RECORD VERSION

STATEMENT BY

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Introduction

Chairman Inhofe, Ranking Member Kaine and distinguished members of the Subcommittee, thank you for the opportunity to testify on the preparedness of the Army's Organic Industrial Base (OIB), its critical role in providing and sustaining readiness for the Warfighter, and our ongoing initiatives in support of its revitalization.

On behalf of Secretary Esper and General Milley, I would like to express our gratitude to Congress for its strong support. As the Secretary outlined in his recent testimony before the House Armed Services Committee, we face a strategic security environment more complex and volatile than any we have experienced in recent memory. The Army stands ready to answer the Nation's call - we are a lethal and effective force. To maintain our effectiveness, we must continue to focus on Readiness, Modernization, and Reform.

A key component of Readiness is the Army's Organic Industrial Base (OIB). This $14 billion enterprise consists of 23 ammunition plants, depots, and manufacturing arsenals, with a workforce of 22,000 professionals. The OIB builds and maintains readiness by executing two key functions. The first is depot maintenance: the overhaul and rebuild of major systems such as the Abrams, Bradley, Stryker, communications equipment, weapons, and other materiel. The second function is the execution of the Army's role as the DoD Executive Agent for Conventional Ammunition. This includes the manufacture of critical conventional munitions, including propellants, energetics, and small arms ammunition. It also includes maintaining preferred munitions and the loading, assembling, packing, storing, outloading, distributing and demilitarization of munitions.

The past seventeen years of conflict have demonstrated the value the OIB provides to Army readiness and to our Nation's security. The OIB successfully surged in order to manufacture and sustain the warfighting equipment needed to execute contingency operations in Afghanistan and Iraq. As we redeployed forces

and drew down the Army over the past decade, workload reductions contributed to rate increases and inefficient operations. The OIB has been largely reactive to emerging requirements. This reactive model does not ensure a healthy organic capability to maintain core competencies and surge capacity to generate combat power.

To reverse these trends requires change. Today I will discuss how the Army is implementing a new, proactive paradigm – one that relies upon a business and operational approach, rather than historical practice. I will also discuss how the OIB is in the midst of transformation as we focus on production output required to support sustained readiness; how we manage capabilities and capacity; and how we execute continuous capital investments to attain viable, modern state-of-the-art industrial facilities. Finally, I will discuss how we are improving our effectiveness through the creation of reliable forecasts of our workload; innovative product support; exploitation of synergies created between the OIB and industry through public-private partnerships; and streamlining depot maintenance through automation and continuous process improvement initiatives.

How the OIB ensures that the Army is Ready and Maintained

The OIB brings to bear unique industrial competencies that are not easily replicated in the commercial sector. These capabilities provide for the Army's immediate needs as well as a base from which to expand in times of crisis. One example within the depot maintenance arena resides at Watervliet Arsenal in New York. Watervliet Arsenal is the Army's Center for Industrial and Technical Excellence for cannon and mortar systems and is the nation's only manufacturer of large caliber cannon barrels, breach blocks and breach rings. Another example is Anniston Army Depot in Alabama. Anniston returns combat readiness to the warfighter, resets the Army's Stryker Combat Vehicles and overhauls M1 Abrams Tank engines. With respect to the ammunition industrial base, including both organic and commercial segments, the Army has identified 103 critical capabilities,

25 of these reside solely in the OIB. Radford Army Ammunition Plant in Virginia, is the only producer of nitrocellulose, a key compound used in making explosives. Holston Army Ammunition Plant in Tennessee, is the only manufacturer of High Melting Explosive and Research Development Explosive in the United States. Holston recently began production of IMX - Insensitive Munitions Explosive, the first in a family of "insensitive munitions." Insensitive munitions are far more stable than conventional TNT and Composition B, and much safer to transport. McAlester Army Ammunition Plant in Oklahoma produces bombs for all the services and is the principal source of supply for both wartime and training requirements across the DoD.

The OIB has been sustaining continuous operations since 2003. During this time, the OIB produced over 21 billion rounds of ammunition and reset over 3.9 million pieces of equipment valued at approximately $32 billion. Importantly, $5.7 billion of this work was in support of other services. This effort has positively impacted Equipment on Hand (EoH) readiness rates of units across the Army and assisted in the execution of other key readiness initiatives. One example is the Army's expansion and reconfiguration of Army Prepositioned Stocks (APS) around the globe – significantly increasing the speed of response to Combatant Commanders' requirements by reducing the amount of time it takes to issue the equipment to deploying units. A second example is the building and equipping of the Army's 15th Armor Brigade Combat Team (ABCT) at Fort Stewart, Georgia

To ensure Army readiness now and into the future, the Army is developing a schedule-driven, depot workloading strategy that is directly linked to the Army's Sustainable Readiness Model. This approach ensures the Army's organic capabilities are focused on meeting its highest readiness priorities, and precious resources are optimized at the enterprise-level. This approach also yields a predictable and stable workload while providing a mechanism to continually evaluate and assess risk to the operating force.

Simultaneously, we are also creating a resilient and responsive ammunition industrial base by analyzing storage and outload requirements and aligning manufacturing capability, capacity and modernization efforts to support it.

Improving the Efficiency and Effectiveness of the OIB

The Army's Organic Industrial Base was designed to sustain the high-volume production rates needed to meet World War II demand. Over the past several decades, the OIB has been reduced from 77 plants, depots, and arsenals to 23 facilities at present. The aging infrastructure poses a risk to the OIB's capability and capacity to meet current and future demands as well as surge to support all required missions. The Army recognizes that modernization is especially critical now and has invested over $2 billion to modernize antiquated, unreliable and inefficient machinery and facilities at Government Owned-Contractor Operated (GOCO) and Government Owned-Government Operated (GOGO) installations. The installation of automation and robotics, accompanied by upgrades to facilities and infrastructure have enhanced productivity. As productivity and efficiency increase we are seeing corresponding decreases in labor, maintenance, and utilities costs.

