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Report to the Chairman, Subcommittee on Readiness and Management Support, Committee on Armed Services, U.S. Senate

April 2001

DEFENSE INVENTORY

Steps the Army Can Take to Improve the Management and Oversight of Excess Ammunition

GAO-01-372

Contents

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Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

April 12, 2001

The Honorable James M. Inhofe
Chairman, Subcommittee on Readiness
and Management Support
Committee on Armed Services
United States Senate

Dear Mr. Chairman:

The Operations Support Command, a subordinate command of the Army Materiel Command, is responsible for the day-to-day operations of the Department of Defense's (DOD) single manager for conventional ammunition, including storing, managing, inspecting, and testing ammunition.[1] It is also responsible for demilitarizing[2] excess ammunition for all of the services. With the end of the Cold War, the services' need for conventional ammunition was significantly reduced, and by 1993 the Command reported a backlog of excess ammunition awaiting demilitarization that amounted to 354,000 tons. Concerned that the quantities of excess ammunition being stored could impede access to needed ammunition and hinder the Army's ability to effectively support contingency operations, the Command set a goal of reducing the backlog to 100,000 tons by fiscal year 2004.

The Army operates ammunition facilities that use open burning and detonating processes as well as other more environmentally friendly processes to demilitarize excess ammunition. Open burning and detonating processes have been the subject of public concern regarding possible health risks to civilian populations believed to be associated with airborne gases, particles, and other contaminants carried downwind of the demilitarization sites. Environmentally friendly processes use demilitarization technologies that do not release contaminants into the

[1] The Commander, U.S. Army Materiel Command, as designated by the Secretary of the Army, acts as the single manager for conventional ammunition for the Department of Defense.

[2] The Army defines demilitarization as the act of removing the military offensive or defensive characteristics from munitions or otherwise rendering munitions innocuous or ineffectual for military use. Demilitarization includes but is not limited to processes involving resource recovery, recycling, reutilization, disassembly, conversion, melt out/steam out/wash out, incineration, open burning, and open detonation to name a few.

atmosphere. In recent years, the Senate Appropriations Committee has encouraged the use of contractors to facilitate the demilitarization of excess ammunition using environmentally friendly demilitarization processes. To ensure ready access to needed ammunition by reducing the amount of excess ammunition being stored, Congress increased the amount of funding for ammunition demilitarization from $35 million in fiscal year 1993 to about $71 million in fiscal year 1994, with funding averaging about $92 million annually for fiscal years 1995-2000. At the same time the Department of Defense is reporting a stockpile of excess ammunition, it is also reporting a shortage of ammunition for training, raising the question of whether excess ammunition could be used for training.

This report reviews the Department's management practices for demilitarizing excess ammunition. Specifically, we evaluated (1) the extent to which the excess ammunition stockpile has been reduced and whether the liability associated with excess ammunition has been fully identified; (2) the Army's reliance on contracted demilitarization and the impact of doing so on government facilities that use similar environmentally friendly processes; and (3) the feasibility of using excess ammunition for U.S. training needs. The scope and methodology of our work are described in appendix I. This is the third and final report in response to your request that we evaluate the Department of Defense's ammunition management practices.[3]

Results in Brief

The Department of Defense's reported stockpile of excess ammunition has grown rather than decreased, rising from about 354,000 tons in 1993 to 493,000 tons at the end of 2000; moreover, the reported stockpile does not include all excess ammunition, which understates the Department's ultimate liability for demilitarizing ammunition. Although the Operations Support Command demilitarized 745,000 tons of ammunition from the stockpile during this 8-year period, the stockpile grew for a number of reasons beyond the Command's control. For example, the military services reduced force structure and, consequently, needed less ammunition; introduced new weapon systems that made some ammunition obsolete; replaced older ammunition with newer and better versions; and the

[3] See our reports *Defense Management: Army Could Achieve Efficiencies by Consolidating Ammunition Management* (GAO/NSIAD-99-230, Sept. 30, 1999) and *Defense Logistics: Unfinished Actions Limit Reliability of the Munitions Requirement Determination Process* (GAO-01-18, Apr. 5, 2001).

Operations Support Command decreased use of open burning and detonating methods of demilitarizing ammunition and increased use of environmentally friendly methods (which demilitarize less ammunition). As a result of these factors, in 1998 the Operations Support Command extended its goal to reduce the stockpile of excess ammunition to 100,000 tons from 2004 to the year 2010. In addition, all excess ammunition needing demilitarization has not been included in the stockpile because, for planning and budgeting reasons, the Command considers only the ammunition under its control along with forecasts of quantities to be added to the stockpile over several years. We found excess ammunition recorded in other inventory records; for example, excess ammunition held overseas was not included in the stockpile. According to the Army, if all known and forecasted excess ammunition were recognized, the demilitarization liability for the Department of Defense could be as much as $3 billion. However, this liability is not reflected in the Department's financial statement, even though federal financial accounting standards[4] require recognition and reporting of liabilities associated with disposal.

In recent years, the Army Materiel Command has required the Operations Support Command to devote 50 percent of its excess ammunition demilitarization budget to contractors that use environmentally friendly demilitarization processes. While a greater emphasis on contractor demilitarization came about as a result of congressional direction, the Army initiated and subsequently expanded this effort without considering the effect it would have on government facilities. With increased contracted demilitarization, the Army has retained and underutilized environmentally friendly demilitarization capabilities in government facilities. These government facilities' environmentally friendly demilitarization processes are projected to operate at only 20 percent of their demilitarization capacity in fiscal year 2001. With increased reliance on contracted demilitarization, the Army has incurred additional costs in some instances that would not have been required if the demilitarization had been performed in government facilities. We visited one government facility that shipped ammunition to a contractor site for demilitarization and found that the facility could have used its environmentally friendly demilitarization processes to demilitarize the ammunition and avoided $50,000 in shipping costs. We also identified one instance where additional costs were incurred when a contractor undertook ammunition

[4] Statements of Federal Financial Accounting Standards No. 5, *Accounting for Liabilities of the Federal Government* and No. 6 *Accounting for Property, Plant, and Equipment.*

demilitarization for the Command, then contracted a portion of the work to three government facilities. According to information obtained from the contractor and one of the three government facilities involved, the Command could have demilitarized the ammunition for less had it overseen the work itself.

