Chapter Two

Defense and International Discretionary Spending

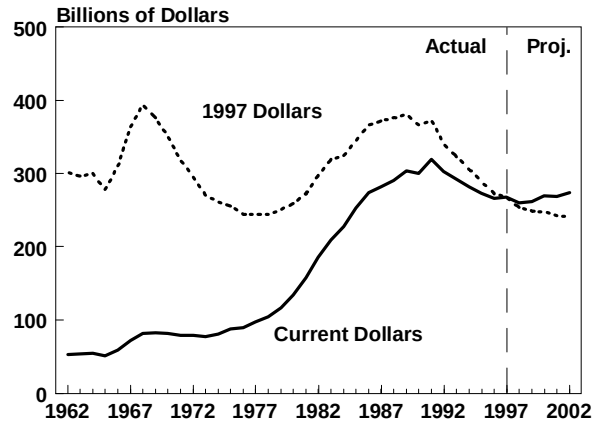
National defense spending, though reduced from Cold War levels, remains one of the larger categories of federal spending. Spending for national defense (budget function 050) represents about one-half of all discretionary outlays--that is, spending that the Congress provides through the annual appropriation of funds (see Figure 2-1). But it is only about one-sixth of all federal spending, a far smaller percentage than in years past. In 1997, outlays for national defense are estimated to be $266 billion out of a discretionary total of $547 billion (see Table 2-1). Spending for national defense embraces not only the Department of Defense's (DoD's) budget but also that portion of the Department of Energy's budget that funds the production, support, and management of the nation's stockpile of nuclear weapons (including environmental cleanup).

This chapter also looks at spending for international affairs, a separate budget category (function 150) that covers both foreign assistance and the conduct of international relations. International affairs is a much smaller budget category than national defense, with discretionary outlays of about $19 billion in 1997.

The National Defense Budget

The defense budget supports national security in several ways. It provides pay and benefits for U.S. military forces; supplies the pay of civilian workers who support the military's operations, as well as other costs for operations and training; and pays the operating costs of the hundreds of military bases and facilities here and abroad. It funds not only procurement of new weapons and equipment to keep military forces at the forefront of technical capability but also the research that creates many of those technical leaps.

Figure 2-1.
Outlays for National Defense
(By fiscal year)



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

Size and Structure of U.S. Military Forces

One aim of U.S. national security policy is to maintain military forces that are powerful enough to deter potential adversaries from attacking the United States or its allies and to defeat them, should deterrence fail. The collapse of the Soviet Union and the Warsaw Pact removed the single greatest military threat to the United States and its allies in Europe and the Pacific. Since then, military and civilian leaders have sought to recalibrate the military threat the United States faces and the size and number of U.S. military forces appropriate to counter that threat.

The first of those reviews resulted in the Base Force Plan of the Bush Administration. That plan reduced the overall size of the Army and established an enhanced corps of ground forces to respond rapidly to military conflicts. Reductions in Air Force wings and Navy ships, though significant, left forces sufficient to maintain forward presence and to deploy forces quickly in response to crises.

In 1993, the current Administration initiated a broad review, termed the Bottom-Up Review, of the national security situation and U.S. military strategy and forces. That review replaced the Cold War threat of the Soviet Union and its Warsaw Pact allies with a scenario in which the United States would fight two conflicts with regional powers (such as Iraq) nearly simultaneously. Relying on the findings of the Bottom-Up Review, the Administration established requirements for forces that were 30 percent to 40 percent below those of the Cold War era. The process of reducing military forces to those new levels will be nearly complete by the end of 1997.

In response to the Congress's direction, another major review of strategy and forces--the Quadrennial Defense Review--is under way. That review is envisioned as a periodic reassessment of military strategy and force structure. The Department of Defense is engaged in the first step of the process--preparing a report that the Secretary of Defense must transmit to the Congress by May 15, 1997. At that time, an independent commission of experts, named by the President and approved by the Congress, will review DoD's findings and produce its own report by December 1, 1997. Once that report is available, the Congress and the Administration should have a better basis for setting the size and determining the composition of U.S. military forces.

Table 2-1.
Appropriations for National Defense for Fiscal Year 1997 (In billions of dollars)

	Budget Authority	Outlays
Department of Defense		
Military personnel	70.0	70.2
Operation and maintenance	90.9	91.2
Procurement	44.2	45.6
Research, development, test, and evaluation	36.5	33.8
Military construction	6.0	6.4
Family housing	4.1	4.1
Other	1.0	1.5
Subtotal	252.8	252.7
DOE's Atomic Energy Program	11.4	11.9
Other National Defense	1.0	1.0
Total	265.1	265.6

SOURCE: Congressional Budget Office.

NOTE: DOE = Department of Energy.

Strategic Forces

Strategic forces are much reduced from Cold War levels. Since 1990, the United States has nearly halved its force of land-based intercontinental ballistic missiles, reduced the number of bombers committed to strategic missions and taken them off alert status, and reduced the number of submarine-based missiles from 584 to 408 (see Table 2-2). Most strategic analysts believe that those forces still provide a robust deterrent to a direct nuclear attack. All parties have now ratified the first Strategic Arms Reduction Treaty (START I). In 1995, the Congress ratified START II, which would commit the United States and Russia to make even larger reductions in strategic forces, but Russia's parliament has not yet done so. Four options in this chapter

Table 2-2.
U.S. Military Forces (By fiscal year)

	1990	1993	1995	1997	Bottom-Up Review Plan[a]
Strategic Forces					
Land-Based ICBMs	1,000	787	585	580	500
Strategic Bombers	277	194	140	126	130
Submarine-Launched Ballistic Missiles	584	408	360	408	336
Conventional Forces					
Land Forces					
Army divisions					
Active	18	14	12	10	10
Reserve[b]	10	8	8	8	5 or more
Marine Corps divisions[c]	4	4	4	4	4
Naval Forces					
Battle force ships	546	435	372	357	346
Aircraft carriers					
Active	15	13	11	11	11
Reserve	1	0	1	1	1
Navy carrier air wings					
Active	13	11	10	10	10
Reserve	2	2	1	1	1
Air Forces					
Tactical fighter wings					
Active	24	16	13	13	13
Reserve	12	11	8	7	7
Airlift aircraft					
Intertheater	400	382	374	345	d
Intratheater	460	380	428	430	e

SOURCE: Congressional Budget Office using data from Office of the Secretary of Defense, *Annual Report to the President and the Congress* (March 1996).

NOTE: ICBMs = intercontinental ballistic missiles.

a. The Bottom-Up Review did not provide goals for all types of forces. Estimates of strategic forces are based on the Nuclear Posture Review, which was completed after the Bottom-Up Review, and assume that the second Strategic Arms Reduction Treaty (START II) enters into force.

b. Excludes 15 enhanced-readiness brigades.

c. Includes one reserve Marine Corps division.

d. The goal for intertheater airlift is expressed as 49.7 million ton-miles a day of transport capability rather than in terms of number of aircraft.

e. No goal has yet been set for intratheater airlift capability.

relate to strategic forces. Option DEF-01 examines the savings that would result from accelerating planned cuts in U.S. strategic forces, and DEF-02 looks at an early cancellation of D5 missile purchases. Option DEF-03 would reduce the scope of the Department of Energy's program for maintaining the stockpile of nuclear weapons. And DEF-04 would limit efforts to build theater missile defense programs.

Conventional Forces

In its Bottom-Up Review, the Administration determined the conventional forces it believes the United States would have to deploy to win two nearly simultaneous regional conflicts. Those forces include 10 active Army divisions supplemented by 15 Army National Guard brigades and other reserve combat and support units. The eight Guard divisions that represent the largest component of reserve combat units were not allocated a role in meeting the two-conflict threat; instead, they were defined as the nation's strategic reserve. The Navy will retain 11 active aircraft carriers plus one reserve carrier for training and local contingencies. And the Air Force will keep 13 active tactical fighter wings, with another seven in the reserve forces. By September 1997, most conventional military forces will have been cut to their target levels (see Table 2-2). Several options examine the implications and savings of further reducing conventional forces. DEF-06 would reduce the number of carriers by two and the number of carrier air wings by one. DEF-11 would reduce Air Force tactical air wings to a total of 18, two less than the force level in the Bottom-Up Review. DEF-17 would eliminate two of the 10 active divisions, and DEF-18 would cut four of the eight Guard divisions.

Modernization

Spending for weapon systems in recent budgets is down more than 50 percent from Cold War levels. The deep cuts DoD made in its forces have enabled it to sharply reduce purchases of ships, planes, and fighting vehicles without creating a shortage of equipment. DoD leaders, however, have identified a need to resume purchasing many of those items beginning around the end of this decade. General John Shalikashvili, Chairman of the Joint Chiefs of Staff, has called for procurement budgets of $60 billion a year, 55 percent more than the Administration requested for 1997. Several of the options presented in this chapter would either defer or cancel some of the programs responsible for that projected increase. DEF-05, for instance, would cancel the Navy's New Attack Submarine program, and DEF-07 would slow the Navy's purchases of destroyers. DEF-12 and DEF-19 would cancel the Air Force's F-22 fighter acquisition program and the Army's Comanche helicopter program, respectively.

Although procurement has fallen sharply, DoD acquisition managers have followed a policy of maintaining a relatively high level of research and development (R&D) spending. That policy was seen as key to keeping the United States at the technological forefront for future weapons while production of earlier generations of weapons was coming to a close. But the Administration's budget projections for the rest of the decade suggest that R&D spending will decline considerably through 2000 as several major weapon systems currently in development move to the procurement phase. That shift, together with a boost in procurement spending in future budgets, will return R&D spending to close to its historical level of about one-fourth of procurement spending. DEF-20 would reduce spending for dual-use technology programs.

The Bottom-Up Review also identified a need to improve the military's ability to deploy forces rapidly to two theaters. That review called for enhancing the strategic mobility forces by adding more Air Force airlift aircraft and Navy and Ready Reserve Force cargo ships and by prepositioning material abroad and at sea. DEF-13 identifies an alternative to the Administration's plan to purchase the C-17 airlifter, and DEF-14 would slow DoD's efforts to modernize tactical airlift forces.

Roles and Missions

The Commission on Roles and Missions of the Armed Forces was established by the Congress in 1994 to review all aspects of the organization of the Department of Defense to identify opportunities to consolidate activities and improve efficiency. It looked at such matters as the duplication of military missions among the services and the possible integration or privatization of support activities such as training, maintenance, and intelligence gathering. Some of the options described in this chapter are drawn from previous CBO analyses

of the issues related to the services' roles and missions. DEF-16, for instance, would make the Army responsible for close air support, eliminating an Air Force mission. DEF-27 would combine the Army National Guard and the Army Reserve.

Pay and Benefits of Military Personnel

Options DEF-21 through DEF-27 present ways to reduce spending for military personnel. Some of those options would reduce elements of military compensation, including the housing allowance (DEF-22), the subsistence allowance (DEF-23), and special bonus pay for nuclear-trained Navy officers (DEF-25). Another option would reduce the number of military personnel needed to staff the forces and activities of the military (DEF-21). DEF-24 looks at a cheaper way to supply the military with new officers.

Health care is a $15 billion item in the defense budget--roughly $5 billion to pay uniformed medical personnel and $10 billion to operate military health care facilities and pay for care provided by the private sector. Much of that spending is for the care of the dependents of active-duty personnel as well as retirees and their families. Four options (DEF-28 through DEF-31) address the military's spending for health care. (For options dealing with veterans' benefits--a separate budget category from national defense--see Chapter 4.)

Operation and Maintenance

Operations consume the largest share of the defense budget and may offer the greatest opportunities to achieve efficiencies without cutting military capability (see Table 2-1). CBO's options examine ways to consolidate activities among the military services or to turn activities over to the private sector. The options focus on professional military education (DEF-33), military housing (DEF-35), and commissaries and exchanges (DEF-36 and DEF-37). Those options have little direct connection to the readiness of military forces: instead, they are oriented toward achieving efficiencies in the infrastructure that supports the forces.

The International Affairs Budget

The international affairs budget for 1997 totals $18.3 billion in discretionary budget authority and results in outlays of $19.3 billion (see Table 2-3). Those outlays represent 1.2 percent of total federal outlays and 4 percent of total discretionary outlays in 1997. Altogether, international programs consume about 0.25 percent of the nation's gross domestic product.

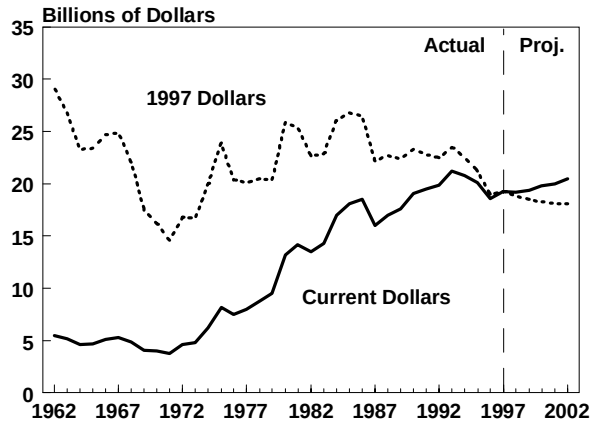
International affairs spending has risen and fallen in waves that reflect the relative emphasis on using foreign assistance to promote U.S. security and to enhance world stability (see Figure 2-2). In 1962, for instance, spending for international affairs totaled $5.5 billion--equivalent to $29 billion in 1997 dollars. That amount represented 7.6 percent of total discretionary outlays and 1.0 percent of gross domestic product in 1962. During most of the 1960s, spending for international affairs declined both absolutely and as a share of the budget, reaching a low of $14 billion (in 1997 dollars) in 1971.

Table 2-3.
Appropriations for International Affairs for Fiscal Year 1997 (In billions of dollars)

	Budget Authority	Outlays
International Development and Humanitarian Assistance	6.8	7.8
International Security Assistance	5.9	5.9
Conduct of Foreign Affairs	3.9	4.0
Foreign Information and Broadcasting Activities	1.1	1.2
International Financing Programs	0.6	0.4
Total	18.3	19.3

SOURCE: Congressional Budget Office.

Figure 2-2.
Outlays for International Affairs
(By fiscal year)



SOURCE: Congressional Budget Office based on data from the Office of Management and Budget.

From that level, spending rose by three-quarters in the 1970s, reaching $25.9 billion (in 1997 dollars) in 1980. Part of that increase reflected much greater levels of economic assistance for Egypt and Israel, agreed to as part of the Camp David Accords. In the 1980s and 1990s, real spending for international affairs has fluctuated between $19 billion and $27 billion.

Options dealing with the international affairs budget are presented in DEF-38 through DEF-43. Those options cover a variety of topics, including activities of the State Department, funding for multilateral development banks, exports of military equipment, and U.S. information programs abroad. Savings for each option are presented in two ways: against the 1997 level of funding for the program, and against the 1997 level of funding for the program adjusted for inflation.

How to Use and Combine Savings Estimates

The table at the beginning of each option displays the savings it would generate through 2002. To define savings, it is necessary to have a starting point. As just noted, savings for international programs are expressed either as savings from the 1997 level of spending or as savings from that level adjusted for anticipated inflation. For defense programs, savings have been computed relative to spending detailed in the Administration's plan for 1997 through 2002 (the 1997 plan), after adjusting for Congressional action on the 1997 budget.

Users of this volume may wish to combine several options into a package of deficit reduction measures. The options selected should not include those that are mutually exclusive or that may overlap, resulting in the double-counting of savings. Subject to that caution, the resulting effects on future deficits may be estimated as follows.

First, select a baseline from which to start. CBO has projected future deficits under two assumptions about overall discretionary spending: one adjusts spending for inflation, the other freezes discretionary spending at the 1997 level through 2002 (see Table 1-2 in Chapter 1). Both are based on economic assumptions consistent with balancing the budget by 2002.

Second, decide whether to include the savings (or costs) of the Administration's 1997 defense plan. Measured against the inflation-adjusted baseline, the 1997 plan generates five-year total savings of $100 billion in outlays (see Table 2-4, which shows the year-by-year details). Users of this volume who start from the baseline adjusted for inflation can, if they choose, subtract the annual savings reflected in the President's 1997 plan from the projected deficits shown in Table 1-2. (By doing so, they implicitly accept all of the Administration's policy actions that are needed to reduce spending by $100 billion.) Users who select the baseline that freezes discretionary spending at the 1997 level, however, should make a different set of adjustments to the projected deficits associated with that baseline. Measured against the frozen baseline, adhering to the Administration's 1997 defense plan will add a net amount of $1.6 billion to the deficit over five years (see Table 2-4). Although the plan's projections are lower than the baseline for 1998 through 2000, projections for the entire 1998-2002 period average slightly more than the 1997 appropriated level.

The third step in the process is to combine the additional savings that the selected options provide and then subtract the totals from the stream of deficit projections that results from the first two steps. Savings from indi-

vidual options may be applied no matter which baseline concept is adopted as a starting point.

Of course, the Department of Defense's plans change from year to year. For some of the options, the Administration's new program for 1998 through 2003 (the 1998 plan) is significantly changed from the 1997 plan. Those changes may increase or reduce CBO's estimates of savings. Readers using the details of this volume to estimate savings relative to the Administration's 1998 plan should refer to the savings estimates for those options shown in Appendix A.

Table 2-4.
Alternative Budget Paths for National Defense (By fiscal year, in billions of dollars)

	1997	1998	1999	2000	2001	2002
Budget Resolution for 1997						
Budget Authority	265.6	268.2	270.8	273.3	276.0	278.8
Outlays	264.1	263.0	266.3	270.0	269.0	269.0
CBO's Projections for National Defense						
1997 Funding Level Adjusted for Inflation						
Budget authority	265.1	272.7	281.0	289.4	298.1	307.2
Outlays	265.6	269.5	276.7	287.1	288.9	300.3
1997 Funding Level						
Budget authority	265.1	265.3	265.4	265.5	265.5	265.6
Outlays	265.6	264.6	264.9	267.0	261.5	263.6
Administration's 1997 Plan						
Budget Authority	254.3	258.5	263.8	270.3	279.4	287.8
Outlays	260.8	256.3	257.8	263.3	266.6	278.2
Savings or Costs (-) Reflected in the Administration's 1997 Plan						
From the 1997 Funding Level Adjusted for Inflation						
Budget authority	n.a.	14.2	17.2	19.1	18.7	19.4
Outlays	n.a.	13.2	18.9	23.8	22.3	22.1
From the 1997 Funding Level						
Budget authority	n.a.	6.8	1.6	-4.8	-13.9	-22.2
Outlays	n.a.	8.3	7.1	3.7	-5.1	-14.6

SOURCE: Congressional Budget Office.

NOTE: n.a. = not applicable.

DEF-01 REDUCE NUCLEAR DELIVERY SYSTEMS WITHIN OVERALL LIMITS OF START II

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	366	506	1,411	1,595	1,232	5,110
Outlays	100	282	646	1,077	1,318	3,423

With the end of the Cold War, the nuclear superpowers have begun to scale back the size of their nuclear arsenals. If put into effect, the second Strategic Arms Reduction Treaty (START II), which was completed in 1993, will require that long-range nuclear forces be cut to roughly two-thirds of their 1990 levels by early in the next century. The United States and Russia have begun to plan their nuclear forces within the framework provided by both of the START accords; Ukraine's decision of November 1994 to sign the Nuclear Non-Proliferation Treaty should greatly help to implement both START treaties. START II was ratified by the Senate in January 1996 but faces an uncertain future in Russia's parliament.

The Administration currently plans to deploy a strategic force in 2003 with 450 to 500 Minuteman III ICBMs (intercontinental ballistic missiles, each carrying a single warhead, although they can carry three), 66 B-52H bombers (each carrying an average of no more than 15 warheads), 20 B-2 bombers (each carrying 16 warheads), and 14 Trident submarines (each carrying 120 warheads). That force is based on the Pentagon's 1994 review of U.S. nuclear doctrine and forces (the Nuclear Posture Review). Overall, the United States would deploy almost 3,500 warheads--the maximum number allowed by START II.

This option would keep the same number of warheads that the Administration plans under START II, but it would load the warheads on fewer missiles and submarines and thus would retire some platforms that the Administration proposes to retain in its plan. Under this option, the United States would retire four Trident submarines and 200 Minuteman III ICBMs relative to the plan (assuming that 500 ICBMs would have been deployed). It would preserve 300 Minuteman III ICBMs and 10 Trident submarines, each loaded with 24 missiles. The number of warheads deployed on the smaller Trident force would stay at the level planned by the Administration (1,680) by increasing the number of warheads on each missile from five to seven (see DEF-02). Like the Administration's plan, this option would retain 66 B-52H nuclear bombers, but they would carry an average of 16 warheads each for a total of 1,056 warheads. It would also keep 20 B-2 bombers, each loaded with 16 warheads--the same number planned by the Administration. Thus, the total strategic nuclear force proposed in this option would carry almost 3,400 warheads--roughly 100 fewer than the Administration proposes. Furthermore, no weapon system would be deployed with more warheads than it was designed to carry.

Compared with the Administration's plan, this option could save $366 million in budget authority in 1998 and $5.1 billion over the next five years. Savings in outlays would be smaller: $100 million in 1998 and $3.4 billion through 2002. Those savings would come from reduced operation and support (O&S) costs and lower levels of investment. The O&S savings reflect the retirement of 200 Minuteman ICBMs and the early retirement of two Trident submarines. Investment savings would be achieved by canceling production of D5 missiles after buying seven missiles in 1997, extending the service life of fewer Minuteman missiles, and forgoing the Administration's plans to reconfigure two Trident submarines so that they can carry new D5 missiles. Savings from retiring two additional Trident submarines would occur after 2002.

During the Cold War, this option might have raised concerns about stability. By putting more nuclear "eggs" in fewer baskets, the United States would have increased its vulnerability to a surprise attack. But today, with the most destabilizing nuclear modernization

programs in the former Soviet Union terminated, fewer weapons at high states of readiness, and the end of the military competition between the North Atlantic Treaty Organization and the Warsaw Pact in Europe, those concerns have become less acute. The United States may now decide that it can save money safely by deploying its warheads on fewer weapon systems.

This option would also preserve flexibility for future developments. For example, it would retain three types of nuclear systems (the so-called triad) despite the recommendations of some analysts that all ICBMs be retired in order to save money. Retaining all three types provides a margin of security against an adversary's developing a new technology that might render other legs of the nuclear triad more vulnerable to attack. In addition, although ICBMs are considered the most vulnerable portion of the triad, at least a fraction of them would be able to survive virtually any type of attack by any country, even if they had been taken off alert.

Against this option's advantages, the Congress would have to balance a number of disadvantages. Carrying more warheads on bombers and submarines would diminish the targeting flexibility of U.S. planners. Unilaterally reducing the ICBM and ballistic missile submarine forces would also limit the ability of the United States to increase significantly the number of warheads it deployed in the event that Russia decided suddenly not to abide by START II. Indeed, some critics of this option and the Administration's plan argue that the United States should not relinquish any capability until Russia has fully complied with START I and ratified START II, because such a unilateral reduction would diminish U.S. leverage to persuade Russia to reduce its forces. Finally, by deploying fewer ICBMs, this option would reduce the forces that could be placed most easily in a nonalert but survivable status, an approach that some analysts have proposed recently to lower the chances of an accidental nuclear war.

DEF-02 TERMINATE PRODUCTION OF D5 MISSILES AFTER 1997

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	300	290	1,036	1,089	673	3,388
Outlays	61	148	388	680	822	2,099

The D5 missile, also called the Trident II missile, is the most accurate and powerful submarine-launched ballistic missile (SLBM) in the U.S. inventory. The result of more than 15 years of research and development, it is the keystone of the Navy's plan to modernize its ballistic missile force. Because of its accuracy and the size of its warheads, the D5 is the first submarine-launched missile that is capable of destroying very hard (or counterforce) targets such as missile silos and command bunkers. That capability has allowed the Navy to assume some of the counterforce missions that previously could be carried out only by the Air Force's land-based intercontinental ballistic missiles and long-range bombers.

The Administration's plan, which reflects the results of the recent Nuclear Posture Review, assumes that the Navy will reduce the Trident force to 14 submarines by 2003, when the United States must fully implement the second Strategic Arms Reduction Treaty (START II). Each submarine will carry 24 D5 missiles. The Navy currently has eight Trident submarines that carry C4 missiles and by 1998 will have a fleet of 10 additional Tridents armed with the more modern D5 missile. To achieve its 14-boat fleet, the Navy will retire the four oldest C4-capable submarines in 2002 and 2003 and convert the other four to carry D5 missiles (one each in 2000, 2001, 2004, and 2005). To support that force, the Navy plans to buy a total of 434 D5 missiles. It has already bought 350 missiles and plans to purchase seven more in 1998 and a total of 84 more through 2005. To keep the number of U.S. warheads near the ceiling allowed by START II, which limits the number of warheads on submarine-launched ballistic missiles to 1,750, the Navy will probably reduce the number of warheads per missile from eight to five (for a total of 1,680 warheads).

This option would terminate D5 production after 1997 and retire all eight C4 submarines. The Navy would have 350 D5 missiles--three more than the number that it says it would need to support a 10-submarine force in light of its recent decision to reduce the number of D5 test flights to four a year. Like the Administration's plan, however, this option would not retire the C4 submarines until after the turn of the century, both to encourage Russia's compliance with START II and to retain the flexibility for the United States to remain at higher START I levels if Russia does not comply. To keep warheads at the level planned by the Administration under START II, this option would increase the number of warheads on each missile from five to seven.

Relative to the Administration's plan, this option would save $300 million in budget authority in 1998 and $3.4 billion through 2002. Outlays would be reduced by $2.1 billion through 2002. Most of those savings would be from canceling missile production. In addition, retiring C4 submarines in 2000 and 2001 rather than upgrading them would save about $400 million to $500 million in each of those years. This option would create significant savings beyond 2002 because it would operate fewer submarines and avoid the cost of modifying C4 submarines and purchasing D5 missiles.