Likewise with our manufacturing arsenals and depots – over 6% of these facilities, valued at $2.5 billion - are in substandard condition. The Army plans to invest over $1.8 billion, which is needed to address inefficiencies in lines that support critical weapon systems including Abrams, Bradley, Stryker, Paladin, Apache, Patriot, MRAPs and C4ISR.

Coupled with modernization, the OIB has recently transitioned to business systems that use standard, industry-recognized processes. The Logistics Modernization Program (LMP) and its Complex Assembly Manufacturing Solution (CAMS) are applications built on commercial off-the-shelf software for Enterprise Resource Planning (ERP) and shop floor integration. These tools allow the Army to completely see its manufacturing and service operations for the first time. These applications also permit

the Army to improve the accuracy of its Bills of Materials; engage in more efficient production scheduling; enable interaction with its supply chain of over 11,000 first, second and third tier vendors; and reduce delays for parts. These capabilities coupled with the Army's tactical-level ERP called the Global Combat Support System – Army (GCSS-A), are increasing the speed at which materiel reaches the warfighter, and provides the Army with true "factory to foxhole" asset visibility and auditability.

The OIB is also executing a number of supply chain initiatives to improve its effectiveness. These include improving demand forecasting accuracy and imposing tougher performance standards on suppliers. The aforementioned efforts improve our ability to purchase, manufacturer, and repair critical parts required to support warfighting equipment.

Synergy through Public-Private Partnership

Public-private partnerships are important in assisting the OIB to improve Army readiness. These partnerships allow private sector companies to access OIB manufacturing capabilities and permit the government to act as a supplier to commercial industry under certain circumstances. Last year, 263 partnerships across the OIB produced $412 million in additional revenue for the government and brought with them innovative ideas and best business practices.

There are many exciting examples of these projects. Anniston Army Depot continues to partner with General Dynamics to reset Strykers and with Honeywell to recapitalize Army M1 tank engines at 25% of their original cost, saving the government $45 million annually. Tooele Army Depot in Utah, has a joint venture with Safety Management Services (SMS), Inc., to operate an on-site commercial laboratory that tests and grades explosives. AM General is partnering with Rock Island Arsenal's Joint Manufacturing Technology Center in Illinois, and the Army National Guard to manufacture M997A3 HMMWV ambulances, and with Red River Army Depot in Texas to overhaul older HMMWV models.

The OIB contributes $3.6 billion to local communities across the country and often has a positive effect on economies across multiple states. For example, recapitalizing the M1 Abrams Tank requires suppliers in 41 states; overhauling an UH-60 Blackhawk helicopter involves companies in 19 states; and manufacturing a single 5.56 mm bullet brings work to 9 states.

Streamlining Depot Maintenance

The introduction of Lean Six Sigma and continuous process improvement has allowed the OIB to realize $5.6 billion in cost savings and avoidance since 2012.

Industrial operations require tremendous water resources and energy. The OIB has successfully used Energy Savings Performance Contracts and Utility Energy Service Contracts to solicit third party investment and save over $30 million annually.

The Army is actively pursuing advanced manufacturing. Advanced manufacturing integrates a number of cutting edge technologies including robotics, artificial intelligence, computer learning and additive manufacturing to improve products or processes.

Manufacturing organizations successfully employing advanced manufacturing share a common attribute. They have all recruited and retained a workforce possessing Scientific, Technical, Engineering and Math (STEM) skills far above the national average. This requirement aligns closely with those manufacturing skills required by the OIB to sustain readiness as it moves into the latter half of the 21st Century, including: materials engineers, capacity planners, chemists, test pilots, industrial radiograph operators, and electroplaters. Our laboratories and Research, Development and Engineering Centers actively work with local high schools and universities to support STEM initiatives and expose students to rewarding careers within the OIB. We are particularly grateful for direct hiring authorities provided by Congress, which enable us to more efficiently hire skilled and talented workers.

Additive Manufacturing (AM) is a technology that could revolutionize the way in which our arsenals and depots maintain, repair, and recapitalize equipment. AM enables the quick replication of obsolete and difficult to obtain parts, this translates to reduced down time and higher operational readiness rates. The Army continues to participate in the private sector Additive Manufacturing Users Group which includes original equipment manufacturers. Thus far, AM capabilities have been installed at 18 sites across our Army. Fourteen are located within the OIB. Rock Island Arsenal – Joint Manufacturing Technology Center (RIA-JMTC) has been designated as the Army's Organic Industrial Base Additive Manufacturing Center of Excellence. RIA-JMTC is charged with establishing a data library and institutionalizing the most effective technologies. As we continue to explore this promising technology, our expectation is to deliver this capability to the point of need on the battlefield, getting equipment quickly back into action while eliminating wait time and transportation costs.

These efforts to streamline depot maintenance have been recognized both inside and outside of the DoD. Collectively the OIB has earned 47 ISO Quality Certifications, 31 Shingo Manufacturing Awards for Excellence, and 26 DoD Value Engineering Awards.

Closing

I would like to thank each distinguished member of the Committee for allowing me to offer this testimony today. To quote President George Washington, "*To be prepared for war is one of the most effective means of preserving peace*." Consistent, predictable, funding enables the OIB to optimize resources and to best support the Army. Your continued support enables us to equip and sustain the best fighting force in the world.