Chapter 1

THE TRI-SERVICE INDUSTRIAL BASE

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INTRODUCTION

The Army Materiel Command (AMC) is the industrial base for the Armed Services. Its motto is, "If a Soldier shoots it, drives it, flies it, wears it, communicates with it, or eats it—AMC provides it." The AMC song, "The Arsenal for the Brave," perfectly captures its raison d'être:

On the front lines to victory
We are the Army for the free
Equipping Soldiers every day
We are the arsenal for the brave
Committed to serving our country with pride
Leading the way to win the fight
Providing equipment to protect and defend
We're the Army Materiel Command!

Because AMC is the industrial base for the joint military effort, one could reasonably substitute "service members" for "soldiers" in the song. AMC exists to support the war fight with any and all of the materiel required to prosecute a war, respond to a humanitarian crisis, provide disaster relief, and support friendly foreign militaries.

From an occupational health perspective, AMC's equity lies in its workforce. Its civilian workers are exposed to unique hazards. Occupational health services became necessary for the civilian workforce during World War II, when workers needed protection from the unique hazards that stemmed from the manufacture and use of modern weapons. Since the terrorist attacks of September 11th, the workforce has endured a frenetic increase in the amount and diversity of materiel requirements for a nation at war in two geographic areas of operation. Understandably, the amount and degree of work-related illness and exposure to hazards in such an environment has also increased. For example, work hours have been extended to fulfill demands. New, potentially more caustic agents have been developed, such as insensitive high explosives. In addition, members of the civilian workforce who deployed to theater in support of logistical needs have all the attendant consequences of experiencing a deployment, such as physical and emotional stress. The civilian workforce at AMC is clearly part of the large Army "family" and is not immune to the stresses and strains of involvement in the war effort. This is particularly evident in the increase in number of civilian suicides.

In terms of assessing and reporting on the health of the AMC, the AMC surgeon plays a vital role. The surgeon acts as the eyes and ears of the commander when it comes to the occupational health of the command. According to AMC Regulation 10-2, the surgeon has the following mission and functions.

Mission: The mission of the Office of the Surgeon is to provide policy and guidance to AMC and subordinate elements on all health-related matters.

Functions: The functions of the Office of the Surgeon are to:

1. Serve as the single point of contact (POC) for medical policy, training, and technical medical guidance to ensure compliance with medical doctrine and practices.
2. Coordinate medical care, occupational health, preventive medicine, radiological health, and environmental health matters with the Army Office of The Surgeon General (OTSG) and the Army Medical Command (MEDCOM) to ensure legal and regulatory compliance, consistency with established medical practices, and improvement of medical support to AMC.
3. Integrate occupational health policies and procedures into all aspects of industrial and other workplace operations to promote a healthy and fit workforce and to minimize illness and injury losses incurred by military and civilian workers.
4. Minimize risk to Soldiers and civilians who use fielded equipment and support materiel developers by conducting and coordinating toxicity clearances and Health Hazard Assessments for all materiel acquisition.
5. Monitor and support medical aspects of the Chemical Surety Program (CSP) for AMC.
6. Enhance deployment medical readiness by establishing and implementing effective predeployment preventive medicine guidelines and training for all deployable civilian personnel.
7. Provide management/internal control over the Army Radiation Safety regulation.[1]

One example of recent efforts by the command surgeon staff is the authorship of a new AMC command policy memorandum on completion of the Post Deployment Health Reassessment (PDHRA) process for deployed civilians.[2] Other examples of broad-based initiatives by the command surgeon staff include the Hearing Conservation Program across the AMC industrial base,[3] as well as an effort to close indoor smoking rooms (which are still allowed at Rock Island Arsenal as an exception to Executive Order 13058, published in 1997, which protects federal employees and the public from exposure to tobacco smoke in the federal workplace[4]).

Under the direction of the MEDCOM commander, the Army Medical Department (AMEDD) resources and staffs occupational health clinics that provide occupational health services for the AMC workforce employed by government-owned, government-operated plants (GOGOs).

