



October 2022

ARMY AMMUNITION

Actions Needed to Improve Management of Procurement and Production Practices

Accessible Version

GAO Highlights

Highlights of [GAO-23-105352](#), a report to congressional requesters

Why GAO Did This Study

The Army is responsible for procuring and producing certain types of ammunition for all the military services. The Army procures most of this ammunition from five government-owned, contractor-operated plants, which, according to the Army, reduces its role in the production process to one of management. The Army also retains a significant capacity for ammunition production that can withstand fluctuations in demand.

GAO was asked to review the Army's current practices for managing the procurement and production of ammunition. This report addresses the Army's relationships and challenges related to government-owned, contractor-operated ammunition plants, among other issues. GAO reviewed and analyzed relevant statutes, regulations, documents, and contracts; and interviewed Army and vendor officials.

What GAO Recommends

GAO is making two recommendations to the Army, including that it revise the documents governing management of the procurement and production of ammunition at government-owned, contractor-operated plants to clarify roles and responsibilities. The Army concurred with both of the recommendations.

View [GAO-23-105352](#). For more information, contact John D. Sawyer at (202) 512-4841 or sawyerj@gao.gov.

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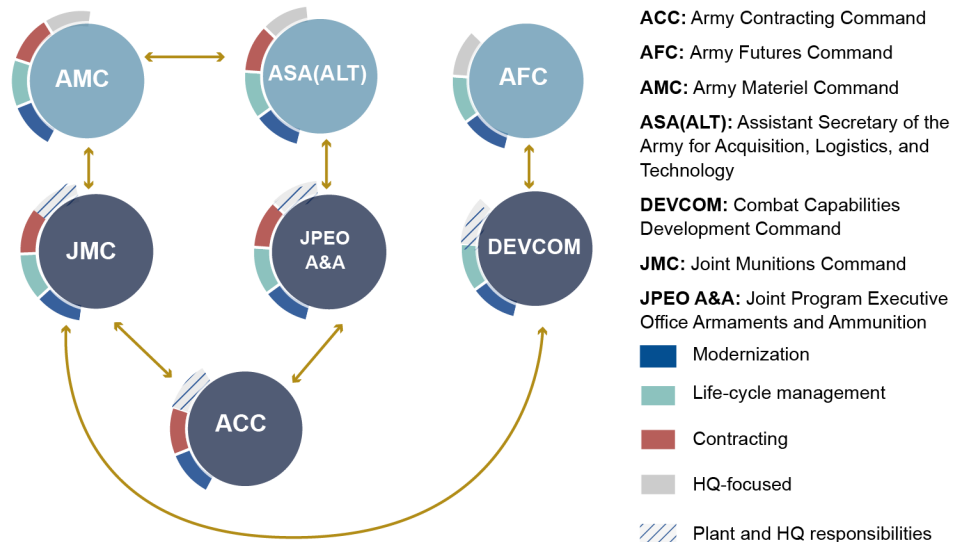
ARMY AMMUNITION

Actions Needed to Improve Management of Procurement and Production Practices

What GAO Found

The Army manages the procurement and production of ammunition—such as small arms cartridges, rockets, artillery shells, and mortars—at government-owned, contractor-operated plants. Doing so involves overseeing complex relationships—such as intersecting roles and responsibilities—among multiple Army organizations at both the headquarters and plant levels.

Army Organizations Involved in Ammunition Procurement and Production, and Their Intersecting Areas of Responsibility



Source: GAO review of Army documents and interviews with Army officials. | GAO-23-105352

The Army has not revised governing documents to reflect changes over time. For example:

- The agreement that lays out the responsibilities of two Army organizations—Joint Munitions Command, and Joint Program Executive Office Armaments and Ammunition—has not been revised since 2004 even though the roles, responsibilities, and authorities have often changed.
- Governing documents do not reflect the role or operating procedures of the recently established Army Futures Command, nor do they outline the relationships between Army Contracting Command and other Army organizations.

Officials from some Army organizations told GAO that, due in part to this outdated documentation, they lack clarity about the roles and responsibilities of the multiple organizations responsible for managing ammunition plants. Army officials indicated that the governing documentation should be revised to clarify roles and responsibilities. Previous attempts to do so stalled, however, as all relevant parties have not yet been able to come to an agreement.

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Abbreviations

ACC	Army Contracting Command
AAP	Army Ammunition Plant
AFC	Army Futures Command
AMC	Army Materiel Command
AO	American Ordnance
ARMS	Armament Retooling and Manufacturing Support
ASA(ALT)	Assistant Secretary of the Army for Acquisition, Logistics, and Technology
BAE	BAE Systems Ordnance Systems, Inc.
DEVCOM Armaments Center	Combat Capabilities Development Command Armaments Center
DOD	Department of Defense
EDCA	Executive Director for Conventional Ammunition
EPA	Economic Price Adjustment
FAR	Federal Acquisition Regulation
FFP	Firm-Fixed-Price
GD-OTS	General Dynamics Ordnance and Tactical Systems
JMC	Joint Munitions Command
JPEO A&A	Joint Program Executive Office Armaments and Ammunition
Olin	Olin Winchester
PBS	Production Base Support
PDJS	Project Director Joint Services
PWS	Performance Work Statement
SMCA	Single Manager for Conventional Ammunition
U.S.C.	United States Code

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October 13, 2022

Congressional Requesters

The Department of the Army is responsible for the procurement and production of certain types of conventional ammunition for all the military services. Conventional ammunition includes items ranging from small arms cartridges to rockets, mortars, and artillery shells.¹ The Army procures most of its ammunition through five government-owned, contractor-operated plants. According to Department of Defense (DOD) and Army documentation, this arrangement allows the government to leverage vendors to produce ammunition, reducing the Army's role in the production process to one of management. Simultaneously, it retains a significant capacity for production that industry is unwilling to maintain given historic fluctuations in ammunition demand. Clarity of roles, responsibilities, and relationships in the Army's ammunition industrial base is vital to ensuring clear coordination and communication among the many entities involved and the safe, effective, and efficient production of conventional ammunition.²

The House Armed Services Committee's Readiness and Tactical Air and Land Forces Subcommittees jointly requested that GAO review the Army's current practices for managing the procurement and production of ammunition. This report addresses (1) the organizational relationships involved in managing the procurement and production of Army government-owned, contractor-operated plants; as well as (2) the contracting approaches and challenges at these plants.

To assess the organizational relationships and associated challenges, we reviewed relevant statutes, DOD directives and instructions, Army regulations, as well as documents that govern the Army's conventional

¹DOD defines conventional ammunition as an end item, complete round, or materiel component charged with explosives, propellants, pyrotechnics, or initiating composition for use in connection with defense or offense (including demolitions), as well as ammunition used for training, ceremonial, or nonoperational purposes. Conventional ammunition does not include nuclear and special weapons.

²For the purposes of this report, the industrial base refers to the government and contractor-owned facilities that produce, store, distribute, and demilitarize munitions for DOD.

ammunition procurement and production enterprise. We interviewed Army acquisition, contracting, and logistics officials as well as vendor officials that operate the ammunition plants for DOD. In addition, we reviewed *Standards for Internal Control in the Federal Government* related to organizational structure, risk assessment, and monitoring activities and found them to be applicable to our review.³ We determined that the assignment of responsibility and delegation of authority component of internal controls was significant to organizational relationships. We assessed the assignment of roles and responsibilities of organizations involved in ammunition production and procurement as described by reviewing relevant statutes, regulations, and documents, and interviewing Army officials at the headquarters level as well as each ammunition plant. To assess the contracting approaches and associated challenges, we analyzed contract documents for the five government-owned, contractor-operated ammunition plants; reviewed GAO leading practices on lessons learned; and interviewed Army contracting and vendor officials. Appendix I provides further information on our objectives, scope, and methodology.

We conducted this performance audit from July 2021 to October 2022 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

DOD's Government-Owned, Contractor-Operated Ammunition Plants

Government-owned, contractor-operated ammunition plants play a key role in the production of ammunition to support the warfighter. These plants are essential to maintaining readiness for DOD and have a key role in sustaining ammunition production and inventory to meet ammunition

³GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 10, 2014).

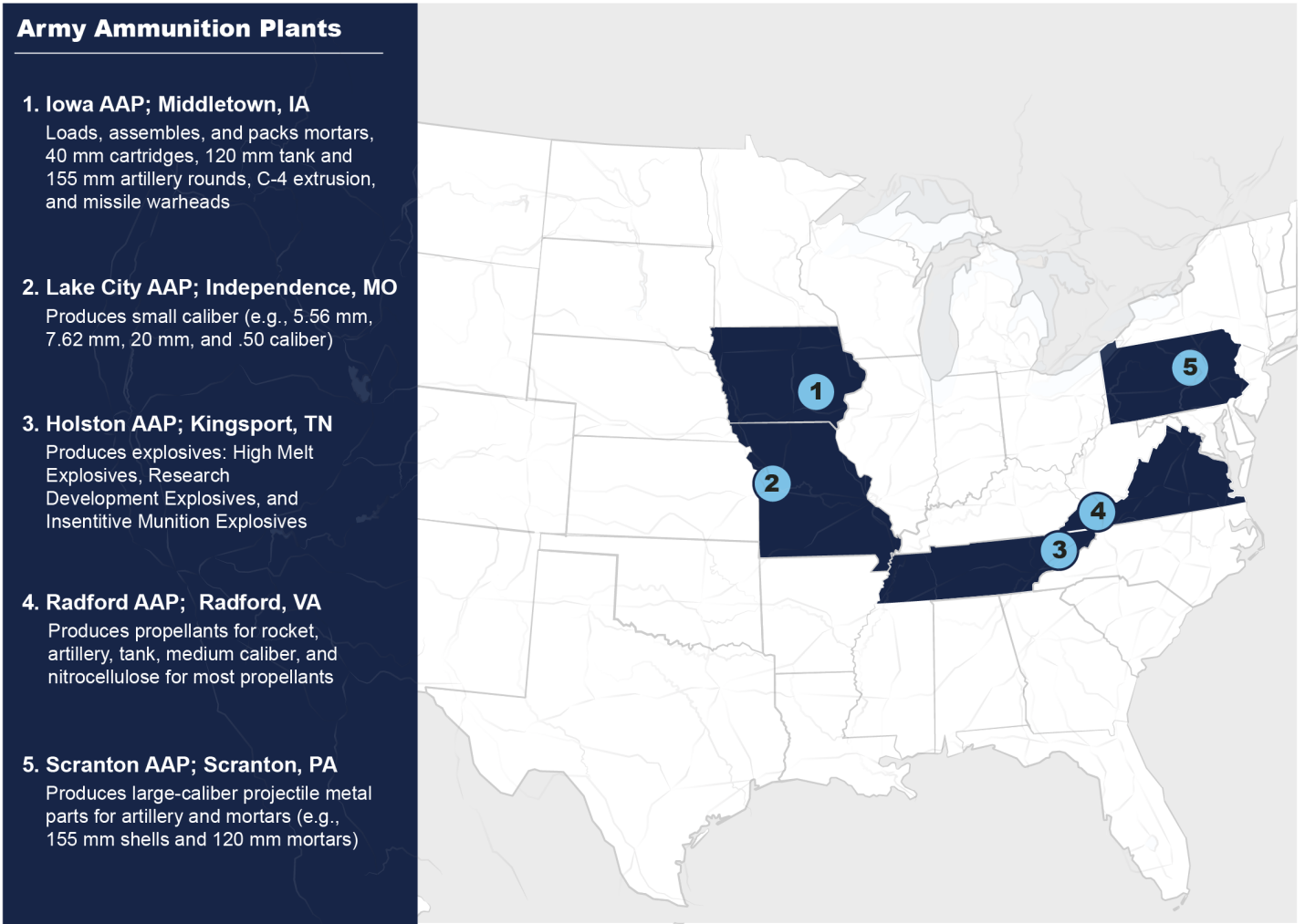
requirements in peacetime, wartime, and during national emergencies. The plants produce a variety of ammunition, propellants, and explosives for DOD. Examples of ammunition include small caliber (5.56 mm to .50 caliber), medium caliber (20 mm to 40 mm), and large caliber (105 mm and 155 mm) ammunition. DOD contracts with vendors to operate and maintain the plants as well as engage in projects to modernize them. The Army funds the procurement of ammunition, and the operations, maintenance, and modernization of the plants through Army ammunition procurement appropriations.⁴ In fiscal year 2021, the Army received an appropriation of \$2.9 billion for the procurement of ammunition.

