United States Government Accountability Office

GAO

Report to the Honorable David R.Obey, Ranking Minority Member, Committee on Appropriations, House of Representatives

July 2005

DEFENSE AMMUNITION

DOD Meeting Small and Medium Caliber Ammunition Needs, but Additional Actions Are Necessary





Highlights of GAO-05-687, a report to the Honorable David R. Obey, Ranking Minority Member, Committee on Appropriations, House of Representatives

Why GAO Did This Study

Following the end of the Cold War, the Department of Defense (DOD) significantly reduced its purchases of small and medium caliber ammunition and reduced the number of government-owned plants that produce small and medium caliber ammunition. Since 2000, however, DOD's requirements for these types of ammunition have increased notably.

Because the success of military operations depends in part on DOD having a sufficient national technology and industrial base to meet its ammunition needs, you asked GAO to review DOD's ability to assess if its supplier base can meet small and medium caliber ammunition needs. Specifically, we (1) identified changes over the past several years that have increased the requirement for small and medium caliber ammunition. (2) assessed the actions DOD has taken to address the increased requirement, and (3) determined how DOD plans to ensure that it can meet future small and medium caliber ammunition needs.

What GAO Recommends

GAO is making recommendations aimed at strengthening DOD's ability to implement its plan and ensure accountability.

In commenting on a draft of this report, DOD concurred with GAO's recommendations and provided information on its planned steps to implement them.

www.gao.gov/cgi-bin/getrpt?GAO-05-687.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Ann Calvaresi-Barr at (202) 512-4281 or calvaresbarra@gao.gov.

DEFENSE AMMUNITION

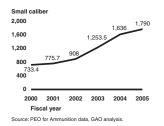
DOD Meeting Small and Medium Caliber Ammunition Needs, but Additional Actions Are Necessary

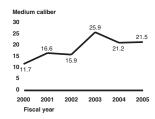
What GAO Found

DOD's increased requirements for small and medium caliber ammunition over the past several years are largely the result of increased weapons training requirements needed to support the Army's transformation to a more self-sustaining and lethal force—an effort accelerated after the terrorist attacks of September 11, 2001—and the deployment of forces to conduct recent U.S. military actions in Afghanistan and Iraq.

Between fiscal years 2000 and 2005, total requirements for small caliber ammunitions more than doubled, from about 730 million to nearly 1.8 billion rounds, while total requirements for medium caliber ammunitions increased from 11.7 million rounds to almost 22 million rounds.

Total Small and Medium Caliber Requirements, Fiscal Years 2000 to 2005 (in millions of rounds)





DOD has initiated several steps to meet the increased demand, including funding about \$93.3 million for modernization improvements at the three government-owned ammunition plants producing small and medium caliber ammunition. DOD is currently able to meet its medium caliber requirement through modernization efforts at the government-owned ammunition plants and through contracts with commercial producers. The government-owned plant producing small caliber ammunition cannot meet the increased requirements, even with these modernization efforts. Also, commercial producers within the national technology and industrial base have not had the capacity to meet these requirements. As a result, DOD has had to rely at least in part on foreign commercial producers to meet its small caliber ammunition needs.

DOD has taken steps to ensure that the national technology and industrial base can meet future small caliber ammunition needs by building flexibility into the acquisition system to address fluctuations. In addition, a planning process has been put in place to ensure that the base can respond to longer-term DOD ammunition needs, including small and medium caliber ammunition. While the process is ongoing, information to effectively implement the plan and timely performance measures to ensure accountability are lacking.

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Abbreviations

DOD Department of DefensePEO Office of the Program Executive Officer

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United States Government Accountability Office Washington, DC 20548

July 27, 2005

The Honorable David R.Obey Ranking Minority Member Committee on Appropriations, House of Representatives

Dear Congressman Obey:

Following the end of the Cold War, the Department of Defense (DOD) significantly reduced its purchases of small and medium caliber ammunition. Historically, DOD has procured small and medium caliber ammunition from government-owned manufacturing plants. As a result of the reduced ammunition needs, the number of these plants has been reduced to less than half of what existed during the Cold War. DOD has three remaining government-owned plants that produce small and medium caliber ammunition. Since 2000, however, DOD's small and medium caliber ammunition requirements have increased notably.

The Army is the single manager for conventional ammunition acquisition, including small and medium caliber ammunition, for all U.S. forces. In September 1999, we reported on the need to consolidate the management of the Army's conventional ammunition programs. In early 2002, the Army established the Office of the Program Executive Officer (PEO) for Ammunition as part of a larger effort to establish greater accountability and responsibility in the life-cycle management of DOD's ammunition programs. A year later, the Army designated this office as the executor for the single manager for conventional ammunition mission and delegated to that office limited authority to make determinations on restricting procurements of conventional ammunition as directed by section 806 of the Strom Thurmond National Defense Authorization Act for Fiscal Year

¹DOD Directive 5160.65, updated April 14, 2004, designates the Secretary of the Army as DOD's single manager for conventional ammunition under the authority of the Secretary of Defense. By memorandum dated January 28, 2003, the Secretary of the Army delegated single manager for conventional ammunition authority to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology.

²See GAO, Defense Management: Army Could Achieve Efficiencies by Consolidating Ammunition Management, GAO/NSIAD-99-230 (Washington, D.C.: Sept. 30, 1999).

1999 (Public Law 105-261).³ In addition, the PEO for Ammunition was given responsibility for procuring conventional ammunition to meet current military requirements.

Because the success of military operations depends in part on DOD having a sufficient national technology and industrial base⁴ to meet its ammunition needs, you asked us to review DOD's ability to assess if its supplier base can meet small and medium caliber ammunition needs. Specifically, we (1) identified changes over the past several years that have increased the requirements for small and medium caliber ammunition, (2) assessed the actions DOD has taken to address the increased requirement, and (3) determined how DOD plans to ensure that it can meet future small and medium caliber ammunition needs.

