

within each corps are a function of both NATO's and the Warsaw Pact's deployment strategies, this analysis is not intended as a comment on the relative capability of a particular country's corps. It does suggest, however, that if the Pact could concentrate its forces in a few selected spots, NATO might not be able to deter an attack. Thus, even though the balance in the entire central region might not make the Warsaw Pact confident that their attack would be successful, the balance in certain sectors could be more encouraging.

CONCLUSION

The analysis presented here leads to the conclusion that neither side can be confident of an easy victory should conflict occur, a situation that may in itself provide effective deterrence. Although it may be possible to determine with some certainty the number of troops, tanks, and tactical aircraft that each side might have at its command, it is less certain when those assets will arrive in theater and how those soldiers and weapons will perform in combat. Quantifying the impact of tactical aircraft on the conduct of the ground war, the role and contribution of support and logistic forces, and the relative capability of the various NATO corps is even more difficult. Finally, it is impossible for either side to predict with certainty the behavior of its allies or its adversary in the event of a conflict. All these factors contribute to the uncertainty facing an attacker.

CHAPTER III

ALTERNATIVES FOR IMPROVING NATO'S CONVENTIONAL GROUND FORCES

As a result of its analysis of the relative military capability of the Warsaw Pact and NATO, discussed in the previous chapter, CBO concluded that neither side could be confident of victory should a military conflict occur in Europe. Despite this uncertainty, the side that initiated a conflict would benefit from several advantages. The attacker in a conventional war, assumed in this study to be the Warsaw Pact, picks the time and place to start the war and thus can plan on exploiting the opponent's specific weaknesses. Analysis in the previous chapter suggested that NATO would be more vulnerable if the Pact mobilized quickly and if the Pact concentrated some of its forces against particular NATO corps. This chapter examines various alternatives that the Congress might consider in an attempt to strengthen NATO and reduce its vulnerabilities.

The analysis in this chapter considers three approaches for improving NATO's conventional capability that could yield results within the next five years. The three strategies include adding barriers in the Federal Republic of Germany to delay a Warsaw Pact attack, acquiring more advanced weapons designed for close combat, and adding more divisions. The chapter also examines a fourth approach that would improve NATO's ability to attack the Warsaw Pact forces that would follow up the initial attack. This approach, in contrast to the other three, would not offer additional capability until the mid-1990s at the earliest. These four alternatives cover several major proposals now being discussed to improve conventional capability, but they are by no means the only options. For example, the alternatives do not include improving the training of NATO forces, providing NATO with more or better tactical aircraft, or improving NATO's support forces.

The improved capability under each of the four alternatives is compared with current NATO capability under the conditions of the middle-range case described in the previous chapter. The Warsaw Pact's capability has been upgraded to reflect improvements in its



forces that are likely to be realized between now and 1993. The most significant improvements include increased numbers of the most modern Soviet tank (the T-80) and attack helicopters deployed with Pact forces. No new types of weapons are introduced into the Soviet forces because it is unlikely that any totally new weapon system would be widely deployed within the next five years.

The impact of each of the four alternatives on NATO's military standing relative to that of the Pact was measured using both the static method (the weapon effectiveness indices/weighted unit values method) and the dynamic model described in the previous chapter and in Appendix A. Since neither method was deemed totally satisfactory for assessing the benefit of all four alternatives, both were used in an attempt to compensate for the shortcomings of each. For instance, because the dynamic method is not well suited for making theaterwide assessments, the static method was used--even when not totally appropriate--to maintain a consistent basis for comparison throughout the study. On the other hand, the static method cannot easily or adequately capture the effects of the barriers examined in Alternative I or the follow-on forces attack (FOFA) approach discussed in the last alternative. The dynamic method should therefore be viewed as the more valid technique when considering the impact of those two alternatives. Since each method alone suffers from individual drawbacks, the strongest conclusions can be drawn when the same trend is evident from both the static and dynamic analyses.

Total costs of each alternative are also estimated. This study assumes that all costs are borne by the United States, since the Administration and the Congress can control only U.S. funds. If, however, the United States paid only a portion, then costs of these alternatives would be lower (perhaps by 48 percent if, for example, the United States paid a portion equal to its fraction of the gross national product of all the NATO nations).

ALTERNATIVE I: CONSTRUCT BARRIERS ALONG THE INTER-GERMAN BORDER

The Warsaw Pact, according to the force ratios calculated in the previous chapter, generally enjoys its largest advantage over NATO

during the first few days following mobilization of its forces. After 7 to 12 days, however, the Pact's advantage would diminish as NATO reinforcements begin to arrive. Several analysts have suggested that barriers along the inter-German border could provide NATO with additional time to marshal reserves and greatly improve the alliance's ability to stop a Pact invasion.^{1/}

NATO already has plans for planting mine fields along the border before an invasion. But more could be done. Several schemes have been suggested for creating effective barriers to tanks along the border, such as digging concrete-lined ditches that would be difficult for tanks to cross. Suggestions for less obtrusive barriers include burying containers that would be left empty until just before an invasion when they would be filled with explosives and detonated to create ditches, or grading slopes to 40 degrees along the border and planting them with trees, creating a slope that is impassable to any existing tank.^{2/} An even more extensive barrier--up to 40 kilometers deep and consisting of forested areas, irrigation and recreation lakes, walled terraces, and prepared defensive positions--has also been proposed.^{3/}

