standard ammunition pallets (single stacked), two 600-gallon fuel pods or two 500-gallon fuel bladders.

The HEMTT recap program will recapitalize HEMTT vehicles to 0 miles/0 hours and to the A4 configuration, which consists of bumper-to-bumper recap of the entire truck with the following technology insertions: CAT 15 engine, electronic transmission, ABS and traction control, and larger cab. The HEMTT A4 is designed with an armored A-kit cab and B-kit armor.

The **Palletized Load System (PLS)** is the primary component of the maneuver-oriented ammunition distribution system. Roughly 1,000 PLS are being used in overseas contingency operations. It also performs local-haul, line-haul, unit resupply and other transportation missions in the



tactical environment. In addition, it is used as the prime mover for the M7 Forward Repair System and various engineer mission modules (M4 Bituminous Distributor Module, M5 Concrete Mobile Mixer Module and M6 Dump Body Module). The PLS is also the host chassis for the dry support bridge launcher vehicle (M1975).

The PLS consists of a 16.5-ton payload tactical truck with a flatrack. It is a five-axle, 10-wheel drive vehicle with a 500-hp Detroit Diesel engine, an Allison automatic transmission and a CTIS. This combination provides a highly mobile system able to transport its payload in virtually any type of terrain or weather and maintain pace with the self-propelled artillery systems that it supports. The PLS comes in two mission-oriented configurations: the M1074 and the M1075. The M1074 is equipped with a variable reach materiel-handling crane (MHC) to support forward-deployed field artillery units. The M1075, without

MHC, is used in conjunction with the M1076 trailer to support transportation line-haul missions.

The M1076 PLS trailer is a three-axle, wagon-style trailer with a 16.5-ton payload capacity that is equipped with a flatrack that is interchangeable between truck and trailer. The combination of truck and trailer provides the combined payload capacity of 33 tons. The flatracks are lifted on and off the truck and trailer by a hydraulic-powered arm mounted on the truck, eliminating the need for additional materiel-handling equipment. The controls for the arm are located inside the cab, allowing the operator to load or unload the truck in less than one minute without leaving the cab. The trailer can be loaded or unloaded in less than five minutes using the remote-control arm.

The PLS can transport multiple cargo configurations by using a variety of flatracks. The M1077 and M1077A1 flatracks



Palletized load system (PLS)

are sideless and used to transport pallets of ammunition and other classes of supplies. The M1 flatrack carries identical classes of supplies. It is ISO/CSC-certified and suitable for intermodal transport including transport on container ships. Ammunition can be loaded on the M1 at depots, transported via container ship to theater, picked up by the PLS truck and carried forward without using any materiel-handling equipment. The walls fold inward when empty to facilitate stacking for retrograde. The M3/M3A1 container roll-in/roll-out platform is a flatrack that fits inside a 20-foot ISO container. The container-handling unit is a kit installed on the PLS that allows the direct load, transport and unload of 20-foot ISO containers without an external flatrack.

The PLS vehicle is in the process of upgrade to incorporate a modern powertrain with increased horsepower, independent suspension and an updated cab that is common with the latest HEMTT vehicles. The updated PLS vehicles (model suffix A1) have completed production verification testing and are preparing to enter production as new production and recapitalization programs. The PLS A1 is long-term protection strategy (LTPS) compliant with A-kit cab and B-kit armor.

The Army's **M915-Series Line-Haul Tractors** operate on highways and sec-



M915A5 line-haul tractor

ondary roads to transport bulk supplies and fuel to U.S. forces. The Army's line-haul fleet consists of the current M915 family of vehicles (FoV) including the M915A5, M916A3 and M917A2 vehicles. The M915A5 is based upon Freightliner's commercial Western Star tractors and incorporates transport industry technologies for safety, fuel efficiency and low operating costs per mile.