In conducting our work, we spoke with officials from appropriate DOD and Army offices. We also reviewed DOD and Army ammunition acquisition policies, planning documents, and ammunition budget and requirements data. For the purposes of this review, we collected data on 5.56mm, 7.62mm, 9mm, and .50-caliber small caliber ammunition, and 20mm, 25mm, 30mm, and 40mm medium caliber ammunition. We conducted our review from September 2004 to May 2005 in accordance with generally accepted government auditing standards. For more information on our scope and methodology, see appendix I.

Results in Brief

DOD's increased requirements for small and medium caliber ammunition over the past several years are largely the result of increased weapons training requirements needed to support the Army's transformation to a more self-sustaining and lethal force—an effort accelerated after the terrorist attacks of September 11, 2001—and the deployment of forces to conduct recent U.S. military actions in Afghanistan and Iraq. Between fiscal years 2001 and 2005, total requirements for small caliber

³Section 806 of the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 (Public Law 105-261, October 1998) authorizes DOD to restrict its procurement of conventional ammunition to sources within the national technology and industrial base if it determined that such action would be needed to preserve the base's capability to meet DOD's conventional ammunition requirements in cases of national emergency or to achieve industrial mobilization.

⁴Defined by 10 U.S. Code section 2500(1) as the persons and organizations that are engaged in research, development, production, or maintenance activities conducted within the United States and Canada.

ammunitions more than doubled, from about 730 million to nearly 1.8 billion rounds, while total requirements for medium caliber ammunitions increased from 11.7 million rounds to almost 22 million rounds. Because a significant portion of this increased requirement is a result of the need to increase training to ensure weapons proficiency in support of transformation, it will continue into the foreseeable future.

The PEO took several steps to meet the increased need for small and medium caliber ammunition. The PEO began modernizing the three ammunition plants that produce DOD's small and medium caliber ammunition, which were built in the World War II era. Between fiscal years 2000 and 2005, DOD funded about \$93.3 million to replace or refurbish outdated manufacturing equipment and make other facility improvements. These modernization efforts are planned to continue through fiscal year 2011. DOD is currently able to meet its medium caliber requirement through modernization efforts at these ammunition plants and through contracts with commercial producers within the national technology industrial base. However, the modernization efforts at the plant that produces small caliber ammunition will only allow the contractor to increase the facility's production capacity to 1.5 billion rounds by early 2006—falling short of DOD's current small caliber ammunition requirements. To make up for these shortfalls, DOD has had to rely on additional buys of small caliber ammunition in the commercial market, both domestic and foreign, and from another nation's war reserve stock. In fiscal year 2004, DOD made additional buys totaling about 313 million rounds of small caliber ammunition from both domestic and foreign sources.

The PEO is attempting to build flexibility into the acquisition system to address fluctuations in near-term needs for small caliber ammunition. For example, the PEO plans to select a commercial producer in 2005 that will serve as a second source for producing small caliber ammunition. This second source producer will begin providing an additional 300 million rounds per year of small caliber ammunition in early 2007. In addition, the PEO has initiated a planning process to ensure that the conventional ammunition industrial base's capacity could effectively and efficiently respond to future DOD ammunition needs, including small and medium caliber ammunition. While the process is ongoing, we identified two weaknesses that may limit its effectiveness, the lack of (1) information to effectively implement certain planning initiatives and (2) performance metrics to annually measure progress and ensure accountability. For example, the PEO has articulated the need to conduct a business case analysis to determine the future size and scope of the government-owned

conventional ammunition base; however, implementing that business case analysis will require actions outside the PEO's scope of responsibility. In addition, while the PEO has encouraged ammunition program managers to submit acquisition plans so that it can determine which items should be procured from the national technology and industrial base, as called for by section 806, Public Law 105-261, other services' ammunition program managers have not always been forthcoming with the plans. Further, while certain performance measures are in place, they are not sufficient to monitor progress and ensure accountability. For example, the PEO's plan does not include key results-oriented principles, such as identifying key resources needed to meet the plan's goals and objectives, including costs, schedules, and responsible DOD components for individual initiatives. In addition, the plan does not include an annual review process to compare the actions taken to the desired performance—principles that agencies have been encouraged to include in their planning.

We are making recommendations aimed at strengthening DOD's ability to ensure that a sufficient national technology and industrial base exists for cost effectively procuring conventional ammunition. In commenting on a draft of this report, DOD concurred with GAO's recommendations and provided information on its planned steps to implement them.

Background

A DOD directive assigns the Secretary of the Army the mission of the single manager for conventional ammunition within DOD. The Under Secretary of Defense for Acquisition, Technology, and Logistics is responsible for providing policy and guidance for the single manager for conventional ammunition's mission, and ensuring compliance with the single manager's responsibilities. Section 806 of the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 (Public Law 105-261) vests the single manager with the authority to restrict the procurement of conventional ammunition to sources within the national technology and industrial base. The Secretary of the Army was authorized to delegate, within the Army, this authority. A January 28, 2003, memorandum from the Secretary of the Army delegated authority to make section 806 determinations to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology. In an April 16, 2003, memorandum that office re-delegated limited section 806 authority to the Program Executive Officer for Ammunition in his capacity as the single manager's executor.

High-level planning guidance establishes general guidelines for the services to determine how much ammunition is needed to conduct military operations. As the single manager for conventional ammunition, the Army is responsible for coordinating with all the military services to meet conventional ammunition requirements. Through the PEO for Ammunition, the Army manages small and medium caliber ammunition, including small arms, mortar, automatic cannon, and ship gun ammunition (see table 1).⁵

Weapon	Use	Ammunition
Small caliber		
Machine gun	Mounted on the Army's Bradley Fighting Vehicle	7.62mm
M2 machine gun	Ground or mounted vehicles	.50-caliber
M16 rifle	Ground	5.56mm
M9 pistol	Ground	9mm
Medium caliber		

Carmon	Modified of the 7th 1 of the 1 to Lagie	20111111
Bushmaster cannon	Mounted on the Army's Bradley Fighting Vehicle, the Marine Corps' Light Armored Vehicle, the Air Force's AC-130U special operations aircraft, and numerous other Navy and Coast Guard surface ships	25mm
Cannons	Mounted on the Air Force's A-10 close support aircraft	30mm
M203 grenade launcher	Infantrymen	40mm

Source: DOD data, GAO analysis.