Although these obstacles would not stop a Pact invasion, they could give NATO additional time to bring its forces up to full combat-readiness and get them into defensive positions before the first Pact forces could engage NATO units in direct combat. Slowing or temporarily halting a Pact advance would also allow NATO to realign its forces along the theater front, positioning them where they would be needed most. Furthermore, if the barriers could not easily be breached or destroyed by Pact artillery, they would create choke

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1. Frank Carlucci, as quoted by the *Washington Post* in "Carlucci Asks 'Creative' Response to NATO," December 1, 1987, p. 23; Robert Komer, "A Credible Conventional Option: Can NATO Afford It?" *Strategic Review* (Spring 1984), p. 35; Congressman Les Aspin, "The World After Zero INF" (speech presented to the American Association for the Advancement of Science Colloquium on Arms Control, Arlington, Va., September 29, 1987); Leon V. Sigal, "No First Use and NATO's Nuclear Posture," in John D. Steinbruner and Leon V. Sigal, eds., *Alliance Security* (Washington, D.C.: Brookings Institution, 1983), p. 108.
 2. John Barry and Russell Watson, "Can Europe Stand on Its Own Feet?" *Newsweek* (December 7, 1987), p. 37.
 3. John C. F. Tillson IV, "The Forward Defense of Europe," *Military Review* (May 1981), p. 70.

points where Pact vehicles would be slowed or stopped, offering lucrative targets for NATO artillery and aircraft.

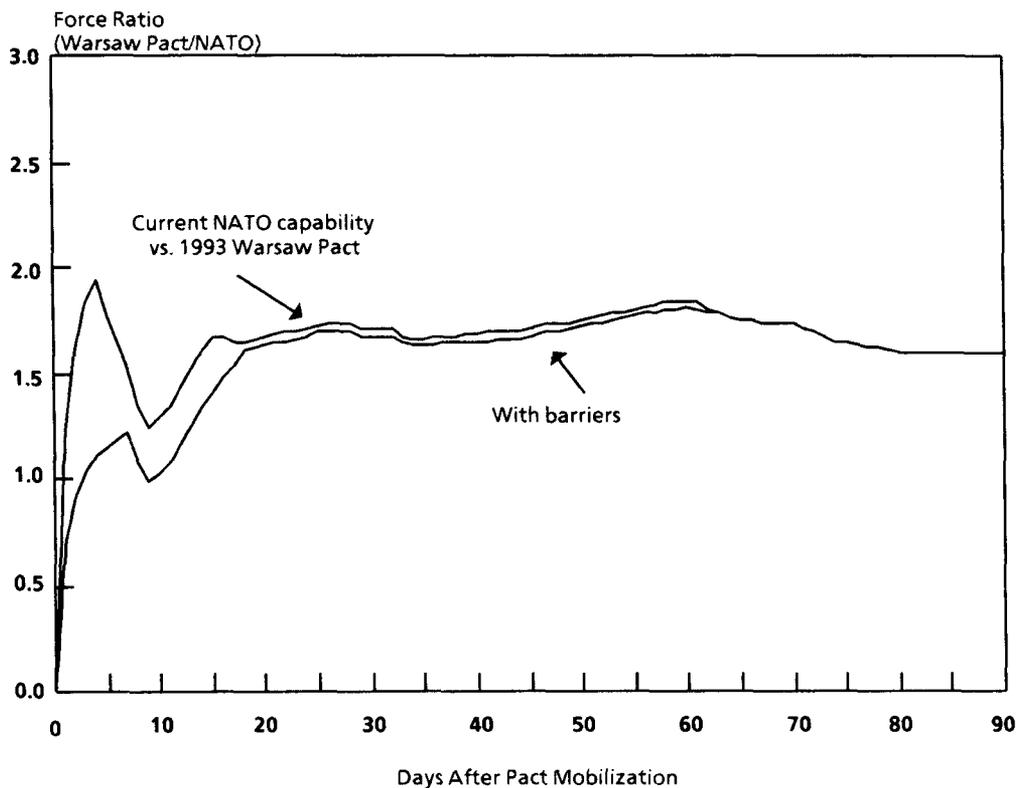
It is impossible to calculate with precision the delay that such barriers would create. Factors such as how well the Pact forces are prepared to breach the obstacles, how much information they have as to the obstacles' locations, and how well NATO can protect the obstacles will determine their effectiveness. Delay could be as short as several hours, which would have little effect on the conventional balance. On the other hand, an extensive network of barriers could plausibly cause a delay of two to three days. John Tillson, who proposed the 40-kilometer-wide defensive zone, estimated that a delay of up to seven days could result from this rather ambitious plan.

If the advance of attacking Pact forces were slowed, then force ratios would be shifted modestly in NATO's favor early in a conflict because NATO would have more time to bring its operational reserve forces to where they are needed. Although the static method does not lend itself to analyzing the impact of barriers--because barriers really only play a role once one side decides to attack and initiates hostilities--it can be artificially modified to reflect their effect. By assuming that a network of defensive barriers--such as the one proposed by Tillson, but only half as wide--could cause a three-day delay in the Pact's ability to bring forces into direct contact with NATO forces, thereby giving NATO three days to bring in reinforcements, a relative shift in the two sides' positions could result. This shift would be more noticeable in the first few days after mobilization when the Pact has a larger advantage (see Figure 8).