The M915-series fleet of vehicles is found primarily in active and reserve component transportation units that are responsible for the rapid, efficient transport of bulk supplies from ocean ports to division support areas within a theater of op-

eration. They are used primarily to transport the M871 semitrailer (flatbed, 22.5 tons), M872 semitrailer (flatbed, 34 tons), M967/M969 semitrailer (5,000-gallon tanker), M1062 semitrailer (7,500-gallon tanker), and M1062A1 semitrailer (9,000-gallon tanker). The M915A5 is the latest series and has a maximum gross combined vehicle weight of 120,000 pounds when operating with the M872A4 semitrailer. Only the M915A5 variant is in production, with fieldings in FY 2010.

The M915A5 includes improvements over the legacy M915A3, with suspension upgrades for increased weight capability for B-kits and an extended cab that is 10

inches wider and 34 inches longer than the M915A3 crew cab. The M915A5 is designed with an armored A-kit cab and B-kit armor.

Product Manager Armored Security Vehicle (PM ASV)

The **Product Manager Armored Security Vehicle (PM ASV)** has the mission to develop, produce, field and sustain the **M1117 Armored Security Vehicle** to an expeditionary force. The M1117 ASV is a turreted, armored, all-wheel drive vehicle that supports military police missions—such as rear-area security, law and order operations, battlefield circulation and enemy-prisoner-of-war operations—over the entire spectrum of war and operations other than war as well as convoy protection missions.

The ASV provides protection to the crew compartment, gunner's station and the ammunition storage area. The turret is fully enclosed, with both an M19 40 mm grenade machine gun and a .50-caliber machine gun, and a multisalvo smoke grenade launcher. The ASV provides ballistic, blast and overhead protection for its four-person crew. The ASV, with a payload



of 3,600 pounds, 400-mile-plus range and top speed of nearly 70 miles per hour ensures both lethality and survivability to the warfighter.

In addition, on the ASV chassis, the U.S. Army is fielding the M1200 Armored Knight to provide improved survivability over the current M707 Knight (Humvee-based Knight). Used by field artillery combat observation lasing teams (COLTs) in both Heavy and Infantry brigade combat

teams, the Armored Knight will combine the proven ASV with the M707 Knight mission equipment package (MEP).

The **Medium ASV (MASV)**, currently in production for use by the Afghan national army (ANA), is based on the Army's M1117 Armored Security Vehicle (ASV) platform. Sharing approximately 70 percent commonality with the ASV, the MASV consists of nine different variants, each designed to meet specific combat roles and

enhance the quick reaction capability of the ANA. The nine variants include the ASV and armored personal carrier configurations as well as the command-and-control, ambulance, engineering, maintenance, mortar, and reconnaissance variations. The enhanced survivability, which is standard on all of the MASV variants, represents a new range of mission set capabilities.

PM Joint Combat Support Systems

The office of **Project Manager Joint Combat Support Systems (PM JCSS)** includes the **Product Manager Joint Light Tactical Vehicles (PM JLTV)**; **Product Manager Sets, Kits, Outfits and Tools (PM SKOT)**; **Product Director Test, Measurement and Diagnostic Equipment (PD TMDE)**; and **Product Director Horizontal Technology Insertion (PD HTI)**.

Product Manager Joint Light Tactical Vehicles (PM JLTV)

The **Product Manager Joint Light Tactical Vehicles (PM JLTV)** is responsible for the Army's participation in the **Joint Light Tactical Vehicle (JLTV)**. The JLTV family of vehicles and companion trailers is a central component of the Army and Marine Corps' tactical wheeled vehicle strategy, balancing long-term warfighter needs of protection, performance and payload in an affordable and expeditionary platform designed for global operations.

Capability gaps within the existing light tactical wheeled vehicle fleet are the result of an imbalance in protection, payload and performance. The JLTV family of vehicles will be able to deliver all of these capabilities within an affordable and transportable solution, meeting Army and Marine Corps rotary- and fixed-wing air, sea and overland transport requirements—something no existing light tactical wheeled vehicle can do.