Several drawbacks are associated with terminating production of D5 missiles. Increasing the number of warheads per missile from five to seven would reduce the range of the missiles by roughly 20 percent. That would limit the areas of the ocean in which submarines could operate, thereby making the fleet more vulnerable. Furthermore, it would reduce the targeting flexibility of the force because missiles with fewer warheads can cover more widely dispersed targets. Also, requiring the Navy to deploy D5 missiles with seven war-

heads would constrain the United States' ability to increase sharply the size of its SLBM force by adding back the extra warheads if Russia broke out of START II or never ratified the treaty, a central concern of some critics of this option. (See Congressional Budget Office, *Rethinking the Trident Force*, July 1993, for more details about the effects of this and other options for reducing the costs of the Trident force.) In addition, reducing the force from 14 to 10 submarines may increase its vulnerability to attack by Russia's antisubmarine forces. Critics also worry that terminating the production of the D5 missile early would leave the United States unable to produce new SLBMs without an expensive rebuilding program.

Nevertheless, terminating D5 production may be acceptable given the marked reduction in the chances of nuclear war between the superpowers. In that environment, the capability retained under this option for Trident submarines to destroy hardened targets may be judged sufficient to deter nuclear war. Although the range of the missiles and the size of submarine patrol areas would be smaller under this option than under the Administration's plan, they would still exceed those planned during the Cold War when Russia's antisubmarine capability was greater and the United States intended to deploy the D5 with eight large warheads (W-88s).

The targeting flexibility given up by this option might not significantly reduce the ability of the SLBM force to deter nuclear war. It is not clear that the force of 1,680 warheads that the Administration plans to deploy on its Trident fleet under START II will deter an adversary more effectively if they are deployed on 336 missiles rather than on the 240 called for in this option. The diminished likelihood of nuclear war with Russia may also have weakened the rationale for the United States to deploy only five warheads on each D5 missile in order to retain its ability to increase U.S. nuclear forces rapidly. Moreover, the United States could increase the number of warheads on land-based ballistic missiles and bombers if Russia violated START II. Finally, supporters of this option would argue that the aerospace companies involved in refurbishing the Minuteman III and building boosters for space launchers will maintain enough skilled workers so that production of a new SLBM could be started in time to replace the missiles lost as Trident submarines begin to retire during the next century.

DEF-03 REDUCE THE SCOPE OF DOE'S STOCKPILE STEWARDSHIP AND MANAGEMENT PROGRAM

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	267	387	429	681	964	2,728
Outlays	200	357	419	618	893	2,487

NOTE: Savings relative to the Administration's 1998 plan appear in Appendix A.

For the first four decades of the nuclear age, the United States developed, tested, and produced nuclear weapons for its arsenal. The Department of Energy (DOE) and its predecessors have been responsible for that task. During much of the Cold War, the arsenal held over 25,000 warheads of more than a dozen different types. The weapons were designed and developed at the three weapons laboratories (Los Alamos, Lawrence Livermore, and Sandia) and tested at the Nevada Test Site; materials and components for the weapons were produced at more than a dozen facilities across the country.

The end of the Cold War has changed the requirements for the arsenal. In response to the second Strategic Arms Reduction Treaty (START II), the United States plans to keep roughly 5,000 warheads of seven different types in its active inventory beyond 2003. DOE has started to consolidate its production facilities as it adjusts to its declining workload.

The United States, along with all other declared nuclear powers except China, has also unilaterally halted all underground testing. To establish a permanent worldwide moratorium, the United Nations' Conference on Disarmament negotiated the Comprehensive Test Ban Treaty (CTBT), which will make it difficult for any country to develop new weapons. President Clinton signed the treaty in September 1996 but has not yet submitted it to the Senate for ratification.

To preserve its ability to ensure, over the long run, the reliability and safety of the weapons that remain in the nuclear stockpile under a CTBT, the Department of Energy has developed a stockpile stewardship and management program. One goal of that program is to increase funding for activities such as computer simulations, nonexplosive nuclear testing, and fusion research that will become increasingly important for ensuring the reliability of the stockpile in the absence of underground testing. Another goal is to ensure that the weapons labs continue to attract talented scientists by providing challenging work and state-of-the-art facilities. A third goal is to develop facilities that will produce the necessary nuclear and nonnuclear components to replace parts, thus ensuring reliability.

To carry out this plan, DOE will continue to operate both of its weapons design labs (Los Alamos and Lawrence Livermore) and its engineering lab (Sandia). It will also construct several new facilities to provide data on the reliability and safety of weapons as they age. Those facilities include the Dual-Axis Radiographic Hydrotest (DARHT) facility at Los Alamos for hydrodynamic tests and the National Ignition Facility (NIF) at Lawrence Livermore for research on the fusion portions of the weapons. In addition, DOE will conduct "zero-yield" tests at the Nevada Test Site so that it can retain enough skilled technicians to resume testing--as directed by the President--if the United States withdraws from the CTBT for reasons of supreme national interests.

According to the 1997 plan for stewardship, DOE will spend $1.7 billion in 1998 for what has been known historically as weapons research, development, and testing (RD&T), or about $600 million less (after adjusting for inflation) than it spent in 1988 when the laboratories were still operating at a Cold War pace. However, the annual expenditures for RD&T under the Administration's plan, after adjusting for inflation, will still be about the same as in 1980 when the United States was both designing new warheads and maintain-

ing an arsenal of some 25,000 warheads. Further reductions in spending may therefore be possible.

DOE's 1997 plan called for spending about $2 billion in 1998 to manage the stockpile and $2 billion or more each year thereafter. That spending includes an average of nearly $500 million a year through 2002 to develop a new source of tritium, a radioactive gas that is used in all U.S. nuclear weapons and decays at the rate of 5.5 percent a year. Tritium is produced by bombarding special targets with neutrons. The neutrons could come from an accelerator or from the fissioning of uranium atoms within a commercial nuclear reactor. DOE recently decided to work on both technologies through 1998, at which point it will make a decision about which one to develop fully.

This option would reduce the scope of the stewardship program by consolidating the two design laboratories and forgoing all testing activities at the Nevada Test Site. It would also reduce the cost of managing the stockpile by canceling the development of a tritium production accelerator and relying instead on less costly commercial reactors. Taken together, the changes in this option would save $200 million in outlays in 1998 and $2.5 billion through 2002 compared with the Administration's 1997 plan. Measured against the 1998 plan, five-year savings would be about $730 million lower. That plan excludes much of the funding that will eventually be required to develop the tritium accelerator. Savings are actually greater in 1998 and 1999 because the 1998 plan fully funds early design activities.

For illustrative purposes, the above savings assume that weapons design activities would be consolidated at Los Alamos over a period of five years; Lawrence Livermore would no longer have the designing of nuclear weapons as its primary focus. Los Alamos designed the majority of nuclear weapons that are likely to remain in the stockpile. To ensure that the other warhead types could be reliably maintained, some designers from Livermore would have to move to Los Alamos. This option would also maintain a cadre of weapons scientists at Livermore to provide peer review for Los Alamos's efforts. To provide those scientists with challenging work, Livermore would retain substantial computational facilities for modeling the complex processes inside nuclear weapons and would proceed with DOE's plans to build the National Ignition Facility. (The savings would be lower if stewardship activities were consolidated at Lawrence Livermore because that would involve moving more facilities and relocating more weapons designers. Also, the environmental issues raised by introducing new nuclear facilities into the populous area surrounding Livermore could prove difficult to overcome.)

Finally, by canceling the program to develop an accelerator to produce tritium and instead producing tritium in commercial reactors, this option would save $190 million in 1998 and about $2 billion through 2002 relative to the 1997 plan. Eventually, operating savings could total more than $100 million a year.

The central question underlying this option is, What is required to ensure the reliability and safety of the stockpile in the future if the current moratorium on underground nuclear testing is made permanent? DOE's stewardship and management program is the Administration's answer. This option preserves much of what the stewardship plan calls for, including DARHT and NIF, but does not preserve readiness at the Nevada Test Site or fund two full design labs. It also opts for an inexpensive source of tritium.

Some people may feel that this option cuts the program too deeply. They believe that DOE's stewardship program is the minimum effort necessary to maintain the stockpile without underground testing. Cuts would not be prudent, they argue, because scientists will need new facilities to obtain data on reliability that was formerly provided directly by underground nuclear testing.

Supporters of DOE's stewardship program also object to the consolidation proposed here. In their view, two design laboratories are essential for providing a robust stewardship program: competition and peer review will be even more important in the absence of underground testing. Furthermore, they argue, refocusing the efforts of one lab away from weapons research will eliminate its central unifying mission (and thus its motivation for excellence) without replacing that focus with an equally important mission. Consolidation will also result in the loss of some facilities that cannot easily be transferred to the other lab. For many of these reasons, the President recently directed DOE to retain both labs. Advocates of the stewardship program also disagree with this option's proposal to close the Nevada Test Site because doing so would increase the time required to resume underground testing if Rus-

sia started a new arms race or the United States discovered a serious problem with its stockpile that could only be corrected by testing. Perhaps equally important to them, closing the Nevada Test Site would restrict the ability of weapons scientists to conduct "subcritical" experiments to learn more about the effects of aging on plutonium.

Other people argue that the stewardship program should be cut further than suggested in this option. Some believe that keeping part of a second lab, increasing money for basic stewardship, and building DARHT and the $1.2 billion National Ignition Facility are unnecessary to support the stockpile. In their view, those facilities may allow DOE scientists to continue designing and testing weapons and to circumvent the test ban treaty. Even if DOE has no intention of designing new weapons, they argue, the perception of such a capability may make it difficult to convince nonnuclear countries--from whom the United States would like continuing support for the Nuclear Non-Proliferation Treaty--that the United States has really given up testing. Other critics contend that the nation cannot afford to keep a portion of a second design lab or NIF; they argue that if NIF can help scientists understand how to harness fusion for civilian energy, as supporters claim, it should be funded outside the nuclear weapons program.

There are several reasons to continue developing an accelerator for producing tritium. Although DOE has explored the idea of buying services from commercial reactors, and utilities that operate the reactors seem enthusiastic, forgoing the accelerator may be premature until DOE is certain that bureaucratic and political hurdles can be addressed and that commercial services will be available. Moreover, some groups argue that relying on commercial reactors to produce tritium will complicate efforts to control the spread of nuclear weapons because it blurs the distinction between military and civil nuclear programs. An accelerator is also appealing because it will not produce the radioactive waste that a reactor generates.

DEF-04 FOCUS THEATER MISSILE DEFENSE EFFORTS ON CORE SYSTEMS

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	404	547	499	397	484	2,331
Outlays	196	416	484	440	448	1,984

NOTE: Savings relative to the Administration's 1998 plan appear in Appendix A.

The Strategic Defense Initiative, which President Reagan started in 1983, focused solely on protecting the United States from a deliberate large-scale attack by Soviet ballistic missiles. The Bush Administration added an effort to protect U.S. troops and allies' civilian populations from attack by shorter-range "theater" missiles such as the Scuds used in the Persian Gulf War. The Clinton Administration--citing the urgency of the threat posed by theater ballistic missiles and the end of the Cold War--has reoriented the program to give priority to developing theater missile defenses (TMDs). It has also de-emphasized the effort to develop so-called national missile defenses, delaying indefinitely a decision to deploy defenses to protect the United States against longer-range missiles. To reflect those changes, it has renamed that effort the Ballistic Missile Defense (BMD) program. This option would make cuts in theater missile defenses.

According to its 1997 plan, the Administration will spend about $15.5 billion for all BMD efforts from 1998 through 2002--an average of roughly $3.1 billion a year. About $2.1 billion of that amount will be spent by the Ballistic Missile Defense Organization on TMD each year. The remaining $1 billion will be spent each year on research and technology development for national missile defenses, management and support, and missile defense activities funded by the military services.

Under its restructured TMD program, the Administration will deploy a core package that includes both point defenses (which can protect relatively small targets like airfields or command facilities) and area defenses (to protect areas a few hundred kilometers in diameter). Specifically, the Army will deploy a point defense called the Patriot Advanced Capability 3 (PAC-3) and an area defense called Theater High-Altitude Area Defense (THAAD). The Navy will develop a sea-based point (or lower-tier) defense using the Standard missile that it deploys on its Aegis destroyers and cruisers.

In addition to the core systems, the Administration plans to continue developing three advanced-capability theater defenses: a Navy sea-based area defense; a mobile Army point defense formerly called the Corps Surface-to-Air Missile (Corps SAM) and now known as the Medium Extended Air Defense System; and an Air Force airborne laser designed to destroy missiles early in their flight, before they can dispense submunitions and decoys that might overwhelm ground-based defenses.

To increase the area that THAAD and the Navy's area defense can protect, the Administration is developing space-based sensors, a constellation of satellites called the Space and Missile Tracking System (also known as Brilliant Eyes). The Administration will also develop a battle management system to enable the TMD systems to function effectively together. Finally, the Administration plans to continue paying for much of Israel's effort to develop the Arrow missile as an area defense system.

Some Members of Congress have expressed concern about the cost of developing so many apparently redundant systems, including both land- and sea-based point and area defenses. Some Members also question why the United States should bear all of the cost to develop area defenses like THAAD that will be used primarily to protect the civilian populations of other na-

tions. Other critics are concerned that the Brilliant Eyes space-based sensor, the Navy's upper-tier defenses, and the airborne laser proposed by the Administration will violate the terms of the Anti-Ballistic Missile (ABM) Treaty.

This option would save money by developing only the Administration's original three core TMD programs (PAC-3, the Navy point defense, and THAAD) and a battle management system. The three advanced-capability systems and Brilliant Eyes would be canceled. This option would continue all other TMD research and non-TMD programs at the Administration's planned level but would eliminate funding for Israel's Arrow missile. Relative to the Administration's plan for 1997, those actions would save $196 million in 1998 and nearly $2 billion over five years. Relative to the 1998 plan, total savings would be higher by $125 million in 1998 and $1 billion through 2002. The Administration increased funding for the airborne laser, the Navy's area defense, and the Space and Missile Tracking System--three of the systems this option would cancel.

By canceling the Navy's upper-tier defense system, this option would reduce the flexibility of U.S. commanders during a crisis. Although sea-based defenses are limited to defending coastal regions, they can be deployed to a region quickly and do not require access to secure airfields to be airlifted into the theater--a limitation of land-based systems like THAAD if they are not already deployed in the region. The United States can also deploy sea-based defenses without having to obtain basing rights in another country, a process that could cause domestic political difficulties for some friendly governments. This option would preserve the capability to defend small areas such as ports or amphibious landings from the sea with the Navy's lower-tier point defense. But without the Navy's upper-tier system, the United States would not be able to defend larger areas such as cities until THAAD could be deployed. Nor could it use forward-based ships to defend large areas of Europe or Japan against attack from the Middle East or North Korea, respectively. The Congress is sufficiently impressed with the potential of the Navy's upper-tier system that it asked the Administration to make that system a core program immediately.

Changes under this option would also limit the area that could be defended by the remaining systems. Canceling Brilliant Eyes would limit the area that THAAD could defend because ground-based sensors would take longer to detect and track incoming missiles, thereby reducing the range at which those missiles could be intercepted. Canceling Brilliant Eyes could also affect the capability of a future national missile defense system, if the United States eventually chose to deploy one. In addition, terminating the airborne laser program would halt work on a system that has the potential to be effective against missiles armed with nuclear or chemical warheads, if technical problems can be overcome. Finally, cutting off funding for Israel's Arrow area defense missile would jeopardize a critical program for one of the United States' closest allies, which currently faces a real threat from ballistic missiles.

Notwithstanding those disadvantages, under this option the United States would still deploy capable land- and sea-based point defenses, a land-based area defense, and a battle management system, all according to the schedule proposed by the Administration. By eliminating all TMD funding beyond the core systems, this option would halt several programs early in their development phase. In addition to the savings over the next five years, those actions could save significant sums beyond 2002, when Brilliant Eyes and one or more of the advanced TMD systems would have entered full-scale development and production. This option would also eliminate payments to Israel to support development of the Arrow missile. In this period of tight budgets, it may be inappropriate to spend U.S. funds to develop a foreign system that the United States has no intention of buying.

In addition to lowering costs, this option would address critics' concerns that several of the planned TMD systems would violate the ABM treaty. Many ABM supporters argue that by effectively substituting for ABM radars, Brilliant Eyes would significantly increase the area that THAAD or the Navy's upper-tier system could defend and thus would violate the treaty. The contractor building THAAD has stated that the system's capability does not depend critically on Brilliant Eyes and that such sensors are needed only to defend the large areas required for national missile defenses. Since the Administration has delayed indefinitely a decision to deploy national missile defenses, space-based sensors such as Brilliant Eyes may not be required for many years, if at all. Terminating the Navy's upper-tier defense would address concerns

about its ability to defend large areas against intercontinental missiles--concerns that have been heightened by the Navy's claims that Aegis ships could indeed defend the United States against a limited ballistic missile attack. Halting the development of the airborne laser would also address concerns about its compliance with the ABM treaty.

DEF-05 CANCEL THE NEW ATTACK SUBMARINE

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	2,859	248	2,240	257	3,436	9,040
Outlays	302	867	881	1,253	971	4,274

NOTE: Savings relative to the Administration's 1998 plan appear in Appendix A.

As part of the overall reductions in military forces, the Navy is reducing its attack submarine force from 80 ships in 1996 to between 45 and 55 by 1999. To meet the overall force goal, the Navy is decommissioning some of its Los Angeles class (SSN-688) submarines before the end of their 30-year service life. At the same time, however, the Joint Chiefs of Staff (JCS) believe that the Navy will need 10 to 12 very quiet submarines by 2012 to compete with Russia's submarines, which have become quieter, making them harder to locate and track. To meet that goal and to maintain the industrial base for building submarines, the Navy is producing three Seawolf class submarines and is designing the New Attack Submarine (NSSN) to be their lower-cost successor.

The NSSN is the first submarine that will be less capable in many ways than its predecessor. It will be as quiet as the Seawolf but will be smaller and slower, carry fewer weapons, and not be able to dive as deep. Although the Seawolf was optimally designed for its primary mission of countering the more severe threat from Russia's submarines in the open ocean, the NSSN is being developed to operate in littoral waters close to potential regional foes.

Under the Clinton Administration's 1996 plan, the Navy purchased the third and last Seawolf in 1996 and planned to purchase the initial NSSN in 1998, the second in 2000, and two ships a year thereafter beginning in 2002. In the 1996 defense authorization act, the Congress instructed the Navy to gradually redesign the NSSN while producing one improved ship each year from 1998 to 2001. The design for producing the new submarine, which would cost less and be more capable than the NSSN, will not be selected before 2002. The Administration's 1997 plan incorporated but did not fund the two additional submarines in 1999 and 2001 that the Congress wanted. Its 1998 plan funds all four ships, but does so over a five-year period, skipping 2000. Procurement of more than one ship a year will begin no earlier than 2004.

The Congress revised the Administration's plan because it was concerned about both the design and the cost of the NSSN. The 1995 conference report on defense appropriations reflected the conferees' concern that the Navy could not afford the research, development, and production costs. The Navy projected that completing the research and development (R&D) program would cost $2.9 billion and that producing the first ship would cost $3.2 billion (in 1998 dollars), though the Navy believed it could lower that cost to $1.6 billion per ship by the time the fifth ship was purchased. The conference report also noted that the Navy would not need to proceed with the NSSN for nearly 10 years to meet its goal for submarines and that continuing to produce a limited number of Seawolf class ships during that period would be less expensive than buying the NSSN.

This option would cancel the NSSN and purchase Seawolf submarines at a low rate. To help maintain the submarine industrial base and modernize the fleet, the option would produce a Seawolf every other year from 1999 to 2002 and one in 2003 and every year thereafter.

Canceling the NSSN and producing the Seawolf at low annual rates would save about $2.9 billion in budget authority in 1998 and $9 billion during the 1998-2002 period compared with the Administration's plan

as revised by the Congress. (In outlays, savings are $302 million in 1998 and $4.3 billion over five years.) Some of those savings would arise primarily from canceling the R&D program costing $1 billion. In addition, producing two more Seawolf ships in 1999 and 2001 would cost $8 billion less through 2002 than producing six NSSNs (one each year from 1998 to 2001 and two in 2002). Compared with the Administration's 1998 plan, which purchases four submarines through 2002, five-year savings in budget authority would be reduced to $4.5 billion during the 1998-2002 period.

The Navy's R&D program for the NSSN is expensive, particularly since it will produce a submarine that is in many ways less capable than the Seawolf. The Congress directed the Navy to redesign the ship using new technology to improve the design and further reduce the cost. The principal benefit of any lower-cost submarine--being able to buy more of them--may be nullified if unit costs for follow-on boats fail to decline as the Navy projects. The Navy projected that costs for the NSSN would decline by about 50 percent from the first ship to the fifth ship. Yet when the 688I (the improved version of the 688 submarine) began production, the costs dropped only 15 percent from the first to the fifth ship. Those two cases may not be entirely comparable, however, because costs for the detailed design of the first ship of a newly constructed class of ships may be higher than costs for the first ship of an improved class.

Continuing to produce the Seawolf submarine would allow the Navy to cancel the research and development program for the NSSN. The Navy could continue a low-level R&D program ($100 million a year) to develop new technologies as Seawolf ships were produced, thereby hedging against the need for a new-generation submarine if current projections of the threat should worsen.

During the Congressional debate on producing the third Seawolf, the Navy emphasized that Russia, although financially strapped and therefore unable to operate its nuclear submarine fleet up to its potential, is still investing money to buy new, very quiet attack submarines at low rates. As a result of Russia's investments, the JCS has set the requirement for 10 to 12 very quiet submarines by 2012. (The Seawolf, the NSSN, and presumably the next-generation submarine would all be quiet enough to meet the JCS standard.) Because the Seawolf's original mission was to fight such highly capable submarines, building additional Seawolf ships might be a hedge against any return by Russia as a hostile and strong military power. Procuring one Seawolf every other year from 1999 to 2002 and one every year from 2003 to 2007, plus the three already authorized, would enable the Navy to field a force of 10 very quiet ships by 2012, meeting the JCS requirement.

Although the Seawolf can perform missions in littoral areas, it might be less capable of carrying out those missions than submarines that are specifically designed for that purpose--the NSSN or the next-generation submarine. The NSSN has enhanced surveillance and special operations capabilities and may be able to get closer to shore in shallow water than the larger Seawolf. A larger ship, however, can carry greater numbers of special forces or Tomahawk missiles for attacking targets on land.

Continuing to produce Seawolf submarines at a low rate would also mitigate the effects on the submarine industrial base of canceling the NSSN. Although building Seawolf ships would do little to retain the capacity to design submarines, it would help maintain the industrial capacity to produce them. This alternative would probably provide enough work for only one of the two shipyards that can build nuclear submarines. If the alternative failed to provide the remaining yard with sufficient production work, that yard could take on some overhauls of existing submarines to help make up the difference. (Overhauls, which are usually done at public shipyards, use most of the skills required in building submarines.)

The low production rate might have a greater impact on subcontractors, but that effect could be mitigated in several ways: providing subcontractors with government subsidies, stockpiling critical components or shifting production of them to the shipyard, shifting other Navy work to the subcontractors, or using subcontractors to revitalize, modernize, or replace equipment on existing submarines. The industrial base for design (engineering and design teams) might be kept active by overhauling and modernizing existing submarines and developing additional technology to hedge against the need for a new-generation submarine. (The costs of those measures are not included in CBO's estimate of the savings for the option.)

DEF-06 REDUCE THE NUMBER OF AIRCRAFT CARRIERS AND AIR WINGS TO 10

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	350	934	1,620	1,358	7,060	11,322
Outlays	259	746	1,061	1,260	1,646	4,972

The aircraft carrier is the centerpiece of the U.S. Navy. The Administration's plan calls for a fleet of 12 carriers (11 active plus one carrier, manned partly by reserves, that can also be used for training) with 10 active air wings and one in the reserves to provide combat capability for those ships. The carriers will be accompanied by a mix of surface combat ships--usually cruisers and destroyers--and submarines that can attack planes, ships, and submarines that threaten the carrier. The surface combatants and submarines can also attack targets on land.

Some policymakers have argued that the United States does not need a force of 12 carriers in the aftermath of the Cold War. The total capability of all U.S. tactical aircraft in the Navy and Air Force will substantially exceed that of any regional power that seems potentially hostile. Cuts may therefore be acceptable.

Moreover, the capabilities of U.S. ships are unsurpassed worldwide. The Navy has ships other than carriers, including large flat-deck amphibious vessels, that can assist in maintaining a U.S. naval presence overseas in peacetime. Perhaps for these reasons, some policymakers have contemplated carrier force levels below those recommended by the Administration's plan. In 1990, before the breakup of the Soviet Union, the Chairman of the Senate Committee on Armed Services recommended a force of 10 to 12 carriers. And during the 1992 campaign, President Clinton called for a Navy with 10 carriers.

This option would retire two conventionally powered carriers early so that by 1999 the Navy would have 10 carriers (nine active carriers and one manned partly by reserves that could also be used for training). In addition, from the force of 10 active and one reserve air wings, it would eliminate one active air wing and leave nine active air wings and one reserve wing to match the number of carriers.

Compared with the 1997 plan, which has 12 carriers and 11 air wings, savings in budget authority could total about $350 million in 1998 and roughly $11.3 billion over five years. (In outlays, about $260 million would be saved in 1998 and $5 billion over five years.) About $4.9 billion of those savings are from reduced operating and support costs generated by retiring two carriers and eliminating one air wing. Another $6.4 billion would be saved by obviating the need to buy the CVN-77 nuclear carrier in 2002. Costs to decommission each retiring ship have not been deducted from the savings estimate.

The Navy might also realize procurement savings, which have not been included in the savings shown above. For example, the Navy might not need to buy as many DDG-51 destroyers for the smaller number of carrier battle groups (see DEF-07 for a discussion of the DDG-51). Also, the cut in air wings would reduce the number of required aircraft (see DEF-08 for a discussion of changes in procurement of naval aircraft).

