



ARMY
MATERIEL
COMMAND

Successful Partnering

A publication of the Army Materiel Command Partnership Program

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A Message from the AMC Partnership Office

This issue of **Successful Partnering** describes ongoing activities in the Army Partnership Program and highlights partnerships that are significantly benefitting both the Army and private industry partners.

The goal of the Partnership Program is to fully leverage the power of partnerships to enhance and preserve the Army Materiel Command's unique organic industrial facilities, processes, and personnel while offering private industry access to these capabilities for their mutual benefit.

A partnership is a contractual agreement between an Army-owned and operated facility and one or more commercial or government entities to perform work or utilize the Army's facilities and equipment. *Partnering is a cooperative effort, not a competitive engagement.*

Partnering with the Army's organic sites offers a range of opportunities. This includes activities like providing articles and/or services to industry, industry leasing equipment and/or facilities to perform work for either the public or private sector, work-sharing, and teaming arrangements where the installation and industry jointly contract with a Program Manager.

Objectives of the Program

- Improving operational efficiencies
- Lowering the costs of products and services
- Accelerating innovation
- Securing private investments
- Sustaining critical skills and capabilities

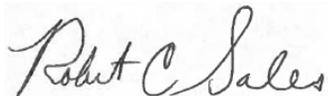
Benefits of Partnering

- Decreased capital investment cost
- Utilization of a trained, competent, competitive and Lean Six Sigma-experienced workforce
- Leverage long-term use agreements
- Secure locations
- Leverage ISO-certified facilities and Lean Six Sigma processes
- Potential use of hard-to-receive hazardous waste permits
- Access to advanced technology industrial equipment

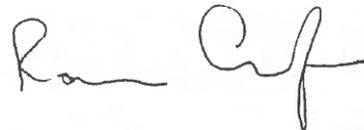
In executing partnerships, the Army depots, arsenals, plants, and centers provide services not available in the private sector or are not cost effective for private industry to provide. These services have generated significant revenue and jobs for the Army leading directly to sustainment and expansion of organic industrial capabilities. In FY14, \$219 million in revenues were generated as a result of Partnership activities.

Private industry also benefits from partnerships through access to Army personnel and facilities. Partnership arrangements result in more effective fulfillment of Army contracts by private industry at lower cost and reduced risk to industry partners.

As you read **Successful Partnering**, you will get a better understanding of what the Partnership program is and the potential for partnering opportunities with the Army. We encourage you to think about new ways you can implement partnering into your organization's operations. Please feel free to contact our office to assist you in any future partnership endeavors.



Robert C. Sales
Program Manager
Army Materiel Command
Partnership Program



Ramon Campos
Chief, Industrial Base Capabilities Division
HQ, Army Materiel Command G4 Logistics

Partnerships are a Winning Opportunity for All

Warfighter - Industry - Government

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Articles and photos were taken from the U.S. Army official homepage

How to Partner

Step 1 - Determine the type of partnership agreement

- Directly purchase a product or service from an installation
- Lease facilities or equipment
- Work collaboratively in a teaming or work-sharing environment

Step 2 - Determine which AMC installation suites your needs

- Review the Army Materiel Command Partnership Website
<http://www.amc.army.mil/amc/partnershipopportunities.html>
- Or e-mail a request for information to: usarmy.redstone.usamc.mbx.partnership@mail.mil
- Or send a written inquiry to:
HQ, Army Materiel Command, DCS G4 Logistics (AMCOL-IB)
4400 Martin Road,
Redstone Arsenal, AL 35898

Step 3 - Contact the installation Business Development Office (BDO)

- Send an inquiry to the BDO (see contacts on back cover of Successful Partnering) for the installation of interest and request additional information

Partnership agreements are executed directly with the installation BDO



Partnerships leverage the strength of the Industrial Base

The importance of Public-Private Partnerships (P3) is touted in policy memos, articles and conferences from the Office of the Secretary of Defense (OSD), to the Secretary of the Army, and down the chain of command. P3s are a critical tool to keep the Industrial Base warm and maintain critical skill sets for sustainment and surge. As quoted from Deputy Assistant Secretary of Defense for Maintenance Policy and Programs, John B. Johns' speech from the 2013 Michigan Defense Expo, "Partnering is one of the ways to ensure that we continue to produce readiness and protect critical capabilities within our industrial base."

What is a P3?

A P3 is an agreement between an organic activity and one or more private industry, or other entities to perform work or utilize facilities and equipment. P3s keep the Industrial Base warm by leveraging the resources, innovation, and leadership of each sector to provide the best value to the war fighter. Partnerships can include one or more of the following: 1) Direct Sales - the use of Army land, facilities, equipment, and employees to perform work or produce goods for the private sector; 2) Work-Sharing - co-production arrangements using Army and private sector facilities and/or employees; and 3) Facilities Use - private sector use of underutilized Army land, equipment or facilities to perform work for the military.

