
REPORT BY THE
Comptroller General
 OF THE UNITED STATES

**Recommended Dollar Reductions To DOD's
 Fiscal Year 1984 Ammunition Procurement
 And Production Base Programs**

The President's fiscal year 1984 Defense budget request included \$4.3 billion for ammunition items and \$277.3 million for enhancing ammunition production facilities .

At the request of the Subcommittees on Defense of the House and Senate Committees on Appropriations, GAO reviewed the military services' requests for funds to purchase conventional ammunition and to modernize ammunition production facilities .

GAO found that most ammunition items and production base projects were adequately justified. However, GAO concluded that funds should not be provided for some items and projects and recommends that the Committees (1) reduce the ammunition appropriation requests by \$433.6 million and (2) reduce the Army's ammunition production base request by \$100.8 million.

In addition, the Committees should closely monitor the ammunition programs for the 155-mm. area denial artillery munitions, the 155-mm. remote antiarmor mines system, and Air Force bomb fuzes until problems are resolved.



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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON D.C. 20548

B-212041

The Honorable Joseph P. Addabbo
Chairman, Subcommittee on Defense
Committee on Appropriations
House of Representatives

The Honorable Ted Stevens
Chairman, Subcommittee on Defense
Committee on Appropriations
United States Senate

As requested, we reviewed the military services' justifications for their fiscal year 1984 appropriation requests for procuring conventional ammunition and the ammunition production base.

As requested, we limited our review primarily to evaluating the justifications for (1) ammunition items with the largest dollar amounts, those being bought for the first time, and those having production and/or performance problems and (2) Army projects for establishing, modernizing, and expanding the ammunition production base. On the basis of our evaluations, we are recommending that the House and Senate Committees on Appropriations reduce the military services' requests by \$534.4 million and closely monitor the requests for some other ammunition items to assure that corrective actions are taken.

In March 1983, we gave your offices some fact sheets and questions for use during the appropriation hearings. This report provides additional information on the results of our review.

As arranged, we are sending copies of this report to the Chairmen, House Committees on Armed Services and on Government Operations and Senate Committees on Armed Services and on Governmental Affairs; the Director, Office of Management and Budget; the Secretaries of Defense, the Army, the Navy, and the Air Force; and the Commandant of the Marine Corps. Copies will also be made available to other interested parties upon request.

A handwritten signature in cursive script that reads "Charles A. Bowsher".

Comptroller General
of the United States

D I G E S T

The President's fiscal year 1984 Defense budget request included \$4.3 billion for ammunition and \$277.3 million for the ammunition production base. The Defense Subcommittees of the House and Senate Committees on Appropriations asked GAO to evaluate the services' justifications for the amounts requested and to recommend adjustments where warranted.

AMMUNITION

GAO primarily reviewed justifications for items involving large dollar amounts, those being bought for the first time, and those with past production and/or performance problems. Most items were adequately justified. However, GAO concluded that the request for ammunition should be reduced by \$433.6 million.

Army

GAO reviewed 80 items representing \$1.63 billion, or 79 percent, of the Army's \$2.06 billion request and recommends that the requests for 14 items be reduced by \$222.8 million for the following reasons:

- \$120.5 million for 8-inch improved conventional munition projectiles is premature because large quantities have been funded in prior years but not yet delivered due to equipment problems at the production plant. (See p. 6.)
- \$76.6 million for 10 items (60-mm., 7.62-mm., .22 caliber, three types of .50 caliber, two types of 20-mm., 25-mm., and 81-mm. cartridges) is unnecessary because requirements can be satisfied with inventory already on hand or on order. (See p. 8.)
- \$18.1 million for 155-mm. chemical projectiles is premature because the location and cost of production facilities is uncertain. (See p. 16.)

--\$7.6 million for high explosive hand grenades and 9-mm. ball cartridges is premature because of the need to complete additional development work before production. (See pp. 16 to 17.)

This report also discusses potential problems in producing funded quantities of 155-mm. area denial artillery munitions and remote antiarmor mines system projectiles. GAO is not recommending reductions for these items, but believes that the Appropriations Committees should closely monitor the production deliveries of these items to determine whether future reductions may be warranted. (See p. 18.)

Army representatives agreed with GAO's recommended reductions of \$73.9 million for 11 of the above 14 items and said that the Army would like to realign the funds to satisfy other ammunition training shortfalls, details of which have been provided to the Armed Services and Appropriations Committees. They did not agree with the recommended reductions of \$120.5 million for the 8-inch improved conventional munition projectiles, \$10.3 million for 81-mm. illuminating cartridges, and \$18.1 million for 155-mm. chemical projectiles.

Marine Corps

GAO reviewed 36 items representing \$438.2 million, or 90 percent, of the Marine Corps' \$484.3 million request and recommends that requests for two items be reduced by \$14.6 million for the following reasons:

--\$14 million for 8-inch propelling charges is not needed because the quantities can be furnished from excess Army inventories. (See p. 20.)

--\$600,000 for 9-mm. ammunition is premature because an acquisition plan has not been approved. (See p. 21.)

The Marine Corps request also includes the two 155-mm. Army items requiring special attention by the Appropriations Committees. (See p. 21.)

Army representatives agreed that the Marine Corps' 8-inch propelling charge needs could be met by transferring excess Army inventories to the Marine Corps, but Marine Corps representatives said that they wanted new propelling charges rather than the Army's old excess stocks. They said that if the 9-mm. ammunition is not ready for procurement, then the Marine Corps would need to procure .45 caliber ammunition.

Navy

GAO reviewed 63 items representing \$411.1 million, or 68 percent, of the Navy's \$607.2 million request and recommends that requests for 12 items be reduced by \$68.2 million for the following reasons:

- \$34.1 million is not needed for eight items (two types of 2.75-inch rocket components, four types of practice bombs, MK25 rocket motors, and JAU-22/B cartridge actuated initiators) because quantities are scheduled for delivery after the fiscal year 1984 funded delivery period. In accordance with Defense procurement procedures, funding for these items could be deferred until fiscal year 1985, and still be available in time to support the scheduled production. (See pp. 22 to 24.)
- \$5.5 million is not justified for 25-mm. cartridges because support costs are overstated. (See p. 24.)
- \$4.1 million is not needed for one type of 5-inch/54 caliber ammunition because the unit cost is overstated. (See p. 24.)
- \$3 million for CCU-44/B impulse cartridges is not needed because inventory will exceed requirements. (See p. 25.)
- \$21.5 million for Bigeye bombs is premature until various development issues are resolved. (See p. 25.)

Navy representatives agreed with GAO's recommended reductions of \$5.5 million for 25-mm. cartridges and \$21.5 million for Bigeye bombs.

Air Force

GAO reviewed 21 items representing \$1,029.5 million, or 87 percent, of the Air Force's \$1,181.5 million request and recommends that requests for seven items be reduced by \$128 million for the following reasons:

- \$94.2 million is not needed for low level laser bomb guidance kits, GBU-15 guided weapon systems, and BSU-50 air inflatable retarders (which delay a bomb's impact with the target until the aircraft is beyond the fragmentation range of the bomb) because quantities are scheduled for delivery after the fiscal year 1984 funded delivery period. In accordance with Defense procurement procedures, funding for these items could be deferred until fiscal year 1985, and still be available in time to support the scheduled production. (See pp. 27 to 29.)
- \$7.9 million for MJU-7B infrared flares is not needed because they can be procured at a lower cost than estimated in the budget. (See p. 29.)
- \$3.2 million for procuring new 30-mm. cartridge containers is no longer needed because the Air Force plans to repair existing containers rather than buy new ones. (See p. 30.)
- \$1.0 million for MK-82 bombs is not needed because the Air Force has adopted several measures to lower the unit cost. (See p. 30.)
- \$21.7 million for Bigeye bombs is premature because of development delays and the Navy's decision to defer procurement until fiscal year 1985. (See p. 31.)

This report also discusses the continuing problem of insufficient quantities of proper fuzes for bombs using retarders and low-level laser guidance kits. Because retarders cannot be used without fuzes, the Appropriations Committees should closely assess the requested mix of fuzes and retarders to determine whether more fuzes or fewer retarders should be procured in the future to balance their inventories. (See p. 31.)

Air Force representatives agreed with GAO's recommended reductions of \$33.8 million for MJU-7B infrared flares, 30-mm. cartridge containers, MK-82 bombs, and Bigeye bombs.

PRODUCTION BASE SUPPORT

Production base support funds are intended to enhance ammunition production capacity by modernizing existing production facilities, building new facilities, properly laying away facilities not needed for peacetime production, and developing improved manufacturing methods.

GAO reviewed the justifications for eight projects representing \$123.4 million, or 44 percent, of the \$277.3 million request for production base support and recommends that requests for five projects be reduced by \$100.8 million for the following reasons:

- \$90.3 million is premature for three binary chemical ammunition production facilities because the location and cost of these facilities is uncertain. In binary chemical ammunition, the two non-lethal chemicals are separated until they are mixed in an artillery shell or bomb, producing a lethal gas. (See pp. 33 to 36.)
- \$8.9 million is not needed for an 8-inch projectile metal parts production facility because funds were provided for these facilities in the fiscal year 1983 program. (See p. 36.)
- \$1.6 million for a 60/81-mm. increment container facility is no longer needed because of a decrease in requirements. (See p. 36.)

Army representatives agreed to consider reinstating the 8-inch projectile metal parts production facility in the fiscal year 1983 program and agreed that \$1.6 million for a 60/81-mm. increment container facility is not needed.

AGENCY COMMENTS

GAO did not obtain agency comments on matters discussed in this report. GAO did, however, discuss the report findings with program officials and included their views in the report where appropriate.

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ABBREVIATIONS

AAP	Army ammunition plant
ADAM	area denial artillery munitions
GAO	General Accounting Office
LAP	load, assemble, and pack
RAAMS	remote antiarmor mines system

CHAPTER 1

INTRODUCTION

The military services' fiscal year 1984 appropriation request for ammunition was about \$4.6 billion, including the Army's request for production base support for \$277.3 million, as summarized below.