According to former Secretary of Defense Les Aspin, reducing the force to 10 carriers would not impair the ability of the U.S. military to fight and win two regional wars that started nearly simultaneously. He argued, however, that having fewer ships would limit the Navy's ability to keep three carriers deployed overseas most of the time. In peacetime, some carriers spend time in repair; others are kept at U.S. ports to provide stateside duty time for their crews; still others are in transit to their operating stations. The Navy argues that only one-quarter or less of the carrier fleet can be deployed overseas in peacetime. Thus, reducing the fleet to only 10 carriers might mean that, much of the

time, one carrier fewer on average could be deployed overseas.

The Navy, however, may be able to maintain deployments with a smaller fleet. The factors the Navy used throughout the 1980s implied that about a third of the carrier fleet would be deployed overseas. Moreover, the Navy kept five of its 13 carriers overseas in the late 1970s. Based on that experience, the fraction of the carrier fleet that might operate routinely overseas is larger than the Navy's current formula would suggest, although according to the Navy such intensive use of carriers led to a number of problems. Alternatively, the same amount of overseas presence might be achieved with fewer carriers by basing another carrier overseas or shuttling crews and air wings between carriers. If the Navy shuttled crews to carriers deployed overseas, the same overseas presence could be achieved with about eight carriers and nine crews and air wings, saving $1.3 billion per year in procurement and operating and support costs.

Furthermore, a reduced overseas presence may be acceptable in the post-Cold War world. The United States would still have at least two carriers deployed overseas at any time, and possibly more if the Navy deployed a larger fraction of its carrier fleet. However, some missions, such as those requiring substantial numbers of fixed-wing aircraft, can be performed only by carriers. For example, carrier aircraft can be used to hit moving targets at longer ranges. In a crisis requiring such capability, a smaller force might mean an increase in the time before U.S. combat capability became available.

Alternatively, the Navy could use surface combatants other than the aircraft carriers to maintain a naval presence in peacetime and to assist in responding to crises. For example, it could use groups of ships centered around as many as 12 large flat-deck amphibious assault ships (smaller carriers) that are designed to transport the Marines and their equipment; those ships can embark helicopters and Harriers (Marine Corps attack aircraft that can land and take off vertically) and are as large as the aircraft carriers of many other countries. These Amphibious Ready Groups are fully capable of handling some missions performed by carriers, such as conducting limited strikes and evacuating noncombat personnel.

The Navy may also be able to meet some of its deployment requirements with groups of surface combatants that do not include any kind of carrier. Those formations have been made possible because the offensive capabilities of surface combatants have been augmented with the Tomahawk missile for attacking targets hundreds of miles inland and because their defensive capabilities have been enhanced by the Aegis system for defense against attacks from aircraft and antiship missiles. With the demise of the Soviet Union, a substantially reduced threat to U.S. ships also contributes to the feasibility of maintaining a presence with ships other than carriers. The Navy has already used formations without aircraft carriers to provide overseas presence. None of the formations, however, are as capable as a carrier battle group.

However, if policymakers continue to use aircraft carriers for overseas presence at current levels but the Navy has fewer vessels available, the time that ships spend at sea will have to increase. The high-quality sailors the Navy needs will therefore be spending more time away from their homes and families, thus making it harder for the Navy to retain them. According to a quantitative study by the Center for Naval Analyses, however, the problem of retention might not be severe and might be reversed by increasing compensation slightly.

DEF-07 REDUCE PROCUREMENT OF DDG-51 DESTROYERS

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	551	660	777	879	1,149	4,016
Outlays	27	127	274	431	585	1,444

NOTE: Savings relative to the Administration's 1998 plan appear in Appendix A.

The DDG-51 destroyers of the Arleigh Burke class would be used in a war to protect aircraft carrier battle groups and to attack land- and sea-based targets. The ships incorporate the Aegis combat system for air defense and the Tomahawk missile fired from the Vertical Launching System for land attack. Compared with previous classes of destroyers, the DDG-51s incorporate other improvements in speed, weapons, and armor. The Navy states that the DDG-51s also will be more difficult for enemy forces to detect because of design features that reduce their radar, sonar, and infrared signatures.

The Administration's 1997 plan would have bought 14 more DDG-51s from 1998 through 2002--two per year in 1998 and three per year from 1999 to 2002. In the 1997 defense authorization act, the Congress provided multiyear contract authority for three ships per year from 1998 through 2001, thereby adding a ship in 1998. The Administration's 1998 plan adds a ship in 1998 in response to Congressional action, but reduces the number of ships purchased in 2002 from three to one.

In contrast, this option would buy only 10 DDG-51s from 1998 through 2002 at a rate of two a year. Compared with the Administration's 1997 plan as modified by the Congress, this option would buy five fewer ships during the 1998-2002 period and could save about $551 million in budget authority in 1998 and $4 billion over five years. (Savings in outlays would be $27 million in 1998 and $1.4 billion over five years.) Of the $4 billion in budget authority savings associated with this option, about $3 billion results from building five fewer ships and $1 billion from consolidating construction at one shipyard. Compared with the Administration's 1998 plan, which calls for building two fewer ships through 2002, this option would save $2.1 billion in budget authority and $1.4 billion in outlays. The smaller fleet of DDG-51s in the next decade would also result in savings in operating and support costs that are not included in this option.

Reducing the number of DDG-51s purchased each year could have some disadvantages. Buying fewer DDG-51s might reduce the capabilities of the fleet by providing fewer ships that can perform multiple missions (such as strike and antiair, antisurface, and antisubmarine warfare). With the Navy's post-Cold War policy of deploying its ships more flexibly, which could require that surface combatants sometimes be deployed without an aircraft carrier, such capabilities might be more important.

Moreover, proponents of the Administration's plan might contend that the advanced capabilities of the DDG-51s will continue to be needed in the post-Cold War world. The sophisticated combat systems that the DDG-51 incorporates include the Aegis system, which is designed to stop attacks by large numbers of enemy aircraft and their antiship missiles attempting to saturate the air defenses of the aircraft carrier battle group. The hostile air threat to the U.S. Navy has declined with the breakup of the Soviet Union, and the smaller air forces of regional powers that the United States is most likely to fight are less capable of launching saturation attacks. Combat against regional powers, however, is likely to bring ships into littoral areas where they have less time to react to threats and thus might benefit from the quicker reaction of the Aegis system. Nevertheless, some analysts believe that the DDG-51, which was designed during the Cold War, is not optimally designed

to fight in coastal areas and is too expensive to purchase in large numbers if the Navy's budget declines.

Only two shipyards currently build surface combatants, and reducing procurement to two vessels a year might sustain only one producer. The Congress would have to weigh carefully the possible effects of reducing the country's naval shipbuilding capabilities and the ability to reconstitute them if a change in threat required a buildup of forces. If reduced purchases caused one shipyard to close, the remaining shipyard might be able to charge higher prices that might offset some or all of the savings from lower production.

The Navy might be able to minimize such growth in unit costs. Even if only one shipyard remained, the government--a single buyer that has many alternative uses for its limited procurement budget--might be able to exert pressure on that yard to restrain costs. Indeed, one approach the Navy could take would be to let the two shipyards bid competitively for a single contract covering all ships purchased during the 1998-2001 period. In the longer term, closing a shipyard might reduce the Navy's costs by eliminating excess naval shipbuilding capacity.

Reducing the number of DDG-51s, as proposed in this option, need not limit the Navy's ability to counter regional threats. For example, the combination and automation of sensor inputs and weapons in non-Aegis ships may allow them to react faster to the shorter-range threats in regional conflicts. Advances in communications may allow a ship with the Aegis system to control the weapons of all other ships in a group, shortening the reaction time of the entire group. In addition, according to a press report, the Navy already has a shortage of Tomahawk missiles to be carried on existing ships, including the DDG- 51, that have the Vertical Launching System.

Considering the reduced threat, the Navy may already have enough sophisticated Aegis ships. With the 75 Aegis ships that would eventually be available under this option (27 CG-47 Ticonderoga class cruisers, 38 DDG-51s funded through 1997, and 10 future DDG-51s), two could be assigned as escorts to each of the 12 aircraft carrier battle groups, leaving 51 available for independent operations. In addition, the Navy would need fewer Aegis ships to escort carrier battle groups if the number of carriers was reduced (see DEF-06) or if lower threat levels warranted assigning only one Aegis ship per battle group. Because of the reduced threat, the Navy is already lowering the number of surface combatants assigned to escort and protect the aircraft carrier.

In the longer term, procuring fewer DDG-51s would exacerbate the Navy's difficulty in maintaining its force goal of 346 ships. In recent years, requirements for overseas presence have prompted the Navy to increase the goal from about 330 ships to 346. Yet the Administration's 1997 plan produces an average of about five ships per year during the 1997-2001 period. Assuming that the average life expectancy of a ship is 35 years, continuing that rate of procurement would stabilize the size of the fleet at less than 200 ships. Producing fewer DDG-51s per year would reduce the fleet even further unless the funds were used to procure a greater number of less expensive ships. With lower threat levels in the post-Cold War era, however, a smaller fleet of highly capable ships might be adequate. Most navies, especially those of potential adversaries, have smaller and less sophisticated ships than the DDG-51.

DEF-08 TERMINATE THE ARSENAL SHIP PROGRAM

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	188	140	116	31	0	475
Outlays	91	138	126	76	28	459

NOTE: The 1997 plan includes no funds for follow-on ships.

The arsenal ship is a relatively new concept in ship design. It is being developed primarily to attack targets on land. Each of six planned ships would contain about 500 vertical launch system (VLS) cells. Those cells are tubes used to fire missiles and are currently deployed in smaller numbers on Navy cruisers, destroyers, and submarines. Because ordnance aboard the arsenal ship would be fired remotely by other ships, aircraft, or ground units using targeting data that they developed, the arsenal ship would not require expensive sensors and combat systems.

The Administration's 1997 plan continues accelerated development and fielding of the first ship (a demonstrator) by the Navy and the Defense Advanced Research Projects Agency (DARPA) under an advanced technology demonstration program. According to a Navy official familiar with the program, if development proceeds satisfactorily, a decision to procure a second ship will be made in 2000 or 2002.

This option would cancel research and development of the arsenal ship, saving $91 million in outlays in 1998 and almost $500 million during the 1998-2002 period. Those savings do not factor in the costs to procure follow-on production ships; the 1997 plan funds only the first vessel. Total savings from not completing the program are estimated to exceed $3 billion. (Those savings assume that the Navy buys a second ship in 2002 and four other ships from 2003 to 2006.) In addition, savings of about $2 billion would result from not buying expensive missiles to fill the 3,000 additional vertical launch cells. (Those savings assume that the Navy procures 3,000 additional Tomahawks, which are used to strike fixed targets on shore at long ranges.)

Proponents of the arsenal ship believe it would be an inexpensive way to give the fleet additional firepower that could be deployed quickly during a crisis or war. Existing technology would be used for the ship; omitting costly sensors and combat systems would allow personnel costs to be kept low by limiting the size of the crew to no more than 50. The ships would be kept overseas in key areas so that they could respond more quickly to crises. Their high-capacity magazines might be used to hit targets early in a war when enemy air defenses would make it too risky to use manned aircraft. Also, the longer-range missiles fired from the ships might be used to support Marines carrying out their new doctrine of maneuvering deep into enemy territory.

Nonetheless, the arsenal ship may not be needed. Opponents of the program maintain that the fleet does not need more VLS cells, especially ones so vulnerable to enemy attack. Even without arsenal ships, by the end of the decade the fleet will have over 7,000 VLS cells on its cruisers, destroyers, and submarines. Unlike the arsenal ship, those ships can perform multiple missions. Critics argue that the VLS cells on the other ships (the maximum number of cells per ship is about 120) are not as vulnerable as those on the arsenal ship. The arsenal ship, they claim, puts too many weapons on a single platform, making it a lucrative and potentially explosive target for enemy aircraft, submarines, and patrol boats. In addition, because the Navy has traditionally assigned a higher priority to buying ships and aircraft than it has missiles, it has a shortage of Tomahawk missiles even for the existing VLS cells. Furthermore, according to one critic, building a ship whose sensors and combat systems are remotely located makes the questionable assumption that data links between

ships cannot be interrupted or jammed. Those data links could be the weakest part of the concept of the arsenal ship.

Opponents also maintain that the Navy is building the wrong kind of ship. Although the Department of the Navy's post-Cold War doctrine "Forward from the Sea" emphasizes the role of the Marine Corps, the arsenal ship may not be ideal for supporting those forces before they go ashore (by bombarding the shore before an amphibious assault) and while they are there. Critics argue that with about 500 VLS cells, the ship would be primarily a strike weapon poised to hit distant, high-value targets in the enemy's rear area with very accurate and expensive missiles. Therefore, the arsenal ship would compete with the plethora of other assets, such as the B-2 bomber, capable of performing the strike mission.

Thus, opponents assert that scarce resources should not be used to buy more VLS cells. Instead, to suppress enemy forces before and during an amphibious assault, the Marines need the support of ships that can provide responsive, sustained, high-volume fire from guns shooting relatively inexpensive shells. According to that argument, such fire support during the Persian Gulf War was provided by the now-retired battleships with 16-inch guns, despite the availability of missiles in VLS cells on ships afloat. Furthermore, unlike guns, missiles cannot be reloaded into VLS cells while the ship is at sea. (The space and weight limitations of the arsenal ship would permit a gun system to be added in the future, but the demonstrator ship will not have one.)

Although the Navy intends to build the arsenal ship inexpensively, it is exploring ways to reduce the ship's vulnerability to attack in littoral areas through stealth techniques that inhibit detection. According to one critic, however, spending a lot on stealth technology may be unwarranted because the vessel would probably be protected by the sophisticated defenses of an accompanying battle group.

DEF-09 CANCEL THE UPGRADE OF THE NAVY'S F/A-18 FIGHTER AND BUY THE CURRENT MODEL

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	1,812	2,116	2,233	1,654	2,410	10,225
Outlays	252	932	1,630	1,886	1,943	6,643

NOTE: The Administration, in its 1998 budget request, has revised its plan for this system. Appendix A shows savings against the 1998 plan.

For the foreseeable future, the F/A-18 aircraft will account for the bulk of the Navy's fleet of carrier-based aircraft that perform fighter and attack missions. The F/A-18 attacks targets both in the air (the fighter mission) and at sea or on the ground (the attack mission). The current version of the F/A-18 is designated the C/D model.

In 1991, the Navy announced plans to develop a new E/F variant of the F/A-18. The E/F version features several modifications: a longer fuselage, a larger wing, and a more powerful engine than are now on the C/D version. Those changes should enable the E/F to carry a larger load of weapons than the C/D, or to carry a combat load about 40 percent farther. Both attributes are important factors in determining the plane's capability in the attack role. The new engine should also enable the heavier E/F aircraft to retain the speed and maneuverability of the earlier version, important performance considerations in fighter combat. McDonnell Douglas Corporation, the plane's manufacturer, also points to the lowered signatures of the E/F, billing the plane as the Navy's first fighter aircraft with low observable characteristics. Such characteristics increase the likelihood that planes will survive to perform their missions.

Though more capable, the E/F version will also be more expensive than the C/D model--about 39 percent more by some estimates--and the Navy will have to pay about $0.4 billion from 1998 through 2002 to complete development of the plane. This option would cancel development and procurement of the new E/F model and instead would buy sufficient additional C/D aircraft to maintain the Administration's planned production rates. Compared with the 1997 plan, savings in budget authority would total about $1.8 billion in 1998 and $10.2 billion over five years. Savings from the 1998 plan would be about the same. Savings from canceling the upgrade might be larger if the F/A-18 experienced unanticipated cost increases.

The requirement for an upgraded F/A-18 aircraft may be questionable in view of today's reduced military threat. The threat to carrier battle groups stemmed largely from the former Soviet Union, and the possibility of conflict with the former Soviet republics now seems increasingly remote. Regional powers are not likely to be able to match the capability of current U.S. fighters for many years. But if the enhanced fighter capabilities offered by the E/F version are not needed, neither may be its added attack capabilities, based on the Navy's judgments about other systems. The Navy is retiring its venerable but longer-range A-6 fleet and has canceled development of a new longer-range replacement, the A/FX, at least in part because the service now places less emphasis on the deep strike mission and more on supporting Marine forces that operate at relatively short ranges from the ships that transport and support them. Such reservations about whether F/A-18 E/F enhancements are needed may have led the Marine Corps, which also flies the F/A-18, to question whether it would pursue E/F purchases or keep buying the current model.

Even if the added capabilities of the E/F model are needed, trends in the F/A-18 program suggest that they may be hard to achieve. Some critics of the program have noted that the A/B model of the F/A-18 attained only about 75 percent of the originally specified goal for the fighter's range, and the C/D model achieved only about 70 percent.

Canceling the E/F development program would have some disadvantages. Even in conflicts with smaller nations, improvements in the F/A-18's range might be useful in the attack mission; indeed, critics of the C/D version believe its relatively short range limits its usefulness. Moreover, now that the A/FX has been canceled, the E/F upgrade will be the only major upgrade the Navy will purchase for its fighter fleet at least through the middle of the next decade.

DEF-10 CANCEL THE MARINE CORPS'S V-22 AIRCRAFT PROGRAM AND BUY CH-53E HELICOPTERS

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	687	813	800	1,258	1,874	5,433
Outlays	200	440	581	696	960	2,877

NOTE: The Administration, in its 1998 budget request, has revised its plan for this system. Appendix A shows savings against the 1998 plan.

The V-22, a new plane entering production in 1997, is intended to help the Marine Corps perform its amphibious assault mission of seizing a beachhead in hostile territory and its subsequent operations ashore. V-22s will transport up to 24 marines or 10,000 pounds of their equipment, moving either from amphibious ships to the shore or from one shore base to another. The plane employs a tilt-rotor technology that enables it to take off and land vertically like a helicopter and, by tilting its rotor assemblies into a horizontal position, become a propeller-driven airplane when in forward flight. The V-22 will be able to fly faster than conventional helicopters; it will also fly longer distances without refueling than other Marine Corps helicopters and thus can "self-deploy" rather than be carried to distant theaters on planes or ships, the common mode of transport for conventional helicopters. The Marine Corps argues that analysis indicates that the V-22's increased speed and other characteristics of its design will make it less vulnerable when flying over enemy terrain.

Despite all of these advantages, the Bush Administration tried to cancel the plane, largely because of its expense. At a projected unit cost of more than $54 million (in 1997 dollars), the V-22 costs considerably more than most conventional helicopters. The V-22's flyaway cost, a price that excludes some items bought with procurement funds, averages about $42 million (also in 1997 dollars).

Notwithstanding the V-22's high cost, the Congress has continued to fund it, providing more funding than the Clinton Administration requested in 1997. The Congress allocated funds to procure five planes, one more than the Department of Defense requested. The Marine Corps plans to buy a total of 425 V-22s. Another 50 planes might eventually be bought for special operations forces, and the Navy plans to buy 48 for combat search-and-rescue missions and for logistics support of its fleet.

At present, the Marines use helicopters to transport personnel and equipment in amphibious missions. One helicopter--the CH-53E, which carries heavier loads than the V-22 and costs about half as much to procure--will continue to transport Marine equipment even after the V-22 is fielded. The Marines will continue to need some CH-53Es to meet requirements for lifting heavier equipment, but the Administration bought the last of those helicopters in 1994.

This option would cancel the V-22 and continue procurement of CH-53Es. It would buy six CH-53Es per year from 1998 through 2002, half the number bought in 1994. It would also cancel development and procurement of the V-22 special operations variant and purchase no replacement. Presumably, the Department of Defense might develop and procure a special forces aircraft at some later date. Relative to the Administration's 1997 plan, the option would save nearly $0.7 billion in budget authority in 1998 and $5.4 billion over five years. Savings from the 1998 plan would be about the same. In addition to saving money, buying CH-53Es might entail less risk than developing a V-22. Two of five V-22 prototypes have crashed, as has one of two XV-15 aircraft built to demonstrate tilt-rotor technology. The Marine Corps argues that the problems that caused those crashes have been remedied without substantial design changes. But the crashes

may suggest problems with the design. If problems exist, developers may need to increase the already high costs of the plane or reduce its capability.

The Marines Corps argues that the CH-53E does not meet its requirements for the amphibious assault mission for a number of reasons. First, the slower CH-53E is less likely than the V-22 to survive in hostile environments. Even if the V-22 is purchased, CH-53Es will be needed to transport heavy items of equipment that the V-22 cannot carry. Since many of those items will be needed early in battle, CH-53s will therefore need to be part of the first assault wave. But Marine Corps doctrine dictates that the first assault wave be delivered by a more survivable aircraft than the CH-53E. Furthermore, Marine Corps personnel suggest that CH-53Es might not be able to build up sufficient forces fast enough to stop enemy troops who might arrive soon after operations begin. Smaller U.S. forces would increase the likelihood of a U.S. defeat or potentially increase the number of casualties. The problem of building up forces quickly might be at least partially overcome if each CH-53E carried more troops, but the Marine Corps argues that CH-53Es are too unwieldy and vulnerable to carry large troop loads.

Marine Corps personnel also argue that the CH-53E, or indeed any other current helicopter, is unacceptable because it cannot deploy overseas without substantial assistance and risk. Many current helicopters can make the relatively long trips over water required to deploy in the Pacific, but they must refuel in flight, requiring the assistance of tanker aircraft, and their slower speed increases the chance that pilot fatigue will result in missing a tanker rendezvous or cause other mishaps. A final argument in favor of buying the V-22 is that it provides capabilities that may be particularly useful in peacekeeping contingencies, such as the Bosnian operation, and hence worth developing if the United States is more likely to engage in such operations. For example, since V-22s fly faster than conventional helicopters, they might be better at landing personnel and equipment in remote sites and rescuing pilots from downed aircraft.

DEF-11 REDUCE AIR FORCE TACTICAL FORCES

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	261	535	548	563	579	2,486
Outlays	191	425	484	518	543	2,162

The military forces proposed by the Administration include 20 tactical air wings--13 active and seven in the part-time reserves--six fewer than the Bush Administration planned to have. (Traditionally, an Air Force tactical air wing has consisted of 72 combat aircraft, plus about 28 aircraft for training and maintenance, though the service may be revising that concept.) Substantial disagreement exists about whether all of those forces are needed, since U.S. tactical aircraft enjoy overwhelming superiority compared with the forces of regional powers that appear potentially hostile to the United States. Perhaps for that reason, former Secretary of Defense Les Aspin, when he was the Chairman of the House Committee on Armed Services, recommended in 1992 that the Air Force retain only 18 tactical wings--10 active and eight reserve.

This alternative would follow that recommendation and further reduce the tactical fighter forces in the Air Force to 18 wings by the end of 1998. So rapid a schedule for reductions should be feasible inasmuch as the Air Force has reduced the size of its fleet quickly in the past; for example, it eliminated six wings during 1991 and 1992. Moreover, the six additional wings the Clinton Administration planned to eliminate were cut by the end of fiscal year 1996. Reducing the number of Air Force wings from 20 to 18 would lower the service's operating outlays by $191 million in 1998 and by $2.2 billion through 2002. Additional savings might accrue from buying fewer aircraft, but those savings are not included in the table above. (See DEF-12 for a discussion of changes in procurement of Air Force tactical aircraft.) CBO assumes that savings from the Administration's 1998 plan will be the same.

Still further savings might be possible if the Air Force accompanied the force reduction with a reorganization that increased the number of planes per squadron and eliminated more squadrons. That practice, known as "robusting," allocates resources more efficiently since each squadron or wing has high fixed costs. Increasing all Air Force squadrons to 24 planes could add significantly to the savings shown above.

In addition to achieving savings, a reduction to 18 Air Force wings could still leave the United States with an acceptable level of military capability in the post-Cold War world. Even in terms of simple counts, U.S. fighter inventories exceed those of any potential regional aggressor. Also, U.S. aircraft are typically more sophisticated than those of potential enemies.

Retaining only 18 wings in the Air Force, however, would not meet the military's current estimate of its requirements. Analysis by the Department of Defense suggests that 20 wings would be the minimum needed to win two nearly simultaneous regional conflicts. Today's U.S. force planning assumes that the United States needs to be able to fight virtually simultaneous wars in two regions of the world--one in the Middle East and another perhaps in Asia. If one accepts that requirement, then the Air Force may well need more than 18 wings.

Some analysts would also argue that additional cuts in Air Force wings ignore a major lesson from the war with Iraq: aerial bombardment by tactical aircraft can be quite effective and may greatly accelerate the end of a war, thus reducing the loss of lives among U.S. ground troops. A sizable inventory of tactical aircraft, perhaps more than would be maintained under this option, may therefore be a wise investment.

DEF-12 CANCEL THE AIR FORCE'S F-22 AIRCRAFT PROGRAM

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	1,130	3,014	3,910	5,152	6,083	19,290
Outlays	479	1,202	1,771	2,521	3,482	9,454

NOTE: The Administration has delayed procurement of F-22s in its 1998 plan. Appendix A shows savings against the 1998 plan.

The F-22 aircraft is being developed as the Air Force's next premier fighter and is scheduled to begin replacing the F-15 aircraft around 2000. Fighter aircraft are designed primarily to destroy enemy planes, thus guaranteeing the United States and its allies control of the air. The Air Force wants the F-22 aircraft to have supersonic cruise speed as well as stealth characteristics that make it difficult for enemy sensors to detect. The F-22 would also be designed to fly long distances and to have highly effective avionics that could make it more capable than other fighters in many types of combat.

The F-22 entered full-scale development in 1991, and according to the Administration's 1996 plan, the first F-22s were to be bought in 1998. Last year the Administration deferred purchases of the first planes to be bought with funds from the procurement account until 1999. (It still planned to buy four aircraft in 1998, but expected to fund them with development moneys and probably would have used them for testing.)