How P3s work

These agreements are contracts, but not FAR-based contracts. Statutes permit private parties to purchase goods or services from publicly-owned installations or to use facilities/equipment. The most widely used statutes are: 10 USC 2208, 10 USC 4543, 10 USC 2474, and 10 USC 4544. The Army continues to recommend revisions to statutes in the form of Legislative Change Proposals and OSD-level Integrated Process Team work. The goal of these efforts is to standardize the process and facilitate the best value from our partnerships.

Two examples of statute revisions implemented in recent National Defense Authorization Act (NDAA) legislation include:

(1) 10 USC 4544 - it is most "customer" friendly. It permits firm fixed price, payment in kind, costs related to production. Prior to the changes from the National Defense Authorization Act (NDAA) FY12, not many installations used this statute because it had a cap on the number of partnerships that could be executed under it. With the removal of that cap, more installations are able to take advantage of it.

(2) 10 USC 2474 is the "Center for Industrial Technical Excellence (CITE)" statute - it permits flexible arrangements,

payment in kind, use of revenues for facility operation, maintenance, and environmental restoration. To utilize section 10 USC 2474, an installation must obtain a CITE designation. This CITE designation is granted by the Secretary of the Army with the process starting at the command level. Another change from NDAA FY12 positively impacted this statute because it included arsenals as well as depots.

"Partnering is one of the ways to ensure that we continue to produce readiness and protect critical capabilities within our Industrial Base."

Practical Application of P3s

CITE designations have increased significantly in the last few years with many more CITEs granted for Army organic industrial sites. When CITE first came into play in 2002, only a few installations obtained CITE designations. Today, more than 25 CITEs are in place at 10 depots and arsenals.

P3 statutes and workload are often confused with Core workload and requirements. The two programs are not the same, however, they dovetail with each other with the same common goal. For example, a partnership can be implemented to fulfill core requirements. Statute 10 USC 2464 defines Core as the organic capability to maintain and repair weapon systems/equipment that directly support the theater commanders in executing their missions. Furthermore, this requirement is to perform work at a government-owned facility, using government-owned equipment performed by government employees. In essence, this law directs the DOD to workload the depots to sufficiently maintain efficient operations at minimum levels of workload that exercise the equipment, facilities and personnel skill sets to keep the operations going well. Similar workload legislation was included for arsenals in the 2014 NDAA.

When looking at CITEs and Core capabilities, it can be seen how the two unite to define the capabilities of the Army's depots and arsenals. (CITE designations by installation are provided on p.13) Assignment of Core workload typically reflects the CITE designations at each installation.

By Annette Lozen, TACOM, 2013





Tobyhanna Army Depot

Tobyhanna soars into helicopter repair mission

Tobyhanna Army Depot (TYAD) has been chosen as the repair source for a component of the Army's largest helicopter, the CH-47 Chinook, based on the installation's electronics expertise. Technicians have begun repairing the Chinook T-55 Electronic Control Units (ECUs). The three-tier program supports the ECUs, which are built for the T-55 engine and replaces the Chinook digital control unit.

Depot ECU support includes test and inspect, conversion, and repair and overhaul programs. During testing and inspection, the units are inducted and run through a room temperature test to screen for any faults or failures. Units that successfully pass inspection move on to conversion where they receive upgraded software prior to a full mechanical inspection. Defective units receive upgraded software and hardware, and are fully disassembled and mechanically inspected. Parts are replaced, the unit reassembled, tested and sent for final inspection.

Nearly \$1.2 million in funds have been authorized for all three phases of the program in fiscal 2014, with about 96 percent of that for the repair and overhaul program. Christopher Meyers, chief of the depot's Airborne Communications/Instrument Branch, said the program not only serves a critical function but also opens the door to future workloads.



An electronics mechanic disassembles an ECU.

Photo credit: TYAD Public Affairs

"This mission is important because it is supporting the current sustainment and modernization of our military's Chinook helicopters, which are scheduled to remain in the fleet through 2038," he said. "Our support for ECUs can open the door for additional workload as we display and improve our capability. It also gives us the opportunity to expand our support to similar units in other aircraft."

Because the depot is an AS9100/9110 Aerospace Certified installation, the ECU program is recognized as one that

demonstrates effective quality management resulting in few defective products, less rework and a decrease in the cost of production. The certification will give customers confidence in Tobyhanna ECU repairs.



Photo credit: U.S. Army Media Site

As an installation certified under AS9100/9110 and ISO 9001 standards, TYAD will receive more exposure within the aerospace market. In turn, it could give TYAD more workload while giving customers a guarantee of a quality product. Aerospace Standard 9100/9110 and ISO 9001 ensure that the depot's products and services consistently meet high standards of quality agreed upon by companies worldwide, and that quality is consistently improved.

"Cargo Sustainment has chosen to live off of repairs coming out of Tobyhanna rather than buy new assets, resulting in large cost-savings," said Ashlyn Isom logistics management specialist. "The mission is also important due to a high demand for ECUs in the field. The program affords the U.S. Army Aviation and Missile Command an opportunity to satisfy critical requirements for deployed aircraft operating in Afghanistan."

