AMC TODAY

SUSTAINING THE STRENGTH OF THE NATION

U.S. ARMY MATERIEL COMMAND MAGAZINE

JULY – SEPTEMBER 2015

IN THIS ISSUE:

THE STORY OF THE ARMY'S ORGANIC INDUSTRIAL BASE

VANTAGE POINT

GENERAL DENNIS L. VIA
AMC COMMANDING GENERAL

In communities across the nation sit 23 industrial facilities unassumingly manufacturing, repairing and resetting our military's equipment. With great efficiency achieved after decades – and in some cases, centuries – of operations, these depots, arsenals and ammunition plants comprise the Army's Organic Industrial Base (OIB). I am proud to have these facilities, and the employees who operate them, as part of the Army's Materiel Enterprise; they are national treasures, providing continuous readiness to the joint force, in essence, a national security insurance policy.

"OIB FACILITIES ARE NATIONAL TREASURES..."

While serving as the AMC commander, and previously as a brigade and battalion commander, I have seen first hand the readiness impact the OIB has had on our Army and the joint force, especially during the past decade of supporting two wars and multiple global contingencies. From the maintenance depots that reset helicopters, tanks and trucks, to the manufacturing arsenals that fabricate metals and cannon tubes, to the ammunition plants that produce small- and large-caliber munitions, our Army would not be the world's best-equipped fighting force without the unique capabilities provided by the OIB.

For the past 13 years, the OIB workload has surged in support of overseas operations. During Operation Iraqi Freedom and Operation Enduring Freedom, the OIB reset nearly 3.9 million items, a workload three times that of the Vietnam War. Since 2003, the reset workload constituted $29.5 billion of Army equipment and $5.7 billion of equipment for the U.S. Air Force, U.S. Navy and U.S. Marine Corps.

The years ahead, amidst a force primarily based in the continental United States and operating under protracted budget restrictions, will require the OIB to evolve to maintain relevance and build future readiness while gaining efficiencies. Smaller workloads will require our Army and DOD to invest in the OIB to ensure we maintain these critical and unique industrial capabilities.

The articles that follow tell the remarkable story of the OIB – the history, modernization efforts, operations, and above all, the people. The artisans who keep the lines running are proficiently trained, talented, skilled experts, and many are second and third generation employees. Their patriotism is truly admirable.

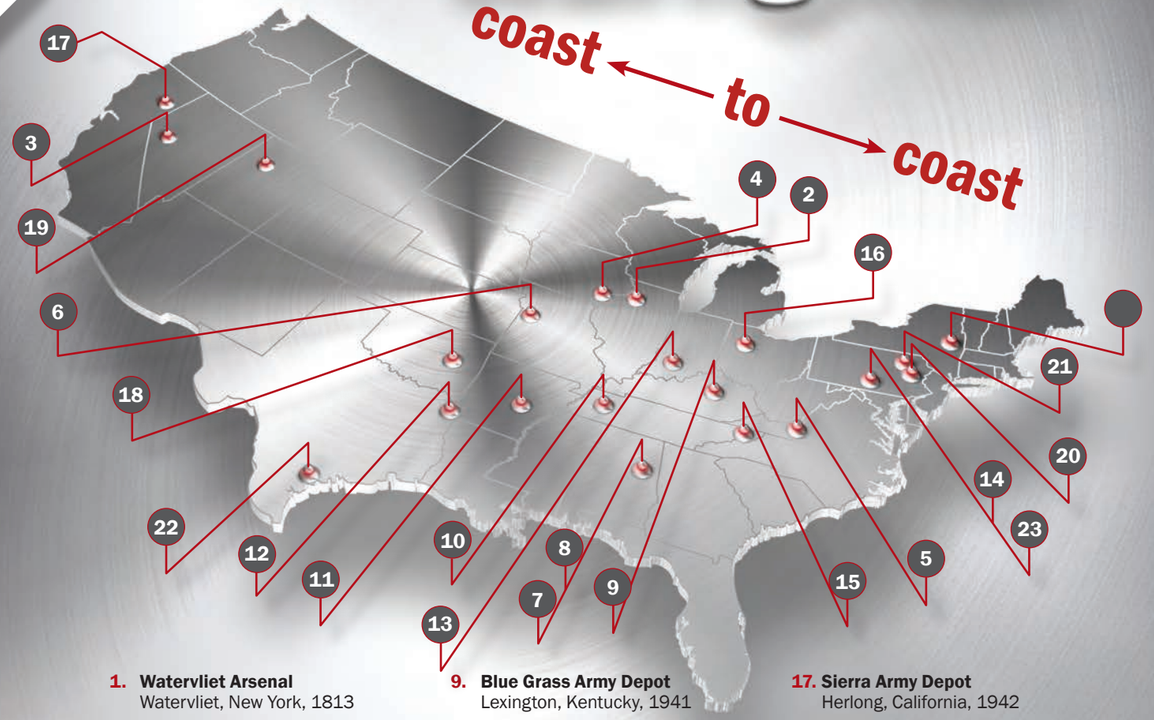
This edition of *AMC Today* will also highlight our important partnerships with industry that help to maintain the OIB. The win-win relationships through Public-Private and Public-Public Partnerships allow us to deliver the equipment our warfighters need, when they need it, at the most affordable price by leveraging the best of what industry and the industrial base has to offer.

As the premier provider of Army and joint readiness, AMC is focused on ensuring our forces always have the combat-ready equipment needed to execute their mission. The OIB is essential in helping us do so. Our Soldiers deserve nothing less.

AMC – Sustaining the Strength of the Nation!

The Army's Organic Industrial Base (OIB) consists of 23 geographically dispersed government ammunition plants, manufacturing arsenals and maintenance depots that provide materiel and equipment readiness to U.S. Soldiers, sailors, airmen and Marines.

Supporting the Warfighter



(SORTED BY DATE OF ESTABLISHMENT)

1. **Watervliet Arsenal**
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2. **Rock Island Arsenal**
   Rock Island, Illinois, 1862
3. **Hawthorne Army Depot**
   Hawthorne, Nevada, 1930
4. **Iowa Army Ammunition Plant**
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11. **Pine Bluff Arsenal**
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    Texarkana, Texas, 1941
13. **Crane Army Ammunition Activity**
    Crane, Indiana, 1941
14. **Letterkenny Army Depot**
    Chambersburg, Pennsylvania, 1941
15. **Holston Army Ammunition Plant**
    Kingsport, Tennessee, 1942
16. **Joint Systems Manufacturing Center**
    Lima, Ohio, 1942
17. **Sierra Army Depot**
    Herlong, California, 1942
18. **McAlester Army Ammunition Plant**
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19. **Tooele Army Depot**
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20. **Tobyhanna Army Depot**
    Tobyhanna, Pennsylvania, 1953
21. **Scranton Army Ammunition Plant**
    Scranton, Pennsylvania, 1953
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    Corpus Christi, Texas, 1961
23. **Letterkenney Munitions Center**
    Chambersburg, Pennsylvania, 1961

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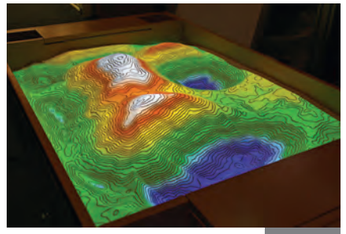
FRONT COVER: Anniston Army Depot employees disassemble M1 Abrams tanks in the Combat Vehicle Repair Facility. The depot is capable of overhauling, repairing or resetting any variant of the M1, to include the Assault Breacher Vehicle and bridging systems supported by the M1 chassis.

BACK COVER: Willie Garrett, a heavy mobile equipment mechanic at Anniston Army Depot, steam cleans combat vehicle tracks in the Nichols Industrial Complex. (U.S. Army photos by Mark Cleghorn)



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AMC TODAY MAGAZINE

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PERSPECTIVES

Featuring this issue's guest columnist

LISHA ADAMS

DEPUTY ASSISTANT SECRETARY OF DEFENSE (MATERIEL READINESS)

IMPORTANCE OF THE ORGANIC INDUSTRIAL BASE AS A NATIONAL DEFENSE ASSET

To protect U.S. national interests and achieve the objectives of the National Security Strategy, the joint force must be successful in missions to counter terrorism, deter and defeat aggression, counter weapons of mass destruction, and defend the homeland. Maintaining readiness and generating combat power across a full range of contingencies is critical to ensuring success in these missions today and in the future. A fully integrated defense industrial base that leverages the competencies, infrastructure and resources of both the public and private sector is essential to our national security.

"A FULLY INTEGRATED DEFENSE INDUSTRIAL BASE THAT LEVERAGES THE COMPETENCIES, INFRASTRUCTURE AND RESOURCES OF BOTH THE PUBLIC AND PRIVATE SECTOR IS ESSENTIAL TO OUR NATIONAL SECURITY."

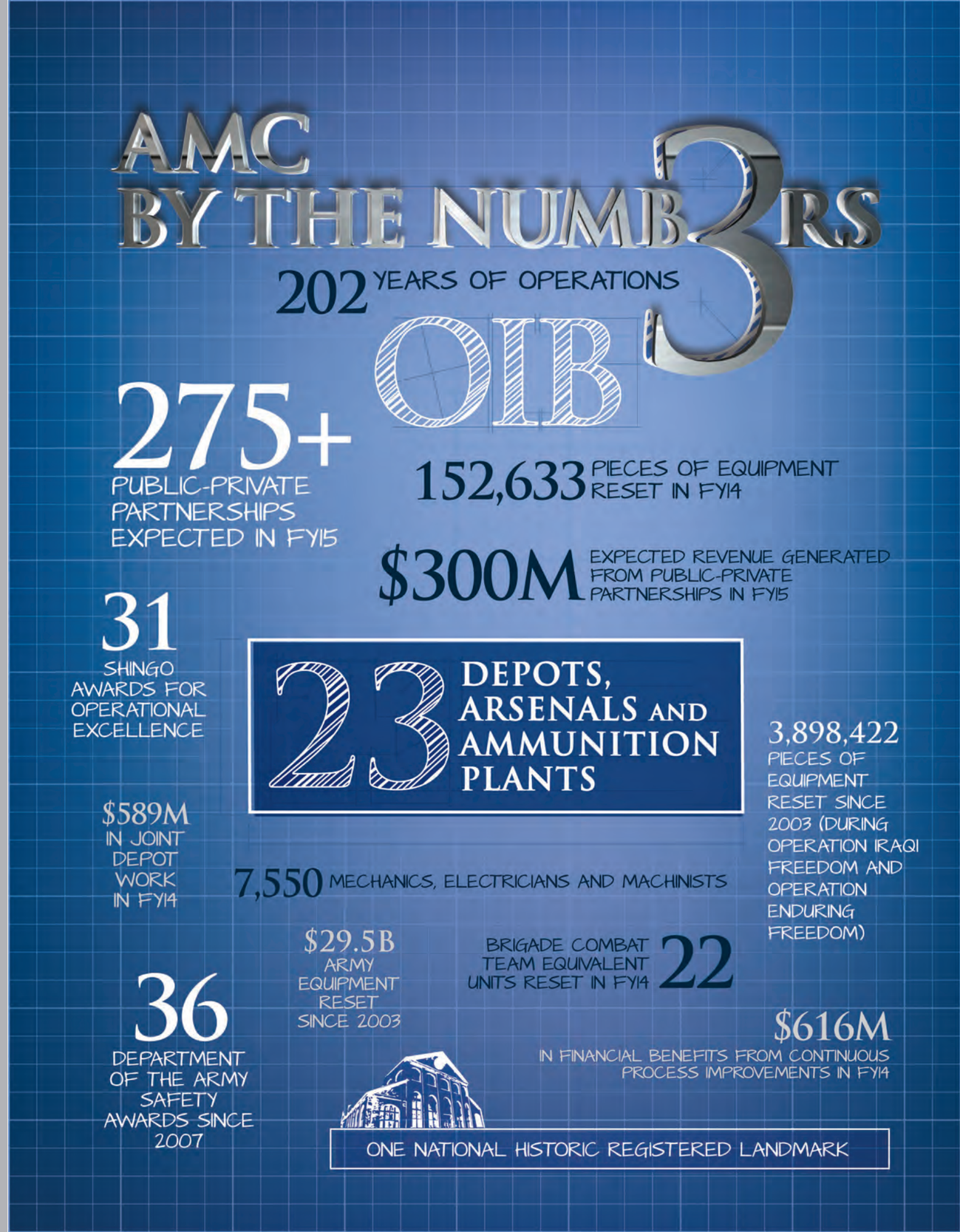
Through statutory and policy framework, the Department of Defense maintains a ready and controlled source of technical competencies and resources in the Organic Industrial Base necessary to ensure an effective and timely response to mobilizations, national defense contingency situations and other sources of emergency requirements.

The Department of the Army's arsenals, depots and ammunition plants offer unique capability to the Department of Defense to fill multiple roles and responsibilities in rapid response to the National Security Strategy. All serve as vital links in the national defense structure, providing manufacturing, maintenance, supply and technical support services for the joint services and our allies.

Arsenals provide manufacturing of artillery systems, combat service support equipment, cannon tubes, mortars, munitions and chemical/biological equipment. Maintenance depots provide major overhaul, or a complete rebuilding of parts, assemblies, subassemblies and end items to provide stocks of serviceable equipment; they also support field maintenance by providing technical assistance or performing maintenance tasks beyond their responsibility. Supply depots provide storage of equipment as well as conventional ammunition and missiles for receipt and issue; load, assembly and packaging of ammunition; and demilitarization. Ammunition plants provide manufacturing of explosives, propellants, small-caliber munitions and projectiles. Across these critical facilities, the Organic Industrial Base plays a key role in keeping our Armed Forces the best-equipped fighting force.

During this time of transition from current war to new and emerging conflicts, and reshaping of the joint force and headquarters, we must maintain our technological superiority. We must continue to field and sustain dominant military capability, a combination of technical and operational effectiveness. Both require that we continue to reduce the cost of doing business and produce quality products at, and in support of, our Organic Industrial Base. Doing this depends on all of our efforts to review processes, control waste and be the best at what we do.

As Chairman of the Joint Chiefs of Staff Gen. Martin Dempsey stated, "The balance between available resources and our security needs has never been more delicate."



The Army's OIB: a National Security Insurance Policy

By Kim Hanson, AMC Public Affairs

For more than 200 years, the U.S. military has relied on a set of unique, highly technical facilities to equip its warfighters. Known as the Army's Organic Industrial Base (OIB), a subset of the larger defense industrial base, these depots, arsenals and ammunition plants manufacture, repair and reset the military's equipment.

Today's OIB, managed by the U.S. Army Materiel Command (AMC), includes 23 geographically dispersed facilities, each specializing in a core competency. Together, they are the centerpiece of Army readiness, said Gen. Dennis L. Via, AMC commanding general.

From small arms, explosives and cannon tubes, to trucks and tanks, the OIB provides depot maintenance work and supply support across all DOD services.

"The OIB builds readiness for our Soldiers and Brigade Combat Teams, provides critical surge capabilities in support of global contingencies, and ultimately ensures our warfighters have the best equipment possible," said Via.

Because much of the work done at the OIB facilities by highly skilled artisans cannot be replicated in the private sector, and because it also provides the Army a unique capability to quickly react to conflicts and contingencies with the necessary equipment when they arise, Via equates the OIB to a "national security insurance policy" for the Army and nation.

"Similar to an insurance policy for your home or automobile, although we may not always need it at the moment," he said, "when we do, we need the OIB to be responsive, dependable and reliable."

While the OIB surged for more than a decade in support of Operation Iraqi Freedom and Operation Enduring Freedom, resetting nearly 4 million items – a workload three times that of the Vietnam War – operations at the facilities are now slowing. The workload needed has declined significantly, and the Army and AMC must determine how to preserve the capabilities to meet future requirements.

"Key to our ability to sustain the force of tomorrow is to preserve the industrial base of today," said Via. "We are continually optimizing our OIB processes, but we must also continue to invest in these facilities to enhance capabilities."

The OIB is funded through the Army Working Capital Fund (AWCF), meaning the costs to operate the facilities are paid by the income brought in by the workload. The challenge is that operational costs are increasing at the same time workload is decreasing, said Eddie Lewis, chief of AWCF at AMC. That leads the OIB to have to increase rates to customers.

"If we can reduce rates, we level the playing field with the private sector's defense industrial base and increase competitiveness of our Army arsenals, depots and ammunition plants," Lewis said. With lower rates, the

A welder in the Anniston Army Depot Combat Vehicle Repair Facility removes the track from an M1 Abrams tank. (U.S. Army photo by Mark Cleghorn)

OIB can attract more business, both through partnerships with the private sector and work from the other military services. All this means the production lines remain warm and ready to ramp up when needed, and the workforce continues to keep their skillsets sharp.