<u>Appropriations</u>	<u>Amount a/</u> (millions)
<u>Procurement of Ammunition, Army</u> <u>(07-15) 21-2034-0-1-051</u>	
Atomic materiel	\$ 112.0
Conventional ammunition	1,894.5
Miscellaneous	50.4
Production base support	<u>277.3</u>
Total	<u>2,334.2</u>
<u>Other Procurement, Navy</u> <u>(07-15) 17-1810-0-1-051</u>	
Air-launched ordnance	379.6
Ship gun ammunition	186.8
Small arms ammunition	15.8
Pyrotechnics and demolition	<u>25.0</u>
Total	<u>607.2</u>
<u>Procurement, Marine Corps</u> <u>(07-15) 17-1109-0-1-051</u>	
Conventional ammunition	<u>484.3</u>
<u>Other Procurement, Air Force</u> <u>(07-15) 57-3080-0-1-051</u>	
Rockets and launchers	3.7
Cartridges	291.8
Bombs	758.0
Targets	-
Fuzes	45.3
Other items	<u>82.7</u>
Total	<u>1,181.5</u>
Total - All Services	<u><u>\$4,607.2</u></u>

a/Figures extracted from documents accompanying proposed budget of the Department of Defense for fiscal year 1984, submitted to Congress on January 31, 1983.

A summary of the Army's request for production base support follows.

	<u>Amount</u>
	(millions)
Provision of industrial facilities:	
Modernization, expansion, and initial production facilities	\$205.1
Annual support projects	30.4
Productivity investment	0.1
Layaway of industrial facilities	17.3
Manufacturing technology program	<u>24.4</u>
 Total	 <u>\$277.3</u>

The services justified their ammunition requests on the basis of meeting training needs and building the war reserve stockpile. Much of the request is for newer munitions, such as rocket-assisted projectiles, improved conventional munitions, area denial artillery munitions, remote antiarmor mines system, and air delivered munitions.

Production base support funds are intended to enhance ammunition production capacity by modernizing existing production facilities, building new facilities, properly laying away facilities not needed for peacetime production, and developing improved manufacturing methods. Almost half of the \$205.1 million facilities program is for three binary chemical munitions production facility projects.

DEFINITION OF TERMS

The terms fiscal year funded delivery period and minimum sustaining rate are used frequently throughout the report. Therefore, a complete definition of the terms is necessary.

Fiscal year funded delivery period

Simply stated, the fiscal year funded delivery period is the time period (usually 12 months) during which quantities in a particular fiscal year program are delivered. The period typically starts about 12 months after the beginning of the fiscal year to allow for administrative lead time such as awarding contracts and production lead time such as procuring raw materials and components. As an example, the funded delivery period for several items in the fiscal year 1984 program is October 1984 through September 1985 because the combined administrative and production lead time for these items is 12 months. However, lead times vary and, as a result, funded delivery periods vary accordingly.

According to Defense procurement procedures, funds should generally not be programed in any fiscal year which could be deferred to a future fiscal year and still be available in time to support the scheduled production, leadtimes considered. In applying this to the fiscal year 1984 program, funds should not be programed in fiscal year 1984 for items scheduled for delivery after the fiscal year 1984 funded delivery period, but rather should be programed in future fiscal years.

Minimum sustaining rate

The minimum sustaining rate refers to the least number of items that can be produced on a single-shift basis and still avoid increasing the unit cost by more than 20 percent. The computation is based on the number of items that are normally produced during a one 8-hour shift operation, 5 days a week (1-8-5).

OBJECTIVES, SCOPE, AND METHODOLOGY

The Chairmen, Subcommittees on Defense, House and Senate Committees on Appropriations requested this review. Our objectives were to assess the justifications for the military services' fiscal year 1984 ammunition programs and the Army's production base support program.

As requested, we evaluated requests involving large dollar amounts, items being bought for the first time, items that are having production and/or performance problems, and projects to establish, modernize, and expand the ammunition production base.

The number of items and complexity of issues, coupled with the unavailability of budget backup data until the end of February 1983, precluded an indepth review of each item. However, we reviewed factors such as requirements, inventory positions, production problems, quality, testing and development, funded program status, and field malfunctions for most items. This process helped identify items for detailed review and analysis.

We closely analyzed production schedules to determine whether the programs could be executed in an efficient and economic manner during the normal funded delivery time period for the fiscal year 1984 program. In addition, we assessed projected receipt and loss data to assure that inventory would not greatly exceed inventory objectives. We also determined whether programs for related ammunition end items such as propelling charges, projectiles, and fuzes were in reasonable balance. We did not have time to verify the accuracy of all data we reviewed such as inventory position, training losses, and cost estimates but we were able to determine whether data was reasonable by contrasting it with other data from prior years.

To evaluate the justifications for specific ammunition items and projects, we interviewed officials involved in ammunition management and procurement and obtained documents, such as briefings, status reports, production problem meeting minutes, and budget support data, from the services at the following locations:

- Headquarters, Department of the Army, Washington, D.C.
- U.S. Army Armament Materiel Readiness Command, Rock Island, Illinois.
- U.S. Army Armament Research and Development Command, Dover, New Jersey.
- U.S. Army Armament Research and Development Command, Chemical Systems Laboratory, Aberdeen Proving Grounds, Maryland.
- U.S. Army Munitions Production Base Modernization Agency, Dover, New Jersey.
- Project Manager, Sergeant York, Dover, New Jersey.
- Project Manager, Tank Main Armament Systems, Dover, New Jersey.
- Project Manager, Cannon Artillery Weapons Systems, Dover, New Jersey.
- Project Manager, Bradley Fighting Vehicle Systems, Warren, Michigan.
- Newport Army Ammunition Plant, Newport, Indiana.
- Headquarters, Department of the Navy, Washington, D.C.
- Naval Air Systems Command, Washington, D.C.
- Naval Sea Systems Command, Washington, D.C.
- Ships Parts Control Center, Mechanicsburg, Pennsylvania.
- Marine Corps Headquarters, Rosslyn, Virginia.
- Headquarters, Department of the Air Force, Washington, D.C.
- U.S. Air Force Systems Command, Armament Division, Eglin Air Force Base, Florida.
- Ogden Air Logistics Center, Hill Air Force Base, Utah.

As directed, we did not obtain agency comments on matters in this report, but we did discuss a draft with program officials of the Army's Office of the Deputy Chief of Staff for Research, Development, and Acquisition; the Navy's Office of the Deputy Chief of Naval Operations for Logistics; the Air Force's Office of the Deputy Chief of Staff for Logistics and Engineering; and the Marine Corps' Office of Deputy Chief of Staff for Installations and Logistics. We made changes to the report, where appropriate, to reflect the views of these program officials.

Except as noted above, our review, done during the period from October 1982 to May 1983, was performed in accordance with generally accepted Government audit standards.

CHAPTER 2

ARMY AMMUNITION PROGRAM

The Army's fiscal year 1984 ammunition request includes \$1,894.5 million for conventional ammunition, \$50.4 million for miscellaneous items, and \$112.0 million for nuclear materials. We reviewed the Army's justifications for 80 items, costing \$1.6 billion, or 79 percent, of the total request. We concluded that \$222.8 million should not be provided for the following reasons:

- A total of \$120.5 million for one item is not needed because large quantities of previously funded programs remain undelivered.
- A total of \$76.6 million for 10 items is unnecessary because inventory will exceed requirements.
- A total of \$25.7 million for three items is premature until developmental problems are resolved.

In addition, there are potential problems in delivering 155-mm. area denial artillery munitions and remote antiarmor mines system projectiles which require special attention by the Appropriations Committees.

UNDELIVERED FUNDED PROGRAMS

The Army requested \$201 million for 192,000 8-inch M509A1 high explosive, improved conventional munition projectiles, but it is doubtful whether the quantities can be delivered as scheduled due to equipment problems at the production plant. The request should be reduced by \$120.5 million because significant quantities have been funded in prior years but are not yet delivered.

We initially concluded that none of the requested amount was needed because of the large quantity of undelivered projectiles from prior year programs. However, we found that deletion of the entire fiscal year 1984 program would result in the shut-down of the metal parts producers. Therefore, sufficient funding is required to maintain the production base while working off the backlog at the load, assemble, and pack (LAP) plant. According to an Army official, a fiscal year 1984 program of 88,000 projectiles would be sufficient for this purpose. Since the Marine Corps is requesting funding for 11,000 projectiles, the Army only needs to procure 77,000 projectiles and accordingly the Army request could be reduced by 104,000 projectiles costing \$120.5 million.

Although the Army has apportioned funds for this 8-inch projectile annually since fiscal year 1981, only small quantities have been produced for testing purposes. Prior fiscal years as well as the proposed fiscal year 1984 programs are shown below:

QUANTITIES OF PROJECTILES

	<u>Fiscal year 1982 and prior</u>	<u>Fiscal year 1983</u>	<u>Proposed fiscal year 1984</u>	<u>Total</u>
Army	96,000	102,000	192,000	390,000
Marine Corps	16,000	47,000	11,000	74,000
Foreign military sales	-	8,000	-	8,000
Total	<u>112,000</u>	<u>157,000</u>	<u>203,000</u>	<u>472,000</u>

In March 1983, the Army estimated first production would begin in April 1983--almost 7 months behind schedule. As of May 23, 1983, when we completed our review, none had been produced for inventory due to problems with drill and pin equipment used to attach the base plate to the projectile. While attempting to solve the equipment problem, the Army is also completing a product improvement program to develop a threaded base plate. The new base plate will simplify loading and save about \$15 per projectile. If the program is successful, then threaded plates, rather than drill and pin base plates, could be produced as early as November 1983.

The Army had scheduled production at the Lone Star Army Ammunition Plant to accelerate from zero in March 1983 to maximum capacity in January 1984 and remain at that level until completion of the fiscal year 1984 program. However, according to an Army representative, the quantities requested for fiscal year 1984 could not be produced within the fiscal year 1984 funded delivery period unless the Army either

- equips an additional plant to produce projectiles with drill and pin base plates, or
- uses fiscal year 1983 funds to prepare a facility for production of threaded base plate projectiles in fiscal year 1984.

We believe the Army's production schedule is overly optimistic since several key events must take place over the very near term. For example, the product improvement program must be successful, threaded base plate capability must be established at the production facilities and adequate quantities must be produced to support load, assemble, and pack operations.

In our opinion, the Army should obtain some production experience and demonstrate the ability to reduce the funded undelivered quantities before planning to produce at the maximum rate. By producing at a normal 1-8-5 rate, the Army could work off the undelivered quantities, gain some production experience, and maintain program continuity both for LAP and one metal parts producer.