The depot has worked closely with Redstone Arsenal for more than three years to ensure the program's success. Isom and other Redstone personnel visited Tobyhanna to tour the maintenance areas. Claude McClendon, Cargo Sustainment logistics manager, said the visit was a large success. "It was an opportunity to sit down face-to-face and discuss the program, its procedures and identify any issues," he said. "I was very impressed with the depot's maintenance [capability] and how well-structured and clean all the areas were."

Tobyhanna has identified several challenges throughout the early stages of the program, including problems with test equipment, troubleshooting procedures and training. Personnel at the depot and Redstone Arsenal have teamed up to resolve these issues while meeting mission requirements. "As expected, there has been a learning curve for everyone involved," said Isom. "This is something that we have already seen evolve and we believe it will continue to be a learning experience for us all."

By Justin Eimers, TYAD, 2014



Army saves big with Stryker Double-V Hull Exchange

Anniston Army Depot (ANAD) and General Dynamics Land Systems (GDLS) continue to expand on a long-standing partnership to improve the survivability of the Army's Stryker Family of Vehicles. The latest effort is the Stryker Double-V Hull (DVH) Exchange program.

Responding to an Army requirement for additional DVH vehicles and to reduce the overall vehicle cost, the DVH Exchange program essentially changes the hull of a flat-bottom Stryker to the newer DVH design. "The need to incorporate an exchange program was critical", said Chuck Gunnels, Deputy Director of Production Management at ANAD. "Through our partnering agreement, GDLS was able to prove the concept to the Army that would provide the necessary protection to the soldier while reducing the overall cost of a new double V-hull vehicle." Flat-bottom hull (FBH) components and mission equipment common to the DVH design are refurbished and installed on a new DVH hull.

As FBH vehicles are shipped to ANAD, depot employees remove the slat armor from the vehicle, perform a technical inspection, disassemble the vehicle, inspect components and

perform rework and kitting. GDLS develops manufacturing bills of materials and disassembly instructions; receives reworked components from ANAD; and provides storage and delivery of components to the assembly line where GDLS employees produce the vehicle.

"The Stryker DVH exchange program is an example of how a public-private partnership works effectively together to quickly deliver the best value and most survivable armored vehicles to Soldiers while achieving significant cost savings."

The first DVH Exchange vehicle was completed in October 2012 and fielded in December of the same year. The partners successfully completed the entire DVH-exchange pilot program in April 2013, delivering 52 vehicles on time and under budget. Currently, two Stryker brigades are outfitted with the Stryker DVH and a program to produce vehicles for a third Stryker brigade is underway. Thirty vehicles were completed in June of 2014 with two additional DVH programs scheduled to begin later in FY14 to produce a total of 60 additional vehicles.

"The Stryker DVH exchange program is an example of how a public-private partnership works effectively together to



The DVH program was initiated in response to an Army requirement for additional vehicles and to reduce the overall vehicle cost.

Photo credit: U.S. Army Media Site



Anniston Army Depot

Army saves big (continued)

quickly deliver the best value and most survivable armored vehicles to Soldiers while achieving significant cost savings”, said Gordon Stein, Vice President Stryker Brigade Combat Team, General Dynamics Land Systems. “Our partnership is more important than ever to ensure that we consistently deliver the critical capabilities that Soldiers need and depend on to successfully complete their missions.”

The Stryker partnership dates back to 2002 when GDLS began production of the Stryker utilizing ANAD facilities, equipment and manpower. A small number of depot employees cross-trained to assist with production, a small step that eventually positioned the depot to assume repair and overhaul missions for the Stryker.

In 2006, Battle-Damage (BDR) and Combat-Damaged (CDAR) programs began, dramatically increasing Anniston’s Stryker workload. BDAR and CDAR vehicles were inspected to determine which systems and portions of the vehicle need-



Photo credit: U.S. Army Media Site

ed new or refurbished parts. ANAD performed the repairs while GDLS supplied new parts and components.

The Stryker partnership dates back to 2002 when GDLS began production of the Stryker utilizing ANAD facilities, equipment and manpower.

The partnership expanded once again in 2009 with the Stryker Reset Program, in which ANAD and GDLS employees worked side-by-side to repair, maintain and upgrade the Army’s Stryker brigades. In May 2011, the Stryker Overhaul Pilot Program began when the depot inducted its first Infantry Carrier Vehicle (ICV) for overhaul. The ICV was the first of 10 Stryker pilot overhauls the depot would complete over the next two years, with GDLS managing some of the materials and repairing or replacing some of the components.

What began as 14 depot employees cross-training to assist GDLS with new Stryker production evolved through the years and resulted in Anniston’s official designation as the Army’s depot source of repair for all ten variants of the Stryker Family of Vehicles. From its inception through its continuing evolution, the Stryker public-private partnership has been a model throughout the Army. It is a testament to what is attainable when the strengths and capabilities of both the public and private sector are leveraged to give the warfighter the best possible product.