Mounted on the Air Force's F-15 Fagle

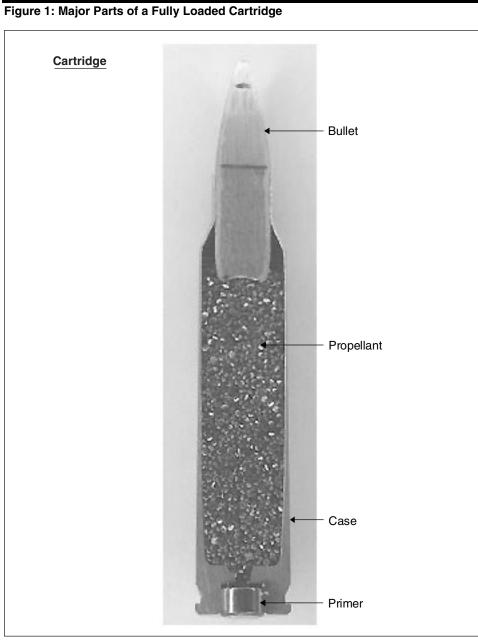
Table 1: Examples of Small and Medium Caliber Ammunition and Their Uses

Cannon

All ammunition cartridges are composed of several components that must be assembled at different stages of production. See figure 1 for an example of a 5.56mm cartridge. It takes, on average, 23-months from the time a production order is placed until final delivery.

20mm

⁵Other categories of conventional ammunition managed by the PEO for Ammunition include: (1) bombs (including cluster, fuel air explosive, general purpose, and incendiary); (2) unguided rockets, projectiles, and submunitions; (3) chemical ammunition with various fillers; (4) land mines; (5) demolition materiel; (6) grenades; (7) flares and pyrotechnics; and (8) other items used in the previously mentioned categories including explosives, propellants, chemical agents, cartridges, propelling charges, projectiles, warheads, fuzes, boosters, and safe arm devices in bulk, combination, or separately packaged items of issue for complete round assembly.



Source: ATK, Inc.

Since World War II, DOD has relied primarily on a government-owned base to meet its conventional ammunition needs. During the Cold War, there were as many as 34 government-owned plants producing conventional ammunition. The end of the Cold War and subsequent changes to defense missions resulted in declining requirements. At its peak in 1985, funding for conventional ammunition was \$4.3 billion; by 1999, funding had dropped by more than half to about \$2 billion. Currently, there are 14 government-owned ammunition plants, 11 of which are contractor-operated. Three of these 11 facilities—Lake City (Missouri), Milan (Tennessee), and Radford (Virginia)—are the government-owned, contractor-operated producers of DOD's small and medium caliber ammunition.

Lake City is the primary producer of small caliber ammunition. Lake City is operated by a commercial ammunition producer under a contract that runs from fiscal year 1999 through fiscal year 2008. The contract initially called for a minimum production capacity amount of 350 million rounds and a maximum of 800 million rounds of 5.56mm, 7.62mm, and .50-caliber ammunition. The PEO increased the upper capacity requirement to 1.5 billion rounds per year to be accomplished by early 2006 through modifications made to the original contract.

The PEO relies on annual contracts with three commercial producers within the national technology and industrial base for most of DOD's supply of 20mm, 25mm, and 30mm medium caliber ammunition. Currently, one of these producers is manufacturing medium caliber ammunition at Radford which specializes in the production of propellants and explosives; the other two commercial producers manufacture medium caliber ammunition at their own facilities. Radford's current contract was awarded in fiscal year 2003 and has been renewed on an annual basis through fiscal year 2005. Milan is the government's primary producer of 40mm ammunition. The contract with the commercial operator at Milan runs from fiscal year 1998 through fiscal year 2006.

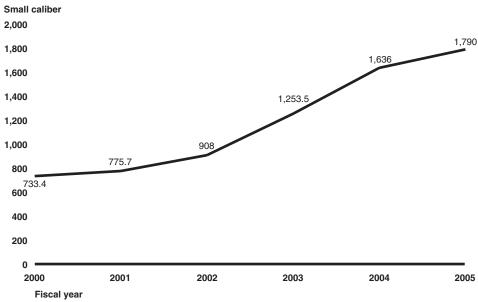
DOD'S Increased Requirements for Small and Medium Caliber Ammunition Primarily Driven by Increased Proficiency Requirements DOD's increased requirements for small and medium caliber ammunitions have largely been driven by increased weapons training requirements, dictated by the Army's transformation to a more self-sustaining and lethal force—which was accelerated after the attacks of September 11, 2001— and by the deployment of forces to conduct recent U.S. military actions in Afghanistan and Iraq. Since 2000, requirements for small caliber ammunition have more than doubled, and requirements for medium caliber ammunition have almost doubled.

Over the last decade, the Army began transforming its warfighting capabilities to respond more effectively to the growing number of peacekeeping operations, small-scale contingencies, and nontraditional threats, such as terrorism. According to Army officials, the transformation is the most comprehensive change in the Army in over a century and will affect all aspects of its organizations, training, doctrine, leadership, and strategic plans as well as its acquisitions. As part of its transformation, the Army is planning for its forces to be self-sustaining and capable of generating combat power and contributing decisively to combat operations. Following the September 11, 2001, attacks, the Army accelerated its force transformation to mobilize and deploy soldiers in support of various missions, most notably war-fighting operations in Afghanistan and Iraq.

To meet its force transformation objectives, the Army began requiring all soldiers to gain additional weapons qualifications training after they complete initial basic training. The Army also began requiring that personnel in all deployed elements, including combat support and combat service support units, achieve and maintain greater proficiency in the use of specified weapons. For example, beginning in late 2001, the Army established a policy requiring each soldier to qualify twice a year on small caliber firearms instead of once a year as previously required. According to Army officials, in addition to the increased annual training requirements, small caliber ammunition needs have increased by an additional 66 percent due to a combination of the mobilization of units and contingency training, for example, training to react to defend against attacks on truck convoys; and, to a lesser extent, due to operations in Iraq and Afghanistan. The increased requirements are likely to continue to a significant extent beyond current operational deployments due to the increased training requirements.