Army representatives agreed that the production schedule was overly optimistic if the projectiles are to be produced with drill and pin base plates. However, they said the threaded base plate product improvement program has progressed to a point that first delivery of threaded components could occur as early as October 1983. Therefore, the fiscal year 1984 program could be loaded either at the Lone Star Army Ammunition Plant on a 1-8-5 shift rate using two production lines--a drill and pin base plate production line and a threaded base plate production line--or at the Milan Army Ammunition Plant using a threaded base plate production line.

The Army's revised production schedule is still optimistic since before projectiles can be produced for inventory using the new threaded base plates, the Army will have to do many different things such as convert the production facilities to produce threaded base plates, rework inventories to the new threaded base configuration, incorporate design changes in the technical data package, and conduct extensive first article testing of the new projectiles.

INVENTORY WILL EXCEED REQUIREMENTS

The Army's request should be reduced by \$76.6 million for the following items because inventory will exceed requirements.

--\$20.2 million for 60-mm. high explosive mortar cartridges,

--\$8.7 million for 7.62-mm. blank, NATO linked cartridges,

- \$.3 million for .22 caliber long rifle match cartridges,
- \$12.3 million for three types of .50 caliber cartridges,
- \$3.2 million for two types of 20-mm. cartridges,
- \$21.6 million for 25-mm. target practice-traced cartridges, and
- \$10.3 million for 81-mm. illuminating cartridges.

60-mm. high explosive cartridge
with multi-option fuze

This \$20.2 million request is for 148,000 M720 60-mm. high explosive mortar rounds used in the new M224 mortar weapon. This request should not be funded because production delays which could continue have caused large backlogs and because of reduced requirements after the budget was sent to the Congress.

In 1976 the Army planned to deploy the 60-mm. mortar system to infantry, airmobile infantry, and airborne infantry rifle companies. In anticipation of this fielding plan, the Army bought about 1,600 M224 mortars. However, in October 1982 the Army reassessed its planning for mortars and limited fielding to ranger battalions and special purpose requirements. The Army now plans to field less than 500 of the M224 mortars it bought.

Since 1978 the Army has allotted \$87.5 million to procure 646,500 M720 mortar rounds. However, as of February 1, 1983, only 14,400, or 2 percent, had been delivered. The Army attributes the significant backlogs to difficulties in producing propellant increment containers and the multi-option fuze used with the mortar.

The Army awarded the initial contract for increment containers in September 1978 to the low bidder. Although the firm produced thousands of containers, they could not meet Army specifications. After lengthy litigation, during which M720 rounds could not be produced, the Army terminated this firm and placed a contract with a new firm. The Army believes increment container production is now satisfactory, but that costs are too high. The Army has an ongoing manufacturing methods and technology project that may reduce the increment container cost.

Although the Army believes future delays will not occur because of increment containers, availability of fuzes meeting Army specifications is uncertain. We found fuze testing has had questionable success. Tests of fuzes pertaining to 16 of the initial 22 lots produced (about 220,000 of 312,000 fuzes) failed to meet Army specifications. In January 1983 about 238,000 additional fuzes were withheld from inventory because they failed ballistic acceptance tests. In December 1982 the fuze's electronic assembly was exceeding specified voltage and electronic sensitivity limits.

Army representatives agreed with our analysis that the \$20.2 million requested for 60-mm. high explosive mortar rounds was no longer needed. They said that after the budget was sent to the Congress, the Army Chief of Staff decided to replace the 60-mm. mortar system in Army field units with the 4.2-inch mortar system. Therefore, although there is no longer a need to procure the 60-mm. high explosive cartridges, it may be necessary to procure additional 4.2-inch rounds. We did not have time to evaluate this potential need.

7.62-mm. blank NATO linked cartridges

The \$41.9 million request for 7.62-mm. ammunition includes \$8.7 million for 30,848,000 blank NATO linked cartridges which are not needed in fiscal year 1984. Projected yearly training losses during the fiscal year 1984 funded delivery period dropped from 82 million to about 30 million cartridges. As a result, the inventory on hand and funded quantities due in are sufficient to meet training requirements and maintain the inventory objective through the fiscal year 1984 funded delivery period which ends in May 1985 as shown below.

	<u>Quantity</u>
Inventory at September 30, 1982	79,689,000
Due in	<u>133,265,000</u>
Total	212,954,000
Less: Estimated losses through May 1985	<u>107,988,000</u>
Projected inventory at May 1985	104,966,000
Inventory objective	<u>51,982,000</u>
Excess	<u><u>52,984,000</u></u>

Deleting this program should not adversely affect production since other 7.62-mm. programs are large enough to enable the production facility to operate at above the minimum sustaining rate.

Army representatives agreed that the \$8.7 million requested for 7.62-mm. blank NATO linked cartridges is no longer needed because inventory would exceed requirements.

.22 caliber long rifle match cartridges

The entire \$300,000 request for 3,041,000 cartridges is unnecessary because requirements can be satisfied from existing and funded quantities.

	<u>Quantity</u>
Inventory at September 30, 1982	7,344,000
Due in	<u>14,465,000</u>
Total	21,809,000
Less: Estimated losses through May 1985	<u>13,556,000</u>
Projected inventory at May 1985	8,253,000
Inventory objective	<u>2,720,000</u>
Excess	<u><u>5,533,000</u></u>

These cartridges are used in target shooting match competition and are bought commercially. Since the cartridges are procured commercially, deleting the program will not affect production rates.

Army representatives agreed that the \$300,000 requested for .22 caliber ammunition is no longer required because inventory would exceed requirements.

.50 caliber cartridges

The \$47 million request for .50 caliber ammunition includes \$12.3 million for three types of cartridges that are not needed because the existing inventory and quantities due in will exceed requirements.

<u>Type of cartridge</u>	<u>Quantity</u>	<u>Amount</u> (millions)
Armor piercing incendiary tracer	1,710,000	\$ 3.7
Blank linked for M2 machine gun	6,423,000	5.8
Blank linked for M85 machine gun	1,787,000	<u>2.8</u>
Total		<u>\$12.3</u>

As shown below, the projected inventory for each of these items without a fiscal year 1984 buy will be greater than the inventory objective.

	<u>Quantity</u>		
	<u>Armor piercing</u>	<u>Blank for M2</u>	<u>Blank for M85</u>
Inventory at September 30, 1982	3,252,000	4,431,400	4,917,000
Due in	<u>2,429,000</u>	<u>36,120,000</u>	<u>23,317,000</u>
Total	5,681,000	40,551,400	28,234,000
Less: Estimated losses through May 1985	<u>3,708,000</u>	<u>18,338,000</u>	<u>24,205,000</u>
Projected inventory at May 1985	1,973,000	22,213,400	4,029,000
Inventory objective	<u>620,000</u>	<u>1,963,000</u>	<u>3,513,000</u>
Excess	<u>1,353,000</u>	<u>20,250,400</u>	<u>516,000</u>

The minimum sustaining rate for .50 caliber ammunition is one million cartridges per month. The Army's fiscal year 1984 program for the .50 caliber ball and tracer round alone (\$32.8 million for 23,931,000 cartridges) ensures that production will remain above the minimum sustaining rate if these three programs are eliminated.

The Committees should be aware that the Army entered into a multiyear contract with a private firm to procure the two types of blank rounds. The contract calls for the Army to buy 15 million blank cartridges in each of fiscal years 1983-85 or pay a cancellation fee of up to \$681,000. Since the Army is only requesting 8.2 million blank cartridges for fiscal year 1984, it will be liable for the cancellation fee even if the request is approved in full.

20-mm. cartridges

The \$16.4 million request for two types of 20-mm. cartridges should be funded at lower levels. Funding the COBRA (\$5 million for 1,421,000 cartridges) and VULCAN (\$11.4 million for 2,788,000 cartridges) programs at the requested levels will result in inventory exceeding requirements for both items.

	<u>Quantity</u>	
	<u>COBRA</u>	<u>VULCAN</u>
Inventory at September 30, 1982	528,000	1,669,000
Due in	4,349,000	5,707,000
Fiscal year 1984 request	<u>1,421,000</u>	<u>2,788,000</u>
Total	6,298,000	10,164,000
Less: Estimated losses through July 1985	<u>5,485,000</u>	<u>8,261,000</u>
Projected inventory at July 1985	813,000	1,903,000
Inventory objective	<u>706,000</u>	<u>1,188,000</u>
Excess	<u>107,000</u>	<u>715,000</u>

To bring the projected inventory in line with the inventory objective, the COBRA program should be reduced by \$350,000 and the VULCAN program should be reduced by \$2.9 million.

The recommended program reductions should not significantly impact the production facility since production is already scheduled at less than the minimum sustaining rate. All 20-mm. cartridges are produced at Lake City Army Ammunition Plant where the minimum sustaining rate is one million cartridges per month. The projected fiscal year program for all services is less than 7.5 million cartridges. Scheduled production varies from 118,000 to 1,048,000 cartridges per month. Reducing the COBRA and VULCAN requests would decrease the program to about 6.7 million cartridges.

Army representatives agreed with our analysis that \$3.2 million requested for the two types of 20-mm. cartridges is not needed.

25-mm. target practice-traced cartridge

The budget request includes four types of 25-mm. ammunition commonly referred to as Bushmaster ammunition. It is used in

the M242 chain driven automatic cannon which is the primary armament for the Army's new infantry and cavalry fighting vehicles. These armored vehicles are designed to accompany the M-1 tank and move troops rapidly in the combat area.

The fiscal year 1984 request for 2,965,000 rounds costing \$91.9 million consists of the following types:

<u>Type</u>	<u>Quantity</u>	<u>Amount</u> (millions)
Target Practice-Traced (TP-T)	1,599,000	\$42.2
Armor Piercing Discarding Sabot-Traced (APDS-T)	677,000	25.3
High Explosive, Incendiary Traced (HEI-T)	542,000	21.1
Dummy	<u>147,000</u>	<u>3.3</u>
Total	<u>2,965,000</u>	<u>\$91.9</u>

Our analysis indicates that if the requested \$42.2 million for 1,599,000 25-mm. target practice-traced (TP-T) cartridges is funded, inventory will exceed the inventory objective by about 820,000 cartridges.

	<u>Quantity</u>
Inventory at September 30, 1982	64,000
Due in	2,239,000
Fiscal year 1984 request	<u>1,599,000</u>
Total	3,902,000
Less: Estimated losses through September 1985	<u>2,306,170</u>
Projected inventory at September 1985	1,595,830
Inventory objective	<u>776,000</u>
Excess	<u>819,830</u>

We believe the quantity should be reduced by 820,000 cartridges estimated to cost \$21.6 million. Deleting this quantity will not adversely affect the production base since adequate 25-mm. quantities remain in the program to support two producers.