As a means of investment into the insurance policy, AMC has requested that non-mission costs – those related to installation management – be removed from the rate structure and absorbed elsewhere by DOD. Essentially, costs such as fire, emergency services, security and other expenses associated with keeping the installations open but not directly involved in operations, would be funded through an appropriated source. Costs associated with the industrial mission would continue to be funded through AWCF, and without the additional expenses, the OIB could offer lower rates to customers.

This is nothing new to the military; other services' industrial activities are tenants on the bases where they reside, absolving them of those expenses. But the request will mean DOD will have to absorb the additional expense – the cost of maintaining an insurance policy for national security, a small cost given the incredible readiness value the OIB provides, Via explained.

"The Army's OIB is a national security asset, providing a critical capability in delivering readiness, not only to the Army, but to the entire joint force," said Via. "Although we are facing challenging fiscal times, support of these critical and unique industrial facilities must remain a priority."

For now and until the policy changes, AMC continues to explore other means for keeping the OIB workforce gainfully employed and the lines running, said Lewis. The command is making a concerted effort to showcase its abilities to private industry to increase Public-Private and Public-Public Partnerships and draw in new business. Increasing interest from U.S. allies also means increased business through Foreign Military Sales. AMC is also putting Lean Six Sigma practices into effect to streamline and optimize OIB processes.

"The bottom line is that we must retain the critical maintenance and manufacturing skills and capabilities necessary to meet any enduring needs, while providing flexibility for future requirements," said Via. "The Army OIB is a national treasure that we simply cannot afford to lose."

OPPOSITE PAGE (top to bottom): A 155 mm artillery tube enters a heat treatment furnace at Watervliet Arsenal as part of a process called "austenitizing." In this step, the tube is heated to 1,550 degrees Fahrenheit for five hours, quenched rapidly with water for 15 minutes, then sent through a tempering process where the tube is reheated up to 1,070 degrees Fahrenheit for 10 hours. Every artillery and tank tube goes through this process to improve the microstructure and hardness of the steel. (U.S. Army photo by John Snyder)

One of the many artisans at Anniston Army Depot demonstrates his work. The installation has several state-of-the-art operations, including the Small Arms Repair Facility and the Combat Vehicle Repair Facility. (U.S. Army photo)

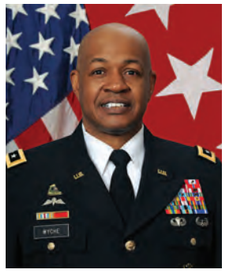
A Mine Resistant Ambush Protected (MRAP) Vehicle sits inside a maintenance facility at Red River Army Depot. The depot is designated by the Secretary of the Army as the Center for Industrial and Technical Excellence for Tactical Wheeled Vehicles including the MRAP, the High Mobility Multipurpose Wheeled Vehicle (HMMWV) and several other vehicles. (U.S. Army photo)

A dockside gantry crane prepares to latch a 20-foot container estimated to be 35,000 pounds each containing various retrograde ammunitions at Jinhae Ammunition Pier. The 19th Expeditionary Sustainment Command and 6th Ordinance Battalion, in coordination with the Republic of Korea Ammunition Support Command, ROK Transcom, Military Surface Deployment and Distribution Command and the 837th Transportation Battalion have conducted two medium ship retrograde operations each year for the last few years. (U.S. Army photo)

U.S. Army photo

"The bottom line is that we must retain the critical maintenance and manufacturing skills and capabilities necessary to meet any enduring needs, while providing flexibility for future requirements," said Via. "The Army OIB is a national treasure that we simply cannot afford to lose."

AMC NEWS & NOTES



1 AMC welcomes new Deputy Commander

Lt. Gen. Larry Wyche officially assumed duties as the U.S. Army Materiel Command (AMC) deputy commanding general April 10. Wyche previously served as AMC's deputy chief of staff for operations and logistics from 2010 to 2012. In 2008, Wyche took command of the Joint Munitions and Lethality Life Cycle Management Command, a major subordinate command of AMC. "He knows our mission; he knows our workforce and he knows our customer – the Soldier," said Gen. Dennis L. Via, AMC commanding general. "He is certainly the right person at the right time to keep AMC moving in the right direction." As the deputy commanding general, Wyche will be responsible for the day-to-day operations of the command including the Organic Industrial Base, Logistics Readiness Centers and major subordinate commands.

AMC's Chief Technology Officer announced

Patrick O'Neill was officially named AMC's chief technology officer (CTO) in March. As the CTO, O'Neill leads all aspects of AMC's Science and Technology (S&T) development and sets the S&T strategic direction for a full range of sophisticated weapons systems and cutting-edge technology. The CTO provides AMC with a "synchronization agent" for research, technology development, innovation and integration. O'Neill served as acting CTO since September 2014. "While serving in the position, Mr. O'Neill brought a visionary and collaborative approach to the Science and Technology enterprise," said John Nerger, then AMC's executive deputy to the commanding general. "His leadership and vision for AMC's S&T development is crucial to the command."

3 AMC's Director for Logistics Integration announced

Kevin Bostick was named chief of the Logistics Integration Division within the U.S. AMC G-3/4 Operations and Logistics, March 20. Bostick, who transitioned from his previous role as acting deputy G-4, U.S. Army Forces Command, officially joined the ranks of the Senior Executive Service at a ceremony in April. In his new role, Bostick is responsible for sustaining the joint warfighter through command and control of supply chain management, depot and National Maintenance Program operations, asset management and distribution, reset, and ammunition/chemical stockpile management. "We look forward to Mr. Bostick's leadership and vast experience in support of our warfighters," said John Nerger, then AMC's executive deputy to the commanding general. "He is a welcome addition to the AMC team."

4 SDDC celebrates 50 years

AMC's Military Surface Deployment and Distribution Command (SDDC), headquartered at Scott Air Force Base, Illinois, celebrated its 50th anniversary Feb. 15. The "Celebrating our Heritage" and Awards Luncheon brought more than 300 members of the SDDC workforce together to celebrate the organization's history and present awards to members of the command for exceptional performance. "Knowing where we've been as an organization helps us better understand who we are and how, as a team, we will take SDDC into the future," said SDDC Commanding General Maj. Gen. Susan A. Davidson. "While we're honoring past contributions, I think it's only fitting to also honor current team members who are excelling and helping to continue SDDC's legacy of moving the force." As part of the event, Davidson, with SDDC's senior enlisted advisor, Command Sgt. Maj. Kevin McKeller, and guest speaker William Lucas, former and first SDDC deputy to the commander, presented a combined total of 47 Global Deployment and Distribution Excellence Awards to teams and individuals for outstanding service and contributions to SDDC's mission.

5 USASAC celebrates 50 years

AMC's U.S. Army Security Assistance Command (USASAC), headquartered at Redstone Arsenal, Alabama, celebrated its 50th anniversary July 21. The organization, which has gone through several reorganizations since its creation in 1965, is known as the "Army's face to the world," serving as the primary entry point for U.S. Army materiel- and service-related Foreign Military Sales requirements. USASAC provides materiel, training, education and other services to help U.S. allies strengthen their defensive capabilities, deter aggression, achieve regional stability and promote democratic values.

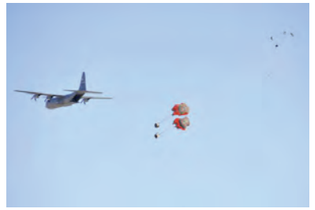
"For five decades, Soldiers and civilians of USASAC have worked together to bolster U.S. foreign policy by carrying out its security assistance mission throughout the world," said Maj. Gen. Mark McDonald, USASAC commanding general. "What the more than 800 personnel of this organization do every day – at Redstone Arsenal; Fort Bragg, North Carolina; New Cumberland, Pennsylvania; and Saudi Arabia, residing in and partnering with 450 countries and international organizations worldwide – is something we're all proud of."

6 Eight AMC employees recognized as top black engineers

The Black Engineer of the Year Awards Science, Technology, Engineering and Math (BEYA STEM) recognized eight AMC employees as some of the top black engineers in the country during their annual Global Competitiveness Conference in February. The conference is the largest gathering of STEM professionals and leaders committed to increasing the percentage of people from historically underrepresented communities in the technology workforce. The award recipients represented two of AMC's major subordinate commands; seven awardees work with the U.S. Army Research, Development and Engineering Command and one with the Joint Munitions Command. They were honored in a range of categories that included technical accomplishments and commitment to community educational outreach.

7 Natick team wins defense award

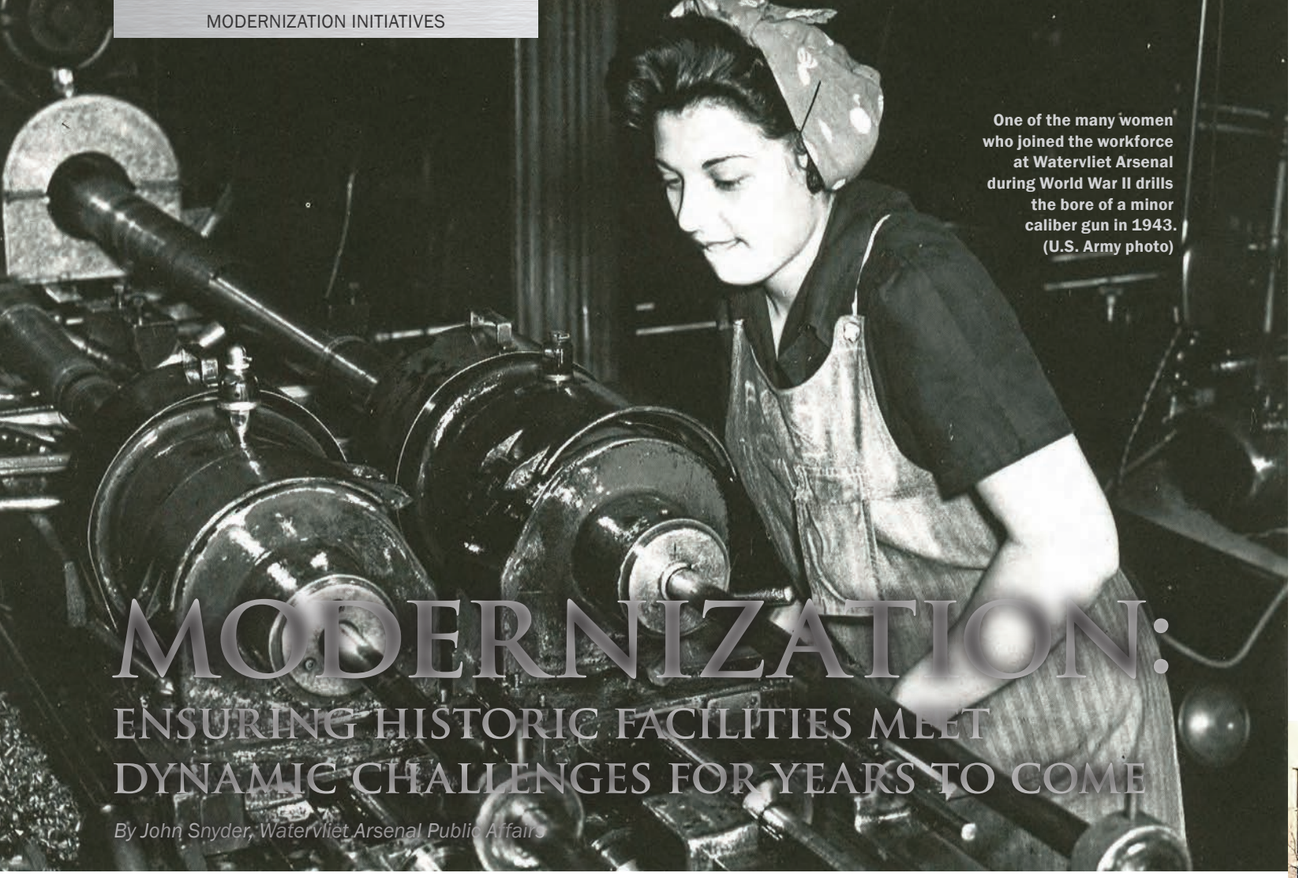
The High Speed Container Delivery System Joint Capability Technology Demonstration (HSCDS JCTD) team was chosen by the Office of the Secretary of Defense for the 2014 JCTD Team of the Year award. The JCTD Program encourages joint service efforts to effectively and efficiently meet the needs of the joint warfighter. Mike Henry, research aerospace engineer in the Aerial Delivery Directorate at the Natick Soldier Research, Development and Engineering Center, was the HSCDS JCTD team technical manager. "Airdrop, by nature, is a joint effort, and HSCDS is no different," Henry said. "U.S. Transportation Command and U.S. Air Force Air Mobility Command work closely together to support the airdrop mission. While the Air Force executes most of the airdrops, it is common for the Army to be the recipient on the ground and can be viewed as the end user." The new system is more efficient at faster aircraft speeds and lower aircraft altitudes than standard airdrop and enhances the safety of ground forces. "By flying faster, the aircrew is exposed to the ground threat for less time, the aircraft is more maneuverable, and it has a greater rate of climb to fly out of terrain, enabling access to more drop zones and reducing the need for ground convoys."



8 New cleaner, lubricant and preservative formula recognized

An Army team from the Armament Research, Development and Engineering Center (ARDEC) received a 2014 Outstanding Achievement Award from the Defense Standardization Program Office for determining that a bio-based material could be used in formulating a cleaner, lubricant and preservative used for weapons and weapons systems. The formulation change was made in an amendment to Military Performance Specification: Lubricant, Cleaner and Preservative for Weapons and Weapons Systems. Requiring this less-toxic formulation did not compromise any performance requirements identified in the specification, officials said. Members of the ARDEC team include Mark Napolitano, Daniel Prillaman and Richard Wu.

(U.S. Army photos)



One of the many women who joined the workforce at Watervliet Arsenal during World War II drills the bore of a minor caliber gun in 1943. (U.S. Army photo)

MODERNIZATION:

ENSURING HISTORIC FACILITIES MEET DYNAMIC CHALLENGES FOR YEARS TO COME

By John Snyder, Watervliet Arsenal Public Affairs

The year was 1813. "Uncle Sam" was first used to refer to the United States, and Congress authorized the use of steamboats to transport mail. The first federal vaccination legislation was enacted. Rubber was patented. On the surface, it seemed like a good year.

However, among those bits of good news was something more troubling; the U.S. was fighting for its very existence in its second war with Britain.

In upstate New York, the village of Troy along the Hudson River was a hub of militia activity. Although it was not a large community during the War of 1812 with about 550 dwellings, Troy was rich with manufacturing artisans who worked in the village's cotton factory, paper mill, firearms factory, and popular for that time period, a distillery.

In 1813, these skilled artisans crossed the Hudson and began to put in place the first bricks and mortar of a future Army arsenal. Factory workers from Troy began working side-by-side with ordnance Soldiers to manufacture critical war items before all the buildings were completed on 12 acres of land purchased for $2,585 – about $31,000 in today's dollars. This site near the meeting place of the Hudson and Mohawk Rivers would eventually become known as the Watervliet Arsenal.

In the beginning, the arsenal's mission was to produce ammunition and small articles of equipment for the Army. Most of the work was performed by enlisted men. Civilian workers were typically hired by the day, week or month, at a rate of $9 a month. Although women have continuously remained a part of the workforce since 1813, children in the early days of the arsenal sweated in the workshops, too. In fact, nearly 300 children were employed at the arsenal during the American Civil War.

Despite the austere conditions of the young arsenal, the workforce stayed day and night to get critical ammunition and supplies packed for Soldiers. When the Capitol was burned, arsenal products were quickly shipped to help repel the British. And when Maj. Gen. Andrew Jackson, who later became the seventh President of the United States, defeated a British invasion in New Orleans on Jan. 8, 1815, the arsenal products were there that infamous day.

CHALLENGES AND GROWTH

After the War of 1812, the arsenal faced severe financial challenges. During the first postwar years, Congress did not appropriate funds for maintenance and operations, and closure was considered. Then arsenal commander, Maj. James Dalliba, who himself had not been paid in over two years, funded the arsenal's operations by purchasing materials on credit.

But the arsenal survived, as it would after every major military conflict, due to visionary leaders and a professional workforce who sought ways to leverage the arsenal's capabilities for other missions. Today, the Army calls this process transformation. A major part of this transformation has been the use of technology to improve manufacturing processes.

RIGHT: The Big Gun Shop at the Watervliet Arsenal in New York has been the site of large-caliber weapon production for more than 100 years and remains in use today.