The dynamic method should reflect the impact of barriers more accurately than the static method, since barriers would affect the actual conduct of war. Figure 9 shows the results of the dynamic analyses of simulated Pact attacks against the U.S. V Corps and a corps in NATO's Northern Army Group (NORTHAG)--such as the British I Corps or the West German I Corps--initiated four days after the start of mobilization.^{4/} Based on these dynamic analyses, barriers

4. The dynamic simulations used in this chapter to compare alternatives for improving NATO's conventional capabilities are based on a slightly different distribution of NATO and Warsaw Pact

Figure 8.
Effect of Barriers on Theaterwide Force Ratios



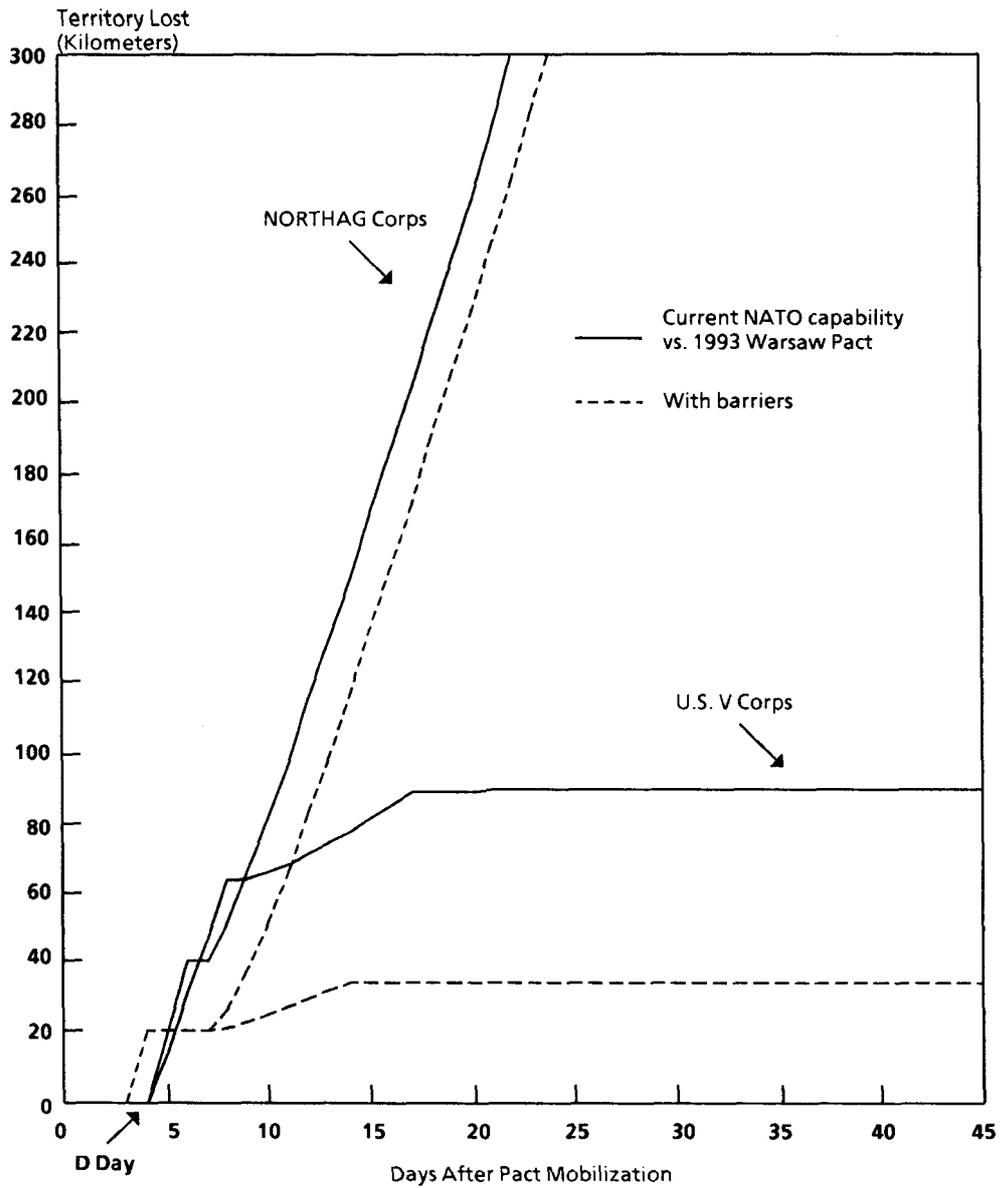
SOURCE: Congressional Budget Office based on Department of Defense data and on John C.F. Tillson IV, "The Forward Defense of Europe," *Military Review* (May 1981), p. 66.

could significantly reduce the territory lost in each of these two NATO corps. A similar simulation of a Pact attack at 15 days after mobilization yielded no discernible benefit attributable to barriers, however. Although this dynamic model may not be able to capture adequately

4. Continued

forces than those discussed in the previous chapter. First, all NATO reinforcements arriving in theater after the attack begins (D-Day) are assumed to go to NORTHAG where the force ratios appear to be overwhelmingly in the Pact's favor. Second, the Pact forces are deployed in echelons, in order to represent more accurately what is known about Soviet war-fighting doctrine. Thus, only those front-line Pact forces in the first echelon that would actually take part in direct combat are included in the Pact forces used to determine the Pact/corps force ratios.