Army representatives agreed with our analysis that \$21.6 million requested for 25-mm. TP-T cartridges is no longer needed.

81-mm. illuminating cartridge

The \$22.4 million request for 143,000 81-mm. illuminating cartridges should be reduced by \$10.3 million for 66,000 cartridges to prevent inventory from exceeding requirements. This cartridge, which is used for target identification during low visibility, is scheduled to be replaced with a new illuminating cartridge which the Army expects to procure in fiscal year 1985. If the entire fiscal year 1984 request is funded the Army will have excess inventory as indicated below.

	<u>Quantity</u>
Inventory at September 30, 1982	267,000
Due in	199,000
Fiscal year 1984 request	<u>143,000</u>
 Total	 609,000
 Less: Estimated losses through September 1985	 <u>201,000</u>
Projected inventory at September 1985	<u>408,000</u>
Inventory objective	<u>342,000</u>
 Excess	 <u><u>66,000</u></u>

In fiscal year 1985 the Army is planning to procure 83,000 of the new cartridges. The new cartridges will be produced on the same production line as the old cartridges. However, since production of the new cartridges is not expected to begin until April 1986, the production line will have to be temporarily shut down following completion of the fiscal year 1984 program now planned for June 1985. If the fiscal year 1984 request is reduced by 66,000 cartridges costing \$10.3 million, the line would have to be shut down 4 months earlier than is currently scheduled.

Army representatives said that the total requested fiscal year 1984 program for the 81-mm. illuminating cartridges is required to provide production continuously through the fiscal year 1984 funded delivery period leading into initial production of the new 81-mm. illuminating round in fiscal year 1985. They said that production of fiscal year 1984 program is scheduled for completion in September 1985 and that the production line would not be shut down because production of the new cartridges is scheduled to begin in October 1985.

The production schedule cited by the Army representatives was correct at the time the budget was prepared, but there has been a slippage in the new 81-mm. program and the Army's latest estimate is that production of the new cartridge cannot begin before April 1986.

PREMATURE PROCUREMENTS

The Army's fiscal year 1984 request includes premature requests totalling \$25.7 million for the following three new items because of developmental or facility problems.

--\$6.4 million for high explosive hand grenades.

--\$18.1 million for 155-mm. binary chemical projectiles.

--\$1.2 million for 9-mm. ball cartridges.

High explosive hand grenades

This \$6.4 million request was for 57,000 new XM78 high explosive antiarmor hand grenades. The request is not justified because the Army's planned procurement is dependent upon completion of research and development work in fiscal year 1983, but the Army's current fiscal year 1983 plans do not include this effort.

The Army had requested and obtained \$1.2 million for fiscal year 1983 to conduct research, development, test, and evaluation activities to prepare for the grenade's production in fiscal year 1984. However, after the budget was submitted, the Army eliminated the research and development program to provide additional funds for other higher priority programs. According to the Army, even if funding for research is restored during fiscal year 1983, the type classification ^{1/} date will slip past the first quarter of fiscal year 1984. Any slippage beyond this quarter would preclude, according to Army policy, its procurement in fiscal year 1984.

Army representatives agreed that the \$6.4 million requested for this new hand grenade is no longer needed.

155-mm. chemical projectile, M687

This \$18.1 million request is dependent on methylphosphonic dichloride (DC) being available when deliveries of the 155-mm. M687 chemical projectiles are scheduled to begin. However, the funding requested in fiscal year 1984 for the chemical DC production facility is premature because the facility location and cost estimates are uncertain and will remain so until March 1984. Therefore, this request to procure M687 projectiles is also premature.

^{1/}In general terms, type classification means an item has met performance and quality standards and is ready to be brought into the supply system.

Army representatives said that slipping the DC project to fiscal year 1985 would delay availability of the chemical DC from 12 to 18 months depending on which source of DC is selected. They said that if the DC project is funded as planned in fiscal year 1984, the minimal quantity of DC required for the initial 155-mm binary production would be available and that the small initial buy of binary rounds would be producible with the requested fiscal year 1984 funding.

As discussed in chapter 6, the facility project does not meet Army criteria for funding in fiscal year 1984 because final design is not scheduled for completion before the end of the second quarter of fiscal year 1984 when the facility location and cost is determined. Army criteria is that final facility design should generally be completed during the first quarter of the fiscal year in which it is being funded. Therefore, since the \$18.1 million request for 155-mm. chemical projectiles is dependent upon the availability of the chemical to be produced at this facility is premature, it should not be funded in fiscal year 1984.

9-mm. ball cartridge

The Army's \$1.2 million request for 5 million XM882 9-mm. ball cartridges is premature because delays in development activities have prevented the Army from establishing program milestones for procurement in fiscal year 1984.

In September 1982, the Army scheduled type classification for the XM882 cartridge for the first quarter of fiscal year 1984. However, the Army placed testing and evaluation efforts in abeyance pending Secretary of Defense receipt of an Army-approved strategy for acquiring the new 9-mm. pistol. The pistol acquisition plan had not yet been approved at the time of budget submission. The plan will describe procurement information as well as user requirements and pistol performance characteristics. According to Army representatives, program milestones will not be established until the plan is approved.

The Army's procurement policy states that generally an item will not be scheduled for procurement in a fiscal year unless it is scheduled for type classification by the end of the first quarter of the same fiscal year. According to Army representatives, type classification of the pistol and cartridge prior to June 1984--third quarter of fiscal year 1984--is not expected and therefore should not be funded in fiscal year 1984.

Army representatives agreed that the \$1.2 million for 9-mm. ball cartridges was no longer needed.

ITEMS REQUIRING SPECIAL ATTENTION

The Army is requesting \$189.7 million for 155-mm. area denial artillery munitions (ADAMs) and remote antiarmor mines system (RAAMS) projectiles. Both the ADAM and RAAMS projectiles have experienced production problems and have large quantities of undelivered funded programs.

155-mm. area denial artillery munitions and remote antiarmor mines system

The Army requested \$66.4 million for 14,000 ADAMs and \$123.3 million for 51,000 RAAMS. ^{2/} The fiscal year 1984 requests deserve special attention because the program quantities may not be delivered within the fiscal year 1984 funded delivery period.

Last year we found the Army had a large backlog of undelivered projectiles and concluded that the backlog would continue unless the production rate was increased, the funded delivery period was lengthened, or the fiscal year quantities were adjusted. Army officials decided that increasing the production rate was too costly and unnecessary and that the best option was to reduce fiscal year 1983 quantities. However, to deliver the fiscal year 1984 program within its funded delivery period, the Army plans to increase production by working multiple shifts for both the ADAM and RAAMS projectiles. The Army is planning improvements that would increase the production capacity at facilities producing the ADAM/RAAMS; however, the improvements will not be in place until after the fiscal year 1984 ammunition production programs are complete.

Since the Army has had extensive delivery problems with these projectiles, lacks experience in producing near the maximum rate, and will be unable to increase production capacity until after completion of the fiscal year 1984 program, there may be some problem in delivering the fiscal year 1984 quantities as planned.

CONCLUSIONS

We believe (1) funds should not be provided for one item because large quantities funded in prior years remain undelivered, (2) the total amount of requested funds should not be provided for 10 items because inventory will exceed requirements, and (3) funds should not be provided for three items because of developmental or facility problems.

^{2/}The Marine Corps is requesting \$48.7 million for 8,042 ADAMs and 3,391 RAAMS (see p. 21).

In addition, requests for two items require close attention because of the size of the programs and potential delivery problems.

RECOMMENDATIONS

We recommend that the House and Senate Committees on Appropriations reduce the Army's request by \$222.8 million for 14 items under 11 budget lines as shown in appendix I. In addition, the Committees should closely monitor the delivery of 155-mm. ADAM/RAAMS programs until budget markup.

CHAPTER 3

MARINE CORPS AMMUNITION PROGRAM

The Marine Corps requested \$484.3 million in fiscal year 1984 to procure ammunition. We reviewed the justifications for 36 items representing \$463.1 million, or 96 percent of the total request. We concluded that the request should be reduced by \$14.6 million for the following reasons:

--\$14 million requested for 8-inch M2 propelling charges is not needed because the quantities can be furnished from excess Army inventories.

--\$600,000 requested for 9-mm. ball ammunition is premature because acquisition plans are uncertain.

It is also important to note that the Marine Corps request includes funds for the 155-mm. area denial artillery munitions and remote antiarmor mines system projectiles which, as discussed in chapter 2, require special attention because of potential delivery problems.

PROGRAM QUANTITIES AVAILABLE FROM EXCESS ARMY STOCKS

The Marine Corps request of \$14 million for 94,645 8-inch M2 propelling charges is not needed because the Army plans to satisfy the Marine Corps request from excess Army stocks. According to an Army official, the excess serviceable propelling charges should be given to the Marine Corps without reimbursement.

Army representatives agreed with our analysis, but Marine Corps representatives expressed concern that the Army stock was too old and of questionable use. Therefore, the Marine Corps representatives said that they wanted new propelling charges rather than the Army's old excess stocks.

As of March 24, 1983, the Army projected that it would have 514,000 excess M2 propelling charges at the end of the fiscal year 1984 funded delivery period. On the basis of the Army's stockpile reliability tests in 1982, the Army believes it has sufficient quantities of serviceable 8-inch propelling charges to meet the Marine Corps needs and, therefore, there is no need to provide funds to buy more.

PREMATURE PROCUREMENT

The Marine Corps request for small arms ammunition includes \$602,000 for 2.5 million XM882 9-mm. ball cartridges used in a new 9-mm. semiautomatic pistol which will become the standard sidearm for all the military services.

This 9-mm. ammunition procurement request is premature because as discussed on page 17 the Army, as the procuring agency, does not have an approved pistol acquisition plan and neither the pistol nor the ammunition are expected to be type classified before June 1984. According to Marine Corps procurement procedures, the latest type classification date for fiscal year 1984 procurements is December 1983.

Marine Corps representatives agreed that if the item is not expected to be type classified before June 1984, it should not be funded in fiscal year 1984. They said that if 9-mm. ammunition is not procured, then they would need to procure .45 caliber ammunition. We did not evaluate this need.

ITEMS REQUIRING SPECIAL ATTENTION

The Marine Corps request includes \$48.7 million for 155-mm. area denial artillery munitions and remote antiarmor mines system projectiles, items which we noted require special attention in the Army's request. (See p. 18.) The Marine Corps request also needs attention because of the same potential delivery problems.