We found indications that some excess ammunition potentially could be used to meet training needs, but further analysis by the Army is needed to fully evaluate the potential. Our analysis showed that the Army has recently purchased 10 types of ammunition, particularly small caliber ammunition, when quantities of the same items were also in the stockpile and identified in the Army's records as being of sufficient quality (either new or in like-new condition) for training purposes. For example, inventory records showed that the stockpile included over 400,000 usable 60-millimeter cartridges that the Army uses in training exercises with the M2 and M19 mortar cannons. In fiscal year 2000, the Army bought over 9,000 60-millimeter cartridges without checking the stockpile for these items. According to the Department of Defense, its policy is to require the military services to routinely check all potential alternative sources, including excess ammunition awaiting demilitarization before purchasing ammunition. Presently, the Command checks the stockpile for usable ammunition only when a critical shortage occurs or if needed ammunition cannot be purchased. The Command believes it is unnecessary to routinely compare planned purchases to the stockpile because, when the excess ammunition has been offered to the active and reserve forces before it was placed in the stockpile, they have declined to take it. However, our work showed that the services' needs may change over time and usable excess ammunition potentially could be recalled from the stockpile to prevent concurrent procurement and demilitarization.

This report includes recommendations that the Secretary of Defense require the Secretary of the Army to (1) identify and include the liability associated with demilitarizing excess ammunition in financial statements; (2) develop a plan in consultation with Congress that includes procedures for assessing the appropriate mix of public/private sector capacity needed to demilitarize excess ammunition and the cost-effectiveness of using contractors versus government facilities to demilitarize excess ammunition; and (3) comply with DOD's policy to routinely compare planned purchases of ammunition for training with usable ammunition in the stockpile and require the single manager for conventional ammunition to prepare periodic reports to the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, showing the quantities and types of ammunition reclaimed from the stockpile. DOD generally agreed

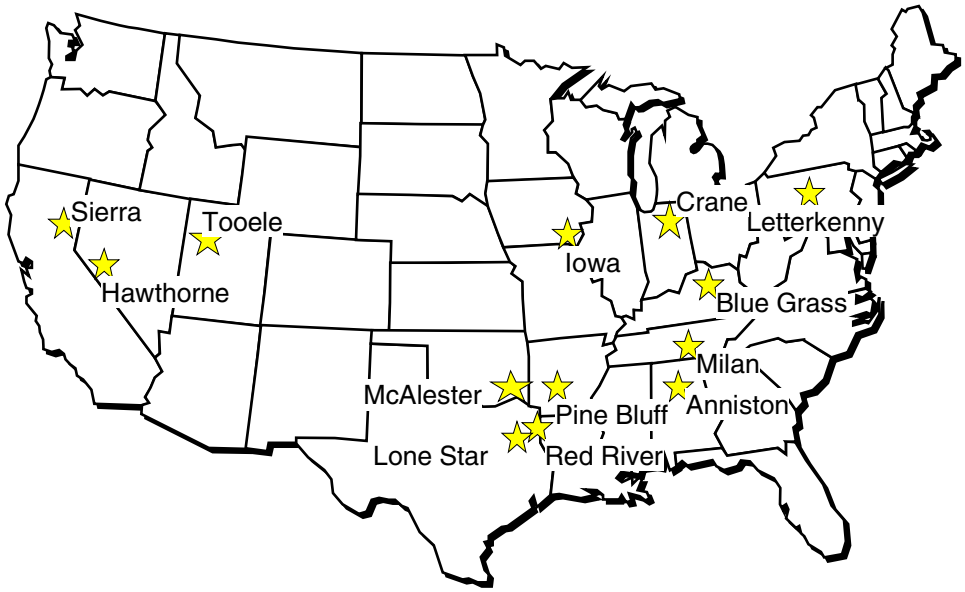
with the recommendations and indicated actions planned that it believed would address them. However, additional actions will likely be needed to fully address the recommendations.

Background

Under the national military strategy, the military services are required to maintain enough ammunition for wartime needs and for peacetime needs, such as training. The Defense Planning Guidance[5] lays out general guidelines for the services to determine how much ammunition they need to conduct operations under the strategy. Ammunition that exceeds these requirements is to be shared among the services or disposed of through sale to other nations, recycling, or demilitarization. In 1977, the Army, through its Operations Support Command (formerly Industrial Operations Command), assumed single manager responsibility for managing, storing, and disposing of the services' ammunition. The Command's Defense Ammunition Center provides the Command and the military services a variety of ammunition related services, including training, technical assistance, and logistics support. The Army demilitarizes excess ammunition at its ammunition depots, plants, and centers. The Army has used open burning and detonating processes as well as the more environmentally friendly processes to demilitarize excess ammunition. Open burning and detonating processes, which may release airborne gases, particles, and other contaminants that are carried downwind of the demilitarization sites, have been the topic of public concerns regarding possible health risks to civilian populations. Environmentally friendly processes use demilitarization technologies that do not release contaminants into the atmosphere. The government-owned locations that demilitarize excess ammunition using environmentally friendly processes are shown in figure 1.

[5] The Secretary of Defense and his staff prepare the Defense Planning Guidance that sets forth policy, articulates strategic objectives, and reflects the national military strategy. It includes the Secretary of Defense's force and resource guidance to the military departments, other combat support agencies, and the unified commands.

Figure 1: Government-owned Excess Ammunition Demilitarization Sites



Source: Defense Ammunition Center.

