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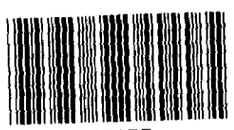
Report to Congressional Requesters

November 1988

DEFENSE BUDGET

Potential Reductions to Missile Procurement Budgets



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General Accounting Office
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National Security and
International Affairs Division

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November 18, 1988

The Honorable John C. Stennis
Chairman, Committee on Appropriations
United States Senate

The Honorable Bill Chappell, Jr.
Chairman, Subcommittee on Defense
Committee on Appropriations
House of Representatives

As requested, we reviewed the justification for the Army's $2.1 billion fiscal year 1989 procurement budget request for 10 missile systems: Hellfire, TOW-2, Army Tactical Missile System, Chaparral, Multiple Launch Rocket System, Pershing, Pedestal-Mounted Stinger, Patriot, Stinger, and Line-of-Sight Forward-Heavy. We also reviewed other portions of the fiscal year 1989 budgets, including (1) the Army's $254 million request to procure missile spares and repair parts, (2) the Marine Corps' $173 million request to procure the TOW-2 and Stinger missile systems, and (3) the Navy's $9 million request to procure the Hellfire missile system. In addition, we examined selected aspects of prior-year missile budgets to identify potential reductions.

In May and June 1988, we presented the preliminary results of our analyses to your offices for use during Committee markups. The results of our evaluation are summarized below and discussed in more detail in appendix I.

We identified $216.3 million in potential reductions from the budget requests for 8 of the 10 missile systems and for spares and repair parts—$95.5 million from the fiscal year 1989 budget request, $94.6 million from the fiscal year 1988 budget, and $26.2 million from the fiscal year 1987 budget. These reductions primarily resulted from (1) our recalculations using more current contract information as well as revised requirements and estimates and (2) requests for procurement funds for fiscal year 1989 that could be deferred to future years.

As you requested, we did not obtain agency comments on this report. However, we discussed its contents with officials from the Office of the Secretary of Defense and the Department of Army and have incorporated their comments where appropriate. Army program officials agreed that certain funds might not be needed for their originally budgeted purposes. However, in many instances they did not believe that reductions

should be made because the funds could be used for other purposes. In addition, they did not agree with the deferral of fiscal year 1989 procurement funds to future years. The objectives, scope, and methodology of our work are described in appendix II.

We are sending copies of the report to various congressional committees; the Secretaries of Defense, the Army, and the Navy; the Commandant of the Marine Corps; the Director, Office of Management and Budget; and other interested parties.

This report was prepared under the direction of Richard Davis, Senior Associate Director. Other major contributors are listed in appendix III.

Frank C. Conahan
Assistant Comptroller General

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Abbreviations

GAO	General Accounting Office
TOW	Tube-Launched, Optically-Tracked, Wire-Guided

Potential Reductions to Missile Programs

We reviewed the Army, Navy, and Marine Corps budgets for selected missile systems and the Army budget for spares and repair parts, and identified potential budget reductions of $216.3 million—$95.5 million from the fiscal year 1989 budget request, $94.6 million from the fiscal year 1988 budget, and $26.2 million from the fiscal year 1987 budget. Table I.1 shows the potential reductions for each item by fiscal year.

Table I.1: Summary of Potential Reductions to Missile Budgets

Dollars in millions

	Fiscal year			
Item	**1989**	**1988**	**1987**	**Total**
Hellfire	$32.5	$35.0	$0	**$67.5**
TOW-2	28.4	0	4.7	**33.1**
Army Tactical Missile System	11.8	0	0	**11.8**
Chaparral	0	15.8	0	**15.8**
Multiple Launch Rocket System	5.2	0	0	**5.2**
Pershing	0	0	5.0	**5.0**
Pedestal-Mounted Stinger	17.6	0	0	**17.6**
Patriot	0	0	16.5	**16.5**
Spares and repair parts	0	43.8	0	**43.8**
Total	**$95.5**	**$94.6**	**$26.2**	**$216.3**

Hellfire Missile System

Hellfire is a laser-guided, air-to-ground antiarmor weapon system consisting of a missile and ground support equipment. The missile homes in on laser energy reflected from a target that has been illuminated by a laser designator. Hellfire is deployed on the Army AH-64 Apache helicopter and the Marine Corps Cobra helicopter.