By Jennifer Bacchus, ANAD Public Affairs, 2014



The DVH exchange pilot program was successfully completed in April 2013, delivering vehicles on time and under budget.

Photo credit: ANAD Public Affairs



Arsenal breaks ground on \$61 million energy savings project

The Rock Island Arsenal Joint Manufacturing and Technology Center (RIA-JMTC) broke ground today on a \$61-million infrastructure modernization project. The project will support critical infrastructure improvements at the industrial facility that will cut energy use by approximately 35 percent, and generate up to \$5.3 million in annual energy and operational savings.

The Army launched the technology center upgrades through a 20-year energy savings performance contract with Honeywell that was awarded by the U.S. Army Corps of Engineers' Engineering and Support Center in Huntsville, AL. Honeywell guarantees the improvements will generate the target savings, which should repay the investment used to fund the work. As a result, the project requires no capital or additional taxpayer dollars upfront.

In the ceremony today at the Arsenal, Col. David J. Luders, Commander of RIA-JMTC, discussed the importance this brings to the Army's only vertically integrated metal manufacturer. "We have been providing the best products and services to our armed forces for more than 150 years," said Luders. "This project lets us tackle our aging infrastructure head on, a difficult task in light of budget cutbacks, so we can operate as efficiently as possible and support mission readiness."

"This project lets us tackle our aging infrastructure head on, a difficult task in light of budget cutbacks, so we can operate as efficiently as possible and support mission readiness."

RIA-JMTC accounts for two-thirds of the Garrison's overall energy consumption. Along with the immediate savings, the project will help the Garrison meet the requirements of a Presidential Executive Order that calls for federal facilities to reduce energy consumption 30 percent by 2015.

As part of the project, Honeywell will implement a variety of facility improvements, which includes installing high-efficiency HVAC systems, such as on-premise natural-gas heating that will allow the facility to disconnect from the Garrison's central coal-fired steam plant. Another major upgrade is new plating and paint systems for the technology center. "Honeywell teamed up with the RIA-JMTC to help address aging infrastructure and improve overall efficiency, no small task given the tight budgets and sizable efficiency requirements," said Kevin Madden, Vice President and General Manager of Honeywell's Federal Systems Group.

"Honeywell made facility improvement recommendations as part of a 20-year, \$61-million energy savings performance contract, which enables the RIA-JMTC to tackle upgrades using the energy and operational savings the improvements deliver, savings guaranteed by Honeywell."

Almost 90 percent of the parts produced at the facility go through plating and paint, receiving the surface coatings necessary to build hardened, durable components for Army equipment. "The plating department is critical to our operations," said Luders. "It is one of our oldest operations with the first plating shop being installed in 1885. Today marks another evolution."

"The project will save nearly 5.5 million kilowatt-hours of electricity each year -- enough energy to power almost 490 homes on average," echoed Madden. "In addition, the Honeywell work is expected to deliver environmental benefits. As a result of transitioning to natural-gas heating, for example, annual coal use at the central plant will drop by approximately 12,000 tons." "This is the new way we measure success in the Army," said Col. Robert Ruch, Commander of the U.S. Army Engineering and Support Center, Huntsville, when referencing the importance of energy conservation. "It is important for us to celebrate events like this."

Rep. Dave Loebsack, who represents Iowa's 2nd Congressional District, participated in a symbolic gesture showing the reduced emissions now will be produced after the project is complete. During his comments in the ceremony he stated the importance of energy conservation across the nation. "This event highlights the modernization that is happening at all our organic industrial facilities", Loebsack remarked.

RIA-JMTC is the nation's largest government-owned and operated arsenal. Its 16 critical manufacturing capabilities make RIA-JMTC the Army's state-of-the-art, vertically integrated metal manufacturing and fabrication arsenal. This enables an immediate response for critical and life saving products to the service members defending the Nation's interests in Overseas Contingency Operations.

By the numbers at the completion of the project:

- \$5.3 Million - Reducing energy use by approximately 35 percent, and generating up to \$5.3 million in annual energy and operational savings.
- 5.5 Million kWh - Saving nearly 5.5 million kilowatt-hours of electricity each year - enough energy to power almost 490 homes on average.
- 63 Million Pounds of Carbon Dioxide Eliminated - Reducing annual coal use at the central plant by approximately 12,000 tons and cutting an estimated 63 million pounds of carbon dioxide each year, the equivalent of removing more than 6,300 cars from the road.

By Rhys Fullerlove, RIA-JMTC, 2014



“Cool” demilitarization process performed at Tooele test site

A Cryobath container full of liquid nitrogen and cryopress test fixture are being used for the freezing and crushing of Department of Defense munitions. Submunitions, M74 anti-personnel, M75 anti tank mines, and MK118 rockeye bomblets that have been identified to be part of the feasibility study to cryofracture the sub-munitions and incinerate them in the Ammunition Testing Facility, APE 1236M2 Deactivation Furnace located at Tooele Army Depot (TEAD).