Currently, there are five government-owned, contractor-operated ammunition plants producing conventional ammunition located across the United States (see fig. 1).⁵

⁴Other potential funding sources include Armament Retooling and Manufacturing Support Initiative Program rental revenue, and Army operations and maintenance appropriations.

⁵See appendix II for more information on the five government-owned, contractor-operated ammunition plants.

Figure 1: Locations and Products of Army Government-Owned, Contractor-Operated Ammunition Plants



AAP = Army Ammunition Plant

Source: GAO analysis of Department of Defense information. | GAO-23-105352

Management and Oversight of Conventional Ammunition

Since 1975, the Secretary of the Army has served as DOD’s Single Manager for Conventional Ammunition (SMCA). The key statutes that pertain to the SMCA mission are:

- Defense Industrial Reserve Act (codified as amended at 10 U.S.C. § 4881), establishes, among other things, a policy that DOD will rely, to

the maximum extent practicable, on the commercial sector, for support of defense production.

- Section 344 of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 established the Armament Retooling and Manufacturing Support Initiative.⁶ The purposes of this initiative include, among other things, encouraging commercial firms to use “eligible” government-owned, contractor-operated Army ammunition facilities for commercial purposes. The statute authorizes the Army to enter into leases and contracts through which the Army receives improvements and maintenance to the facilities, reductions in overhead costs, and reductions in product cost, among other things.⁷
- By statute, DOD must use full and open competition when conducting a procurement, unless an exception applies.⁸ The exceptions include circumstances when it is necessary to award a contract to a particular source or sources to maintain a facility, producer, manufacturer, or other supplier available for furnishing property or services in case of a national emergency or to achieve industrial mobilization.⁹ Section 806 of the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 authorized the SMCA to limit ammunition procurements to sources within the national technology and industrial base. It also required the SMCA to use the aforementioned exception in cases where doing so is necessary to maintain a facility, producer, manufacturer, or other supplier available for furnishing an essential item of ammunition or ammunition component in cases of national emergency or to achieve industrial mobilization.¹⁰

In its role as the SMCA, the Army centrally manages the procurement and production of conventional ammunition for all military departments. Under DOD guidance, the SMCA’s mission encompasses all aspects of the life-cycle of conventional ammunition, from research and development

⁶Pub. L. No. 106-398, § 344, 114 Stat 1654, 1654A-67 to 1654A-71 (2000).

⁷10 U.S.C. § 7554.

⁸10 U.S.C. § 3201.

⁹10 U.S.C. § 3204(a)(3)(A).

¹⁰Pub. L. No. 105-261, 112 Stat. 1920, 2084 (1998).

through acquisition, inventory management, and eventual disposal.¹¹ The SMCA, the military departments, and U.S. Special Operations Command all have responsibilities pertaining to various conventional ammunition duties.¹² In addition, DOD organizations involved in ammunition management developed joint policies and procedures to guide the procurement and production of ammunition.

Army Contracting Approaches

The Army's selection of a contract approach is based on the acquisition strategy developed for each of the government-owned, contractor-operated ammunition plants, and the judgment of the contracting officer. The objective is for the government to negotiate a contract type and price that will result in reasonable contractor risk and provide the contractor with an incentive for efficient and economical performance. In addition, contracting officers must always establish the reasonableness of offered prices. The Army's approach typically involves the use of two kinds of contracts:

- A facility use contract that establishes an agreement regarding vendor's requirements for operations, maintenance, and modernization of the ammunition plant; and
- A supply contract that establishes an agreement through which the Army acquires ammunition from the vendor.

In general, for the facility use and supply contracts, the Army competitively awards contracts, and then either exercises options to extend their performance or, in some cases, awards noncompetitive follow-on contracts to the incumbent vendors.

¹¹See Department of Defense, *Single Manager for Conventional Ammunition (SMCA): Responsibilities of the SMCA, the Military Services, and United States Special Operations Command (USSOCOM)*, DOD Instruction 5160.68 (Washington, D.C.: Dec. 29, 2008). The 15 specific SMCA mission functions include: Research, Development, Test and Evaluation; Production Base; Acquisition; Supply; Maintenance; Demilitarization and Disposal; Quality Assurance; Technical Data and Configuration Management and Control; Transportation and Handling; Safety; Security; Financial Management and Planning, Programming, Budgeting and Execution; Implementing Regulations and Assessment and Oversight; Personnel and Unit Training; and Security Assistance.

¹²The military departments separately manage some types of conventional ammunition, such as guided rockets and missiles, naval mines, and torpedoes. Such items are often unique to one department; for example, torpedoes are for the Department of the Navy.

The Army awards facility use and supply contracts, using a variety of contract types described in the Federal Acquisition Regulation (FAR). The FAR states that selecting the contract type is generally a matter for negotiation and requires the exercise of sound judgment. The FAR further states that the objective is to negotiate a contract type and price (or estimated cost and fee) that will result in reasonable contractor risk and provide the contractor with the greatest incentive for efficient and economical performance. The contract types described by the FAR fall into two broad categories: fixed-price contracts and cost-reimbursement contracts. The specific contract types range from firm-fixed-price, in which the contractor has full responsibility for the performance costs and resulting profit (or loss), to cost-plus-fixed-fee, in which the contractor has minimal responsibility for the performance costs and the negotiated fee (profit) is guaranteed. In between are various incentive contracts, in which the contractor's responsibility for performance costs and the profit or fee incentives offered are tailored to the uncertainties involved in performance. See table 1 for examples of contract types used in the ammunition plant contracts we reviewed.

Table 1: Contract and Agreement Types Used for Government-Owned, Contractor-Operated Ammunition Plants

Contract and agreement type	Federal Acquisition Regulation section	Definition
No cost	Not addressed in the FAR	The vendor performs contract requirements at no cost to the government in return for a benefit of some sort. For example, at many of the plants, the facility contract provides that the vendor will perform plant maintenance and operations at no cost to the government while authorizing the vendor to use the plant to fulfill orders for the supply of ammunition under separate government or commercial contracts. ^a
Firm-fixed-price	16.202	This contract type provides a price that is not subject to adjustment based on the contractor's cost experience in performing the contract. The vendor bears the maximum risk and full responsibility for all costs and resulting profit (or loss).
Fixed-priced incentive	16.204	A fixed-price type contract that provides for adjusting profit and establishing the final contract price by a formula based on the relationship of final negotiated total cost to total target cost. Since the vendor's profit is linked to actual performance, fixed-price incentive contracts provide an incentive for the vendor to control costs.
Fixed-price contract with economic price adjustment	16.203	A fixed-price type contract that provides for upward and downward revision of the stated contract price upon the occurrence of specified contingencies.
Indefinite-delivery, indefinite-quantity	16.504	This contract type provides for an indefinite quantity, within stated limits, of products or services during a fixed period. The government places orders for individual requirements under these contracts.

Contract and agreement type	Federal Acquisition Regulation section	Definition
Cost-plus-fixed-fee	16.306	A cost-reimbursement type contract that provides for payment to the contractor of a negotiated fee that is fixed at the inception of the contract.
Cost reimbursement	16.301	This contract type provides for payment of allowable incurred costs, to the extent prescribed in the contract. These contracts establish an estimate of total cost for the purpose of obligating funds and establishing a ceiling that the contractor may not exceed (except at its own risk) without the approval of the contracting officer.
Basic ordering agreement	16.703	A basic ordering agreement is not a considered a contract. Instead, it is a written instrument of understanding with a contractor that contains terms and clauses applying to future contracts (orders) between the parties, a description of supplies or services to be provided, and methods for pricing, issuing, and delivering future orders under the agreement.

Source: GAO review of Federal Acquisition Regulation (FAR). | GAO-23-105352

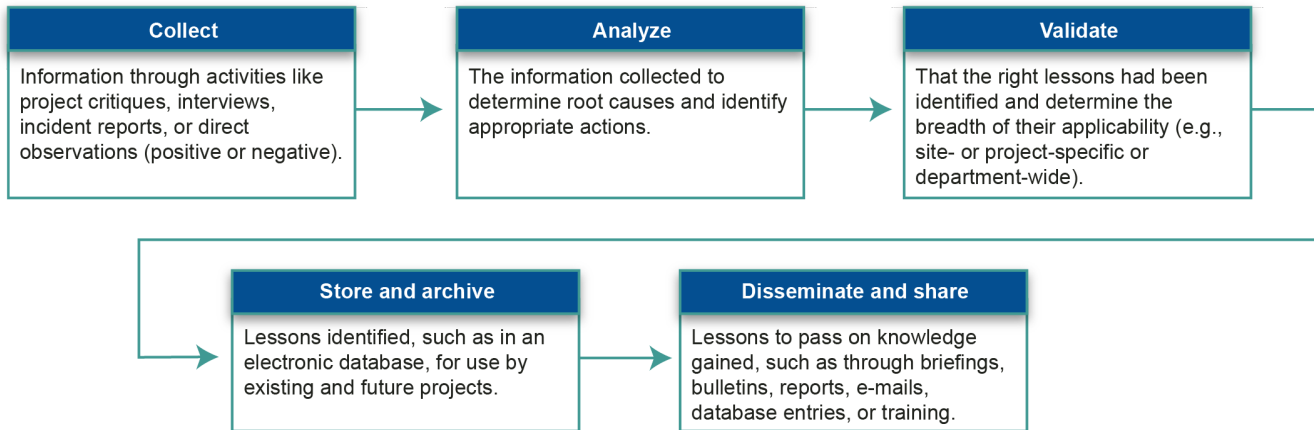
^aSome of the contracts we reviewed refer to this type as “firm-fixed-price, no cost” or “firm-fixed-price, zero cost.”

