RECORD VERSION

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BEFORE THE

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ON

UPDATES ON EFFORTS TO MODERNIZE CONVENTIONAL AMMUNITION PRODUCTION

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Introduction

Chairman Norcross, Ranking Member Hartzler, and distinguished Members of the Subcommittee on Tactical Air and Land Forces, thank you for this opportunity to provide an update on the Army's plan to modernize production of conventional ammunition across the organic industrial base. On behalf of the Secretary of the Army, the Honorable Christine Wormuth, and the Chief of Staff of the Army, General James McConville, we thank you for the invitation to join you today and look forward to a productive discussion.

Conventional Ammunition Readiness

Since 1977, the Army has been the Single Manager for Conventional Ammunition (SMCA) for the Department of Defense (DoD), providing central management of conventional ammunition for all the Services to ensure superior products and reliable sources of supply, as well as economies of scale and other managerial efficiencies. The Army continues to successfully execute this mission, which is annually validated through a Joint Force customer survey that measures the effectiveness of the Army in four key areas: production base, acquisition, logistics and customer service. The Army's survey for fiscal year (FY) 2021 indicated a satisfaction rate of 93 percent. Ultimately, there has been no significant shortfall in conventional ammunition production by the ammunition industrial base, thus enabling Joint Warfighters to execute their worldwide contingency missions.

Organic Industrial Base Modernization

The Army's industrial base vision is a complementary and synergistic industrial base, both commercial and government owned, that has the capability to satisfy the Joint Warfighter's ammunition life cycle requirements in peacetime, wartime, and during national emergencies. Ammunition must remain available, reliable, and affordable. To

ensure this, the capabilities that produce ammunition components and end-items must also remain available, reliable, and affordable.

The Army's organic ammunition production industrial base is currently composed of a network of Government Owned, Contractor Operated (GOCO), and Government Owned, Government Operated (GOGO) ammunition industrial sites that have evolved over time. In the 1940's, the Army had 84 ammunition plants to accomplish this mission. Today, the Army has ten ammunition production installations and is on a path to reduce to nine through divestiture decisions. The majority of the buildings and infrastructure on the remaining installations are well past the design life and now are at the point of requiring complete replacement or recapitalization.

Although the Army's modernization efforts to date have resulted in an improved industrial base, critical infrastructure and manufacturing process upgrades are still required to support the Warfighter's current and future ammunition requirements, address continued facility deterioration, increase safety, and improve environmental compliance. Facilities that can meet ammunition production requirements while ensuring workforce safety, reducing environmental impacts, and sustaining production continuity are critical.

To ensure the continued viability of the organic ammunition production industrial base, the Army has developed an Army Ammunition Plant (AAP) Modernization Plan that will result in a resilient, safe, environmentally compliant, and effective organic ammunition industrial base that supports current and future weapons platforms. Investment in the AAP Modernization Plan will focus on achieving the following objectives and associated end states:

1. Increase manufacturing safety and readiness to meet current and future requirements: Modernize and transform production processes.
2. Isolate energetic mass from people: Remove personnel from energetic operations and leverage automation.

3. Ensure graceful degradation and resilient operations: Minimize the concentration of energetic materials in any one place.
4. Improve flexibility, maintainability, and sustainability: Multi-product production lines, proactive preventative maintenance, and state-of-the-art technology.
5. Reduce cost of operations: Identify efficiencies to reduce labor, material, and energy costs.
6. Secure supply chains: Mitigate single point failures and foreign dependencies.

The Army has developed a thorough process to identify and prioritize modernization projects in accordance with these objectives. Teams comprised of ammunition stakeholders are continually exercising this process. Additionally, to view modernization solutions from a different perspective, Sandia National Laboratories High Consequence Robotics and Automation Division provided an independent assessment of opportunities for automation across the production facilities, a key component of the Modernization Plan.