The technical team consists of the Ammunition Equipment Directorate (AED) at Tooele Army Depot, UT; Program Manager for Demil, Picatinny Arsenal, NJ; and General Atomics (GA). This partnership has been in place since the late 80's and has led to many successful test programs. The current study started in late fall of 2013 and is expected to successfully be completed in 2014.

"The AED test facility at TEAD provides a unique opportunity for clients like PM Demil to evaluate demilitarization processes."

Cryofracture involves cooling of munitions in liquid nitrogen for approximately fifteen minutes and then crushing its casing in the Cryofracture Press with hydraulic power, followed by the entire munition being fed at approximately 425 degrees through the Ammunition Peculiar Equipment (APE) 1236M2 Deactivation Testing Furnace.

The process is to evaluate the feasibility of cryofracture as a pre-processing step (exposing explosive and mechanical com-



After being frozen in liquid nitrogen then cryopressed, M74 anti-personnel and M75 anti-tank mines are burned through the APE 1236M2 Deactivation Furnace. Photo credit: ANAD Public Affairs

ponents) for the demilitarization of mines and sub-munitions. The test will also determine the capability and feed rate in the Ammunition Peculiar Equipment (APE) 1236 Deactivation Furnace System to incinerate cryofractured munitions.

Safety is a primary factor in the Cryofracture process. In addition to highly conservative safety features for normal facility operations, safety features are also provided for unexpected or off-normal events. The portion of the system where munitions are crushed is surrounded by an explosive-containment chamber that is designed to protect equipment and personnel in the event of an unexpected detonation. Containment of dust and vapors is assured, while numerous remote features minimize personnel exposure and risk.

Cryofracture provides the flexibility to safely destroy any type of munitions in any condition, making it uniquely applicable to old and abandoned munitions. Other demilitarization processes depend on either the ability to disassemble the munitions or the use of slow accessing processes to expose the munition contents for destruction or recycle. Old and abandoned munitions are usually degraded, and the details of internal construction may not be well known. Cryofracture provides a rapid, reliable, robust process to access the munitions without contaminating the contents or requiring munition disassembly. Cryofracture is also compatible with a variety of subsequent processing steps, including other demilitarization technologies developed by GA.



TEAD employee at the controls of the deactivation furnace.

Photo credit: ANAD Public Affairs

"The AED test facility at TEAD provides a unique opportunity for clients like PM Demil to validate demilitarization processes. The combination of AED knowledge of ammunition related equipment, remote test location and availability of the overall depot mission allows for a valuable service for our customers," stated Brent Hunt, AED General Engineer for Tooele Army Depot.

By Kathy Anderson, TEAD Public Affairs, 2013



Letterkenny Army Depot

Letterkenny rolls out first vehicle for enhanced radar surveillance

The rollout ceremony for the AN/MPQ-64A3 Enhanced Sentinel Radar mounted on a Family of Medium Tactical Vehicle (FMTV) signifies a major accomplishment in providing enhanced surveillance data to shooters in the Integrated Air & Missile Defense Systems (IAMD) architecture, increased Soldier survivability, and proven viability of the Army's agile acquisition.

"Today's ceremony marks a major milestone in the evolution of the Sentinel Radar program and the culmination of several years of hard work and dedication on the part of many people sitting in this audience and located throughout this production facility," said Col. Victor S. Hagan, Letterkenny Army Depot Commander.

The rollout showcased the outcome of a 2011 pursuit by the Sentinel Product Office to upgrade a production run of 56 radars to a FMTV based platform from a High Mobility Multipurpose Wheeled Vehicle (HMMWV) based platform, which had been in use with the radar since 1997.

Hagan shared how the depot became involved in the evolution of the system. "In July of 2011, as a result of the reputation of our engineers and artisans, the Sentinel Project Office came to LEAD inquiring about our ability to build the new system," he said. "Our participation in the design and development of the vehicle resulted in the Program Office selecting Letterkenny as the Depot Source of Repair (DSOR) for the Improved Sentinel workload in April 2012."

To achieve the goal of upgrading the Sentinel fleet, the Sentinel Product Office formed a unique partnership, integrating commercial industry, military research and development offices, and the Army's organic Industrial Base.

Through the 2012 designation of DSOR, the joint services agreed to accomplish depot maintenance organically at LEAD and Tobyhanna Army Depot for Improved Sentinel workload. "The new platform is capable of hosting an enhanced armor protection kit that signifies a major step forward in providing increased Soldier survivability against the threats on the modern battlefield, while still meeting the maneuverability and transportability requirements to deploy anywhere in the world," Hagan said.

Pennsylvania Senator Rich Alloway turned the audience's attention to the nine Shingo banners hanging from cranes to emphasize both LEAD's past and present success, "congratulations to all the workers on this great achievement."

The AN/MPQ-64A3 Improved Sentinel contributes to the digital battlefield by automatically detecting, classifying, identifying and reporting cruise missiles, unmanned aerial systems, and rotary and fixed wing threats. It is the only 360-degree coverage air defense radar in the Army's current inventory and features a 3D X-Band phased array antenna.