CONCLUSIONS

We believe (1) the \$14 million requested for 8-inch propelling charges is not necessary because they are available from excess Army stocks, (2) the \$0.6 million requested for 9-mm. cartridges is premature until an acquisition plan is approved, and (3) the \$48.7 million request for 155-mm. area denial artillery munitions and remote antiarmor mine system projectiles requires continued monitoring because of potential delivery problems.

RECOMMENDATIONS

We recommend that the House and Senate Committees on Appropriations reduce the Marine Corps' request by \$14.6 million for two items and monitor the request for two other items as shown in appendix II.

CHAPTER 4

NAVY AMMUNITION PROGRAM

The Navy's fiscal year 1984 request, Other Procurement, Navy appropriation, includes \$607.2 million for 26 ammunition budget lines. We examined the Navy's justifications for 63 items within these budget lines representing \$411.1 million, or 68 percent of the total request. We believe the Navy's fiscal year 1984 ammunition program should be reduced by \$68.2 million because:

- \$34.1 million for eight items is premature because various requested quantities will not be delivered until after the fiscal year 1984 funded delivery period.
- \$5.5 million is no longer needed for 25-mm. API cartridges because support costs are overstated.
- \$4.1 million is not justified for one type of 5-inch/54 caliber ammunition because the unit cost is overstated.
- \$3.0 million for CCU-44/B impulse cartridges is not needed because inventory will exceed requirements.
- \$21.5 million for procuring Bigeye bombs is premature until various issues are resolved.

DELIVERIES NOT WITHIN FUNDED DELIVERY PERIOD

A total of \$34.1 million of the Navy's request for the following items should not be funded because requested quantities cannot be delivered within the funded delivery period.

- \$12.6 million for two types of 2.75" rocket components.
- \$15.7 million for four types of practice bombs.
- \$4.3 million for MK25 rocket motors.
- \$1.5 million for JAU-22/B cartridge actuated initiators.

2.75" rockets

The \$15.3 million request for 2.75" rockets should be reduced by \$12.6 million for the following two items:

--\$10.7 million for 38,800 MK66 rocket motors is premature because none of the motors would be delivered during the funded delivery period ending in September 1985. Furthermore, none of the fiscal year 1983 program is scheduled for delivery within its funded delivery period.

--\$1.9 million for LAU-61 launchers is unnecessary because 674 of the 1,154 launchers requested will be delivered after the fiscal year 1984 funded delivery period ending in September 1985. Furthermore, a significant portion of the fiscal year 1983 program is scheduled for delivery during the fiscal year 1984 funded delivery period.

Practice bombs

The \$69 million request for practice bombs should be reduced by \$15.7 million for the following four items:

--\$1.6 million for 100 BDU-20C bombs is premature because none of the bombs are scheduled for delivery during the funded delivery period ending in December 1985.

--\$7.2 million for 399 BDU-36 bombs is not needed because none of the bombs are scheduled for delivery during the funded delivery period ending in December 1985.

--\$4.4 million for Rockeye bombs is premature because 915 of 3,015 bombs requested are scheduled for delivery after the fiscal year 1984 funded delivery period ending in September 1985.

--\$2.5 million for MK76 bombs is not needed because 116,500 of 464,200 bombs requested are scheduled for delivery after the fiscal year 1984 funded delivery period ending in March 1986.

In reviewing these items, we noted that as of September 30, 1982, undelivered quantities existed from prior year programs as far back as fiscal year 1978. Eliminating the budget requests outlined above would give the Navy time to work off some of the undelivered quantities and should help put future programs on schedule.

MK25 rocket motors

The \$12 million request for jet-assisted take off motors includes a request for MK25 rocket motors which should be reduced by \$4.3 million. The Navy's planned production schedule shows that 506 of 1,306 motors requested in the fiscal year 1984 program would be delivered after the funded delivery period which ends in March 1986.

JAU-22/B cartridge-
actuated initiator

The \$31.9 million request for cartridge-actuated devices includes a request for JAU-22/B initiators which should be reduced by \$1.5 million since the Navy's planned production schedule is for 117,100 of the 522,100 initiators requested in the fiscal year 1984 program to be delivered after the funded delivery period ending in March 1986.

Views of program officials

Navy representatives agreed that when the Army's production leadtimes are used, the quantities cannot be delivered within the funded delivery periods. However, they said that actual leadtimes are much longer than those shown in the budget backup data. We found, however, that for the above items, the problem is more of past production delivery problems rather than inaccurate leadtimes.

REQUEST FOR 25-MM. API AMMUNITION
FACILITIES OVERSTATED

The \$32.1 million requested for machine gun ammunition includes \$6 million for non-recurring facilities support consisting of production support for the 25-mm. API ammunition. Originally, the Navy had planned to spend \$11.6 million on facilities in fiscal year 1983. Due to reductions in planned procurement quantities, the Navy revised its facilities estimates to \$6 million a year for both fiscal years 1983 and 1984.

The Navy's latest estimate is only \$2 million for facilities, consisting of \$1.5 million in fiscal year 1983 and \$0.5 million in fiscal year 1984. Only \$1.5 million has been obligated and the Navy plans to reprogram about \$4.5 million from this project to meet other high priority ammunition needs during fiscal year 1983. Since the Navy only needs \$0.5 million for facilities in fiscal year 1984, the request should be reduced by \$5.5 million.

Navy representatives agreed with our analysis that \$5.5 million requested for facilities support is no longer needed.

5-INCH/54 CALIBER AMMUNITION
COST IS OVERSTATED

The \$72.4 million requested for 5-inch/54 caliber ammunition includes \$47.1 million for 55,857 improved MK82 mechanical time, point detonating, projectiles. About \$4.1 million of the amount requested for MK82 projectiles is not needed because the unit cost is overstated.

On January 26, 1983, the Army's single manager for conventional ammunition estimated the fiscal year 1984 unit cost at \$791.04. However, the Navy's fiscal year 1984 unit cost estimate for MK82 projectiles in its January 1983 budget submission is \$843.69. Navy officials said they questioned the single manager's cost estimate and informally solicited initial production subcontractors for cost estimates to develop their budget estimate. On March 1, 1983, the single manager issued a revised cost estimate of \$769.78.

The single manager is responsible for producing the item and therefore is in the best position to determine unit costs. Indeed, the single manager cannot function as intended if the services elect to use their own cost estimates. Since one estimate must prevail it should be the single manager's latest cost estimate. The request for 5-inch/54 caliber ammunition should be reduced by \$4.1 million, the difference between the Navy's unit cost estimate of \$843.69 and the single manager's estimate of \$769.78 times 55,857 projectiles.

INVENTORY WILL EXCEED REQUIREMENTS

The \$31.9 million requested for cartridge actuated devices includes \$3 million for 1,152,800 CCU-44/B impulse cartridges. These cartridges are not needed because the Navy could use available quantities of the MK2 impulse cartridge to meet its needs. The Chief of Naval Operations expenditure allocations for fiscal years 1983, 1984, and 1985 provide a combined allocation for CCU-44/B and MK2 impulse cartridges. During these years the Navy plans to use about 2.6 million impulse cartridges. However, when making budget decisions, the Navy allocated most of the planned consumption to the CCU-44/B. When the total available inventories of the CCU-44/B and MK2 impulse cartridges are considered, sufficient quantities exist to satisfy requirements and a fiscal year 1984 procurement is not needed.

Navy representatives said when preparing the budget they did not consider the MK2 for planned consumption after the fiscal year 1983 funded delivery period because the useful life of the assets in inventory beyond this time would be questionable. However, the Navy's consumption data showed that the Navy could use up most of the MK2 inventories before expiration of their useful life and plans to use them at least through fiscal year 1985.

PREMATURE PROCUREMENT OF BIGEYE BOMBS

The \$21.5 million requested for procuring Bigeye bombs is premature because this binary chemical bomb has experienced development delays. In view of these delays the Navy has decided

to defer procuring the Bigeye until fiscal year 1985 and therefore no longer needs the \$21.5 million requested to procure the bombs. However, because the program will remain in development longer than planned, the Navy estimates that a total of \$8.2 million in Navy Research, Development, Test and Evaluation Appropriations is needed in fiscal year 1984 for chemical weapons development. This is \$4.7 million more than the Navy requested in its budget. Since this decision was made after we completed review, we were unable to determine the validity of the Navy's estimate. However, we have no basis for questioning the estimate.

Navy representatives agreed that the \$21.5 million requested for procuring the Bigeye bomb is no longer needed.

CONCLUSIONS

The amount of funds the Navy needs for ammunition in fiscal year 1984 is overstated because (1) funds requested for eight items are premature because various requested quantities will not be delivered until after the funded delivery period, (2) only part of the request for 25-mm. API ammunition support funds is needed because facilities requirements are overstated, (3) part of the request for the 5-inch/54 caliber ammunition is not needed because the unit cost is overstated, (4) some of the request for cartridge actuated devices is not needed because assets will exceed requirements, and (5) none of the request for procuring Bigeye chemical bombs is needed until various issues are resolved.

RECOMMENDATIONS

We recommend that the House and Senate Committees on Appropriations reduce the Navy's ammunition procurement appropriation request by \$68.2 million for 12 items under 7 budget line items as shown in appendix III.

CHAPTER 5

AIR FORCE AMMUNITION PROGRAM

The Air Force requested \$1,181.5 million for ammunition in its fiscal year 1984 program. We reviewed program justifications for 21 items representing \$1,029.5 million, or 87 percent of the request, and concluded that the request should be reduced by \$128 million for the following reasons:

- A total of \$94.2 million of \$336 million requested for three items is not needed because deliveries extend beyond the fiscal year 1984 funded delivery period.
- \$7.9 million is not needed for MJU-7B flares because the unit cost is overstated.
- \$3.2 million is not needed for procuring 30-mm. training cartridge containers because the Air Force plans to repair used containers instead of buying new ones.
- \$1 million for MK-82 bombs is not needed because the Air Force adopted several cost reduction measures which will lower the unit cost.
- \$21.7 million for initial production of Bigeye bombs is no longer needed because the bomb has experienced development delays and will not be procured until fiscal year 1985.

In addition, the House and Senate Committees on Appropriations should note the continuing problem with insufficient quantities of proper fuzes for bombs using retarders (which retard and stabilize the bombs for accurate target placement) and low-level laser guidance kits.