Figure 9.
 Simulated Effect of Barriers on Territory Lost in Two NATO Corps
 (War starts four days after mobilization)



SOURCE: Congressional Budget Office based on Department of Defense data and on John C.F. Tillson IV, "The Forward Defense of Europe," *Military Review* (May 1981), p. 66.

the effect of a barrier such as the one postulated here, it is not surprising that barriers would have a greater impact against a Pact attack initiated early in its mobilization. Indeed, the static analysis also predicted that the largest impact of erecting defensive barriers would be felt if the Warsaw Pact attacks soon after it starts to mobilize and before NATO has the chance to muster many of its forces.

The costs of such a network of barriers should be relatively modest. An extensive network, such as the one proposed by Tillson but only half as wide, could cost up to \$5 billion to construct. William Kaufmann, who proposed a more modest and narrower barrier, estimated that the total cost of deploying such devices as mines, tank traps, and sensors to detect advancing enemy vehicles would be between \$700 million and \$800 million.^{5/} The political costs of some types of barriers could, however, be high. German political leaders have opposed barriers along the inter-German border in the past because they tend to emphasize the existence of two separate Germanys. Some types of barriers might arouse additional political opposition because they radically alter the environment along the German border, although less obtrusive barriers might avoid these problems.

ALTERNATIVE II: IMPROVE NATO'S CAPABILITY IN CLOSE COMBAT

While barriers could cause important delays, they would not actually destroy any enemy forces. Purchasing more advanced weapons, however, would increase NATO's conventional capabilities to destroy enemy forces. This alternative therefore focuses on weapons involved in close combat--that is, combat that occurs near the front lines between two opposing combatants who typically can see each other. This alternative is limited to increasing the purchases of U.S. weapons, since those are the weapons under the control of the Administration and the Congress.

5. William W. Kaufmann, "Nonnuclear Deterrence," in John D. Steinbruner and Leon V. Sigal, eds., *Alliance Security* (Washington, D.C.: Brookings Institution, 1983), p. 65.

The U.S. Army has undertaken and largely completed a major modernization effort that began in the early 1980s. As part of that effort, the Army fielded a new main battle tank, the M1, which was followed by a modified version, the M1A1; a new armored personnel carrier, the Bradley fighting vehicle (BFV); a new multiple rocket launcher, the Multiple Launch Rocket System (MLRS); and a new combat helicopter, the AH-64 Apache. Each of these systems is considered by many analysts to be the best of its kind in the world.

This alternative would increase U.S. capability in close combat by equipping all of the Army's approximately 3,270 M1s with a 120mm gun and purchasing an additional 2,970 M1A1s, 4,834 BFVs, and 900 AH-64s. It would purchase sufficient MLRS launchers, rockets, and support equipment for an additional 15 MLRS battalions, and 562 Air Defense Antitank System (ADATS) launchers and associated missiles to equip all 10 of the active U.S. Army heavy divisions. Finally, as an interim solution to the antitank deficiency in Army infantry units, this alternative would also purchase 100,000 improved medium antitank missiles with 7,000 launchers plus 197,000 light antitank (AT-4) missiles.

Specific Weapons Programs to Improve NATO's Close-Combat Capability

Although the Army began fielding the original version of the M1 tank with its 105mm gun in 1981, it later developed a larger 120mm tank gun that would be better able to destroy the newest Soviet tanks equipped with improved armor. Starting in 1985, the M1A1 tank was produced with a 120mm gun. Nevertheless, the Army still owns about 3,270 M1 tanks with the smaller gun. Equipping these tanks with the 120mm gun would improve their ability to counter some of the more modern Soviet tanks, thus increasing the overall capability of U.S. tank forces.

Purchases of some other modern weapons still have not met the Army's acquisition objectives. Although the Army started purchasing the M1 tank in 1979, the Bradley fighting vehicle in 1980, and the Apache helicopter in 1982, it has not yet purchased enough of these systems to fulfill all of its requirements. To equip all of the heavy divisions and brigades intended for use in NATO and to fill its war

reserve stocks, the Army could use an additional 2,970 M1A1 tanks and 4,834 more Bradley fighting vehicles. An additional 900 AH-64 helicopters beyond those purchased through 1988 would be needed to equip all of the active Army units that would be sent to Europe.

New programs planned for production during the next five years will also increase combat capability. The Army's plans to improve the air defense capability of its heavy combat units were halted with the cancellation of the DIVAD (Division Air Defense) antiaircraft gun program in 1985. Since then the Army has looked for a replacement, recently settling on Martin Marietta's Air Defense Antitank System. Deployment of this missile system with the heavy divisions will greatly improve the air defense capability of the Army's units in Europe.