THE US ARMY MATERIEL COMMAND

The AMC celebrated 50 years of service in 2012, having been activated on May 8, 1962, and becoming fully operational on August 1, 1962.[5] Its first commander, Lieutenant General Frank S. Besson Jr, chose the name "Army Materiel Command" for its simplicity and clarity. Its mission was to manage the life cycle of materiel from the initial concept through research and development, procurement, production, supply, distribution and maintenance, and, ultimately, disposal. Initially established at what is now the Ronald Reagan Washington National Airport, AMC headquarters has had several homes. From the environs of the airport, it moved to Alexandria, Virginia, and then to Fort Belvoir, Virginia. As a result of a Defense Base Closure and Realignment Commission recommendation to the president in 2005, it has been located at Redstone Arsenal in Alabama since 2011.[6] The basic structure of AMC changed in 1986 with the passage of the Goldwater-Nichols Department of Defense (DoD) Reorganization Act. Essentially, AMC was removed from command oversight of acquisition when the Army created the Assistant Secretary of the Army for Research, Development, and Acquisition, with a military deputy.

The current mission of AMC is to develop, deliver, and sustain materiel to ensure a dominant joint force for the United States and its allies. Its vision is to provide America's service members with the decisive edge. Since the terrorist attacks of September 11th, AMC has supported troops in both Iraq and Afghanistan by resetting and repairing equipment in a timely manner and providing contracting services when needed. In short, virtually anything a service member needs is provided by AMC. The core competencies of AMC are to equip, sustain, integrate, and enable: as the premier provider of materiel readiness, AMC "provides." As of September 30, 2013, there were 67,938 employees across the AMC enterprise, 96% of whom are civilian and 4% military.[7] They are assigned to duty locations in 42 states and 29 countries. The vast majority of permanent civilian positions (66%) are professional, technical, or administrative. Of these positions, 41% require acquisition certification. Fifty-nine percent of white collar personnel have a bachelor's degree, master's degree, or PhD. Of the civilian workforce, 10.1% are retired military.

Industrial activities are organized in three different configurations:

1. GOGOs. These plants are owned and operated by AMC and staffed with federal employees. Sierra Army Depot (AD), Deseret Chemical Depot (CD), Tooele AD, Pueblo CD, McAlester Army Ammunition Plant (AAP), Red River AD, Corpus Christi AD, Pine Bluff Arsenal, Anniston AD, Blue Grass AD, Tobyhanna AD, Watervliet Arsenal, Letterkenny AD, and Crane Army Ammunition Activity are all GOGOs. In addition, there are two port facilities (Military Ocean Terminal-Concord and Military Ocean Terminal-Sunny Point) that are also GOGOs.
2. Government-owned, contractor-operated plants (GOCOs). These plants are owned by AMC but operated by a contractor who independently employs the workers. Hawthorne AD, Lake City AAP, Iowa AAP, Milan AAP, Joint Systems Manufacturing Center, Scranton AAP, Radford AAP, and Holston AAP are all GOCOs.
3. Contractor-owned, contractor-operated operations (COCOs). These plants are owned and operated by private-sector manufacturers. AMC purchases their products.

The responsibility for provision of occupational health services depends on the ownership and operation of the plant. AMEDD provides occupational health services only at GOGOs.

To convey the depth and breadth of AMC's responsibilities, as well as its occupational health needs, a brief synopsis of its major subordinate commands, activities, and respective missions is provided below.

Research, Development and Engineering Command

The Research, Development and Engineering Command (RDECOM) headquarters is based at Aberdeen Proving Ground, Maryland. Its mission is to develop technology solutions for service members to maintain the decisive edge on the battlefield. It has seven subordinate centers under its command.

1. The US Army Research Laboratory is the Army's executive agent for development, execution, and transfer of extramural basic science research. This type of research provides service members with enhancements in protection, lethality, networks, and sensors. This workforce makes up the largest source of world-class integrated research and analysis in the Army.
2. The Aviation and Missile Research, Development, and Engineering Center conducts research and exploratory and advanced development for aviation and missile weapons systems.