DELIVERIES NOT WITHIN FUNDED DELIVERY PERIOD

The Air Force's request should be reduced by \$94.2 million for the following three items because production extends beyond the fiscal year 1984 funded delivery period.

- \$82.5 million for low-level laser bomb guidance kits.
- \$7.6 million for GBU-15 guided weapon systems.
- \$4.1 million for BSU-50 air inflatable retarders.

Low-level laser guidance bomb (LLGB) kits

The request includes \$267.8 million for 6,000 kits for MK82 500-pound bombs and for 4,000 kits for MK84 2,000-pound bombs. The request should be reduced by \$82.5 million because production schedules in budget support documents show that deliveries extend beyond the fiscal year 1984 funded delivery period. The schedules show fiscal year 1984 program deliveries starting in July 1985, although since the production leadtime for the LLGB is 17 months, deliveries should start in March 1985. The reason fiscal year 1984 production is starting in July rather than March 1985 is that technical problems in testing and evaluation have caused several months slippage in the fiscal year 1983 program production schedule.

In May 1983, Air Force representatives provided us with a tentative production schedule which indicated that the fiscal year 1983 and 1984 programs could be accelerated so that all deliveries could occur within the funded delivery periods. They did caution that operational problems may necessitate changing the schedule. They stated that the Air Force would make a production decision in June 1983 after testing eight more items.

Although we were unable to evaluate the Air Force's revised production schedule in detail, we believe that the revised schedule is optimistic. The first deliveries of the fiscal year 1983 quantities have slipped from September 1983 to March 1984. Yet, the Air Force's revised production schedule shows that all deliveries would be completed 4 months earlier than originally planned. The rationale for this optimistic projection is unclear, especially since the Air Force is several months behind schedule in making a production decision on this item because of operational problems.

GBU-15 Guided Weapon System

The \$50.2 million request for 250 GBU-15 guided weapon systems should be reduced by \$7.6 million because deliveries are scheduled through December 1985 or 2 months past the fiscal year 1984 funded delivery period.

Although budget backup data indicates a production leadtime of 13 months, the Air Force used a 15 month lead time in scheduling delivery of its fiscal year 1984 program. This moved the end of the fiscal year 1984 funded delivery period from October to December 1985.

Air Force representatives acknowledge that the production leadtime is 13 months, but said they added two months to the leadtime to allow for fund release from DOD and for the processing of funding and contract documents prior to contract award. If this is the case, then additional time would have to be added to each ammunition program because they are subject to the same conditions.

Since the production leadtime for the GBU-15 guided weapon system is 13 months, the November and December 1985 production quantities should not be funded in fiscal year 1984.

BSU-50 Air Inflatable Retarders

The \$18 million request for 9,300 BSU-50 air inflatable retarders ^{1/} should be reduced by \$4.1 million because deliveries extend 3 months past the fiscal year 1984 funded delivery period. The delivery schedule is based on an 18 month production leadtime, but the Army's procuring activity told us the correct leadtime is 15 months. However, Air Force representatives contend that 18 months are needed to allow time for release of funds by DOD and processing of funding documents by the Air Force.

Production schedules for the fiscal year 1982 and 1983 programs are not being delivered within their normal funded delivery periods which precludes starting delivery of the fiscal year 1984 program until April 1985--or 3 months after the fiscal year 1984 funded delivery period begins.

It appears that the 18 month leadtime was used to allow enough time to produce prior year programs. Consequently, deleting 3 months production from the fiscal year 1984 program will allow for final delivery in December 1985 and result in getting the program back on a 15 month leadtime.

OVERSTATED COST ESTIMATE

The \$15.6 million request for 324,000 MJU-7B infrared flares should be reduced by about \$7.9 million because the unit cost is overstated. The Air Force based its budget request on a unit cost of \$47.29 provided by the Army's single manager for conventional ammunition in July 1982. On January 4, 1983, the single manager reduced the unit cost to \$22.62. According to Air Force representatives, the single manager procured the fiscal year 1982 program at a unit cost of \$20.36 and expects the cost for the fiscal year 1983 and 1984 programs to be in the same price range.

Air Force representatives agreed that the program can be reduced by \$7.9 million, though they were concerned that the Air Force ammunition program may be reduced because of inaccurate cost estimating by the Army's single manager.

^{1/}Low-level strike aircraft are vulnerable to fragmentation damage from bombs they release on a strike mission. Retarders delay the bomb's impact with the target until the aircraft is beyond fragmentation range.

PLANNED PROCUREMENT CANCELED

The \$96.1 million request for 30-mm. training cartridges should be reduced by \$3.2 million because after the budget was submitted, the Air Force decided to repair used 30-mm. cartridge containers rather than procure new containers. The Air Force included costs for container repair in its fiscal year 1984 operation and maintenance budget request. It plans to defer repairing other lower priority containers so that the 30-mm. containers can be repaired.

Air Force representatives agreed that the program should be reduced by \$3.2 million since they no longer plan to procure new containers in the fiscal year 1984 program.

COST REDUCTION MEASURES FOR EMPTY MK82 BOMBS

The \$20.8 million request for 50,000 bombs should be reduced by \$1 million because after preparing the budget request the Air Force decided to buy a lower cost configuration of the bomb.

The empty MK82 bomb is a 500-pound general purpose bomb without the explosive fill. For training purposes the bombs are filled with concrete/vermiculite to simulate the drop trajectory of an explosives-loaded bomb.

The request was based on the cost of buying empty heat treated bombs containing the internal components needed to fuze the bombs. However, after preparing the budget request the Air Force determined that

- it is not necessary to heat treat bombs used for training,
- it has an adequate inventory of bombs with internal fuzing components, and
- it costs less to fill the bombs with concrete/vermiculite at the load plant rather than in the field.

The net affect of these determinations is a reduction in the unit cost of \$20 a bomb.

Air Force representatives agreed that the program should be reduced by \$1 million.

PREMATURE PROCUREMENT OF BIGEYE BOMB

The Air Force is requesting \$21.7 million for Bigeye bombs. As discussed in chapter 4, the bomb has had development delays which must be corrected before production begins.

Based on these problems, we believe it is premature to provide funds for procuring Bigeye bombs in fiscal year 1984. Air Force representatives agreed that the Bigeye bomb program should not be funded.

ITEMS REQUIRING SPECIAL ATTENTION

The Air Force does not have the quantity of fuzes needed for bombs using retarders or low-level laser guidance kits to perform as designed. The FMU-112/B fuze, developed by the Air Force, is an electronic impact or short delay fuze designed to fit the standard 3-inch fuze well on guided or unguided series bombs such as the M117 or MK-80. According to an Air Force official, bombs using retarders or low-level laser guidance kits require the FMU-112/B fuze to perform as designed, but the inventory of this fuze is inadequate.

Less FMU-112/B fuzes are in stock than BSU-49 and BSU-50 retarders. One reason for this imbalance is that FMU-112/B fuzes were not procured in fiscal years 1981, 1982, and 1983, but about 179,500 BSU-49 and BSU-50 retarders were procured. In addition, the Air Force initially planned to request \$90.1 million in fiscal year 1984 for 55,000 FMU-112/B and 25,000 FMU-139/B fuzes; however, in view of the congressional action on the fiscal year 1983 budget, the Air Force decided to include only \$27.9 million for 25,000 FMU-139/B or FMU-112/B fuzes.

The FMU-139/B fuze is being jointly developed by the Air Force and the Navy to eventually replace the FMU-112/B fuze. In fiscal year 1983, the Air Force requested \$8.3 million for procurement of FMU-112/B or FMU-139/B fuzes. During hearings before the House Committee on Appropriations, the Air Force testified that it would buy the FMU-139/B fuze if it was ready for production, otherwise it would buy additional quantities of the FMU-112/B fuze. The Committee approved the request, but stated that it expected the funds to be used only to procure the FMU-139/B fuze once production readiness was demonstrated.

The Air Force does have some older fuzes, such as the FMU-81 fuze, which could be used with air inflatable retarders but they are less effective and do not meet the performance requirements of the weapons or the delivery aircraft. While these older fuzes could be used for most applications, either the FMU-112/B or FMU-139/B fuze improves the effectiveness of the air inflatable retarders.

The fiscal year 1984 budget request also includes \$10.4 million for 15,240 FMU-81 fuzes. Although the FMU-81 fuze is very reliable, it may not be useful with the low-level laser guided bombs because of the impact angle on high-speed, low-level delivery. Other drawbacks to using the FMU-81 fuze, according to Air Force officials, are that it does not meet Air Force safety requirements and it contains a thermal battery making it subject to age-out. In view of these potential problems in using the FMU-81 fuzes with low-level laser guided bombs, we believe the Air Force should consider procuring FMU-112/B fuzes rather than FMU-81 fuzes.

Air Force representatives agreed with our analysis.

CONCLUSIONS

We believe (1) only part of the requests for three items should be provided because total program quantities will not be delivered during the funded delivery periods, (2) part of the request for MJU-7B flares is not needed because the flares can be procured at a lower price, (3) part of the request for 30-mm. training cartridges is not needed because the Air Force no longer plans to buy new containers, (4) part of the request for empty MK-82 bombs is not needed because the Air Force has adopted several cost reduction measures, (5) none of the request for procuring Bigeye bombs is needed until various issues are resolved, and (6) the Air Force has insufficient quantities of proper fuzes for bombs using retarders and low-level laser guidance kits which requires special attention.

RECOMMENDATIONS

We recommend that the House and Senate Committees on Appropriations reduce the Air Force's ammunition appropriation request by \$128 million for seven items shown in appendix IV. Also, the Committees should closely assess the requested mix of fuzes and retarders to determine whether more fuzes or fewer retarders should be procured in the future to balance inventories.

CHAPTER 6

AMMUNITION PLANT MODERNIZATION

AND EXPANSION PROGRAM

The Army's fiscal year 1984 request includes \$277.3 million for production base support of which \$205.1 million is for 14 projects to modernize and expand the ammunition production base. The Army plans to use the modernization and expansion funds for a variety of projects with about half for establishing facilities for binary chemical munitions.

After reviewing justification documents for all projects, we selected eight that appeared to have potential problems. These eight modernization and expansion projects represent \$123.4 million or 45 percent, of the total production base support request. We concluded that the requests for five projects should be reduced by \$100.8 million.

BINARY CHEMICAL MUNITIONS

The Army is requesting \$90.3 million for the following three chemical munitions facilities.