Hellfire production began in fiscal year 1982 with one contractor producing all missiles; in fiscal year 1983 a second producer was qualified. Competition began in fiscal year 1984, and each contractor was guaranteed (1) 5 years of dual-source procurement to recover tooling and test equipment costs and (2) at least 25 percent of each production buy.

The Army and Navy requested $189.5 million for fiscal year 1989 to procure 5,200 Hellfire missiles and associated ground support equipment—the Army requested $180.5 million for 5,000 missiles and equipment, and the Navy requested $9 million for 200 missiles and equipment. We believe that the combined requests could be reduced by up to $32.5 million and that the Army's fiscal year 1988 budget could be reduced by $35 million.

Fiscal Year 1989 Budget Request

The fiscal year 1989 budget request for Hellfire can be reduced by up to $32.5 million if the combined Army and Navy quantity is limited to 3,500 missiles. We believe that the quantity can be limited because the Army is planning a warhead lethality improvement that, according to project production and procurement officials, cannot be incorporated into missile production until the latter half or quarter of the fiscal year 1989 procurement program. Slowing down production will result in buying fewer unimproved missiles. In addition, the reduced quantity would guarantee the high bidder a minimum sustaining rate and the low bidder a larger amount if the award were divided on a 35-percent/65-percent basis—an option the Army is already considering. The low bidder could produce Hellfire at the minimum sustaining rate until the improvement can be incorporated and then increase production of the improved missile. Additional details regarding this subject are classified.

The Deputy Project Manager believes that the Army should procure 5,000 missiles if the improvement can be incorporated before the fiscal year 1989 procurement program is completed. He believes that reducing the procurement quantity will jeopardize competition and increase unit costs. While procuring 3,500 missiles will ensure competition, unit costs will probably increase. But reducing the quantity will ensure that fewer unimproved missiles will be bought. In addition, any unit cost increase would be somewhat offset by lower retrofit costs in later years.

Fiscal Year 1988 Budget

We believe that the fiscal year 1988 budget for Hellfire could be reduced by $35 million. The Appropriations Committees provided $35 million more than the Army requested to purchase an additional 1,000 Hellfire missiles. However, the fiscal year 1988 contracts did not include the additional 1,000 missiles. According to a project procurement official, the Army plans to include an option for the additional 1,000 missiles in the fiscal year 1989 production contract, but according to a Department of Army program analyst, final decisions have not been made as to whether the funds will be used to purchase Hellfire missiles. We believe that the fiscal year 1988 budget could be reduced by $35 million for the same reasons that we believe the fiscal year 1989 request could be reduced.

TOW-2 Missile System

The Tube-Launched, Optically-Tracked, Wire-Guided (TOW) missile system is a heavy, antitank/assault weapon system consisting of a missile, a launcher, and ground support equipment. The missile is connected to its launcher by wire. After firing, the gunner keeps the sight's crosshairs

on the target, and the launcher automatically transmits course corrections through the wire to the missile. TOW can be employed from a ground mount or from vehicles, including the Bradley Fighting Vehicle, the High-Mobility Multipurpose Wheeled Vehicle, and the Cobra Helicopter. The Army is currently producing and fielding the TOW-2A system—an improved TOW-2 missile.

The Army and Marine Corps requested $172.1 million for fiscal year 1989 to procure 14,854 TOW-2A missiles and associated ground support equipment—$143.7 million for 12,000 Army missiles and $28.4 million for 2,854 Marine Corps missiles. We believe that the combined fiscal year 1989 request could be reduced by $28.4 million and that the Army's fiscal year 1987 budget could be reduced by $4.7 million.

Fiscal Year 1989 Budget Request

The combined Army and Marine Corps fiscal year 1989 TOW-2 budget requests could be reduced by $28.4 million if production is limited to the contractor's minimum sustaining rate of 12,000 missiles.[1] We believe that production could be limited because (1) the TOW-2A is currently being procured as an interim measure to counter the Soviet reactive armor threat and (2) the TOW-2B, which will provide greater capability against more advanced threats, will begin production in April 1991. In addition, the Army is planning to retrofit some TOW missiles already fielded. Additional details regarding limiting TOW-2A production are classified.