BELOW: A 16-inch gun is ready for shipment from Watervliet Arsenal, New York, in 1902. (U.S. Army photos)

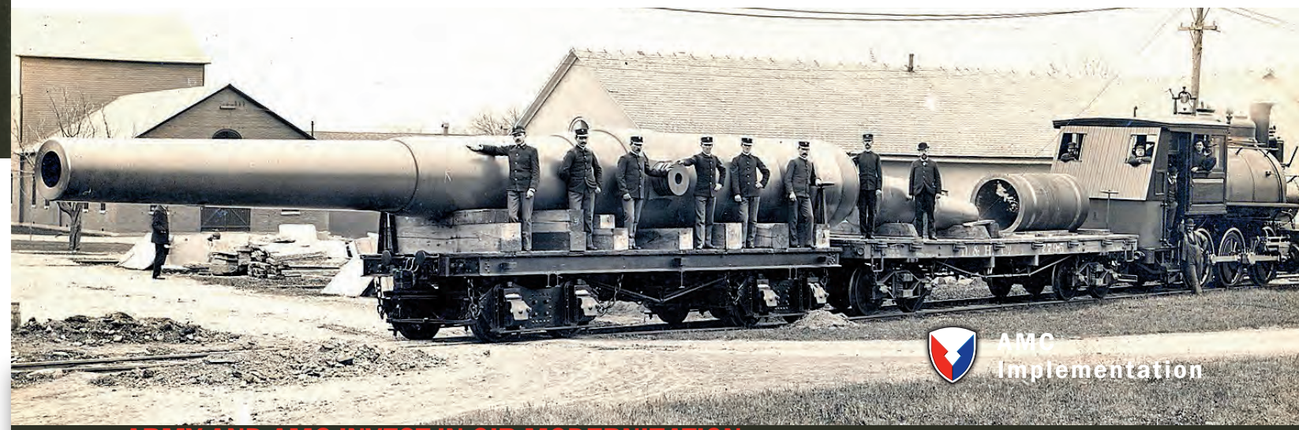
Seventy years after the arsenal's first products were in use, it gained national prominence as the Army's first large-caliber cannon manufacturer in the late 1880s. During this period, production moved from the manufacturing of saddles and gun carriages to cannons.

Present day operations recall remnants of this time through the continued use of historic Building 110, "The Big Gun Shop," for manufacturing missions. This gun shop once produced 16-inch guns for the U.S. Navy's battleships.

NBC correspondent and former TV anchor Tom Brokaw defined the American way of life during World War II as the "Greatest Generation." In many ways, that period in American history was also the greatest generation for the Watervliet Arsenal. Personnel numbers peaked near 9,300 during World War II, as the workforce manufactured more than 23,000 cannons from the day of the attack on Pearl Harbor to the Normandy Invasion in June 1944 with an on-time delivery rate exceeding 99 percent.

CONTINUING A PROUD TRADITION

Since the Battle of New Orleans in 1814, arsenal products have supported U.S. troops at every military conflict and location, including: the landing of Vera Cruz; the hills of Gettysburg and San Juan Hill; the Battles of the Marne



ARMY AND AMC INVEST IN OIB MODERNIZATION

The Army Organic Industrial Base (OIB) has a rich history spanning more than two centuries in support of the nation's defense. The U.S. Army Materiel Command (AMC) operates today's OIB, with infrastructure worth more than $30 billion.

While these 23 depots, arsenals and ammunition plants manufacture, reset and store the state of the art equipment that ensures the U.S. Army remains the best equipped fighting force, more than 60 percent of the facilities were constructed in the World War II era or earlier.

To combat the aging facilities and ensure they support modern industrial processes, AMC is investing heavily in the OIB. However, additional work is necessary, said R.J. Sollohub, facilities division, AMC G 3/4. Capital investments are needed in both OIB facilities and the industrial tools and equipment they house.

Since Fiscal Year 2005, AMC has invested more than $2 billion in the OIB between Military Construction, Army (MCA) and Capital Investment Program (CIP) projects. MCA projects, accounting for around $500 million, encompass requirements from production related facilities at the hard iron depots to infrastructure for ammunition out load at munitions storage depots. CIP projects, accounting for around $1.5 billion, represent investments by the OIB back into their operations and production lines. CIP investments have led to modernized equipment, automation and facilities.

The Army and AMC will continue to invest in the OIB to preserve critical capabilities and maintain the Army's technological advantage, Sollohub said.

Since the late 1800s, the Watervliet Arsenal has been the Army's manufacturer of large-caliber guns. Two of the most recent and most important product lines are the manufacturing of the 120 mm tube for Abrams Tanks and the 155 mm tube for the artillery. (U.S. Army photo)

and the Bulge; the frozen Korean tundra; the jungles of Vietnam; and Grenada, Panama, Iraq and Afghanistan.

Modern day military operations look very different from those of days past at Watervliet. In the 10 years after the first Gulf War ended, the U.S. Army downsized from around 780,000 to less than 500,000 Soldiers. The arsenal workforce fell from approximately 2,000 to about 500 by 2002 where it remains today.

While much has changed at the arsenal since 1813, one constant has withstood the test of time, said Col. Lee H. Schiller Jr., Watervliet Arsenal commander. "There is a tremendous sense of pride by those who work at the arsenal that the work they do has helped hundreds of thousands of U.S. Service members to come home safely since the War of 1812."

LOOKING TO THE FUTURE

Today, Watervliet is also home to over 225 employees of the U.S. Army's Benét Laboratories, a U.S. Army research, development and engineering facility that is part of the Weapons and Software Engineering Center (WSEC) within the Armament Research, Development and Engineering Center (ARDEC).

"Although we were organized with the official Benét Labs name on May 9, 1962, we have actually been providing weapons research, design and development for our military since 1887 as a division of the Watervliet Arsenal," said Lee Bennett, director of Benét Labs. "When the arsenal began cannon production in the 1880s, we were there to help design the first 12-inch and 16-inch guns."

Since 1962, Benét has grown from a mostly one-dimensional research and design facility to an organization that provides a full spectrum of software and engineering design and support for a diverse Army.

"We still design large-caliber weapon systems because that is our core mission, but we also develop such products as Tank Crewmen Cooling Kits and 3-D medical modeling for military and civilian application," Bennett said.

Above all else, Bennett said his team loves a challenge. The multiskilled workforce adjusts as needed to provide technologies for the next generation of weapon systems, new machining technologies for current production and around-the-clock support for existing fielded systems.

"The Watervliet Arsenal heavily relies on Benét Laboratories to conduct research, design and prototype development," said Schiller. "The unique synergy achieved by having a world-class weapons research and design facility within a five-minute walk from those who will manufacture a product is unequaled anywhere in the Department of Defense. This synergy has, in the last year, brought us tens of thousands of direct labor hours manufacturing such items as an improved 105 mm breech to chrome plating 155 mm howitzer tubes."

Today's arsenal is relied upon by U.S. and foreign militaries to produce the most advanced, high-tech, high-powered weaponry for tank, howitzer and mortar systems. It is also the only domestic manufacturer for U.S. Army large-caliber breeches and gun tubes. This National Historic Registered Landmark has an annual economic benefit to the local community in excess of $100 million.

Out of necessity to blunt the British invasion, a small arsenal of highly skilled labor remains standing 200 years later. The arsenal remains the oldest, continuously active arsenal in the United States.

The Watervliet Arsenal, a subordinate organization of the U.S. Army Tank-automotive and Armaments Command (TACOM), is a co-location of arsenal manufacturing and Benét Labs offering military or private industry a one-stop shop for research, design, prototype development and full-service manufacturing support. TACOM, a major subordinate of the U.S. Army Materiel Command, generates, provides and sustains mobility, lethality and survivability for Soldiers and other branches of the U.S. Armed Forces.

OPERATION UPGRADE:

HOW TOBYHANNA IS PUTTING ARMY QUALITY WORK ENVIRONMENT INITIATIVES INTO ACTION

By Anthony Ricchiazzi, Tobyhanna Army Depot Public Affairs

Technician Joe Decindio conducts a final inspection of mechanical build up and wave guide installation on an AN/TPS-75 air surveillance antenna under the bright light of new LED fixtures at Tobyhanna Army Depot. New lights promise to save more than $400,000 in energy and maintenance costs over the next 15 years. (U.S. Army photo by Steve Grzezdzinski)

Tobyhanna Army Depot, DOD's premier full-service maintenance facility for Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Systems, is undergoing a massive, multiyear effort to modernize facilities. The $102 million investment includes everything from replacing thousands of lights to updating nearly 200,000 square feet of industrial and engineering space in the heart of the electronics maintenance complex.

Tobyhanna consistently looks at ways to modernize and update infrastructure to ensure the installation will remain a world-class facility, ready to handle workload requirements for the future. This effort, called Quality Work Environment (QWE), is part of an Army-wide initiative.

"The Army staff was concerned that the infrastructure of Army installations needed upgrading to allow maximum productivity," said Russ Dunkelberger, chief of the Environmental, Safety and Occupational Health Branch at Tobyhanna. "They directed a number of actions to review and update infrastructure standards. This is what later turned into QWE."

QWE includes factors that can improve the ability of a worker to accomplish the mission: facility, safety, health, workplace arrangements, comfort and improved productivity.

LEFT: Tobyhanna is undergoing a massive, multiyear effort to upgrade facilities. The $102 million investment includes everything from replacing thousands of lights to updating nearly 200,000 square feet of industrial and engineering space in the heart of the electronics maintenance complex. (U.S. Army photo by Steve Grzezdzinski)

OPPOSITE PAGE:
1. Employees make progress during the demolition phase of the modernization effort at Tobyhanna Army Depot. The effort is part of an Army-wide Quality Work Environment modernization effort.

2. Electrician John Boylan checks a new power panel in Building 16. The building is one of several at Tobyhanna Army Depot undergoing modernization that will exceed safety codes and standards.

3. A team begins the demolition process in the main communications-electronics repair and testing building at Tobyhanna Army Depot.

4. Mike McDade, a public works technician, adjusts new cable in a nearly-finished building at Tobyhanna Army Depot. The building was modernized to provide safer and more efficient accommodations for emergency personnel. (U.S. Army photos)

Tobyhanna employees worked with personnel from several U.S. Army organizations, including the Army Communications-Electronics Research, Development and Engineering Center; Army Armament Research, Development and Engineering Center; and Army Public Health Command, to determine the need in terms of structural, safety and health standards. Several buildings and associated structures were identified as needing improvement during the process.

Upgrades include building interiors and exteriors, docks and loading ramps, heating, ventilation and air conditioning (HVAC) systems, and electrical systems.

"These efforts are depot-wide, aimed at increasing productivity by improving the work environment. When all the projects are done, Tobyhanna Army Depot will be safer, more efficient and more comfortable for the thousands of employees who work here," said Mechanical Engineer John Lyman, Tobyhanna Installation Services Directorate.

The biggest piece of the modernization is the $44 million upgrade to the Electronics Maintenance and Operations Facility, the center of productivity for electronics workers, planners, production controllers, quality improvement specialists and engineers. It plays a key role in maintaining electronics for the entire Department of Defense.

The facility, built in 1952, was updated in 1982 with an environmentally controlled electronics enclosure on the ground floor and a 59,845 square foot mezzanine built above it for work planners and engineers. HVAC was added to the enclosure and the original administration areas at the time. Since then, only sustainment and maintenance work has been performed.

"The interior has never had a renovation," Lyman said. "The foundation and walls are in great condition, but there are issues in some building systems, components and finishes that typically occur in facilities of this type."

The five-year project will include telecommunications, plumbing, heating and air conditioning systems with support facilities that include uninterruptible power supplies for critical test equipment, emergency generators, information systems and anti-terrorism measures. It also incorporates improved processing/testing equipment needed to modernize operations.

"The project will be phased over the five years to accommodate workable strategic repair and maintenance schedules to keep the electronics mission efficient and seamless as repair of the facility progresses," said Industrial Engineer Ray Watkins, Installation Services Directorate.

The long-term project is designed to sustain current workload, improve capabilities, and increase test speed and efficiency. Once completed, it will provide a productivity improvement benefit estimated at $4 million annually.

"When completed, this project will exceed current safety codes and standards for facility shops, labs and administrative offices," Dunkelberger said.

Another major project is modernizing the installation fire station, which the QWE team identified as having high maintenance costs and needing improvement.

"Upgrading the station will eliminate inadequate sleeping quarters and lighting," Dunkelberger said. "The facility, while still able to ensure fire and safety protection, does not meet quality of life standards and impacts the morale of our fire protection personnel."

In addition to the bunkroom, the aging roof and dayroom will be replaced. The HVAC system will be replaced with an energy efficient system, reducing energy costs. The modernization will further reduce response time on the installation and, in light of mutual aid agreements, to nearby communities.

"The renovated fire station will allow an even faster response to fires, accidents, and environmental, chemical and biological emergencies while reducing costs," Dunkelberger said. As an added benefit of keeping them out of adverse weather conditions, the service life of emergency vehicles and equipment will be extended.

Dunkelberger said that although most of the modernization work underway will be done in three years, QWE is a continuous process for keeping Tobyhanna and other Army installations ahead of the curve in safety, efficiency and employee comfort.

Tobyhanna Army Depot designs, manufactures, maintains, repairs and overhauls dozens of electronic systems across the Department of Defense and is a recognized leader in providing logistics support for Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Systems. The depot is a subordinate organization of the Communications-Electronics Life Cycle Management Command (CECOM), a major subordinate command of the U.S. Army Materiel Command.

AMC Implementation

RONMENT INITIATIVES SPAN ACROSS AMC

The U.S. Army Materiel Command (AMC) is committed to providing a safe, modern environment for employees across the organization, including the 23 depots, arsenals and ammunition plants that comprise the OIB, said AMC Safety Engineer Kristina McCarthy Martin.

Through a robust and concerted Quality Work Envi ronment (QWE) initiative, AMC has invested time and resources in the OIB to modernize facilities and ensure the workforce has the best possible area to work in.

AMC invested more than $541 million in the OIB between Fiscal Years 2013 and 2015 for QWE improve ments. These projects include upgrades to HVAC, lighting and mass notification systems.

AMC has also conducted QWE assessments across the OIB. Teams of professionals assessed facility structures, safety hazards, health concerns and more. From industrial hygienists to facility engineers, the teams provided feedback on improvements to everything spanning comfort and ease for the workforce to building structures and ventilation.

AMC plans to expand the QWE efforts that have been successful across the OIB to Logistics Readiness Centers and Research, Development and Engineering Centers in FY16 and FY17, McCarthy Martin said.

Eric Andreas overlooks work done on an Apache at Corpus Christi Army Depot. (U.S. Army photo by Ervey Martinez)

CCAD REALIZES COST SAVINGS FROM LEAN SIX SIGMA IMPLEMENTATION

By CCAD Public Affairs

At Corpus Christi Army Depot (CCAD), the world's largest helicopter repair facility, Lean Six Sigma (LSS) is more than a just another program; its Continuous Process Improvement (CPI) principles are interwoven into the very DNA of the depot. For an Army Working Capital Fund organization, finding innovative ways to save time and money is an essential part of doing business – from simple ways to best use resources in everyday operations to significant cost savings on large-scale multimillion dollar projects.

CCAD must carefully manage assets, materiel, tools and labor to execute more than 640 simultaneous programs in order to meet scheduled commitments with its customers. Controlling expenditures is critical to keeping labor rates as low as possible for consumers of the depot's components and aircraft services.

To tackle this formidable task, CCAD leverages program managers and operations professionals in business and finance alongside a team of experts from the U.S. Army Aviation and Missile Command Aviation Logistics Center to focus on cost avoidance and audit readiness. LSS is the key enabler in maintaining the lowest labor rate possible, providing the tools, training and approach necessary to streamline processes and fully embed CPI in the organizational culture.

Over the past five years, the success of CCAD's CPI program is self-evident. CCAD has achieved around $335 million in cost avoidance and continues to leverage LSS to refine processes and eliminate waste. In Fiscal Year 2014, CCAD exceeded its CPI financial target of $36 million by $12.8 million, a result of several major projects led by depot employees.

Cesar Garcia, a LSS Yellow Belt and program manager on UH-60 Black Hawk recapitalization, significantly reduced materiel and labor costs associated with OH-58 Kiowa crash damage repairs by re-utilizing an available (no-cost) fuselage from a divested program. His project not only ***reduced labor hours by 96 percent, from 7,527 to 304, but also achieved a 100 percent cost avoidance by averting the purchase of a $6 million aircraft cabin.***

By addressing sizeable revenue losses associated with poorly processed Product Quality Deficiency Report (PQDR) materials, Pamela Janek, PQDR Cell team lead and LSS Green Belt, ***generated a cost avoidance of $888,000 in 2014 and $7.1 million over a 3-year period.*** Her team analyzed root causes contributing to poorly processed material, took corrective actions and developed standard operating procedures, clearly defining roles and responsibilities for processing PQDRs for financial credit.