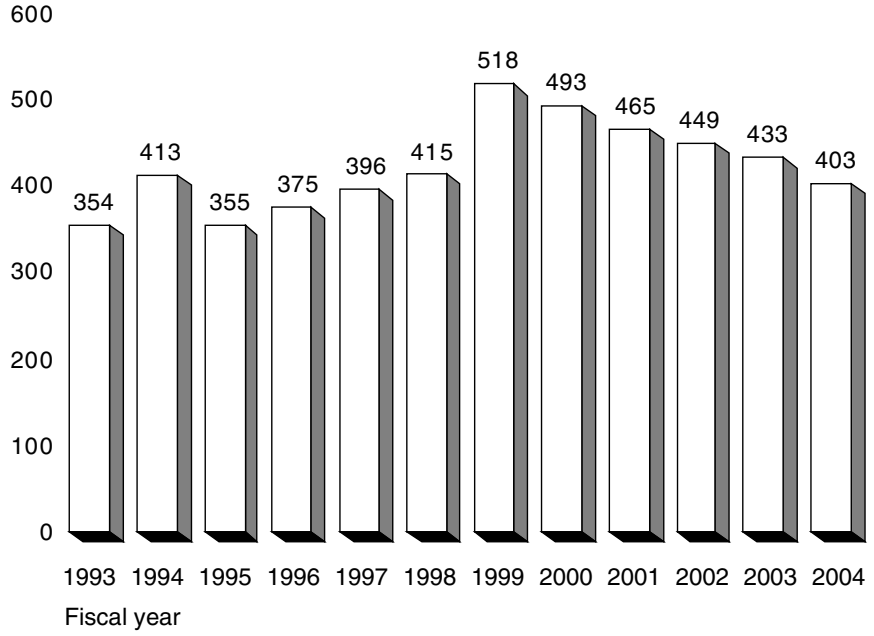
During the 1980s, the amount of excess ammunition needing to be demilitarized was generally stable, holding at about 100,000 tons. However, in the early 1990s, with the end of the Cold War and other worldwide changes, a general reshaping of military resources and budgets began as the United States shifted from a strategy of preparing for a global war to a strategy of preparing for regional conflicts and crises. As a consequence, the services' ammunition requirements were significantly reduced, and by 1993 the Operation Support Command's reported backlog of ammunition awaiting demilitarization was 354,000 tons. Because excess and needed ammunition were being stored together, the Command was concerned that the excess ammunition could impede access to needed ammunition and hinder the Command's ability to effectively support contingency operations. To address this concern, Congress increased the amount of funding available for ammunition demilitarization from $35 million in fiscal year 1993 to almost $71 million in fiscal year 1994 and to an average of nearly $92 million annually in fiscal years 1995-2000. In addition, the Command set a goal of reducing the backlog to 100,000 tons by 2004. In October 1998, the Army extended its goal to reduce the demilitarization stockpile to less than 100,000 tons in fiscal year 2004 to the end of fiscal year 2010.

On May 10, 1993, the Chairman of the Senate Appropriations Subcommittee on Defense requested that DOD increase its use of environmentally safe destruction processes and technologies and phase out its use of open burning and detonating destruction processes as soon as possible. The Chairman also requested that DOD look to the private sector for environmentally friendly processes that could be used to help demilitarize excess ammunition. In 1994, the Senate Appropriations Committee directed the Army to accelerate, where possible, the award of contracts that make use of environmentally friendly demilitarization processes. The Operations Support Command enacted a variety of initiatives to help the demilitarization program respond to the congressional requests. These initiatives included optimizing work assigned to government facilities; increasing the use of environmentally friendly technology at government facilities to recover, recycle, and reclaim usable elements of ammunition; and awarding contracts to commercial firms that used environmentally friendly processes to demilitarize portions of the stockpile.

Excess Ammunition Stockpile Has Grown and Does Not Include All Excess Ammunition

DOD's reported stockpile of excess ammunition has grown, and it does not include all excess ammunition; as a result, the government's financial liability for demilitarizing excess ammunition is understated. To reduce the stockpile, the Operations Support Command enacted a variety of initiatives, and for fiscal years 1993 through 2000, it demilitarized 745,000 tons of excess ammunition from the stockpile. Despite these efforts, the reported stockpile grew from 354,000 tons in 1993 to 493,000 tons at the end of 2000 and is projected to be at 403,000 tons in 2004 (see fig. 2).

Figure 2: Actual and Projected Growth of Demilitarization Stockpile in Thousands of Tons, Fiscal Years 1993 Through 2004



Note: Includes only reported stockpile amounts.

Source: Operations Support Command, updated on March 27, 2001.

According to the Operations Support Command, there are multiple factors that affect the number of tons in the reported stockpile from year to year. These factors include transferring ammunition from the stockpile to meet critical needs of the military services, the amount of demilitarization funding received from Congress, and the amount of excess ammunition that gets turned in to the stockpile. For example, the increase in the stockpile in fiscal year 1999 was largely due to the 289,000 tons entering the stockpile that year. According to the Command, the downward trend for fiscal years 2001 through 2004 is due to a combination of forecasted increases in demilitarization funding and forecasted decreases in quantities of ammunition becoming excess. Several factors outside the Command's control contributed to the growth of the stockpile:

- downsizing of forces, which resulted in the need for less ammunition;
- replacing weapon delivery systems, which created obsolete ammunition;
- replacing older ammunition with newer, better versions, which created obsolete ammunition;

- transferring certain ammunition that was not planned for the stockpile (such as non-self-destruct antipersonnel land mines) to the stockpile; and
- reducing reliance on open burning and detonating processes to demilitarize ammunition in conjunction with public pressure to use more environmentally friendly methods.

The Operations Support Command recognized that these factors would prevent it from meeting its goal of reducing the stockpile to 100,000 tons by 2004. Current Command projections show that the stockpile will instead be at about 403,000 tons by 2004. In October 1998, the Army extended its goal to reduce the demilitarization stockpile to less than 100,000 tons in fiscal year 2004 to the end of fiscal year 2010.

In addition, the Operations Support Command's reported stockpile does not include all excess ammunition needing demilitarization. The reported stockpile only includes excess ammunition located at storage sites belonging to the Command (see fig. 1). Our analysis of the services' inventory records showed that there are additional quantities of excess ammunition needing demilitarization that were not included in the demilitarization stockpile. Specifically, we identified additional demilitarization liabilities associated with 94,030 tons of ammunition located overseas and 54,770 tons of unusable or unneeded ammunition at other military storage sites in the United States.