The Project Manager believes that the Army needs the requested quantity because (1) the total quantity will help ensure a stable production base; (2) the Marine Corps quantity and funding fluctuate, endangering both the stability of the production base and the minimum sustaining rate; and (3) the quantity is needed to maintain an adequate inventory. However, the contractor's minimum sustaining rate is 12,000 missiles; therefore, the reduced quantity will ensure a stable production base. Also, since the Army plans to retrofit TOW missiles that are already fielded, a reduction of 2,854 missiles will only slightly affect the total TOW inventory.

Fiscal Year 1987 Budget

The Army's fiscal year 1987 TOW-2 budget could be reduced by $4.7 million because (1) TOW program management officials informed us that the

[1]The potential reduction assumes that the unit price would remain constant, but actual unit prices for fewer missiles could vary.

fiscal year 1987 program can be accomplished without the funds and (2) the funds have not been obligated. The Department of the Army withdrew $7.5 million from the fiscal year 1987 TOW-2 budget ($4.7 million in missile procurement funds and $2.8 million in missile modification funds) as contingency funds for Gramm-Rudman-Hollings budget reductions, but the reductions did not occur. The Army recently returned the $2.8 million, and TOW program management officials said that the funds will be used as originally planned, for day-sight modification kits. The remaining $4.7 million is available for reduction.

Army Tactical Missile System

The Army Tactical Missile System is designed to be a long-range missile mounted on a modified Multiple Launch Rocket System launcher. The system is designed to engage and destroy targets beyond the range of existing cannons, rockets, and the Lance missile system. It will be used to attack enemy surface-to-surface missile sites, air defense systems, and other high value targets, and it is intended to disrupt second tier ground forces before they can reinforce the front line of battle.

The Army requested $80.6 million for fiscal year 1989 to procure 66 missiles and provide advanced procurement funding for future production. The Army's fiscal year 1989 budget request for the Army Tactical Missile System could be reduced by about $11.8 million: $6 million requested as a contingency fund for potential cost increases resulting from government-caused schedule and technical problems and $5.8 million of $7.6 million requested for engineering changes to improve missile performance and program efficiency.

The Project Manager stated that he did not expect the program to experience major problems and that the $6 million requested for schedule and technical problems was requested as insurance only. He also stated that the program should be considered low risk because (1) virtually no new technology will be developed and (2) the production line will use the same machine tools and personnel used to produce the developmental missiles. Since the Project Manager considers the program low risk and no schedule and technical problems have been identified, we believe that the budget could be reduced by the $6 million.

The Army budgeted $7.6 million as a contingency fund for unidentified and undefined engineering changes in fiscal year 1989. However, the $7.6 million is about 17 percent of the maximum contract amount. The Project Manager agreed that the $7.6 million request was excessive and reduced the estimate to $1.8 million. Therefore, we believe that the

budget could be reduced by the remaining $5.8 million. The Project Manager said that the $5.8 million could be used for other program requirements such as fielding team support, technical publications, and flight test support. He had neglected to identify these other requirements during our review.

Chaparral Missile System

Chaparral is a short-range air defense missile system that was deployed in 1969. It consists of a tracked carrier vehicle, launch station, and missiles. Chaparral provides short-range air defense for infantry, mechanized infantry and armored divisions, and other critical assets such as airfields. Since its initial deployment, the Army has modified Chaparral to extend its target acquisition range, survivability, lethality, and all weather capability. One modification—adding a new rosette scan seeker guidance section—is in progress to add new capability against advanced countermeasures and increase the seeker's acquisition range.

