

CBO TESTIMONY

**Statement of
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Procurement Costs to Maintain Today's Military Forces

**before the
Subcommittee on Military Procurement
Committee on Armed Services
U.S. House of Representatives**

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Mr. Chairman and Members of the Subcommittee, I am pleased to appear before you today to discuss the Congressional Budget Office's (CBO's) steady-state estimates of procurement costs for military equipment and systems. Those estimates appear in CBO's recently released study *Budgeting for Defense: Maintaining Today's Forces* (September 2000). Before I discuss CBO's estimates, however, I would like to emphasize a few points.

A new Administration will be coming into office next year and will begin its term with another Quadrennial Defense Review. The new Congress will be focusing its own review of the new Administration's plans on three key questions:

- Is the new Administration's national security strategy an appropriate response to likely threats to U.S. security?
- Will the military forces and modernization programs that the Department of Defense (DoD) plans adequately support that strategy?
- Will the budget that the Administration proposes be sufficient to maintain those forces and carry out those plans?

All three of those questions are appropriate for evaluating the nation's military forces and the funding that is necessary to maintain them, but the testimony I will present today will provide a context for addressing only the last issue. In particular, the testimony will focus on what procuring replacement equipment for today's forces would cost. While that question is important, developing appropriate budgets for defense also depends on addressing the far-reaching questions about threats and strategy and forces.

THREATS

The U.S. military today has no peer. In number, certain Russian and Chinese conventional (mostly nonnuclear) weapons and forces may equal and, in a few cases, exceed those of the United States. But the capabilities of the U.S. military far surpass those of other nations once such factors as training, readiness for combat, sophistication of weapons, and availability of linked communications and intelligence networks are taken into account.

Nevertheless, certain regional powers around the world are antagonistic to U.S. interests and pose threats that are the focus of much of today's defense planning. Iran, Iraq, and North Korea are the nations of most concern, although they have substantially

fewer forces than either Russia or China, let alone the United States. Their forces are also no match for U.S. troops and equipment in many of the other dimensions of combat capability noted above.

But most worrisome, according to the intelligence community and many military leaders, may be unconventional threats—for example, nuclear, biological, and chemical (NBC) weapons, many of which have enormous destructive capacity. The regional powers of concern to U.S. analysts may be developing or expanding their stocks of such weapons. Moreover, threats to use unconventional weapons could come from individuals or hostile groups as well as other nation states. Adversaries could also target the Internet and seek to disrupt commercial and military computer networks, on which the United States and DoD increasingly rely. Such threats are difficult to counter, in part because most current U.S. weapons are focused on more conventional threats. Moreover, the nation's superior conventional forces and weapons would be of limited value in a regional war if an enemy's threat of retaliation with NBC weapons deterred the United States from using its conventional arms.

STRATEGY

The current national security strategy rests on a policy of engagement in the world's affairs, not only during crises but in peacetime as well. Consequently, the strategy directs the U.S. military to be ready to undertake activities ranging from limited humanitarian missions to full military campaigns against capable, well-equipped regional adversaries.

The makeup of today's combat forces is driven by a goal of being ready to fight two regional campaigns occurring at about the same time. That objective determines the size and structure of most types of forces. But the current national security strategy has also expanded the U.S. military's peacetime activities—referred to in CBO's study as peace operations—compared with those of past periods. (Peace operations include peacekeeping, humanitarian assistance, hostage rescue, and peace enforcement.) That part of the strategy has affected forces as well, adding to the military's operating costs in peacetime and increasing the demands on military personnel—not only from additional activities but also from the greater need for forces specifically associated with peace missions, such as civil affairs personnel and military police.

Another factor that affects U.S. military actions and budgets is the desire of decisionmakers to minimize casualties, a desire that has increased over the past several decades. That attitude may affect the nature of the forces military leaders use—for

example, air rather than ground forces. It may also lead to increases in the number of forces that DoD maintains, because, the military argues, greater U.S. superiority can shorten wars and reduce U.S. casualties.

In addition to meeting current demands, the national security strategy directs that the services prepare for the demands of the future. The plans that DoD develops for that purpose attempt to consider the evolution of military technology, the proliferation of more-sophisticated weapons—including weapons of mass destruction and the means to deliver them—and the possible emergence in the future of a nation with military capabilities that rival those of the United States. The military has used those considerations to justify its plans for modernization and its development and procurement of new weapons.