The services have successfully completed the 27-month technology development (TD) phase, completing a rigorous test and evaluation effort at Aberdeen Proving Ground, Md., and Yuma Proving Ground, Ariz. The services completed all planned performance and RAM testing; however, because of the increased requirement in survivability, they conducted above-threshold ballistic testing to help inform the engineering and manufacturing development (EMD) phase requirements. In addition, JLTV's first helicopter sling-load transportability test with the Army's CH-47D and the Marine Corps' CH-53E was completed with each of the three TD phase contractor's Category A general purpose vehicles.

The development of the JLTV reinforces the Army's approach to interoperable platforms that provide expeditionary and protected maneuver to forces currently supported by Humvees. The JLTVs also



Joint light tactical vehicle

Lockheed Martin

improve payload efficiency through chassis engineering, enabling the vehicles to be deployed with the appropriate amount of force protection through scalable armor solutions.

The TD phase has satisfied its intended purpose: to demonstrate the integration of established technologies as a complete system, providing an assessment of the technical and performance risks relevant to entering the EMD phase. The EMD phase will be full and open competition, with the selection of two offerors. Milestone B is

currently scheduled for the second quarter of fiscal year 2012.

Product Manager Sets, Kits, Outfits and Tools (PM SKOT)

The **Product Manager Sets, Kits, Outfits and Tools (PM SKOT)** manages more than 50 of the Army's combat engineer and ordnance sets, kits, outfits and tools, providing industrial quality tools with lifetime warranties, foam cutouts for rapid inventory, and increased ease of accountability and transportability to the warfighter. PM

*Mine resistant ambush
protected (MRAP) vehicles*

SKOT's broad portfolio includes SKOTs for tracked and wheeled vehicle emergency repair and maintenance, armament systems repair, hydraulic systems repair, metal working and machining, cutting and welding, engineering and construction, urban operations, Army diving missions, inflatable boats and motors, and fire suppression and protection equipment.

Product Director Test, Measurement and Diagnostic Equipment (PD TMDE)

The **Product Director Test, Measurement and Diagnostic Equipment (PD TMDE)** is responsible for the life-cycle management of the Army's calibration sets, general purpose electronic test equipment (GPETE) and its modernization through the test equipment modernization (TEMOD) program, and the Integrated Family of Test Equipment (IFTE), composed of at-platform automatic test systems (APATS) and off-platform automatic test systems (OPATS).

Product Director Horizontal Technology Integration (PD HTI)

The focus of the **Product Director Horizontal Technology Integration (PD HTI)** is on identifying relatively established technologies (technology readiness level 6 or greater) at the component or subsystem levels for potential insertion into and improvement of joint ground systems. These ground systems are those in the portfolios of the Program Executive Office (PEO) Combat Support and Combat Service Support (CS&CSS), PEO Ground Combat Systems, and the Marine Corps' PEO Land Systems and Project Manager (PM) Light Armored Vehicles. Support is also provided to PEO Integration.

The primary method used to identify potentially useful technologies is through the PEO CS&CSS-sponsored, PD HTI-executed joint ground system enterprise market investigation process (EMIP). This process involves identifying technology areas of interest to the commercial marketplace, reviewing submitted technology ideas, physical demonstration by the vendor of selected technologies, demonstration assessment by a government team of subject-matter experts, and referral of promising technologies to relevant PEOs and other government organizations.

Besides identifying and assessing potentially useful ground-system-related technologies, PD HTI's efforts provide an opportunity for more coordinated market research, a referral point for PMs when meeting with vendors, a forum to support



a demonstration of interesting technologies submitted in response to PMs' requests for information (RFI), and a technology idea database available to the acquisition and technology communities. Also, the generation of smarter acquisitions and requirements is more likely by knowing what latest technologies are available and, by having a joint focus, PD HTI's efforts potentially help drive commonality across platforms. In addition, vendors, particularly small businesses, appreciate the opportunity to demonstrate their technology to relevant government experts.