The Army requested $57.9 million for fiscal year 1989 to buy 368 Chaparral missiles with the rosette scan seeker and $8.1 million for Chaparral modifications—including $2.9 million for 18 kits to modify Chaparral missiles with the rosette scan seeker. However, in April 1988 the Army amended its budget to show requested quantities of 79 missiles with the rosette scan seeker and 41 modification kits. We did not identify any specific potential reduction for fiscal year 1989 but believe that the fiscal year 1988 budget for Chaparral could be reduced by about $15.8 million because the funds are not required to accomplish the program. The Deputy Program Manager agreed that the funds are not required, but the project office plans to use the funds to procure more seekers and missiles in fiscal years 1988 and 1989.

As of May 1988, the project office had $97.2 million for the rosette scan seeker program, including $35.7 million from fiscal year 1986 missile funds, $31.8 million from fiscal year 1987 missile funds, $16.2 million from fiscal year 1988 missile funds, and $13.5 million from fiscal year 1988 modification funds. The project office planned to use $71.45 million to award the initial rosette scan seeker production contract in August 1988 and $13.3 million for facilities for a second source producer, but it did not have a specific use for the remaining amount of about $12.5 million. The Deputy Project Manager stated that the project office plans to use any remaining funds to support the fiscal year 1989 missile procurement.

In addition, the fiscal year 1988 budget can be reduced by $3.3 million because of a reduction in estimated prime contractor start-up costs. The start-up cost reduction occurred because quantities to be purchased decreased in fiscal year 1988. The Deputy Project Manager told us that the project office planned to use these funds to purchase more missiles in either fiscal year 1988 or 1989.

Multiple Launch Rocket System

The Multiple Launch Rocket System has a self-propelled rocket launcher designed to provide a high volume of fire in a short period of time. It is mounted on a derivative of the Bradley Fighting Vehicle, and it requires three crew members. The system is used in counter fire, air defense suppression, and armor defeating roles.

The Army requested $406.8 million for fiscal year 1989 for the Multiple Launch Rocket System—$386 million to procure 48,000 rockets, 44 launchers, and ground support equipment and $20.8 million for advance materials for a proposed multiyear contract. Fiscal year 1989 is the last year of the current multiyear contract as well as the first year of a proposed follow-on multiyear contract. Of the 48,000 rockets, 30,510 will be bought under the terms of the current multiyear contract while the remaining 17,490 will be bought in the first year of the follow-on multiyear contract.

The fiscal year 1989 budget request could be reduced by about $5.2 million based on lower multiyear unit cost estimates for the 48,000 rockets. We believe that additional savings may be possible after the contract is negotiated, but the savings cannot be quantified until the contractor's proposal is received.

The Army's request is based on awarding a follow-on multiyear contract in fiscal year 1989. It includes an average tactical round unit price of $4,836 for 48,000 rockets. However, a more recent Army estimate using current economic price adjustment factors shows an average unit price of $4,727. Based on the newer estimate, the budget could be reduced by $5.2 million. A project program management official agreed with our computation.

In addition, the fiscal year 1989 funding may be further reduced after the contractor's proposal is received and the contract is negotiated. The currently estimated average unit price of $4,727 per rocket is based on buying (1) 30,510 rockets at $4,361 each under the existing multiyear

contract and (2) 17,490 rockets at $5,365 each under the follow-on multiyear contract—a difference of more than $1,000 per rocket. Project management officials agreed that a lower unit cost may be negotiated for the follow-on contract; however, because fewer rockets will be produced under the new contract, unit prices may not be as low as current prices.

As indicated above, the Army requested $20.8 million for advance materials, but if the multiyear contract is not approved these materials will not be needed, and the budget could be reduced by a net amount of $14.5 million. The multiyear justification analysis, which compares the funding requirements for the multiyear contract to annual buys, indicates that an annual contract in fiscal year 1989 would require an additional $6.3 million to cover the higher hardware cost. Therefore, the remaining $14.5 million would not be needed.

Pershing Missile System

The Pershing II is a mobile, nuclear missile system designed to provide a significant increase in effectiveness and a decrease in unwanted collateral damage over its predecessor, the Pershing IA. Its primary mission is to provide nuclear fire support. However, as a result of the Intermediate-Range Nuclear Force Treaty, the program will be terminated.