<u>Project number</u>	<u>Project</u>	<u>Amount requested</u>
		(millions)
5840079	QL chemical production facility	\$34.5
5840063	Bigeye bomb assembly equipment	30.6
5840103	DC chemical production facility (needed to produce DF)	<u>25.2</u>
Total		<u>\$90.3</u>

Until the Army chooses the locations of these projects, funding them in fiscal year 1984 is premature since the costs will vary according to location. Further, the developmental Bigeye bomb has technical problems and has undergone only limited testing.

The production facilities are in support of Navy and Air Force fiscal year 1984 requests for the Bigeye chemical bomb and the Army's fiscal year 1984 request for 155-mm. chemical projectiles. The Bigeye chemical bomb releases a lethal chemical called VX formed in a reaction between a chemical called QL and sulfur. The 155-mm. chemical projectile releases a lethal chemical called GB formed in a reaction between the chemicals DF and OPA. The chemical DC is used to produce DF.

The Army initially planned to build an integrated binary production facility at the Pine Bluff Arsenal, Pine Bluff, Arkansas, with capability to produce the necessary chemicals and to assemble the bombs and projectiles. The Army is constructing a DF production facility and a load, assemble, and pack facility for 155-mm. projectiles at the Pine Bluff Arsenal, but is currently considering alternatives for building Bigeye bomb production facilities elsewhere.

Project 5840079

This \$34.5 million project is to establish a facility to produce QL for the Bigeye bomb, although the Army has not yet decided where the facility will be located. It is considering (1) establishing a new facility at the Pine Bluff Arsenal, (2) building new facilities in the private sector, or (3) rehabilitating facilities at the Newport Army Ammunition Plant.

The Army's estimated cost of locating the facility at Pine Bluff is \$47.7 million. Private industry proposals range from \$30 to \$80 million. The cost and feasibility of rehabilitating facilities at the Newport Army Ammunition Plant is being determined under a \$1.9 million contract awarded in January 1983. In April 1982 the Army estimated rehabilitation would cost between \$29 and \$62 million.

Since the Army has not yet determined the facility's location, it is premature to fund the project in fiscal year 1984. Furthermore, considering Bigeye's development delays (see p. 25), we believe funding this project is even more questionable.

Project 5840063

This \$30.6 million project is for equipment to load and assemble the Bigeye bomb and package it for shipment. The equipment was originally planned for a building to be constructed at Pine Bluff Arsenal. According to Army representatives, though, the final decision on where the load, assemble, and pack facility will be located depends on where the Army decides to place the QL binary chemical production facility which is still unknown at this date.

The \$30.6 million budget request for this load, assemble, and pack facility was based on the Army's December 1982 estimate to rehabilitate a building at the Newport plant. According to an Army representative, the cost could range from \$24 to \$36 million. In our opinion, this project should not be funded

until (1) the final locations have been selected for both the QL production facility and the Bigeye bomb load, assembly, and pack facility, (2) the costs have been estimated, and (3) the Bigeye's technical problems are resolved.

Project 5840103

This \$25.2 million project is to establish a facility for producing the binary chemical DC. The facility under construction at the Pine Bluff Arsenal will use the DC to produce the chemical DF for the 155-mm. projectiles, but like the project discussed above, the Army has not yet decided where the DC facility will be located.

The Army's current alternatives are to (1) build or augment facilities at the Newport Army Ammunition Plant, (2) establish a facility in the private sector, or (3) rehabilitate a facility at the Army's Phosphate Development Works, Muscle Shoals, Alabama.

In January 1983, the Army requested the contractor who is evaluating the production of QL at rehabilitated Newport facilities to also evaluate the possibility of producing DC at these facilities. The evaluation will not be completed until January 1984. The Army plans to solicit proposals from private industry to participate in a three-part program to produce DC and to do an engineering study to determine the feasibility of rehabilitating existing DC production facilities at the Phosphate Development Works for QL production.

According to Army representatives, it would take between 12 and 18 months to add capability to the Newport Army Ammunition Plant, about 18 months to establish a facility in private industry, and about 12 months to rehabilitate the Phosphate Development Works facility.

The Army's plan, as of April 1983, was to compare private industry proposals and the results of the Newport plant and Phosphate Development Works evaluations in March 1984 to decide the location and the costs of DC production. Since the project's location has not yet been determined, we believe it is premature to fund it in fiscal year 1984.

Views of program officials

Army representatives said that the facilities are required in fiscal year 1984 to meet planned procurement schedules and that the studies for site locations will be completed during the second quarter of fiscal year 1984. However, Army criteria is that final designs should be completed and approved by the end of the first quarter of the fiscal year in which a project is to

be funded. While we can understand the Army's desire to move ahead with these programs, we believe the design criteria is sound and should be followed. Therefore, these projects are premature and should not be funded in fiscal year 1984.

8-INCH PROJECTILE METAL PARTS
FACILITY--PROJECT 5843215

This \$8.9 million project provides equipment to both the Scranton Army Ammunition Plant and Norris Industries to produce threaded base plates for the M509A1 8-inch projectile. These facilities presently produce the M509A1 base plate using a pinned base design. The Army has a product improvement program to change the base design to a threaded base to save \$15.00 per projectile by using a simpler assembly operation and by reducing the scrap rate.

The Army requested and received \$8.8 million for an identical project in fiscal year 1983. The project was later eliminated by the Army because of testing delays and the Army reallocated the funds for other purposes.

We believe the project should be reinstated in the fiscal year 1983 program, if the product improvement program is successful. This will permit quicker realization of cost savings and enhance earlier delivery of the 8-inch projectiles as discussed on page 6. If reinstated, there would be no need to provide funds for the project in fiscal year 1984.

Army representatives said that the Army would consider reinstating the project in fiscal year 1983 if the product improvement program proves successful. However, if other fiscal year 1983 projects will be displaced by this funding, then they will be moved to fiscal year 1984.

60/81-MM. INCREMENT CONTAINER
FACILITY--PROJECT 5843194

Because of a reduction in the planned fielding of the 60-mm. mortar system (see p. 9), the Army no longer needs this project for a 60/81-mm. increment container facility. Therefore, the budget request should be reduced by \$1.6 million.

Army representatives agreed that the \$1.6 million requested for this project is no longer required.

CONCLUSIONS

We believe (1) three projects for binary chemical munitions are not ready for funding in fiscal year 1984 because the Army has not decided where they will be located so their costs--varying according to location--are uncertain, (2) there is no need to provide funds for the 8-inch metal parts facility in

fiscal year 1984 if the Army were to reinstate it in the fiscal year 1983 program, and (3) there is no longer a need to provide funds for expanding the 60/81-mm. increment container production base because of requirements reductions.

RECOMMENDATIONS

We recommend that the House and Senate Committees on Appropriations

- Defer funding the \$34.5 million to establish a facility to produce the chemical QL for the Bigeye bomb until a decision is made on the location.
- Defer funding the \$30.6 million for equipment to load, assemble, and pack the Bigeye bomb until the locations for this facility and the QL production facility have been determined.
- Defer funding the \$25.2 million to establish a facility to produce the chemical DC for use in the 155-mm. projectiles until the location is decided.
- Deny the \$8.9 million request for facilities to produce threaded base plates for the 8-inch M509A1 projectile because funds were provided for these facilities in fiscal year 1983 and it should be reinstated in the fiscal year 1983 program.
- Deny the \$1.6 million request for the 60/81-mm. increment container facility since it is no longer required.

GAO-RECOMMENDED ADJUSTMENTS TO THE
ARMY'S AMMUNITION REQUEST

<u>Budget line number</u>	<u>Item description</u>	<u>Budget request</u>	<u>Recommended adjustments</u>	<u>Adjusted request</u>	<u>Remarks</u>
----- (millions) -----					
4	Cartridge, 5.56-mm., all types	\$ 74.7	\$ -	\$ 74.7	No comment.
5	Cartridge, 7.62-mm., all types	41.9	-8.7	33.2	Inventory will exceed requirements for blank NATO round. (See p. 10.)
6	Cartridge, .22 cal., all types	0.3	-0.3	-	Inventory will exceed requirements for match round. (See p. 11.)
7	Cartridge, .45 cal., all types	1.7	-	1.7	No comment.
8	Cartridge, 9-mm.	1.2	-1.2	-	Premature procurement. (See p. 17.)
10	Cartridge, .50 cal., all types	47.0	-12.3	34.7	Inventory will exceed requirements for three types of rounds. (See p. 11.)
12	Cartridge, 20-mm., all types	16.4	-3.2	13.2	Inventory will exceed requirements for both rounds. (See p. 13.)
13	Cartridge, 30-mm., all types	18.9	-	18.9	No comment.
14	Cartridge, 25-mm., all types	91.9	-21.6	70.3	Inventory will exceed requirements for TP-T round. (See p. 13.)
15	Cartridge, 40-mm., DIVADS, all types	109.3	-	109.3	No comment.
16	Cartridge, 40-mm., conven- tional, all types	1.8	-	1.8	No comment.

<u>Budget line number</u>	<u>Item description</u>	<u>Budget request</u>	<u>Recommended adjustments</u>	<u>Adjusted request</u>	<u>Remarks</u>
----- (millions) -----					
17	Cartridge, 60-mm., LMCMS, all types	\$20.2	8-20.2	\$ -	Inventory will exceed requirement. (See p. 9.)
20	Cartridge, 81-mm., conven- tional	22.4	-10.3	12.1	Inventory will exceed requirements for the illuminating round. (See p. 15.)
22	Cartridge, 4.2-inch, all types	77.2	-	77.2	No comment.
24	Cartridge, 105-mm., HEAT/TP, all types	34.1	-	34.1	No comment.
25	Cartridge, 105-mm., APPSDS-T/TP	123.0	-	123.0	No comment.
28	Projectile, 155-mm., HE, ICH	233.0	-	233.0	No comment.
29	Projectile, 155-mm., HE, RAP	45.0	-	45.0	No comment.
30	Projectile, 155-mm., ADAM/RAAMS	189.7	-	189.7	Requires special attention. (See p. 18.)
32	Chemical munitions	18.1	-18.1	-	Premature procurement. (See p. 16.)
33	Charge, pro- pelling, all types	117.9	-	117.9	No comment.
34	Cartridge, 165-mm., TP	3.0	-	3.0	No comment.