Joel Torres, a Non-Destructive Test (NDT) tester and LSS Green Belt, ***eliminated production bottlenecks by reducing the time required for NDT Magnetic Particle/Fluorescent Penetrate Inspections from 16 days to one, a 94 percent reduction in process lead-time.*** His project identified and removed five steps deemed "non-value added" in the inspection process and allowed for the removal of rework needed to apply, and later remove, parts preservation coatings. Improving the lines of communication between engine cleaning and component NDT testing facilitated more effective management and scheduling, and prevented over-processing. Torres' project ***will save the depot an estimated $8.3 million over three years.***

For FY15, CCAD aimed for $32 million CPI cost avoidance and is on track to meet – and possibly once again exceed – that goal. As of March 2015, CCAD artisans and CPI professionals have joined forces to complete significant cost avoidance projects with notable achievements.

The bulk of CCAD production involves UH-60 Black Hawk recapitalization, a program that touches almost every process at the depot. LSS Yellow Belt Rodrick Dunham, an Aviation Intermediate Maintenance Pave Hawk work leader at the HH-60 Crash Damage Division, introduced a project to repair UH-60 Black Hawk landing gear wheels. Repairing the wheel halves instead of purchasing new units ***reduced costs over 64 percent per main wheel, resulting in a total cost reduction of $1.1 million over two years.*** Reducing costs and time on this key program ensures CCAD remains a U.S. Army Center of Excellence for rotary wing aircraft maintenance, repair and overhaul operations.

For AH-64 programs, developing innovative methods of reducing Apache component costs is crucial to the depot. Matthew Lapointe, a composite fabricator and LSS Yellow Belt, focused his efforts on a project to purchase AH-64 Apache main rotor head pitch housing shims rather than manufacturing them locally. The rotor head pitch housing requires 100 percent replacement of shims during the composite repair process. The cost to manufacture a single shim locally is $611.71, while the same newly manufactured part costs only $8.16. Purchasing shims ***resulted in a 99 percent cost reduction, a savings of over $1.4 million over three years.***

The exponential power of CPI through leveraging CCAD Public-Private Partnerships is evident through cooperative projects. Collaborating with U.S. Army Aviation and Missile Research, Development and Engineering Center (AMRDEC) Aviation Engineering Directorate (AED) and Boeing Aerospace, CCAD achieved over $7 million in cost avoidance.

Equipment Specialist Eric Andreas, a LSS Yellow Belt at the Administration and Management Office, worked one such partnership-endorsed repair process with AMRDEC and Boeing to implement a cost-saving alternate repair process on the AH-64 Apache. This CPI collaboration with CCAD external partners ***reduced process lead-time by 81 percent and labor by 89 percent for the AH-64 Apache, resulting in a projected cost avoidance of more than $6.9 million over three years.***

AMC Implementation

CONTINUOUS PROCESS IMPROVEMENT STREAMLINES OIB OPERATIONS

The U.S. Army Materiel Command (AMC) is capitalizing on continuous process improvements across the Organic Industrial Base. Through two primary tools – Lean Six Sigma and Value Engineering – AMC is increasing efficiency and effectiveness at its 23 depots, arsenals and ammunition plants, said Susan Cole, director of the Continuous Process Improvement (CPI) Division at AMC.

Lean Six Sigma is a process-focused methodology that relies on a collaborative environment to systematically remove waste in the system, streamline operations and improve quality. Value Engineering is a method to improve the value of products and services by improving the function and reducing total cost of ownership.

The Lean Six Sigma and Value Engineering tools yield financial benefits through cost savings and cost avoidance, ultimately resulting in reduced depot/arsenal rates and improved equipment readiness, said Cole. Since Fiscal Year 2010, AMC has realized around $6.5 billion in financial benefits through these tools. Examples include a $29.8 million benefit at McAlester Army Ammunition Plant on Armor Piercing Round rework and a $30.6 million benefit from Antenna Base reutilization at Tobyhanna Army Depot.

AMC has also been recognized with numerous CPI awards, including three Lean Six Sigma and eight Value Engineering awards in 2013. AMC depots and arsenals have amassed 31 Shingo Medallion awards and hold 18 Quality International Organization for Standardization (ISO) Certifications across the command.

"We have to get better at getting better. A CPI deployment strategy keeps you grounded and ensures you are focused on the right things, enabling you to get the results needed to drive efficiency and quality across the industrial base," said Lt. Gen. Larry Wyche, AMC's deputy commanding general. "Through the application of CPI tools, we can achieve exceptional results."

LEFT: Rodrick Dunham, an aircraft mechanic and a five-year CCAD artisan, reviews paperwork and equipment on an Apache. RIGHT: Matthew Lapointe, a composite fabricator and a six-year CCAD artisan, works on an AH-64 Apache rotor head. The men and women of CCAD use the process improvement principles of Lean Six Sigma to find innovative ways to save time and money across the organization. (U.S. Army photos by Ervey Martinez)

In August 2014, an MH-47 Chinook from the 160th Special Operations Aviation Regiment (Airborne) arrived at CCAD for crash damage repair stemming from a blade strike during training. The standard repair process would include Plastic Media Blasting (PMB) of the entire aircraft in preparation for inspection and repair. The MH-47 belly did not receive damage and, as such, did not require media blasting. Additionally, the belly on this aircraft contained specialized composite beams that if damaged during any aspect of the repair would result in exorbitant repair costs. LSS Yellow Belt Clarence Dean, Structures Branch chief, and LSS Yellow Belt Solomon Lopez, Production Control work lead, worked in tandem with AMRDEC and Boeing to develop a specific process to strip only damaged areas of structure, excluding any PMB on the belly. Leveraging their combined efforts, the team developed a specific stripping process to include only damaged areas of the aircraft. The localized PMB process of the aircraft resulted in cost avoidance in labor hours for the PMB process itself, as well as the additional hours not required to secure and protect the integrity of the specialized composite beams. This project ***resulted in a cost avoidance of $182,000 and, more importantly, significantly contributed to an accelerated repair timeline.*** As a direct consequence of this synergy, CCAD met the customer's requirement to have the aircraft returned back into service as quickly as possible at considerable cost savings.

Delivering readiness to U.S. Army rotary wing aviation now and for Force 2025 and beyond requires implementing continuous process improvements every day. Embracing and integrating shop floor automation into CCAD operations is critical to improving program management, performance efficiency and quality control for supported units and Soldiers. CCAD will continue to pursue new technology to develop the workforce in advanced skills needed in the future and invest in new tools, processes and test equipment that will minimize costs and production time. Reducing costs while maintaining quality and schedule is why CCAD's tag line remains, "Better, Faster and Cost Effective."

Corpus Christi Army Depot, a Department of Defense Center of Industrial and Technical Excellence for rotary wing aircraft, is a principal location of the U.S. Army Aviation and Missile Command (AMCOM). AMCOM and its subordinate organizations provide engineering, logistics and acquisition support to the product life cycle management efforts of 16 aviation and missile project managers. As a subordinate command to the U.S. Army Materiel Command, AMCOM works with partners across the Department of Defense and the private industry to support the nation's aviation and missile warfighters across the globe.

SUPPLYING FIREPOWER TO THE JOINT SERVICES

By 1st Lt. Marshall Z. Howell, Crane Army Ammunition Activity Public Affairs

ABOVE: A white phosphorus projectile burns in a modified rotary kiln furnace at Crane Army Ammunition Activity's white phosphorus-to-phosphoric acid conversion plant. The heated vapors are produced into a phosphoric acid concentration that can be used for agricultural fertilizer. The facility is the only white phosphorus conversion plant in the United States. (U.S. Army photo by 1st Lt. Marshall Howell)

At the close of the 19th century and fresh off his successful participation in the last major cavalry charge in British history, a young officer named Winston Churchill wrote, "Victory is the beautiful, bright colored flower. Transport is the stem without which it could never have blossomed."

Though modern warfare has evolved a long way from the clash of horse and saber, the maxim still rings true. As Gen. Douglas MacArthur observed, "The history of war proves that nine out of ten times an army has been destroyed because its supply lines have been cut off."

Today, more than a quarter of the entire U.S. military's critical munitions supply passes through Crane Army Ammunition Activity, whose influence extends far beyond its physical footprint encompassing 100 square miles of rolling hills and wooded ravines at its secure inland location in southern Indiana. A subordinate of Joint Munitions Command, the activity maintains up to one-third of the conventional ammunition inventory for all five service branches within the Department of Defense.

Originally established as Crane Naval Ammunition Depot in 1941, Crane Army was added to its capabilities as a tenant in 1977, formed to implement the "single manager for conventional ammunition" concept. Crane Army continues to support warfighters worldwide by receiving, storing, shipping, renovating, demilitarizing and producing conventional ammunition, missiles and related components.

ON THE MOVE

As DOD's second largest munitions depot, Crane Army receives, stores and ships a wide variety of conventional ammunition and munitions for warfighter training and combat. With 124 miles of paved roads and 94 miles of active railroads connecting 1,800 storage magazines spread out over 51,000 acres, the activity maintains the capability to leverage 4.9 million square feet of storage space into a strategic mobility platform that can make short-notice shipments in support of the joint force anywhere in the world. The organization's wide reach can also be seen in its command oversight of Iowa Army Ammunition Plant in Iowa, Letterkenny Munitions Center in Pennsylvania, and Milan Army Ammunition Plant in Tennessee.

Former Commandant of the Marine Corps Gen. Robert Barrow once noted, "Amateurs think about tactics, but professionals think about logistics." With a consistent focus on safe and efficient execution, Crane's logistics professionals perform inventory and surveillance operations and intra-depot movement on more than 650,000 tons of explosives and related ordnance items. Professionals excel by focusing on the details; at Crane even the shipping containers are groomed down to the stenciling in a state-of-the-art container repair facility. The facility provides container-inspection stands and International Organization for

Mark Benstin, the program manager for Crane Army Ammunition Activity countermeasures division, briefs Gen. Dennis L. Via, Army Materiel Command commanding general, on the production and upgrade of aircraft countermeasures such as the MJU 32A/B, MJU 57A/B and MJU 61A/B decoy flares for the Navy and Marine Corps. (U.S. Army photo by Tom Peske)

Standardization (ISO) data strips and re-stenciling kits for the Navy and other customers.

In addition, Crane Army supports the reserve component by hosting National Guard and Army Reserve units on the installation to conduct ammunition storage and logistical operations in material handling, driver's training, container inspection and repair, inventory, blocking and bracing, and other related activities.

A FLARE FOR SUCCESS

Crane's manufacturing and engineering infrastructure includes more than 200 production buildings, a chemical laboratory and a 72,000 square-foot machine shop where a variety of pyrotechnic devices are produced. These devices, such as marine location markers, signal, smoke and illuminating projectiles, and infrared flares, were critical to the military's efforts to maintain clean supply lines on IED-choked routes in Iraq and Afghanistan during the last decade of war.

In recent years, Crane engineers have teamed with Naval Surface Warfare Center (NSWC), Crane Division, to build and upgrade aircraft countermeasures such as the MJU 32A/B, MJU 57A/B and MJU 61A/B decoy flares for the Navy and Marine Corps. Without receiving the upgrades from the Crane Army countermeasure team, which include replacing the igniter to improve both shelf life and reliability, the decoy flares would otherwise be destroyed.

"We work very closely with the Navy to produce the MJU countermeasure flare," said Ed Lammert, a Crane Army explosives handler. "They will determine anything from how we produce our flare, whether we need a deviation to a component part, to how we pack our flares and how we ship them."

Working closely with other services has allowed Crane Army to effectively and efficiently react to warfighter needs.

"As a government entity, Crane Army can avoid lengthy contracting processes and rapidly respond to the needs of the ultimate customer – the warfighter," said NSWC's Brad Stevenson, the integrated product team lead for airborne expendable infrared countermeasures.

RECLAIMING THE PAST

Crane's multiple focus areas require flexible employees who can bring their unique skillsets together to support the joint warfighter. Crane Army's demilitarization team supports the larger joint force mission of global readiness by safely disposing of excess or obsolete munitions to ensure only the most advanced materiel is kept ready for use in the military's stockpile.

Crane Army's white phosphorus-to-phosphoric acid conversion plant, the only one in the United States, is a keystone of that demilitarization process. The facility is a unique recycling system that derives phosphoric acid from a wide variety of white phosphorus munitions that then can be sold on the open market.

"The significant thing about this plant is that it converts the lethality of munitions into renewable resources to include steel recycling and phosphoric acid for agricultural fertilizer," said Paul Allswede, Crane Army's demilitarization program manager. "This process generates revenue to offset production costs, saving the taxpayer dollars."

SHAPING THE FUTURE

Every effort Crane Army makes is designed to help support the joint warfighter. To better posture the organization to meet the demands of the joint force in the current environment of reduced workload and fiscal restraints, senior leadership at Crane Army conducted strategic planning sessions over the past year.

In these sessions, leaders developed imperatives nested within the higher strategies of JMC, Army Materiel Command, the Army and DOD that will help guide Crane Army in the years to come. The imperatives look at how Crane Army does business and develops efficiencies to strengthen its long-term relevancy to the Organic Industrial Base.

"Crane Army's strength is in its workforce which has met every challenge and adapted to ever-changing fiscal constraints and worldwide complexity by being innovative and improving," said Norman Thomas, Crane Army's deputy to the commander. "With the world's volatility, uncertainty, complexity and ambiguity, Crane Army understands that we must meet the challenges of tomorrow by being innovative. We must make sure our workforce is knowledgeable, our planning is aligned with strategic goals, our processes and resources are properly managed, and our actions are responsive to the needs of our customers. Within that framework, Crane Army can sustain relevance to the joint warfighter."

Crane Army Ammunition Activity's depot operations includes a state-of-the-art container repair facility that also provides container-inspection stands and ISO data strip and re-stenciling kits for the Navy and other customers.

As the DOD's second largest munitions depot, Crane Army Ammunition Activity receives, stores and ships a wide variety of conventional ammunition and munitions for warfighter training and combat. (U.S. Army photos)

Crane Army Ammunition Activity is a subordinate organization of the Joint Munitions Command (JMC), a major subordinate command of the U.S. Army Materiel Command. JMC manages the production, storage, distribution and demilitarization of conventional ammunition for all U.S. military services.

AMC Implementation

OIB ENABLES READINESS ACROSS THE JOINT FORCE

While the Army's Organic Industrial Base (OIB) provides critical capabilities and equipment to Soldiers, these 23 unique facilities also enable readiness for sailors, airmen and Marines across the U.S. military, said Gerry Bates, chief of the sustainment and operations division, G 3/4, at the U.S. Army Materiel Command (AMC).

The depots, arsenals and ammunition plants that comprise the OIB support all branches of service, manufacturing and repairing equipment for the U.S. Army, Navy, Air Force and Marine Corps. Since 2003, the reset workload at the OIB constituted $5.7 billion of equipment for the other services.

Across the OIB, industrial artisans ensure the entire joint force remains the best equipped military, said Bates. The Red River Army Depot workforce repairs Mine Resistant Ambush Protected (MRAP) vehicles for the Marine Corps, Air Force and Navy. At Anniston Army Depot, M1 Abrams Tanks are reset for the Marines. The skilled workforce at Tobyhanna Army Depot builds and repairs radars for the Marines.

These examples show the scope, breadth and depth of the strategic reach of the Army's OIB, said Bates. The OIB is not only critical to the U.S. Army, it is a national treasure providing vital capabilities in support of all warfighters.

ARSENAL OF THE BRAVE:
COMMITTED TO SERVING OUR COUNTRY WITH PRIDE

THOUSANDS OF AMC SOLDIERS, CIVILIANS AND CONTRACTORS WORK EVERY DAY PROVIDING OPTIMAL SUPPORT TO THE JOINT WARFIGHTER WITH SKILL, PASSION AND DEDICATION. THEY ARE THE BACKBONE OF THE ORGANIZATION, ENSURING MISSION SUCCESS. ARSENAL OF THE BRAVE PROFILES A FEW OF THE MANY OUTSTANDING INDIVIDUALS FROM ACROSS AMC WHO EXHIBIT THESE VALUES.

U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS COMMAND (TACOM)

Chief Warrant Officer 4 Richard Wills, II is one of two warrant officers assigned to Anniston Army Depot in Alabama. His technical areas of expertise are small arms and artillery operations, but he is eagerly learning more about the various repair and overhaul processes of combat vehicles that coincide with the depot's mission. Wills began his military career in 1988 as an Army armament repairer. He served in the enlisted ranks until 2003 when he was selected to become a warrant officer. *"Over the next two years, I hope to broaden my understanding of maintenance processes," said Wills. "My previous maintenance experience was limited to field repairs, but the depot is much more efficient than we are in the field. The complete repair process flows well here."*

William Simpson, mechanical equipment repairer, Sierra Army Depot, Herlong, California, was recognized for his commitment, expertise and leadership in the reset of the Inland Petroleum Distribution System. With only seven years as a government employee, Simpson is looked upon by his peers as a leader who takes initiative when performing corrective repair on all water and fuel systems for the Army, as well as any other powered systems associated with depot operations.