Army Materiel Command officials explained that, in managing the demilitarization program, the Army estimates what ammunition is expected to require demilitarization in a reasonable time. Therefore, to plan and budget, it uses the quantities in the reported demilitarization stockpile plus forecasts of excess ammunition it expects the services to turn in to the stockpile. The officials agreed that the services' inventory records showed additional quantities of excess ammunition needing demilitarization that were not included in the demilitarization stockpile and estimated that if all known and forecasted excess ammunition were recognized, the demilitarization liability for the Army could be as much as 2.9 million tons. The Command estimates the cost to demilitarize a ton of ammunition to be about $1,034. Using this estimate, the disposal liability could potentially be as great as $3 billion, but DOD's financial statement does not reflect any demilitarization liability even though federal financial accounting standards[6] require recognition and reporting of liabilities

[6] Statements of Federal Financial Accounting Standards No. 5, *Accounting for Liabilities of the Federal Government* and No. 6 *Accounting for Property, Plant, and Equipment.*

associated with disposal. DOD's omission of its demilitarization liability is representative of the needed financial management reforms on which we testified before the Government Management, Information, and Technology Subcommittee of the House Committee on Government Reform, stating that DOD still faces significant challenges to implement the federal accounting standards requiring recognition and reporting of liabilities associated with disposal.[7]

The Army Increased Its Reliance on Contracted Demilitarization Without Assessing Impact on Government Facilities

In recent years, the Operations Support Command has worked to allocate 50 percent of its excess ammunition demilitarization budget to contractors that used environmentally friendly demilitarization processes. However, at the same time the Command retained and underutilized environmentally friendly demilitarization capabilities at government facilities. The Army could have benefited from examining whether it was maximizing its demilitarization capabilities with the most cost-effective mix of public and private environmentally friendly capabilities. We noted that in some instances the Army incurred additional costs in contracting with the private sector for ammunition demilitarization and retained underutilized environmentally friendly demilitarization processes at its facilities.

From 1993 to 1996 the Operations Support Command awarded 18 demilitarization contracts to private firms to demilitarize 76,527 tons of ammunition at a cost of about $48.2 million. During this 4-year period, the private sector received about 16 percent of the Command's demilitarization budget. Although congressional instructions did not specify how much demilitarization work should go to the private sector, in February 1996, the Army Materiel Command required that the demilitarization budget for 1997 be split 50/50 between government facilities and private companies. Army Materiel Command officials said the directive was issued to force the Operations Support Command to move a larger portion of its demilitarization workload to private firms and that the 50/50 split seemed appropriate (even though the government facilities having environmentally friendly processes were being underused at the time). The Operations Support Command adopted this policy for fiscal year 1997 and subsequent years. While the actual ratio varied each year, over time the Command planned to spend its ammunition demilitarization funds equally between government facilities and private

[7] *Department of Defense: Progress in Financial Management Reform* (GAO/T-AIMD/NSIAD-00-163, May 9, 2000).

firms.[8] For fiscal years 1997 and 1998, the Command awarded 21 contracts to private companies to demilitarize 56,739 tons of ammunition at a cost of about $45.8 million. During this 2-year period, the private sector received about 25 percent of the Command's demilitarization budget.

To eliminate the administrative burden associated with awarding and monitoring 21 contracts, beginning in fiscal year 2000 the Operations Support Command awarded two 5-year contracts, potentially worth an estimated total of $300 million, to General Dynamics Armament Systems and PB/Nammo Demil LLC. Subsequently, General Dynamics Armament Systems was awarded a task order under the contract to demilitarize 12,000 tons of ammunition at a price of $34.8 million for the first year and PB/Nammo Demil LLC was awarded a task order under the contract to demilitarize 12,000 tons of ammunition at a price of $25.9 million for the first year.[9] PB/Nammo Demil LLC entered into agreements with three government facilities for a portion of this work. In addition, the firm subcontracted with other companies in the United States and overseas for the remainder of the work.

According to Army Materiel Command and Operations Support Command officials, when implementing congressional direction to involve the private sector in environmentally friendly demilitarization of excess ammunition, the Army did not emphasize cost-effectiveness in terms of dollars saved and costs avoided. As a result, the Army incurred additional costs in contracting with the private sector for ammunition demilitarization. For example, according to the contracts, the Command is required to pay for packaging, crating, handling, and transportation costs to move ammunition from a government facility to the contractor demilitarization site. The Command considers these costs necessary to doing business with contractors.

Since 1997 the Operations Support Command paid from $8 million to $14 million a year for packaging, crating, and handling excess ammunition and for transporting the ammunition, mostly from government facilities to contractor sites for demilitarization using environmentally friendly demilitarization processes. According to Command officials, a small

[8] The Army Materiel Command further required that 10 percent of its ammunition demilitarization budget be allocated for demilitarizing ammunition located overseas.

[9] Modifications to the order increased its total potential value for the first year to $28.6 million.

percentage was spent to move excess ammunition from one government facility to another, but the majority of these expenditures were for moving ammunition from government sites to contractor sites. In some cases, government facilities with excess ammunition in storage had environmentally friendly demilitarization processes and facilities that could have been used to demilitarize the ammunition without incurring the shipping cost, leaving the funds available to demilitarize additional ammunition. For example, at one facility we visited, the Command paid $50,000 during fiscal year 2000 to ship excess ammunition from a storage site at the McAlester Army Ammunition Plant to contractor demilitarization sites when the McAlester plant had environmentally friendly capabilities to demilitarize the ammunition. The Command could have avoided $50,000 in shipping costs by allocating this work to McAlester.

Other costs were incurred under the Operations Support Command's two contracts awarded in May 1999 that could have been avoided had the work been assigned to a government facility. For example, in one instance where the Command contracted for ammunition demilitarization, the contractor, in turn, entered into agreements with three government facilities to have them perform the demilitarization work. In essence, the government paid a contractor to have the ammunition demilitarized by government employees. This occurred when the contractor entered into three separate agreements for demilitarization services with government facilities at McAlester, Oklahoma; Crane, Indiana; and Tooele, Utah. The total value of the agreements for the first year was $8.6 million (including about $1.9 million to upgrade the demilitarization capabilities at the three government facilities). In addition, information provided by the contractor and by one government facility indicates that one government facility could have demilitarized the ammunition for less cost than was incurred by the Command's contract with this firm.

The Operations Support Command attributed the decision not to use the available environmentally friendly capacity at government facilities for demilitarization purposes to the Army Materiel Command's interpretation of congressional instructions to use the private sector to destroy excess ammunition and the Materiel Command's mandate that 50 percent of the demilitarization budget go to private firms. While increasing reliance on contracted demilitarization, the Operations Support Command has retained environmentally friendly processes that are not being fully utilized. Projections for fiscal year 2001 show that 16,550 tons of incineration capacity at four government facilities will not be used. These same projections show that government facilities will operate at only

20 percent of their overall capacity to recover and reuse 81,100 tons of excess ammunition (see table 1).