The Army requested about $1 million for fiscal year 1989 to maintain operational readiness and system safety until the Pershing program is phased out. We did not identify specific reductions to the fiscal year 1989 program, but the fiscal year 1987 budget could be reduced by $5 million because it exceeds program needs.

The Army budgeted $5 million in fiscal year 1987 procurement funds for Treaty support planning efforts and also submitted a reprogramming action for operation and maintenance funds for the same funding requirement. Program management officials agreed that the $5 million was not needed for the Pershing program and said that the budget could be reduced by that amount if the reprogramming request for operation and maintenance funds is approved. The reprogramming action was approved in July 1988. Therefore, the fiscal year 1987 Pershing budget could be reduced by the $5 million.

Pedestal-Mounted Stinger Missile System

The Pedestal-Mounted Stinger system is a transportable surface-to-air missile/gun weapon system mounted on a high-mobility multipurpose wheeled vehicle. It is operated by a two-man crew and is intended for use against low-altitude enemy aircraft. The system uses the standard vehicle-mounted launcher and will fire all versions of the Stinger missile.

The Army requested $92.2 million for fiscal year 1989 to buy 100 Pedestal-Mounted Stinger systems. We believe the request could be reduced by about $17.6 million if procurement of 30 systems, excluding launchers, is deferred. This reduction is possible because the Army's existing contract includes a fiscal year 1989 option for 70 systems (30 less than requested) and the contract for launchers, which are procured separately, has not been awarded.

The Army originally planned to buy 100 systems in fiscal year 1989—70 under the option to the existing contract and another 30 competitively. However, the Army no longer plans to initiate competition in fiscal year 1989. Instead, it plans to ask the sole source contractor to submit a proposal for 100 systems in fiscal year 1989 and additional systems for fiscal years 1990 and 1991. The Army expected to receive the proposal in October 1988, and it hopes to achieve a lower unit price in each of those years. In addition, the Army is planning to award a multiyear contract in fiscal year 1992, and it expects to achieve a significantly lower unit cost. Therefore, we believe that it is prudent to consider deferring the procurement of the 30 systems requested in fiscal year 1989 to take advantage of multiyear savings unless (1) the new proposal for 100 systems provides significantly lower unit costs, or (2) operational readiness would be diminished to an unacceptable level. If procurement of the 30 systems is deferred, the fiscal year 1989 budget could be reduced by $17.6 million.

Patriot Missile System

The Patriot is a surface-to-air missile capable of engaging multiple high-performance aircraft. The system consists of a radar, ground support equipment, missile launchers, and missiles. It is intended for use primarily against enemy aircraft flying at high to medium altitudes and is being deployed to protect ground forces and high-value assets such as air bases in the rear combat zone. It will replace the Nike Hercules system and partially replace the Hawk system.

The Army requested $818.7 million for fiscal year 1989 to procure 815 Patriot missiles, associated ground support equipment, and advance

materials. We did not identify specific potential reductions in the fiscal year 1989 request, but the fiscal year 1987 budget could be reduced.

The Patriot project office recently received about $16.5 million in fiscal year 1987 funds that had previously been withheld as a deficit reduction contingency. Since these funds had been withheld, the project office planned to accomplish the fiscal year 1987 program without them. Therefore, the budget could be reduced by $16.5 million.

Project management officials stated, however, that the $16.5 million was part of the fiscal year 1987 program prior to the deficit reduction withholding action, and they believe it is unfair to consider the funds subject to reduction now that they have been released to the project office. Nevertheless, the funding was designated to satisfy the budget reduction, and a fiscal year 1987 program can be accomplished without the funding.

Spares and Repair Parts

The Army Missile Command purchases spares and repair parts for its missile systems as well as for certain Army aircraft and tracked combat vehicles. It receives funding from the Missile Procurement, Army; Aircraft Procurement, Army; Procurement of Weapons and Tracked Combat Vehicles, Army; and Other Procurement, Army, appropriations.

Spares and repair parts fall into four categories—initial provisions, replenishment, war reserve, and reimbursables. Initial provisions are spares required to support systems when they are initially fielded; replenishment spares are required to resupply initial stocks or to increase stocks for fielded items; war reserve spares are those critical for maintaining and sustaining combat operations until resupply can be accomplished; and reimbursable spares are those for which the Missile Command is reimbursed from foreign military sales and other Department of Defense customers.