3. The US Army Armament Research, Development and Engineering Center advances armaments technology and engineering innovation for more than 90% of the Army's lethality, focusing on advanced weapons, ammunition, and fire control systems.
4. The US Army Communications-Electronics Research, Development and Engineering Center supplies advanced command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) capabilities.
5. The US Army Edgewood Chemical Biological Center is the technical organization responsible for non-medical chemical and biological defense. It is the only "all hazard" laboratory in the United States capable of dealing with items that are potentially contaminated with chemical, biological, or radiological material.
6. The US Army Natick Soldier Research, Development and Engineering Center treats the soldier as a combat system. It is charged with developing and using innovations in science and technology to improve and maximize survivability, sustainability, mobility, combat effectiveness, and field quality of life. Its core competencies include joint service combat feeding, modeling and simulation of aerial delivery, clothing and protective equipment, specialized shelters for command and control and threat environments, soldier and small-unit technology maturation and demonstration, and human systems integration sciences, which makes use of applied behavioral and cognitive sciences.
7. The US Army Tank Automotive Research, Development and Engineering Center develops, integrates, and sustains technology solutions for all manned and unmanned DoD ground systems and combat support systems, collectively known as the Ground System Enterprise. Geographically located at Detroit Arsenal, it is at the center of the automotive industry and its collateral intellectual property expertise.

Tank-Automotive and Armaments Command Life Cycle Management Command

Headquartered in Warren, Michigan, the Life Cycle Command's mission is to develop, acquire, field, and sustain soldier and ground systems. It has six subordinate centers.

1. Anniston Army Depot, founded in 1940 and located in Anniston, Alabama, repairs, overhauls, modifies, and upgrades combat vehicles (except the Bradley and Multiple Launch Rocket Systems), artillery systems, bridging systems, small arms, and secondary components.
2. Rock Island Arsenal Joint Manufacturing and Technology Center is located in Rock Island, Illinois. It claims the honor of having built the first American manufactured tank. Its mission is to provide products and services through developing and manufacturing, integration, testing, and logistics. Its many capabilities range from having a full-purpose foundry, fabrication and welding of metals, heat treating, machining, painting, and engineering. In its possession are two of only thirteen existing seven-axis machining centers in the world, along with 200 computer-controlled machines and more than 950 conventional machines.
3. Red River Army Depot, founded in 1941 and located in Texarkana, Texas, conducts ground combat and tactical system sustainment maintenance operations. It is engaged in the remanufacturing and recapitalization of tactical wheeled vehicles; production of M1 road wheels; and the repair and overhaul of electronic systems, heavy tanks, and artillery. It is the designated center of industrial and technical excellence (CITE) for Bradley Fighting Vehicles, the Multiple Launch Rocket System, rubber products, and tactical wheeled vehicles—including the Heavy Expanded Mobility Tactical Truck, the High Mobility Multipurpose Wheeled Vehicle, the Armored Security Vehicle, the Heavy Equipment Transporter, the High Mobility Artillery Rocket System, multiple configurations of trailers, and the Small Emplacement Excavator vehicle. Additionally, it has the technical resources to design, fabricate, and manufacture a wide variety of items, ranging from specialty parts to unique prototype weapons systems and vehicles.
4. Sierra Army Depot, founded in 1942, is located in Herlong, California. It is the CITE for all petroleum and water distribution systems. It is home to the Army's three largest operational project systems: the Inland Petroleum Distribution System, Water Support Systems, and Force Provider. It serves as an expeditionary logistics center, providing the full range of logistics support through

long-term storage, maintenance, care of supplies in storage, equipment reset, and container management. Its mission includes equipment reset, new assembly and kitting operations, training support, maintenance of medical readiness stock, and redistribution of Class II and IX items. It has established an end-of-first-life-cycle center for excess combat vehicles. It has also been designated the Army's consolidation and distribution center for the Clothing Management Office, which supports brigade-level organizational clothing and individual equipment reset operations.

5. Watervliet Arsenal, located in Watervliet, New York, is the nation's oldest continuously active arsenal, having been founded in 1813 in support of the War of 1812. It is the principal manufacturer of large-caliber weapons. It provides manufacturing, engineering, procurement, and quality assurance for cannons, mortars, and associated materiel. It partners with all of the acquisition community to design and build prototypes of the latest and next-generation weapons.
6. The US Army Natick Soldier Research, Development and Engineering Center (described above), which is also a part of RDECOM.

US Army Aviation and Missile Life Cycle Management Command

The US Army Aviation and Missile Life Cycle Management Command (AMCOM) is headquartered at Redstone Arsenal. Its mission is to unite all organizations that design, acquire, integrate, field, and sustain Army aviation, missile, and unmanned aircraft weapons systems. AMCOM is a member of the Aviation and Missile Materiel Enterprise, whose other members include the Aviation and Missile Research, Development and Engineering Center, the Army Contracting Command-Redstone, the Program Executive Officer (PEO) Aviation, and the PEO Missiles and Space. AMCOM supports six of the Army's 16 major warfighting systems. It has two Army depots—Corpus Christi and Letterkenny—that provide depot-level support to aviation and missile systems.