Table 1: Comparison of Recovery and Reuse Demilitarization Capacity to Demilitarization Planned in Fiscal Year 2001

Location	Recovery and reuse capacity (tons)	Recovery and reuse demilitarization planned (tons)	Percent of capacity to be used
Anniston	1,000	0	0
Blue Grass	4,000	26	1
Crane	13,300	2,765	21
Hawthorne	13,500	5,725	42
Iowa	5,000	772	15
Letterkenny	1,000	115	12
Lone Star	2,000	1,158	58
Milan	1,800	0	0
McAlester	9,300	4,248	46
Pine Bluff	3,500	0	0
Red River	1,000	0	0
Sierra	24,000	1,099	5
Tooele	1,700	274	16
Total	**81,100**	**16,182**	**20**

Source: Operations Support Command.

Currently, the Army is conducting a congressionally mandated study of potential alternative disposal methods that do not release contaminants into the atmosphere. The study will address the possibility of phasing out open burning and detonating processes in favor of environmentally friendly processes, technologies currently in existence and under development, and the cost and feasibility of constructing facilities employing these technologies. According to Operations Support Command officials, the results of this study, which will not be available until September 2001, could potentially lead to expanding the government's environmentally friendly capabilities.

Further Analysis Needed to Determine Usability of Excess Ammunition for Training Purposes

DOD's conventional ammunition policies and procedures require the military services to routinely check excess ammunition awaiting demilitarization before purchasing new ammunition. Available information indicates that the stockpile may contain ammunition that may be usable for training purposes, but more analysis is required to evaluate the condition of the ammunition. Although neither the services nor the Operations Support Command systematically compares the contents of the excess ammunition stockpile to the training needs of the active and reserve forces, the Command checks the stockpile for such items if a critical shortage occurs or if the needed ammunition cannot be purchased. For example, in the last 2 years quantities of 155-millimeter, 105-millimeter, and 30-millimeter ammunition have been pulled from the stockpile and given to the active forces.

The Department of Defense Single Manager of Conventional Ammunition (Implementing Joint Conventional Ammunition Policies and Procedures) 5160.65-M requires the military services to routinely check all alternative sources before purchasing ammunition for its weapon systems. Excess ammunition awaiting demilitarization in the stockpile is an alternative source. However, the Command believes that a routine comparison of planned purchases to the stockpile is unnecessary because (1) when the excess ammunition has been offered to these groups before it was placed in the stockpile, they declined it, and (2) it would have to spend money to conduct an evaluation of the condition of the excess ammunition. Also, a Command official responsible for managing the stockpile stated that a 1996 Army analysis of the excess ammunition in the stockpile found that there were no items in the stockpile that could be used for training.

According to a Defense Ammunition Center official, the services' needs may change over time and usable excess ammunition potentially could be recalled from the stockpile to prevent concurrent procurement and demilitarization. Our analysis showed that the Army has recently purchased 10 types of ammunition, particularly small caliber ammunition, when quantities of the same items were also in the stockpile and identified in the Army's records as being of sufficient quality (either new or in like-new condition) for training purposes. Examples of excess ammunition that the Army purchased in fiscal year 2000 for training exercises at the same time there were quantities in the stockpile reported to be in usable condition are shown in table 2.

Table 2: Examples of Purchases of Ammunition for Training in Fiscal Year 2000 When the Same Items Were in the Demilitarization Stockpile

Description of item	Quantity in stockpile in usable condition	Quantity purchased in fiscal year 2000
7.62mm cartridges used in M60 or M73 machine guns	8,676	27,163,329
.30 caliber cartridges used in various rifles and guns	9,600	16,154
.45 caliber cartridges used in automatic pistols and submachine guns	20,855	240,413
.50 caliber cartridges used in machine guns	1,083,282	11,100
60 mm cartridges used in mortar M2 and mortar M19	421,781	9,161
105mm cartridges used in gun, cannon M68	92,776	6,148
105mm cartridges used in gun, cannon M68	132,456	10,957
155mm propellant charges	428,249	2,951
M228 fuze hand grenades	5,020	1,298,064
M18 red smoke hand grenades	1,050	16,067

Source: GAO analysis of stockpile data provided by the Defense Ammunition Center and purchases provided by Operations Support Command.

Conclusions

A disposal liability of potentially up to $3 billion is not reflected in DOD's financial statements. If all excess ammunition is not accurately reflected in DOD's financial statements and made available for congressional budget deliberations, then DOD and Congress cannot clearly understand the present and future financial liability associated with demilitarizing the excess ammunition. Additionally, indications are that the allocation of 50 percent of the excess ammunition demilitarization budget to contractors may have increased the cost of demilitarizing excess ammunition. Also, excess capacity involving environmentally friendly demilitarization processes exists at government facilities. While it may be appropriate to rely on the private sector to enhance demilitarization capabilities, the continued use of the private sector to demilitarize excess ammunition at the same time the government facilities have excess capacity raises the question of whether the Army is sponsoring too much capacity. At the same time, an on-going study effort examining the potential to expand environmentally friendly demilitarization capabilities at government facilities raises additional questions about the appropriate mix of public/private sector capacity needed to demilitarize excess ammunition. Whether excess ammunition in the demilitarization stockpile could be used for training needs is unclear because the Command does not

systematically compare the contents of its stockpile to the training needs of the active and reserve forces. DOD requires such a comparison before purchasing ammunition. Records indicate that the Army is buying ammunition when potentially usable ammunition is available in the stockpile, suggesting that checking the stockpile could be cost-effective by avoiding concurrent procurement and demilitarization and could put the Army in a better position of buying what it actually needs.

Recommendations for Executive Action

To improve the financial reporting, economy, and efficiency of demilitarizing excess ammunition, we recommend that the Secretary of Defense require the Secretary of the Army to

1. identify and include the total liability (domestic and overseas) associated with demilitarizing excess ammunition in the Department's annual consolidated balance sheet;

2. develop a plan in consultation with Congress that includes procedures for assessing the appropriate mix of public/private sector capacity needed to demilitarize excess ammunition and the cost-effectiveness of using contractors versus government facilities to demilitarize excess ammunition, with specific actions identified for addressing the capacity issue; and

3. comply with DOD's policy to routinely compare planned purchases of ammunition for training with usable ammunition in the stockpile and require the single manager for conventional ammunition to prepare periodic reports to the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, documenting such comparisons and showing the quantities and types of ammunition reclaimed from the stockpile.

Agency Comments and Our Evaluation

The Director of Strategic and Tactical Systems in the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics provided written comments to a draft of this report. DOD's comments are reprinted in appendix II. DOD also provided separate technical comments that we have incorporated in this report where appropriate. DOD generally agreed with our recommendations and pointed out that it is taking actions that it believes will address our recommendations. However, additional actions will likely be needed to fully address the recommendations.