Fielding an effective antitank weapon for infantry units has also been a problem for the Army. Replacing the current Dragon medium antitank missile and the Light Antitank Weapon (LAW) with more effective weapons would significantly improve the infantry's antitank capability. Although the Army has not yet picked replacements for these weapons, it is considering several medium antitank weapons including the Milan, the Bill, and an improved Dragon to replace the current Dragon. A production decision for a replacement is expected in 1992. The Army is also purchasing the AT-4 light antitank missile to replace the LAW in its infantry divisions.

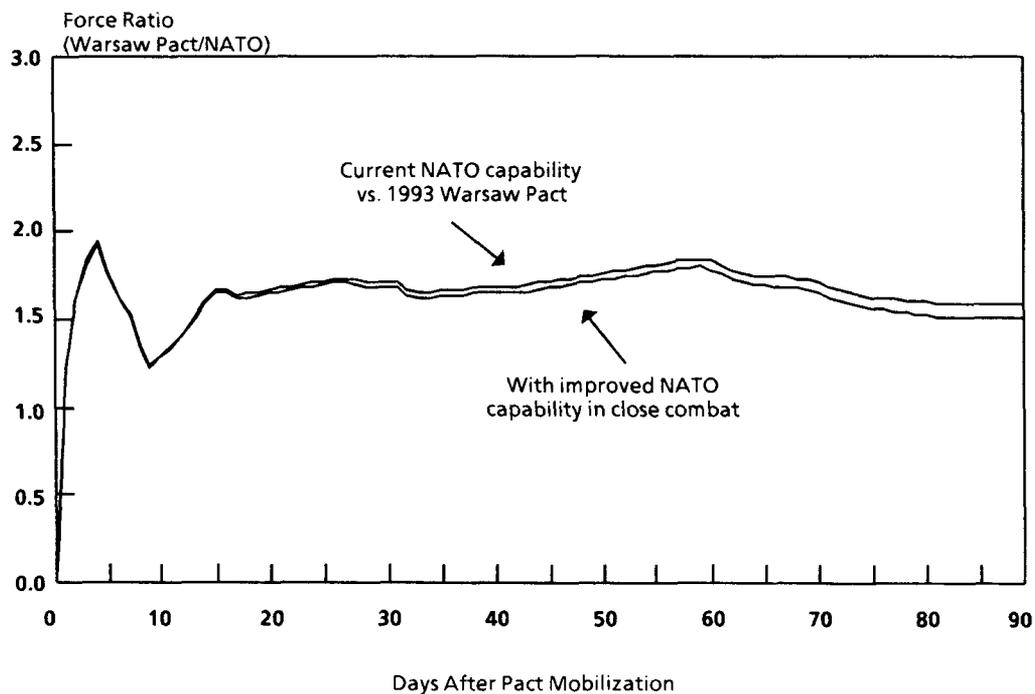
Finally, measures could be taken to mitigate the Warsaw Pact's numerical superiority in artillery weapons. (The 1987 version of the Department of Defense's *Soviet Military Power* credits the Pact with 42,000 artillery pieces compared with NATO's 18,350.) Greatly increasing the number of deployed U.S. artillery weapons would require more personnel, an approach not considered in this alternative. Nonetheless, the number of Army artillery pieces could be increased by reassigning artillery soldiers currently serving in Pershing missile units that will be deactivated as a result of the Intermediate-Range Nuclear Forces Treaty. Specifically, the approximately 6,800 U.S. soldiers in Pershing missile units could be reassigned to form 15 additional artillery battalions armed with the Army's most modern artillery weapon, the Multiple Launch Rocket System. These units could be assigned to the U.S. III Corps, which is not responsible for the defense of any particular sector of the inter-German border (see Fig-

ure 4 in Chapter II). Rather, its mission is to act as a reserve for all of the northern half of the central region (NORTHAG). In this way, some additional forces could be added to NORTHAG's less heavily defended sector.

Improvement in Capability

Despite the many changes suggested by this alternative, the resulting improvement to NATO's theaterwide capability relative to that of the Warsaw Pact might be small. Based on the WEI/WUV analysis described in Chapter II, these improvements would lead to only a 2 percent improvement in the Pact/NATO force balance 60 days after mobilization (see Figure 10). There are two reasons for this small

Figure 10.
Effect of Improved Close-Combat Capability
on Theaterwide Force Ratios



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

effect. First, U.S. forces account for only half of NATO's total; therefore, any improvement in U.S. capability will be diluted by a factor of two unless other NATO nations also improve their forces. Second, as a result of the U.S. Army's recent modernization effort, U.S. ground forces are, on the whole, already very capable, particularly those stationed in Europe. For example, many of the U.S. Army units stationed in Europe during peacetime already have the new M1A1 tank. Similar situations prevail for other types of equipment in U.S. units in Europe, such as the Bradley fighting vehicle and the AH-64 helicopter. But gains would also be made in other aspects of close combat. For example, the improved air defense and antitank capability that would result from this option leads to a 3 percent increase in the capability of active heavy divisions. Nonetheless, most forces that bear heavily on the outcome of a conflict in Europe would not have their capability augmented substantially.