Walter Zinko, Sierra Army Depot senior general engineer, has dedicated more than 37 years working within Public Works and serving in the Army. In his current position, Zinko was instrumental for the upgrade of facilities and roadways to support the depot's changing missions. Earlier in his career, he received the award for Department of Public Works Engineer/Resource Management Executive of the Year.

JOINT MUNITIONS COMMAND (JMC)

Roy Flick, Jr., known as Junior to those who work with him at Crane Army Ammunition Activity in Indiana, reached the milestone achievement of 55 years of service to the government. Flick credits his longevity to good health and enjoyment of his work. He said as long as his health continues, he has no immediate plans to retire. While Flick tends to be modest in talking about reaching the milestone, his supervisors have plenty of praise for the man they go to first to learn from his past experiences. Thinking back on all the people who retired before him, he said, *"I used to joke with some of the supervisors back when they were retiring, saying 'I am going to stay longer than you.'"*

Jim Cox, general engineer, JMC Quality Directorate, was inducted into the Ordnance Order of Samuel Sharpe, Nov. 24, 2014. The Samuel Sharpe Award recognizes ordnance personnel nominated by their peers who have demonstrated integrity, moral character and professional competence during their federal careers. Cox was recognized and honored for his 31 years of federal service and going above and beyond in providing quality ammunition to the warfighter.

Ron Neff celebrated 45 years of federal service on Dec. 2, 2014. After serving in the Navy during Vietnam, Neff served at Red River Army Depot in Texas, Blue Grass Army Depot in Kentucky, and Kansas Army Ammunition Plant before serving more than 30 years at Milan Army Ammunition Plant in Tennessee. In addition to outstanding performance of his duties in safety and security as the installation risk manager, Neff has been invaluable in his service to Soldiers by supporting training missions, wounded warrior hunts and other services in his personal time.

Julie Solinski, civilian executive assistant, Iowa Army Ammunition Plant, has more than 30 years of service to the government. She began as a quality assurance and reliability intern and served as a quality assurance representative on a variety of munitions programs. As the civilian executive assistant, Solinski said her primary role is to provide continuity for the plant, as the military commanders rotate every two years to other assignments.

U.S. ARMY AVIATION AND MISSILE COMMAND (AMCOM)

JoAnn Yeager began her career at Letterkenny Army Depot 35 years ago in the depot's Directorate of Public Works (DPW), Heating Section, as a clerk typist. She moved to positions in the depot's personnel office, legal office and Depot System Command's (DESCOM) public affairs office. When DESCOM moved to Illinois in 1994, she did a job swap back to Letterkenny into the Maintenance Directorate, where she spent the next 15 years. She eventually returned to DPW and after four years, she accepted the role as a staff action officer in the newly established Directorate of Operations – Planning and Support. This is where she will say goodbye to Letterkenny in July 2015. *"I enjoyed the opportunities Letterkenny had to offer to move between positions and directorates, and the ability to learn the varied work that the depot performs and how each employee's work really does support the warfighter," said Yeager.*

Kevin Starry is a 40-year employee

of the Directorate of Information Management at Letterkenny Army Depot, Pennsylvania. He monitors the Automated Storage and Retrieval System (ASRS) conveyors and cranes for errors, and contacts appropriate personnel if any problems arise. In addition, Starry assists ASRS personnel in resolving inventory problems and is available for off-shift support to keep the ASRS operation running 24 hours-a-day, 7 days-a-week. *"I'm not going to retire for a few more years," said Starry. "But when I do, I'm moving to New Mexico where it is warmer and there is less snow."*

William 'Burgie' Bragunier knew

he wanted to work at Letterkenny Army Depot from an early age. He enlisted in the Army, and with no break in service, Bragunier now celebrates 40 years working for the depot. He also served 21 years with the National Guard. He started as a wage grade one laborer with the Directorate of Public Works (DPW). Bragunier still works in DPW for the Construction Division as an equipment operator. He says the job is much the same except now when he clears snow on a road, he pulls a lever to engage the plow instead of picking up a shovel. Bragunier said retirement is in his future, and he plans to hunt and fish. He admits that if he retires before his wife, the fishing may have to wait. *"I'll probably be doing 'honey-do lists' until she retires," Bragunier joked.*

U.S. ARMY COMMUNICATIONS-ELECTRONICS COMMAND (CECOM)

Sgt. 1st Class Jason Hyche, the

non-commissioned officer in charge at the U.S. Army Pueblo Chemical Depot, Colorado, is an Army Master Instructor and has been instrumental in developing and teaching various safety and refresher courses for depot employees. Hyche, a subject matter expert in the areas of hazardous waste and emergency response, is also responsible for post-to-post coordination, and for depot augmentation forces stationed at Fort Carson, Colorado. *"Being here at the depot is very different in that I am the only Soldier besides the commander," he said. "But I noticed one thing immediately – the workforce is very dedicated to doing their best."*

Sara Stellatella was named the

Tobyhanna Army Depot Employee of the Quarter in the junior category for the fourth quarter of 2014. Stellatella, an administrative assistant in the Production Management Directorate, has worked at the depot for five years handling various administrative responsibilities while ensuring directorate leaders are prepared and well-informed. Stellatella focuses largely on evolving her intrapersonal and organizational skills, and learning how the depot's internal and external functions contribute to the mission.

Deana Haikes from CECOM's

Tobyhanna Army Depot was named as the command Employee of the Quarter for fourth quarter Fiscal Year 2014 for outstanding duty performance. Haikes, a lead budget analyst in the Resource Management Directorate, previously earned the depot's 2014 Employee of the Quarter for the third quarter, senior category. Haikes worked alongside three budget experts to prepare the depot's multimillion dollar FY16 budget estimate submission. Attention to detail and timelines were crucial to Haikes' ability to follow up on assigned actions and ensure critical steps and budget requirements were not overlooked.

MILITARY SURFACE DEPLOYMENT AND DISTRIBUTION COMMAND (SDDC)

Denison "Ace" Parker, a traffic

management specialist in SDDC's 599th Transportation Brigade's command operations center, has worked for the brigade since it moved to Hawaii in 1991. Parker retired from the U.S. Navy as a senior chief petty officer in 1983 after 24 years in the submarine service, where he fulfilled every job from seaman to chief of the boat. He is originally from Annapolis, Maryland, and has more than 50 years of government service.

Ruby Ragragola, an operations

analyst at SDDC's 599th Transportation Brigade, has worked at the brigade for eight years and has completed more than 35 years of government service in total. Originally from Paia, Maui, Ragragola graduated from Farrington High School in Honolulu. She served for nine years in the U.S. Air Force and 22 years in the U.S. Army.

U.S. ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND (RDECOM)

Tiffany Sutton, a physicist at

the U.S. Army Edgewood Chemical Biological Center for 14 years, has performed research on aerosol-borne biological threats in a series of high-profile studies and taken on roles of increasing responsibility with each assignment. One of her earliest assignments was assessing commercial detection systems for the U.S. Postal Service during the 2001 anthrax attacks. For the past two years she has been supporting Leg 3 of the Project Joint United States Forces Korea Portal Integrated Threat Recognition Advanced Technology Demonstration, where she supported a team of nine, charged with assessing ten different biological agent detection technologies to determine their detection limits and suitability for a field environment. Currently, she is supporting a number of projects that are focused on chemical aerosol threats of interest.

Dr. Ramanathan Nagarajan was

recently selected by the Secretary of the Army for the position of senior research scientist for Soldier nanomaterials at the U.S. Army Natick Soldier Research, Development and Engineering Center. He serves as the Army's senior research scientist in nanomaterials-based technologies, especially addressing Soldier domain problem areas affecting individual warfighters and small units. Nagarajan earned his doctorate in chemical engineering from the State University of New York at Buffalo, Amherst, and his Bachelor of Technology and Master of Technology in chemical engineering from the Indian Institute of Technology, Kanpur, India. He is an internationally recognized expert on molecular self-assembly, colloids, polymers and nanomaterials, and is a Pennsylvania State University professor emeritus of chemical engineering.

Giorgio Bertoli, chief engineer,

Cyber Offensive Operations Technology Division of the U.S. Army Communications-Electronics Research, Development and Engineering Center Intelligence and Information Warfare Directorate, was lead for the working-level Implementation Planning Team that executed the day-to-day effort to etch out the Army's Cyber Materiel Development Strategy, which was published earlier this year. Doctrinal, operational, acquisition, and research and development communities for Army materiel development worked together for more than two years on a comprehensive strategy, which looks at where Army cyberspace capabilities currently are and what lies ahead.

Chenxi Dong-O'Malley, U.S. Army

Natick Soldier Research, Development and Engineering Center force projection and sustainment portfolio manager, recently received honorable mention in the "Lessons Learned" category of the first annual Major General Harold J. "Harry" Greene Awards for Acquisition Writing. Dong-O'Malley was a member of the Competitive Development Group/ Army Acquisition Fellowship (CDG/ AAF) program of the U.S. Army Acquisition Support Center and wrote about the concept of high-performance teaming through leadership training. Dong-O'Malley has worked on individual chemical and biological (CB) protection science and technology, and as a CB product system engineer for Product Manager Soldier Clothing Individual Equipment under Program Executive Office Soldier. For the past three years, while a member of the CDG/AAF program, she worked in different developmental assignment positions.

U.S. ARMY CONTRACTING COMMAND (ACC)

Katherine "Katie" Thompson,

contract specialist from ACC-Aberdeen Proving Ground, was recently recognized for her successful completion of the Department of Defense Civilian Emerging Leadership Program (DCELP). DCELP is a competitive one-year program that covers topics such as leadership, conflict resolution, team building, emotional intelligence and effective writing. *"DCELP provided me the tools and strategies I need in order to develop as a leader and promote positive change in DOD," Thompson said.*

Master Sgt. Lucas Tighe, a

Mission and Installation Contracting Command Soldier from Fort Carson, Colorado, has been named the U.S. Special Operations Command Outstanding Contingency Contracting Officer for 2014. Tighe, from the 918th Contingency Contracting Battalion, earned the award for the enlisted category as a result of his contributions to contracting and competition during a 2014 deployment to Al Udeid Air Base, Qatar, in support of Special Operations Command Central Forward.

Capt. Miracle Garcia, 905th Contracting Battalion, U.S. Army Expeditionary Contracting Command,

was named the U.S. Special Operations Command Outstanding Contingency Contracting Officer for Fiscal Year 2014 while serving as a contracting officer supporting Army special operations forces. Embedded with U.S. Army Special Operations Command at Fort Bragg, North Carolina, Garcia led the 92nd Civil Affairs Battalion, U.S. Army Special Operations Command Office of Counsel and U.S. European Command points of contact to solve a highly visible humanitarian and civic assistance mission supporting the Bosnian people. With proper legal authority, Garcia enabled Army Special Operations Forces to purchase water filters that helped provide potable water to more than 20,000 Bosnians.

U.S. ARMY SUSTAINMENT COMMAND (ASC)

Ranetta Jackson, food program manager at the 405th Army Field Support Brigade at the Logistics Readiness Center in Bavaria, directs plans and coordinates the Installation Food Service Program. Jackson, who has been with the Army for more than six years, said that the best part of her job is taking care of and supporting Soldiers. *"What I do has a positive real-world impact on the quality of life of our Soldiers," she said.* Jackson, a grandmother of four, said she is enjoying her time living in Europe which affords her the opportunity to travel and explore new cultures.

Staff Sgt. Tyrone Plessner,

a senior mechanic and contracting officer representative at Camp Arifjan, Kuwait, has worked for the U.S. Army for 15 years. He currently serves as the maintenance quality assurance non-commissioned officer for the largest forward deployed Army prepositioned stocks set worldwide. Plessner said that he enjoys the opportunity to work with the variety of active and reserve Soldiers, Department of Army Civilians, contractors and third country nationals at Camp Arifjan. *"We ensure that the warfighter has the best equipment possible and that the equipment is available at any given time to ensure mission success," Plessner said.*

U.S. ARMY SECURITY ASSISTANCE COMMAND (USASAC)

Sherry Masters joined USASAC

as the Internal Review and Audit Compliance Officer in 2012. With almost 33 years of federal government service, Masters has spent much of her career planning and executing audits of operational, financial and program functional areas. Her duties have included two deployments to Afghanistan serving as the chief of audit for the Afghanistan Engineer District and two deployments to Iraq auditing for Task Force Restore Iraqi Oil and supporting audit efforts within the Gulf Region Division. Masters also supported emergency recovery operations for Pennsylvania, as well as flooding and five hurricane recovery efforts. *"I am proud of the opportunities I've been afforded – those that not only advanced my career, but all the events and individuals over the years that greatly contributed to my self-growth," said Masters.*

Maj. Christopher Peterson, senior

medical operations advisor to the Saudi Arabian Ministry of the National Guard (MNG), is responsible for all aspects of health service support modernization, including policy, doctrine development, organization, training and materiel acquisition for a 120,000-man full-time fighting force. Peterson focuses on assisting field medical units modernize and prepare for war or other contingency operations. He provides oversight for a $6 million training service contract and evaluates 24 contractors who train the MNG. *"I like the autonomy I have as a medical advisor and the ability to travel across the entire Kingdom of Saudi Arabia to advise and assist virtually every unit in the Ministry of the National Guard," he said.*

"OUR PEOPLE ARE OUR GREATEST ASSET. OUR ARMY CANNOT ACCOMPLISH ITS MISSION WITHOUT WHAT YOU DO EACH AND EVERY DAY." – GEN. DENNIS L. VIA

FOREIGN MILITARY SALES SUPPORT OIB SUSTAINMENT

Employees at ANAD, one of the nation's 23 critical OIB facilities, work on Stryker vehicles. Foreign Military Sales bolster workload across the OIB. (U.S. Army photo by Mark Cleghorn)

By Adriane Foss, USASAC Command Information

As the U.S. Army transitions from combat to sustainment, the U.S. Army Security Assistance Command (USASAC) continues to do its part to maintain critical capabilities across the 23 depots, arsenals and ammunition plants that make up the Organic Industrial Base (OIB).

During Operations Iraqi and Enduring Freedom, the OIB surged, resetting nearly 3.9 million items – a workload three times that of the Vietnam War. However, the transition from combat to sustainment led to a decline in workload at OIB facilities nationwide.

The diminished workload is one of the OIB's greatest challenges, although predictable, according to Tim Sullivan, chief of G-3 Operations at USASAC.

"It happens every time we come in and out of combat operations. In this case, we saw a significant increase in workload after the beginning of the war in 2003, which remained relatively stable throughout the war years," said Sullivan. "As we came out of Iraq in 2011 and Afghanistan in 2014, it was a natural occurrence for the workload to decline."

USASAC, a U.S. Army Materiel Command (AMC) subordinate command, provides a multitude of key capabilities to the U.S. Army and its partners across the globe, but one of its greatest values is its Foreign Military Sales (FMS) program. Last year, FMS cases netted the OIB more than $140 million in revenue.

Understanding the ebb and flow of work in the OIB is imperative, said Sullivan, who served as Anniston Army Depot (ANAD) commander from 2012 to 2014. FMS is a critical alternative to bolster OIB labor.

FMS provides workload to OIB facilities, including ANAD, a state-of-the-art maintenance center and munitions storage site covering more than 25 square miles in central Alabama and employing around 4,000 industrial artisans. FMS frequently fills voids where planned or programmed work falls off.

"It also helps to supplement workload shortages during the peacetime years. Depots and arsenals have a core workload that defines the number of hours required to sustain capabilities that reside within the OIB facility," said Sullivan. "FMS helps to offset those shortages in direct labor or core workload hours."

While each OIB facility is unique, they all have one thing in common – an unmatched labor force, according to Sullivan.

"The average experience level at Anniston Army Depot, regardless of system, is 25-plus years," he said. "Nobody can compete with that. The OIB can do it all because it has the facilities, skilled workforce, technical expertise and materiel to successfully execute any program."

He also noted the OIB's strong capability to reverse engineer and remanufacture, and the OIB's responsiveness to surge in support of rapid requirements. The unmatched quality and capabilities the OIB offers is what drives demand from allies for U.S. equipment, said AMC Commander Gen. Dennis L. Via.

"Foreign militaries trust in the equipment that the United States provides to them," Via said. "They know they are getting the highest quality, advanced equipment, and through the OIB, they can also sustain the equipment they purchase."

While FMS is crucial to OIB sustainment, it is equally important to protect and preserve the capabilities that exist in the commercial base, said Sullivan.

"We really shouldn't advocate for one or the other, but rather, educate our partners so that they understand the capabilities of both," he said. "The true solution is that both the commercial base and OIB have strengths. The commercial is strong in research and development, technical and material support, where the OIB has the infrastructure, facilities and skilled workforce."

Albeit a small fraction of total OIB revenue generating only around 3 percent in Fiscal Year 2014, FMS continues to contribute to maintaining core competencies and workload across the OIB.