PM Mine Resistant Ambush Protected

The **Product Manager Mine Resistant Ambush Protected (PM MRAP)** vehicles encompasses thousands of highly survivable MRAP vehicles under several product managers, including Vehicle Systems, MRAP All-Terrain Vehicles (M-ATV), and Assured Mobility Systems, frequently referred to as route-clearance vehicles (RCVs).

MRAP vehicles are armored vehicles with a blast-resistant V-bottomed underbody designed to protect the crew from mine blasts and fragmentary and direct-fire weapons. MRAP features four vehicle categories: Category I for urban combat missions; Category II for convoy escort, troop transport, explosive ordnance disposal and ambulance missions; Category III for clearing mines and improvised explosive devices (IEDs); and the M-ATV, a smaller, lighter-weight platform. A wrecker, or MRAP Recovery Vehicle (MRV), was added to the fleet in late 2010.

In May 2007, the MRAP vehicle program was deemed the Department of Defense's highest priority defense acquisition program.

Product Manager MRAP Vehicle Systems

The **Product Manager MRAP Vehicle Systems** was responsible for the initial acquisition of the MRAP fleet of vehicles, consisting of 16 discernable variants from five different commercial manufacturers. Originally envisioned as a few thousand vehicles to assist with the growing threat of IEDs, the fleet immediately demonstrated significantly higher survivability than other vehicles fielded. Follow-on acquisition based on MRAP success now supports all five services and Special Operations Command. The current MRAP fleet has grown to approximately 27,000 vehicles. The smaller Category I vehicles in the 17- to 25-ton range can carry a crew of up to eight, whereas the larger Category II vehicles weigh as much as 40 tons and protect a crew of up to 10. MRAP vehicles can be found in a multitude of missions and are the wheeled vehicle of choice for the most dangerous combat encounters in current operations.

Several other features make the MRAP well suited for its mission. As mentioned, they provide significant protection from small arms from all angles and are especially adept at mitigating blast effects—much more so than lighter vehicles. Most also have the ability to carry extra protection for other types of specialized threats if the mission dictates. All variants come complete with a communications suite, a gunner's turret and a chassis capable of much higher mobility than other vehicles of similar weight. Overall, the MRAP family of vehicles provides incredible flexibility and capability to the warfighter.

While already considerably mobile, many **Category I** vehicles have received suspension upgrades, including a fully independent suspension system (ISS) to re-



MRAP all-terrain vehicle (M-ATV)

place the solid-axle system provided at the time of initial purchase. Follow-on procurements have included the ISS built on the production floor.

Other enhancements include the integration of a remote weapons system, CROWS, as well as TOW/ITAS, interior and exterior survivability enhancements, ride and comfort upgrades, and lighting packages.

Some examples of Category I vehicles are the **MaxxPro Dash**, **MaxxPro Ambulance**, **Cougar A1**, **RG-31 A2** and **Caiman**.

Vehicles in **Category II**, including the **RG-33L**, **Cougar**, **RG-33 Ambulance**, and **RG-33 with add-on armor**, also provide a host of special capabilities. Although somewhat less mobile over uneven terrain, many of these vehicles have also received suspen-

sion upgrades to enhance ride quality. Other improvements include C4I, government-furnished equipment and weapons suites. Category II vehicles make up approximately one-third of the fleet and will continue to serve in all theaters in highly protected troop transport and warfighting roles.

The **MRAP Buffalo** stands alone as the one variant in **Category III**. It is physically larger than any other variant and weighs just as much as other up-armored variants. Purpose-built for roadside bomb detection and route clearance, the Buffalo uses a highly maneuverable articulating arm to investigate debris or other roadside materials, providing a safe stand-off for soldiers. The hull structure and other interior appointments all enhance the survivability of the vehicle.