PROCUREMENT IN THE 1990s

Throughout most of the 1990s, the military services did not purchase replacements for many of the items in their inventories of equipment. For other items, the quantities procured were significantly reduced. Overall, procurement budgets fell by about one-third from their Cold War levels.

As a result of the reduction in purchases, many items in the current inventory are considerably older today, on average, than comparable items were in the 1970s and 1980s. Still, U.S. forces have a significant technical edge over potential adversaries. But aging equipment can bring problems: higher maintenance costs; greater downtime; and, sometimes, an inability to maintain electronics that have become obsolete in the civilian economy.

CBO'S ESTIMATE OF A SUSTAINING BUDGET FOR DEFENSE

My testimony today will focus on the likely costs to procure replacement equipment for today's forces. In its new study, CBO estimates the steady-state cost to support and maintain the United States' current military forces. One major element of that estimate—which totals \$340 billion a year (in 2000 dollars)—is CBO's calculation of the cost of procurement: \$90 billion a year. That estimate assumes a one-for-one replacement of every item in DoD's inventory at an annual rate consistent with the item's service life. In instances in which no replacement item is planned, CBO assumed that the current model would be bought.

CBO's \$90 billion estimate is larger than recent budgets. The Congress appropriated \$53 billion for procurement in fiscal year 2000 and \$62 billion this year for fiscal year 2001. But CBO's estimate is about 15 percent below the average for the 1980s—a period when DoD was buying large quantities of many systems. I would like to spend some time explaining to you how CBO developed this estimate—what it is and what it is not.

CBO's Estimate for Major Systems

CBO's estimate of a sustaining budget for procurement was constructed in two parts: (1) an estimate for major weapon systems such as aircraft, ships, and tanks and (2) an estimate for all other equipment, for which DoD provides less detail. The latter covers many categories of items, including small arms and ammunition, communications equipment, cars and some other vehicles, protective gear for individuals, and engineering equipment.

Estimating Method. In calculating sustaining funding for procuring DoD's major systems, CBO began with the size of the inventory of equipment required for today's forces. Relying on established or implicit service lives (generally, those that the military uses in its projections), it determined the annual purchases needed to maintain that inventory, adjusting those numbers upward when necessary to account for losses through (peacetime) attrition because of accidents or other causes. To arrive at the annual procurement spending for each item, CBO multiplied the quantity by CBO's estimate of the cost of the replacement system.

In Table 1, the first two columns provide historical perspective. They show average annual purchases—first for 1975 through 1990 and then for the decade of the 1990s. The third column shows CBO's calculations of the numbers of each item required to maintain inventories at current levels. CBO used those numbers to derive spending estimates. The final column shows the purchases that would be needed had CBO used the shorter service lives that reflected historical patterns.

If, every year, DoD purchased all of its systems in the quantities CBO calculated, eventually, the equipment in its inventories would evenly span the range of ages—from newly delivered items to those ready for retirement. With such a distribution, the quantities retired would be steady, instead of varying from year to year as they do now. Thus, the age of an inventory (the average age for all systems of a particular type) would come to equal half the equipment's service life.

Uncertainty and Sensitivity of the Estimate. CBO based its estimate of a sustaining budget for procuring major systems on a number of assumptions, all of which are uncertain to various degrees. Those assumptions are about projected inventories, estimates of the ages of equipment at the time of replacement, and costs for replacing weapon systems.

For example, CBO's assumptions about annual purchases of weapon systems call for replacing the systems on a one-for-one basis. But that practice might not be followed in every case. The services might find that they could perform their missions with less (or very different) equipment than they use today—perhaps because of improvements in the equipment's capabilities. The inventory DoD required for comparable capability would then be smaller and annual procurement costs lower than under CBO's estimate. The Army is engaged in just such a rethinking of how its forces should be structured and equipped. As a result, the Army's forces may eventually look radically different than they do today.

Other crucial assumptions are about the retirement of equipment. CBO's estimate assumed that equipment would be retired at ages consistent with DoD's current plans. But in many cases, the services have never kept systems for as long as they now plan to. If shorter service lives—based generally on historical experience—proved to be more accurate indicators of how long systems actually remained in service, much larger quantities than those included in CBO's estimate would be needed, as shown in the right-hand column of Table 1. Under those alternative assumptions of shorter service lives, CBO's estimate of a sustaining budget would not be sufficient to maintain today's inventories: specifically, the estimate of \$90 billion for steady-state procurement would increase by \$25 billion.