Leading Practices for Lessons Learned

The use of lessons learned is a principal component of an organizational culture committed to continuous improvement and can enhance the procurement and production of conventional ammunition. Collecting and sharing lessons learned serve to communicate knowledge more effectively and to ensure that beneficial information is factored into planning, work processes, and activities. GAO and others, including the Army, have identified leading practices for collecting, analyzing, validating, archiving, and sharing information on positive and negative experiences.¹³ Figure 2 describes these leading practices.

¹³GAO, *DOD Utilities Privatization: Improved Data Collection and Lessons Learned Archive Could Help Reduce Time to Award Contracts*, [GAO-20-104](#) (Washington, D.C.: Apr. 2, 2020); *Project Management: DOE and NNSA Should Improve Their Lessons-Learned Process for Capital Asset Projects*, [GAO-19-25](#) (Washington, D.C.: Dec. 21, 2018); and *Federal Real Property Security: Interagency Security Committee Should Implement a Lessons-Learned Process*, [GAO-12-901](#) (Washington, D.C.: Sept. 10, 2012). See also Center for Army Lessons Learned, *Establishing a Lessons Learned Program: Observations, Insights, and Lessons* (Fort Leavenworth, KS: June 2011).

Figure 2: Leading Practices of a Lessons Learned Process



Source: Analysis of prior GAO reports and the Center for Army Lessons Learned report, *Establishing a Lessons Learned Program: Observations, Insights, and Lessons*. | GAO-23-105352

Army Established Complex Relationships to Manage Ammunition Efforts but Did Not Revise Governing Documents

DOD and the Army Established Governing Documents for Ammunition Efforts

DOD and the Army have established several governing documents to manage the procurement and production of conventional ammunition, including establishing roles and responsibilities. From most broad to most specific, these documents include:

- **DOD Instruction 5160.68, updated and reissued March 2022.** This instruction broadly establishes the SMCA mission and responsibility for 15 corresponding ammunition functions—such as financial management and personnel training—between the SMCA, the military departments, and U.S. Special Operations Command. The instruction assigns responsibility for designating an Executive Director for

Conventional Ammunition (EDCA) and maintaining the SMCA charter to the Secretary of the Army as the SMCA.¹⁴

- **Army Regulation 700-90 (Army Industrial Base Process), updated January 2020.** This regulation broadly establishes responsibilities for the Army industrial base, including, among other things, Army responsibilities for the management and operation of government-owned, contractor-operated ammunition plants. Specifically, the regulation outlines general responsibilities at a high level between the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT)) and Army Materiel Command (AMC).
- **The Single Manager for Conventional Ammunition Charter, updated May 2015.** This charter establishes the manner in which the responsibilities and authorities assigned to the SMCA in an earlier version of DOD Instruction 5160.68, dated December 29, 2008, will be executed. The charter outlines how roles and responsibilities are delegated to suboffices and subcommands for ASA(ALT) and AMC, respectively. Specifically, the charter outlines the different responsibilities of Joint Program Executive Office Armaments and Ammunition (JPEO A&A) as the SMCA Executor, and Joint Munitions Command (JMC) as the SMCA Field Operating Activity.¹⁵
- **Joint Conventional Ammunition Policies and Procedures, updated December 2018.** This policy implements the SMCA mission and the 15 responsibilities for conventional ammunition between the SMCA and the military departments, as established in the 2008 version of DOD Instruction 5160.68. For example, JPEO A&A is responsible for approving acquisition plans and strategies, while military departments are responsible for identification of their planned purchases and any changes to their requirements.
- **The Joint Munitions Life-Cycle Management Command Memorandum of Understanding, updated December 2005.** This memorandum assigns SMCA responsibilities for acquisition and logistics established in earlier versions of DOD Instruction 5160.68 and the SMCA Charter between JPEO A&A, JMC, and Armament

¹⁴The update to the instruction incorporates content from and cancels DOD Directive 5160.65, Single Manager for Conventional Ammunition (Aug. 1, 2008). The incorporated content removes references to the Office of the Executive Director for Conventional Ammunition, which was dissolved in 2021.

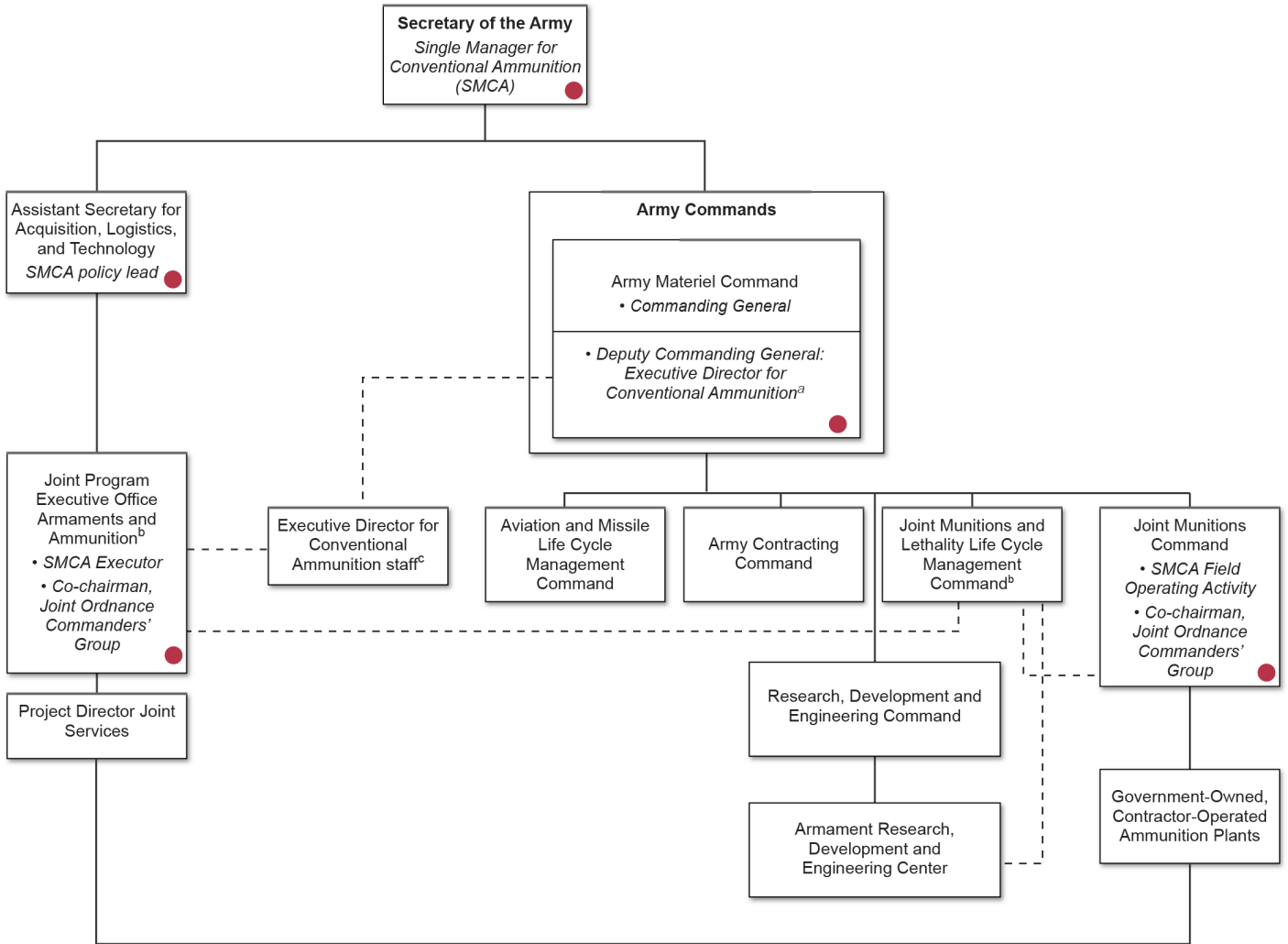
¹⁵The 2015 SMCA Charter, as originally written, names Program Executive Office Ammunition as the SMCA Executor. In 2018, the Army changed the Program Executive Office Ammunition name to Joint Program Executive Office Armaments and Ammunition (JPEO A&A) to reflect its joint mission responsibility.

Research, Development and Engineering Center. For example, the memorandum establishes that JMC is responsible for planning, programming, budgeting, and executing operations and maintenance funding and JPEO A&A is responsible for procurement and research, development, testing, and evaluation funding. Additionally, the memorandum establishes how the three organizations will work together to achieve life-cycle management, including coordination on budgeting and interactions with other groups in the ammunition enterprise.

- **The Industrial Base Support Agreement, dated May 2004.** This agreement assigns roles and responsibilities between JPEO A&A and JMC with respect to industrial base production planning; and determines how such responsibilities correspond to those established in earlier versions of Army Regulation 700-90 and DOD Instruction 5160.68. Responsibilities include budgeting for modernization and coordination on contract requirements for ammunition plants.

Several of these key documents were established between 5 and nearly 20 years ago. Figure 3 presents the organizational structure established in part under these governing documents.

Figure 3: Army Organizational Structure for Management of Ammunition Procurement and Production at Government-Owned, Contractor-Operated Plants as Outlined in Governing Documentation



● Single Manager for Conventional Ammunition and designees

Source: GAO analysis of Department of Defense information. | GAO-23-105352

Notes: This chart depicts the roles of various entities with respect to conventional ammunition as outlined in governing documentation. The connecting lines do not necessarily represent the complete administrative, operational, or reporting relationships for all purposes and functions. The solid lines represent the chain of command and the dotted lines represent coordination links.

^aAccording to the 2015 SMCA Charter, the Deputy Commanding General of AMC receives support for the role of Executive Director for Conventional Ammunition by a joint-staffed office of senior military department officials and civilian ammunition management specialists who report directly to the Executive Director.

^bThe governing documents name Program Executive Office Ammunition as the SMCA Executor. In 2018, the Army changed the Program Executive Office Ammunition name to Joint Program Executive Office Armaments and Ammunition to reflect its joint mission responsibility.

^cIn 2021, the Army reassigned the staff of the Executive Director for Conventional Ammunition to the Joint Program Executive Office Armaments and Ammunition.

The Army's Governing Documents Create Complex Relationships with Multiple Stakeholders

The Army designed and implemented governing documentation to manage the procurement and production of conventional ammunition, which created complex relationships among multiple offices and commands at both the headquarters and plant levels. Army headquarters officials stated that the statutes that are relevant to the operation of the Army ammunition industrial base are not the reason for this complexity in the Army's organizational relationships. These officials instead attribute the complexity to the manner in which the Army has distributed the roles and responsibilities for the procurement and production of ammunition.