The Air Force recently announced that the program would slip again this year. The service now plans to extend the engineering and manufacturing development for the F-22 and reduce the number of aircraft purchased through 2003. It canceled the four test planes, so the first fighters would not be bought until 1999 under the new schedule. The decision stems from a recent Air Force program review that found that the F-22 engineering and manufacturing development program required additional funding and time to have a stable design before entering production. In addition, the study cited the potential for procurement costs for the F-22 to increase as much as 28 percent. The Air Force and the F-22 contractor hope to contain any growth in procurement costs by incorporating initiatives that would streamline production. The program would also include reforms of the contracting process similar to those applied to the C-17 program.

This option would cancel the F-22 program on the grounds that its additional capability may be both unnecessary and too expensive. Compared with the 1997 plan, canceling the F-22 would save $1.1 billion in budget authority in 1998 and about $19.3 billion for the 1998-2002 period. Savings from the 1998 plan over the next five years would be about $5 billion less. (The total estimated savings include procurement, research and development, and military construction.)

The high cost of the F-22 is one argument for canceling it. The Air Force planned to buy 648 aircraft in January 1993 at a total cost of about $74 billion in 1997 dollars ($86.6 billion in current dollars). The average unit procurement cost of the F-22 would have been about $83 million in 1997 dollars. Now the Air Force seems likely to buy no more than 438. Total program costs declined by only 15 percent (in 1997 dollars) even though the total quantity fell by nearly a third. The reduction in quantity, and other factors, pushed up the unit procurement cost of the F-22 to about $91 million (in 1997 dollars), about 10 percent more than the estimate provided in January 1993 and roughly 65 percent more than the average cost of the F-15E.

Since the costs of many weapon systems increase during the full-scale development phase that the F-22 entered in 1991, actual costs could rise even more. For example, the F-22's cost could increase if the Air Force has to fix design flaws. The Air Force argues that the

April 1992 crash of the only flying prototype of the F-22 was caused by the way the aircraft was operated and that certain operating restrictions or, at most, minor software changes should prevent future problems. But such mishaps may portend costly production problems. Some recent press reports also suggest that the F-22 may be experiencing other development problems, such as increases in weight, that can raise its costs. The program may also have to engage in a costly redesign of some avionics that have become obsolete over the lengthy development process. And unit costs will rise if F-22 procurement is reduced even further below planned levels, as seems likely.

Events in the Persian Gulf War suggest that current Air Force aircraft are able to counter any threat less severe than that formerly posed by the Soviet Union, which many analysts consider to have been the only hostile country whose air force had the capability to threaten U.S. fighters. In view of that reduced threat, the F-22 may provide more capability to attack enemy fighters than the United States needs.

Moreover, other types of aircraft may prove to be more useful in future conflicts. The extensive use of tactical bombing in the Persian Gulf War emphasizes the value of aircraft that can attack land targets, perhaps in preference to aircraft such as the F-22, which is designed to combat enemy fighters. Given the changes in the nature of the threat, strategies other than buying expensive F-22 aircraft might better meet the Air Force's future needs. Such strategies might include upgrading existing aircraft or developing a new plane that is less capable but cheaper than the F-22.

Nor does the Air Force need to buy the F-22 any time soon to support the reduced size of its tactical forces. CBO's analysis suggests that even if the Air Force procured no fighter aircraft after 1993, it would have more than enough through at least the middle of the next decade, though it would experience shortages in its overall tactical fighter fleet around the turn of the century.

The Air Force contends that the improved capabilities of the F-22 aircraft are required even in a world in which U.S. tactical air forces are smaller and the threat is much reduced from that posed by the former Soviet Union. If the United States canceled the F-22 program, the capability of its fighters through the first decade of the next century would be similar to that of today's F-15 aircraft, which entered development in the 1960s. By the next decade, some regional powers may possess fighter aircraft that are at least the equal of the F-15. Thus, the Air Force believes that the United States, to maintain its edge, needs the improved capability the F-22 aircraft offers. The Air Force also raises concerns about increased threats from the ground that may degrade the survivability of current aircraft. Modernizing surface-to-air missile systems, which may be more accessible to regional powers, may also be cheaper and easier than modernizing fighter fleets. To counter those threats, fighters may need the improved capabilities of the F-22, including stealth and higher speed.

The Department of Defense plans to provide the F-22 with capabilities to perform the ground attack mission--a plan that may be the Administration's response to criticisms that the F-22 is less useful in regional conflicts if it is a pure fighter aircraft. The F-22's capability to attack targets on the ground may be modest, however, according to some press reports. And its ability as a bomber will undoubtedly be less than that of a plane developed primarily for the bombing mission.

DEF-13 BUY NO MORE THAN 72 C-17S AND PREPOSITION EQUIPMENT INSTEAD

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	80	290	1,210	3,540	3,560	8,680
Outlays	10	10	120	690	1,640	2,470

The C-17 Globemaster III is a four-engine transport aircraft that can carry a cargo payload of at least 110,000 pounds for a distance of 3,200 nautical miles without aerial refueling. It is being produced as the next-generation airlift aircraft to replace the C-141 Starlifter. Because it is designed to land at relatively small airfields with short runways, the C-17 might also play a role in meeting transport needs within a combat theater and could substitute for other aircraft, such as the C-130, that traditionally perform that role.

The Congress has already authorized 48 C-17 aircraft through 1997, and the Administration plans to purchase a total of 120. By buying a maximum of 15 C-17s per year, the Administration would complete procurement in 2003. CBO estimates that under the terms of a multiyear arrangement, acquiring the aircraft would cost $18.7 billion between 1998 and 2002. Operating and supporting all C-17s in the Administration's plan would cost an additional $3.5 billion over the same period.

The Department of Defense has two alternatives to airlift for transporting military equipment over intercontinental distances--sending cargo from the United States on sealift ships or placing sets of equipment closer to regions where conflict might occur (called "prepositioning"). Although the Administration is investing in all three modes of transportation, DoD has recently focused on prepositioning equipment in two places where military planners believe conflict is most likely: the Persian Gulf region and the Korean Peninsula. That approach would allow DoD to deliver heavy forces (units that include tanks and armored fighting vehicles) much more quickly to major regional conflicts; sealift ships would take about three or four weeks to steam from the United States and unload their cargo, and airlift planes can carry only one or a few heavy vehicles at a time. By prepositioning heavy equipment on large roll-on/roll-off ships anchored in the Indian or Pacific Ocean, military planners can retain some flexibility in where they choose to send U.S. forces yet deliver the larger volume of cargo typically provided by sealift.

This option would limit purchases of C-17s to a total of 72 aircraft, or eight per year in 1998, 1999, and 2000. In the place of airlift planes, DoD would purchase one additional large, medium-speed, roll-on/roll-off ship (LMSR) that would carry prepositioned equipment. Since DoD would procure fewer C-17s each year than under the Administration's plan, CBO assumed that the average cost of each plane would be higher. CBO also assumed that DoD would incur some costs associated with closing down the C-17 production line, and it would purchase new equipment to preposition rather than rely on current stocks. Yet even after those costs, CBO estimates that the option would save $10 million in outlays in 1998 and $2.5 billion through 2002 relative to the Administration's plan to purchase 120 C-17s. Savings in budget authority would be considerably larger--almost $8.7 billion over the next five years.

Compared with the Administration's plan, this alternative would allow DoD to deliver roughly the same amount of equipment and supplies even in the most challenging scenario. But how could one ship substitute for 48 C-17s? Each newly constructed LMSR can preposition at least 250,000 square feet of cargo, compared with approximately 1,200 square feet to 1,500 square feet on each C-17. Based solely on floor space, it would take a total inventory of 38 to 52 C-17s to deliver the same amount of cargo to the Persian Gulf in the same 11- to 12-day period as one LMSR that had been prepositioned in the Indian Ocean. But using

floor space as a measure understates the comparison because airlift loads are constrained more by the weight and three-dimensional shape of their cargo than by floor space. Thus, one LMSR, which is less constrained by the weight and volume of cargo, may very well be able to perform the same early deliveries as 48 C-17s. (See Congressional Budget Office, *Moving U.S. Forces: Options for Strategic Mobility*, February 1997, for more details.)

Defense leaders might prefer to keep prepositioning to a minimum for two reasons. First, the units that military planners intend to deploy would have to be selected long before any sign of conflict. Yet if circumstances changed, a different mix of units might better address the situation. For that reason, the option might not provide regional commanders with as much flexibility as would the Administration's plan.

Second, prepositioning can complicate a deployment by breaking up the integrity of military units. Some equipment is not appropriate for prepositioning: it may be in short supply, contain sensitive electronic components, or be difficult to maintain aboard ships. For example, helicopters can be shrink-wrapped before they are transported on ships to lessen their exposure to salt water, but such a measure would not be suitable for long-term storage since it would prevent the ship's crew from running the helicopters' engines or performing routine maintenance on them. As a result, military planners divide units into equipment that is considered suitable for prepositioning and its "fly-in echelon"—the troops and more sensitive cargo that would be airlifted to meet up with stocks already in place.

The complexity added by dividing up units, however, is not insurmountable. As the military services have begun prepositioning more equipment in recent years, they have also conducted training exercises in which troops learn how to "marry up" with their gear. Increasing the amount of training could offset much of the complexity added by another prepositioning ship.

Finally, opponents of this option would argue that at a time when the U.S. military is preparing to face diverse regional conflicts on short notice, the Air Force needs more of the versatile C-17 airlifters. A 1995 study by the Secretary of Defense's Director for Program Analysis and Evaluation found that if the United States became involved in crises requiring special military missions, U.S. forces might need more than 72 C-17s. For example, the Army has a military requirement to be able to perform airdrop operations with large, brigade-size forces over long distances--a mission that DoD believes would require at least 100 C-17s. Having more C-17s could also be important if military commanders chose to devote one or two squadrons of C-17s to moving larger pieces of equipment within a combat theater at the same time as a deployment from the United States was under way.

But DoD has rarely dropped brigade-size forces in actual missions. The United States conducted airdrops into Grenada in 1983, Panama in 1989, and came close to performing a large-scale drop into Haiti in 1994, but the Air Force could have used shorter-range C-130s in all those situations. Since a brigade airdrop over longer distances would be more physically demanding on the troops and more difficult to execute, some analysts have suggested that the United States is unlikely to use such a capability. And although DoD officials have justified buying 120 C-17s partly on the requirement to conduct brigade-size airdrops over strategic distances, that plane has experienced persistent difficulties in airdrop tests.

Supporters of the option would contend that DoD could continue to use trucks and rail cars to move the largest pieces of cargo within a combat theater. Moreover, based on DoD's own analysis, the option would include enough C-17s to deliver cargo to many types of smaller contingencies such as humanitarian assistance operations, evacuating noncombatants from foreign countries, peacekeeping missions, or even delivering heavier cargo to a peace enforcement mission such as current operations in Bosnia.

DEF-14 DEFER MODERNIZATION OF TACTICAL AIRLIFT

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	117	114	119	114	117	581
Outlays	7	35	73	98	107	320

NOTE: Savings relative to the Administration's 1998 plan appear in Appendix A.

The C-130 Hercules is an airlift plane that the Air Force uses to transport cargo and supplies within a theater of operations. The C-130 is much smaller than strategic airlifters like the C-17 or C-5, which can carry an average of at least three times more weight over much longer distances. Nor is it big enough to carry the largest pieces of equipment such as Apache helicopters or Patriot missile batteries.

Nevertheless, the C-130 remains a critical element of the Air Force's tactical airlift fleet. Lockheed Martin has produced more than 2,100 of those aircraft over the past 40 years, and the C-130's airframe has proved highly effective and versatile. Its turboprop engines do not ingest loose dirt and materials from unpaved runways, thus giving the C-130 better access to austere airfields than the turbofan engines used in most strategic airlifters. The turboprop engine also permits more rapid changes in thrust than most turbofans, which contributes to the C-130's ability to take off and land on short runways and descend quickly into airfields that are hard to reach. And since the average unit procurement cost of the J version is about $55 million, the Air Force could purchase at least three C-130Js for the price of one C-17, which some defense analysts would like to use for tactical airlift operations.

To produce the J version, which the Air Force is now buying, Lockheed Martin has taken the basic airframe of the C-130 and upgraded a number of the plane's systems. For example, the C-130J includes an integrated avionics system that eliminates the need for a flight engineer and incorporates a new engine that is more powerful and fuel-efficient. The plane can be modified for in-flight refueling, although the Air Force did not request that capability in the basic C-130Js that it is purchasing.

The Air Force maintains a primary mission aircraft inventory of more than 450 C-130s for tactical airlift. For 1997, the Congress continued a pattern of authorizing a larger purchase of C-130s than the Administration requested--five C-130Js were authorized instead of the one aircraft requested. In its 1997 plan, the Administration proposed buying two C-130Js per year throughout the 1998-2002 period to begin replacing the Air Force's E version aircraft in the active-duty forces. Although the C-130Es are the oldest of those aircraft, until recently the Air Force had no plans to begin retiring them until the middle of the next decade. In its budget request for 1998, however, the Administration reduced the number of C-130Js that it proposes to buy to just three planes rather than 10 over the 1998-2002 period.

Identifying a clear numerical requirement for the C-130J, however, is difficult. The Air Force sent only 149 of its large inventory of C-130 aircraft to the conflict in the Persian Gulf. Since they move equipment and supplies from main operating bases closer to the battlefront, a substantial number of C-130s may be needed during two major regional contingencies that occurred at nearly the same time. But predicting the type and number of intratheater airlift movements that would be needed is difficult, and other modes of transportation such as trucks, trains, and watercraft can substitute for some airlift deliveries.

This option would postpone procurement of C-130Js until well into the next decade. Relative to the

Administration's 1997 plan, deferring modernization of the C-130 would save about $115 million in budget authority per year, resulting in a total of $320 million in outlay savings over the 1998-2002 period. Since the Administration has cut back purchases of C-130Js in its 1998 plan, savings from this option would be far smaller--$222 million in budget authority and $58 million in outlays over the five-year period.

As with all cuts in weapons programs, this option would eventually have negative repercussions on the defense industrial base. Following in a long tradition of export sales to more than 60 countries, Lockheed Martin is currently building a stretch model of the C-130J for Britain and Australia and may sell others to replace the C-130s it sold abroad years ago. The manufacturer used its own financial resources to develop the upgrade program, which it hopes to recoup with the first 120 planes it sells. If the U.S. Air Force purchased the J version today, that might also help to secure export sales in the world market.

Critics of this option might also argue that it would leave the Air Force with a less capable fleet of intratheater airlift planes. In recent years, the Congress appropriated funds to purchase new C-130s for the Air National Guard and Air Force Reserve, but many of the older E version remain in the Air Force's inventory. Ultimately, an older fleet might prove more expensive to operate and support. Lockheed Martin contends that since the J version uses a smaller crew and will be easier to maintain, the annual cost of operating and supporting a squadron of C-130Js will be significantly lower than that of the C-130s already in the Air Force's inventory.

But although the average E-model plane is about 30 years old, the fleet has flown an average of about 21,000 hours--well below the aircraft's planned 40,000-hour service life. Since the Air Force flies its C-130Es an average of 600 hours per year for active-duty forces and 375 hours to 450 hours per year for those flown by Guard and Reserve crews, it might be able to retain most of those planes until the latter part of the next decade.

An Air Force analysis has suggested that the costs of the ambitious upgrade might be higher than expected or that the program's schedule might be delayed. Furthermore, no one knows whether operation and support costs for the J version will be as low as the producer has advertised. Since Lockheed Martin has been developing the C-130s for its export customers, the Air Force might avoid technical and cost uncertainties associated with the program by waiting to modernize its forces until the development phase is complete.

DEF-15 RETIRE EXCESS KC-135 TANKERS

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	42	131	225	325	433	1,156
Outlays	34	111	201	298	403	1,046

The Air Force owns a large fleet of tanker aircraft to refuel transports, fighters, and bombers while they are airborne. Being able to do so is important for tactical air operations and for deploying forces by air from the United States to other parts of the world. U.S. tanker forces consist of 472 KC-135 aircraft and 54 KC-10 aircraft (both figures reflect primary mission aircraft inventory--those planes available for operational use).

During the past several years, most of the aircraft in the KC-135 fleet have been retrofitted with new CFM-56 engines that increase their fuel-carrying capacity. About two-thirds of the KC-135s have been modernized with this engine. The remainder (designated as KC-135E aircraft) have been retrofitted with less efficient engines for the Air Force Reserve and Air National Guard.

This option would retire 100 E-version aircraft--those with the least efficient engine technology and the smallest capacity for fuel delivery--at a rate of 20 planes per year through 2002. That would still leave the military with more than 420 operational tanker aircraft (including KC-10s). Compared with the Administration's 1997 plan, this approach could save $34 million in outlays in 1998 and over $1.0 billion through 2002.

Historically, the tanker fleet has played an important role in the nuclear deterrence mission by supporting long-range strategic bombers. Today, however, most of the requirements for aerial refueling are derived from regional threats. The tanker fleet provides an "air bridge" for deploying conventional forces, thus reducing the amount of time it takes to place U.S. forces in distant theaters and decreasing the degree to which the United States must rely on foreign bases en route. Tankers can be used to refuel airlift aircraft, as was done to support the C-5 aircraft that carried heavy equipment to Somalia. To a limited extent, KC-135s can also transport cargo during peacetime; in the event of a major regional contingency, 26 would be used in a transport role. Once in theater, tanker aircraft support fighters and bombers, increasing their combat range and endurance. For example, about 300 tanker aircraft supported operations in the Persian Gulf War.

This option could provide enough tanker capacity to meet the requirements of future regional contingencies. The combination of planned KC-135 retirements and the changes proposed in this option would amount to about a 15 percent reduction in the Air Force's total capacity for fuel delivery by 2001 compared with its current level. Relative to 1990 levels, those reductions in numbers of tankers are commensurate with the Administration's plans to reduce the number of attack and fighter aircraft by about 40 percent.

Retiring the older KC-135E aircraft would also avoid other problems. The KC-135E has a refurbished engine used formerly by Boeing 707 aircraft in commercial service. Although that engine has greater fuel efficiency than the KC-135's original engine, it gives the aircraft less capacity for fuel delivery and slightly higher operating and support costs than aircraft equipped with the more modern CFM-56 engine. In addition, the older engine does not comply with Federal Aviation Administration Stage III noise standards set for 2000. Since tankers often operate from airfields used for both military and commercial aircraft, the Air Force would probably have to purchase "hush kits" or put new engines in its E-version planes in the near future.

Retiring KC-135E tankers, however, might leave fewer KC-10 aircraft available for airlift tasks. In addi-

tion to being an aerial refueling aircraft, the KC-10 can be used as an airlifter; it is especially efficient in delivering bulk cargo. The Air Force plans to dedicate just 15 of its 54 KC-10s to air refueling missions, leaving the remainder free primarily for cargo delivery. Thus, by retiring more of the Air Force's aircraft dedicated to refueling, this option may reduce the number of KC-10s that can be devoted to airlift missions.

Moreover, the Air Force may need to rely more heavily on aerial refueling if the United States loses access to foreign bases that support airlift missions en route. During the Gulf War, three bases (Zaragoza, Torrejon, and Rhein-Main) handled 61 percent of the airlift traffic. Of those bases, one is no longer available, and it is uncertain whether the United States will have the same degree of access to the others in the future. Opponents of this option might argue that a large tanker fleet makes the United States less dependent on obtaining overflight and landing rights.

This option might leave the United States unable to wage a conventional war and a major nuclear war involving strategic bombers at the same time. However, in light of the low probability of major nuclear war and the availability of other platforms for delivering nuclear weapons that do not depend on tankers, the loss of capability is unlikely to be a problem.

Perhaps more important, this option might also limit the United States' ability to achieve the Administration's stated goal of being able to prosecute two major regional conflicts that occur nearly simultaneously. In the Persian Gulf War, the military deployed 46 KC-10 and 262 KC-135 tankers. The refueling aircraft retained under this option would be sufficient for a future deployment of similar size and would also provide capability for a simultaneous, smaller conventional deployment in some other theater or for support of a small nuclear mission that involved bombers. But such a force might not permit the United States to fight two simultaneous wars on the scale of Operation Desert Storm.

DEF-16 MAKE THE ARMY RESPONSIBLE FOR CLOSE AIR SUPPORT

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	148	367	652	1,108	1,361	3,637
Outlays	120	314	563	959	1,238	3,194

Ground forces and air forces have typically operated in the same area and provided each other with mutual support. Forces on the ground have defended air bases from attack from both land forces and enemy aircraft. Conversely, air forces--in missions referred to as close air support and battlefield air interdiction--have attacked from the air targets that are beyond the reach of ground-based weapons. Those roles have become more complex, however, as ground-based weapons--helicopters and artillery in particular--have attained the ability to attack enemy assets at longer ranges. This option would relieve the Air Force of the responsibility for providing air support to the Army. A consequence of adopting this option is that the Army would have to rely on its own assets, such as attack helicopters and artillery, to attack targets beyond the range of direct-fire weapons such as tanks.

Even though the Air Force has had responsibility for providing close air support (CAS) to the Army for the past 50 years, several defense experts have expressed concerns and doubts about the willingness or ability of the Air Force to do so adequately. The CAS mission involves attacking hostile targets that are near friendly forces and requires close coordination with the Army. Although the Air Force has an airplane, the A-10, that is dedicated solely to the CAS mission, the service has periodically attempted to eliminate all of the A-10s from its force structure. The Air Force still has 168 A-10s, but that is far fewer than the 400 it fielded in 1988. Moreover, more than half of the remaining aircraft are in the reserve components.

The Air Force has traditionally allotted 25 percent of its fighter aircraft specifically to ground attack missions, which include close air support as well as battlefield air interdiction (BAI). Both those missions involve attacking enemy targets on the battlefield, but in contrast to close air support, battlefield air interdiction would be directed at targets far removed from friendly forces. As the number of A-10s has declined, the Air Force has assigned increasing numbers of its F-16s to those missions. Consequently, three wings of F-16s, or about one-quarter of all of the Air Force's F-16s, could be designated for the CAS and BAI missions. Since the F-16s are multirole aircraft, however, they are not likely to be as well suited to the CAS mission as the A-10, which was designed specifically for it. In addition, the F-16s could be called on to perform other missions of more importance to the Air Force than CAS. All of these factors highlight the concerns Army commanders could have that Air Force aircraft might not be available when the Army needed them to provide air support.

Perhaps in response to these concerns, the Army has developed and fielded its own weapons capable of attacking ground targets beyond the reach of direct-fire weapons. The premier example of such a weapon is the attack helicopter, which can attack armored as well as soft targets and performed ably in Operation Desert Storm. In addition, the Army is developing fire-support weapons with increasingly long ranges and precision-guided munitions capable of attacking some of the targets previously accessible only by aircraft.

With the Army fielding hundreds of attack helicopters and increasingly sophisticated fire-support weapons, it may be possible to relieve the Air Force of the primary responsibility for providing CAS. That change would simplify operations since the Air Force would not have to coordinate its air strikes so closely with the Army in order to avoid attacking friendly troops. Moreover, the Air Force could retire all of its A-10s and reduce the number of types of aircraft in its inventory, thereby realizing some budgetary savings. The

Army could use its currently planned level of forces--attack helicopters and artillery--to attack targets that might today be assigned to Air Force aircraft.

This option would yield significant savings if it led to the elimination of all Air Force aircraft assigned to the close air support and battlefield air interdiction missions. Retiring all of the Air Force's A-10s and about one-quarter of its F-16s would reduce the size of the Air Force by about five wings. Such a reduction in force could save $120 million in 1998 and $3.2 billion over the next five years in operating costs compared with the Administration's 1997 plan.

Eliminating one-quarter of the Air Force's F-16s, however, could limit its ability to carry out its other missions. The F-16 is a multirole fighter capable of performing other tasks, such as air-to-air combat, besides providing air support to the Army. Cutting the F-16 fleet and the tactical Air Force by one-quarter would represent a major reduction in the Air Force's overall capability.

Shifting primary responsibility for close air support and battlefield air interdiction solely to the Army and eliminating Air Force assets assigned to those missions would also have other drawbacks. Having multiple means of attack is a distinct advantage for a commander because it forces the enemy to defend itself against multiple threats. Thus, if the United States can attack its enemies with fixed-wing aircraft, helicopters, and artillery all at once or in rapid succession, the defender's task becomes that much harder.

Another drawback to eliminating from the Air Force all aircraft designated for the CAS and BAI missions is the loss of the ability to react and deploy quickly that is inherent in aircraft. Aircraft are generally the first assets to arrive in theater, since additional time is needed to transport Army equipment, including helicopters, to trouble spots. With fewer aircraft in the Air Force inventory that are capable of CAS, delays may occur before significant assets arrive in theater to perform that mission. And a major lesson some observers have drawn from Operation Desert Storm is that air power can slow or even stop the advance of enemy ground forces. Sharply reducing the number of U.S. aircraft capable of providing close air support would eliminate many of the aircraft that contributed to an early victory in the Gulf War and helped to keep down the loss of U.S. lives.

DEF-17 REDUCE THE NUMBER OF ARMY LIGHT DIVISIONS

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	431	1,429	2,774	3,617	3,717	11,967
Outlays	372	1,269	2,528	3,412	3,621	11,202

The active portion of the U.S. Army consists of 10 divisions, six of which are generally regarded as "heavy"--that is, equipped with tanks and other armored vehicles. The six heavy divisions are primarily intended to be used against other armored forces. The other four divisions, referred to as "light" divisions, are useful against less heavily armored forces and were designed to be dispatched quickly and transported easily to trouble spots around the world. They include one airborne division, one air assault division, and two light infantry divisions (LIDs).

The utility of the light infantry divisions has been questioned in the Congress and elsewhere since their creation in the mid-1980s. The Reagan Administration justified the LIDs by emphasizing the need to respond to events anywhere in the world by rapidly dispatching U.S. forces. And, indeed, the light infantry divisions are the smallest and lightest of all U.S. combat divisions. As a consequence, they can be transported as whole units to trouble spots around the world more easily than any other U.S. division.