In commenting on our recommendation for dealing with the liability associated with demilitarizing excess ammunition, DOD stated that determining an accurate demilitarization liability is a difficult task and that it believes that a reasonable estimate of the demilitarization stockpile plus the forecast of new generations expected to be added to the stockpile for the next 5 years should meet the intent of our recommendation. However, this proposal does not recognize a liability for excess ammunition overseas (even though a portion of the demilitarization budget each year is used to demilitarize ammunition overseas) nor does the proposal recognize any demilitarization liability for excess Army-owned war reserve ammunition, excess retail ammunition, and excess ammunition not stored at an Army installation. Therefore, we believe DOD should recognize the total liability associated with demilitarizing excess ammunition rather than its proposal to recognize only a portion of its demilitarization liability and have revised our recommendation accordingly.

In commenting on our recommendation for a plan and procedures for assessing the public/private sector mix of demilitarization capacity, DOD stated that the Army is preparing a report to Congress, due September 30, 2001, on the feasibility of replacing open burning and detonation with closed disposal technologies. DOD said that this report could also be used to address the mix of public/private sector capacity needed to demilitarize excess ammunition. DOD also stated that the Army has a computer-modeling tool that can be used to identify the costs associated with changing the public/private sector percentages. We recognize that the report and computer-modeling tool can provide information that the Army can use to determine the mix of public/private sector capacity needed to demilitarize excess ammunition, but DOD's response does not address the substance of our recommendation which is to state how it plans to rationalize the public/private mix and minimize excess capacity at government facilities. Accordingly, we have made no change to our recommendation.

Our draft report included a recommendation that DOD determine the feasibility of establishing a process to periodically compare planned purchases of ammunition for training with usable ammunition in the stockpile. DOD stated that an existing regulation and procedures require the Army to screen excess ammunition for use prior to procurement.[10]

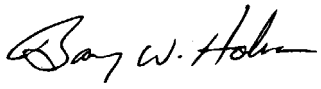
[10] According to DOD, this action is directed in DOD 4160.21-M, DOD 5160.65M, and AMC-R-755-8.

However, our work showed that the Operations Support Command checks the stockpile for ammunition only if a critical shortage occurs or if the needed ammunition cannot be purchased. This suggests the need for additional oversight to ensure such assessments occur on a more frequent basis. Therefore, we have revised our recommendation to require the Army to comply with DOD's policy to routinely compare planned purchases of ammunition for training with usable ammunition in the stockpile and to require the single manager for conventional ammunition to prepare periodic reports documenting such analyses and showing the quantities and types of ammunition reclaimed from the stockpile.

We are sending copies of this report to the appropriate congressional committees; the Honorable Donald H. Rumsfield, Secretary of Defense; the Acting Secretary of the Army, Joseph W. Westphal; the Acting Secretary of the Navy, Robert B. Pirie, Jr.; the Acting Secretary of the Air Force, Lawrence J. Delaney; and the Director, Office of Management and Budget Mitchell E. Daniels, Jr.

Please contact me at (202) 512-8412 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix III.

Sincerely yours,



Barry W. Holman, Director
Defense Capabilities and Management

Appendix I: Scope and Methodology

To determine the extent to which the excess ammunition stockpile has been reduced and whether the liability associated with excess ammunition has been fully identified, we reviewed the composition of the Army's reported stockpile of excess ammunition and obtained inventory records showing the condition and location of the services' ammunition. We also reviewed policies and procedures governing the demilitarization of excess ammunition and the requirements for reporting the financial liability of ammunition awaiting demilitarization. We met with officials and performed work at the U.S. Army Operations Support Command, Rock Island Arsenal, Rock Island, Illinois; the U.S. Army Defense Ammunition Center, McAlester, Oklahoma; Army, Navy, Marine Corps, and Air Force Headquarters, Washington, D.C.; and the Office of the Under Secretary of Defense (Acquisition and Technology), Washington, D.C.

To assess the extent that the Army used contractors to demilitarize excess ammunition and its impact on the utilization of environmentally friendly demilitarization processes at government facilities, we met with officials at the Operations Support Command; McAlester Army Ammunition Plant, McAlester, Oklahoma; and PB Nammo Demil LLC, New York, N.Y. We selected the McAlester plant because it was one of three government facilities having an agreement with PB Nammo Demil LLC to perform demilitarization work. We reviewed the Command's contracts with private firms and assessed packaging, crating, and handling expenses associated with transporting ammunition to contractor sites. We also obtained and reviewed contractor agreements with government facilities to have them perform the demilitarization work and evaluated information provided by the contractor and by one government facility to determine if the government facility could have demilitarized the ammunition for less cost than was incurred by the Command's contract with this firm. We obtained Army data on the government facilities' capabilities to demilitarize excess ammunition and compared the Army's demilitarization plans to these capabilities. This allowed us to identify and calculate excess capacity situations. We also obtained information from the Army Materiel Command and the Operations Support Command involving an on-going study of the possibility of phasing out open burning and detonating processes in favor of environmentally friendly processes, technologies currently in existence and under development, and the cost and feasibility of constructing facilities employing these technologies.

To determine the feasibility of using excess ammunition for training needs, we met with officials at the U.S. Defense Ammunition Center and discussed the Center's capability to compare the contents of the excess ammunition stockpile to the services' needs for ammunition to perform

training operations. We compared the services' fiscal year 2000 training ammunition purchases to ammunition awaiting disposal to verify that ammunition matching the services' training needs is located in the stockpile. We did not look at opportunities to dispose of excess ammunition in the stockpile through sale to other nations.

We used the same computer programs, reports, records, and statistics that DOD and the military services had used to manage excess ammunition. For example, we used Operations Support Command's inventory records to show the reported amounts of excess ammunition in the stockpile. We did not independently determine the reliability of all these sources. For historical perspective and illustrations of past problems, we reviewed the results of prior Defense studies and audit reports.

We performed our review from August 2000 through February 2001 in accordance with generally accepted government auditing standards.