This option would lead to larger improvements in the capability of other U.S. divisions that do not figure heavily in the balance in Europe. WEI/WUV analysis shows that the capability of active infantry units would increase between 5 percent and 10 percent because they would get better antitank weapons and helicopters. But these units are not ideally suited for heavy combat in Europe and provide only a small portion of the total U.S. forces scheduled for deployment to Europe during a crisis. A few heavy units in the U.S. reserves would realize substantial gains in capability--as much as 31 percent. But they are scheduled to arrive in the European theater between 60 and 80 days after Pact mobilization and account for only 2 of the 26 armored division equivalents contributed by the United States, which reduces the significance of any improvement they might realize.

Nor would this option result in substantial improvements in particular corps areas, even though disparity in vulnerability among corps was identified as a key problem in Chapter II. Increases in capability would be somewhat larger in U.S. corps since the improvements are restricted to U.S. forces. Static WEI/WUV analyses reflect a 6 percent improvement in the capability of the U.S. V Corps, which is located in the central portion of West Germany. But, as noted in the preceding chapter, the most serious concerns revolve around corps in the northern section.

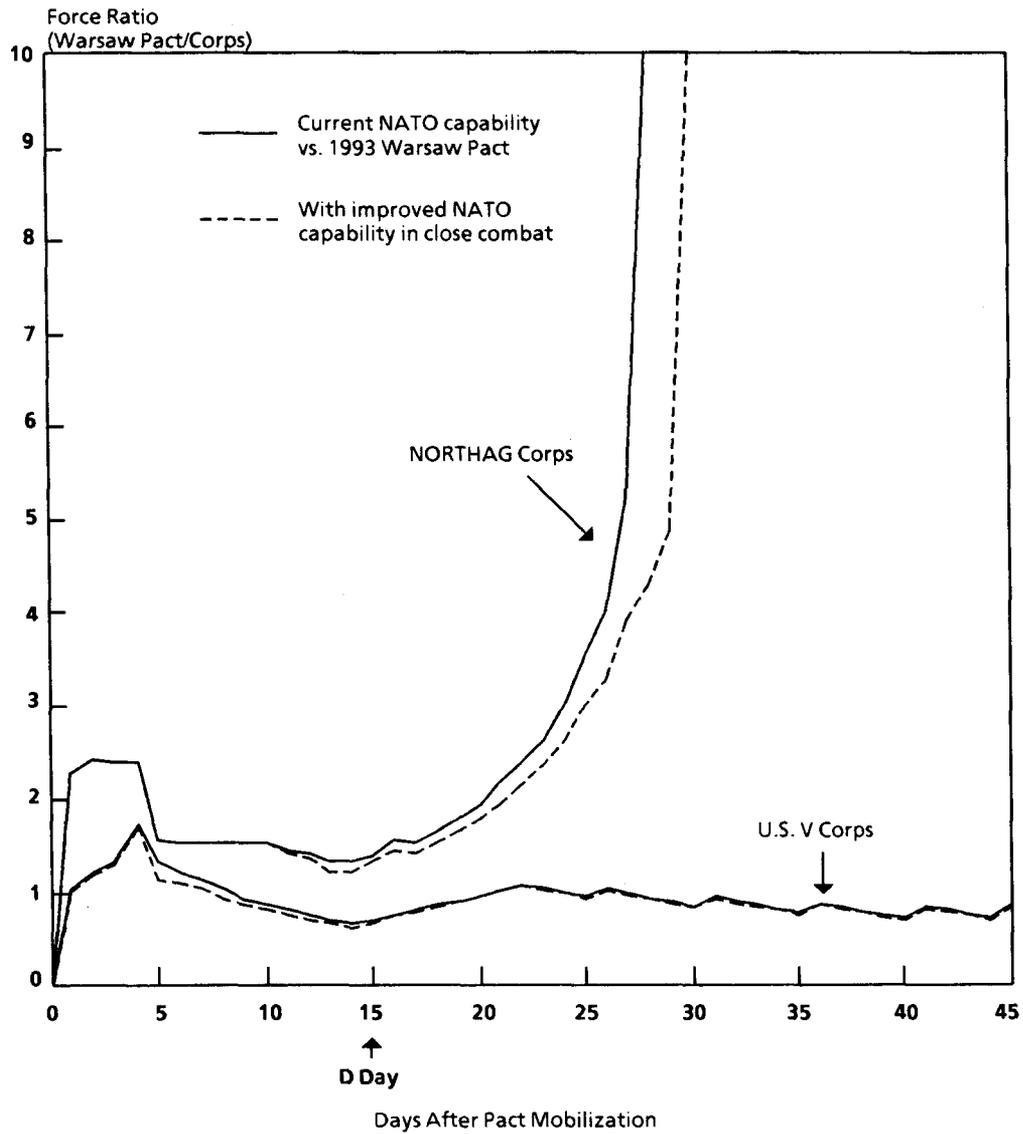
Even ruling out fundamental redeployment of NATO assets, this option might improve capability in the NORTHAG corps. For example, by deploying the 15 additional MLRS artillery battalions created under this option to the U.S. III Corps located in the northern area, NATO could achieve a 5 percent improvement in the capability of two of NORTHAG's front-line corps 60 days after mobilization. (This estimate assumes that the U.S. III Corps' 15 MLRS battalions are evenly divided between the British I Corps and the West German I Corps, because these two NORTHAG corps are opposite the likely corridors of attack by Pact forces.) But the improvements would still be modest.