Between fiscal years 2000 and 2005, total requirements for small caliber ammunition increased from about 730 million to nearly 1.8 billion rounds (see figure 2).

Figure 2: Total Small Caliber Requirements, Fiscal Years 2000 to 2005



Source: PEO for Ammunition data, GAO analysis.

Note: In millions of rounds.

The 5.56mm rounds—used in the M16 rifle, the standard weapon used by soldiers—accounted for much of the small caliber increase (see table 2).

Table 2: Small Caliber Requirements, Fiscal Years 2000 to 2005

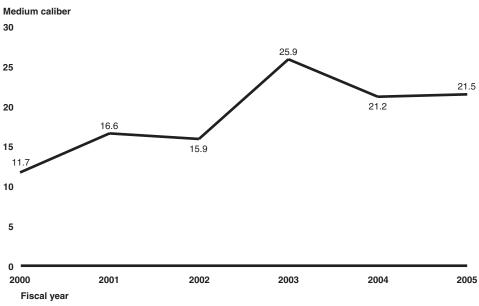
In millions of rounds						
Туре	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
5.56mm	626.2	575.6	689	929	1,181	1,353
7.62mm	47.2	50.7	92.2	136.3	313	282
.50-caliber	20.4	15.7	22.6	41.8	67	74
9mm	39.6	133.7	104.2	146.4	75	81
Total	733.4	775.7	908	1,253.5	1,636	1,790

Source: PEO for Ammunition data, GAO analysis.

Medium caliber requirements have also increased over the past few years. Between fiscal years 2000 and 2005, medium caliber requirements almost

doubled, from 11.7 million rounds to almost 22 million rounds (see figure 3).

Figure 3: Total Medium Caliber Requirements, Fiscal Years 2000 to 2005



Source: PEO for Ammunition data, GAO analysis.

Note: In millions of rounds.

The 40mm rounds represent the bulk of the increases between fiscal years 2000 and 2005 (see table 3).

Table 3: Medium Caliber Requirements, Fiscal Years 2000 to 2005

In millions of rounds						
Туре	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
20mm	2.4	4.1	4.4	6.3	4	4
25mm	2.6	2.6	3	4.4	0.8	1
30mm	2.5	5.1	3.9	4.1	5.4	5.5
40mm	4.2	4.8	4.6	11.1	11	11
Total	11.7	16.6	15.9	25.9	21.2	21.5

Source: PEO for Ammunition data, GAO analysis.

PEO Is Meeting Increased Requirements through Modernization Efforts Supplemented by Commercial Buys In an effort to help meet the increased need for small and medium caliber ammunition in the near term, the PEO upgraded the equipment at the Lake City, Milan, and Radford Army Ammunition plants. While these upgrades enabled Milan and Radford—the government-owned, contractor-operated producers of medium caliber ammunition—to meet DOD's requirements, Lake City—the small caliber ammunition producer—was unable to meet DOD's fiscal year 2004 requirement of about 1.6 billion rounds of ammunition. As a result, the PEO made additional procurements from the commercial market to make up for fiscal year 2004 shortfalls.

The three government-owned, contractor-operated plants that produce small and medium caliber ammunition were built in 1941. Between fiscal years 2001 and 2005, DOD funded a total of about \$93.3 million to upgrade these facilities. This included replacement or refurbishment of ammunition cartridge production equipment and other facility improvements. According to a PEO official, ongoing modernization is needed for the Army ammunition plants to continue to operate into the future, and in the case of the Lake City Army Ammunition Plant, additional equipment and facility upgrades will be needed to increase capacity to address future needs. According to a PEO official, the Army plans to replace and refurbish ammunition production equipment through fiscal year 2011. See table 4 for examples of funded modifications.

Table 4: Examples of Modifications at Lake City, Milan, and Radford Plants

Army Ammunition Plant Modifications

Lake City • Small caliber line upgrades
• Replacement of die sets for manufacturing ammunition components

Milan • Modernization of temperature humidity control used for producing mortars
• Production support and equipment replacement

Radford • Upgrading the acid production facilities for propellant production

Source: Army data, GAO analysis.

According to PEO officials, the national technology and industrial base has been able to meet the increased requirements for medium caliber ammunition. In an effort to meet DOD's small ammunition requirements, the PEO initiated additional modernization efforts at Lake City to increase

production from a maximum capacity of 800 million rounds in fiscal year 2001 to approximately 1.2 billion rounds per year in July 2004. Despite this increased production capacity, Lake City was unable to meet fiscal year 2004 requirements for small caliber ammunition.

Consequently, the PEO was forced to rely on other ammunition sources. While many commercial ammunition producers responded to the PEO's sources sought announcements, few were able to satisfy DOD's ammunition specifications. For example, seven of nine commercial producers responding to the PEO's announcement for a specific type of 5.56mm ammunition were unable to meet the specifications, such as producing metal cartridge cases. For an announcement for different types of .50-caliber ammunition, none of the 10 respondents were able to meet all of the specifications. Several respondents were foreign ammunition producers. According to officials from U.S. commercial ammunition producers, the recent surge in DOD's small caliber ammunition requirements could only be met by accessing available worldwide capacity.

The PEO was eventually able to find commercial producers qualified to fill DOD's small caliber ammunition shortfall in fiscal year 2004. These included Israel Military Industries and Olin-Winchester—a U.S. ammunition producer. According to data provided by the PEO, almost 313 million rounds of 5.56mm, 7.62mm, and .50-caliber ammunition were purchased from commercial ammunition producers in fiscal year 2004. According to a PEO official, DOD paid about \$10 million more than a similar amount of small caliber ammunition would cost from Lake City. However, Lake City could not meet the 2004 requirement. Although DOD paid a premium as a result of the need to procure ammunition outside the government-owned base, we did not analyze whether maintaining a more robust base would have been cost-effective.

According to DOD officials, the increased buys for small caliber ammunition are being funded through supplemental appropriations.