But recent history indicates that the United States may not need those light infantry divisions since it has the Army's eight other divisions and the combat forces in the Marines. Between 1945 and 1991, about 120 incidents--excluding major conflicts such as those in Korea, Vietnam, and Iraq--required commitment of U.S. ground forces. Of those, the Army was involved in about a third and, even then, generally not in very large numbers. Indeed, only 12 of those incidents required Army forces of division size or larger. One can argue that other units--including the Army's airborne and air assault forces and three Marine Corps divisions --could provide sufficient rapid response instead of the Army's LIDs.

Other questions arise about the capability of the LIDs once they have been transported, presumably to a hostile location. With just 1,600 vehicles and 40 utility helicopters to transport the unit and all its equipment, a light infantry division has limited mobility. Thus, many of the more than 11,000 soldiers assigned to a light infantry division would have to move by foot. A LID also has limited firepower, particularly against an enemy with any kind of armored vehicles. Each division has only 88 long-range antiarmor missile launchers, 54 towed howitzers, and 40 helicopters armed with antitank missiles. The most numerous antiarmor weapon in the LID--162 Dragon medium-range antitank missiles--has a limited capability against modern tanks.

Perhaps the strongest statement about the utility of the LIDs in combat was made by the Department of Defense, which did not send any forces from light infantry divisions to take part in Operation Desert Storm. That conflict was initiated by a relatively unsophisticated foe and occurred halfway around the world with very little warning. The need to establish some military presence in theater very rapidly would seemingly have argued for the use of light infantry forces. Nevertheless, none of the LIDs were deployed. Another telling experience was that of the 10th Mountain Division in Somalia. That light infantry division's firepower and protection proved to be inadequate against even the unsophisticated and poorly equipped troops of a Somali warlord. As a result, parts of a heavy division were dispatched to Somalia to provide armored protection to U.S. forces there.

This alternative would eliminate the remaining two light infantry divisions from the Army's active forces. To permit an orderly drawdown, the divisions would be eliminated gradually over the five-year period. The

alternative would retain light forces of one air assault division and one airborne division. Compared with the Administration's 1997 plan, this alternative would save $372 million in 1998 and $11.2 billion over the next five years.

Despite these savings and the shortcomings of the light infantry divisions, eliminating all of them would reduce U.S. capability in certain situations. For example, LIDs might be useful during combat in areas where armored vehicles could not operate easily such as dense forests, mountain terrain, or cities. They might also be useful for defending areas such as airports or seaports if the enemy did not have armored capability. Finally, in a recent demonstration of the utility of light divisions, contingents from the 10th Mountain LID were instrumental in operations in Haiti.

DEF-18 ELIMINATE FOUR GUARD DIVISIONS

Savings from the 1997 Plan	Annual Savings (Millions of dollars)					Five-Year Cumulative Total
	1998	1999	2000	2001	2002	
Budget Authority	55	221	450	691	828	2,245
Outlays	50	205	427	665	809	2,156

The Army National Guard is manned mostly by part-time soldiers and makes up about half of the Army's combat forces. At the end of fiscal year 1997, about 367,000 people will be members of the Guard, which operates units in all 50 states. Guard units are under the authority of state governors during peacetime, and state governments contribute to the Guard's operating expenses, particularly when units perform state missions. When mobilized for combat, Guard units come under the active Army's chain of command.

Eight divisions--each with three brigades--and an additional 18 independent brigades currently make up the Guard's ground combat units. Additional units in the Guard provide combat support (such as artillery) and combat service support (such as transportation) to combat units in the Army. The Army also relies on the skills of 215,000 largely part-time soldiers in the Army Reserve, most of whom perform support services.

Guard units were an important element of the combat forces the United States expected to deploy in a war with the former Warsaw Pact. Operating at roughly a quarter of the cost of a comparable active unit, Guard divisions and brigades provided a cost-effective way to reach the large force levels that would have been required in a land war against the forces of the former Soviet Union. According to the Army's planning factors, the United States expected to be able to deploy certain Guard brigades at the same time as their active-duty counterparts and to deploy the full divisions, which would require more time to prepare for combat, in a second wave that would have been sent to Europe about a month later.

The Army now contends, however, that those Guard units would require considerably longer to prepare for deployment than it had previously assumed. According to revised estimates by the active Army, full divisions would take up to a year to become ready to go to war. Other analysts maintain that Guard divisions could be ready much more quickly--perhaps within 72 to 120 days of mobilization--possibly in time to contribute to a short war. Brigades might take less time, perhaps as little as two to three months.

The Army's revised estimates--combined with a decrease in overall force requirements for the smaller wars that are now the basis of DoD's planning--have raised questions about whether the Guard's combat units, and specifically its divisions, have a clear mission in a post-Cold War world. Indeed, the Commission on Roles and Missions suggested in its report that the Administration's deployment plans no longer include any of the Guard's eight divisions. That assertion would seem consistent with the relative brevity of currently envisioned wars and with the longer mobilization times now assumed for those divisions. Partly in response to that criticism, and in part to correct a perceived shortfall in Army support forces, the Army plans to convert 12 of the Guard's 42 combat brigades to support units. That plan would ultimately leave the Guard with 30 combat brigades--18 of which would be organized into six divisions and 12 that would stand independently--and 12 support, or "combined arms," brigades. Nevertheless, even after the reorganization, the Guard would still retain six combat divisions that do not have a clearly defined and validated role to play in current warfighting plans.

This alternative would eliminate four of the eight combat divisions currently in the Guard. It would not affect the Army's plan to reorganize two Guard combat divisions into support units. Upon completing its reorganization plan and implementing this alternative, the Guard would retain two combat divisions and 12 inde-

pendent combat brigades, which should leave the Army with sufficient combat forces to provide a hedge against unforeseen circumstances. Furthermore, since the Army has identified a shortage in its support forces, this alternative would retain all of the support personnel indirectly associated with the deleted divisions.

In order to achieve an orderly drawdown, this alternative would eliminate one Guard division each year starting in 1998 and continuing until 2001. Once fully implemented in 2002, such an action would save about $0.8 billion a year in operating costs. All told, DoD might save about $2.2 billion over the 1998-2002 period.

Eliminating Guard divisions presents a number of problems, however. The Guard argues that eliminating its divisions would harm its ability to provide assistance in domestic crises, such as natural disasters and civil disturbances. Although the remaining Guard units could help in such instances, some states might find themselves with little or no Guard presence. Of course, states could always choose to fully fund some of their Guard units to retain the emergency services. Indeed, guard personnel who were trained to render emergency services in domestic crises might perform better than those who were trained primarily for combat. In any event, the Guard has never been asked to provide a large number of personnel for state missions, though large percentages of individual states' Guard personnel have been called up during domestic crises such as Hurricane Andrew and the Los Angeles riots in 1992. One way to expand the number of Guard personnel available to state governors in a domestic crisis might be to establish interstate agreements, thus allowing the governor from one state to call on the Guard units of another state when needed.

A much smaller National Guard could also present problems at the federal level. The Administration plans to reduce the Army Guard and Reserve from the current level of 582,000 to about 575,000 reservists by 1999. That plan was agreed to in the 1993 "Offsite Agreement," an arduous negotiation involving active and reserve Army personnel as well as personnel from several associations that deal with issues affecting the Army, the Army Reserve, and the Army National Guard. Some of those participants would probably feel that further reductions in reserve personnel violated the terms of that agreement. Furthermore, proponents of the Guard would argue that giving it a larger share of DoD's missions and forces would be a more cost-effective way to restructure the Army's combat forces, because operating costs are much lower for Guard units than for their active-duty counterparts. Finally, some analysts argue that for relatively little cost, the Guard divisions provide a strategic reserve and insurance against unforeseen events or the emergence of an unknown threat.

DEF-19 CANCEL THE ARMY'S COMANCHE HELICOPTER PROGRAM

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	3	190	255	397	440	1,285
Outlays	64	200	265	348	416	1,293

The Army fields about 6,000 helicopters, some of which are approaching the end of their 20-year useful service life or have exceeded it. About 2,000 of the helicopters--the OH-58 Kiowa scout helicopters and the AH-1 Cobra attack helicopters--are Vietnam-era aircraft that the Army plans to replace with the RAH-66 Comanche helicopter. The Comanche will fill both the reconnaissance and the attack roles that those two helicopters now perform.

The Comanche program, when it was conceived in 1983, was intended to develop one aircraft that, in two different configurations, could replace not only the Vietnam-era scout and attack helicopters described above but also the UH-1 utility helicopters of the same vintage. The Army originally planned to buy more than 5,000 Comanches of various configurations. The utility version was dropped in 1988, however, because the program had become too costly. Since then, the Comanche program has included only the attack and scout version, and the quantity has been reduced further, from a planned purchase of more than 2,000 aircraft to just under 1,300. The helicopter is still in the development stage, which will continue at least through 2004. As recently as 1992, the Army had planned to start buying Comanches in 1996, but it has since delayed the start of production until 2005.

These changes in the objective and size of the program have caused the cost of each Comanche helicopter --expressed in 1997 dollars--to more than double since the program began, from $11 million in 1985 to $26 million based on the Army's 1996 estimate. Furthermore, the Comanche has become more expensive to acquire than the Army's current generation of attack helicopter, the AH-64 Apache, which is bigger and heavier than the Comanche. That cost increase is significant, particularly in a helicopter whose development was originally justified on the basis of its being inexpensive to purchase, operate, and maintain. Indeed, the Comanche's high cost calls into question the prudence of pursuing this as-yet-undeveloped aircraft instead of continuing to buy existing helicopters such as the Apache or later models of the Kiowa.

Some analysts have questioned the wisdom of continuing the Comanche program. A General Accounting Office (GAO) report published in 1992 noted not only the increase in the cost of buying the Comanche but also the potential for maintenance costs to increase to three times the original estimates. Those factors, plus the risk of additional cost increases as technical issues are resolved, caused GAO to question the Army's underlying rationale for the Comanche program. In addition, the Comanche, which was conceived at the height of the Cold War, will no longer need to counter threats of the same scale or sophistication as those it was designed to thwart. Indeed, the Comanche is now so similar in capability to the Apache--the aircraft it is supposedly designed to complement--that whether it has a unique role to play in Army aviation is unclear. Without a mission that existing Army helicopters cannot perform, it is hard to justify the continued development of an aircraft that is more expensive to acquire than existing helicopters.

Based on these various concerns, this alternative would provide other means for filling the Comanche's role, at reduced cost. It would cancel the RAH-66 program, thereby saving $2.4 billion in budget authority over the next five years. Some added costs, however, would be associated with buying more helicopters of other types. The Army has already purchased enough Apaches to fulfill the attack role assigned to 13 of its 18 divisions. During Operation Desert Storm, Apaches performed their missions without scout helicopters, and

this alternative accordingly would provide no replacements for the aging Kiowas currently assigned that role in those divisions. The Army, however, needs to replace the aging Cobras assigned to the attack aviation units of the remaining divisions. Armed scout helicopters, known as Kiowa Warriors, were used effectively in the Persian Gulf and could replace the Cobras still in service. The Congress has supported purchasing those aircraft in the past, and the Army has bought a limited number (406). This alternative would buy 18 armed scout helicopters in 1998 and 24 each year thereafter, leading to a total procurement of 519 by the end of 2005. After taking into account the cost of buying those helicopters and canceling the Comanche, net savings compared with the 1997 plan would total about $1.3 billion in both budget authority and outlays over the 1998-2002 period.

The primary disadvantage of adopting this alternative would be the loss of the new aviation technology incorporated in the Comanche. Some analysts would argue that the threats the Comanche is likely to face would not demand the very sophisticated stealth, avionics, and aeronautic technologies slated for the new helicopter, but others would support the program as a way to maintain the U.S. lead in helicopter technology. Some of the Comanche's new technologies are already being incorporated into current U.S. helicopters such as the Apache. Abandoning the RAH-66 program, however, would mean that the Army would have to rely on helicopters designed in the 1960s and 1970s for years to come.

DEF-20 CUT SPENDING FOR DUAL-USE TECHNOLOGY PROGRAMS TO HISTORICAL LEVELS

Savings from the 1997 Plan	Annual Savings (Millions of dollars)					Five-Year Cumulative Total
	1998	1999	2000	2001	2002	
Budget Authority	108	126	101	107	136	578
Outlays	96	113	109	105	118	541

In recent years, the Congress and the Administration have expanded funding for research and development (R&D) on dual-use technologies--those that have both civil and military applications. One program that was financed with part of that increase was the Technology Reinvestment Project. TRP provided support to consortia that developed or disseminated dual-use technologies; it was administered by the Defense Advanced Research Projects Agency (DARPA) in cooperation with the three military departments and five other federal agencies. In most cases, recipients of TRP awards matched their federal support dollar for dollar.

Several other dual-use programs have also received considerable funding increases over the past several years, including R&D in high-performance computing, materials and electronics processing, and electronics modules. Those programs are administered by DARPA, whose technical managers are given considerable independence in selecting technologies and managing projects. Organizations that receive R&D awards from DARPA are not necessarily obligated to share project costs, although some do.

In 1997, the Administration replaced TRP with the Dual-Use Applications Program (DUAP). That initiative was designed to address criticisms of TRP by focusing only on technologies that are potentially useful to the military and by making all of its awards through a competitive selection process--that is, avoiding special earmarks. The Administration has requested $225 million for DUAP in 1998 and would like funding for that program to continue over the next five years. Under the 1997 request, other dual-use programs would have received about $1.1 billion annually.

This option would limit funding for DUAP and other dual-use initiatives to $1.2 billion, an amount that is consistent with appropriation levels from 1992. Compared with the Administration's 1997 request, outlay savings under this option would be $96 million in 1998 and total $541 million over the next five years.

Advocates of greater funding for dual-use technologies contend that those programs ultimately will help lower the cost of defense equipment. Although military R&D has spawned numerous commercial applications, today some civil products outpace their defense counterparts and are less expensive, particularly those in the field of microelectronics. By incorporating widely available components from the commercial sector, some defense equipment could be made more capable while keeping costs reasonable. Programs such as DARPA's efforts in electronics processing may help to adapt commercial technologies for military use.

Initiatives such as DUAP may also improve the integration of the defense industrial base into civil sectors of the U.S. economy. Historically, military and civil production have been treated as two distinct sectors because of onerous cost-accounting requirements and detailed specifications for military products, among other factors. But as U.S. military spending has declined, integrating those sectors in order to meet future military needs has become more important. Some analysts fear that otherwise, only a few companies would remain in the defense business and retain the capability to produce sophisticated military equipment. That could become a problem if threats to national security emerged that would need advanced technology to counter them. Some advocates also believe that dual-use programs can bolster economic growth in certain industries, especially high-technology ones.

Critics of direct funding for dual-use R&D argue that other policy changes can encourage the integration

of civil and military efforts more effectively. Adopting commercial standards in place of military specifications, for example, may allow weapons producers to incorporate civil components on a more widespread basis than, say, a DARPA-sponsored study in which commercial technologies are customized for military use. Dual-use programs that tailor civil technologies to defense specifications can leave too little in common with the commercial marketplace, thereby defeating one of the key purposes of dual-use items: to benefit from economies of scale in production. Ultimately, dual-use programs may not be sufficient to sustain domestic suppliers of high-technology goods for military equipment. And such programs also cannot control whether companies that develop technology with their help share those innovations with foreign firms, even though such sharing may undermine the objectives of the program.

Moreover, these dual-use programs sponsor a type of R&D for which the grounds for government funding are less clear. Most economists believe that federal support for basic research is justified because the private sector will underinvest in research of that type. More contentious, however, is the degree to which the government should support applied R&D, the type funded by most dual-use programs. As projects move from underlying scientific knowledge closer to products and processes, the commercial benefits of that R&D are likely to become more apparent. Applied research projects could take numerous paths, and it is difficult to select a few projects from among several promising applications and then evaluate critically the role of federal support. Some analysts therefore contend that the private sector--with its vested interests in identifying commercial potential--is better suited to promote applied R&D projects. Furthermore, if supported with federal funds, R&D programs can become entrenched politically and difficult to discontinue.

DEF-21 ASSIGN A WARTIME FUNCTION TO MILITARY PERSONNEL IN TRAINING OR TRANSIT

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	667	3,225	5,197	5,357	5,525	19,971
Outlays	538	2,867	4,905	5,251	5,454	19,015

At any time, about 65,000 of the Department of Defense's active-duty military personnel are either in transit between assignments or undergoing individual follow-on training to learn more military skills or further their professional development. The services do not assign those individuals a wartime responsibility within a unit even though they have usable military skills.

During the Cold War, when the United States was preparing to fight a long, conventional war against the Soviet Union, DoD's wartime planning assumption was that most of those individuals would complete their training and then fill vacancies caused by wartime losses or help to form additional units as the force was expanded. But with the end of the Cold War, DoD now prepares to fight two brief, major regional contingencies. In a short war, the individuals en route to new assignments or undergoing follow-on or professional development training could be used to fill existing deploying units immediately or to substitute for personnel who deploy to the combat theater.

This option would direct the military services to assign those individuals a wartime responsibility in their previous unit, in the unit to which they were traveling, or in another unit that would require their skills. (Only personnel who had already completed their basic and initial skills training, which would give them usable military skills, or who were en route to new assignments would be assigned a wartime role.) If DoD adopted this policy, it would need about 65,000 fewer military personnel, saving almost $5 billion annually by 2000. To carry out this policy, the services would staff certain units below current levels on the assumption that personnel would become available if war erupted.

Some personnel analysts would suggest that this policy could jeopardize military readiness; mobilizing and integrating these individuals into units could take some time because they would have to move from training or other assignments. In addition, the services would prefer not to disrupt the training pipeline because that could make it more difficult to fill positions once the war was over. During the contingency, the training base itself would also temporarily be underused because fewer students would be training there.

Although assigning wartime responsibilities in this way would reduce staffing below current levels, those levels have remained fairly high in recent years. Moreover, since the services are not likely to expand the size of forces--in contrast to planning assumptions during the Cold War--the risk of not fully staffing units would be lower. The services could also distribute reductions in staffing levels to areas that would pose the least risk to meeting wartime contingencies. The services acknowledge that in a major contingency, they might compress training and pull individuals out of courses if they were needed. In fact, the Air Force already simulates such scenarios. During Operation Desert Storm, for example, the Army also required that individuals postpone scheduled moves if their skills were required for the war. Finally, this policy change would reduce costs by using all trained personnel who would be available in wartime. Although personnel in training or en route to new assignments would experience disruptions, so would all personnel facing deployments to meet a contingency.

DEF-22 RESTRUCTURE MILITARY HOUSING ALLOWANCES

Savings from the 1997 Plan	Annual Savings (Millions of dollars)					Five-Year Cumulative Total
	1998	1999	2000	2001	2002	
Budget Authority	33	77	123	137	141	511
Outlays	31	74	120	136	141	502

In 1996, the military services spent nearly $6 billion on housing allowances for service members stationed in the United States who do not live in government-supplied housing. The allowance consists of two parts: the basic allowance for quarters (BAQ) and the variable housing allowance (VHA). The amount of each component depends on the member's pay grade and whether he or she has dependents. In addition, the VHA amount varies among different parts of the country, based on periodic surveys of members' housing expenditures. The BAQ is intended to cover 65 percent of the nationwide median housing expenditure of personnel in each grade and dependency status, although it currently covers only about 60 percent of the median. The VHA pays the difference between the median housing cost in each area and 80 percent of the national median. Thus, a typical member is currently expected to cover about 20 percent of the national median cost out of pocket, except in areas where housing costs are so low that the BAQ alone leaves a smaller uncovered cost. A separate overseas housing allowance, which serves a similar function to the VHA, applies to members stationed outside the United States.

This option would make two changes in the way housing allowances are calculated. First, it would combine the separate basic and variable allowances--BAQ and VHA in the United States, and BAQ and overseas housing allowances elsewhere--into a single housing allowance. Second, it would change the way in which the allowance is calculated in the United States, basing the allowance on estimates of housing prices rather than on members' housing expenditures. The option would set allowance rates across the country to equalize the well-being of members facing different prices. (A similar change might be possible for the overseas allowance but was not examined as part of this option.) The Department of Defense (DoD) is reportedly planning to propose a change similar to this option that would be phased in beginning perhaps as early as 1998.

The current system for setting VHA rates has been criticized for not meeting one of its principal goals. As stated by the Seventh Quadrennial Review of Military Compensation in 1992, "a service member should be unaffected by the housing price variations between locations." However, because people respond to differing housing prices by adjusting their consumption of housing services--more or fewer rooms, closer to or farther from work--differences in service members' expenditures between locations may not measure differences in area housing prices or in well-being. A service member sent from an area of higher housing prices to one of lower prices can reduce his or her spending on housing and enjoy better housing. Conversely, when moving from a low-price area to a high-price area, he or she will pay more for less housing. The current system adjusts for the changes in expenditures but not for the changes in benefits. Thus, it tends to undercompensate people stationed in high-cost areas and overcompensate people in low-cost areas, compared with the situation of people facing average housing prices.

Although seemingly involving only a technical adjustment, this option would achieve substantial overall savings because the savings from reduced housing allowances in areas with low housing prices would more than make up for the costs of increased allowances in areas with high prices. The option would save $31 million in 1998 and $502 million over the 1998-2002 period. The savings assume that new allowance rates--either higher or lower--would apply only to people newly assigned to an area; service members would continue to collect housing allowances at the old rates until they were reassigned.

Two major objections might be raised to the change proposed by this option. First, although the change would achieve greater equity among service members assigned to different areas of the country, it would amount to a reduction in the average level of military compensation. Thus, it could cause some members to leave the military who would otherwise have remained. That effect would be partially offset, however, to the extent that members recognized that they would benefit, on average, from the reduced geographic variation in living standards that the change would achieve.

The second objection is that estimating housing prices accurately enough for the purpose of calculating allowances could prove difficult. Available data on housing prices cover geographic areas that do not always coincide exactly with the specific locations in which service members choose to live. Data might be available for a particular city, for example, but not for the corner of that city where a military base happened to be located. Further refining such data could add to the costs of administering the allowance program. The savings estimates above do not reflect any increase in administrative costs. In developing the estimates, CBO used an inexpensive procedure, suggested in a RAND study, that derives prices indirectly from the data on members' housing expenditures that are already being collected. Whether that procedure would prove to be a practical alternative to using independent price data would require further study. DoD's plan would rely on data on housing prices from nonmilitary sources, which could result in the allowances in some areas being badly out of line with the prices that service members actually face in those areas.

DEF-23 REDUCE THE BASIC ALLOWANCE FOR SUBSISTENCE OF ENLISTED PERSONNEL

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	98	231	371	520	675	1,895
Outlays	93	224	363	511	665	1,856

Although originally intended to defray a portion of the cost of subsistence for service members not receiving rations in kind, since 1974 the basic allowance for subsistence (BAS) has generally been raised in lockstep with military basic pay. In part as a result, the money that a typical enlisted service member receiving BAS spends on the food he or she consumes at home is probably less than the amount of his or her allowance (which is higher than what officers receive). The U.S. Department of Agriculture regularly estimates the cost of food at home for various families and individuals; the enlisted allowance is greater than the cost for a typical male adult in a family of four under all but the most liberal of the USDA food plans. Thus, in addition to its intended role as compensation for the lack of government-provided meals, BAS has served as an income supplement for enlisted members who receive it.

The role of the basic allowance for subsistence in supplementing income is particularly important for very junior married personnel, whose seemingly low pay levels have received special attention in the wake of reports that many military families may be receiving food stamps. For a married person in the lowest enlisted pay grade, BAS averages 13.3 percent of total compensation (including the tax advantage that accrues because subsistence and housing allowances are not subject to federal income tax), compared with only about 8.4 percent for all married enlisted personnel. To some extent, however, the concerns about low pay levels are misplaced: even the most junior married enlisted person receives total compensation that exceeds the total family income of nearly 20 percent of U.S. families and half of all young families (those headed by a person under age 25). The use of food stamps apparently derives less from low total compensation than from the way the military's quarters allowance is administered: married personnel living in government quarters are not paid a cash allowance and so, having a lower cash income than their counterparts living off-base, are more likely to qualify for food stamps. According to the Department of Defense, 40 percent of the military families receiving food stamps live on-base, although overall only about 20 percent of the families of members in the three lowest enlisted pay grades live on-base.

The harmful effects of a too-generous subsistence allowance became apparent during Operation Desert Shield/Desert Storm. Many military families were suddenly, and unexpectedly, deprived of the income supplement when their service members were deployed to the Persian Gulf (and lost BAS because they received government rations). Although families' food costs may indeed have fallen, their income fell by even more. Many perceived that as an unfair burden to place on families already hurt by the members' sudden departure. To address that problem in the subsequent deployment of troops to Haiti, the Defense Department adopted a stopgap policy that resulted in the services' paying BAS to all enlisted personnel in Haiti, regardless of whether they had been entitled to it before the deployment, as well as feeding the deployed troops.

This option would reduce BAS for enlisted personnel to a level equivalent to that for officers (currently $154.16 per month), phased in over five years. The most common form of enlisted BAS, which is given to people on leave or authorized to mess separately (for example, single personnel authorized to live off-base and to receive a quarters allowance, and married personnel accompanied by their dependents), would eventually be reduced by 31 percent, to $5.07 per day at 1997 pay rates compared with the current $7.36. Compared with BAS costs under current law and based on the Administration's 1996 plan for reducing military

personnel levels, the option would save about $93 million in 1998 and a total of $1.9 billion over the 1998-2002 period. Additional savings might accrue if the change in BAS rates prompted DoD to abandon the interim policy of paying BAS to all troops in certain deployments. Some of the savings might be offset if a targeted pay raise or some other measure was used to counter specific problems arising from the option (see below).

Linking the BAS rate for enlisted personnel to that for officers reflects an essentially arbitrary choice. Alternatively, the rate could be based on one of the four USDA food plans. Food costs for a male adult age 20 to 50 in a family of four under the low-cost plan (second lowest of the four) are slightly lower than the current allowance for officers, and under the moderate-cost plan are about $33 per month higher. The thrifty plan (lowest cost) is used in determining Food Stamp payments; costs under the liberal plan (highest cost) are roughly the same as the current enlisted BAS level.