The effects of this alternative on particular corps are confirmed by dynamic analyses.^{6/} Results of simulations using the dynamic model indicate that the standing of the U.S. V Corps relative to the Pact is improved by 4 percent (see Figure 11), compared with the 6 percent overall improvement that resulted using static WEI/WUV methods. The simulations also indicate that the defensive posture of two NORTHAG corps would be improved by 10 percent (see Figures 11 and 12), about twice the improvement that resulted using the static technique. It must be kept in mind, however, that the relatively large improvement in the two corps in NORTHAG and comparatively small improvement indicated in the U.S. V Corps do not change the ultimate outcome in any way: the situation in NORTHAG is still bleak, and the U.S. corps was already strong.

Even though this alternative would not add greatly to NATO capability, either in key corps sectors or theaterwide, the Administration and the Congress might wish to consider it for other reasons. Indeed, the Administration has proposed buying substantially more M1A1 tanks in coming years. Such an action would enhance capabili-

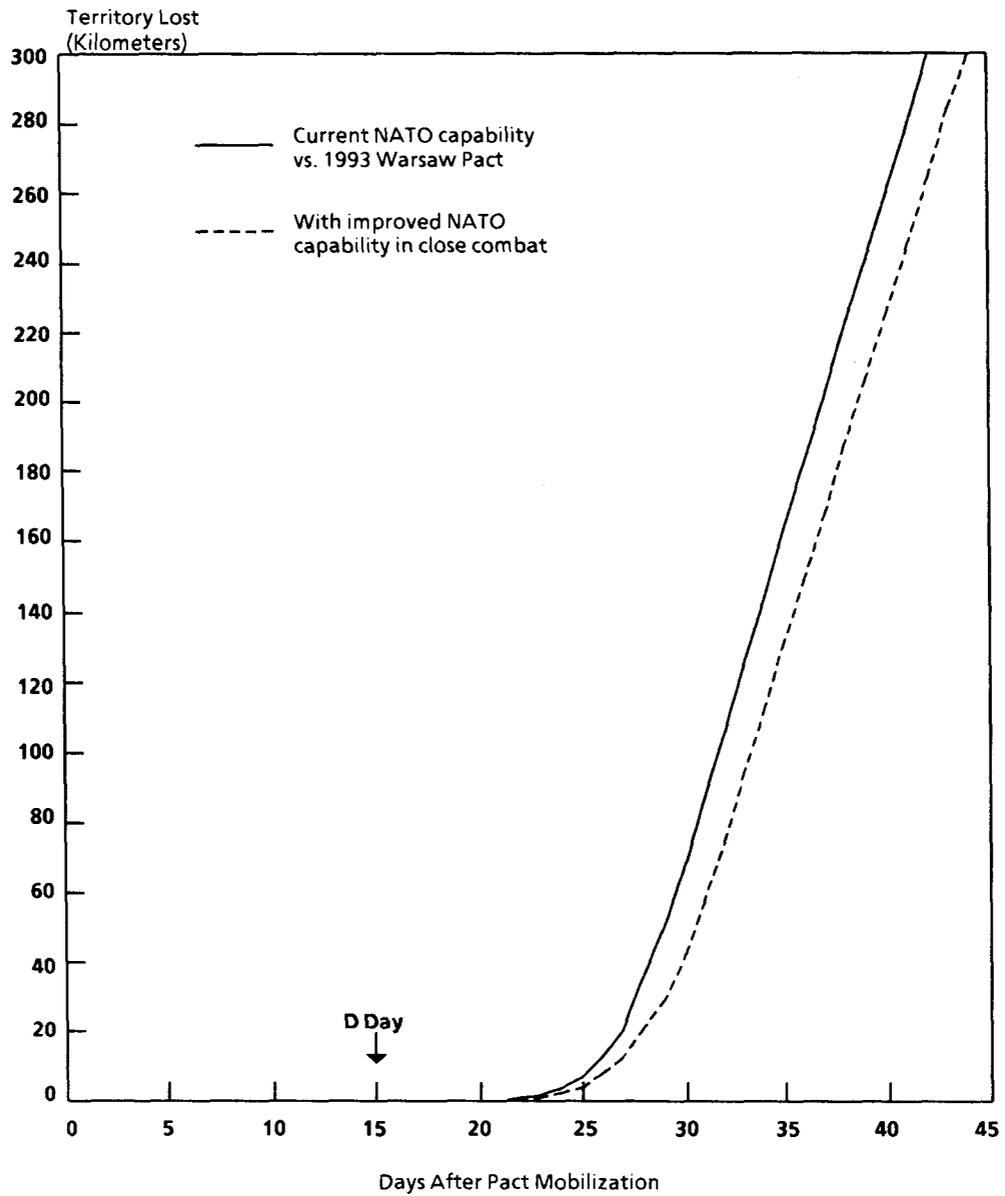
6. The standards used to measure improvements based on the dynamic analysis differ somewhat from those used for the static analysis. In the latter case, force ratios at 60 days after mobilization were used as a standard. In the dynamic analysis, however, the NORTHAG corps were sometimes overrun by this stage, based on the war starting at 15 days after mobilization. Comparisons using the results from the dynamic analysis are therefore based on conditions after 30 days of combat, which corresponds to 45 days after mobilization. The primary standard of comparison for the dynamic analysis is territory lost in each corps. The U.S. V Corps loses no territory, even without improvements, however. The impact of the various alternatives in this corps is therefore based on reductions in force ratio.