Below, we describe the roles and responsibilities for the primary Army organizations at the headquarters level as identified in governing documents and interviews.

ASA(ALT). According to Army Regulation 700-90 (dated January 2020) and the 2015 SMCA Charter, ASA(ALT) is responsible for issuing policy, providing oversight of the mission, and for making determinations to limit ammunition procurements to sources within the National Technology and Industrial Base:

- JPEO A&A, an office within ASA(ALT), is responsible for, among other things, development, procurement, and fielding armaments and ammunition. JPEO A&A is responsible for the overall execution of the 15 functions associated with the management of conventional ammunition, including acquisition and expenditure of Army ammunition-related funding. Specifically, JPEO A&A is responsible for setting acquisition strategies that guide contracting approaches and funding for modernization and certain performance work statements. According to a JPEO A&A official, their office makes the final determination on whether to award a new contract or exercise an option to extend performance. JPEO A&A program managers have

authority over the ammunition plant contracts, including facility use and supply contracts.

AMC. According to the 2004 Industrial Base Support Agreement, AMC delegated many of its ammunition production responsibilities—such as overall management of the plants—to JMC. The governing documentation, specifically the 2015 SMCA Charter, establishes the EDCA within the AMC organizational command and gives it the responsibility for overseeing the SMCA's major activities.

- JMC is the SMCA Field Operating Activity and is primarily responsible for day-to-day oversight at the ammunition plants. This command manages the ammunition plants with respect to logistics and sustainment, including matters related to storage, maintenance, security, safety, and quality assurance. This means that JMC is responsible for all security or safety incidents at the plants. The command is also responsible for developing performance work statements to establish the core functions that the vendor must perform for facility use contracts and for modernization efforts. According to the 2004 Industrial Base Support Agreement, JMC develops, plans, and coordinates modernization efforts with JPEO A&A, ensuring that they are technically sound and beneficial to the government. Additionally, the command is responsible for operations and maintenance funding.
- Army Contracting Command (ACC) is responsible for soliciting, negotiating, awarding, and administering the various contracts in place at the five government-owned, contractor-operated ammunition plants. The Rock Island office within this command is primarily responsible for awarding contracts, contract modifications, and delivery orders for these plants. ACC advises JPEO A&A and JMC in the development of acquisition strategies and performance work statements. ASA(ALT) decides on the acquisition strategy, while ACC is responsible for awarding and administering the contracts. ACC delegates some contract administration functions to JMC at the plants.

Army Futures Command (AFC). Established in 2018, AFC is responsible for Army force design and force development, is the capabilities developer and operational architect for the future Army, and is responsible for operating the Army's research laboratories and centers.

- Combat Capabilities Development Command (DEVCOM) Armaments Center is the Army's primary research and development center for new and existing armament systems. Center officials stated that the

center provides life-cycle engineering services and support for the production of ammunition and for the modernization of production lines.

At the plant level, JMC officials primarily manage activities and provide oversight, but other organizations have influence as well. Below we describe the primary roles and responsibilities for positions at the plant level and the chain of command, as identified in governing documents and interviews.

- **The installation commander** is a JMC position held by an active duty Army officer who is responsible for safety, security, and environmental concerns at the plant. Army senior leadership designates an installation commander for each ammunition plant to enable unit readiness of Army civilians, integrate Army priorities and initiatives at the installation, and oversee the base operation services and capabilities provided to customers. For example, the installation commander is in charge of certain physical security efforts and plant protection matters involving accessibility to the plant.
- **The deputy to the commander or commander's representative** is a civilian JMC official who provides overall program management, contract surveillance, coordination, and administration of government and vendor personnel. The deputy to the commander or commander's representative provides strategic direction to the vendor and monitors the vendor's manufacturing performance as well as the operation and maintenance of the plant.
- **The procuring contracting officer** is an off-site ACC official responsible for contract negotiations, oversight of the vendor, and compliance with contract terms and conditions. The procuring contracting officer delegates certain authorities to an on-site administrative contracting officer who is a JMC, not ACC, official. The procuring contracting officer is the only government official authorized to bind or commit the government to contract actions and to change the contract terms and conditions.
- **The administrative contracting officer** is a JMC official who is responsible for vendor oversight. This officer—with help from subject matter experts—ensures that the vendor is following the performance work statements and other contract terms and conditions. Additionally, the administrative contracting officer approves payments, provides interpretations regarding contractual requirements, and resolves contractual issues.

- **The quality assurance staff** are also part of JMC and are responsible for monitoring and evaluating vendor performance, including ammunition production quality and safety issues on behalf of the government. They provide technical assistance to government officials and information as needed to vendor staff on matters relating to ammunition surveillance and ammunition safety.
- **The JMC site lead**—instituted in 2019—is an off-site official who is assigned to work with certain plants. This position provides a conduit between those responsible for performance work statement requirements at headquarters, the plant, and ACC-Rock Island personnel to ensure open communications between all entities.
- **The program integrator** is a generally on-site JPEOA&A/Project Director Joint Services (PDJS) official responsible for integrating all current and planned modernization programs with ongoing facility maintenance efforts, as well as monitoring production status and quality. The program integrator provides an additional avenue of contact between plant officials and PDJS headquarters officials to improve coordination and communication. PDJS first created the position in 2020 at the Lake City plant and subsequently added the position to three other plants. PDJS officials told us that they plan to add this position at the Scranton plant as well.
- **The DEVCOM Armaments Center engineer** is an on-site AFC official who provides an avenue of contact between plant officials and DEVCOM Armaments Center headquarters officials to improve coordination and communication. According to AFC officials, they created the on-site position in 2021 to, among other things, reduce travel to the plants and build better relationships with organizations in the ammunition enterprise.

In addition to the primary Army organizations discussed above, other DOD organizations play a lesser role in the ammunition enterprise. This includes the U.S. Army Corps of Engineers, Defense Contract Management Agency, and Defense Contract Audit Agency. The Army also can enter into agreements with the Army Corps of Engineers for plant modernization projects. In particular, the Corps is used when the projects involve non-ammunition production related requirements for which the Corps has expertise, such as designing and constructing buildings or roads. In addition, when the Army contracts with a vendor to construct a project, the Corps reviews the vendor's design and can provide an environmental assessment. At some plants, Defense Contract Management Agency officials perform quality assurance inspections for products sold to other vendors in support of government orders. Additionally, at one plant, the Defense Contract Management Agency

administers the contract for ammunition production. Officials from the Defense Contract Audit Agency may review vendor proposals and accounting systems as needed, especially when the Army is negotiating a contract extension or awarding a new contract through competition.

The Army created governing documents that established complex relationships where many organizations are involved and have intersecting roles. For example, Army officials at one plant stated that JPEO A&A and JMC headquarters officials rewrote the fire services requirement in the plant’s contract to lower it to the minimum requirement. JPEO A&A is responsible for deciding on the acquisition strategy, JMC provides oversight of the contracts and vendors, and the vendor is responsible for day-to-day operations, including the safety of its workforce. According to officials from one plant, JMC bears the risk for all safety incidents. In addition, they said JPEO A&A’s rationale for lowering the fire services requirement was to reduce expenses. JMC headquarters officials stated that this reduction of the fire services requirement could affect the plant’s capability to respond to a fire incident such as one that causes loss of life or property. Table 2 shows the areas of intersecting responsibility among JPEO A&A, JMC, ACC, and DEVCOM Armaments Center.

Table 2: Areas of Intersecting Responsibilities for Ammunition Management among Army Organizations

Area of responsibility	Joint Program Executive Office Armaments & Ammunition	Joint Munitions Command	Army Contracting Command	DEVCOM Armaments Center
Contracts	Decision authority over acquisition strategy Funds contracts, including performance work statement requirements ^a	Oversight of vendor performance and administration of contracts, as delegated Manages performance work statement requirements	Awards all and administers most contracts Authorized to make contract changes Reviews performance work statements	Not applicable
Modernization	Leads modernization planning, resourcing and execution Selects final modernization priority projects and provides funding Executes modernization projects	Supports modernization planning Submits modernization priority projects list Executes modernization projects	Modifies contracts to include approved modernization projects	Technical support, including project design

Area of responsibility	Joint Program Executive Office Armaments & Ammunition	Joint Munitions Command	Army Contracting Command	DEVCOM Armaments Center
Life-cycle management	Life-cycle manager for ammunition industrial base, including responsibility for program cost, performance and schedule, production, and disposal.	Command and control of plants Authority over operations and maintenance funding Control over quality assurance and inventory levels	Not applicable	Life-cycle engineering support, including providing technical data (e.g. failure analysis)

DEVCOM = Combat Capabilities Development Command

Sources: GAO review of Army governing documents and interviews with Army officials. | GAO-23-105352

^aPerformance work statements establish the core functions that the vendor must perform for facility use contracts and for modernization efforts.

Army's Governing Documents Do Not Reflect Current Operating Practices and Create Unclear Relationships

Army organizations responsible for ammunition procurement and production lack clarity about roles and responsibilities because the Army failed to revise governing documents at the headquarters and plant levels to reflect changes over time. For example, JPEO A&A/PDJS officials told us that no recent, formal documentation outlines the current relationships and responsibilities between the JPEO A&A and JMC. Below we describe examples of key areas where changes to the Army's organizational structure or operating practices at the headquarters are not reflected in governing documents.

Change in modernization approval authority. The Army has not revised Army Regulation 700-90, dated January 2020, to reflect a change in the approval authority for modernization projects. According to this regulation, ASA(ALT) is the approval authority for facility modernization projects valued at \$10 million or less. In 2021, DOD raised the dollar threshold for approval authority for the military departments from \$10 million or less to \$40 million or less.¹⁶ Approval authority for facility modernization projects valued at above \$40 million resides with the Office of the Secretary of Defense (Acquisition and Sustainment). JPEO A&A/PDJS officials stated that DOD made this change to reduce delays associated with the Office of the Secretary of Defense staff review for

¹⁶See Department of Defense, Office of the Under Secretary of Defense for Acquisition and Sustainment, *Memorandum for Temporary Delegation of Approval Authority for Construction Projects at Government Owned Facilities with a Total Value Equal to or Lower than \$40 million* (Feb. 7, 2021).

these projects. Officials at one plant were unaware of this change in the threshold for determining approval authority until we mentioned it to them.

Change to preparation of performance work statements. JPEO A&A/PDJS officials stated that JMC does not prepare modernization performance work statements. This in contrast to what is stated in the 2004 Industrial Base Support Agreement. Instead, they said that JPEO A&A and AFC's DEVCOM Armaments Center provide this function. In response to the draft report, JMC officials stated that they do prepare modernization performance work statements, including for structural repairs as well as for modernization of facilities. Additionally, they stated that JMC staff at the installations develop specific requirements for inclusion in the modernization performance work statements related to facility operations to include: maintenance, property, safety, environmental, and security.