The option would have two major advantages in addition to the obvious one of reducing defense expenditures. First, as suggested above, it would reduce or eliminate the problem of families of deployed service members experiencing a decline in their living standard (albeit at the cost of reducing their disposable income at other times). Because the allowance would no longer include an income supplement, the income lost when the member deployed would be roughly offset by the reduction in the family's total food costs. Second, the option would eliminate an inequity in the current system that favors married personnel and others who receive a subsistence allowance over people who must eat in government mess halls, many of whom are single junior personnel. The former receive a payment that probably exceeds their actual food costs; the latter apparently incur out-of-pocket costs on the occasions when they do not eat in the mess halls--about 44 percent of all meals. To a small extent, the cut might discourage some married people from entering the military and some single personnel already in the military from marrying. Some observers might see that as an advantage and others as a disadvantage.

The option achieves its savings by cutting the total compensation of a majority of enlisted personnel. That approach might be undesirable for two reasons. First, it would probably reduce personnel retention and could make recruiting more difficult--both traditional areas of concern. Second, the most junior personnel eligible for BAS would suffer the largest percentage reduction in compensation because the dollar amount of the allowance is the same for all enlisted pay grades.

Although the income of junior enlisted personnel may not be as low as is sometimes thought, that group would definitely be hardest hit by this option. The BAS cut would reduce the total compensation of very junior married personnel by about 4 percent--twice as great a percentage as for senior noncommissioned officers. Offsetting the reduction for junior personnel through an increase in basic pay for the three lowest enlisted pay grades would cost about $300 million per year, based on 1997 pay rates. That possible offset is not reflected in the savings shown in the table.

DEF-24 RESTRUCTURE OFFICER ACCESSION PROGRAMS

Savings from the 1997 Plan	Annual Savings (Millions of dollars)					Five-Year Cumulative Total
	1998	1999	2000	2001	2002	
Budget Authority	152	250	354	465	464	1,685
Outlays	113	216	318	426	453	1,526

The military services have drawn on several management tools to reduce the size of the officer corps. They have encouraged voluntary separations through specific actions such as tightening criteria for promotion and liberalizing early-out procedures. They have reduced the number of senior officers by selective early retirement, and they can make further cuts through reductions in force if necessary. Finally, the military services have reduced the number of new officers (accessions) who enter the force each year, consistent with the projected smaller force.

This option would restructure officer accession programs beyond the changes the Department of Defense has already made. Overall accession levels would not be cut below the level planned by the department, but more officers would be drawn from lower-cost commissioning programs--Reserve Officer Training Corps (ROTC) and Officers Candidate School/Officer Training School (OCS/OTS)--and fewer from the more costly service academies. In addition, a ceiling would be placed on the per capita amount that could be spent on each recipient of a ROTC scholarship. Further, the option would cut Junior ROTC programs and eliminate the preparatory schools operated by the service academies. Relative to the Administration's 1997 plan, savings in outlays would be $113 million in 1998 and a total of $1.5 billion through 2002.

Of that total, $1.1 billion would come from cutting class size at the three service academies. At present, each academy graduates about 1,000 second lieutenants or ensigns a year. This option would reduce that number to 625 by cutting the size of the entering class for the three academies from a total of 3,000 to only 1,875. Estimated savings from that action reflect only the costs that would change in the near term, such as faculty and cadet pay and operating expenses. Those savings would be offset by the additional costs of about $60 million over the five years that would be needed to procure officers from OCS and ROTC to replace those from the academies. In the longer term, savings also might accrue from changes in the academies' physical plant.

Additional savings under this option would stem from changes in the structure of ROTC programs. In 1995, DoD spent $280 million for ROTC scholarships. (DoD covers other costs of education, but this option deals only with tuition.) About 40 percent of ROTC students now attend private institutions. The average cost per student in 1995 for tuition at four-year private institutions, based on data from the Department of Education, was $11,500 a year, more than four times the average cost of $2,700 at public universities. The option would cap ROTC scholarships at the $2,700 level consistent with average tuition at public institutions. Under a cap, DoD might choose to reduce the number of programs at high-cost institutions, reallocating resources to lower-cost schools in order to maximize the number of officers trained. Alternatively, the department might elect to pay only a fraction of total tuition at high-cost institutions, requiring the student to make up the difference. Students currently enrolled would be allowed to complete their education without financial penalty.

Furthermore, this option would cut Junior ROTC programs by about 25 percent. Junior ROTC provides introductory military training and uniforms to students in secondary school, at an overall cost in 1997 of $170 million. Recent Congressional action significantly expanded Junior ROTC in an effort to place more programs in the inner cities. The reduction called for in this option would restrict that expansion by 50 percent. DoD could retain programs in urban areas or elsewhere.

Savings would be about $40 million in 1998 and $220 million over five years.

Finally, the option would close the preparatory schools operated by each service academy. Those schools accept students who cannot meet the stringent admission criteria of the academies and give them a year of additional training and schooling so that they can gain entry to an academy. Savings in 1998 would be about $20 million and would total about $100 million through 2002.

Supporters of the military academies have contended that those programs are needed to produce future service leaders. That argument has not persuaded the Congress, but past attempts to mandate cuts at the academies have been only partly successful; class size has declined modestly, but academy graduates now account for a larger share of officer accessions than at any time since at least 1980. There is little evidence for the contention that the academies have already reduced their class size to the minimum efficient level, as supporters have claimed in arguing that further cuts would not produce savings.

Opponents of a dollar ceiling on ROTC scholarships might argue that the quality of a graduate from a private institution is higher than that of a graduate from a public institution. Setting a cap--and limiting the number of accessions from private institutions--thus might reduce the overall quality of the officer corps. However, the national security benefits of paying the higher tuition at private schools are unclear at best. Supporters of the public educational system might claim that the quality of education at public schools equals that provided at private ones.

Proponents of Junior ROTC include many Congressional supporters who contend that it provides discipline and reinforces positive values for teenage youth, particularly in inner-city schools. Nonetheless, the program's contribution to national security is difficult to measure, and if its benefits lie in the behavioral changes it encourages, arguably it should be funded in competition with other social programs targeted toward such populations.

Similarly, supporters of the service academies' preparatory schools claim that those schools are needed to provide an opportunity for students from less fortunate circumstances to enter the military academies. Those schools also provide an avenue for enlisted personnel to enter the academies. Opponents argue that the schools are used to enable the academies to recruit athletes and minorities who cannot otherwise qualify for admission, and that at an average total cost of about $40,000 per student they are more expensive than most other secondary education or than OCS/OTS programs, the primary avenue of commissioning for enlisted personnel.

DEF-25 RESTRUCTURE THE BONUS PROGRAM FOR NUCLEAR OFFICERS

Savings from the 1997 Plan	Annual Savings (Millions of dollars)					Five-Year Cumulative Total
	1998	1999	2000	2001	2002	
Budget Authority	8	12	16	18	19	73
Outlays	8	12	16	18	19	73

One of the pressing personnel issues facing the Navy is meeting its numerical requirements for officers with nuclear training, a challenge that has intensified as the Navy downsizes its force. Moreover, the shortage of nuclear-trained officers, who serve on shore and at sea on submarines and surface ships, is projected to continue in the near future.

One of the major tools with which the Navy is addressing the situation is the Nuclear Officer Incentive Pay (NOIP) program. That program provides a continuation pay (COPAY) bonus of $10,000 a year for nuclear officers who sign a contract to remain in the Navy for three to five years and a smaller career annual incentive bonus (AIB) of $7,200 a year for officers who reenlist for a year without a contract. In addition, the program offers an accession bonus of $6,000 to new officers who choose the nuclear field.

Under this option, the COPAY and AIB portions of the NOIP program would be terminated, saving $8 million in 1998 and $73 million over the next five years. Current Navy requirements call for about 5,500 nuclear-qualified officers. But many of the requirements involve positions unrelated to the nuclear field--as teachers at the Naval War College, the Naval Postgraduate School, or the Naval Academy. Only about one-third of the total positions the Navy sets aside for nuclear submarine officers actually require nuclear training, and only one-fourth of those for nuclear surface officers do so. If fewer officers with nuclear training were willing to stay in the Navy as a result of their cut in compensation, those positions not requiring nuclear-qualified officers would be filled by officers who were not nuclear-qualified.

Proponents of the option argue that even without the bonus, a sufficient number of nuclear-qualified officers would stay to fill the limited number of positions that actually require nuclear expertise. Opponents would counter that even though many positions currently held for nuclear-qualified officers do not actually require the nuclear qualification, it is important that those officers have the same opportunities for advancing their career as their counterparts in other Navy fields. Opponents believe that eliminating the bonus would adversely affect morale and eventually lead to an unsustainable decline in retention.

DEF-26 DENY UNEMPLOYMENT COMPENSATION TO SERVICE MEMBERS WHO VOLUNTARILY LEAVE MILITARY SERVICE

Savings from the 1997 Plan	Annual Savings (Millions of dollars)					Five-Year Cumulative Total
	1998	1999	2000	2001	2002	
Budget Authority	157	158	161	169	174	819
Outlays	157	158	161	169	174	819

Many military personnel who leave active-duty service are eligible for unemployment benefits. Their payment amounts are calculated in the same way as those of civilian personnel who qualify for unemployment benefits. However, eligibility of former military personnel differs from that of recipients in the civilian labor force in one important respect. Former military personnel can apply for and receive unemployment benefits even if they voluntarily leave military service, but civilian recipients must have lost their job involuntarily.

The majority of personnel who leave military service do so voluntarily. For example, many choose not to reenlist following completion of their term of service. Others, who have completed a minimum of 20 years of service, opt for voluntary retirement. Still others may choose to leave military service in return for cash payments under the voluntary separation incentive and special separation benefits programs enacted in 1991. A much smaller group is separated involuntarily for reasons related to job or promotion performance or, in recent years, because of the drawdown of military forces.

Under this option, former military personnel would be subject to the same rules as other members of the civilian labor force; that is, only personnel who left service involuntarily would be eligible to receive payments. Eliminating payments to people who left service voluntarily would reduce the number of recipients by at least two-thirds, resulting in savings of about $170 million annually. Because the Department of Defense ultimately reimburses the Department of Labor for the cost of unemployment payments to former service members, those savings would occur in the defense budget.

The unemployment insurance program was established with the intent of aiding people who lost their job involuntarily. Subjecting military personnel to the same rules as the rest of the workforce regarding unemployment compensation thus could be seen as a more equitable use of an existing entitlement program. But if military service is considered to be fundamentally different from other types of employment, one could argue that voluntary separation from service is not comparable with voluntary termination of civilian employment and therefore should not be subject to the same restrictions on eligibility for unemployment compensation.

DEF-27 MERGE THE ARMY NATIONAL GUARD AND THE ARMY RESERVE

Savings from the 1997 Plan	Annual Savings (Millions of dollars)					Five-Year Cumulative Total
	1998	1999	2000	2001	2002	
Budget Authority	131	402	548	562	577	2,220
Outlays	117	370	526	554	572	2,139

The bulk of the Army's forces today can be found in its reserve component, which includes both the Army National Guard and the Army Reserve. Those two organizations comprise 582,000 soldiers, compared with the Army's 495,000 soldiers on active duty. The President can call all or portions of the National Guard and the Army Reserve to active duty during a national crisis such as Operation Desert Storm. The National Guard is organized along state lines and reports to state governors in peacetime, but the Army Reserve is an exclusively federal force. Another dissimilarity between the two organizations is that the Guard includes large numbers of combat units, whereas the Reserve is composed almost exclusively of units that would support combat troops during a conflict by providing transportation and other services.

As the size of the Army and the resources available to it have shrunk over the past few years, some people have questioned the need and efficiency of retaining two separate reserve organizations within the Army. The National Guard is a constitutionally mandated organization, providing states with militias and with forces that are useful to respond to domestic emergencies. The Army Reserve was created early in this century primarily as a way to increase the number of doctors in the military. But it also provided the President with a pool of part-time soldiers who would be readily available for military interventions outside the United States. Over the past decades, however, new laws and court rulings have removed many impediments to Presidential call-up of units in the National Guard. Thus, the need for a large pool of federal reservists has become less obvious.

Furthermore, some people have suggested that many of the units currently in the Reserve could be useful to governors during domestic crises. In emergencies such as earthquakes or riots, state governors have access to the National Guard units in their states. But the Army has recently concentrated combat forces in the Guard and some types of support forces in the Reserve. As a consequence, some units, such as helicopter transport units and medical units, that state governors might need during a crisis are found primarily in the Reserve and are not available to them.

This option would merge the Army National Guard and the Army Reserve into one entity that would retain the dual state and federal status of today's Guard. Such a merger would place a larger number and greater diversity of resources to deal with domestic crises at the disposal of each governor. It would also save money by eliminating administrative organizations that now exist within the Reserve but would be redundant after the merger. Approximately 43,000 personnel could be eliminated from the Reserve. Upon completing the merger and downsizing, the Army could save over $500 million annually. Cumulative savings over the next five years could total more than $2 billion.

Of course, such a merger would have its disadvantages. It would result in turmoil throughout the Reserve as units and personnel transferred to the Guard. Furthermore, although such a merger would put additional units at the disposal of state governors, it might not provide every governor with assets sufficient to meet each and every contingency, because governors have access only to units based in their state. Finally, the resulting reduction in the administrative structure of the reserves as a whole might place a strain on the remaining structure in the event of a large-scale mobilization.

Nevertheless, the idea of merging the Army National Guard and the Army Reserve has been raised several times over the past 50 years. Although such a merger has been rejected repeatedly, giving serious consideration to a more efficient structure for the reserves might be appropriate in these times of fiscal constraint.

DEF-28 ADOPT HMO STAFFING PATTERNS IN MILITARY MEDICAL FACILITIES

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	22	69	117	144	148	500
Outlays	21	66	114	142	147	491

In December 1993, the Department of Defense announced its plans to reform the military health care system by establishing a program of managed care nationwide, referred to as Tricare. Ensuring that people who are eligible for health care from the military have access to high-quality health care benefits and improving the efficiency of the military health care system are two of the major goals of the Tricare program. DoD has already introduced a new approach to delivering and financing health care in the military to encourage coordination among the Army, Navy, and Air Force and to provide them with strong fiscal incentives to control costs. When fully implemented, Tricare will also introduce several managed care strategies, which many civilian plans have adopted, to improve the cost-effectiveness of the system.

This option, building on the incentives under Tricare, would require DoD to adopt staffing patterns at the military medical facilities based on the standards used by civilian health maintenance organizations. HMOs are generally accepted as a cost-effective way to deliver care to a defined group of enrollees by controlling their use of health care and delivering services as economically as possible.

Putting HMO staffing patterns into effect could lead to substantial savings for DoD by reducing the overall number of physicians the military employs. Civilian HMO staffing standards suggest that DoD would need 8,060 physicians. That number is based on the assumption that about 5.1 million beneficiaries seek care from military medical facilities worldwide; the number is adjusted upward for differences in age and sex of military beneficiaries and civilian HMO enrollees. Recognizing other key differences between military and civilian HMOs, such as training and the services' readiness requirements, the number of physicians needed would rise to 12,070. At the end of fiscal year 1997, however, DoD plans to have about 13,290 physicians--or about 1,220 more than required for the military in this option. By having fewer physicians, DoD could lower health care costs by $21 million in 1998 and $491 million over five years, in comparison with the Administration's 1997 plan. These estimated savings are in addition to those resulting from the drawdown already planned for uniformed and civilian physicians. The estimates also assume that HMO staffing standards would be phased in over three years.

Even though adopting HMO staffing patterns would be consistent with the department's move toward managed care for the military, this option has some drawbacks. HMO staffing patterns assume significantly lower levels of health care use by enrollees than is true for the military beneficiaries who currently use the military's medical facilities. Therefore, reducing the number of military physicians would decrease the access of beneficiaries to military medical care.

The higher rates of health care use by military beneficiaries compared with HMO rates, however, underscore the differences in practice patterns between military physicians and those who work in civilian HMOs. Unless military physicians changed how they practice medicine, reducing the number of physicians could lead to rationing or poorer service. That said, phasing the HMO staffing patterns in over three years, as this option assumes, might mitigate many of the potentially adverse effects of those cutbacks on beneficiaries. That phase-in period would allow physicians some time to understand the variations in clinical practice patterns between HMOs and the military and to modify their behavior accordingly. DoD could support those efforts

by trying to understand clinical variations among the services as well as differences in practice patterns among physicians.

A more serious problem that relates directly to the issue of care is the possibility that the number of eligible military beneficiaries electing to use the military health care system might grow. With more beneficiaries, the problems of excess demand, rationing, and declines in the quality of service would be greater than assumed here, because the number of physicians assumed in this option might not be sufficient to meet HMO staffing patterns for the military.

In view of these uncertainties, this option makes the conservative assumption that beneficiaries receive all of their health care at military medical facilities, though currently they actually receive about 20 percent of their care from civilian providers paid by DoD. Indeed, accounting for the care that beneficiaries receive from civilian providers could lower the number of physicians needed to meet civilian HMO staffing standards by as much as 20 percent--or from the 8,060 assumed here to 6,450.

DEF-29 REVISE COST SHARING FOR MILITARY HEALTH CARE BENEFITS

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	362	355	355	355	355	1,781
Outlays	305	346	350	353	353	1,707

About 8.2 million people are eligible to use the military health care system. That total includes all men and women on active duty, their spouses and children, and retired military personnel and their dependents and survivors. Yet only about 6.3 million of them actually use the military's system of care. Many of those who are eligible choose instead to rely on other insurance coverage. Eligible people do not have to enroll or otherwise commit themselves to use the military system. Instead, they can elect to use military care on a case-by-case basis, thus creating major cost and management uncertainties for military providers.

Beneficiaries who choose to use the military's health care system receive most of their care in the military's hospitals and clinics (referred to as the direct care system). Other care is given by civilian providers who are reimbursed by a traditional fee-for-service insurance program known as the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS). Care furnished in military facilities is virtually free to the beneficiary, whereas CHAMPUS users bear higher out-of-pocket costs for the care they receive, although they are not required to pay an insurance premium.

The Department of Defense, however, is now implementing a plan, known as Tricare, for reforming the current system of military health care. DoD plans to make Tricare available to all military beneficiaries nationwide by the end of 1997. Under that plan, beneficiaries can choose among three options for health benefits: Tricare Prime, a plan modeled after private-sector health maintenance organizations (HMOs); Tricare Standard, the standard CHAMPUS benefit plan; or Tricare Extra, a preferred provider option that beneficiaries participating in Tricare Standard are allowed to use on a case-by-case basis. Only Tricare Prime requires beneficiaries to enroll. Active-duty personnel and their dependents do not pay an annual enrollment fee, but retirees pay $230 for single and $460 for family coverage. (Beneficiaries who are 65 years of age or older are not allowed to enroll in Tricare Prime under provisions governing CHAMPUS eligibility.)

Tricare makes many changes to the military health care system, but those changes may not be sufficient to remedy the inefficiencies that have beset DoD's management and delivery of health care. In an effort to improve the Tricare program, this option would make two modifications to the military health care benefit. The first would require all beneficiaries, except those who are 65 years of age or older, to enroll in either Tricare Prime or Tricare Standard as a precondition for using the military health care system. Annual enrollment fees for Tricare Standard would be modeled after the fees established for Tricare Prime. Active-duty personnel and their dependents would pay no fee, but retirees under the age of 65 would pay an annual fee of $115 for single and $230 for family coverage.

The second modification would equalize the cost-sharing requirements for outpatient care for all beneficiaries regardless of whether that care was received in a military or civilian setting. New cost-sharing requirements for direct military health care would be modeled after the civilian cost-sharing requirements for Tricare Prime.

Savings in outlays under this option could amount to about $305 million in 1998 and about $1.7 billion through 2002. Those savings would stem from the revenue generated from enrollment fees, increased copayment charges, and the reductions in patterns of use by beneficiaries in response to higher cost sharing. Some

of those savings, however, would be offset by the cost of modifying existing automated information systems to collect the higher fees, which has not been included.

All three Tricare plans would require that beneficiaries seek care through the direct care system before going to a civilian provider. Beneficiaries using the direct care system would continue to pay very little out of pocket. The costs for hospital care would not change: most beneficiaries would pay between $4.75 and $9.70 per day, and retired enlisted personnel would pay nothing. Moreover, outpatient visits and prescriptions would continue to be free for all beneficiaries.

Beneficiaries using civilian providers would generally continue to pay more out of pocket for their care under Tricare than if they used the direct care system. How much more would depend on the beneficiary's choice of plan. Enrollees in Tricare Prime would pay the least out of pocket for the care that they obtained from a civilian network provider: most beneficiaries would pay about $11 per day for hospital care and between $6 and $12 for outpatient care. The cost-sharing requirements for Standard and Extra users would generally be higher.

Aside from raising revenue, this option would yield many other benefits. An efficiently managed system would require DoD to be able to identify the population for whom health care was provided. Tricare begins to build a better foundation for DoD by requiring people who choose Tricare Prime to enroll. But DoD would still face a challenge in planning for people who did not enroll. Military providers need to be able to plan for the health care needs of a defined population to develop per capita budgets and build cost-effective health care delivery networks. Those strategies can be put into effect only if all beneficiaries commit themselves either to use a military plan or to rely on nonmilitary sources of care. The universal enrollment requirement in this option would accomplish that. Charging more for direct care would also help curb excessive use of services in military facilities by creating the same incentives for beneficaries who used the military treatment facilities as for those who used civilian providers. Finally, this option would eliminate the inherent inequity of providing more generous health care benefits to people who live near a military hospital or clinic.

This option also has drawbacks. Because medical care is a key part of military compensation, military families might view increased charges as an erosion of benefits. That could be of particular concern during a major drawdown of forces, which has already created considerable uncertainty among military families. Recruitment and especially retention could suffer, although enrollment in Tricare would continue to be free for active-duty personnel and their dependents, in contrast to the premiums typically required for enrolling in other medical plans offered to civilian employees in either the federal government or the private sector. Nor should rising charges necessarily harm health, because evidence shows that people at ages and income levels typical of military beneficiaries seek needed care even when they share costs.

DEF-30 DOWNSIZE THE MILITARY MEDICAL SYSTEM

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	278	827	1,762	2,464	2,702	8,033
Outlays	162	755	1,187	2,385	2,583	7,072

The Department of Defense operates an extensive military medical system that is the chief source of health care for about 6.3 million people, including 1.6 million uniformed personnel. The need for the system stems primarily from its mission to care for military personnel in wartime. In peacetime, military medical personnel train for their wartime mission and also provide care for active-duty personnel, their dependents, and retirees and their families.

During the Cold War, wartime military medical requirements were based largely on the scenario of an all-out conventional war in Europe. The expected high casualty and injury rates generated demands for far more hospital beds and physicians' services than military budgets could afford. The military built large medical systems incorporating some 30,000 hospital beds in the United States and requiring the services of 13,000 active-duty physicians.

This option would restructure the military health care system based on the reduction in wartime medical requirements that has occurred since the Cold War ended. Although the size of the system has been reduced slightly in response, wartime requirements have plummeted so sharply that the military medical establishment in the United States now has more than twice the capacity needed to meet the projected wartime demand for medical care. Substantial reductions in the number of facilities--and personnel--in the military health care system may therefore be possible.

According to a study for the Department of Defense conducted by RAND, for example, the military could eliminate all but 11 of today's 94 hospitals in the United States. That would reduce the wartime capacity of the system in the United States, as measured by the number of hospital beds, by more than two-thirds--from about 18,000 beds to about 5,500 beds. In doing so, DoD's health care system would be able to meet about 60 percent of the total wartime requirement for 9,000 beds, a significantly higher percentage than it ever met during the Cold War. As DoD has traditionally planned, the Department of Veterans Affairs and the civilian sector would provide the additional beds during wartime.

To date, DoD has no plans to make such deep reductions in the size of its medical establishment. Military medical officials argue that military medical facilities and the care those facilities provide in peacetime are essential to train physicians and ensure medical readiness for wartime. In addition, they claim that they must maintain a large enough establishment to attract, recruit, and retain medical personnel. In principle, however, DoD could separate its responsibility to provide beneficiaries with access to medical care from its direct provision of peacetime health care in military facilities. Indeed, given that the department reimburses beneficiaries for care received from civilian providers through the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), it already makes that separation to a degree.

Downsizing the military's medical system to such an extent would obviously have a major impact on training and preparing for wartime. Such an effort would require DoD to strengthen its affiliation with the civilian sector to provide wartime training for military medical personnel, meet some of the requirements for active-duty personnel, and ensure an adequate supply of wartime beds. Developing those closer ties with the civilian sector might be worth the effort, since practicing medicine in the civilian sector would probably afford military medical personnel more experience in treating the diseases and injuries that they might be re-

quired to deal with in wartime than would treating mostly civilian patients in military medical facilities. (See Congressional Budget Office, *Restructuring Military Medical Care*, July 1995, for a fuller discussion of this subject.)

This option would also have a significant impact on the way that DoD provides health care to the millions of people who rely on the military system. A downsized medical establishment would drastically limit the ability of DoD to provide care directly to its beneficiaries, including military personnel. Active-duty personnel would receive their health care in both military and civilian settings; other beneficiaries--dependents of active-duty personnel and retirees and their families--would have to depend entirely on the civilian sector.

Carrying out such an aggressive restructuring of the military medical system would offer substantial savings. Net savings in outlays would be $162 million in 1998 and more than $7 billion over five years. Those net savings reflect both the costs avoided by downsizing the military health care system and the costs of providing an alternative source of health care coverage for non-active-duty beneficiaries.

Costs Avoided by Downsizing. Under one definition of wartime readiness, DoD could reduce its net annual budget authority by about $821 million in 1998 and more than $28 billion through 2002. That estimate of savings accounts for the eventual elimination of CHAMPUS, the provision of health care to active-duty personnel, and the costs of closing down the military medical system; it does not, however, reflect the costs to the federal government of cleaning up hospital sites, because DoD would have to pay those costs anyway.