In estimating the costs for replacing systems, CBO used, as a base, the prices that DoD paid for similar units. For some systems, CBO adjusted those prices to reflect expected improvements in technology and growth in costs. However, its assumptions about costs may prove to be either high or low. Other analysts might argue that using historical prices—with or without CBO's adjustments—may overstate costs in the future. The Defense Department and private industry, they might contend, are committed to reducing the cost of procuring major weapon systems—for instance, through so-called lean manufacturing techniques.¹ In addition, for some missions the

1. Those techniques include delivering parts to the production line just before they are needed, thereby reducing storage costs; using computers more efficiently in the design and manufacturing process; and using more generic equipment to assemble systems, which reduces spending on specialized tooling.

services are planning to buy systems that could be less expensive than replacements of current systems. For example, DoD is considering replacing some manned reconnaissance systems with lower-price unmanned equipment. CBO's estimate does not reflect such possible changes to the composition of DoD's forces.

In contrast to the problem of overstating costs, some of the prices for weapons and equipment that CBO used for its estimate could be too low. Replacements for many current systems are either early in their development or not in development at all. Historically, as systems have moved from the early stages of development into full production, their prices have grown. Although some of CBO's estimates of prices for replacement systems include the likely growth of costs, the estimates may not be high enough to cover the full costs of improved capabilities or modifications.

CBO's Estimate for Other Procurement Spending

The other part of CBO's estimate for procurement spending covers equipment and systems for which CBO lacked the data to develop individual spending estimates.² Examples include some trucks, communications and civil engineering equipment, and ammunition, as well as programs for modifying existing systems. While individually those items are cheaper than major systems, CBO's estimate of the total cost for all of them—almost \$50 billion annually—exceeds the total cost of procuring major systems.

Estimating Method. CBO estimated a sustaining budget for purchases of equipment other than major systems by using historical data (for the 1974-1998 period) on total spending for procurement. In particular, CBO based its estimate on the relationship between total current spending on procurement and past spending on equipment similar to the replacement items, as well as on the relationship between spending on major systems and spending on other kinds of procurement.

Uncertainty and Sensitivity of the Estimate. CBO's estimate of the funds needed to sustain DoD's other procurement is uncertain for at least two reasons. First, it is based in part on CBO's estimate of the sustaining funding needed to procure major systems; as a result, it is affected by all of the uncertainties associated with that estimate—specifically, changes in the costs, service lives, and required inventories of individual

2. CBO's category should not be confused with accounts labeled "Other Procurement" in the budgets of the Army, Navy, and Air Force. Although CBO's category includes funds from those accounts, it also includes money for items that are funded through many other accounts.

systems. Second, the estimate for other procurement relies on statistical analysis that is inherently imprecise.

To try to lessen some of those uncertainties, CBO developed alternative methods for calculating a sustaining budget for this category of procurement. One approach broke down spending for such procurement into subcategories and developed an estimate for each one using detailed statistical relationships. Like CBO's original approach, that method generated an estimate of about \$50 billion for other procurement funding.

Distribution of CBO's Overall Estimate for Procurement by Service

Table 2 presents CBO's estimates of sustaining budgets for procurement for the military departments and defense agencies. For the Department of the Navy, which includes the Marine Corps, and the Air Force, the estimates are roughly \$35 billion a year each. The figure for the Army is much lower—about \$15 billion a year. Another \$5 billion a year for the defense agencies completes the overall estimate, which totals \$90 billion.

The estimate of \$15 billion for the Army can be compared with a procurement appropriation in 2000 of \$10 billion. The \$35 billion estimate for the Navy and Marine Corps is also considerably more than the 2000 amount of \$23 billion. Similarly, the estimate for the Air Force—also \$35 billion—greatly exceeds the 2000 appropriation of \$18 billion. And the estimate for sustaining procurement for defense agencies—at \$5 billion—exceeds the 2000 appropriation of \$2 billion. (The sustaining-budget figure for defense agencies includes procurement for national and theater missile defense, reflecting the role of the Ballistic Missile Defense Organization as the steward of missile defense funds.)