Appendix II: Comments From the Department of Defense

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

ACQUISITION AND TECHNOLOGY

26 MAR 2001

Mr. Barry W. Holman
Director, Defense Capabilities and Management
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Holman:

This is the Department of Defense (DoD) response to the GAO draft report, "DEFENSE INVENTORY: Steps the Army Can Take to Improve the Management and Oversight of Excess Ammunition," dated February 23, 2001 (GAO Code 709541/OSD 3045).

The report recommends that the Secretary of Defense require the Secretary of the Army to:

- identify and include the liability associated with demilitarizing excess ammunition in the DoD's annual consolidated balance sheet;
- develop a plan, in consultation with Congress, for assessing the appropriate mix of public/private sector demilitarization capacity; and
- determine the feasibility of establishing a process to compare planned purchases of ammunition for training with usable ammunition in the stockpile.

See comment 1.

The Department generally agrees with these recommendations, and a detailed response to each is enclosed. However, determining an accurate demilitarization liability is a difficult task, as evidenced by the much higher than anticipated generation of excess ammunition during the 1993 to 2000 time period. Also, the Army is currently preparing a report to Congress, due September 30, 2001, on the feasibility of replacing open burning and open detonation with closed disposal technologies. This report could also be used to address the public/private sector mix recommendation.

Suggested technical changes for clarification and accuracy have been provided separately.

The Department appreciates the opportunity to comment on the draft report.

George R. Schneiter
Director
Strategic and Tactical Systems

Enclosure

GAO DRAFT REPORT – DATED FEBRUARY 23, 2001
GAO CODE 709541/OSD CASE 3045

"DEFENSE INVENTORY: STEPS THE ARMY CAN TAKE TO IMPROVE THE MANAGEMENT AND OVERSIGHT OF EXCESS AMMUNITION"

DEPARTMENT OF DEFENSE COMMENTS TO THE RECOMMENDATIONS

RECOMMENDATION 1: To improve the financial reporting, economy, and efficiency of demilitarizing excess ammunition, the GAO recommended that the Secretary of Defense require the Secretary of the Army to identify and include the liability associated with demilitarizing excess ammunition in the Department's annual consolidated balance sheet.

DoD RESPONSE: Concur. However, determining an accurate liability is a difficult task. For example:

- The demilitarization liability would be the ammunition stocks that will not be used in training, sold (such as foreign military sales or grant aid), or used in a conflict. The current CONUS stockpile is approximately 2.1M tons. This total does not include Army-owned war reserve ammunition, retail ammunition (i.e., basic load), and single-managed ammunition owned by the other Services but not stored at an Army installation (raises total to approximately 2.9M tons). It will be extremely difficult to accurately calculate this liability, especially when future procurement decisions are added to the process.

- Ammunition stocks in War Reserves Stocks Allies - Korea (WRSA-K) are the responsibility of the Republic of Korea to demilitarize. These stocks will not be a liability to the Army unless we remove these stocks from WRSA-K. Additionally, Package Deal II will impact which stocks will be returned to the United States.

See comment 1.

The DoD believes that the demilitarization liability calculations should be based on the current demilitarization stockpile plus the forecast of new generations expected for the next five years. This will provide a reasonable estimate of the demilitarization liability and should meet the intent of GAO's concerns.

RECOMMENDATION 2: To improve the financial reporting, economy, and efficiency of demilitarizing excess ammunition, the GAO recommended that the Secretary of Defense require the Secretary of the Army to develop a plan in consultation with the Congress that includes procedures for assessing the appropriate mix of public/private sector capacity needed to demilitarize excess ammunition and the cost-effectiveness of using contractors versus government facilities to demilitarize excess ammunition; with specific actions identified for addressing the capacity issue.

See comment 1.

DoD RESPONSE: Concur. The Army is currently preparing a report to Congress on the feasibility of replacing open burning and open detonation (OB/OD) with closed disposal technologies. The report is due to Congress on September 30, 2001, and can be used to address

this issue as well as closed disposal technologies. A more in-depth analysis of this issue is required to address a variety of issues, such as:

See comment 1.

- The Army currently develops a plan annually to assess the appropriate mix of public/private sector capacity for the demilitarization of excess ammunition. This plan is developed from a computer modeling tool and plans up to a ten-year program assessing capability, capacity, and cost data for both government and commercial facilities. This model allows the Army to identify different constraints (such as varying percentages of funding for private industry) and can produce an optimal plan within given constraints. The model provides an assessment of the percentage of capacity utilization of the execution locations, provides the Army with a mathematical basis to assess the appropriate mix of government and commercial execution, and will identify the costs associated with changing the public/private sector percentages.

See comment 2.

- The GAO report criticizes the Army for using private industry while the government base has underutilized resource recovery capability. This criticism is valid only when FY2001 funding levels and costs to demilitarize are used to validate decisions made by the Army five to six years ago. The funding that was programmed in FY1996, in conjunction with the decreases in demilitarization costs, would have allowed the government facilities to continue to work at capacity while private industry picked up the excess workload. However, a combination of demilitarization funding decreases, inflation impacts, and the fact that the Army has switched to demilitarizing complex munitions (such as improved conventional munitions and cluster bomb units -- much more expensive to demilitarize) have resulted in a demilitarization over-capacity versus full capacity just a few years ago, as shown below.

	Funding Plan	Funded Level	Tons Demiled	Cost Per Ton
FY1995	$104.3M	$104.3M	138K	$791
FY1996	$100.3M	$97.4M	167K	$599
FY1997	$98.6M	$95.4M	129K	$831
FY1998	$99.2M	$88.6M	115K	$945
FY1999	$98.3M	$82.3M	85K	$1,070
FY2000	$97.9M	$85.1M	62K	$1,358 **
FY2001	$97.9M	$84.2M	61K	TBD

**Not all projects for FY2000 have been completed. The cost per ton will change as accomplishment data are updated.

Now on p. 12.

See comment 3.

- The second paragraph on page 15 states that "16,550 tons of incineration capacity at four government facilities will not be used." However, the report does not state that most of the munitions that would be incinerated are small arms ammunition that were being demilitarized by private industry contract through a resource recovery methodology at a cost of $1 a ton (versus $1,200 to $1,500 per ton for incineration at a government facility). In addition, the Army is completing this project (no new task orders) and intends to retain this workload for government facilities.

Now on p. 13.

See comment 4.