Costs of Health Care. Any serious effort to restructure the military health care system would probably consider the costs of providing an alternative source of health care coverage for non-active-duty beneficiaries. For that reason, this option assumes for illustrative purposes that DoD would offer non-active-duty beneficiaries the opportunity to enroll voluntarily in the Federal Employees Health Benefits (FEHB) program. As an employer, DoD would pay the government's share of the premiums for the plans that beneficiaries selected, modeled on the premium-sharing arrangements between the government and nonpostal employees. Another key assumption of this option is that DoD would ensure that all of its beneficiaries over the age of 65 had full coverage under Medicare.

Assuming gradual implementation of this option, the total cost to the government of providing an alternative source of health care to non-active-duty beneficiaries would be about $500 million in 1998, growing to almost $19 billion over the next five years. Based on that estimate, the government's cost would be substantially less than the savings it could realize by downsizing and restructuring the military health care system.

This option might be opposed for several reasons. Beneficiary groups might object because enrolling in a plan offered under the FEHB program would cost them substantially more on average than what they pay out of pocket for care in the military health care system today. Nevertheless, many FEHB plans would offer improved coverage to military beneficiaries and so might be worth the higher out-of-pocket costs.

This option would also require DoD and the Congress to proceed unambiguously with separating peacetime care from wartime readiness. Military medical officials strongly oppose downsizing the military medical system on the grounds that such actions would jeopardize medical readiness. But in fact, this option would make wartime medical readiness the primary objective of DoD's medical planning. In the past, DoD has had difficulty balancing the wartime mission with peacetime care. DoD has stated that it has not always been able to serve its wartime mission well given its tendency to emphasize the delivery of peacetime care at the expense of wartime preparedness. This option would help to address that problem by redefining the responsibilities of the department.

DEF-31 CLOSE THE UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	19	37	53	94	91	294
Outlays	16	33	49	86	89	273

Historically, the Department of Defense has faced shortages in medical personnel, particularly physicians. To alleviate that situation, DoD has developed various programs to provide a supply of those personnel. One such program is the Health Professionals Scholarship Program (HPSP), which pays tuition and a stipend to medical students and to students in other health-related programs in return for a military service obligation. Another is the Uniformed Services University of the Health Sciences (USUHS), a medical school operated by DoD.

The Congress created the university in 1972 to train physicians committed to long-term military careers. At a total cost of about $100 million in 1995, the school provides a full education for its participants, including a stipend to cover room, board, and books. Based on figures from 1995, USUHS is the most expensive source of military physicians at about $615,000 per person. By comparison, scholarships cost about $125,000; other sources, such as the Financial Assistance Program (FAP), cost about $60,000. Even after adjusting for the lengthier service commitment required of physicians trained at USUHS, the cost of training them is still higher than that of training physicians from other sources.

USUHS has met only a small fraction of DoD's need for new physicians--less than 12 percent in 1994, for example. Scholarships provided over 80 percent, and the remaining 8 percent came from other sources, including volunteers.

This option assumes that the class of students admitted in August 1997 would be USUHS's last; the institution would close at the end of fiscal year 2001 after those students had graduated. Other programs for obtaining physicians would be expanded to offset the loss of physicians trained at USUHS. CBO's estimate of the Administration's 1997 plan, as modified by Congressional action, assumes continuation of the USUHS program at current levels. Compared with that plan, net savings to the defense budget would be $16 million in 1998 and $273 million over five years. Those savings include reductions in military and civilian personnel assigned to the university, which would be in addition to planned drawdowns. They also reflect the added cost of obtaining physicians from other sources, such as the HPSP and FAP.

Congressional support for this option would be hard-won. For the past two years, the Administration has proposed closing the university. Each year, however, the Congress has directed DoD to keep USUHS open. In its reasons for doing so, the Congress has cited many of the arguments of the university's supporters. Those supporters claim, for example, that USUHS physicians are better trained for the special needs of the services because of the university's focus on the study of military medicine and preparation of military medical officers. In addition, some of the higher costs of USUHS are repaid, in effect, because USUHS-trained physicians have a longer service commitment than physicians from other sources. For example, graduates of USUHS must pay back seven years of active duty, whereas scholarship recipients must pay back only about one year of active duty for each year of health professional training. The longer tenure of USUHS graduates may enhance stability in the medical corps and reduce demands on the other sources of physicians.

Supporters of USUHS also argue that direct cost comparisons between it and other sources of physicians may be unfair to the university because of indirect subsidies that the federal government provides to medical schools, which in effect raise the true governmental

cost of physicians from sources other than USUHS. Nonetheless, taking those subsidies into account would lead to the dubious conclusion that closing USUHS would increase the amount that the federal government spends on indirect subsidies to medical schools.

DEF-32 CLOSE AND REALIGN ADDITIONAL MILITARY BASES

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	0	-381	-886	-140	717	-691
Outlays	0	-118	-412	-434	-34	-998

NOTE: Savings for this option do not include the costs for environmental cleanup since the Department of Defense is obligated to incur such costs regardless of whether it operates or closes bases.

Starting in 1988, the Department of Defense sought to achieve savings by closing military bases. DoD concluded that the reduction in military forces justified cutting back the number of bases. To elevate that process beyond parochial concerns, the Congress set up the Commission on Base Realignment and Closure in October 1988 (BRAC I) and subsequently chartered additional commissions to meet in 1991, 1993, and 1995 (BRAC II, III, and IV). Those commissions have directed the closure and realignment of hundreds of military installations in the United States, Puerto Rico, and Guam. According to current DoD estimates, BRAC actions will yield 20-year savings with a net present value of about $57 billion. The department estimates that when all four BRAC rounds are completed, it will save about $6 billion a year in operating costs.

This option would authorize another round of base closures and realignments. If history is a guide, this option would add to costs over the next five years. But between 1998 and 2007, this option could save about $6.4 billion in budget authority and about $4.5 billion in outlays as the department begins to realize steady-state savings. The estimates of the near-term costs and long-term savings for this option are based on DoD's experience and current projections for the four earlier rounds of base closings.

Closing and realigning additional military bases is consistent with DoD's overall drawdown of forces. By several measures, the reductions in military forces significantly exceed the planned cutback in the number of bases. When the services have carried out current plans to reduce the force structure, for example, the Army will have cut the number of active and reserve divisions by 36 percent, the Navy will have reduced the number of battle force ships by 37 percent, and the Air Force will have lowered the number of active and reserve tactical fighter wings by 44 percent. By the end of 1999, when DoD will have completed implementing the Bottom-Up Review and virtually all of the past BRAC closure and realignment actions that it began in 1990, military and civilian end strength will have fallen by about 968,000 positions--a reduction of about 31 percent from personnel levels in 1990. By one measure, reductions in the base structure have not been as extensive as those in the force structure: DoD estimates that when all rounds of closures and realignments have been completed, the replacement value of the base structure (the cost of replacing all buildings, pavements, and utilities) will have decreased by only about 21 percent.

Some analysts believe that DoD can further reduce the number of military bases. In March 1995, the Secretary of Defense indicated that he would recommend that BRAC authority be extended to permit another round of base closures because the services had indicated the potential for further cuts. In the *Department of Defense Base Closure and Realignment Report* of March 1995, the department stated that opportunities existed for further cutbacks and consolidations of depot maintenance facilities, defense laboratories, test and evaluation installations, medical facilities, and training bases for helicopter pilots.

Others believe that the BRAC cuts have gone far enough in matching the planned reductions to the force structure, most of which have already been carried out. The base structure, they believe, should retain enough excess capacity to accommodate emerging risks to na-

tional security that could require a surge in the number of military forces.

Closing military bases can produce substantial savings. But experience indicates that the actual savings from another round of cuts could be lower than expected. Projected net savings for BRAC II, for example, have declined from the initial estimate of $2.9 billion to about $1 billion at present. Higher environmental cleanup costs and lower revenues from the sale of property explain most of the change in DoD's estimates.

Furthermore, closing bases requires a substantial up-front investment that may be difficult to justify in a constrained budget environment. Up-front costs for this option could amount to about $1.4 billion in budget authority during the 1998-2001 period, when most of such costs would occur. For example, DoD estimates that the costs of military construction activities to implement BRAC I and BRAC II amounted to about $2.8 billion.

Closing and realigning additional bases could also make better use of federal property. Former military bases are transferred either to other federal agencies or to local redevelopment authorities for economic development or for nonprofit use by the public. The federal government plans to retain about 58 percent of surplus property resulting from BRAC I and BRAC II closures; about half of that property will be used for wildlife protection, and a substantial portion will be used for parks and recreation, prisons, and Job Corps training sites. About 20 percent of the surplus property from those two rounds will be used for public facilities, including commercial airports, educational facilities, housing for the homeless, and state prisons. About 12 percent is slated for economic development programs to help offset the local economic effects of closing bases. DoD plans to sell about half of the remaining 10 percent of the property to private purchasers and has not yet completed plans for reusing the rest.

DEF-33 REDUCE PROFESSIONAL DEVELOPMENT EDUCATION

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	88	310	449	461	474	1,782
Outlays	79	286	431	455	470	1,721

Professional development education courses are designed to prepare both commissioned officers and noncommissioned officers (senior enlisted personnel) for new leadership and management positions or to provide them with advanced training. Those courses provide broad professional training in leadership and management, military science and national security policy, acquisition management, or advanced training in a particular field; they generally do not focus on specific job skills. The length of the training varies, but the time and number of personnel involved are substantial: on any given day in 1996, for example, an average of 12,600 personnel will attend professional development education programs in residence.

Most of this training is conducted by the individual services at 23 military schools and over 80 other military installations around the country. In many cases, personnel must undergo such training before receiving a promotion. About two-thirds of this training is for commissioned officers and one-third for noncommissioned officers. Almost all of the training is for active-duty personnel. Each service has both a command and staff college to prepare commissioned officers for mid-level staff duties and a senior service school, or war college, to prepare officers for senior positions. Courses at those leadership schools vary in length from 12 to 44 weeks. Senior enlisted personnel receive analogous training to prepare them for management positions; they take courses in leadership, human relations, and administration over a period of, typically, four to 40 weeks. Personnel can also meet some training requirements by taking military correspondence courses or by taking courses at local universities; the services incur little expense with such nonresidential leadership training.

Leadership training accounts for about half of residential professional development education. The remainder consists of sending personnel to military schools or civilian universities for undergraduate or graduate course work. That training is designed to encourage individuals to complete undergraduate degrees to improve the general educational levels of service personnel or to acquire advanced knowledge in their field.

Residential professional development training is expensive, costing the services over $900 million annually. The small size of many classes, the length of courses, and the salaries of military personnel while in training largely account for the high cost. The average annual cost per student in residence at a school is about $70,000.

During the 1980s, the services increased their investment in residential professional development training for both commissioned and noncommissioned officers by almost 50 percent. Unlike training levels for new enlistees and officers, which have fallen in tandem with the drawdown of military personnel, the amount of professional development training provided has remained at about the 1989 level. Training levels remained high in the Army Navy, and Air Force in part because the number of commissioned officers did not fall in proportion to the decrease in the number of active-duty personnel. In contrast, professional development training for noncommissioned officers rose dramatically even though the share of those eligible for that training fell.

At the same time, the average number of days of professional development training provided for all eligible active-duty personnel has grown by almost 30 per-

cent, from seven to almost nine days a year. Average annual training days will grow by 12 percent for commissioned officers and by over 80 percent for noncommissioned officers between 1989 and 1997. Those increases reflect greater emphasis on residential professional development, particularly for noncommissioned officers.

This option would decrease the amount of professional training conducted in residence by one-third in the next two years, saving over $450 million a year in outlays by 2001. Savings would result not only from decreases in training expenses, such as the cost of materials and paying civilian instructors, but also from decreases in the total number of military personnel needed by the services. (DoD does not consider personnel in training to be available for other positions.) Such a reduction would adjust the level of professional residential development training to that set during the 1980s when funding for training and support of forces was at historically high levels. The services could distribute that reduction among the different types of professional development training, based on their requirements for officers of different ranks and for personnel with advanced training in particular areas.

Reducing professional development training would have some drawbacks. The reduction would run counter to the increased emphasis the services have placed on residential classroom training, which they believe is superior to training conducted by correspondence or on the job. Moreover, if the services continued to offer training to fewer students but retained the same number of locations, then the savings, though substantial, would not be proportional to reductions because the costs associated with bases, facilities, and equipment would only partially adjust to smaller loads.

The services have not offered any explanation of why proportionately more residential professional development training is needed in a smaller force. This option would encourage the services to concentrate their resources on the types of training they consider most important, to reduce the number of officers, and to look more carefully at opportunities to consolidate their training courses at fewer locations to improve efficiency and save money. Finally, military personnel concerned with advancing their careers could continue to take professional development training by correspondence, at their home bases, or at local universities on their own time if residential training was not available.

DEF-34 REDUCE FUNDING FOR DOE'S CLEANUP PROGRAM

	Annual Savings (Millions of dollars)					Five-Year Cumulative
	1998	1999	2000	2001	2002	Total
From the 1997 Funding Level						
Budget Authority	621	621	621	621	621	3,105
Outlays	448	609	621	621	621	2,920
From the 1997 Funding Level Adjusted for Inflation						
Budget Authority	783	957	1,137	1,323	1,510	5,710
Outlays	565	893	1,083	1,268	1,454	5,263

The Department of Energy (DOE) is engaged in a massive effort to resolve environmental problems at its nuclear weapons complex. The complex comprises more than 100 sites in 36 states and territories where radioactive materials were processed and nuclear weapons were produced beginning in the early 1940s.

For 1997, the Congress appropriated $6.2 billion to DOE for its environmental management (EM) program. Of that total, about one-third is for environmental restoration; the rest is for managing hazardous (including radioactive) and nonhazardous wastes, stabilizing nuclear materials and facilities, researching and developing technologies for more effective cleanup, and general management and oversight.

Under this option, DOE's EM budget would be cut 10 percent relative to the 1997 level. Savings in outlays from the 1997 funding level would be $448 million in 1998 and $2.9 billion over the 1998-2002 period. Measured from the 1997 level adjusted for inflation, outlay savings would be $565 million in 1998 and $5.3 billion over the five-year period. A 10 percent cut is consistent with a recent DOE estimate that 49 percent of the budget for waste management and cleanup activities addresses high risks to the public, workers, or the environment and 39 percent addresses medium risks. Other cleanup activities carried lower risks that would not cause significant effects in the next 10 years.

Deferring cleanup at lower-risk sites might prevent DOE from complying with agreements it has made with the Environmental Protection Agency (EPA) and state regulatory agencies. Those agreements establish specific milestones that DOE must meet or face fines and other penalties. DOE estimates that 7 percent of the EM budget is for cleanups that present a low risk but are of high priority in complying with those agreements.

Congressional action might be needed to avoid exposing DOE to penalties for not meeting the milestones. The Congress, for example, could direct DOE to renegotiate agreements so as to postpone noncritical cleanups--especially where the risks to cleanup workers are high relative to the risks of continuing to monitor the site and where technologies are not currently available for effectively treating and disposing of hazardous and radioactive wastes. The renegotiated agreements might also allow lower standards of cleanup on sites destined for industrial use and greater flexibility in the choice of cleanup methods.

Such actions could substantially reduce cleanup costs. DOE estimates that its recent renegotiation of the Hanford Tri-Party Agreement has saved more than $1 billion. Although each situation is unique, state regulators and EPA have incentives to renegotiate the agreements. In most cases, they entered into the agreements long before enough information was available to assess the potential benefits and costs of specific cleanup actions. As more information becomes available, they may decide to reconsider their priorities.

The Congressional debate over reauthorizing the Superfund program includes many of the same ques-

tions about cleanup goals, suitable standards for waste disposal, and the appropriate balance of risks and costs. The resolution of those issues could serve as guidance for DOE's cleanup policies and, combined with reductions in appropriations for DOE, could save large sums of money.

Supporters of DOE's current plans point to substantial progress in managing the cleanup program effectively. They acknowledge that the program had management problems in its early years--problems common to new, rapidly growing programs and exacerbated by DOE's tradition of secrecy in its nuclear weapons mission--but claim that DOE is now on the right track. Making cuts could introduce more turmoil into a program that is just becoming stabilized. In addition, communities neighboring the contaminated facilities would probably object to delays and changes in cleanup standards unless they would lead to safer methods and more effective solutions, including turning DOE facilities over to other industrial uses.

DEF-35 INCREASE COMPETITION BETWEEN PRIVATE-SECTOR AND DEPARTMENT OF DEFENSE HOUSING

Savings from the 1997 Plan	Annual Savings (Millions of dollars) 1998	1999	2000	2001	2002	Five-Year Cumulative Total
Budget Authority	680	720	710	700	690	3,500
Outlays	320	470	580	640	650	2,660

Approximately two-thirds of the military families in the United States receive cash housing allowances and rent or purchase housing in the private sector. The remaining third live in housing units provided by the Department of Defense. The department's policy is to provide housing units only if the private sector is unable to provide adequate, affordable housing. Nonetheless, DoD does not plan to reduce its housing stock in proportion to the ongoing reduction in U.S. military forces. As a result, CBO projects that the percentage of military families in the United States living in DoD housing will increase from 30 percent in 1990 to 35 percent in 1997. That increase means higher costs for DoD. Over the long run, the average annual cost of providing one unit of DoD housing (including the amortized cost of construction) is approximately $12,000, compared with approximately $7,600 for housing allowances.

DoD's plan for military family housing also presents a funding problem in the near term. Because much of the department's housing stock is near the end of its service life, maintaining that stock will require an immediate investment program. DoD plans to use private capital to meet some of those needs. The 1996 defense authorization act expanded DoD's ability to offer rental guarantees or leases to private investors and to enter into public/private partnerships. Those provisions may enable DoD to attract private funds. By itself, however, greater access to private capital could reduce the need for appropriations in the near term without lowering the long-run cost of providing DoD family housing.

This option offers an alternative approach that might both resolve DoD's immediate funding problem and reduce the long-term cost of ensuring that military families have adequate housing. Under this option, all military personnel eligible for family housing would receive cash housing allowances regardless of whether they lived in DoD or private-sector units. Each family would be free to choose between DoD and private-sector housing. In the short run, DoD housing managers at each installation would set rents at market-clearing levels (levels at which there would be neither excess vacancies nor waiting lists). In the long run, DoD would revitalize and replace units only if the value of the new unit to service members (the rent that it could command) was sufficient to cover operating costs and amortized capital costs.

Under this approach, DoD housing would for the first time compete with private housing on a level playing field. Currently, only families living in private-sector housing pay rents that cover the full cost of their housing. The housing allowance that families in DoD housing forfeit (which is, in effect, the rent they pay) is on average equal to about 60 percent of the costs that the federal government incurs in providing a unit. In effect, DoD subsidizes the cost of on-base housing. That subsidy contributes to the demand by military families for on-base units, making it difficult for the department to reduce its housing stock and require greater use of private-sector housing.

Total outlay savings under this option compared with CBO's estimate of the Administration's 1997 plan could amount to $320 million in 1998 and $2.7 billion through 2002. Some of those savings would result from more efficient management of existing units as the on-base units were forced to compete with less costly private-sector housing. Other savings would result from lower revitalization and replacement costs. DoD would retire aging units rather than undertake investment projects that would not be justified by the value of the units to service members (as indicated by projected rental payments).

These estimates reflect the cost of raising the housing allowances to hold constant the total out-of-pocket cost that service members incur (the difference between their total expenditures on housing and the total amount of allowances provided). As a result, they reflect real resource savings, not the fact that service members would have to pay higher rents for DoD housing.

One disadvantage of this option is that it represents a significant break with tradition. At least since the onset of the Cold War, a substantial minority of married service members have lived in housing that DoD provided "free" in lieu of cash allowances. Because this option would eliminate that practice, it could be perceived as a reduction in the level of total compensation (despite the offsetting increase in housing allowances for the military as a whole). In addition, unless DoD responded to competition with private-sector housing by dramatically reducing the cost of providing on-base housing, the number of families living on-base would gradually decline as DoD units were retired. That change in housing patterns would be a disadvantage in the eyes of people who feel that the on-base lifestyle makes an important contribution to military spirit.

Other disadvantages include the costs of determining initial rental rates and collecting rents. Special arrangements would have to be made for historic units (units that DoD must maintain even if rents do not cover costs) and for personnel who are required to live on-base to be available in the event that military needs arise (approximately 3 percent of all personnel). Since a rental system might have to be phased in as individuals started new tours, inequities might exist initially between people under the old system and those under the new.

Yet this unsubsidized system of market-clearing rents offers some important advantages. It would eliminate the frustration and costs borne by military families under the current system in which waiting lists are used to ration on-base units. Service members would no longer have to move into a private-sector unit at the beginning of their tour only to move again into an on-base unit when they reached the head of the waiting list. In addition, rental prices under this option would provide a clear signal to housing managers about the value of on-base housing to service members. With those price signals guiding investment decisions for on-base housing, the location, quality, and number of units would be more likely to reflect the preferences of military personnel than they do under the current system.

Perhaps most important, allowing private-sector housing to compete with on-base housing on a level playing field would, over the long run, enable the department to provide service members with the same quality of life at lower cost. Although presented here as an alternative to DoD's current housing system, the use of unsubsidized, market-driven rents for military housing might offer similar advantages regardless of whether the units were controlled directly by DoD, a quasi-governmental housing authority, or a public/private partnership.

DEF-36 REDUCE SUBSIDIES FOR MILITARY COMMISSARIES

Savings from the 1997 Plan	Annual Savings (Millions of dollars)					Five-Year Cumulative Total
	1998	1999	2000	2001	2002	
Budget Authority	460	480	490	500	510	2,440
Outlays	350	440	470	490	510	2,260

The Department of Defense Commissary Agency (DeCA) operates on-base supermarkets, or commissaries, for the benefit of both current and retired service members and their dependents in the United States and overseas. Based on sales volume, DeCA is the nation's eighth largest supermarket chain.

The Congress provides DeCA with approximately $1 billion in annual appropriations to pay for the salaries of commissary employees and other operating costs. That subsidy allows commissaries to charge prices well below those charged by commercial supermarkets. CBO's midrange estimate suggests that commissary prices are on average 20 percent below commercial prices. DeCA, based on a 1995 price survey, estimates that commissary prices are typically 29 percent below commercial levels. Whatever its exact level, the difference between commissary and commercial prices creates a strong demand for continued access to commissaries. As a result, DoD continues to operate small, costly stores in U.S. locations where bases have been closed and relatively few active-duty personnel remain.

This option would raise commissary prices by 10 percent, making the commissaries more self-sufficient and reducing the need for appropriated subsidies. Despite the price increase, commissaries would continue to offer substantial savings. CBO's midrange estimate is that commissary prices would still be 12 percent below commercial levels. However, if DeCA's estimate of current savings is correct, the new prices would be 21 percent below commercial levels. That is only 2 percentage points less than the 23 percent savings reported by DeCA in 1991.

Over the long run, DoD savings from this option would be approximately $500 million annually. Those savings would permit the Congress to cut the commissary appropriation by about one-half. That estimate includes the cost of an $80 million increase in overseas cost-of-living allowances that higher prices in overseas commissaries would trigger.

This price increase would make commissaries a more cost-effective benefit for military personnel. Under the current system, the price that service members pay for commissary goods does not cover the costs that taxpayers incur in providing them. Subsidized prices encourage members to purchase goods even if the value they place on those purchases is less than the cost to taxpayers.

This option could also improve the welfare of families living overseas by expanding their shopping alternatives. The large price differential that exists between commissaries and local stores overseas can make local shopping appear unreasonably expensive, in effect trapping service members into shopping at small commissaries even in locations where the local economy offers large, modern supermarkets with a wide array of goods. Higher commissary prices--and a higher cost-of-living allowance to offset those prices--would give service members a wider array of affordable options.

The major disadvantage of this option is that it would force military members and retirees in the United States to pay higher prices at commissaries or to shop in commercial supermarkets. Service members in the United States, unlike those overseas, would not get an automatic offsetting increase in cash compensation.

Nonetheless, this option would offer significant savings while preserving much of the current commissary benefit for both active-duty and retired military personnel. Commissary prices would still be sig-

nificantly below commercial prices, and commissary benefits might continue to be regarded as an integral feature of the military way of life for both active-duty and retired personnel. The only commissary sales DoD would lose would be those that were clearly not cost-effective.

DEF-37 CONSOLIDATE THE MILITARY EXCHANGES AND INCLUDE THEM IN THE FEDERAL BUDGET

Savings from the 1997 Plan	Annual Savings (Millions of dollars)					Five-Year Cumulative Total
	1998	1999	2000	2001	2002	
Budget Authority	520	530	540	560	580	2,730
Outlays	390	490	530	550	570	2,530

The Department of Defense's three military exchange systems (the Army and Air Force Exchange Service, the Navy Exchange Command, and the Marine Corps's system) operate a wide array of retail stores and consumer services for the benefit of active, reserve, and retired military personnel and their families. Although best known for their main retail stores (similar to J.C. Penney or Sears), the exchanges also provide convenience stores, liquor stores, gas stations, fast-food restaurants, flower shops, and pet-grooming salons. In 1995, the exchanges sold over $9 billion of goods and services and employed nearly 80,000 workers.

Although wholly owned by the federal government, the exchanges are nonappropriated fund (NAF) activities and do not appear in the federal budget. DoD spends the exchanges' net earnings without Congressional authorization or appropriation. In 1995, DoD's discretionary NAF income from exchanges and overseas slot machines (another large revenue producer) was approximately $450 million. By 1997, that amount is expected to rise to over $600 million as the exchanges recover from the effects of the drawdown and take control of all tobacco sales at military bases. The services use most of that discretionary NAF income to support their morale, welfare, and recreation (MWR) programs. Among the MWR programs that benefit from the income are so-called Category C programs (commercial-style programs such as golf courses, hotels, and clubs) as well as Category A and B programs (mission-supporting and community support activities such as libraries, gymnasiums, and child care centers).