US Army Communications-Electronics Command

The US Army Communications-Electronics Command is located at Aberdeen Proving Ground. It is the "one-stop shop" for life cycle support of communications-electronics systems and equipment carried by soldiers. Its mission is to develop, acquire, provide, and sustain C4ISR and battle command capabilities for the joint combat service member. In addition to its headquarters, it has four subordinate organizations.

1. Tobyhanna Army Depot, founded in 1953, is located in Tobyhanna, Pennsylvania. It provides maintenance, manufacturing, integration, and fielded repair to C4ISR systems worldwide. The Army has designated Tobyhanna Army Depot as the CITE for C4ISR, avionics, and missile guidance and control. It also provides maintenance, fabrication, and system integration for the Army, Navy, and Air Force C4ISR systems.
2. The Central Technical Support Facility is located at Fort Hood, Texas. It is the test, integration, and certification testing facility for the Army LandWarNet/Battle command systems.
3. The Logistics and Readiness Center is located at Aberdeen Proving Ground. It provides global logistics support for C4ISR systems and equipment.
4. The Software Engineering Center is located at Aberdeen Proving Ground. It provides life cycle software solutions on the battlefield to ensure that service members are fed, housed, moved, and supplied.

US Army Joint Munitions Command

The Joint Munitions Command (JMC) headquarters is at Rock Island Arsenal. Its mission is to manage production, storage, issue, and demilitarization of conventional ammunition for all US military services. Through a process called centralized ammunition management, JMC supplies combat units with the right munitions at the right time and the right place. In addition to a training and explosives safety center at the Defense Ammunition Center in McAlester, Oklahoma, JMC has oversight of 10 ammunition plants and four Army depots and arsenals.

Ammunition Plants

1. The Anniston Defense Munitions Center is located in Anniston, Alabama. Its mission is to provide receipt, storage, shipment, maintenance, inspection, demilitarization, and recycling of ammunition and missiles.
2. The Crane Army Ammunition Activity, founded in 1941, is located in Crane, Indiana. As a strategic mobility platform, its mission

is to receive, store, ship, produce, renovate, and demilitarize conventional ammunition, missiles, and related components. It is also deemed a munitions center of excellence; as such, it produces mortar and artillery illumination and infrared items. It is a major producer of large-caliber Navy gun ammunition and has capabilities for missile warhead pressing, depleted uranium remanufacture, and C4 extrusion, as well as loading and renovating munitions and bombs, insensitive munitions, and actuating devices. Demilitarization capabilities include steam-out and water-jet processes, high-pressure washout, permitted open burn/open detonation, contained detonation, and white phosphorus conversion. Tools, dyes, fixtures, gauges, production equipment, and components are fabricated in its machining center.