Creation of AFC. The Army has not revised the 2005 memorandum of understanding or other governing documentation to reflect the creation of AFC or the transfer of Armament Research, Development and Engineering Center's responsibilities to AFC. This center, according to the 2005 memorandum of understanding, is responsible for technology development and providing life-cycle engineering support. According to DEVCOM officials, their responsibilities include support for modernization of production at the ammunition plants. In 2019, the Army removed the center from AMC and transferred it to AFC. This new command has a different mission (research and development of new capabilities and requirements) than AMC (logistics and materiel readiness). JPEO A&A and JMC leadership told us that the memorandum of understanding is not representative of how the Army currently manages ammunition procurement and production.

Creation of new roles at ammunition plants. As mentioned above, the Army created three new positions in 2019, 2020, and 2021: the JMC site lead, the program integrator, and the DEVCOM Armaments Center engineer. The Army has not fully developed plant-level governing documentation that clearly delineates the roles and responsibilities of the three new positions in any of the ammunition plants.

Dissolution of the Office of the EDCA. The Army has not revised the 2015 SMCA Charter to reflect the dissolution of the Office of the EDCA. The Army dissolved the Office of the EDCA, which administratively supported the EDCA, in 2021. According to JPEO A&A/PDJS officials, there was insufficient workload for the two full-time civilian employees and

the EDCA was redundant with the PDJS mission. While the DOD updated the 2022 DOD Instruction 5160.68 to include this change, the Army has not revised other governing documents. For example, JPEO A&A/PDJS leadership told us that the 2015 SMCA Charter has not been reviewed annually and revised accordingly as required by the charter.

Change in name for the SMCA Executor. The 2015 SMCA Charter and other governing documents do not reflect a 2018 name change for the SMCA Executor. The 2015 SMCA Charter, as originally written, named Program Executive Office Ammunition as the SMCA Executor. In 2018, the Army changed the Program Executive Office Ammunition name to JPEO A&A to reflect its joint mission responsibility.

Lack of current documentation for roles and responsibilities.

Governing documentation does not establish roles and responsibilities for all Army organizations involved in the procurement and production of ammunition.

- There is no documentation that ensures JMC funding is aligned with JPEO A&A requirements. According to the 2004 Industrial Base Support Agreement, JMC is responsible for the planning, programming, budgeting, and execution of operations and maintenance funding. However, the agreement does not outline a process for ensuring this. Furthermore, the Army has not revised the agreement in over 18 years. JPEO A&A/PDJS leadership told us that the agreement needs to be updated to ensure funding alignment as well as to account for organizational changes that have taken place since 2004.
- The relationships between ACC and other Army organizations with SMCA responsibilities are not outlined in any of the governing documents.

The organizational changes above reflect the intersecting responsibilities and relationships between ASA(ALT), AMC, and AFC, and add complexity to already complicated relationships. Because of this complexity, it is important for the Army to revise the documents in a timely manner to ensure the roles and responsibilities are current, clear, and meet mission objectives. For example, three Army organizations have roles in the contracting process, which requires a clearly defined framework for how they individually and collectively operate.

Officials at a majority of Army organizations we interviewed stated that the unclear Army roles and responsibilities create challenges for

ammunition procurement and production. While several Army officials indicated that the governing documents at the headquarters and plant level should be revised or established, the Army has not prioritized doing so. Army officials stated that workload issues and difficulty getting agreement from all relevant parties has impeded efforts to revise the documents. A JMC headquarters official stated that they were working on the development of a document to clarify roles and responsibilities at the headquarters level for over a year, but this effort has stalled because all relevant parties have not yet been able to come to an agreement.

JPEO A&A and JMC leadership acknowledged the need to revise governing documents to fully define roles and responsibilities and incorporate organizational changes, such as the creation of AFC, and are taking some steps. JPEO A&A/PDJS officials said they are currently working to update the 2004 Industrial Base Support Agreement—one of the several guiding documents—to improve, among other things, unity of effort concerning roles and responsibilities. These officials said they plan to finish the update to the 2004 agreement by September 2022. However, they stated that there are no current plans to update the 2005 memorandum of understanding or the 2015 SMCA Charter.

At the plant level, only one of the ammunition plants has current, formal documentation that governs roles and responsibilities. Government officials at another plant took the initiative to develop an informal document to resolve overlaps and gaps in the roles and responsibilities of the various entities on site. Plant officials stated that they created the document to incorporate new positions and better clarify roles and responsibilities. This document outlines which entities have decision authority, responsibility for performing a task, the need to be consulted, or the need to be informed. One JMC official said that JMC shared the document with other plants and recommended that they create something similar. However, JMC and plant officials stated that the remaining three plants do not have formal, signed documentation, and that they were unaware of the plants also developing informal documentation.

The 2005 memorandum of understanding sets a goal of sharing information, agreements, and decisions to ensure coordinated responses between JPEO A&A and JMC. According to the memorandum, to achieve this, all stakeholders must have a common understanding of the areas of responsibility and the internal rules of engagement. Additionally, the memorandum highlights effective coordination as including all levels of the enterprise. *Standards for Internal Control in the Federal Government* state that management should establish an organizational structure,

assign responsibility, and delegate authority to achieve the entity's objectives. Additionally, according to those standards, management should establish and operate monitoring activities and remediate identified internal control deficiencies on a timely basis.

The Army's use of governing documents that do not (1) fully define roles and responsibilities at all levels and (2) do not reflect current operating practices can hinder effective coordination that can lead to poor or delayed decision-making. For example, governing documents do not define a role for plant officials beyond the initial selection stage for plant modernization projects. As a result, headquarters officials do not have a defined process within the governing documents to include plant officials in the later parts of the decision-making process. Government officials at one plant told us that, in one instance, poor coordination between JPEO A&A/PDJS headquarters officials and JMC plant officials resulted in the Army purchasing a \$2.8 million piece of equipment in 2020 that cannot perform the job it was purchased to do. Formal revisions to the governing documents, such as ensuring roles and responsibilities at all levels are current and clearly defined, could prevent such issues in the future.

Army Is Addressing Contracting Challenges, but Opportunities Exist for Sharing Lessons Learned

The Army Established Different Contracting Approaches at Each Ammunition Plant to Address Challenges

The Army established different contracting approaches at each of its ammunition plants to address contracting challenges or unique requirements at each plant. Differences in contracting approaches can include decisions about the number of contracts used, the type of contracts, and the maximum period of performance. Table 3 shows select characteristics of the contracts at the five ammunition plants at the time of contract award.

Table 3: Contract Characteristics for the Five Government-Owned, Contractor-Operated Army Ammunition Plants (AAP) at the Time of Award

Plant	Holston AAP	Iowa AAP	Radford AAP	Scranton AAP	Lake City AAP
Calendar year of contract award	1998	2008	2011	2019	2019
Number and kind of contract	One facility and one supply	One facility and one supply	One facility and one supply	One facility and one supply	One combined facility and supply
Primary contract type for facility operation	FFP	No Cost	No Cost	No Cost	No Cost
Primary contract type for supply	FFP	FFP	FFP	Fixed Price with EPA	FFP with EPA

Legend: FFP = firm-fixed-price and EPA = economic price adjustment.

Source: GAO review of ammunition plant contracts. | GAO-23-105352

While some of the differences among the contracting approaches stem from unique requirements at each ammunition plant, many of the differences stem from attempts by the various plants to overcome challenges experienced in contracting. Army and vendor officials identified multiple contracting challenges, but the Army is making efforts to address them.

Vendors lack incentives to make investments to improve plants' operations. Vendors at four of the five plants said that they lack incentives to make investments to improve plant infrastructure and operations, citing an inability to make a return on investment during the life of the contract. Army officials reported challenges in getting vendors to invest in the industrial base and have tried multiple approaches to achieve this. Table 4 shows the maximum period of performance of these contracts.

Table 4: Contract Maximum Period of Performance for the Five Government-Owned, Contractor-Operated Army Ammunition Plants (AAP)

Plant	Holston AAP	Iowa AAP	Radford AAP	Scranton AAP	Lake City AAP
Calendar year of contract award	1998	2008	2011	2019	2019
Maximum period of performance	Varies by contract but up to 25 years	Varies by contract but up to 25 years with options	Varies by contract but up to 25 years with option and award term extensions	Varies by contract but up to 15 years with options	Up to 10 years with option and award term

Source: GAO review of ammunition plant contracts. | GAO-23-105352

- The Army used different maximum periods of performance as an approach to try to incentivize vendors to make investments to improve plants' operations. The Army previously used 25-year contracts including options, hoping to provide a sense of ownership and encourage vendor investments, according to officials. Army officials said, however, that this approach has not incentivized vendors, as intended. They now believe that a 10-year period of performance, including options, may provide incentive to the vendor to invest in the plant while offsetting the intensive resources and planning that are needed for the government to compete a new contract repeatedly over a lesser period.
- The Army included requirements for annual modernization or capital improvements, as opposed to a one time requirement, in the facility use contract terms at two of the five plants. By including requirements on investments for certain modernization or capital improvements in the facility use contract, the government has established a certain minimal dollar amount to be invested by the vendors in the plants.

Challenges in delineating maintenance and modernization responsibilities. The facility use contracts generally require the vendors to perform needed maintenance at the vendors' cost. The contracts we reviewed generally do not require the vendors to provide annual modernization or capital improvements to the plants, although some of the contracts include terms requiring the vendors to do so at their own cost up to a certain minimal dollar amount. Army officials told us that modernization is primarily funded by the government. Officials stated that the challenges in delineating what is considered maintenance and what is considered modernization can cause confusion about which party is responsible for the costs. The Army has attempted to address this issue in the contracts for the individual plants. For example, table 5 shows select maintenance characteristics of these contracts.

Table 5: Contract Characteristics Related to Maintenance for the Five Government-Owned, Contractor-Operated Army Ammunition Plants (AAP)

Plant	Holston AAP	Iowa AAP	Radford AAP	Scranton AAP	Lake City AAP
Calendar year of contract award	1998	2008	2011	2019	2019
Performance work statement (PWS) definitions or descriptions for maintenance types	The PWS includes definitions for different types of maintenance ^a	The PWS includes descriptions of different types of maintenance ^a	The PWS includes definitions for different types of maintenance ^a	The PWS includes definitions for different types of maintenance ^a	The PWS includes definitions for different types of maintenance, including: normal, scheduled, unscheduled, and preventative maintenance, for which the contractor is responsible for costs up to \$150,000, as well as abnormal maintenance, for which the contractor is responsible for costs up to \$250,000.

Source: GAO review of ammunition plant contracts. | GAO-23-105352

^aThe PWS states that the government will decide, define, or clarify any conflict between government and industry usage of the terminology in the PWS maintenance definitions.