<u>Budget line number</u>	<u>Item description</u>	<u>Budget request</u>	<u>Recommended adjustments</u>	<u>Adjusted request</u>	<u>Remarks</u>
------(millions)-----					
35	Projectile, 8-inch, HE, ICM	\$201.0	\$-120.5	\$ 80.5	Production problems and backlog. (See p. 6.)
36	Projectile, 8-inch, HE, RAP	39.4	-	39.4	No comment.
37	Fuze, all types	95.8	-	95.8	No comment.
38	Primer, Percussion	1.0	-	1.0	No comment.
43	Demolition munitions	18.1	-	18.1	No comment.
44	Rocket, 66-mm.	7.5	-	7.5	No comment.
47	Hand grenades, all types	16.5	-6.4	10.1	Premature procurement. (See p. 16.)
48	Signals, all types	24.8	-	24.8	No comment.
49	Simulators, all types	25.7	-	25.7	No comment.
53	Stockpiling of explosives/ propellants	7.9	-	7.9	No comment.
	Total (note a)	<u>1,727.2</u>	<u>-222.8</u>	<u>1,504.4</u>	
	Total (note b)	<u>329.7</u>	<u>-</u>	<u>329.7</u>	
	Total	<u>\$2,056.9</u>	<u>\$-222.8</u>	<u>\$1,834.1</u>	

a/GAO reviewed requests for items totaling \$1,629 million under these budget lines.

b/Total for budget lines not reviewed by GAO.

GAO-RECOMMENDED ADJUSTMENTS
TO THE MARINE CORPS' AMMUNITION REQUEST

<u>Budget line number</u>	<u>Item description</u>	<u>Budget request</u>	<u>Recommended adjustments</u>	<u>Adjusted request</u>	<u>Remarks</u>
------(millions)-----					
2	Linear charges, all types	\$ 15.0	\$ -	\$ 15.0	No comment.
7	Small arms, all types	27.7	-0.6	27.1	Premature procurement of 9-mm. ball ammunition. (See p. 21.)
14	Machine gun, all types	50.3	-	50.3	No comment.
16	Mortar, all types	28.1	-	28.1	No comment.
18	Grenades, all types	9.5	-	9.5	No comment.
21	Rockets, all types	4.9	-	4.9	No comment.
29	Training, all types	7.7	-	7.7	No comment.
38	Projectiles, 155-mm., all types	194.0	-	194.0	ADAM/RAAMS require special attention. (See p. 21.)
43	Anti-armor, all types	5.0	-	5.0	No comment.
47	Projectiles, 8-inch, all types	59.7	-14.0	45.7	Propelling charges available from excess Army inventory. (See p. 20.)
49	Fuses, all types	36.3	-	36.3	No comment.
	Total (note a)	<u>438.2</u>	<u>-14.6</u>	<u>423.6</u>	
	Total (note b)	<u>46.1</u>	<u>-</u>	<u>46.1</u>	
	Total	<u>\$484.3</u>	<u>\$-14.6</u>	<u>\$469.7</u>	

a/Total requested for the budget lines. GAO reviewed this total.

b/Total for items in budget lines not reviewed by GAO.

GAO-RECOMMENDED ADJUSTMENTS
TO THE NAVY'S AMMUNITION REQUEST

<u>Budget line number</u>	<u>Item description</u>	<u>Budget request</u>	<u>Recommended adjustment</u>	<u>Adjusted request</u>	<u>Remarks</u>
----- (millions) -----					
218	General purpose bomb	\$82.5	\$ -	\$82.5	No comment.
219	Laser guided bomb kits	9.9	-	9.9	No comment.
221	Zuni rocket	9.3	-	9.3	No comment.
222	2.75-inch rocket	15.3	-12.6	2.7	MK66 rocket motor and LAU-61 launcher cannot be delivered during the program period. (See p. 22.)
224	Machine gun ammunition	32.1	-5.5	26.6	25-mm. API ammunition facility support costs are overstated. (See p. 24.)
225	Practice bombs	69.0	-15.7	53.3	MK76, BDU-20C, BDU-36, and Rockeye bombs cannot be delivered during the program period. (See p. 23.)
226	Cartridges and cartridge actuated devices	31.9	-4.5	27.4	JAU-22/B cartridge actuated initiators cannot be delivered during the program period; CCU-44/B inventory exceeds requirements if substitute items are used. (See pp. 24 and 25.)
227	Aircraft escape rockets/catapults	5.0	-	5.0	No comment.
231	Bigeye chemical weapon	21.5	-21.5	-	Premature procurement because various issues are unresolved. (See p. 25.)
232	Jet-assisted take off	12.0	-4.3	7.7	MK25 rocket motor cannot be delivered during the program period. (See p. 23.)

<u>Budget line item</u>	<u>Item description</u>	<u>Budget request</u>	<u>Recommended adjustment</u>	<u>Adjusted request</u>	<u>Remarks</u>
		------(millions)-----			
233	Gator	\$24.9	\$ -	\$24.9	No comment.
255	3-inch/50 caliber ammunition	7.8	-	7.8	No comment.
257	5 inch/54 caliber ammunition	72.4	-4.1	68.3	5-inch/54 caliber ammunition unit price inflated. (See p. 24.)
260	CIWS ammunition	24.6	-	24.6	No comment.
261	76-mm. ammunition	29.1	-	29.1	No comment.
306	Small arms and landing party ammunition	15.8	-	15.8	No comment.
307	Pyrotechnics and demolition material	25.0	-	25.0	No comment.
	Total (note a)	<u>\$488.1</u>	<u>\$-68.2</u>	<u>\$419.9</u>	
	Total (note b)	<u>119.1</u>	<u>-</u>	<u>119.1</u>	
	Total	<u>\$607.2</u>	<u>\$-68.2</u>	<u>\$539.0</u>	

a/Total requested for these budget lines. GAO reviewed requests for items totaling \$411.1 million under these budget lines.

b/Total for items in budget lines not reviewed by GAO.

GAO-RECOMMENDED ADJUSTMENTS TO THE
AIR FORCE'S AMMUNITION REQUEST

<u>Budget line number</u>	<u>Item description</u>	<u>Budget request</u>	<u>Recommended adjustments</u>	<u>Adjusted request</u>	<u>Remarks</u>
		----- (millions) -----			
7	Cartridge, 30-mm., training	\$96.1	\$-3.2	\$92.9	No longer plan to buy con- tainers. (See p. 30.)
8	Cartridge, 30-mm., HEI	26.7	-	26.7	No comment.
9	Cartridge, 30-mm., API	69.0	-	69.0	No comment.
10	Cartridge, 40-mm., HEI	30.6	-	30.6	No comment.
14	Cartridge, flare ALA-17	14.1	-	14.1	No comment.
15	Cartridge, chaff RR-170	8.6	-	8.6	No comment.
20	Engine Starter MXU-4A/A	5.9	-	5.9	No comment.
24	MK-82 bomb, empty	20.8	-1.0	19.8	Overstated cost estimate. (See p. 30.)
25	Airfield attack weapon	23.1	-	23.1	No comment.
26	BSU-49 inflatable retarder	65.5	-	65.5	No comment.
27	BSU-50 inflatable retarder	18.0	-4.1	13.9	Premature buy. (See p. 29.)
30	Laser bomb guidance kit	267.8	-82.5	185.3	Premature buy. (See p. 28.)

APPENDIX IV

APPENDIX IV

<u>Budget line number</u>	<u>Item description</u>	<u>Budget request</u>	<u>Recommended adjustments</u>	<u>Adjusted request</u>	<u>Remarks</u>
----- (millions) -----					
31	GBU-15 guided weapon	\$ 50.2	\$ -7.6	\$ 42.6	Premature buy. (See p. 28.)
32	Bomb, practice BDU-33	22.5	-	22.5	No comment.
36	CBU-89 TMD/GATOR	154.8	-	154.8	No comment.
37	CBU-87 combined effects munition	90.0	-	90.0	No comment.
38	Bigeye bomb	21.7	-21.7	-	Premature procurement. (See p. 31.)
43	Flare, IR MJU-7B	15.6	-7.9	7.7	Overstated cost estimate. (See p. 29.)
47	Flare, IR M206 cartridge	7.4	-	7.0	No comment.
53	Marker, LUU-10	4.5	-	4.5	No comment.
62	Fuze, FMU-81	10.4	-	10.4	No comment.
63	Fuze, PMU-112/ PMU-139	27.9	-	27.9	No comment.
	Total (note a)	<u>1,051.2</u>	<u>-128.0</u>	<u>923.2</u>	
	Total (note b)	<u>130.3</u>	<u>-</u>	<u>130.3</u>	
	Total	<u>\$1,181.5</u>	<u>\$-128.0</u>	<u>\$1,053.5</u>	

a/Total requested for these budget lines. GAO reviewed requests for items totaling \$1,029.5 million under these budget lines.

b/Total for items in budget lines not reviewed by GAO.

GAO-RECOMMENDED ADJUSTMENTS TO THE ARMY'S
MODERNIZATION AND EXPANSION PROGRAM REQUEST

<u>Project Number</u>	<u>Description</u>	<u>Budget Request</u>	<u>Recommended adjustments</u>	<u>Adjusted request</u>	<u>Remarks</u>
------(millions)-----					
5840063	Initial production facility to fill, load, assemble & pack the BLU-80, VX-2 Bigeye binary chemical bomb	\$30.6	\$-30.6	\$ -	Location and cost are uncertain. (See p. 34.)
5840079	Initial production facility for binary chemical (QL)	34.5	-34.5	-	Location and cost are uncertain. (See p. 34.)
5840103	Initial production facility for binary chemical (DC)	25.2	-25.2		Location and cost are uncertain. (See p. 35.)
5842632	Nitroguanidine main ammunition plant	8.7	-	8.7	No comment.
5842855	Expansion of production facilities for 25-mm. GAU 12/U API ammunition in commercial industry.	12.1	-	12.1	No comment.
5843215	Modernization of production facility for base metal parts at Scranton Army Ammunition Plant & commercial industry	8.9	-8.9	-	Funding provided in fiscal year 1983 (See p. 36.)
5843906	Modernization of production facility for nitric acid at Holston Army Ammunition Plant	1.8	-	1.8	No comment.
5843194	Expansion of production on facility for 60-mm. & 81-mm. increment containers in commercial industry	1.6	-1.6	-	Reduced requirements for 60-mm. ammunition. (See p. 35.)
	Total (note a)	123.4	-100.8	22.6	
	Total (note b)	81.7	-	81.7	
	Total	\$205.1	\$-100.8	\$104.3	

a/Total for projects reviewed by GAO.

b/Total for projects not reviewed by GAO.

(947506)