Ammunition Production Installations

The Army's organic ammunition production industrial base consists of ten facilities: seven GOCO facilities and three GOGO facilities. They are:

1. **Holston Army Ammunition Plant** (GOCO) in Tennessee is the sole manufacturer of Research Development Explosive and High-Melt Explosive, and the only North American manufacturer of the Insensitive Munitions Explosives (IMX) IMX-101 and IMX-104. Holston produces the majority of explosives used in nearly every lethal system within DoD from bombs and missiles to hand grenades, mortars, and tank and artillery ammunition. Projects to increase production capacity to address critical gaps are already underway at Holston. Future investments will minimize air emissions,

increase wastewater treatment capability and improve infrastructure to minimize accidental discharges.

2. **Iowa Army Ammunition Plant** (GOCO) is the DoD's primary source for the Load, Assemble, and Pack (LAP) of nearly all artillery, missile warheads, tank ammunition, grenades, mortars, mine-clearing charges, and demolition charges. Production lines at Iowa require modernization to address production continuity, environmental and safety issues posed by outdated processes and equipment, and failing infrastructure. Current production facilities are also inefficient for producing next-generation munitions, necessitating the design, construction, and commissioning of modern artillery and tank lines. In the near future, the Army plans to address critical infrastructure issues and construct a state-of-the-art Long Range Precision Artillery facility. This new line will incorporate enhanced safety, automation, flexibility, efficiency, and expandability.
3. **Lake City Army Ammunition Plant** (GOCO) in Missouri is the only Government Owned producer of small caliber ammunition, responsible for 85 percent of DoD's small caliber ammunition (less 9mm ammunition). Modernization at Lake City will upgrade current core capabilities and infrastructure while adding new capabilities to support Army Modernization efforts. Safety improvements through automation and remote operations, as well as critical infrastructure upgrades, are key elements of the strategy for Lake City. Future investments at Lake City will add a modern, high volume production facility for the Next Generation Squad Weapon 6.8mm ammunition and additional capabilities to produce lightweight 7.62mm ammunition.
4. **Radford Army Ammunition Plant** (GOCO) in Virginia produces propellants and propellant ingredients used in rockets, tank ammunition, and nearly all of our small caliber ammunition from 5.56mm to .50 caliber. Radford is the only source for production of nitrocellulose and solventless propellant in the National Technology and Industrial Base (NTIB). Radford faces challenges related to severely degraded critical infrastructure and production equipment that increases probability of future failure, posing risks to production

continuity, environmental compliance, and employee safety. Planned initiatives at Radford will result in 21st century manufacturing processes that are safer and more environmentally friendly, flexible, and resilient. This will require extensive automation, remote operations, and reduced plant footprint. Key design considerations will improve worker safety, reduce cost of operations, meet environmental requirements, and enhance finished product quality and consistency.

5. **Scranton Army Ammunition Plant** (GOCO) in Pennsylvania provides metal forge capabilities critical to the high volume production of mortar and artillery shell bodies used to supply the production process in Iowa. Modernization at Scranton will address degraded critical infrastructure and obsolete production equipment to improve employee safety, production efficiency, and enhance product quality. Future investment will repair and replace failing infrastructure as well as install a new manufacturing line to support production of the next generation of artillery metal parts.
6. **Milan Army Ammunition Plant** (GOCO) in Tennessee was a LAP facility which is now inactive and the Army is in the process of divesting of it.
7. **Quad Cities Cartridge Case Facility** (GOCO) in Illinois is a large cartridge case manufacturing facility specializing in deep drawn steel cartridge cases. Quad Cities was laid-away in the 2014 timeframe and is maintained in an inactive state for potential future requirements.
8. **Crane Army Ammunition Activity** (GOGO) in Indiana performs explosive loading (cast cure, press, and extrusion) and LAP of Navy gun ammunition, candles and pyrotechnics. The desired end state for modernization includes multifunction facilities, automation to reduce operator exposure, and flexible manufacturing facilities to meet current and next generation munitions production needs. Future investments will support plans to modernize multiple buildings and facilities to improve safety, quality, and throughput.
9. **McAlester Army Ammunition Plant** (GOGO) in Oklahoma performs mixing operations for both cast cure and melt-pour explosive formulations, as well as LAP operations of all penetrator, general purpose and inert (practice) bombs