3. Holston Army Ammunition Plant, founded in 1942, is located in Kingsport, Tennessee. Its mission is to manufacture secondary detonating explosives, including Research Department Explosive, an explosive nitroamine; High Melting Explosive, a relatively insensitive nitroamine high explosive; triaminotrinitrobenzene, a powerful, extremely insensitive aromatic explosive; 3-nitro-l, 2, 4-triazol-5-one, an insensitive munition; and all of their related formulations. Research and development focus on next-generation energetic materials, covering synthesis, formulation, development of analytical methods, and explosive performance testing.
4. Iowa Army Ammunition Plant, founded in 1941, is a GOCO facility operated by American Ordinance LLC in Middletown, Iowa. Its mission is to produce and deliver large-caliber ammunition for the DoD. Production capabilities include the M795, M107, M927, Hawk, Stinger, Stryker Reactive Armor Tile, Expeditionary Fire Support System, Modular Artillery Charge System, and the entire family of 120-mm tank ammunition.
5. Lake City Army Ammunition Plant, founded in 1941, is located in Independence, Missouri. It operates the independent North Atlantic Treaty Organization test center for small arms ballistics. Operated by Orbital ATK (Dulles, VA), an American aerospace manufacturer and defense industry company, the plant is a GOCO facility. Its mission is to provide ammunition to train, maintain, and sustain combat operations by ordering bulk metals, chemicals, and propellants and fabricating them into complete 5.56-mm, 7.62-mm, and .50-caliber ammunition. Additionally, it loads, assembles, and packs 20-mm ammunition.
6. Letterkenny Munitions Center, founded in 1941, is located in Chambersburg, Pennsylvania, and is a tenant activity on Letterkenny Army Depot. It is a strategic mobility platform that provides munitions and missile support. It performs surveillance, receipt, storage, issue, testing, and minor repair for the Army Tactical Missile System and Guided Multiple Launch Rocket System missiles, as well as the High-Speed Anti-Radiation Missile and Joint Air-to-Surface Stand-Off Missile (primarily used in the Air Force) and the Sidewinder, Sparrow, Advanced Medium Range Air-to-Air Missile, and Penguin missiles (primarily used in the Navy).
7. McAlester Army Ammunition Plant, founded in 1943, is located in McAlester, Oklahoma. Its mission is to produce and store a variety of munitions. It is a large-scale producer of bombs and stores one-third of all munitions stock for the DoD. It has capability to renovate bombs, rockets, projectiles, mortars, small arms, propelling charges, and shipping containers. In addition, it fabricates wood and metal pallets, maintains and repairs mobile railroad track, and disassembles missiles. It operates a chemical and explosive laboratory and two digital x-ray facilities. It is also the centralized ammunition management agency for the southwest region, which encompasses seven states and Puerto Rico, including 33 Army installations.
8. Milan Army Ammunition Plant, founded in 1941, is located in Milan, Tennessee. Its mission is to provide joint munitions by loading, assembling, and packing medium- to large-caliber ammunition (40-mm, M918/M385, and M430/M433). It manufactures the M74 grenade and loads it into the Army Tactical Missile System Warhead. It receives and ships containerized cargo. It also has ability for high-explosive artillery/mortar melt pour; assembly and packaging of 105-mm, 155-mm, 60-mm, and 81-mm ammunition; extrusion of C4 plastic explosives, C4 used for mine-clearing line charges (M58A4/N68A2), and M112/M183 demolition charges; and assembly of reactive armor tiles for the Bradley Fighting Vehicle.

9. Radford Army Ammunition Plant, founded in 1940, is located in Radford, Virginia. Its mission is to manufacture propellants and explosives for field artillery, air defense, tank, missile, aircraft, and weapons systems for the DoD. The plant operates chemical, metrology, and ballistics labs. It also is the sole producer of nitrocellulose and solventless propellant for various rocket motors in the continental United States.
10. Scranton Army Ammunition Plant, founded in 1951, is located in Scranton, Pennsylvania. Largely unaltered since its construction in 1908 as a steam locomotive erecting and repair facility for the Delaware, Lackawanna & Western Railroad, the plant is on the National Register of Historic Places as part of the Steamtown Historic District. The Army acquired it in 1951 and converted it to produce metal parts. It is now a GOCO facility operated by General Dynamics (Falls Church, VA). Its mission is to manufacture and deliver large-caliber steel projectiles for artillery, mortar, and Navy projectile metal parts. It manufactures 105-mm to 155-mm diameter projectiles, including the 105-mm MK64-2; the 120-mm M929, M930, M931, M933, M934 HE, and M983; and the 155-mm M107, M110, and M795.

Depots and Arsenals

1. Blue Grass Army Depot, founded in 1941, is located in Richmond, Kentucky. It is a strategic mobility platform whose mission is to provide conventional munitions, missiles, nonstandard ammunition, and chemical defense equipment logistical support.
2. Hawthorne Army Depot, founded in 1930, is located in Hawthorne, Nevada. Its mission is to provide for receipt, storage, rewarehousing, preservation and packaging, surveillance, renovation, demilitarization/disposal, and issue of conventional ammunition. With 7,685,000 square feet of storage, it is the premier demilitarization facility for conventional ammunition. It also serves as the storage site for the nation's stockpile of elemental mercury.
3. Pine Bluff Arsenal, founded in 1941, is located in Pine Bluff, Arkansas. Its mission is to produce ammunition and perform chemical/biological defense production and repair, depot storage and surveillance, and homeland security. It has been designated as the CITE for chemical and biological defense equipment. The arsenal has white phosphorus canister fill capability and supplies smoke munitions. It develops unique pyrotechnic mixing technologies, including facilities for red phosphorus mixing, extrusion, and pressing, and 40-mm colored smoke grenade production. It rebuilds and recertifies protective gas masks for the Army and the Defensive Chemical Test Equipment Services for the manufacture of several large filters and the M291 decontamination kit.
4. Tooele Army Depot, founded in 1943, is located in Tooele, Utah. As a major power projection platform, its mission is to receive, store, issue, demilitarize, renovate, and test conventional ammunition. It also designs, manufactures, fields, and maintains ammunition-peculiar equipment.