Members of Congress have questioned some of the services' decisions to use NAF earnings in support of particular Category C projects. One response, which DoD used to defend both the purchase of a hotel in Disney World and the construction of a third golf course at Andrews Air Force Base, is that NAF dollars belong to service members, not taxpayers. That argument may be misleading. Although NAF dollars are not currently in the federal budget, they are legally federal resources. They might also be viewed as taxpayers' dollars from a practical perspective. Military exchanges are able to generate NAF earnings while charging below-market prices only because some of their costs are paid with appropriated funds and because they benefit from special tax exemptions. Moreover, the amount of appropriated funds necessary to attract and retain a high-quality force increases when DoD does not spend its NAF dollars wisely.

This option would consolidate the military exchanges and bring them, together with DoD's overseas slot machines, into the federal budget under a single DoD agency or government corporation. That entity would operate under the same personnel and acquisition rules that currently guide the exchanges as NAF activities. In the agency or corporation’s enabling legislation, the Congress would authorize it to spend the money it receives from its customers to cover its operating costs on a revolving basis. The agency would also be authorized to borrow from the Treasury (at interest) for capital investment. It would require specific Congressional authorization, however, to spend its net earnings in support of DoD's MWR programs. CBO estimates that this option would save $390 million in outlays in 1998 and approximately $2.5 billion between 1998 and 2002.

Those savings would come from three sources. One source would be from consolidating the three exchanges' support functions into a single headquarters staff, one set of regional offices, one buying staff, one information system, and one distribution and warehousing system. CBO estimates that those savings would

amount to approximately $50 million annually. That figure is equal to roughly half of the central and overhead costs of the Navy and Marine Corps systems that would be integrated with the larger Army and Air Force Exchange Service.

This option would also provide savings by giving managers better visibility and control over their use of resources. Under this option, a single revolving-fund budget would pay for all of the operating costs of the exchanges, both those now paid with appropriated funds and those paid with nonappropriated funds. Under the current system, the appropriated funds used to support the exchanges (including funds for overseas transportation and utilities, providing services such as police and fire protection, and maintaining the exterior of buildings) do not appear in the exchanges' income and expense statements. As a result, the NAF managers who operate an overseas bakery, ice cream production line, and meat-processing line do not take into account the cost of transporting raw materials from the United States or their utility costs. Separating the appropriated funds from the nonappropriated funds may have encouraged the Army and Air Force Exchange Service to spend $40 million in 1995 transporting beverages bottled in the United States overseas rather than seek overseas bottlers.

Finally, DoD would save because the agency or corporation would use some of its receipts from patrons to reimburse DoD for the cost of any services that the department provided. That reimbursement would reduce the reported net earnings of the agency. The lower estimate of earnings, however, might more accurately reflect the difference between the agency's receipts from the public and its total expenses.

The Congress could use the savings created by that reimbursement (along with the remaining net earnings of the agency) to support the morale, welfare, and recreation activities that are currently supported by exchange earnings. In the past, however, the Congress has been reluctant to provide appropriated funds to support the commercial-style Category C MWR activities that currently receive much of the benefit from the earnings of the exchanges and slot machines. CBO's savings estimate assumes that the Congress would provide appropriated funds (or authorize expenditures of net earnings) to make up for any loss in nonappropriated funds to MWR activities in Categories A and B, but that it would not appropriate funds to cover Category C activities or their overhead costs.

CBO's savings estimate also assumes that the agency or corporation would borrow from the Treasury to meet its investment needs. In the long run, the need to pay interest costs would lead to more careful use of resources. In the short run, the requirement to finance investment with borrowed funds rather than retained earnings would contribute to budgetary savings.

In addition to providing savings, this option would make the treatment of exchanges consistent with the principles established by the 1967 President's Commission on Budget Concepts, thus providing a better picture of overall federal activity. Including the agency's activities in the federal budget would have no effect on federal outlays or the deficit in years when the agency's collections from patrons just balanced its expenditures. In years when expenditures exceeded receipts, net federal outlays would rise by the difference; in years when receipts exceeded expenditures, they would fall. Moreover, by eliminating the process that takes appropriated funds and funnels them through the exchanges to produce net NAF earnings, this approach would increase Congressional control over what are, in fact, expenditures of federal resources.

One disadvantage of this option is that consolidating the separate exchange systems could make it more difficult to tailor the exchanges at different bases to meet the needs of their specific patrons. The transition to a single organization might also temporarily disrupt some exchange operations as DoD moved warehouse operations, created integrated information systems, and reorganized headquarters and support functions.

In addition, at the same time that this option enhanced Congressional oversight and control of federal resources, it would put decisions about the level of federal resources to be spent on MWR activities--decisions that DoD currently handles internally--into the political arena. Although that could have a positive effect on the quality of life (for example, if dollars previously spent on golf courses were shifted toward what might be needs with a higher priority, such as improved barracks), it might also have a negative impact (for example, if the Congress did not provide appropriated funds to replace the NAF dollars previously used to support fitness centers).

DEF-38 REDUCE STATE DEPARTMENT FUNDING AND ELIMINATE MISCELLANEOUS FOREIGN AFFAIRS ACTIVITIES

	Annual Savings (Millions of dollars)					Five-Year Cumulative
	1998	1999	2000	2001	2002	Total
From the 1997 Funding Level						
Budget Authority	50	65	75	95	35	320
Outlays	45	60	70	90	45	310
From the 1997 Funding Level Adjusted for Inflation						
Budget Authority	105	185	265	355	365	1,275
Outlays	85	160	230	320	345	1,140

The Department of State, which employs about 19,500 full-time personnel in the United States and in foreign countries, promotes U.S. foreign policy interests abroad. Other, smaller agencies also conduct research and activities relating to foreign affairs.

The State Department will receive about $2.5 billion in 1997 to administer its foreign affairs programs. In the early 1980s, that portion of the State Department's budget was approximately $1.7 billion. Inflation was responsible for some of the increase, but the funding that was added to provide security for diplomats and to establish new posts in the republics of the former Soviet Union also contributed. Even when funding for added security and new posts is excluded, however, real growth from the 1980s through 1997 amounts to about 20 percent. The increases in funding mainly reflect growth in salaries and related expenses and in rental and acquisition costs of residences and office space. In addition, the State Department has used fees on machine-readable visas and other consular services to augment its consular affairs budget. In 1996, the State Department collected and retained an estimated $143 million in fees.

The State Department is not the only federally funded organization that works on foreign affairs activities. Smaller agencies such as the U.S. Institute of Peace, the Asia Foundation, the East/West Center, and the North/South Center perform functions that could be eliminated without directly affecting U.S. foreign policy. Those agencies, which have combined budgets totaling about $30 million annually, conduct research and work to build better relations between the United States and various foreign countries.

This option would reduce State Department funding from 1998 through 2002 by phasing in nominal cuts in appropriations. By 2001, State Department funding (excluding the cost of security improvements and new posts in the former Soviet Union) would return to its real level of the early 1980s. Compared with the 1997 funding level, this option would save $310 million over the 1998-2002 period--$160 million by reducing State Department funding and $150 million by eliminating the related functions of various other agencies dealing in foreign affairs. Compared with the 1997 funding level adjusted for inflation, this option would save about $1.1 billion over the five-year period.

The department could accommodate those cuts by readdressing its mission and implementing a policy of comprehensive change. Some of those changes might include eliminating or consolidating posts in less important areas of the world, reorganizing the State Department's bureaucracy, and reducing the number of senior foreign service officers, which some studies have suggested is too high given the size of the foreign service.

Opponents of this option would argue that more money--not less--will be needed to handle the new, complex issues that the United States now faces abroad. The current number of senior foreign service

officers may be needed to represent the United States in the post-Cold War world in which economic superpowers will compete. Finally, the smaller agencies dealing in foreign affairs might be viewed as providing valuable independent analysis of issues and improving the United States' understanding of, or relations with, foreign countries.

DEF-39 ELIMINATE OVERSEAS BROADCASTING

	Annual Savings (Millions of dollars)					Five-Year Cumulative Total
	1998	1999	2000	2001	2002	
From the 1997 Funding Level						
Budget Authority	75	190	385	385	385	1,420
Outlays	45	160	350	380	385	1,320
From the 1997 Funding Level Adjusted for Inflation						
Budget Authority	90	215	425	440	455	1,625
Outlays	55	180	385	435	450	1,505

U.S. overseas broadcasting is provided by several entities. Radio Free Europe (RFE) and Radio Liberty (RL) broadcast country-specific news to Eastern Europe and the former Soviet Union, respectively. The Voice of America (VOA) oversees radio broadcasts that provide news and U.S.-related information to audiences worldwide. The United States Information Agency (USIA) oversees television broadcasting services similar to the radio broadcasts of VOA and also manages a broadcasting service to Cuba. In 1996, the Congress consolidated the appropriations for VOA, RFE/RL, and USIA's television and film service into the International Broadcasting Operations account. Funding for radio and television broadcasting to Cuba and for construction of broadcasting facilities was provided in separate appropriations.

This option would eliminate VOA and RFE/RL and would end broadcasting services to Cuba, all overseas construction of broadcast facilities, and U.S. overseas television broadcasting. When measured against the 1997 funding level, five-year savings would total $1.3 billion. Terminating International Broadcasting Operations, which has an operating budget of $325 million, would cost about $295 million in 1998 but would yield five-year savings of about $1 billion. Over the five-year period, ending broadcasts to Cuba would save about $105 million, and terminating construction of broadcast facilities, $135 million. Near-term savings for those programs would be reduced by large termination costs, such as severance pay for employees. Compared with the 1997 funding level adjusted for inflation, this option would save approximately $1.5 billion over the five-year period.

Proponents of terminating overseas broadcasting claim that RFE/RL and VOA are relics of the Cold War that are no longer necessary. RFE and RL continue to broadcast to countries of Eastern Europe and the former Soviet Union even though, after the fall of communism, those countries have ready access to world news. With the advent of satellite television broadcasting, most nations can receive world and U.S.-related news from private broadcasters, such as the Cable News Network (CNN). Some proponents also argue that the primary technology used by VOA and RFE/RL limits the effectiveness of U.S. overseas broadcasting; because shortwave radios are needed to receive most broadcasts, audiences are limited. Finally, foreigners may distrust the accuracy of broadcasts sponsored by the U.S. government.

Critics of this option would argue that the current level of broadcasting should continue or even increase. The process of change in Eastern Europe and the former Soviet Union needs nurturing, and U.S. broadcasting can assist in that process. In other parts of the world, many countries remain closed. Supporters of VOA and RFE/RL argue that shortwave radio broadcasts are the best way to reach people in closed countries because very few people own satellite dishes, which are needed to receive television broadcasts such as those by CNN. They note that VOA and RFE/RL are continuing to broadcast more programs over AM

and FM frequencies. Supporters also argue that broadcasting should be sharply increased to some countries such as China and North Korea. Further, they believe that television is a powerful communications tool and that private television networks cannot adequately communicate U.S. policy and viewpoints.

DEF-40 RECOVER THE FULL COST OF MILITARY EXPORTS

	Annual Added Receipts (Millions of dollars)					Five-Year Cumulative
	1998	1999	2000	2001	2002	Total
Addition to Current-Law Receipts	95	120	195	210	230	850

The United States now exports more military equipment and services than any other country, a position held by the former Soviet Union during the 1980s. Since the end of the Cold War, the international market for military equipment and services has fallen precipitously, by about 70 percent. In contrast, U.S. exports have fallen by less than 25 percent, from approximately $13 billion a year in the 1980s to between $9 billion and $10 billion in the mid-1990s. The Department of Defense expects that relatively strong performance to continue, with U.S. defense industries capturing between 50 percent and 60 percent of the global arms trade. Economic concerns rather than Cold War competition have now become the primary motivation for arms sales, and with the end of the Cold War, the need for the U.S. government to subsidize global alliances has greatly diminished. Indeed, Russia has terminated most of its grant agreements and now pursues arms exports as a means of earning hard currencies.

This option would reinstate a policy of full cost recovery to U.S. foreign military sales programs by reversing recent changes in U.S. laws and regulations that created the subsidies. If the government recovered the full cost of arms sales, its additional receipts would be $95 million in 1998 and $850 million over five years. That estimate assumes that the amount of new arms sales agreements will remain relatively low through the decade as importing countries focus on sustaining existing weapon systems. Subsidies are estimated to have little effect on such sales.

Specifically, this option would eliminate several different subsidies now provided for foreign arms sales. All sales would again be subject to charges for nonrecurring research, development, and production on licensed commercial exports of major defense equipment and for the use of U.S. government-supplied plant and production equipment. That would recoup some of the U.S. government's investment. In addition, the option would require that the administrative surcharge currently imposed on all arms sales include the full cost of civilian and military personnel who work on foreign military sales.

Proponents of subsidizing military exports argue that the exports forge important ties between the United States and foreign military leaders. They also contend that other countries' having U.S. equipment will facilitate joint operations involving U.S. and foreign forces. They argue that significant increases in the cost of military exports, which are also an important source of business and employment for defense industries, will adversely affect the U.S. defense industrial base. Advocates of arms sales claim that each billion dollars of exports supports 20,000 to 25,000 jobs in defense industries.

Opponents counter that concerns about the proliferation of weapons outweigh the benefits of protecting the U.S. defense industrial base. They argue that no economic studies have shown that demand for military equipment would be sensitive to the modest price increases proposed in the option. They contend that military exports can harm importing countries by contributing to destabilizing regional arms races, increasing the destructiveness and violence of regional wars, and draining resources away from civilian investment.

U.S. defense industries have significant advantages over their foreign competitors and thus should not need additional subsidies to attract sales. Because the U.S. defense procurement budget is nearly twice that of all Western European countries combined, U.S. industries can realize economies of scale not available to their competitors. The U.S. defense research and development budget is five times that of all Western European countries combined, which ensures that U.S. weapon

systems are and will remain technologically superior to those of other suppliers. The military and political ties with the United States associated with the sales are also an important benefit to many foreign countries. In times of crisis, no other country can offer the same military or logistical assistance as the United States.

DEF-41 REDUCE SECURITY ASSISTANCE

	Annual Savings (Millions of dollars)					Five-Year Cumulative
	1998	1999	2000	2001	2002	Total
From the 1997 Funding Level						
Budget Authority	282	555	824	1,090	1,357	4,109
Outlays	176	373	646	921	1,192	3,308
From the 1997 Funding Level Adjusted for Inflation						
Budget Authority	332	673	1,020	1,380	1,754	5,159
Outlays	207	452	790	1,146	1,514	4,109

International security assistance consists primarily of aid from the Economic Support Fund (ESF) and the Foreign Military Financing (FMF) program. Two countries--Israel and Egypt--receive most of that funding. In 1979, Israel and Egypt signed the Camp David peace accords that formally ended 30 years of hostilities. As part of that process, the United States agreed to provide substantial amounts of aid to both countries to promote their economic, political, and military security. In 1997, funding for security assistance to Israel and Egypt totaled $5.2 billion. Assistance earmarked for them now accounts for 87 percent of discretionary funding for security assistance and 28 percent of all discretionary funding for international affairs. With that total being cut severely, it seems appropriate to have those two countries assume some of the burden of reductions in the international affairs budget.

This option would reduce economic and FMF support to both Israel and Egypt. It would set economic support for Israel, in return for its continued participation in the Camp David Accords, at the amount of its annual repayment of security assistance loans and guarantees. The Congress has consistently stated in appropriation law that Israel should receive sufficient funding to repay many of its debts to the U.S. government. By historical practice, U.S. assistance to Egypt has been tied politically to its assistance to Israel. Thus, the option would make proportionate reductions in Egypt's allocation. Relative to the 1997 funding level, the five-year savings in outlays from those reductions in economic support to Israel and Egypt would be $1.6 billion. Relative to the 1997 level adjusted for inflation, the savings would be $2.3 billion.

This option would also reduce the level of grants to Israel and Egypt for FMF assistance. Israel would receive $1.8 billion in grants in 1998. Beginning in 1999, $475 million in FMF grants to Israel would be phased out over a four-year period. Those reductions, plus proportionate reductions in Egypt's grants, would save $1.7 billion over five years compared with the 1997 funding level. With the 1997 level adjusted for inflation, the savings would be $1.8 billion.

Many people feel that Israel no longer needs the economic support it receives from the United States. That support helps to offset Israel's balance-of-payments problems, which stem mainly from a high trade deficit with Europe rather than with the United States. U.S. economic aid to Israel represents less than 2 percent of Israel's gross domestic product (GDP). Moreover, proponents of cutting aid would argue that Israel is a high-income economy by World Bank standards and thus should be able to weather these cuts.

According to some analysts, U.S. assistance to Egypt is not being spent wisely or efficiently. Critics note that high levels of appropriations have exceeded Egypt's ability to spend the funds, leading to the accumulation of large undisbursed balances, inefficient use of assistance, and delays in making the reforms needed to foster self-sustaining growth. Furthermore, many other countries and organizations contribute substantial

amounts of money to Egypt. Thus, some reductions in U.S. assistance may make sense.

Proponents of cutting military assistance to Israel and Egypt believe that those countries no longer need a high level of support. With the expanding peace process in the Middle East and Iraq's defeat in the Persian Gulf War, neither Israel nor Egypt faces a substantial military threat in the near future. After 15 years of U.S. arms sales and grants, Israel and Egypt are far better equipped militarily than any of their neighbors. Roughly one-quarter of Israel's grants for 1997, or the $475 million noted above, is designated for procuring defense articles, services, and research and development in Israel. That funding therefore results in further balance-of-payments support for Israel's trade deficit.

Furthermore, both Israel and Egypt have reduced the burden of defense on their respective economies. Israel now spends approximately 10 percent of its GDP on defense, down from 23 percent in the early 1980s. Similarly, the defense burden on Egypt's economy has declined from more than 7 percent of GDP in the mid-1980s to slightly more than 3 percent in the 1990s. Those declines may reflect both the economic growth in Israel and Egypt over the past 10 years and an improving security environment.

Supporters of current aid levels would argue that Israel and Egypt are the United States' closest allies in the Middle East. Cutting foreign assistance to them at this time could be interpreted by some people in the Middle East as a weakening of U.S. political support for either those two states or the Middle East peace process, especially given the assassination of Israeli Prime Minister Yitzak Rabin in November 1995. Furthermore, both Israel and Egypt face domestic and international threats from Islamic fundamentalists and states supporting terrorism, such as Iran. Many groups in the Arab world violently oppose both states for having started the peace process in 1979. Thus, supporters of maintaining current levels of assistance would argue that even though cuts may eventually be warranted, now is not the time to make them. A weakening of U.S. support might jeopardize Israel's security and Egypt's stability.

DEF-42 ELIMINATE THE EXPORT-IMPORT BANK, OVERSEAS PRIVATE INVESTMENT CORPORATION, AND TRADE AND DEVELOPMENT AGENCY

	Annual Savings (Millions of dollars)					Five-Year Cumulative
	1998	1999	2000	2001	2002	Total
From the 1997 Funding Level						
Budget Authority	830	820	810	805	800	4,065
Outlays	85	215	310	400	480	1,490
From the 1997 Funding Level Adjusted for Inflation						
Budget Authority	855	870	890	910	930	4,455
Outlays	90	225	335	445	540	1,635

The Export-Import Bank (Eximbank), the Overseas Private Investment Corporation (OPIC), and the Trade and Development Agency (TDA) promote U.S. exports and overseas investment by providing a range of services to U.S. companies wishing to do business abroad. Eximbank and OPIC provide subsidized direct loans, guarantees of private lending, export credit insurance, and political risk insurance; TDA funds feasibility studies, orientation visits, training grants, and other forms of technical assistance. Appropriations in 1997 for Eximbank, OPIC, and TDA are $715 million, $104 million, and $45 million, respectively.

These agencies are only three of several U.S. government agencies that have activities related to promoting trade and exports. According to the 1996 annual report of the Trade Promotion Coordinating Committee, exports supported by OPIC, Eximbank, and TDA accounted for less than 4 percent of total U.S. exports in 1995. In that year, obligations for those agencies totaled over $0.9 billion. The committee warns that its data might include double-counting, thereby overstating exports supported by those agencies.

This option would eliminate the TDA and the subsidy appropriations for Eximbank and OPIC. Eximbank and OPIC would not be able to make any new finance or insurance commitments but would continue to service their existing portfolios. This option would save $85 million in 1998 and reduce outlays by $1.5 billion through 2002 relative to the 1997 funding level. Compared with the 1997 funding level adjusted for inflation, savings would be $90 million in 1998 and $1.6 billion through 2002.

Supporters of promoting exports argue that those programs play an important role in helping U.S. businesses, especially small businesses, understand and penetrate overseas markets. The programs level the playing field for U.S. exports by offsetting the subsidies that foreign governments provide to their exporters, thereby creating jobs and promoting U.S. exports. By promoting U.S. investment in areas such as Russia and the states of the former Soviet Union, those programs might also serve a foreign policy objective.

Critics dispute claims that promoting exports creates jobs in the United States. They assert that by subsidizing exports, the government merely displaces private investment flows and redistributes benefits that are best left to more efficient and less distorted market forces. Subsidizing exports runs contrary to the free-market policies that the United States advocates. OPIC and Eximbank's finance programs might encourage adverse selection; firms that seek financing are the ones least likely to be able to raise funds on their own merit. Similarly, the insurance programs of those agencies may encourage moral hazard--that is, firms might invest in riskier projects than they would if their own funds were at stake or they did not have insurance. Finally, critics argue that those programs encourage highly risky projects in vulnerable areas. Although emerging markets like South Korea, Brazil, Mexico, the Association of Southeast Asian Nations, and Poland

provide the best potential markets for U.S. exports, they are also somewhat risky; firms operating in those markets face considerable political, currency, and business risks. Furthermore, OPIC's mandate restricts its operations to economies that are less developed and riskier than those emerging markets.

DEF-43 CEASE SUPPORTING MULTILATERAL DEVELOPMENT BANKS

	Annual Savings (Millions of dollars)					Five-Year Cumulative
	1998	1999	2000	2001	2002	Total
From the 1997 Funding Level						
Budget Authority	484	774	845	913	921	3,937
Outlays	43	168	300	449	609	1,568
From the 1997 Funding Level Adjusted for Inflation						
Budget Authority	507	824	919	1,014	1,051	4,315
Outlays	45	178	320	483	663	1,690

First established to finance the reconstruction of Europe after World War II, the World Bank and its regional counterparts--the Inter-American Development Bank, the Asian Development Bank, the African Development Bank, and the European Bank for Reconstruction and Development--are now important sources of financing for developing countries. Those multilateral development banks are owned by 180 member countries and have collective assets of between $263 billion and $402 billion (the valuation depends on the fair market value of loans extended on highly concessional terms). The banks have grown over the years through periodic increases in their stock. Member nations participate in the stock increase by directly purchasing the stock or by promising to back the banks' debts (termed callable-capital stock). The banks finance much of their lending activities by borrowing in private credit markets. In addition, member countries contribute funds that the banks lend to low-income countries on highly concessional terms.

Under this option, the United States would continue to be a member and a stockholder in the banks but would stop supplying new capital. The federal government would fulfill its currently authorized commitments but would not agree to new stock purchases or additional contributions. Adopting this approach would save $43 million in 1998 and $1.6 billion over the next five years compared with the 1997 funding level. Savings would be $45 million in 1998 and $1.7 billion over the next five years compared with the 1997 funding level adjusted for inflation.

Critics of the banks' operations would be in favor of this option. They believe that the multilateral banks have harmed the economies and people they were supposed to help, that some of the projects they have funded have damaged the environment, and that the banks' managers are out of touch with the needs of their client countries.

Critics claim that the multilateral banks are more interested in the process of generating loans than in whether the loans are well invested. They argue that the banks have incentive systems that create a preoccupation with getting loans approved. In some cases, loan officers add features to their proposals that may enhance the prospect of obtaining the board's approval but that complicate implementation and endanger the success of the projects. Borrowing to finance poor investments has contributed to the "debt overhang," or insolvency, of severely indebted low-income countries. After five years of internal reforms, the World Bank reports that a third of its projects are still unsatisfactory at completion. Limiting U.S. participation in new lending might cause the banks to pay more attention to the success of lending activities and efficient management.

Some critics also claim that the banks' lending harms the economies of developing countries. They believe that large amounts of aid could raise the recipient country's exchange rate and reduce the country's need to earn foreign exchange through exports. An overvalued exchange rate increases the relative costs of domestic products, thereby reducing their competitiveness in world markets. According to that argument, poor

investments by the multilateral banks not only waste money but also drag down the entire economy of the recipient country. Critics also maintain that the constant infusion of concessional lending weakens financial discipline and depresses domestic saving and private investment, thereby destroying the incentives that foster sound business practices.

Finally, environmental groups charge that the large-scale projects funded by the banks too often damage the environment and marginalize indigenous peoples. They point to examples such as the Polonoreste plan in northern Brazil, where new settlers have burned thousands of square miles of tropical forests to produce cropland and grazing land for large cattle ranchers. The banks have financed dams for irrigation in India that have displaced hundreds of thousands of poor farmers and tribal peoples without improving their standard of living. Environmental groups claim that in certain instances, the dams have inundated entire ecosystems.

Supporters of the banks argue that the banks are the most effective instrument in promoting policy reform in developing countries and in countries undergoing the transformation to democracies with a free-market orien-tation. The banks promote U.S. interests around the world on a scale that the United States, acting alone, could not afford. For example, the banks have undertaken important initiatives such as promoting reform in Eastern Europe and the republics of the former Soviet Union, reducing poverty in Africa and Asia, and fostering development in the West Bank and Gaza. If the United States stopped contributing to the banks, its ability to shape their policies and operations would be weakened. Supporters might also note that the harmful effects on the indigenous population, the environment, and the economy were common to all past development efforts, not just the banks' projects, and that the banks have adopted operational policies to reduce the adverse environmental and social impact of projects that they finance.

The banks' advocates might also point out that developing countries are the most rapidly expanding export market and that the financing the banks provide is a particularly important source of support in expanding U.S. exports to those countries. They might argue further that the poor performance of the banks' portfolios is exaggerated: development is a risky business, and if the banks were making only safe loans, they would not be serving their main function of taking risks that profit-oriented investors shun.