⁶The PEO purchased approximately 120 million rounds of war reserve stocks from the United Kingdom in fiscal year 2004.

⁷A sources sought announcement is a type of market survey to identify companies that can fill the quantities and types of ammunition being sought.

 $^{^8}$ The PEO purchased almost 2.7 million rounds of armor-piercing 5.56mm and 7.62mm ammunition from a commercial producer in Sweden in fiscal year 2004.

Tables 5 and 6 illustrate how much funding for small and medium caliber ammunition acquisitions has been proposed by the President's Budget, and the final funding including supplemental funds for fiscal years 2001 to 2005.

Table 5: FY 2001-2005 Budget for Small Caliber Ammunition

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Fiscal year	Proposed President's budget	Final funding including supplemental funds
2001	\$123,205	\$255,956
2002	117,728	140,930
2003	169,928	364,910
2004	315,186	298,671
2005	283,500	282,405

Source: Army data, GAO analysis.

Table 6: FY 2001-2005 Budget for Medium Caliber Ammunition

Dollare	in	thousands
Dollars	111	เทอนรสทนร

Fiscal year	Proposed President's budget	Final funding including supplemental funds
2001	\$130,089	\$140,589
2002	105,522	101,119
2003	114,585	263,782
2004	148,747	163,062
2005	150,984	150,401

Source: Army data, GAO analysis.

PEO Is Taking Steps to Meet Future Small and Medium Caliber Needs, but Implementation Problems Exist The PEO has taken certain steps to ensure that the national technology and industrial base can meet future small and medium caliber ammunition needs. As part of these efforts, the PEO is attempting to build flexibility into its acquisition system to address near-term fluctuations in the requirement for small caliber ammunition. In addition, the PEO has initiated a longer-term planning process to better manage the national technology and industrial base for conventional ammunition. However, the PEO lacks access to some information needed to effectively implement certain planning initiatives, and other initiatives require actions that are beyond the purview of the PEO. Furthermore, the PEO has not established sufficient performance metrics necessary to ensure accountability.

PEO Is Attempting to Build Flexibility into Procurement Process for Small Caliber Ammunition The PEO is taking several steps to increase flexibility in the small caliber ammunition procurement process. First, the PEO plans to increase Lake City's production capacity to 1.5 billion rounds per year by March 2006 through additional modernization. Moreover, the PEO is in the process of selecting a commercial contractor that will provide an additional 300 million small caliber ammunition rounds per year. This commercial producer will serve as a second source in addition to Lake City, to meet small caliber ammunition needs. The contract is to be awarded in mid 2005, with initial deliveries to start in January 2007. Also, the PEO is requiring that this commercial source be able to supply an additional 200 million rounds of small caliber ammunition, if requirements continue to increase. 9

In the event that future small caliber ammunition requirements were to decrease, which would likely happen if war fighting operations were scaled back, the PEO plans to reduce the amount of ammunition produced at Lake City, while maintaining the 300 million rounds of ammunition production provided by the commercial producer. According to a PEO official, the reduction at Lake City will be accomplished by reducing the number of work shifts rather than by storing or mothballing equipment. Therefore, a future need for increased production could be met by adding shifts. By building this flexibility into the production at Lake City, whose production the PEO can expand or contract under a new contract starting

⁹In 2005 the PEO issued a request for proposals for a commercial producer to produce 300 million rounds per year. The request calls for 300 million rounds for the first year, plus four additional 1-year options for 300 million rounds per year. In addition the request requires that the commercial producer have the capability of increasing production by an additional 200 million rounds within 12 months of an award, if needed.

in fiscal year 2008, the PEO hopes to avoid the need for future additional buys, while retaining the capacity to expand production at Lake City.

A Planning Process for Ammunition Has Been Initiated, but Information Needed for Effective Implementation and Measuring Performance Is Lacking

The PEO has initiated a planning process to ensure that the national technology and industrial base for conventional ammunition's capacity can effectively and efficiently respond to future DOD ammunition needs, including small and medium caliber ammunition requirements. ¹⁰ While the process is ongoing, information needed to effectively implement all aspects of the process and performance metrics needed to annually measure progress and ensure accountability are lacking.

In November 2003, the PEO issued a plan¹¹ with the following five goals: (1) balance industrial base and acquisition management risk; (2) transform to meet current and future requirements; (3) incentivize industry to reinvest in capital equipment and processes; (4) modernize required manufacturing and logistics capacity; and (5) operate effectively and efficiently. In addition to these five goals, the plan establishes 30 initiatives that are intended to help meet the goals. (See appendix II for a list of the 30 initiatives by goal.)

The PEO has begun taking actions to implement several of the 30 initiatives to achieve the plan's goals. For example, the PEO has begun implementing initiatives that address determining whether procurements of conventional ammunition should be restricted to sources within the national technology and industrial base, as provided by section 806 of Public Law 105-261. The PEO, the Joint Munitions Command, and the Defense Contract Management Agency have worked together to begin the development of a risk assessment tool that will include industrial base data such as requirements, suppliers, capacities, deficiencies, production schedules, and inventories. The tool also will be capable of developing reports with "what-if" scenarios to anticipate production problems. To date, the Joint Munitions Command and the Defense Contract Management Agency have identified hundreds of conventional ammunitions items that could not be produced if only one supplier of the

¹⁰The PEO was tasked with developing a conventional ammunition industrial base strategic plan to ensure that the ammunition industrial base could effectively and efficiently respond to current and future conventional ammunition requirements.

¹¹Single Manager for Conventional Ammunition (SMCA) Industrial Base Strategic Plan: 2015.

necessary components needed to build the item would suddenly become unavailable. As part of its efforts to implement its section 806 responsibilities, the PEO is encouraging all ammunition program managers to provide acquisition plans for their conventional ammunition needs, as required by regulation. This process is intended to help the PEO ensure that other Army and DOD components are developing procurement strategies that adhere to section 806.