Limitations of CBO's Estimate

CBO's analytic results may help the Congress as it debates future budgets. But I would like to point out some limitations of those results. The estimates I have presented are steady-state calculations and do not apply specifically to the budget year or to DoD's future-year planning period. And, as described, the assumptions underlying CBO's results are subject to argument. Because some of the methods used relied on aggregate relationships and historical patterns, the estimates are broad and should not be considered precise. Nor should they be compared to the formal cost estimates of the type CBO prepares for legislative proposals.

CONCLUSION

Mr. Chairman, CBO's estimate of \$90 billion for an annual sustaining procurement budget for DoD is considerably larger than current spending. I want to emphasize that CBO is not recommending an increase in funds to that level. For one thing, DoD's acquisition managers might find it difficult to spend such an increase wisely—many of the items CBO included in its calculations are nowhere near ready to be bought. Some items exist only on paper. In other instances, the services have no plans at all for a replacement system. And CBO does not make recommendations on matters of policy.

Instead, I believe this estimate is useful for the perspective it provides. First, it may explain why—after a decade of annual purchases in the range of \$45 billion to \$55 billion—the services are voicing more and more concerns about the age and performance of their equipment. Second, it establishes a basis for judging future procurement budgets.

But that brings me back to my first point, Mr. Chairman. It is not at all evident that today's forces are appropriate for tomorrow's missions. A new Administration and a new Congress will have the opportunity to rethink the national security strategy and the military forces necessary to support it. CBO is prepared to help the Congress understand the budgetary implications of such a review when it is completed.

TABLE 1. DoD'S PAST PURCHASES OF SELECTED EQUIPMENT AND CBO'S ESTIMATES OF PURCHASES UNDER A SUSTAINING BUDGET (By fiscal year)

	<u>Average Annual Purchases</u>		<u>Annual Sustaining-Budget Purchases^a</u>	
	1975-1990	1991-2000	Based on Longer Service Lives ^b	Based on Shorter Service Lives ^c
Tanks, Artillery, and Other Armored Vehicles	2,083	145	588	883
Helicopters				
Scout and attack	78	7	105	169
Utility	109	69	151	183
Battle Force Ships ^d	19	7	8	11
Aircraft				
Fighter and attack				
Navy	111	42	64	88
Air Force	238	28	89	124
Electronic-warfare	21	7	9	12
Tactical and strategic airlift ^e	31	15	20	26
Tankers	5	1	12	14
Heavy bombers	7	1	3	3
Other ^f	16	0	11	15

SOURCE: Congressional Budget Office based on data from the Department of Defense.

- a. The sustaining-budget estimate is CBO's calculation of the annual funding required to maintain U.S. military forces at their current size; to modernize their weapons and equipment at a rate that is consistent with expected service lives and with maintaining a technological advantage over potential adversaries; and to maintain current funding for readiness. It is a steady-state concept and not an estimate of the defense budget for any specific year.
- b. Assumes longer service lives—generally those that underlie DoD's and the services' current projections of inventories.
- c. Assumes shorter service lives that reflect historical experience or more-pessimistic assumptions about how long equipment will last.
- d. Includes all Navy ships involved in combat—for example, ballistic missile submarines, surface combat ships, aircraft carriers, and amphibious craft—as well as some other vessels.
- e. Air Force planes only.
- f. Includes, for example, fixed-wing antisubmarine warfare aircraft and planes for special operations.

TABLE 2. CBO'S ESTIMATE OF A SUSTAINING BUDGET FOR PROCUREMENT, BY SERVICE
(In billions of 2000 dollars)

	Army	Navy/ Marine Corps	Air Force	Defense Agencies	Total
Procurement of Major Systems	5	20	15	a	40
Other Procurement	<u>10</u>	<u>15</u>	<u>20</u>	<u>5</u>	<u>50</u>
Total	15	35	35	5	90
Memorandum: Appropriations in Fiscal Year 2000 ^b	10	23	18	2	53

SOURCE: Congressional Budget Office.

NOTES: Estimates are rounded to the nearest \$5 billion.

CBO's estimate of a sustaining budget for procurement provides for funding to modernize weapons and equipment at a rate that is consistent with expected service lives and with maintaining a technological advantage over potential adversaries. It is a steady-state concept and not an estimate for any specific year.

a. Less than \$2.5 billion.

b. Excluding supplemental appropriations. The Army estimate includes \$1 billion for chemical agents and munitions destruction. CBO's sustaining-budget estimate includes funding for that activity under the defense agencies, where it was formerly classified.