- Table 1 on page 16 contains data on capacities within the organic base to perform resource recovery operations. Although these capacities exist, their utility must be based on the applicable ammunition family and the tons available. For instance, to say that only 5 percent of the resource recovery capacity at Sierra Army Depot is being utilized doesn't take into consideration that the majority of that capacity is for a family of ammunition with only 2,200 tons on site. Without considering all relevant data, the capacity information is taken out of context, and the data are misrepresented. In addition, the report does not identify the costs to utilize the resource recovery capacity at all of the Army's facilities, nor does it include the cost to modernize these facilities.

Now on p. 15.

See comment 5.

- A conclusion on page 20 states that "While it may be appropriate to rely on the private sector to enhance demilitarization capabilities, the continued use of the private sector to demilitarize excess ammunition at the same time the government facilities have excess capacity raises the question of whether the Army is sponsoring too much capacity." Based on current funding levels, there is a significant overcapacity for demilitarization operations. However, future demilitarization budget increases (currently programmed) would require the use of most of the overcapacity referenced in this report. In planning for the future the Army must balance these considerations:

  a) Restricting private industry involvement may cause the Army to lose the use of private demilitarization capacity (i.e., companies may leave the demilitarization business). If future funding increases as anticipated, then there may no longer be sufficient capacity to execute the program.
  b) If we maintain the status quo (private industry involvement not restricted) and the planned funding increases do not materialize, the Army will continue to have a significant demilitarization overcapacity.

See comment 6.

- The report criticizes the Army for not executing the most cost-effective program possible. The most effective demilitarization program would be to maximize open burn/open detonation with Sierra Army Depot being workloaded at capacity. The Army has interpreted past congressional language as having broader public policy implications such as environmental issues and support of the ammunition industrial base. Development of a cost-effective program must also reflect the direction provided by Congress (such as their desire to move away from open burn/open detonation to closed disposal technologies).

See comment 7.

- The report states that there is no apparent benefit to using private industry. However, the cost to demilitarize a ton of ammunition prior to 1995 was approximately $1,000. Significant funding increases and contractor involvement began in FY1995. The cost to demilitarization a ton of ammunition dropped to less than $600 during FY1996. The cost to demilitarize a ton of complex ammunition (i.e., improved conventional munitions) has only recently passed the FY1993 cost to demilitarize simple munitions (i.e., High Explosive projectiles). There were only two factors which changed during this period -- increased funding (economy of scale) and utilization of private industry (increased competition).

See comment 1.

See comment 8.

Now on p. 15.

See comment 9.

RECOMMENDATION 3: To improve the financial reporting, economy, and efficiency of demilitarizing excess ammunition, the GAO recommended that the Secretary of Defense require the Secretary of the Army determine the feasibility of establishing a process to periodically compare planned purchases of ammunition for training with usable ammunition in the stockpile.

DoD RESPONSE: Concur. The Army has in place the requirement and procedures for screening ammunition for reutilization, transfer or sale prior to either the procurement or disposal of assets. This action is directed in DOD 4160.21M, DOD 5160.65M, and AMC-R 755-8. However, the GAO claimed that there is an excess of usable ammunition in the demilitarization account that can be used to offset production. This would require the Army to review current screening procedures, analyze the GAO data in detail, and determine if any change in policy is mandated. Expectations of significant procurement offsets should be moderated until after a detailed review of the GAO data can be accomplished. For example, Table 2 on page 19 could be very misleading:

- First, the "usable quantity" within the family is questionable. Some of the materiel may be listed as serviceable, but may not be cleared for overhead fire, and/or is a result of turn-ins where lot identity has been lost.

- The GAO claimed that there are over 1 million "useable" .50-caliber cartridges in the account, and that the Army had unnecessarily purchased additional rounds. Without the benefit of reviewing the GAO data in detail, this claim is difficult to evaluate. The Army does currently have .50-caliber configurations in the demilitarization account which are obsolete, and some of them have been condemned due to poor performance.

The following are GAO's comments on the Department of Defense's (DOD) letter dated March 26, 2001.

GAO Comments

1. DOD's comment and our evaluation are included in the body of the report.

2. The examples of costs that could have been avoided that we cite in our report relate to contracts awarded for fiscal year 2000. The examples illustrate the need for DOD to develop a plan that includes procedures for assessing the appropriate mix of public/private sector capacity by considering the cost-effectiveness of using contractors versus government facilities to demilitarize excess ammunition. Such a plan would help better ensure that cost-effective decisions are made. Our report also recognized that factors beyond the Army's control have affected its efforts to demilitarize excess ammunition. Further, our recommendation states that the plan should be developed in consultation with Congress.

3. Our analysis suggests the Army has excess environmentally friendly demilitarization capacity considering the capacity available at government facilities and under contract. This suggests the need to rationalize the capacity being supported by DOD.

4. The example cited by DOD illustrates the need for it to examine why the Army continues to incur costs to maintain 24,000 tons of capacity at this site with only 2,200 tons of ammunition available on site to be demilitarized.

5. Our analysis indicates that in recent years DOD's funding plan for ammunition demilitarization has significantly exceeded its funding level. The intent behind the plan called for in our recommendation is not to arbitrarily restrict use of the private sector percentages. Rather, we believe there is a need for DOD to develop a plan and business case analysis of the appropriate mix of public/private sector capacity by considering the cost-effectiveness of using contractors versus government facilities to demilitarize excess ammunition.

6. Our report focuses on excess capacity involving environmentally friendly demilitarization process that exists at government facilities and highlights that the Army has not determined the most cost-effective mix of public/private sector capacity for environmentally

friendly demilitarization methods. Our report recognizes DOD's efforts to decrease emphasis on open burning and detonating methods.

7. Our report does not state that there is no apparent benefit to using private industry. Our report stresses the need for a greater emphasis on cost effectiveness in deciding the appropriate mix of public and private environmentally friendly capabilities instead of assigning a predetermined amount of demilitarization funds to the private sector as the Army presently does.

8. The applicable section of the report was modified to include DOD's position that its regulations and procedures require the Army to screen excess ammunition for use prior to procurement.

9. Our analysis was based upon data from the Army's Defense Ammunition Center, which we shared with the Army during the course of our review. Our report emphasized that potentially usable ammunition was available in the stockpile and recognized that further analysis was needed to determine the usability of the excess ammunition.

Appendix III: GAO Contacts and Staff Acknowledgments

GAO Contacts

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Roger L. Tomlinson (214) 777-5777

Acknowledgments

In addition to those named above, Jimmy Palmer, Joanna McFarland, and John Brosnan made key contributions to this report.

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