Despite these actions, the implementation of the planning process has two major weaknesses. First, the PEO lacks the information needed to effectively implement several initiatives. For example, conducting a business case analysis to determine the future size and scope of the government-owned base to preserve critical capabilities and reduce costs is key to meeting the PEO goals. However, implementing the business case analysis is outside the PEO's scope of responsibility. Further, who will need to take action and what needs to be done to develop the business case have not yet been specified. Further, in the case of the acquisition plans, the PEO has encouraged ammunition program managers to submit acquisition plans so that determinations can be made as to what should be procured within the national technology and industrial base, as called for in section 806. Some services program managers (other than Army) have not been forthcoming with all the information needed to make these determinations. The authority to require program managers to submit these plans rests with the Under Secretary of Defense for Acquisition, Technology and Logistics.

Second, the performance measures in place are not sufficient to monitor progress made in meeting the plan's goals and objectives and ensure accountability. The Government Performance and Results Act of 1993 (Public Law 103-62) provides guiding principles that agencies should use to gauge progress towards long-term goals. These principles include identifying required resources such as staff, schedules, and costs. Additionally, the act requires agencies to report actual performance against performance goals, the reasons certain goals were not met, and future planned actions to meet stated goals. The 30 initiatives included in the PEO's plan establish some accountability for implementation because they identify the objectives for each goal and general performance measures. Further, the PEO is developing plans for each of the 30 initiatives—14 of which have been developed. These plans contain

¹²See section 207.103 of the Defense Federal Acquisition Regulation Supplement.

information on major activities or actions that must be taken to complete an initiative and identify the PEO staff responsible for managing each initiative. However, the PEO has not yet completed the development of implementation plans. Furthermore, the initiatives in the strategic plan do not include key results-oriented principles such as identifying key resources needed to meet the plan's goals and objectives including costs, schedules, and responsible DOD components for individual initiatives. In addition the plan does not include an annual review process to compare the actions taken to the desired performance. Such evaluations could be useful in achieving the plan's goals.

Conclusions

Ensuring the industrial base can meet DOD's fluctuating small and medium caliber requirements is a significant challenge. Unforeseen events, such as the terrorist attacks of September 11, 2001, and subsequent military deployments, make predicting future requirements difficult. However, it is imperative that the warfighter be provided with sufficient ammunition to carry out missions to counter ongoing and emerging threats without amassing wasteful unused stockpiles. While DOD has been able to meet its near-term ammunition requirements, it has had to rely on foreign suppliers to make up for some shortfalls. Implementing a strategy for DOD's long-term ammunition needs should include steps to ensure that future ammunition acquisitions are both cost-effective and timely. The likelihood that the current strategy will achieve its goals and objectives could be enhanced by (1) ensuring that the information needed to effectively implement initiatives is provided to those responsible for implementation, and by (2) ensuring that the plan identifies key resources needed to achieve the plan's goals and objectives, and developing an annual review process to compare the actions taken to the desired performance.

Recommendations for Executive Action

To improve DOD's ability to manage the national technology and industrial base for small and medium caliber ammunition and to address risks to that base, we recommend that the Secretary of Defense direct the

- Under Secretary of Defense for Acquisition, Technology, and Logistics to ensure that needed information on planned ammunition procurements is provided to the Program Executive Officer for Ammunition; and
- Assistant Secretary of the Army for Acquisition, Logistics, and Technology to ensure that the Program Executive Officer for

Ammunition identifies and provides key resources and develops metrics for measuring annual progress in meeting planned goals and objectives.

Agency Comments and Our Evaluation

In commenting on a draft of this report, DOD concurred with both recommendations. In response to our recommendation that DOD ensure that needed information on planned ammunition procurements be provided to the Program Executive Officer for Ammunition, the Under Secretary of Defense for Acquisition, Technology, and Logistics plans to issue direction to the services emphasizing the need to submit small and medium caliber ammunition plans to the Single Manager for Conventional Ammunition. In response to our recommendation that the Program Executive Officer for Ammunition identify and provide key resources and develop metrics for measuring annual progress in meeting planned goals and objectives, the Under Secretary of Defense for Acquisition, Technology, and Logistics plans to provide direction to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology and the Program Executive Officer for Ammunition to identify and provide key resources and develop/refine metrics for measuring annual progress in meeting planned goals and objectives. (See appendix III for agency comments.) In addition, DOD provided technical comments that we have incorporated as appropriate.

Copies of this report will be sent to interested congressional committees and the Secretary of Defense. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at http://www.gao.gov.

Please contact me at (202) 512-4841 if you have any questions regarding this report. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Major contributors to this report were Thomas Denomme, Marie Ahearn, Tony Beckham, Michael Gorin, Arturo Holguín, and Karen Sloan.

Sincerely yours,

Ann Calvaresi-Barr

Director, Acquisition

and Sourcing Management

Appendix I: Scope and Methodology

To identify changes over the past several years that have increased the requirement for small and medium caliber ammunition and assess the actions DOD has taken to address the increased requirement, we reviewed documentation and data, and interviewed DOD officials from the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics; the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology; the Office of the Army Deputy Chief of Staff for Operations and Plans; the Office of the PEO for Ammunition; and the Training and Doctrine Command. Specifically, we reviewed policy documents governing (1) DOD's Transformational Planning Guidance, (2) Army training requirements, (3) small and medium caliber ammunition production requirements, and (4) other major operational requirements related to small and medium caliber ammunition needs. We also interviewed DOD and Army officials and obtained inventory data to determine small and medium caliber ammunition trends and to understand how selected policies have impacted the industrial base for ammunition. For the purposes of this review, we collected data on 5.56mm, 7.62mm, 9mm, and .50-caliber small caliber ammunition; as well as 20mm, 25mm, 30mm, and 40mm medium caliber ammunition. We also spoke to two commercial ammunition producers to obtain a better understanding of the supplier base. Finally, we examined budget data provided by officials from the Office of the Assistant Secretary of the Army for Financial Management and Comptroller to determine the funding for small and medium caliber ammunition between fiscal years 2001 to 2005.

To determine how DOD plans to ensure that it can meet future small and medium caliber ammunition needs, we interviewed officials from previously mentioned DOD offices, including the Office of the PEO for Ammunition, to determine the status of their planning efforts.