- In general, for efforts that qualify as maintenance under the no-cost facility contract performance work statements, the vendor is responsible for the cost of the work. In contrast, if a project qualifies as modernization, the vendor generally is not responsible for the cost. There are four facility use contracts, however, for which the vendor agreed to invest in modernization or capital improvements as part of its offer to the government. Army and vendor officials stated that the line between whether a given project is a maintenance or modernization project is clear in some cases—e.g., repainting the lines on a road—but less clear in other cases—e.g., replacing a broken wooden staircase with a metal one.
- The Army used different definitions and terms for maintenance in contract documents to delineate maintenance responsibilities for the vendor. The performance work statements for all five plants’ facility contracts describe both requirements for which the vendor is responsible for costs and requirements for which the government is responsible for costs. For example:
 - At one plant, for building deficiencies with repair costs estimated to exceed \$250,000, the vendor submits a report on the needed repair or upgrades, and JPEO A&A decides which modernization projects to support with government funding.
 - At two of the plants, Army officials stated that the Army looks at the circumstances and content of the project, not at the total cost,

to determine if the vendor or government is responsible for funding.

Despite the numerous definitions for various types of maintenance in the performance work statements, vendors and plant-level officials we interviewed at some of the plants noted difficulties in determining whether the government or the vendor is responsible for the costs of various projects. Vendors and plant-level officials stated that such difficulties were due to disagreement over whether the project qualifies as maintenance.

Challenges in establishing pricing for government sales. The Army's facility use contracts typically require vendors to perform maintenance and operations functions at no direct cost to the government. Because of this, per the contracts, the costs of the maintenance and operations functions generally are included in the product prices under the supply contracts. Product sales include sales to the government and, in some cases, sales on the commercial market. When determining the contract type and pricing structure, the objective is to negotiate a contract that will result in reasonable contractor risk and provide the contractor with the greatest incentive for efficient and economical performance.

To address this, Army officials stated that they typically negotiate with the vendor on the pricing structure. One option is a price matrix, which provides predictive pricing for multiple ordering periods based on set quantity ranges. Prices for government orders include costs to operate the facility. According to a 2021 Army Audit Agency report, these costs include the costs of performing the maintenance and operations functions specified in the performance work statements, general and administrative expenses, and profit.¹⁷

There are advantages and disadvantages of using a price matrix model. The advantages of a price matrix model, according to ACC officials, is pricing based on a competitive environment at the time of award and better budget planning. According to other Army officials, the shortcoming of the price matrix model is that the government does not receive all the efficiency experienced by the vendor at the upper bounds of each unit range. For example, if one round of ammunition costs \$0.50 for orders between 100,000 and 200,000 units and \$0.40 for orders between

¹⁷Department of the Army, U.S. Army Audit Agency, *Army Armaments and Ammunition Pricing Practices, Radford Army Ammunition Plant*, Report A-2021-0041-AXZ (FOUO) (April 15, 2021).

200,001 and 300,000 units, an order for 200,000 rounds is not as cost efficient for the government as an order for 200,001 rounds.¹⁸

The Army uses other pricing models for government orders, including direct payment of efforts performed under performance work statements costs and a price curve.

- At one plant, the Army switched from using a price matrix to paying for facility maintenance and operations costs directly. The Army included a price matrix in the supply contract at the time of award in 2011, but this contract did not include terms to continue the price matrix into the option period. When the Army extended the total period of performance to 10 years, it had to negotiate to account for this. During the negotiation, the vendor did not agree to include a price matrix. Upon expiration of the price matrix in 2015, for approximately 2 years, orders were negotiated between the government and the vendor as need arose. In 2017, the Army moved to direct-funding of maintenance and operations requirements, which meant these costs were not included in all product prices. According to the 2021 Army Audit Agency report, the Army paid an additional \$15.7 million in 2019 as a result of not allocating costs to operate the facility to all customers. In a 2022 modification to the facility use contract, the Army returned to having costs to operate the facility primarily included in product prices.
- As an alternative to a price matrix, Army officials at the same plant in the example above included a price curve in a contract extension. Army officials stated that a price curve, like a price matrix, matches prices with quantities of product but with greater granularity. The price curve offers more product ranges and accompanying prices. According to Army officials, the price curve has the advantage of greater price accuracy compared to the price matrix.

Challenges in determining equitable allocation of costs for commercial sales. In addition to pricing for government orders, the Army experiences a challenge in determining how to equitably allocate facility operation costs at facilities where the vendors are engaged in commercial sales. Vendors at four of the five plants engage in commercial sales, in addition to government sales. Engaging in commercial sales is one way for the vendor to make additional profit. The products the vendor sells commercially are made with government-owned equipment and property,

¹⁸The mathematical example of this is 200,000 units X \$0.50 unit cost = \$100,000; and 200,001 units X \$0.40 unit cost = \$80,000.40.

and Army officials noted it is the government's position that it should receive some benefit from these sales. Army officials stated that depending on the contract, this benefit could take the form of reduced costs to operate the facility, reduced product costs, or a share in the profits.

According to Army officials, if the costs to operate the facilities are not equitably allocated between the vendor's commercial sales and the government's purchases of ammunition, the government bears costs unrelated to its purchases.

The Army has attempted to address this challenge on a plant-by-plant basis. According to Army Regulation 700-90, dated January 2020, all costs associated with the industrial base—including operations at Army ammunition plants—are to be reflected in product or service prices, to the maximum extent possible. Most of the contracts we examined provide that product prices will include costs to operate the facility for production, but one contract did not. As noted above, during our audit, the Army transitioned this contract back to including such costs in product prices. For example:

- According to government officials at one plant, they did not allocate all costs to operate the facility to product prices in order to keep the vendor's prices competitive in the commercial market. Instead, the plant officials stated that the Army shared the profit with the vendor and then used the funds to support the plant by directly paying for some facility operation costs.
- Vendor officials from three of the five plants said that requirements in performance work statements create costs not found at comparable commercial ammunition plants. For example, the two of the plants require a much larger security workforce than commercial plants. Vendor officials at one plant said that there is a staff of about 70 armed guards and a few dozen vehicles at the plant, whereas the vendor's similar commercial facility has a single guard shack. Vendor officials at another plant said that they staff three guards at each gate, whereas at a commercial facility there may just be one guard at each gate. They also said that their government-owned, contractor-operated plant is required to accept deliveries at off-hours and must allow entrance on weekends during certain times of the year, which increases security costs relative to security costs at a commercial facility. Army officials at one plant stated that, if all costs to operate the facility are included in product prices, the products from the

government-owned, contractor-operated plants could be uncompetitive in the commercial market.

- Army officials said that, while vendors should earn some profit from commercial sales, they believe commercial sales revenue should contribute to the costs to operate and maintain the plant. Additionally, plant officials said there are non-monetary benefits to commercial production for vendors, such as maintaining the ability to meet surge requirements and ensuring sufficient workload to keep skilled labor employed.

Army's Use of Different Contracting Approaches Suggests Opportunities for Sharing Lessons Learned

The Army's differing contracting approaches with each vendor to address the aforementioned challenges suggest an opportunity to apply GAO and others' leading practices on lessons learned. Army officials told us that they did not systematically collect and share lessons learned related to ammunition procurement and production, but that such a process would be beneficial. They noted that there is currently some ad hoc sharing of lessons learned at regular meetings at the headquarters level.

The Army may have already missed opportunities to use lessons to better facilitate the procurement and production of ammunition. Examples of opportunities to use lessons learned that we observed during our review include ensuring that the pricing matrix for products covers the full contract performance period (including options), and that product prices reflect plant operations costs when the vendors are engaged in commercial sales. The Army awarded contracts for two different plants in the same time frame in 2019 but, according to Army officials, did not formally share lessons learned on contracting approaches between the acquisition teams or throughout the organization. Army officials noted that they are currently competing a contract at one plant, but have not formally shared lessons learned on contracting approaches with the acquisition team.

Effective coordination and communication across the Army ammunition enterprise are crucial to success and can help avoid conflicting efforts and ineffective use of resources. The use of lessons learned is a principal component of an organizational culture committed to continuous improvement and can improve coordination and communication. Collecting and sharing lessons learned serve to communicate knowledge

more effectively and to ensure that beneficial information is factored into planning, work processes, and activities. As stated earlier, leading practices for a lessons learned process—identified by GAO and others—include collecting, analyzing, validating, archiving, and sharing information on positive and negative experiences.¹⁹ These leading practices generally build upon each other:

- **Collect information.** Involves capturing information about events in the area of interest, which can be achieved through various methods.
- **Analyze information.** Involves analyzing the information collected to determine root causes and identifying appropriate actions.
- **Validate applicability of lessons.** Involves validating that the right lessons have been identified and determining the scope of their applicability.
- **Store and archive lessons.** Involves using a repository to store information. Archiving lessons learned should remain an ongoing process; otherwise, it risks becoming cumbersome and irrelevant.
- **Disseminate and share lessons.** Involves disseminating lessons in many ways, such as briefings, bulletins, reports, emails, websites, etc. Lessons can be pushed (automatically delivered to a user) or pulled (where a user searches for them in an archive of lessons learned information).

Army officials stated that the Army currently does not have a policy or procedures for staff in the organizations managing and overseeing the five ammunition plants to collect, analyze, validate, archive, and share lessons learned with each other. However, Army officials described some efforts that could support a more comprehensive lessons-learned effort.

According to Army headquarters officials, there are some efforts to discuss lessons learned about contracting approaches. For example, an Army official stated that they discuss and share lessons learned informally at integrated product team meetings. This official noted that none of these meetings has guidance or written meeting minutes to preserve and share lessons learned. Officials provided documents describing efforts to assess lessons learned in two instances:

¹⁹GAO-20-104; GAO-19-25; and GAO-12-901. See also Center for Army Lessons Learned, *Establishing a Lessons Learned Program: Observations, Insights, and Lessons* (Fort Leavenworth, KS: June 2011).

- JPEO A&A, JMC, and ACC completed a line of efforts study in 2021 with the purpose of (1) determining optimal approaches for procuring and producing ammunition; and (2) recommending implementation strategies, contract vehicles, and terms and conditions in support of optimal approaches. The study made a recommendation to capture lessons learned and make them broadly available. Officials did not provide documentation showing whether the study's recommendations were implemented.
- Army officials conducted a post source selection assessment with stakeholders to determine ways to improve the contracting process from the request for proposal through source selection phases. The Army produced a lessons learned document that identified ways to improve the process for future competitions. For example, the document suggests releasing performance work statements early enough in the proposal process to allow the vendors to review and provide input. We are not aware if Army officials shared this document with other officials outside the specific contract.

These examples are consistent with elements of leading practices for developing a formal lessons learned process, but the Army needs to systematically and comprehensively complete all the leading practices to obtain the full benefits of these efforts.

For instance, according to plant-level Army officials, there are no efforts to formally collect information on lessons learned. Plant-level Army officials stated that they have a role in developing performance work statements and prioritization of facility projects, as well as negotiating facility use and supply contracts. As such, they have knowledge of lessons learned on what works and does not work that can be helpful to Army officials at other plants in future contract competitions. Collecting information is the first of the five leading practices criteria identified by GAO and others. Officials were unable to provide documentation demonstrating a systemic collection of lessons learned related to ammunition contracting approaches and operations management. Army officials also said there is no overarching repository, mechanism, or database to capture lessons learned for ammunition procurement and production.