The Army requested $254.3 million for fiscal year 1989 to procure missile spares and repair parts. We did not identify any specific potential for reduction for fiscal year 1989, but the fiscal year 1988 budget of $354.8 million could be reduced by $43.8 million.

The Army's obligation plan showed that only $291.6 million would be obligated in fiscal year 1988 and that an additional $18 million was being held for a contingency associated with the amounts planned for obligation. We initially concluded that the budget could be reduced by

the remaining $45.2 million. However, the Army actually obligated $293 million. Using this figure, the potential reduction would be $43.8 million.

As of May 1988, the Missile Command's actual obligations were $41.6 million less than projected in the obligation plan, and there were some obstacles toward reaching the projected amount. For example, in order to obligate the planned amount for fiscal year 1988, $130.7 million, or about 45 percent of the funds, had to be obligated during the last 4 months of the fiscal year.

On October 5, 1988, Missile Command Logistics Center officials told us that most of the funds for missile spares were obligated during fiscal year 1988. A Logistics Center official also said that the remaining funds for other spares accounts are needed to satisfy valid requirements. In addition, they said that reductions to the fiscal year 1988 program would cause an increase of fiscal year 1989 requirements because those requirements were computed based on the funds available in fiscal year 1988. According to the officials, carryover of funds from one fiscal year to the next is routine and is a vital aspect of the spares and repair parts program.

We agree that carryovers have become a common practice with the Missile Command. For example, it has carried unobligated funding for spares over to the next fiscal year for each of the last 2 years—$31.3 million in fiscal year 1987 and $32.3 million in fiscal year 1986. If this historical trend continues, the Army's fiscal year 1988 spares budget may be overstated by about $43.8 million. Further, a reduction in the fiscal year 1988 program would not necessarily result in an increase in fiscal year 1989 requirements. If the Army follows its routine practice of carrying over spares funding from one fiscal year to the next, the fiscal year 1989 spares request may contain funds planned to be carried over into fiscal year 1990.

Objectives, Scope, and Methodology

Our objectives were (1) to review the Defense Department's fiscal year 1989 budget requests for selected Army missile systems to determine whether the missile programs should be funded in the amounts requested and (2) to examine selected aspects of prior-year budgets for the selected items to determine whether unused funds could be reduced.

We examined selected aspects of the budget justifications for 10 Army missile systems: Hellfire, TOW-2, Army Tactical Missile System, Chaparral, Multiple Launch Rocket System, Pershing, Pedestal-Mounted Stinger, Patriot, Stinger, and Line-of-Sight Forward-Heavy. We also examined the Army's budget request justification for spares and repair parts. In addition, we reviewed selected aspects of the Marine Corps request for funding TOW-2 and Stinger and the Navy request for funding Hellfire. Our review identified potential reductions to the budgets for all items except Stinger and Line-of-Sight Forward-Heavy.

In evaluating the budget requests, we (1) reviewed production plans, delivery plans, improvement plans, and effectiveness analyses to determine if planned production is warranted; (2) examined test reports and missile delivery status to determine the effect of production problems on missile delivery; and (3) examined the requirements for selected missiles and support equipment. In addition, we reviewed selected aspects of missile costs by examining the services' methodology in arriving at those costs, determining the most recently experienced costs, and examining contractor proposal costs. Also, for selected systems, we reviewed the status of obligations for previously appropriated funds and the plans to obligate these funds. Because of limited time, we did not examine each of these aspects for all weapon systems. Rather, we tailored our review of each system to the aspects that appeared to have the most potential for reduction.

We performed our work at the U.S. Army Missile Command, Huntsville, Alabama, during the period February through June 1988. Our scope of work and analyses were more limited than anticipated because detailed budget requests were not provided until March 17, 1988. As a result of the limited time, we relied substantially on testimonial evidence. However, to the extent practicable, we corroborated this evidence with other sources or verified the evidence a second time with the same source. We conducted our work in accordance with generally accepted government auditing standards.

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