Appendix II: Overview of Strategic Plan for Conventional Ammunition Industrial Base, by Goal

Rankir	g Strategic initiatives O	bjectives	Perfo	rmance measures
Strate	ic Goal 1: Balance industrial base & acquisitio	n management risk		
4	Synchronize ammunition procurements to maintal the required manufacturing capabilities and capacities. Define structured decision process to facilitate synchronizing. (Keep lines warm.)	 Ensure critical core competencies and capabilitie are available to meet requirements. Balance cost, schedule, and performance with the need to have capability. Establish right-sized ammunindustrial base. 	es 2. 3.	Munitions Readiness Ratings. Utilized capacity and footprint. Government-owned, contractor-operated/ government-owned, government-operated operating costs. Strategic outload capabilities (facilitization, staffing, and skills).
12	Effectively implement section 806 of Public Law 105-261 (Strom Thurmond National Defense Authorization Act for Fiscal Year 1999).			,
13	Use science base production and prototyping as principal means for attaining surge capabilities an emergency requirements.	d		
15	Partner with industry and academia to assist in advancing the state of manufacturing readiness.			
20	Define and require an industrial base readiness assessment into all acquisition plans and strategic	es.		
23	Pursue feasibility and overall business case for government-owned, contractor-operated Army ammunition plants for sell, long-term lease, and/o consolidation options focusing on preserving critic capabilities and reducing costs. (Pending fiscal ye 2005 Base Realignment and Closure Process outcome and Army industrial base transformation guidance.)	al		

Ranking	g Strategic initiatives	Objectives	Performance measures
Strategi	ic Goal 2: Transform to meet current ar	nd future requirements	
3	Develop a replenishment definition to inc planning and industrial base sizing cons	istencies. replenishment requirements	Existence and clarity of replenishment definition.
		definition and strategy.	 Percentage of acquisition strategies/plans utilizing industrial base assessment tool for planning.
			3. Munitions readiness ratings.
			 Trend of single point failure condition.
17	Establish an integrated data environmer and centralized industrial base assessm	ent tool. and industrial base	Logistics Modernization Program deployment schedule.
S S	Assessment tool will include requirements, suppliers, capacities, deficiencies, production schedules, stockpile, metrics, and "what-if" report generation.	uction manufacturing capability and	 Meet combatant command operations planning requirements.
			Correct positioning of ammunition stocks to meet peacetime and wartime requirements.
23	Pursue feasibility and overall business case for government-owned, contractor-operated Army ammunition plants for sell, long-term lease, and/or consolidation options focusing on	d Army contractor-operated Army ammunition plant operating costs/footprint and dispose of	Government-owned, contractor- operated/government-owned, government-operated operating costs.
	preserving critical capabilities and reduc (Pending fiscal year 2005 Base Realign)		^t 9. Utilized capacity and footprint.
	Closure Process outcome and Army ind base transformation guidance.)		Unit cost trends for critical ammunition end items.
30	Sell non-value added, unutilized product equipment and utilize revenue for advant manufacturing technology capability, environmental remediation, and reducing ammunition plant operating costs.	ncing	
18	Utilize science-based production method and knowledge transfer/access to Indus	try for manufacturing/logistics	11. Army manufacturing modernization investments.
	ramp-up capability and/or capacity. Alter strategy to laying away facilities/equipme		12. Munitions readiness ratings.
6	Establish robust manufacturing moderning funding lines.	zation	 Logistics critical skills and capability sustainment assessments.
			 Strategic outload capabilities (facilitization, staffing, and skills).

Ranking	Strategic initiatives	Objectives	Performance measures
Strategic G	oal 3: Incentivize industry to reinvest in	capital equipment and processes	
1	Establish multi-year contracting strategies by ammo family (14 categories).	 Maintain a financially viable industrial base. 	Number of suppliers in high-risk financial condition.
			Financial viability of suppliers of critical core capabilities.
19	Selectively promote initiatives from the Armament Retooling and Manufacturing Support Act of 1992 authorizing the Army to permit commercial firms to use facilities located at government-owned, contractor-operated ammunition plants for commercial purposes, and identify projects for production modernization and transformation.		
28	Explore and implement indemnification on a selected basis.		
5	Promote long-term relationships/partnerships with Industry.	Increase industry investment in equipment and facilities.	 Industry investment applied to modernizing manufacturing processes, equipment, and facilities.
27	Offer government-owned equipment and personnel for supplier use.		
7	Initiate a manufacturing modernization loan program to provide low-interest rates to the ammo supply chain.		
18	Facilitate use of science based production modeling and process controls.		
14	Award incentive production contracts that match government funds for contractor investment in capital equipment and processes.		

Ranking	Strategic initiatives	Objectives	Performance measures		
Strategic Go	Strategic Goal 4: Modernize required manufacturing and logistics capacity				
6	Establish robust manufacturing modernization funding lines.	Increase manufacturing and logistics readiness to meet current and future requirements.	Munitions readiness ratings.		
			Manufacturing readiness levels for future munitions.		
			 Army and industry's manufacturing modernization investments. 		
			 Number of single point failures adopting science based production methodologies. 		
9	Identify, consolidate, and prioritize production deficiencies in the organic and commercial sector, aligning priorities with the program managers' needs.				
14	Integrate into ammunition contracts a percentage required for capital improvement initiatives with contractor matching.				
24	Establish science-based production methodologies at critical single point failure locations and transfer prototyping knowledge/capabilities to Industry.				
25	Leverage and coordinate Mantech and research, development, technology, and engineering from all services.				

