AMRDEC News from the Center

THE U.S. ARMY AVIATION AND MISSILE RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER

SUMMER 2016

Army Scientists remanufacture rocket igniters, reduce cost

The U.S. Army Aviation and Missile Research, Development and Engineering Center is working with the missile community to remanufacture used rocket igniters to provide Soldier training and practice rockets for the Army.

The Guided Multiple Launch Rocket System, or GMLRS, is the Army's primary precision strike artillery weapon. To conduct the proper training for munitions handling, loading and fire control systems, the Army uses a GMLRS training round, the Low Cost Reduced Range Practice Rocket.

The LCRRPR rounds are built by a commercial supplier, but as the Army's training needs continue to grow, the Precision Fires Rocket and Missile Systems Project Office is investigating ways to increase production capacity and reduce product cost.

PFRMS has partnered with AMRDEC's Weapons Development and Integration Directorate, Letterkenny Munition Center and Crane Army Ammunition Activity to remanufacture and reassemble used rocket igniters to support the production of LCRRPR practice rockets.

WDI's Missile Sustainment Chief Robert Little said there could be a cost-effective solution to provide additional practice rounds for training in the Army.

"This program has the potential to save the government the cost and effort of demilitarizing the hardware and provide a reliable alternate source of supply in training rounds for Soldiers."

>> FULL ARTICLE

AMRDEC develops critical components for Lethal Miniature Aerial Missile System

In need of a Lethal Miniature Aerial Missile System that is man-portable and capable of neutralizing or eliminating combatants? AMRDEC assists in ensuring state-of-the art critical components exist for potential vendors.

More than 40 AMRDEC researchers and scientists developed and tested six critical component technologies in its Small Organic Precision Munition Program to support the LMAMS requirement. The six government-owned critical components are: the Small Warhead, the Small Electronic Safety and Arming Device, Power, Secure Micro Digital Data Link, Image Stabilization/Autotracker, and the Laser Ranging Height Of Burst Sensor.

The original intent for LMAMS-a small, Soldier-launched loitering precision weapons system-was to destroy combatant enemies such as snipers or those emplacing Improvised Explosive Devices. This system not only allows Soldiers on the ground to engage with targets they cannot see, but can potentially be used to counter threat Unmanned Aircraft Systems. This guided weapons system can fly to a specific coordinated position or be diverted with its wave-off capabilities to minimize collateral

>> CONT. PAGE TWO

damage.

“TRADOC outlines the warfighter requirements,” said Mike Richman, Associate Director of Missile Development. “If the capability doesn’t exist, AMRDEC invests Missile Science and Technology funds to help create a solution, and work with our partners at the Program Executive Office for Missiles and Space throughout the system lifecycle once it becomes a program of record.”

One vendors’ solution to the LMAMS requirement is AeroVironment’s Switchblade. This miniature intelligence, surveillance, reconnaissance, and lethal platform can be operated manually or semi-autonomously. Switchblade has a 10 kilometer radius of operation and more than 10 minutes of battery endurance.

“AMRDEC has exceeded the battery endurance requirement by doubling endurance from 15 minutes to 30 minutes. This battery technology also allows us to operate in colder temperatures than the previous Switchblade battery” said Spencer Hudson, AMRDEC Deputy Ground Tactical Capability Area Lead.

>> FULL ARTICLE

Army rapid response facility continues success with Navy partnership

Army prototype engineers are continuing to support Navy mine countermeasure operations in response to a 2011 urgent need statement.

AMRDEC's Prototype Integration Facility developed a Lithium Ion Containment System integrated into a Military Dismountable Van to protect and support the MK18 Mod 2 Underwater Unmanned Vehicle.

The MK18 is used by the Navy for mine detection missions with enhanced endurance and an improved area coverage rate from the previous system. These UUVs are pre-programmed and designed to scan waters for targets or threats while offering sailors faster post-mission analysis.

>> FULL ARTICLE

AMRDEC expertise in modeling, simulation contributes to chemical, biological defense

AMRDEC's expertise in system integration, modeling and simulation is contributing to foreign chemical and biological defense for the Joint U.S. Forces Korea Portal and Integrated Threat Recognition program, also known as JUPITR.

JUPITR, a program led by the Joint Program Executive Office for Chemical and Biological Defense and supported by the U.S. Army Edgewood Chemical Biological Center, will provide chemical and biological detection capabilities to decrease soldier workload, lower operational costs, increase performance and create a stronger chemical and biological defense capability throughout South Korea.

Leaders from Army Materiel Command, AMRDEC, the DoD Chemical and Biological Defense Program, Army Test and Evaluation Command, as well as several Congressional Defense Committee staff members, met in the AMRDEC Soldier Protection Lab to review program progress and receive a demonstration of JUPITR capability. CBRN defense personnel from the United Kingdom Ministry of Defense and Royal Navy were also present. The event highlighted the collaboration between AMRDEC and CBDP necessary for the JUPITR capability to be fielded to USFK.

>> FULL ARTICLE

Redstone additive manufacturing partnership seeks technological edge

Additive manufacturing has been described as a potential game-changer for the U.S. federal government and national security.

AMRDEC, with the Redstone Additive Manufacturing Integrated Product Team, hosted a Team Redstone AM Workshop to foster further collaboration. Participants heard ongoing AM efforts at AMRDEC, NASA Marshall Space Flight Center, the Army Materiel Command, Defense Acquisition University, UAH, as well as briefs from local industry representatives. **"With additive manufacturing, engineers are no longer limited in design by what can be traditionally manufactured,"** said Katherine Olson, Manufacturing Science and Technology Division Additive Manufacturing Lead. "This enables design complexity - organic shaped components optimized for performance, light-weighting, and frequency tailoring.

>> FULL ARTICLE

Public Affairs Office
Phone: 256-876-1649
https://www.amrdec.army.mil/AMRDEC/