Without systematically collecting, analyzing, validating, archiving, and sharing lessons learned on the management of procurement and production of conventional ammunition, the Army is missing opportunities to share knowledge with other officials at plant and headquarters levels. This knowledge would help Army officials to meet the DOD policy objective to achieve the highest possible degree of efficiency and

effectiveness in the operations required to procure top quality conventional ammunition. Officials from Army headquarters organizations we spoke with agreed that it would be beneficial to have a lessons learned mechanism to share information about ammunition procurement and production activities.

Conclusions

The Army faces challenges in managing the procurement and production of conventional ammunition. Some challenges stem from governing documents that do not reflect current organizational structure or operating practices for ammunition management and the failure to revise the documents in a timely manner. The Army recognizes that it needs to revise governing documents to reflect roles and responsibilities at all levels and organizational changes on how it currently operates, but it has been slow to act. The Army also lacks a centralized mechanism to collect, analyze, validate, archive, and share lessons learned for ammunition procurement and production, but Army officials acknowledge that one could be beneficial. Such a mechanism could encourage knowledge sharing among the ammunition plants and other stakeholders, thus enabling more efficient and effective ammunition procurement and production practices.

Recommendations for Executive Action

We are making two recommendations to the Secretary of the Army:

The Secretary of the Army should direct the appropriate offices within the Army to revise the governing documents of Army organizations involved in managing the procurement and production of conventional ammunition at government-owned, contractor-operated plants to ensure they are current and clearly delineate roles and responsibilities. (Recommendation 1)

The Secretary of the Army should ensure the Assistant Secretary of the Army for Acquisition, Logistics, and Technology directs the Joint Program Executive Office Armaments and Ammunition, in conjunction with Joint Munitions Command and Army Contracting Command, to establish a mechanism to collect, analyze, validate, archive, and share lessons learned related to managing conventional ammunition procurement and

Letter

production at government-owned, contractor-operated plants.
(Recommendation 2)

Agency Comments

We provided a draft of this report to the Department of the Army for review and comment. In its comments, reproduced in appendix III, the Army concurred with both of our recommendations. The Army also provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional requesters; the Secretary of Defense; the Secretary of the Army; the Assistant Secretary of the Army for Acquisition, Logistics, and Technology; the Commanding General of Army Materiel Command; and the Commanding General of Army Futures Command. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-4841 or sawyerj@gao.gov. Contact points for our offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.

A handwritten signature in black ink, reading "John D. Sawyer". The signature is written in a cursive, flowing style with large loops and a prominent initial "J".

John D. Sawyer
Acting Director, Contracting and National Security Acquisitions

List of Requesters

The Honorable John Garamendi
Chairman

The Honorable Michael Waltz
Ranking Member
Subcommittee on Readiness
Committee on Armed Services
House of Representatives

The Honorable Donald Norcross
Chairman

The Honorable Vicky Hartzler
Ranking Member
Subcommittee on Tactical Air and Land Forces
Committee on Armed Services
House of Representatives

The Honorable Doug Lamborn
House of Representatives

Appendix I: Objectives, Scope, and Methodology

This report addresses (1) the organizational relationships involved in managing the procurement and production of ammunition of Army government-owned, contractor-operated ammunition plants; as well as (2) the contracting approaches and challenges at these plants.

The Army has five government-owned, contractor-operated ammunition plants: (1) Holston Army Ammunition Plant located in Kingsport, TN; (2) Iowa Army Ammunition Plant located in Middletown, IA; (3) Lake City Army Ammunition Plant located in Independence, MO; (4) Radford Army Ammunition Plant located in Radford, VA; and (5) Scranton Army Ammunition Plant located in Scranton, PA. Additional information on these plants may be found in appendix II.

To assess the organizational relationships and associated challenges, we reviewed relevant statutes, Department of Defense (DOD) directives and instructions, and Army regulations, as well as documents that govern the Army's conventional ammunition procurement and production enterprise. We reviewed:

- The Defense Industrial Reserve Act (codified as amended at 10 U.S.C. § 4881);
- Section 344 of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001, Pub. L. No. 106-398, 114 Stat 1654, 1654A-67 to 1654A-71 (2000) (codified as amended at 10 U.S.C. §§ 7551-7555);
- Section 806 of the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999, Pub. L. No. 105-261, 112 Stat. 1920, 2084 (1998);
- Department of Defense Directive 5160.65, *Single Manager for Conventional Ammunition*, updated August 31, 2018;
- DOD Directive 4275.5, *Acquisition and Management of Industrial Resources*, updated August 31, 2018;
- Department of Defense Instruction 5160.68, *Single Manager for Conventional Ammunition*, updated August 31, 2018;

- DOD Instruction 5160.68, *Single Manager for Conventional Ammunition*, updated and reissued March 15, 2022;
- Army Regulation 700-90, *Army Industrial Base Process*, updated January 30, 2020;
- Single Manager Conventional Ammunition Charter, updated May 21, 2015;
- Memorandum of Understanding (MOU) between U.S. Army Joint Munitions Command, U.S. Army Armament Research, Development, and Engineering Center, and U.S. Army Program Executive Office Ammunition, updated December 12, 2005;
- Industrial Base Support Agreement between the Program Executive Office Ammunition and the Joint Munitions Command, dated May 25, 2004;
- Joint Conventional Ammunition Policies and Procedures, updated December 2018;
- US Army Joint Munitions Command (JMC) Regulation 10-8, updated February 3, 2015; and
- Holston Army Ammunition Plant Regulation 10-1, updated March 8, 2022.

We interviewed Army acquisition, contracting, and logistics officials from the Assistant Secretary of the Army for Acquisition, Logistics, and Technology, Joint Program Executive Office Armament and Ammunition; Army Contracting Command; Army Materiel Command, Joint Munitions Command, and Army Futures Command's Combat Capabilities Development Command Armaments Center. In addition, we interviewed government officials who provide contract oversight of and vendor officials who operate the five government-owned, contractor-operated ammunition plants for DOD. To inform our discussions with the government officials about challenges, roles, and responsibilities, we identified and reviewed reports related to the Army ammunition industrial base. We also reviewed *Standards for Internal Control in the Federal Government* related to organizational structure, risk assessment, and monitoring activities.¹ We determined that the assignment of responsibility and delegation of authority component of internal controls was significant to organizational relationships. We assessed the assignment of roles and responsibilities of organizations involved in ammunition production and

¹GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 10, 2014).

procurement, as described, by reviewing relevant statutes, regulations, and documents and interviewing Army officials at the headquarters level as well as each ammunition plant.

To assess the contracting approaches and associated challenges, we analyzed contract documents for the five government-owned, contractor-operated ammunition plants that produce conventional ammunition. To identify contracting approaches, we analyzed each plant's contract or contracts and associated performance work statements, among other documentation. To identify potential challenges in contracting and how the Army addressed them, we interviewed officials in headquarters offices for applicable Army organizations as well as plant and vendor officials at each of the five government-owned, contractor-operated facilities. We reviewed leading practices on lessons learned developed by GAO and the Army.² We asked Army officials about their use of a process or practices for systematically collecting, analyzing, validating, storing and archiving, and disseminating and sharing lessons learned—GAO's leading practices—to manage contract approaches at the ammunition plants.

We conducted this performance audit from July 2021 to October 2022 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

²GAO, *DOD Utilities Privatization: Improved Data Collection and Lessons Learned Archive Could Help Reduce Time to Award Contracts*, [GAO-20-104](#) (Washington, D.C.: Apr. 2, 2020); *Project Management: DOE and NNSA Should Improve Their Lessons-Learned Process for Capital Asset Projects*, [GAO-19-25](#) (Washington, D.C.: Dec. 21, 2018); and *Federal Real Property Security: Interagency Security Committee Should Implement a Lessons-Learned Process*, [GAO-12-901](#) (Washington, D.C.: Sept. 10, 2012). See also Center for Army Lessons Learned, *Establishing a Lessons Learned Program: Observations, Insights, and Lessons* (Fort Leavenworth, KS: June 2011).

Appendix II: Additional Information on Army Ammunition Plants

The following pages provide additional information about each of the Army's five government-owned, contractor-operated ammunition plants:

- Holston Army Ammunition Plant located in Kingsport, TN;
- Iowa Army Ammunition Plant located in Middletown, IA;
- Lake City Army Ammunition Plant located in Independence, MO;
- Radford Army Ammunition Plant located in Radford, VA; and
- Scranton Army Ammunition Plant located in Scranton, PA.

PLANT FEATURES

Originally Established:
1942

Acreage:
5,890.11 acres

Infrastructure:
495 buildings and 129
igloos with explosive
storage capacity of
201,369 square feet

On-site Staff:
1 military, 21 government
civilians, and approximately
980 contractors

EXAMPLE OF END ITEM PRODUCED

Insensitive munitions
explosives flakes



Source: U.S. Army/D. Whipple. |
GAO-23-105352

ANNUAL PRODUCTION CAPACITY

Up to 14.5 million
units annually

HOLSTON ARMY AMMUNITION PLANT

Kingsport, TN Overview

MISSION

To manufacture a wide
range of explosives for the
Department of Defense



Source: GAO.

CONTRACT INFORMATION

- (1)** In June 1998, the Army awarded a firm-fixed-price facility contract with a 25-year base period, which extends through December 2023. At the time of award, the DOD valued the contract at a cumulative total of \$75 million.
- (2)** In June 1998, the Army awarded a firm-fixed-price supply contract with a period of performance through September 2002. At the time of award, DOD valued the contract at a cumulative total of \$88 million. The Army subsequently awarded four additional supply contracts covering periods through September 2022.

PRODUCTION BASE SUPPORT (PBS) FUNDING FOR FISCAL YEAR 2021

\$290.4 MILLION

Examples of proposed PBS
projects include a new kettle drying
facility, secondary river water
intake facility, and replacement and
construction of acid tanks.

CURRENT VENDOR

BAE Systems Ordnance
Systems, Inc. (BAE) since 1998

ARMAMENT RETOOLING AND MANUFACTURING SUPPORT (ARMS) PROGRAM

According to the Army, ARMS
revenues were \$545,000 in fiscal
year 2021 from 11 tenants.

PLANT FEATURES

Originally Established:
1941

Acreage:
19,011 acres

Infrastructure:
5 active lines, 1,180 facilities (of which 640 are buildings), 143 miles of interior road, 103 miles of railroad, and 39 bridges

On-site Staff:
1 military, 22 government civilians, and 779 contractors

EXAMPLE OF END ITEM PRODUCED

40 caliber grenades



Source: U.S. Army/D. Whipple. | GAO-23-105352

ANNUAL PRODUCTION CAPACITY

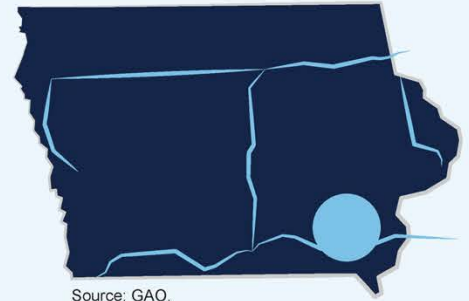
Up to **12.453 million** units annually

IOWA ARMY AMMUNITION PLANT

Middletown, IA Overview

MISSION

To produce and deliver component assembly and medium- and large-caliber ammunition items



Source: GAO.