Product Manager MRAP All-Terrain Vehicle (PM M-ATV)

The **Product Manager MRAP All-Terrain Vehicle (PM M-ATV)** manages the M-ATV, designed to provide MRAP levels of

Buffalo mine protected clearance vehicle (MPCV)

protection with greater offroad mobility in the Afghan theater of operations. The lighter weight and smaller size also create easier transportability. The M-ATV can carry up to five personnel—four crew members and a gunner. The underbody improvement kits (2) (UIK2) effort is a survivability upgrade for the M-ATV platform. The UIK2 consists of automotive and armored components and is a response to an urgent theater requirement. The current requirement for the UIK is 8,011, which is the majority of the fleet. The M-ATV is used in small-unit combat operations in highly restricted rural, mountainous and urban environments. Missions include mounted patrols, reconnaissance, security, convoy protection, communications, command and control, and combat service support.

Product Manager Assured Mobility Systems (PM AMS)

The **Product Manager Assured Mobility Systems (PM AMS)** is responsible for managing the entire life cycle of development, acquisition and sustainment of route-clearance equipment for the Army. This mission involves equipping the forward-deployed route-clearance teams and explosive ordnance disposal teams operating in both Iraq and Afghanistan with the capability to detect, identify, interrogate and neutralize improvised explosive devices (IEDs). PM AMS vehicles are combined at the discretion of the field commander to create the “route-clearance package” to support route-clearance teams. The future route-clearance company configuration of a route-clearance team will consist of a Buffalo, a vehicle-mounted mine detection (VMMD) set consisting of two Husky vehicles and four medium mine protected vehicles (MMPV), used for command and control.

The AMS Family of Vehicles includes the **Buffalo, Panther, RG-31 MK5E, VMMD** and **JERRV**.

The **Buffalo Mine Protected Clearance Vehicle (MPCV)** is a six-wheeled, mine-protected, armored personnel carrier with a one-piece body designed to provide survivability for a crew of six. The front, side and rear armor provide small-arms protection, while its V-shaped hull deflects blasts from mines/IEDs. The Buffalo MPCV has an articulated hydraulic arm mounted on the front bumper and can be used to inves-



tigate suspected mine/IED locations. The Buffalo MPCV is used by engineer units during area- and route-clearance missions.

The **Vehicle Mounted Mine Detection (VMMD)** system consists of two Husky vehicles operating in tandem to detect buried explosives. Each Husky has a detection array mounted under the vehicle, which is deployed during route-clearance operations. If a suspected explosive is detected, the system marks the spot on the ground for follow-up interrogation by either the Buffalo or RG-31 fitted with an interrogation arm.

The **RG-31 MK5E** vehicle is designed to safely transport personnel or equipment in areas where mines and IEDs may be de-



RG-31 MK5E

ployed. In addition, the hull of the vehicle is designed utilizing a V-shape, which serves to provide mine blast protection. The RG-31 MK5E, along with the Panther vehicle, will be deployed jointly as a solution to the MMPV requirement.

The **Panther** is a 6x6 wheeled vehicle designed to provide enhanced crew protection and system survivability with add-on armor protection, an automatic fire extinguishing system, and a chemical, biological, radiological, nuclear or high-yield explosive overpressure system. There are three variants of the Panther: the XM1226 Engineer (holds four combat engineers, one robot and 180 cubic feet of storage), the XM1227 EOD (holds four explosive ordnance specialists, two robots and 197 cubic feet of storage) and the XM1229 Prophet (seats six soldiers for intelligence, surveillance, electronic warfare and target acquisition operations). The XM1226 provides soldiers the ability to transport, charge, configure and deploy the robot without compromising force protection. The Panther has a rear hydraulic ramp for crew and robot ingress/egress, and the XM1226 has a bulkhead door separating the crew compartment from the cargo area.

The **Joint EOD Rapid Response Vehicle (JERRV)** is a joint service, mine-protected vehicle with a primary role of supporting first responders such as explosive ordnance disposal specialists in neutralizing improvised explosive devices, mines and other ordnance. The JERRV is an ONS system for use in theater during deployment operations and will be replaced by the XM1227 Panther as a program of record for fielding in the continental United States.