Soldiers from Fourth Air Defense Artillery Regiment at Fort Bragg, N.C. emplace the Family Medium Tactical Vehicle based AN/MPQ-64A3 Sentinel Radar in the maintenance facility during the rollout ceremony. Photo credit: TEAD Public Affairs

Speaking from first-hand experience, Col. Matthew T. Tedesco, Capabilities Manager of the Air Defense Artillery Brigade, U.S. Army Training and Doctrine Command said the Sentinel remains deployed saving lives daily.

"It is the radar that is dedicated to protecting the maneuver commander at the forward edge of the fight," Tedesco said. "Sentinel Radar is a proven capability and is vital to the future of the Air Defense Artillery and the United States Army."

To achieve the goal of upgrading the Sentinel fleet, the Sentinel Product Office formed a unique partnership, integrating commercial industry, military research and development offices, and the Army's organic industrial base.

The commercial partner, Thales-Raytheon Systems of the Raytheon Consolidated Manufacturing Center at Forest, MS designed and built the original radars and continues to support the system through development of radar upgrades; the Prototype Integration Facility from the Aviation and Missile Research, Development, and Engineering Command at Redstone Arsenal, AL designed the common platform upgrade and technical data package; and Letterkenny Army Depot executes that design.

Brig. Gen. L. Neil Thurgood, Program Executive Officer, Missiles and Space thanked the workforce for allowing Soldiers to engage the enemy at a distance in which the enemy cannot engage us.



Letterkenny Army Depot

Letterkenny rolls out (continued)

"You came to work to make solder, to make metal, to put in rivets, to fix our equipment so we can get it back to our Soldiers," Thurgood said. "And we need it back. We need it back good, we need it back correctly and we need it back on time. But you really came to work today to save Soldiers' lives."

"The new platform is capable of hosting an enhanced armor protection kit that signifies a major step forward in providing increased Soldier survivability against the threats on the modern battlefield, while still meeting the maneuverability and transportability requirements to deploy anywhere in the world."

The culmination of the ceremony occurred as Soldiers from Echo Battery, Third Battalion, Fourth Air Defense Artillery Regiment at Fort Bragg, N.C. drove the FMTV based AN/MPQ-64A3 Sentinel Radar into the maintenance facility and emplaced the radar.

The audience comprised of Soldiers, representatives from various organizations such as Cruise Missile Defense Systems, local community officials, and the depot workforce watched as the radar was emplaced.

The narrator explained their steps from separating the truck from the trailer, leveling the trailer, accessing the radar, raising the antenna and running power cables from the truck to gaining initial operations with the radar, dropping the work platforms and completing connections necessary for full operations.

"Here's what they (the Soldiers) know. They aren't going to ever know your name. What they are going to know is this, that someone gave them an opportunity to go to a little league game, to go to a piano recital to be home for Christmas, to be home for a birthday, that's what they know," Thurgood said.

The FMTV platform has a larger area for the installation of new equipment that will allow for system growth and future integration with systems such as the Integrated Air Missile Defense systems.

By LEAD Public Affairs, 2014



Upgrading the Sentinel fleet required a unique partnership integrating commercial industry, military research and development offices, and the Army's organic industrial base. Photo credit: U.S. Army Sustainment Command Media Site



Tooele Army Depot

Tooele partners with U.S. Navy and Alliant Techsystems

Beginning early in 2012, Tooele Army Depot (TEAD), Tooele, UT, began providing storage and surveillance support to the Missile Defense Agency (MDA) and support contractor, Alliant Techsystems (ATK). After two successful years of receiving and storing C4 motors for MDA, the U.S. Navy's C4 Program Manager contacted Tooele requesting additional storage support for Navy assets.

"With our experience in receiving and storing first stage and second stage motors for MDA, we felt prepared to assist the U.S. Navy."

The Naval Surface Warfare Center, Crane (NSWC Crane) proposed that TEAD assist in storage of the first C4 third-stage motor at the Depot. "With our experience in receiving and storing first-stage and second-stage motors for MDA we felt prepared to assist the U.S. Navy," said Jerry Romano, Chief, Shipping and Receiving Division, Tooele Army Depot. "Our motor crew consists of 10 highly trained personnel capable to ship and receive all three stages of the Navy C4 rocket."



TEAD's rocket motor storage has expanded from supporting MDA and ATK to the Navy C4 program. Photo credit: TEAD Public Affairs

NSWC Crane laid out its plan to deliver the motors to TEAD in a Conex type shipping container. The container is referred to as the Heated Orbus Container (HOC) and is used to transport third-stage rocket motors. The HOC contains an externally mounted diesel motor that powers an environmental control unit. The diesel engine is started by an externally mounted 12-volt automotive battery. The HOC has restraint points in the floor for motor retention and contains fork pockets for loading/unloading to/from flatbed trailers.