(500 pounds–30,000 pounds) for the U.S. Air Force and U.S. Navy. Future investments will modernize legacy cast cure facilities, equipment, and support capabilities with next generation processes. Upgrades will increase robotic and automated process to reduce hazardous exposure, update multi-purpose facilities to improve efficiency and flexibility, and incorporate modern systems controls.

10. **Pine Bluff Arsenal** (GOGO) in Arkansas provides the joint warfighter with specialized ammunition, smoke, and Chemical, Biological, Radiological, and Nuclear defense capabilities, including specialized munitions for obscurant, illuminating, and incendiary devices. The desired end state for modernization at Pine Bluff includes fully modernized, advanced multi-product capable, environmentally friendly manufacturing facilities that leverage state of the art manufacturing processes to maximize efficiency and worker safety. Planned near-term projects will renovate an existing, available pyrotechnic facility and purchase of a new fluidized bed mixer to support smoke production.

Long Term Modernization

The current AAP Modernization Plan captures requirements through FY 2036. Transformational modernization of the organic ammunition production industrial base will be an enduring requirement to ensure that the critical capabilities remain available for current and future conventional ammunition production requirements. Projects deemed critical due to immediate safety concerns, environmental compliance risks, or significant supply disruptions are prioritized for each facility. The AAP Modernization Plan includes significant initiatives in the FY 2029-FY 2036 timeframe.

The AAP Modernization Plan is revisited on a yearly basis to address emerging critical facility needs, DoD priorities, and next generation ammunition production requirements. It is a holistic approach that will ensure a safe, environmentally compliant, resilient, and effective organic ammunition industrial base.

Challenges

Significant investments made in the past 20 years have enabled the Army to continue meeting the needs of the Joint Warfighter and Coalition Partners with an aging ammunition production capability. To ensure that our forces continue to have the munitions that they require, when they require them, significant investments are necessary. Timely, adequate, predictable, and sustainable funding is critical to fully achieve the vision laid out in the AAP Modernization Plan.

Producing ammunition is an inherently dangerous mission. The highest modernization priority is improving safety. This can be accomplished through the incorporation of the latest automation technologies to reduce workforce exposure to these hazardous situations. In the event there is an accident, resilient facilities will minimize down time and ensure critical production capabilities are maintained.

In parallel with addressing the critical needs within the organic ammunition production facilities, the Army is placing a priority on securing the full munitions supply chain through the identification of the highest risk materials and the development of mitigation strategies. New processes to increase production capacity, the rebuilding of organic capabilities, and the development of new sources within the NTIB are some of the avenues being explored. Automated supply chain risk management tools will help identify and monitor potentially problematic sources of supply, and proactively identify potential commercial sources capable of supporting requirements.

Conclusion

The Army’s organic ammunition production industrial base that supports our Joint Warfighters and coalition partners serves a vital role in protecting our nation’s security. The Army continues to successfully support Combatant Commander requirements and ensure the success of our Joint Warfighters through conventional ammunition

readiness. However, to maintain this capability and readiness we must continue to modernize the facilities or we risk catastrophic failures of critical production.

In parallel with the holistic modernization of our ammunition production facilities, we must remain vigilant in understanding our supply chain and addressing potential weaknesses. Continuous assessment and a focus on reducing single point failures and foreign dependencies is critical to securing our supply chains and ensuring continued availability of end items and constituent components in peace and war.

Chairman Norcross, Ranking Member Hartzler, and distinguished Members of this Subcommittee, we thank you for your steadfast and strong support of the outstanding men and women in uniform, our Army Civilians, and their Families, and we look forward to your questions.