US Army Contracting Command

The Army Contracting Command, with headquarters is at Redstone Arsenal, acquires equipment, supplies, and services for combat missions. It has two subordinate commands: (1) the Expeditionary Contracting Command for locations outside the continental United States and (2) the Mission and Installation Contracting Command, headquartered at Fort Sam Houston and comprised of six major contracting centers within the United States (Aberdeen Proving Ground, New Jersey, Orlando, Redstone, Rock Island, and Warren).

US Army Sustainment Command

The Army Sustainment Command is headquartered in Rock Island Arsenal. Its mission is to organize, train, and sustain a deployable force and integrate materiel and services for service members. In essence, it ensures that troops have the right equipment at the right time to accomplish their missions. The Army's field-level maintenance and supply capabilities, as well as seven field support brigades and the Logistics Civil Augmentation Program Support Unit, are under the Sustainment Command's command and control.

US Army Military Surface Deployment and Distribution Command

The Army Military Surface Deployment and Distribution Command is headquartered at Scott Air Force Base in Illinois. Its mission is to provide expeditionary and sustained end-to-end deployment and distribution.

In essence, it plans and executes the surface delivery of equipment and supplies. It is the Army service component command of the US Transportation Command and a major subordinate command of the AMC. It operates 24 ports throughout the continental United States and abroad, averaging about 20 million square feet of deployment and redeployment cargo movements (roughly equating to 314 vessel operations) each year. It has a total of five transportation brigades under its command, in addition to a transportation engineering agency at Scott Air Force Base.

US Army Security Assistance Command

The Army Security Assistance Command is headquartered at Redstone Arsenal. Its mission is to manage security assistance programs and foreign military sales for the Army. From pre-letter of request through development, execution, and closure, USASAC is responsible for the life cycle management of foreign military sales cases, managing about 4,600 cases a year, valued at more than $134 billion. It is also responsible for financial policy and security assistance information management, as well as providing policy, procedure, and guidance for the Army security assistance community.

US Army Chemical Materials Activity

The Army Chemical Materials Activity is headquartered in the Edgewood area of Aberdeen Proving Ground. Its mission is to enhance national security by storing and ultimately eliminating US chemical warfare materiel (CWM), in addition to supporting CWM responses. There are only two sites remaining where CWM is stockpiled: Blue Grass Chemical Activity (mustard and nerve agent) and Pueblo Chemical Depot (mustard agent), both of which will have their stockpiles destroyed through the auspices of the Assembled Chemical Weapons Alternatives, a US Army element. The stockpiles of CWM at Anniston, Pine Bluff, Deseret, and Umatilla have all been effectively destroyed. The Army Chemical Materials Activity also responds to non-stockpiled CWM, such as World War II munitions, when it is discovered. For example, there are currently 17 known dumping sites on Redstone Arsenal where chemical weapons were buried following World War II, when it was standard practice to drain, burn, or bury surplus munitions.[8] The Army Chemical Materials Activity works with the treaty mission as the Army's executive agent and partners with the Chemical Stockpile Emergency Preparedness Program.

The Logistics Support Activity

The Logistics Support Activity is headquartered at Redstone Arsenal. It is the home of the Logistics Information Warehouse, the Army's official storehouse for collecting, storing, organizing, and delivering logistics data. Its mission is to provide timely and integrated life cycle logistics information, knowledge, and expertise in support of service members around the world to meet full-spectrum operational requirements.

Army Materiel Systems Analysis Activity

The Army Materiel Systems Analysis Activity has a worldwide presence, including a forward support cell located at AMC headquarters at Redstone Arsenal. Its mission is to conduct analyses across the materiel life cycle to inform critical decisions for current and future service member needs.