NSWC Crane initially requested the motors to be stored in the HOC inside a facility to eliminate handling of the motors. Once TEAD/NSWC personnel received the HOC it was de-

termined that the motors cannot be stored in the HOC inside the facility. Upon unloading from the HOC, the motor must be manually maneuvered into the storage facility in short time, or covered with a motor blanket, to avoid motor solar exposure.



TEAD capabilities meet the strict environmental requirements for rocket motor storage. Photo credit: TEAD Public Affairs

Navy requirements for the C4 third-stage motors require limited solar exposure to eliminate any possibility of heating of the propellant due the translucent motor case. Environmentally controlled storage of C4 motors is required at specific temperature and humidity levels. The Tooele team provides monitoring of storage conditions with alerts in the event the facility reaches out of tolerance storage conditioning.

Prior to delivery of live motors, NSWC Crane required Tooele personnel perform the operations using a Pathfinder (inert motor). This would allow both sides to evaluate the operation and come up with recommendations on any requirements to demonstrate all handling procedures. NSWC Crane provided procedures for the unloading/loading of the HOC from/to a flatbed trailer and roll transfer of the motor into/out of the HOC. TEAD personnel incorporated the procedures into their standard operating procedures.

The Pathfinder testing was successfully conducted during early November. TEAD is expected to receive live motors from Orbital ATK, Magna, Utah, in the spring of 2014, once they have performed inspections and system checks. The Navy has received permission to store the third-stage motors in an environmentally controlled ordnance igloo that belongs to MDA.

TEADs shipping and receiving mission will include assisting ATK shipping motors to and from their facilities and also transporting them to facilities such as Dugway Proving Grounds (DPG), Utah, for aging and surveillance testing or delivery test motors to the customer.

By Kathy Anderson, TEAD Public Affairs, 2013



Tobyhanna Army Depot

Tobyhanna lands Gray Eagle Ground Control Station repairs

The Army, Marine Corps, Air Force and Navy have named Tobyhanna Army Depot as the Depot Source of Repair for the Gray Eagle (MQ-1C) Unmanned Aircraft System Ground Control Stations.

The decision by the four services' Maintenance Inter-service Support Management Offices recognizes the depot as the installation best suited for these repairs.

"Through the acquisition process, there is a lot of assessment that takes place, including core logistics analyses that look at our capabilities," said Nick Caprioli, Chief of the Business Development Division. "Tobyhanna was selected based on infrastructure, training and technical expertise for this type of work."

Repairs for the new workload will begin in fiscal year 2016, with 19 Ground Control Stations, or GCSs, scheduled per year, totaling more than 75 systems through fiscal year 2018.

The Gray Eagle system is a long-range, high-altitude Unmanned Aircraft System, or UAS, that provides the capability to perform wide-area reconnaissance, surveillance and target acquisition. It is also capable of relaying communications and can be equipped for attack missions. The system consists of the aircraft, GCS, data terminals and data links. Each GCS controls one Gray Eagle aircraft and is used by the operator to perform command and control, payload control and weapon launch operations.

Due to their complexity, Gray Eagle systems and components are currently replaced rather than repaired, exhausting money and resources. Depot personnel are developing cost-effective solutions to repair GCSs and increase capability. Tobyhanna recognizes that the assignment of this Depot Source of Repair, or DSOR, will enable the depot to be selected for additional DSORs for UAS equipment.



Photo credit: Marty Shelton



Repairs on the Ground Control Stations for Gray Eagle (MQ-1C) Unmanned Aircraft Systems are scheduled to begin at Tobyhanna Army Depot in fiscal year 2016.

Photo credit: TYAD Public Affairs

Katlin Edmunds, business development specialist, noted that revamping the DSOR decision process will also help substantially reduce costs and bring more UAS work to the depot.

"Tobyhanna was selected based on infrastructure, training and technical expertise for this type of work."

"DSOR selection helps ensure effective use of commercial and organic depot maintenance resources," she said. "We have been aggressively trying to streamline processes, find inefficiencies and figure out the best way to accommodate new UAS workloads."

Based on trends in the market, business management analysts anticipate that UAS will be the depot's largest commodity in the future. As the only Army depot involved in the Integrated Product Team, or IPT, for Air Force and Army UAS, Tobyhanna is well positioned to receive workloads for additional UAS component repairs. The IPT is working with Tobyhanna to identify the need for any new test equipment, facilitation or training necessary for additional UAS work.

"Part of the planning process to bring in this workload is to have our engineers work with the program offices to make sure our capabilities are sufficient to provide the best solution for everybody involved," said Caprioli. "The depot's all-hands-on-deck approach to secure this DSOR selection has helped increase our marketability and should open doors for future UAS workloads."

By Justin Eimers, TYAD, 2014



DoD Manufacturing Institutes highlight AMC partnerships

When President Barack Obama spoke to the nation February 25th, 2014 about the next two Department of Defense-led manufacturing institutes, Army Materiel Command leaders were there.