The U.S. Army Security Assistance Command (USASAC) is responsible for managing security assistance programs and Foreign Military Sales for the Army. USASAC is a subordinate command to the U.S. Army Materiel Command (AMC). With support from AMC, DOD agencies and U.S. industry, the command provides materiel, training, education and other services to help 145 ally countries and multinational organizations strengthen their defensive capabilities, deter aggression, achieve regional stability and promote democratic values.

SDDC TRANSPORTS, TRACKS AMMUNITION ACROSS HIGHWAYS, RAILWAYS, OCEANS

By Sarah Garner, SDDC Public Affairs

Military Ocean Terminal Sunny Point (MOTSU) completed construction on two new ship-to-shore cranes in October 2012 as the focal point of the Center Wharf expansion project. The port's South Wharf still boasts two smaller first generation cranes. MOTSU encompasses 16,000 acres and is the Army's primary east coast deep-water port. (U.S. Army photo by Kim Hanson)

Every day, trucks and rail cars cross the country loaded with cargo to support the warfighter. The Military Surface Deployment and Distribution Command (SDDC), a subordinate organization of the U.S. Army Materiel Command, is a key player in getting much of that military cargo where it needs to be, on time and in good condition.

The Soldiers, sailors, airmen and Department of the Army Civilians who make up SDDC facilitate the movement of all types of supplies and materiel, but one of the most important categories involves ammunition and how it moves from the Organic Industrial Base (OIB) to the warfighter overseas.

When it comes to arms, ammunition and explosives (AA&E) cargo, SDDC is involved at several phases of movement, from the initial requirement at the Joint Munitions Command (JMC), to delivery at a seaport of embarkation (SPOE), to loading the cargo for shipment overseas.

The journey begins with a requirement generated by the services and consolidated by JMC. At this initial phase, a traffic management specialist at SDDC headquarters located at Scott Air Force Base, Illinois, offers the shipment for overseas movement either by a one-time-only vessel or via a Military Sealift Command-chartered vessel.

"SDDC, JMC and port personnel continue coordination throughout the movement process to ensure the cargo will arrive in time to allow for a review of documentation and an update of the load plan," said Claire Bandy from SDDC's Fusion Branch, who has worked with JMC for nine years and is primarily responsible for the coordination of ammunition movements.

Following this phase, JMC depots fill the ammunition requisitions according to the classification and quantity needed. JMC, in coordination with SDDC, then begins the process of planning the movement from the OIB facility, to one of two ammunition terminals operated by SDDC's 596th Transportation Brigade – Military Ocean Terminal Concord, California, or Military Ocean Terminal Sunny Point, North Carolina.

To ensure a coordinated movement, Steve Kerr, 596th Transportation Brigade deputy commander, and his staff are involved in these early phases.

"We prepare a pre-stow plan using the Integrated Computerized Deployment System to ensure the proposed quantities and classes of ammunition will fit on the vessel based on their category," said Kerr. "We then plan for the ammunition to arrive 10 days to two weeks prior to loading, depending on whether or not we have to containerize the ammunition before loading the vessels."

Once the initial planning is complete and the vessel has been selected, the transportation officers at JMC depots schedule the movement of the ammunition to the port via rail car or truck using negotiated rates established by SDDC with the commercial carriers.

As AA&E cargo moves across our nation's highways, it is tracked by SDDC's Defense Transportation Tracking System (DTTS). DTTS is a satellite-based tracking system used to provide in-transit visibility of Department of Defense AA&E shipments moving throughout the Defense Transportation System.

The system is monitored 24 hours-a-day from an operations center at the SDDC headquarters and can initiate a rapid emergency response to in-transit accidents, monitor movements for security issues and provide emergency information for DOD senior leader awareness when required.

When the ammunition arrives at the SPOE, 596th Transportation Brigade personnel take over. They segregate and stage the cargo, then complete the final stow plan and use contracted stevedores to load the vessel. Once loading is complete and the vessel sails, it is monitored by the SDDC command operations center until it is either offloaded by another SDDC brigade or is staged at sea.

The ammunition required to win our nation's wars has a long and varied route from the OIB to its delivery destination. The men and women of SDDC take pride in their role of providing adaptive global deployment and distribution capabilities to meet the nation's objectives.

The Military Surface Deployment and Distribution Command (SDDC), a subordinate organization of the U.S. Army Materiel Command and Army Service Component Command of the U.S. Transportation Command, delivers world-class, origin-to-destination distribution solutions. Whenever and wherever Soldiers, sailors, airmen, Marines and Coast Guardsmen are deployed, SDDC is involved in planning and executing the surface delivery of their equipment and supplies. SDDC partners with the commercial transportation industry as the coordinating link between DOD surface transportation requirements and the capability industry provides, ultimately deploying, sustaining and redeploying U.S. forces and materiel around the globe.

ABOVE: Stevedores guide a container from the crane's spreader bar onto a "bomb cart" trailer during a cargo offload using new ship-to-shore container cranes on the recently renovated center wharf at Military Ocean Terminal Sunny Point, North Carolina.

RIGHT: Personnel assigned to SDDC's Operations Directorate plan, direct, synchronize, coordinate and monitor port operations and global surface movements through subordinate operation commands and strategic seaports. The command's operations center, along with brigade operations centers, maintain operational oversight of all SDDC operations 24 hours-a-day, 365 days-a-year. (U.S. Army photos)

ACROSS THE YEARS

200+ YEARS OF BOMBS AND BULLETS

Since the Revolutionary War, America's ammunition industrial base has risen to the challenge to meet the needs of the nation's military. Ammunition plants and activities produced a wide range of chemicals, artillery ammunition, bombs, grenades, rockets, mines, small-caliber ammunition, powders, explosives and more in support of U.S. warfighters and their allies. The support that began more than 200 years ago continues today as the U.S. military is engaged in operations and training exercises across the globe.

THE FIRST 100 YEARS

The nation learned its first lessons in materiel mobilization during the Revolutionary War. Leaders of the Continental Army made strides to organize, produce, manage and supply the nation's Army, constructing 27 depots and arsenals.

Peacetime following the Revolutionary War led to reductions in military expenditures and major cuts to production, causing readiness challenges for future conflicts. To meet those challenges, the Ordnance Department was formed in 1812 with an initial budget of $20,000. The Ordnance Department grew and developed infrastructure to keep pace with national development, but inventory was often small in comparison to the actual requirements for conflicts that followed, including the Civil War, Spanish-American War and Philippine-American War.

Leaders in the ammunition industrial community learned a valuable lesson during this century: depots and arsenals provided technical assistance and expertise that was invaluable when industrial expansion was required and retained special skillsets that were otherwise lost.

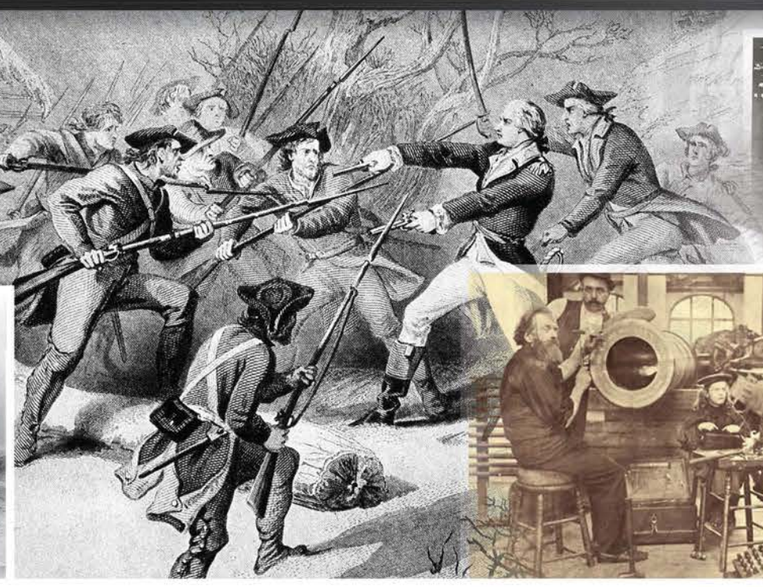
THE WORLD WARS

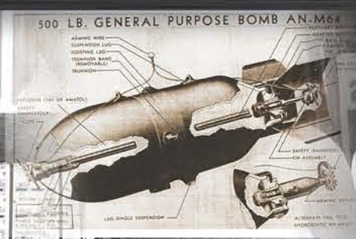
As the U.S. prepared for the nation's eventual involvement in World War I, ammunition commodities became an important focus. The country had relied heavily on foreign companies and private suppliers to meet ammunition needs, but with the outbreak of hostilities in Europe, the Ordnance Department saw an even greater need to expand plant capacity and capability for the production of munitions.

Supporting the requirements of WWI proved difficult, but by the end of the war, more than 90 government and commercial plants were producing ammonium nitrate, picric acid, smokeless powder and TNT. An additional 93 plants were loading, assembling and packing shells, bombs, grenades, boosters, fuzes and propellant charges.

The backbone of the current ammunition industrial base was established during World War II. More than 80 ammunition plants were constructed during the course of the war, and some of the most remarkable technological advances of the 20th century occurred in the ammunition industry. With virtually no mass production of military ammunition since WWI, the field was wide open for the development of new processes and machinery. This was also an era of doctrinal development as U.S. Army field commanders paved the way for advancing foot Soldiers by use of massed artillery fire and aerial bombing instead of exercising frontal infantry attacks.

1770 1780 1790 1800 1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920 1930 1940





200+ YEARS OF BOMBS AND BULLETS

KOREA, VIETNAM AND THE COLD WAR

The years following WWII saw the downsizing and resurging of the ammunition industrial base as the U.S. fluctuated between peace and conflict. Only 14 ammunition plants remained active immediately following WWII, primarily engaged in demilitarization, renovation and production of fertilizer. By 1950, the Ordnance Department faced the arduous task of restoring more than 50 plants to meet the ammunition requirements of the Korean War. Following the Korean War, once again the base faced reductions down to 26 ammunition plants in operation to meet peacetime requirements. Large stockpiles of ammunition and advancements in production process technology supplemented those 26 plants to meet the military's needs during the Vietnam conflict.

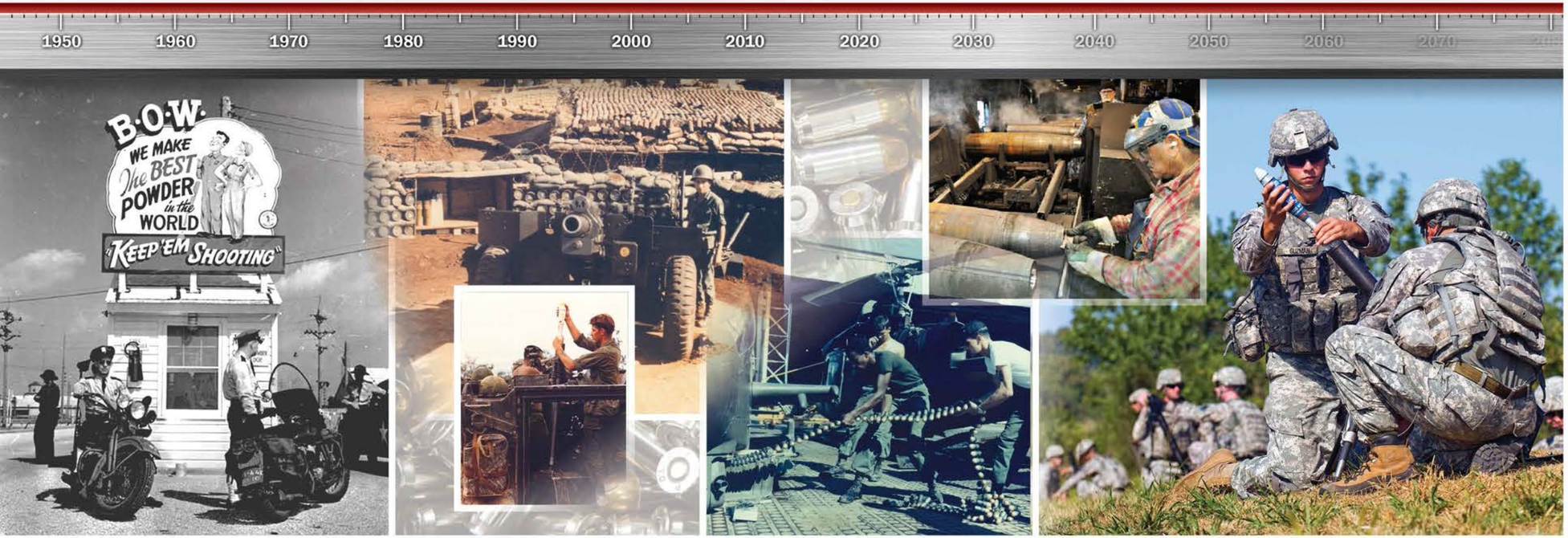
By the end of the Cold War, despite revitalization and modernization throughout the 1980s, the munitions industry was burdened by excess capacity that it did not have funding to maintain.

21ST CENTURY

As the U.S. military fought wars on two fronts in the first ten years of the 21st century, the Army made significant strides in transforming into a lighter, more lethal land force, supplying warfighters faster, with improved products and with minimized life cycle costs. Despite the industrial base being small compared to years past, leaders at the U.S. Army Materiel Command and its subordinate Joint Munitions Command (JMC) and Joint Munitions and Lethality Life Cycle Management Command implemented initiatives that enabled the ammunition community to develop, acquire, field and sustain value-added ammunition for the joint warfighter.

Today, JMC – the latest in a series of commands dating back to WWII to manage the nation's ammunition plants – is responsible for the production, storage, distribution and demilitarization of conventional ammunition for all U.S. military services. The organization, headquartered at Rock Island Arsenal, Illinois, is responsible for ammunition plants and storage facilities in 12 states where it also employs around 11,500 military, civilian and contractor employees. Currently, 15 U.S. Army-owned ammunition installations and depots produce and store more than 1.6 billion rounds of ammunition for training and combat.

The JMC and AMC History Offices contributed to this article.



LOG CHRONICLES

HIGHLIGHTING THE CONTRIBUTIONS OF PAST PROFESSIONALS

George Diehl retired as a civilian from the U.S. Army in 1976 after serving more than 30 years at the Tooele Army Depot in Tooele, Utah. Diehl was employed with the Department of Defense in 1941 as a civilian munitions handler at Savanna Ordnance Depot in Savanna, Illinois. In December 1942, he was temporarily transferred to Tooele for a 30-day assignment, but ended up staying for his entire career. "I can only conclude that I didn't quite get the job done," Diehl joked.

In 1946, Diehl was promoted to the role of civilian executive assistant where he stayed for the next 30 years. Diehl led the installation in addressing shifting mission priorities, significant turbulence of personnel, major organizational realignment and many other significant events in the depot's history. After leaving the U.S. Army, Diehl was elected to three consecutive terms as mayor of Tooele, serving from 1983 to 1994. At the age of 96, Diehl said he still likes to pay a visit to the Tooele Army Depot from time to time. "I like to keep them on track," he said.

Q: What were the biggest changes to the ordnance industry during your time with the U.S. Army?
A: The handling of munitions changed tremendously over the years. Prior to World War II, it was all hand loaded. With the introduction of the forklift and of different packaging methods, it was an interesting time.

Q: What innovations were the most important during that time in the advancement of the ammunition industrial base?
A: Mechanization really took over the ammunition business. Previously everything was hand loaded and unloaded, from storage to the boxcars, and from the boxcars to the storage buildings. Mechanization changed everything.

Q: How important were partnerships with private industry to Tooele's mission?
A: Our equipment programs were very closely tied to private industry – vehicle repair, artillery, tanks, weapons, everything. It was vital to completing the mission.

Q: How important are the Army's depots and arsenals to Soldier success?
A: Extremely important to serving the troops in action. Tooele Army Depot was very strategically located for supplying the west coast ports – San Francisco, Los Angeles and Seattle. We had a very active mission. We took great pride in our quick response and practically overnight deliveries.

ASC'S ORGANIZATIONAL INDUSTRIAL BASE: STRETCHING FROM THE HEARTLAND TO THE FRONT LINES

By Sgt. William J. Taylor, 402nd Army Field Support Brigade Public Affairs

A 7,000 mile plane ride and a bumpy convoy trip separate Camp Buehring, Kuwait, from Rock Island Arsenal, Illinois. However, with today's technology coupled with hardworking Soldiers, Department of the Army Civilians and contractors, one would think Rock Island, home of Army Sustainment Command (ASC), was right next door.

ASC's 402nd Army Field Support Brigade (AFSB) Logistics Support Element (LSE)-Kuwait and Brigade Logistics Support Team (BLST) afford units in the U.S. Central Command the reach-back capabilities they need to ensure that mission readiness is the highest priority.