Ranking	Strategic initiatives	Objectives	Performance measures
Strategic Go	oal 5: Operate effectively and efficiently		
2	Ensure that military services and industry participate in strategic planning activities.	Maintain open communications with all services and industry.	Number of annual meetings with industry and services.
10	Actively participate in industry organizations and events; e.g., National Defense Industrial Association, Munitions Industrial Base Task Force, etc.		2. Customer satisfaction survey.
8	Level and consolidate procurement buys to the maximum extent practicable.	 Reduce ammunition life-cycle costs. Maximize customer satisfaction. Reduce response time in providing 	Percentage of identified inefficiencies that have been corrected.
			4. Utilized capacity and footprint.
11	Identify operating inefficiencies and formulate corrective actions. (This		Customer satisfaction survey ratings.
	initiative was deleted in the November 2004 update of the plan.)		6. Munitions readiness ratings.
21	Incentivize the implementation of best business practices in single manager for conventional ammunition processes and at key government and commercial suppliers.		 Number of self-help projects implemented by ammunition suppliers and associated value- engineering savings.
23	Pursue feasibility and overall business case for government-owned, contractor-operated Army ammunition plants for sale, long-term lease, and/or consolidation options focusing on preserving critical capabilities and reducing costs. (Pending fiscal year 2005 Base Realignment and Closure Process outcome and Army industrial base transformation guidance.)		 8. Meet combatant command operations planning requirements. 9. Correct positioning of ammunition stocks to meet peacetime and wartime requirements.
29	Promote/incentivize contractors to pursue state-based, self-help programs among ammo suppliers.		
16	Promote commonality of components across/within ammo families.		
17	Develop and implement an industrial base integrated data environment using a web-based assessment tool and report generating system that captures production data, stockpile condition, requirements and specific	Automate industrial base planning and processes.	10. Percentage of production base plan converted to integrated data environment.11. Establishment and completion of a logistics industrial base plan.

Appendix II: Overview of Strategic Plan for Conventional Ammunition Industrial Base, by Goal

Ranking	Strategic initiatives	Objectives	Performance measures
22	Identify and benchmark best practices in production and facility management.	Understand condition and posture of the ammunition and logistics base.	12. Percentage of baseline metrics collected.
			13. Munitions readiness ratings.
26	Baseline, characterize, and monitor the state of the industrial base supply chain. Utilize Joint Munitions Command production base readiness measurement scheme to characterize risk of industrial base to meet requirements.		14. Strategic outload capabilities (facilitization, staffing, and skills)

Source: PEO for Ammunition data.

Appendix III: Comments from the Department of Defense



OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON WASHINGTON, DC 20301-3000

Ms. Ann Calvaresi-Barr Director, Acquisition and Sourcing Management U.S. Government Accountability Office 441 G Street, N.W. Washington, DC 20548

Dear Ms. Calvaresi-Barr:

This is the Department of Defense (DoD) response to the GAO draft report, "DEFENSE AMMUNITION: DOD Meeting Small and Medium Caliber Ammunition Needs, but Additional Actions Are Necessary," dated June 20, 2005 (GAO Code 120373/GAO-05-687).

The report recommends that the Under Secretary of Defense (Acquisition, Technology, and Logistics) ensure that needed information on planned ammunition procurement is provided to the Program Executive Officer for Ammunition, and that the Assistant Secretary of the Army for Acquisition, Logistics, and Technology ensure that the Program Executive Officer for Ammunition identifies key resources and develops metrics for measuring annual progress in meeting planned goals and objectives.

The Department concurs with both recommendations. The Department mandated that the Services provide their small and medium caliber ammunition acquisition plans be submitted to the Single Manager for Conventional Ammunition in an Under Secretary of Defense memorandum, dated April 5, 2002, subject: Section 806 of the Strom Thurmond National Defense Authorization Act of Fiscal Year 1999. The Department is considering the reissue of this memorandum to emphasize the need and importance of adhering to this direction. The Assistant Secretary of the Army for Acquisition, Logistics, and Technology and the PEO for Ammunition are continuing to identify and provide key resources and developing/refining metrics for measuring annual progress in meeting planned goals and objectives. Detailed comments on the report are enclosed.

My point of contact for this matter is Mr. Robert Read at (703) 602-4287.

Gary A. Powell

Acting, Deputy Under Secretary of Defense (Industrial Policy)

Hong a Youll

JUL 15 2005

Enclosure: As stated



GAO DRAFT REPORT - DATED JUNE 20, 2005 GAO CODE 120373/GAO-05-687

"DEFENSE AMMUNITION: DOD MEETING SMALL AND MEDIUM CALIBER AMMUNITION NEEDS, BUT ADDITIONAL ACTIONS ARE NECESSARY"

DEPARTMENT OF DEFENSE COMMENTS TO THE RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense (Acquisition, Technology and Logistics) to ensure that needed information on planned ammunition procurements is provided to the Program Executive Officer for Ammunition. (p. 17/GAO Draft Report)

<u>DOD RESPONSE</u>: Concur. The Department mandated that the Services provide their small and medium caliber ammunition acquisition plans be submitted to the Single Manager for Conventional Ammunition in an Under Secretary of Defense memorandum, dated April 5, 2002, subject: Section 806 of the Strom Thurmond National Defense Authorization Act of Fiscal Year 1999. The Under Secretary of Defense for Acquisition, Technology & Logistics (USD(AT&L)) will issue reinforcing direction to the Services emphasizing the need and importance of adhering to the prior direction.

RECOMMENDATION 2: The GAO recommended that the Secretary of Defense direct the Assistant Secretary of the Army for Acquisition, Logistics, and Technology to ensure that the Program Executive Officer for Ammunition identifies key resources and develops metrics for measuring annual progress in meeting planned goals and objectives. (p. 17 & 18/GAO Draft Report)

DOD RESPONSE: Concur. The USD(AT&L) will provide direction to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology and the Program Executive Officer for Ammunition to continue to identify and provide key resources and develop/refine metrics for measuring annual progress in meeting the planned goals and objectives identified in the Single Manager for Conventional Ammunition (SMCA) Industrial Base Strategic Plan: 2015. The strategic plan identifies five goals: (1) balance industrial base and acquisition management risk; (2) transform to meet current and future requirements; (3) incentivize industry to reinvest in capital equipment and processes; (4) modernize required manufacturing and logistics capacity; and (5) operate effectively and efficiently. The strategic plan also establishes 30 initiatives to help meet the goals. The Program Executive Officer for Ammunition is supporting the strategic plan and the implementing the initiative by identifying the necessary key resources and metrics and by measuring annual progress.

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