Gen. Dennis L. Via, AMC Commander, as well as RDECOM Director Dale Ormond, and AMC Chief Technology Officer Dr. Grace Bochenek were among the Department of Defense and industry invitees. Also included were Frank Kendall, Under Secretary of Defense for Acquisition, Technology and Logistics; Dr. Ernest Moniz, Secretary of Energy, and Office of Science and Technology Policy Director John P. Holdren.



President Barack Obama delivers remarks announcing two new public-private manufacturing innovation institutes.

Photo credit: U.S. Army Media Site

The two institutes, the Digital Manufacturing and Design Innovation (DMDI) Institute, and the Lightweight and Modern Metals Manufacturing Innovation (LM3I) were lauded during Obama's remarks. "America stands on a new manufacturing frontier, where hi-tech products are designed and tested within a virtual environment. The DMDI will get us there," said President Obama.

AMRDEC, located at Redstone Arsenal, AL, will lead the DMDI. The event served as an announcement of a five-year cooperative agreement for the consortium, to be led by UI Labs in Chicago. While the Lightweight and Modern Metals Manufacturing Innovation is led by the Navy, it has strong linkage with TARDEC and the Department of Energy. The University of Michigan is the lead for that consortium.

During the event, the President spoke about the importance of technological innovation, global competitiveness, and the power of manufacturing. He highlighted the nation's ability to innovate and build, which he called "a key to the U.S.'s future, and a key to our economy."

The newly-announced consortiums are comprised of 40 large and small industry and more than 30 academia, government and community partners. Each partner is focused on reducing the time and cost associated with the development of manufactured products.

"America stands on a new manufacturing frontier, where hi-tech products are designed and tested within a virtual environment. The DMDI will get us there," said President Obama."

"The Army is shaping the future through these new institutes and new approaches to drive innovation," Bochenek said. "These new initiatives bring academia, all levels of industry and the Army together in a unique, collaborative way - it will be through this synergy that new technical advancements will be made and delivered. We clearly are on the ground floor and driving the nation's next generation of technologies and our ability to manufacture them in the United States is key."

Recently published Secretary of Defense and Secretary of the Army goals emphasize the critical nature of science and technology and research and development. "As we look into the future towards 2025 and beyond our Army must maintain its technological advantage, it must maintain its engineering and scientist competencies, and it must strengthen our ability to change technological innovation into Army products and systems," Bochenek said. "AMC is the Army's agent to accomplish this goal. We are turning the crank, building the technical people, the new technologies and new industries."



The Joint Light Tactical Vehicle has been identified by DoD as a candidate for weight reduction utilizing LM3I.

Photo credit: PM Joint Light Tactical Vehicles

"Today demonstrates the Army and AMC's commitment and contribution to building our future ... a future that enables innovation, a future that drives technological advancements, ensuring that our country and our Army maintain technological superiority," she said. "It's our nation's ability to drive American prosperity through technological innovation. It's our ability to take these innovations and turn them into solutions."

By AMC Public Affairs, 2014

Centers of Industrial and Technical Excellence

Anniston Army Depot Anniston, AL



- Combat Vehicles (Wheeled and Tracked)
- Artillery (Self-propelled and Towed)
- Bridging
- Small Caliber Weapons (from 9mm pistol to 120mm mortar)
- Non-tactical generators, locomotives, & rail equipment

Corpus Christi Army Depot Corpus Christi, TX



- Aviation structural airframes and blades
- Advanced composite technologies
- Flight controls & control surfaces
- Aviation engines, transmissions and hydraulic systems including sub-system accessory components
- Armament, electronics, and support equipment (less avionics)

Letterkenny Army Depot Chambersburg, PA



- Mobile Electric Power Generation Equipment
- Air Defense and Tactical Missile Ground Support Equipment (less Missile Guidance and Control)
- Route Clearance Vehicles (RCV)
- Patriot Missile Recertification

Red River Army Depot Texarkana, TX



- Tactical Wheeled Vehicles
- Small Emplacement Excavator
- Bradley Fighting Vehicle Series
- Multiple Launch Rocket System chassis
- Rubber products for sustainment & support of U.S. and Allied forces

Pine Bluff Arsenal Pine Bluff, AR



- Chemical and Biological Defense Equipment

Rock Island Arsenal Joint Manufacturing Technology Center Rock Island, IL



- Mobile Maintenance Systems (MMS)
- Foundry Operations
- Add-on-Armor design, development and prototype fabrication

Sierra Army Depot Hurlong, CA



- Reverse Osmosis Water Purification Units (ROWPUs)
- Petroleum and Water Storage and Distribution Systems

Tobyhanna Army Depot Tobyhanna, PA



- Electronics, Avionics, and Missile Guidance & Control
- Command, Control, Communications, Computers, Intelligence, Surveillance & Reconnaissance (C4ISR)

Tooele Army Depot Tooele, UT



Ammunition Peculiar Equipment (APE)

Watervliet Arsenal Joint Manufacturing Technology Center Watervliet, NY



- Cannon and mortar systems

AMC Industrial Installations



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