CONTRACT INFORMATION

- (1)** In October 2008, the Army awarded a firm-fixed-price at no-cost contract for facility operation and maintenance. The contract included a 5-year base period, a 5-year option that the government immediately exercised, and three 5-year award terms through which the government could extend performance to December 2033. At the time of award, the DOD valued the contract at \$427.8 million.
- (2)** In October 2008, the Army awarded a firm-fixed-price contract for ammunition production with five ordering periods for all products through 2013. Since 2013, the Army awarded follow-on contracts for some of the products to AO on a sole source basis and awarded contracts for other needed products on a competitive basis.
- (3)** In October 2008, the Army established a basic ordering agreement through which it would place firm-fixed-price and cost-reimbursement delivery orders for services related to the operations and maintenance of the Iowa ammunition plant. The basic ordering agreement had an effective period of 10 years.

PRODUCTION BASE SUPPORT (PBS) FUNDING FOR FISCAL YEAR 2021

\$143.2 MILLION

Examples of PBS projects include insensitive munitions explosives wastewater treatment upgrades, rail upgrades, and long range precision artillery production.

CURRENT VENDOR

American Ordnance (AO)
since October 2008

ARMAMENT RETOOLING AND MANUFACTURING SUPPORT (ARMS) PROGRAM

According to the Army, ARMS revenues were \$1.4 million in fiscal year 2021 from 19 tenants.

PLANT FEATURES

Originally Established:
1940

Acreage:
3,945 acres

Infrastructure:
330 buildings, 69 structures,
17 miles of steam pipe, 60
miles of improved road, 2
test firing ranges

On-site Staff:
1 military, 33 government
civilians, and 1,890
contractors

EXAMPLE OF END ITEM PRODUCED

7.62 caliber



Source: U.S. Army/D. Whipple. |
GAO-23-105352

ANNUAL
PRODUCTION
CAPACITY
Up to 1.6 billion
rounds annually

LAKE CITY ARMY AMMUNITION PLANT

Independence, MO Overview



Source: GAO.

MISSION

To produce small caliber munitions and operate
the North American Regional Test Center

CONTRACT INFORMATION

In October 2019, the Army awarded a contract for ammunition production and operation, maintenance, and modernization of the facility. Ammunition production under the contract was fixed-price with economic price adjustment. The contract included a 5-year base period, a 2-year option that the government immediately exercised, and a 3-year award term through which the government could extend performance to September 2029. According to Army officials, at the time of award, the Army valued the total potential of the contract at \$8.4 billion.

PRODUCTION BASE SUPPORT (PBS) FUNDING FOR FISCAL YEAR 2021

\$78.1 MILLION

Examples of PBS projects include fire
sprinkler upgrades, heating, ventilation,
and air conditioning redesign, and Next
Generation Squad Weapon design.

CURRENT VENDOR

Olin Winchester (Olin)
since October 2019

ARMAMENT RETOOLING AND MANUFACTURING SUPPORT (ARMS) PROGRAM

According to the Army, ARMS
revenues were \$857,000 in fiscal
year 2021 from 23 tenants.

PLANT FEATURES

Originally Established:
1941

Acreage:

6,901 acres across two facilities: the Radford manufacturing unit (4,080 acres) and the New River storage unit (2,821 acres)

Infrastructure:

1,038 buildings, 214 igloos, storage capacity of 657,000 square feet

On-site Staff:

1 military, 23 government civilians, and approximately 1,000 contractors

EXAMPLE OF END ITEM PRODUCED

MK90 grain for 2.75" Hydra Rocket



Source: U.S. Army/D. Whipple. | GAO-23-105352

ANNUAL PRODUCTION CAPACITY

Up to 37.3 million units annually

RADFORD ARMY AMMUNITION PLANT

Radford, VA Overview

MISSION

To produce propellants, energetics, and munitions in order to enable engagement and destruction of targets



Source: GAO.

CONTRACT INFORMATION

- (1)** In May 2011, the Army awarded a firm-fixed-price at no cost facility operations and maintenance contract with a 5-year base period and options to extend the period of performance to a total duration of 25 years. At the time of award, the Army exercised the first 5-year option.
- (2)** In May 2011, the Army awarded a firm-fixed-price, indefinite-delivery, indefinite-quantity supply contract with a 5-year period of performance. Through two separate modifications, the Army extended performance through January 2022. At the time of award, the contract's maximum dollar value was \$423 million. In January 2022, the Army awarded BAE an undefinitized contract action, modifying the original contract to extend performance through January 2024.
- (3)** In May 2011, the Army established a basic ordering agreement through which the Army could issue firm-fixed-price, fixed-price incentive, cost-reimbursable, or cost-plus-fixed-fee orders during an ordering period of 5 years. Through two separate modifications, the Army extended the ordering period through January 2024. Army officials stated that, at the time the agreement was established, the Army estimated its value at \$427 million.

PRODUCTION BASE SUPPORT (PBS) FUNDING FOR FISCAL YEAR 2021

\$197.9 MILLION

Examples of PBS projects include constructing a new nitrocellulose facility, modernizing the nitroglycerin facility, and fire protection upgrades.

CURRENT VENDOR

BAE Systems Ordnance Systems, Inc. (BAE) since May 2011

ARMAMENT RETOOLING AND MANUFACTURING SUPPORT (ARMS) PROGRAM

According to the Army, ARMS revenues were \$1.495 million in fiscal year 21 from 11 tenants.

PLANT FEATURES

Originally Established:
1953

Acreage:
15.3 acres

Infrastructure:
9 buildings with 509,000 square feet of production space

On-site Staff:
0 military, 8 civilians,
and 285 contractors

EXAMPLE OF END ITEM PRODUCED

155 mm artillery shells



Source: U.S. Army/D. Whipple. | GAO-23-105352

ANNUAL PRODUCTION CAPACITY

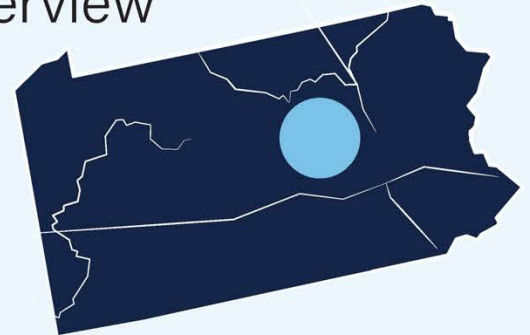
Up to 228,000 metal projectiles annually

SCRANTON ARMY AMMUNITION PLANT

Scranton, PA Overview

MISSION

To produce large caliber projectile metal parts (no explosives) for artillery and mortars for the military services



Source: GAO.

CONTRACT INFORMATION

- (1) In July 2019, the Army awarded a primarily firm-fixed-price, no-cost indefinite-delivery, indefinite-quantity (IDIQ) contract for property management with a base period of five, 1-year ordering periods, and options to extend the contract through July 2034. At the time of award, the contract had a ceiling of \$215 million.
- (2) In July 2019, the Army awarded a fixed-price with economic price adjustment IDIQ requirements contract for ammunition production with a base period of five, 1-year ordering periods, and an option to extend the contract through July 2029. At the time of award, the contract had a ceiling of \$891 million.

PRODUCTION BASE SUPPORT (PBS) FUNDING FOR FISCAL YEAR 2021

\$23.5 MILLION

Examples of proposed PBS projects include roof repair, infrastructure and safety upgrades, and production line modifications.

CURRENT VENDOR

General Dynamics Ordnance and Tactical Systems (GD-OTS) since 2019

ARMAMENT RETOOLING AND MANUFACTURING SUPPORT (ARMS) PROGRAM

According to the Army, there were no ARMS tenants in fiscal year 2021.

Appendix III: Comments from the Department of the Army

Appendix III: Comments from the Department
of the Army



UNDER SECRETARY OF THE ARMY
WASHINGTON
SEP 23 2022

Mr. John D. Sawyer
Director
Contracting and National Security Acquisitions
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Sawyer:

This is the Department of Defense (DoD) response to the GAO Draft Report, GAO-23-105352 "ARMY AMMUNITION: Actions Needed to Improve Management of Procurement and Production Practices," received 26 August 2022 (GAO Code 105352).

The DoD concurs with the subject draft report and recommendations outlined in the document. The DoD appreciates the opportunity to review the draft report. My point of contact is Mr. Matthew Zimmerman, Project Director, Joint Services, Joint Program Executive Office Armaments and Ammunition, matthew.t.zimmerman2.civ@army.mil or 973-724-7626.

Sincerely,

A handwritten signature in black ink, appearing to read "Gabe Camarillo", is positioned above the printed name.

Gabe Camarillo

**GAO DRAFT REPORT DATED AUGUST 26, 2022
GAO-23-105352 (GAO CODE 105352)**

**“ARMY AMMUNITION: ACTIONS NEEDED TO IMPROVE MANAGEMENT OF
PROCUREMENT AND PRODUCTION”**

**DEPARTMENT OF DEFENSE COMMENTS
TO THE GAO RECOMMENDATION**

RECOMMENDATION 1: The GAO recommends that the Secretary of the Army should direct the appropriate offices within the Army to revise the governing documents of Army organizations involved in managing the procurement and production of conventional ammunition at government-owned, contractor-operated plants to ensure they are current and clearly delineate roles and responsibilities.

DoD RESPONSE: DoD concurs.

RECOMMENDATION 2: The GAO recommends that the Secretary of the Army should ensure the Assistant Secretary of the Army for Acquisition, Logistics, and Technology directs the Joint Program Executive Office Armaments and Ammunition, in conjunction with Joint Munitions Command and Army Contracting Command, to establish a mechanism to collect, analyze, validate, archive, and share lessons learned related to managing conventional ammunition procurement and production at government-owned, contractor-operated plants.

DoD RESPONSE: DoD concurs.

Accessible Text for Appendix III: Comments from the Department of the Army

SEP 23 2022

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Contracting and National Security Acquisitions
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

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Sincerely,

Gabe Camarillo

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DoD RESPONSE: DoD concurs.

Appendix IV: GAO Contract and Staff Acknowledgments

GAO Contact

John D. Sawyer, (202) 512-4841 or sawyerj@gao.gov

Staff Acknowledgments

In addition to the contact named above, key contributors to this report are J. Kristopher Keener (Assistant Director), Joe E. Hunter (Analyst-in-Charge), Matthew T. Crosby, Lily Folkerts, Stephanie Gustafson, William Reed, Edward J. SanFilippo, and Robin Wilson. Breanne Cave, Lorraine R. Ettaro, and Kevin O'Neill also contributed to this report.

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