"To understand how this process works, you have to look at the engaging partners within the system," said Chief Warrant Officer 3 Shavonta D. Gaynor, 402nd AFSB's LSE-Kuwait maintenance officer. "Here we are able to utilize resources such as the life cycle management commands (LCMCs) and the Army's Organic Industrial Base (OIB) to adequately address the issues for units on the ground."

A recent training event demonstrated these capabilities, Gaynor explained. A unit had a deadlined M1A2 Abrams Tank requiring a heads-up display part. The unit ordered the part, but the estimated shipping date was around five months. Gaynor found the Tank-automotive and Armaments Command (TACOM) item manager, and after sending critical information about the deadlined tank and how it would affect the unit's overall mission, the item manager was able to have the part released and shipped from the TACOM Armament Partnership Facility warehouse in Fort Hood, Texas.

"The unit received the part three weeks later, and as a result, the tank was repaired and reported as fully mission capable. Using reach-back capabilities by coordinating directly to the LCMC item managers, the

Michael Lane, a Communications-Electronics Command power and environmental Logistics Assistance Representative, teaches Soldiers from the 2nd Battalion, 43rd Air Defense Artillery Regiment, about an Antenna Mast Group during training at Al Udeid Air Base, Qatar. (U.S. Army photo by Staff Sgt. Roger K. Hendricks)

Logistics Assistance Representatives (LARs) from all four LCMCs are also part of the 402nd AFSB and provide training and technical assistance to multiple units within the U.S. Central Command's area of responsibility.

LARs interface directly with the units to create reports and review unit reports, but most importantly, to see firsthand when problems arise, said John Salazar, an Aviation and Missile Command (AMCOM) senior systems technical representative who provides unit commanders with the technical guidance necessary to resolve weapon systems, equipment and systemic logistics problems while in theater. The LARs assist Soldiers in troubleshooting, and if a part needs to be repaired or replaced, they expedite those items from Army arsenal and depot item managers around the world.

"Our LARs go to Corpus Christi Army Depot as well as Fort Hood to receive extensive training to learn how they can provide assistance on the ground while also understanding what capabilities the depots can bring," Salazar said."In addition, the LARs are sent to specialized schools provided by the system's original equipment manufacturer such as the General Electric engine school, composite repair training, Black Hawk, Apache, Chinook, ground support and new equipment training. Also, unmanned aerial systems (UAS) have become a significant part of the LAR coverage, so they are sent to airframe-specific training to support the increasing number of UAS."

One of AMCOM's airframe LARs, Ryan Watson, said that being able to assist Soldiers is the highlight of his job. Recently, Watson met with Soldiers from the 4th Battalion, 501st Aviation Regiment, to discuss proper repairs on a Boeing AH-64 Apache vertical stabilator. Watson worked with Army depots multiple times to have parts ordered.

"We work with and for the Soldiers to keep them ready and safe for operations," Watson said. "We are technical experts in our fields who are able to assist and train the Soldiers to keep aircraft mission-capable."

The 11th Air Defense Artillery Brigade works with Bernard Battle, an AMCOM Patriot LAR who ensures that critically needed parts for the Patriot system are within arm's length.

"We work with the Army depots, contracting logistics support and Theater Supply Support Activity partners to retain and stock critical parts that are known to break down or need replacement on Patriot systems," Battle said. "By being embedded with the unit, we help document the trends when these parts need replacement and reach back to equipment engineers to make new innovations."

The continued collaboration and accomplishment between the Army depots and arsenals, LCMCs, LSE/BLST, LARs and Soldiers shows a healthy partnership as the Army concludes more than a decade of war. As the drawdown of deployed forces continues, the Army's OIB remains a steadfast anchor ensuring the Army stays well-resourced and prepared for future contingency operations.

The 402nd Army Field Support Brigade is one of seven brigades worldwide under the U.S. Army Sustainment Command (ASC). ASC, a subordinate organization of the U.S. Army Materiel Command (AMC), bridges the national sustainment base to the Soldiers in the field, bringing together the capabilities of AMC to provide the right equipment, at the right place and time, and in the right condition.

ABOVE LEFT: Ryan Watson, an Aviation and Missile Command airframe LAR, explains the proper repair techniques for a Boeing AH-64 Apache vertical stabilator to Soldiers from the 4th Battalion, 501st Aviation Regiment, at Camp Buehring, Kuwait. (U.S. Army photo by Sgt. William Taylor)

ABOVE RIGHT: Michael Lane, a Communications-Electronics Command power and environmental LAR, teaches Spc. Joshua Lowry, a wheeled vehicle mechanic from the 2nd Battalion, 43rd Air Defense Artillery Regiment, how to troubleshoot a Potentiometer R2 with a multimeter during training at Al Udeid Air Base, Qatar. (U.S. Army photo by Staff Sgt. Roger K. Hendricks)

BEFORE THE OIB: HOW S&T INNOVATIONS ENSURE SOLDIER READINESS

By Natick Soldier Research, Development and Engineering Center Public Affairs

Dr. Tad Brunye guides a Soldier participating in a navigation virtual reality exercise at the Natick Soldier Research, Development and Engineering Center. Brunye, who is on the Natick Cognitive Science Team, is investigating various influences on choices people make when choosing a route. (U.S. Army photo)

Before the military's equipment gets manufactured, reset and repaired in the Army's Organic Industrial Base facilities, it is conceptualized, researched and designed in research labs and centers around the nation. The U.S. Army Materiel Command (AMC) provides the Army with organic research and development capabilities for the current and future force. The command and its subordinate organizations manage around 80 percent of the Army's Science and Technology (S&T) portfolio, focused across six Research, Development and Engineering Centers and the Army Research Laboratory.

The U.S. Army Natick Soldier Research, Development and Engineering Center (NSRDEC), located in Natick, Massachusetts, focuses on the Soldier domain by developing and using the latest innovations in S&T to maximize joint warfighters' survivability, sustainability, mobility, combat effectiveness and field quality of life.

For more than 60 years, NSRDEC has served the Soldier. Established in 1954, the organization has gone through many name changes and is known locally as Natick Army Labs. NSRDEC follows a simple mandate: to ensure that American Soldiers are the best-fed, best-protected and most highly mobile military in the world.

As part of AMC's Research, Development and Engineering Command, Natick Army Labs leads the Soldier systems integration domain in coordinating Soldier-related efforts and in highlighting Soldier technology capability gaps that need to be addressed. Partnering and collaborating across Army, DOD, government organizations, industry and academia, Natick Army Labs delivers advanced capabilities through S&T generation and application. The organization empowers, unburdens and protects warfighters.

On a visit to Natick Army Labs in 2013, Chief of Staff of the Army Gen. Raymond Odierno called the organization a "very, very important place in the Army."

"What they do here is an incredibly important mission to the Army as they continue to work what I consider to be our center of gravity, which is helping our Soldiers do their job," Odierno said. "That's something that will never change. The Army is about Soldiers. It's about their ability to perform and conduct their mission."

NSRDEC's 500-plus scientists, engineers and equipment designers provide a wide range of equipment, including field feeding and life support systems, clothing, precision airdrop systems, and ballistic, chemical and laser eye protection systems. Using Soldier Systems Engineering Architecture, Natick Army Labs combines Operational Analytics, Human Science and Engineering, Biomechanics, Cognitive Science, Anthropology, Human Factors, and Food Science and Nutrition to optimize Soldier performance and potential.

Natick Army Labs' technical and scientific expertise in the research, development and engineering of novel materials and fibers has led to the creation of new combat uniforms and Soldier equipment that is lighter weight, more durable and more threat resistant than anything Soldiers have ever worn.

Scientists and engineers at Natick Army Labs have also conducted innovative research into food science and packaging, leading to a new understanding of how to maximize a Soldier's performance by developing rations that contain just the right mix of nutrients, are easy to prepare in remote locations, and, most importantly, taste good.

Researchers also use state-of-the-art systems to advance the expeditionary technologies necessary to power, heat, light and support modern structures that protect Soldiers and enhance their quality of life in the field and while deployed.

Many of Natick Army Labs' responsibilities support the other services and involve joint programs and projects for U.S. warfighters including personal protective equipment, aerial delivery, contingency and expeditionary shelters, and field feeding and combat rations.

Warfare in the 21st century has changed the roles of Service members on the battlefield, and Natick Army Labs has been the leader in developing the equipment used by today's warfighters, to include the protection provided by helmets, body armor and flame resistant uniforms and equipment. NSRDEC works closely with its NATO allies and other strategic partners to bring some of these capabilities to joint and combined combat forces around the world.

Natick Soldier Research, Development and Engineering Center (NSRDEC) is a subordinate organization of U.S. Army Materiel Command's Research, Development and Engineering Command. NSRDEC is charged with maximizing the warfighter's survivability, sustainability, mobility, combat effectiveness and field quality of life by treating the Soldier as a system. NSRDEC is the leader in empowering the world's most capable Soldiers.

PROTOTYPE INTEGRATION FACILITY PROVIDES STATE-OF-THE-ART CAPABILITIES

The U.S. Army Materiel Command's Research, Development and Engineering Command (RDECOM) offers unique science and technology solutions to warfighters, from exploring the art-of-the-possible to developing the state-of-the-art. Through Prototype Integration Facilities, known as PIFs, RDECOM develops concepts and engineering designs for rapid conversion into prototypes for immediate use by Soldiers, or for transition to full-scale production.

The Larry O. Daniel PIF at Redstone Arsenal, Alabama, is one of the premier facilities for rapid prototyping. Part of the Aviation and Missile Research, Development and Engineering Center's (AMRDEC) Engineering Directorate, their PIF prides itself on its ability to provide innovative, comprehensive, swift results since its inception in 2002.

The AMRDEC PIF develops and integrates technology and rapidly provides fielded products directly to the Soldier. The 60,000 square-foot facility has the unique capability of producing electrical and mechanical parts, subassemblies and associated platform integration under one roof.

"A warfighter's needs are complex, constantly evolving and immediate. Our ability to provide rapid response and integrated hardware solutions addresses those needs in a unique way," said Danny Featherston, AMRDEC PIF program manager.

The AMRDEC PIF provides a single-source capability unlike any other government organization, combining focused, systematic and flexible processes with expert teams drawn from both government and industry.

The AMRDEC PIF's capabilities include design and analysis, prototyping, mechanical fabrication, circuit card assembly, cables and chassis, platform integration and more.

"We are committed to continually improving our processes and standards to meet or exceed the ever-changing challenges in today's budget-minded environment. We offer in-house acquisition expertise and integrated enterprise management," Featherston said.

The AMRDEC PIF is housed in nine different buildings and uses additional off-site contractor facilities to meet surge requirements.

"Our teaming arrangements with other government agencies, industry and academia allow us to draw from pooled resources giving us maximum flexibility to achieve our mission for our customers," Featherston said.

At any given time, the AMRDEC PIF manages more than 200 projects involving hardware improvements.

"Many of the requirements that come to us aren't forecasted," Featherston said. "We address immediate needs that arise from new threats in the field, or new conditions and challenges experienced by the warfighter. We provide solutions in days or weeks or months rather than in years. We integrate new technology on existing systems or change technologies to meet new uses by the warfighter."

The AMRDEC PIF has become a model for other research and development operations throughout the U.S. It is fully funded by government customers.

"We deliver complete solutions to our customers, not simply technology," Featherston said.

BATTLE TECH

MATERIEL READINESS FOR TOMORROW'S WARFIGHTER

AMC experts have developed game-changing technology to provide the decisive edge to today's forces and ensure the Army's advantage well into the future. BattleTech provides a look at some of the amazing technology being used in the command today.

BOMB PRODUCTION TECHNOLOGY IMPROVEMENTS

A new load, assemble and pack production line that began first article acceptance testing last fall is expected to increase surge capacity and improve the efficiency and effectiveness of bomb-loading operations at the McAlester Army Ammunition Plant (MCAAP) in Oklahoma. The new configuration, which gives the installation the capability to do melt-pour and cast-cure on a single line, supports a primary asset of the U.S. Air Force – the BLU-109 C/B 2,000-pound penetrator bomb – also known as a "bunker buster." The technology mitigates employee exposure to hazardous materials in the explosive mix process. The B-line will be MCAAP's primary workhorse for loading, assembling and packing bombs now and into the future.

U.S. Army photo by Kevin Jackson

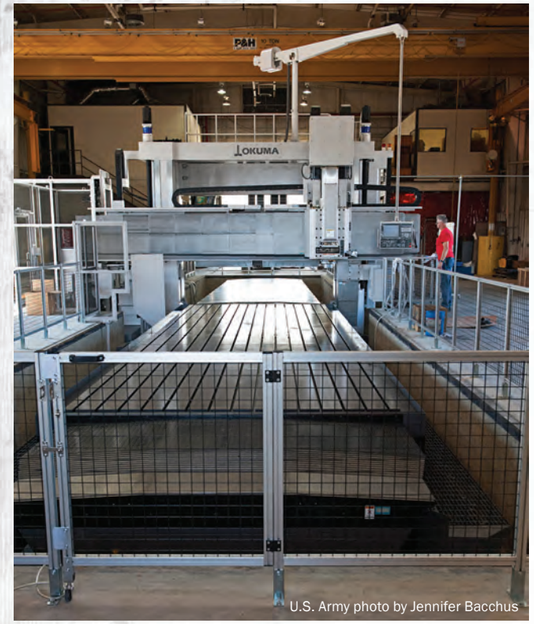
Heath Eldridge, left, and Brad Cochran monitor the transfer of explosives into the body of a BLU-109 C/B penetrator bomb during first article acceptance testing at MCAAP. The 600-gallon mixing bowl rolls on a track to the back of the new B-Line facility and is then elevated for the mix to be transferred into the bomb body that is secured below.

U.S. Air Force photo by Staff Sgt. Marie Cassetty

Senior Airman Raymond Banks guides a 60K loader into position to load an MRAP Egress Trainer. RRAD began producing the MET in 2009 to provide Soldiers the confidence needed to safely escape an MRAP involved in a rollover.

MRAP EGRESS TRAINER

The Mine Resistant Ambush Protected Vehicle (MRAP) was the most sought after vehicle during the height of the wars in Afghanistan and Iraq. In 2009, Red River Army Depot (RRAD) in Texarkana, Texas, fully fabricated the MRAP Egress Trainer (MET) to teach Soldiers how to get out of an MRAP in the event of a rollover. During peak production times for the MET, Red River personnel worked seven days-a-week to ensure the needs of the Soldiers were met. RRAD also produces a similar rollover simulator for the High Mobility Multipurpose Wheeled Vehicle (HMMWV) called the HEAT or HMMWV Egress Assistance Trainer. The depot is the only producer of both rollover systems.



U.S. Army photo by Jennifer Bacchus

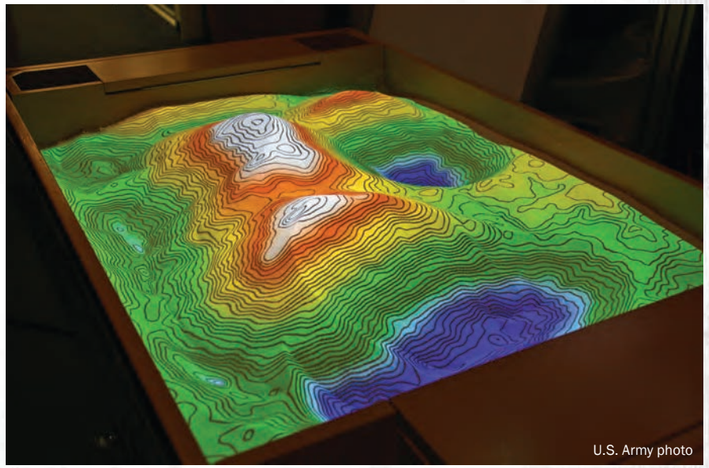
FIVE-AXIS VERTICAL MACHINING CENTER

Anniston Army Depot's Manufacturing Division, which creates parts for nearly every combat vehicle family overhauled or repaired on the installation, is now using a new five-axis vertical machining center to continue supporting the organization's sustainment mission. The device's capabilities allow the operator to bring the cutting head to the incision point, rather than turning the part to make it accessible to the cutting head. This large, computer numerically controlled, or CNC, machine increases the installation's machining capacity for large parts. From turret components for the Assault Breacher Vehicle to mine route clearance equipment, bridges or parts for an M1 Abrams Tank, employees have the expertise and equipment to tackle the task.

Wayne McCarley inspects the newly installed five-axis vertical machining center for ANAD's Directorate of Production's Manufacturing Division. This machine is capable of cutting large items, such as turrets and small combat vehicles.