QUALITY OF THE WORK ENVIRONMENT

AMC's qualtiy of the work environment (QWE) initiative supports efforts to improve the work environment. The 32nd vice chief of staff of the US Army, General Peter Chiarelli, began the QWE program after he visited Lake City Army Ammunition Plant and decided that working conditions at the plant, though within acceptable regulations and standards, could be improved. The existing standards were inadequate to ensure that the civilian, contractor, and military workforce had a "comfortable and quality" place to work. Because no standards for comfort and quality existed, developing QWE standards was critical not only for documentation and correction of findings, but also for long-term integration into Army daily business processes. To accomplish these goals, cross-functional teams of subject matter experts in facilities engineering and fire safety, as well as life safety, industrial hygiene, ergonomics, occupational health, and safety, conducted assessments across 23 organic industrial base sites. To assess the sites, the teams developed initial QWE criteria based on existing industry standards and created new benchmarks. Following the assessments, each site was provided an individualized report, including a synopsis of programmatic findings for industrial hygiene, safety, ergonomics, occupational health, fire protection, life safety, facilities engineering, criteria findings, and feedback from employee surveys.

From a strategic perspective, major occupational health challenges for the civilian workforce remain. Several common findings from the QWE assessments

illustrate these challenges. For example, there are problems with the Defense Occupational and Environmental Health Readiness System-Industrial Hygiene (DOEHRS-IH), the mandated Army computer software program that automates and archives industrial health program data. DOEHRS-IH contains exposure-based occupational healthcare information and creates a longitudinal exposure record. However, it also depends on data being entered into the program, which is a laborious, time-consuming process. Industrial hygienists must not only conduct surveys, but also enter all the data into DOEHRS-IH. QWE assessments revealed that although surveys were being conducted, in many cases data were not being entered into the database because of staffing issues.

Another issue brought to light by the QWE assessments was the chronic underfunding of maintenance and repairs to industrial facilities; most of the buildings are over 70 years old. Even though AMC owns approximately 15% of the Army's inventory of plants, it receives less than 3% of military construction funding. The Army needs to develop a funding strategy through the Program Objective Memorandum process to replace these facilities. The initial cost estimate for all sites is $3.5 billion over 20 years. In the interim, AMC has already sought funding to make some facility improvements through several modalities, including the Army Working Capital Fund, contractor investment, and the capital investment; sustainment, restoration, and modernization; operation and maintenance; and production-based support programs.

AMC partners with the Army Public Health Center to develop a path forward to address QWE issues at MEDCOM occupational health clinics that support AMC sites, particularly to identify improvements to the industrial hygiene, ergonomic, and occupational health portions of the QWE assessments. AMC will continue to pursue funding in accordance with the Army Organic Industrial Base Strategic Plan, 2012–2022, to ensure that depots and arsenals will remain modernized and capable of sustaining their core depot and critical manufacturing capabilities.[9]

SUMMARY

In its inherent mission to supply all classes of materiel, AMC is the Army's wellspring, enabling the Army to conduct kinetic, humanitarian, and disaster relief operations alike. Since the beginning of Operation Enduring Freedom in Afghanistan in 2001, the operational tempo has been high across AMC's industrial base in support of two wars in two locations. During this time AMC personnel have processed and handled well over 3.5 million pieces of equipment. As the war in Iraq came to an end, AMC was fully engaged with retrograde movement of materiel out of that theater. As of this writing, the war in Afghanistan is still being prosecuted. According to diplomatic decisions between the United States and Afghanistan, US forces returned home in December 2014, leaving behind a cadre of advisors. There is an ongoing reduction in workload from wartime highs, as redeployment from Afghanistan continues. There will be uncertainty in the overall requirements placed on AMC's industrial base with the end of combat operations in Afghanistan, and a reshaping initiative for the strength of the Army, as well as other US armed services.

During any interwar period, what is certain is the vital importance of maintaining the skills of the workforce and the ability to readily ramp up production capability when the next conflict inevitably occurs. It is vital that resources be available to ensure that AMC maintains its place as the premier logistical platform for the US armed forces, and that it sustains the prepositioned stock of materiel and equipment in various areas around the globe. This is important not only for kinetic operations, but also for logistical support of humanitarian efforts and disaster relief operations. As General Omar Bradley once said, "Amateurs talk strategy. Professionals talk logistics." Just as the military services rely on the materiel support provided by the AMC, the AMC rests on the backbone of its workforce, and its workforce must be healthy to perform at maximum capacity. Occupational health plays a key role in keeping the workforce healthy and resolving issues in the work environment that could adversely impact the health of its workers. These are all the building blocks for success in fighting wars and securing peace.

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