AUGMENTED REALITY SANDTABLE

The Army Research Laboratory (ARL) is developing the Augmented Reality Sandtable (ARES), a prototype that incorporates the best aspects of the traditional sandtable with existing technologies and software to enable new possibilities for learning and operational support. Working with public and private partners, ARL has taken the traditional sandtable and augmented it with a projector, monitor, laptop and a motion-sensing input device. Sensing gestures, changes are made to the sand "terrain" with ARES projecting moving military units, terrain features and other data onto the sand. One of the goals of the project is to determine if warfighters interacting with a traditional sandtable results in better battlespace visualization than warfighters interacting with a printed map or 3-D graphical rendering of the same terrain. The team behind ARES believes the device will benefit Soldiers in the classroom, in mission planning and in mission command.



U.S. Army photo

ARL is developing the Augmented Reality Sandtable to demonstrate the value of a traditional sandtable augmented with existing technologies to enable new possibilities for learning and operation support.

Anniston Army Depot employees test components of a Stryker Infantry Carrier Vehicle recently overhauled at the installation. ANAD and General Dynamics Land Systems have worked side-by-side since 2002 maintaining, building, repairing and upgrading the Army's Stryker brigades as part of the Defense Department's Public-Private Partnership Program.

Public-Private Partnerships key to Organic Industrial Base

By Ed Worley, ACC Public Affairs

The U.S. Army Contracting Command (ACC) is leveraging Public-Private Partnerships (P3) to preserve the Organic Industrial Base (OIB) and ensure Soldiers have what they need, when they need it. P3 agreements are arrangements between government agencies, or between government agencies and industry or educational partners, to provide products, services, and research and development. P3 agreements can also be used to secure use of facilities or equipment for the partners.

"These partnerships are absolutely critical to the preservation of the nation's Organic Industrial Base which is key to not only the Army, but to overall military readiness," said Teresa Bonds, chief of the Strategic Programs Division, ACC-Warren, Anniston Army Depot, Alabama.

Bonds is one of two ACC contracting officers who has a separate Direct Sales warrant that allows her to establish P3 agreements. She was involved in developing the Army Materiel Command's P3 policy letter.

"Partnering allows the government and the contractor to work together in a 'win-win' relationship to ensure Army readiness," she said. "It also enhances the ability to respond to future contingency operations by improving operational efficiencies, lowering costs, leveraging organic engineering services, accelerating innovation and maximizing use of the capabilities and strengths of both private and public entities."

The Defense Acquisition University's Public-Private Partnering Guidebook explains how P3s differ from regular defense contracts. The book states, "Defense contracts specify the work tasks, articles, services and outcomes to be provided by the private sector entity. They are generally one-sided in their directive requirements – from the government to the contractor. Partnerships enable a more collaborative relationship in which parties from both public and private sectors are able to leverage and maximize the use of their resources in ways that were not specified in their underlying contracts."

Three types of P3 agreements exist: work share, facility use and direct sale. Work shares are co-production arrangements using Army and private sector facilities and/or employees and allow a program manager (PM) or the life cycle management command (LCMC) to use

Continued on page 46

Employees from Anniston Army Depot and General Dynamics Land Systems work on the Stryker Double-V Hull (DVH) Exchange program. Responding to an Army requirement for additional DVH vehicles and to reduce overall vehicle cost, the program changes the hull of a flat-bottom Stryker for the newer DVH design. (U.S. Army photos by Mark Cleghorn)

AMC PUBLIC-PRIVATE PARTNERSHIPS

The Army's Organic Industrial Base (OIB) is a national resource that is the centerpiece of Army readiness. To preserve and enhance the unique capabilities of the OIB, the U.S. Army Materiel Command (AMC) and its subordinate commands are leveraging the power of Public-Private Partnerships (P3s). In Fiscal Year 2015, AMC is projected to have more than 275 P3s, generating about $300 million in revenue. Here's what senior leaders are saying:

"Although the organic and commercial industrial base sectors are often discussed as distinct communities, public-private partnership at Army depots and essential facilities is a potential core strategy to ensure that parts and materials are available to sustain platforms and equipment at appropriate readiness levels."

Hon. Heidi Shyu, Assistant Secretary of the Army for Acquisition, Logistics and Technology

"Public-Private Partnerships offer innovative ways to help the Army preserve its unique capabilities and reduce cost while sustaining critical skillsets in our workforce. As part of our sustainment strategy, we must continue to aggressively pursue new opportunities and implement initiatives to assure attainment of command-wide partnership objectives."

Gen. Dennis L. Via, AMC Commanding General

"We must become more efficient in our business practices to ensure the right skillsets and workforce size to meet projected workload requirements. Competitive rates, working closely with industry and partnering will optimize usage of the Organic Industrial Base."

Hon. Robert M. Speer, Assistant Secretary of the Army for Financial Management and Comptroller

"Raytheon has been proud to be teamed with Theater Readiness Monitoring Directorate (TRMD) in supporting Patriot Missile Recertification, Stockpile Reliability Testing and other maintenance activities at the Patriot Missile Facility for the U.S. Army and our Foreign Military Sales Patriot partner nations at Letterkenny Army Depot. TRMD has demonstrated outstanding performance to all of its global customers and this could not have been accomplished without the men and women who work to make this program a complete success."

Michael Fletcher, Director of Patriot Systems Missile Programs, Raytheon Integrated Air & Missile Defense

"[The Sensor Fuzed Weapon] is an incredibly complex electro-mechanical system. It requires every function to function properly or the system will fail. As such, what gets done at McAlester is so very critical. As far as we're concerned, McAlester is the lynchpin to our program. What gets done here is the critical portion of the process. We have very high confidence in the work that is done here. I see it every time I come here – the working relationship between the Textron team and the McAlester team is fantastic. To me, it's just one team."

Brian Doherty, Director of Manufacturing, Textron Defense Systems

(The Sensor Fuzed Weapon is the largest partnership between McAlester Army Ammunition Plant and Textron. The McAlester workforce is solely responsible for loading, packing and assembling the Sensor Fuzed Weapon.)

"The mission of the AMC Partnership Program is to improve capabilities and performance of AMC's industrial sites through cooperation between the public and private sectors. There are a number of benefits to partnering with AMC, including gaining access to advanced technology industrial equipment. We have invested more than $1.3 billion in our industrial sites in the last decade."

James Dwyer, Deputy Chief of Staff for Logistics, AMC

"These partnerships are win-win opportunities. Partnerships help the depots, arsenals and commercial industry receive more work, develop new technical skills and make use of Army-owned facilities. By sharing investments, taking advantage of the best business practices and promoting the joint use of facilities, we can reduce costs and risk for all."

Gen. Dennis L. Via, AMC Commanding General

RIGHT (from top): Ricky Parker, left, Jerrilyn Harris, center, and Iris Wood replace a fuel pump in the rear of a Stryker at Anniston Army Depot. Partnership with private industry is vital to improving the quality and workflow throughout the Army's Organic Industrial Base. (U.S. Army photo)

The M113 armored personnel carrier program is a Foreign Military Sales/direct sales partnership between Anniston Army Depot and BAE Systems, and an example of a partnership that helps maintain organic and private core skillsets. (U.S. Army photo by Staff Sgt. Megan Leuck)

both private industry and a depot to perform work. In an example of a work share agreement, Bonds said a PM or LCMC "workloads" a depot to perform part of the work. Funding flows from the PM or LCMC to the depot for direct labor and also funds a private industry via a Federal Acquisition Regulation contract for managing parts. The parts and the work come together at the depot for the final product.

Facility use agreements allow a private entity to use government facilities or equipment. In this agreement, the private entity pays the government. For example, General Dynamics Corporation builds the Stryker combat vehicle, but does not have a test track. Anniston Army Depot does, so General Dynamics pays Anniston Army Depot a fee to use its test track on a non-interference basis.

The third partnership is a direct sale. In this case, the private entity approaches the government for a manufacturing or production service, usually involving direct labor. For example, a firm that has a contract to build a vehicle but needs help painting the vehicle could work out an agreement where the government facility does the work. The PM pays the contractor to produce the vehicle, and the contractor pays the government facility to paint it.

Successful programs begin with an internal partnering triad consisting of the business developers, contracting officers and legal counsel, said Bonds.

"It is important that the triad has involvement from the beginning of the partnering opportunity," she said. "Each member of the triad contributes unique advantages to the partnering process."

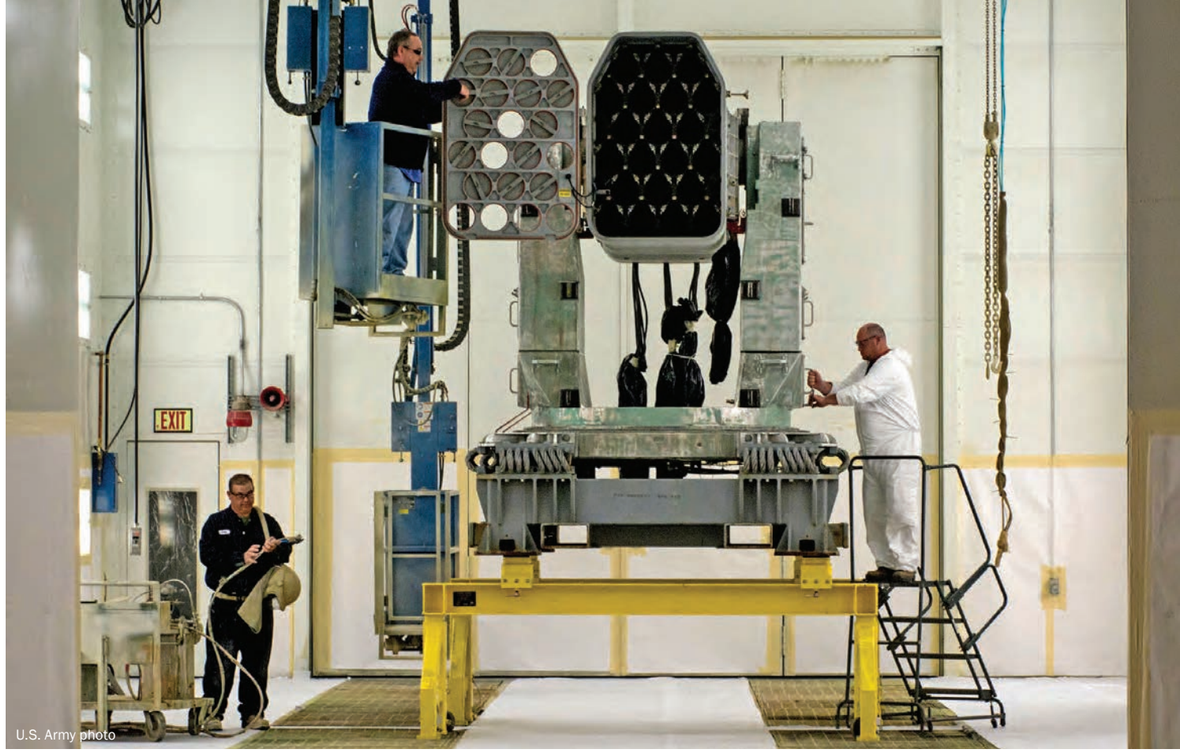
Bonds pointed to two examples of how partnerships evolve over time from building new vehicles to maintenance and reset. The M113 armored personnel carrier program is a Foreign Military Sales/direct sales partnership between Anniston Army Depot and BAE Systems. BAE provided supply chain management and Anniston provided almost 63,000 hours of labor, resulting in more than $4.3 million for the depot. Bonds said the partnership helped maintain the organic and private core skillsets, expanded Anniston's customer base, and improved Anniston's and BAE's P3 relationship.

She also highlighted Anniston's partnership with General Dynamics Land Systems for Stryker vehicles. Bonds said that the partnership began in 2002 as a $13.3 million direct sale/facility use partnership for building new Strykers. In 2006, they added a $49.4 million work share/facility use partnership for battle damage repair and in 2009, they added a Stryker reset partnership for $152.4 million. In 2012, they formed a $19.5 million work share partnership for Stryker double V hull exchange.

"Partnerships require equal amounts of trust, commitment and acceptance of risk," said Bonds. "With shared ownership of risk and commitment, partnerships are a sure-fire tool to ensure everyone involved is working towards the same goal of delivering what our Soldiers need, when they need it."

Headquartered at Redstone Arsenal, Alabama, the U.S. Army Contracting Command (ACC) and its subordinate organizations and contracting centers provide contracting support for the U.S. Army. As the Army's principal buying agent, ACC ensures that Soldiers have what they need to be successful, from food and clothing to bullets and bombs. ACC is a major subordinate command of Army Materiel Command.

OPPOSITE PAGE: From left, Daniel Moore, James Ratowski and Brian Jones prep a Rolling Airframe Missile (RAM) MK-49 Guided Missile Launching System for painting in Tobyhanna Army Depot's state-of-the-art C4ISR Finishing Center. Establishing an organic depot source of repair at the facility resulted in significant cost savings for the RAM program and a Naval Sea Systems Command Excellence Award for Tobyhanna. Whether supporting the joint warfighter or private industry, partnerships are key to the success of the facilities that make up the Army's Organic Industrial Base.



U.S. Army photo

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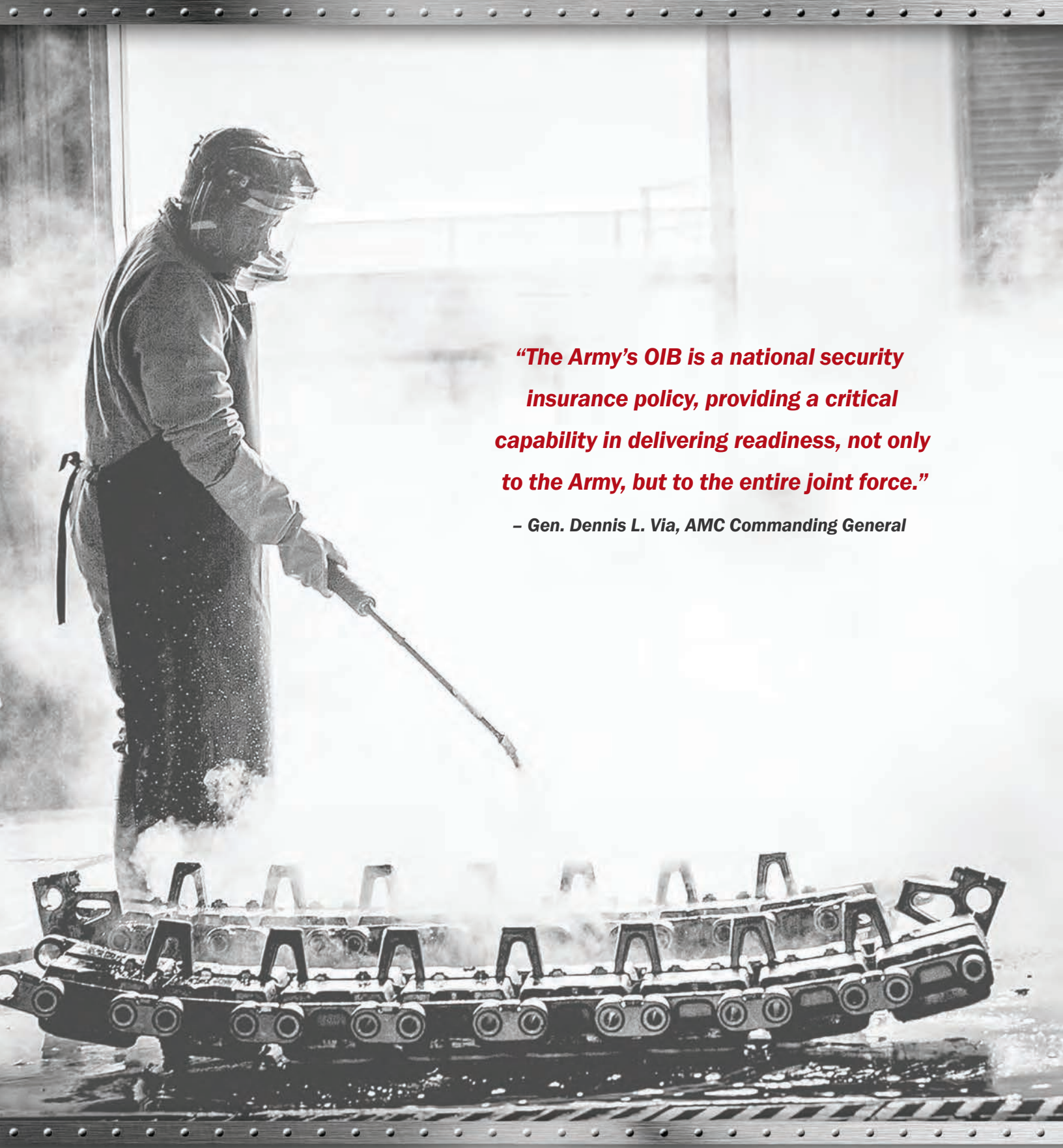

"The Army's OIB is a national security insurance policy, providing a critical capability in delivering readiness, not only to the Army, but to the entire joint force."

– Gen. Dennis L. Via, AMC Commanding General

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