Figure 11.
Simulated Effect of Improved Close-Combat Capability on
Force Ratios in Two NATO Corps



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

Figure 12.
Simulated Effect of Improved Close-Combat Capability
on Territory Lost in a NORTHAG Corps



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

ties of units--particularly reserve units--that could be increasingly important during a lengthy NATO conflict. Moreover, implementing the portions of this alternative that call for production of new weapons--such as the tank and helicopter--would keep open weapons production lines and so would allow the United States to produce weapons more quickly in time of war.

Costs

The total cost of all the weapons purchased under this option would amount to \$41 billion (see Table 6). The largest portion of these costs results from the purchase of large numbers of AH-64 helicopters, M1A1 tanks, and ADATS. Costs of new MLRS launchers and fighting vehicles also contribute substantially to the total. Some additional funds might be needed to operate and maintain these weapons, which are newer and more complicated than the weapons that they would replace. Over the typical 20-year life of a weapon, these costs could become significant. Indeed, the additional operating and support costs associated with these weapons for the next 20 years could be as high as \$7.5 billion (in 1989 dollars). The total cost of this alternative, including both investment and operating costs, would be \$48.4 billion.

ALTERNATIVE III: ADD FORCES TO NATO

Rather than provide more and better weapons to existing forces, the Congress could increase NATO's ground force capability by funding additional U.S. forces for Europe's defense. Since it is impossible to determine "how much is enough" in terms of combat power, this alternative would simply add as many combat divisions to NATO's force structure as could be equipped for the same total cost as the previous alternative. Doing so allows a direct comparison between the effects of the two options. For the \$48.4 billion needed to carry out Alternative

**TABLE 6. COSTS OF IMPROVING CLOSE-COMBAT CAPABILITY
IN ALTERNATIVE II (Costs in millions of fiscal year 1989
dollars of budget authority)**

	1989	1990	1991	1992	1993	Subtotal 1989- 1993	1994- 2008	Total 1989- 2008
M1A1 Tank								
Quantity	545	665	855	905	0	2,970	0	2,970
Cost	1,720	2,310	3,140	2,630	0	9,800	0	9,800
M1 Tank Modification								
Quantity	150	300	600	600	600	2,250	1,020	3,270
Cost	100	150	300	300	300	1,150	500	1,650
Bradley Fighting Vehicle								
Quantity	660	720	792	792	792	3,756	1,078	4,834
Cost	800	850	800	800	800	4,050	1,100	5,150
AH-64 Apache Helicopter								
Quantity	84	108	144	144	144	624	276	900
Cost	1,150	1,400	1,850	1,850	1,800	8,050	3,450	11,500
Improved Medium Antitank Missile System								
Missiles	7,200	14,400	15,680	15,680	15,680	68,640	31,360	100,000
Launchers	180	360	720	1,000	1,580	3,840	3,160	7,000
Cost	100	200	300	350	450	1,400	850	2,250
Improved Light Antitank Weapon (AT-4)								
Quantity	77,000	75,000	45,000	0	0	197,000	0	197,000
Cost	70	50	30	0	0	150	0	150
Air Defense Antitank System								
Missiles	60	424	669	827	810	2,790	7,144	9,934
Launchers	5	20	38	47	46	156	406	562
Cost	160	400	400	400	400	1,760	3,700	5,460
Multiple Launch Rocket System								
Rockets	72,000	72,000	72,000	72,000	72,000	360,000	224,500	584,500
Launchers	72	72	72	72	72	360	424	784
Cost	550	550	550	500	600	2,750	2,250	5,000
Total								
Acquisition Costs <u>a/</u>	4,650	5,910	7,370	6,830	4,350	29,110	11,850	40,960
Operating and Support Costs <u>b/</u>	0	0	30	80	150	260	7,230	7,490
Acquisition and Operating and Support Costs	4,650	5,910	7,400	6,910	4,500	29,370	19,080	48,450

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

- Acquisition costs include procurement, research, development, test and evaluation, and military construction costs associated with acquiring the system.
- Operating and support costs include only the marginal increase in costs associated with substituting the systems included in this alternative for current systems.

II, the United States could equip with modern equipment and maintain through the year 2008 only one active heavy division.^{7/}

Adding one heavy division to the U.S. Army means buying more tanks, fighting vehicles, helicopters, and many other types of equipment. The initial investment costs for the division's equipment alone would total \$5 billion. The division presumably would be based in the United States, since the Congress has generally prohibited any increases in U.S. forces stationed in Europe. Enabling this additional division to deploy to the central region quickly in the event of a crisis means that the United States would also have to preposition overseas an additional division's worth of equipment. This would result in an added cost of \$3.6 billion. Altogether, the investment costs for this new unit could total \$8.6 billion.

Unlike the previous two options, this one would also add substantially to annual operating costs. The additional operating costs would be lower if the new division were created from reserve forces, since fewer full-time soldiers would be needed. One could argue, however, that a reserve division would contribute less to NATO's defense than an active division, since it probably could not be ready for combat with fewer than 30 days to mobilize. In this alternative, therefore, the extra division is added to the active forces.

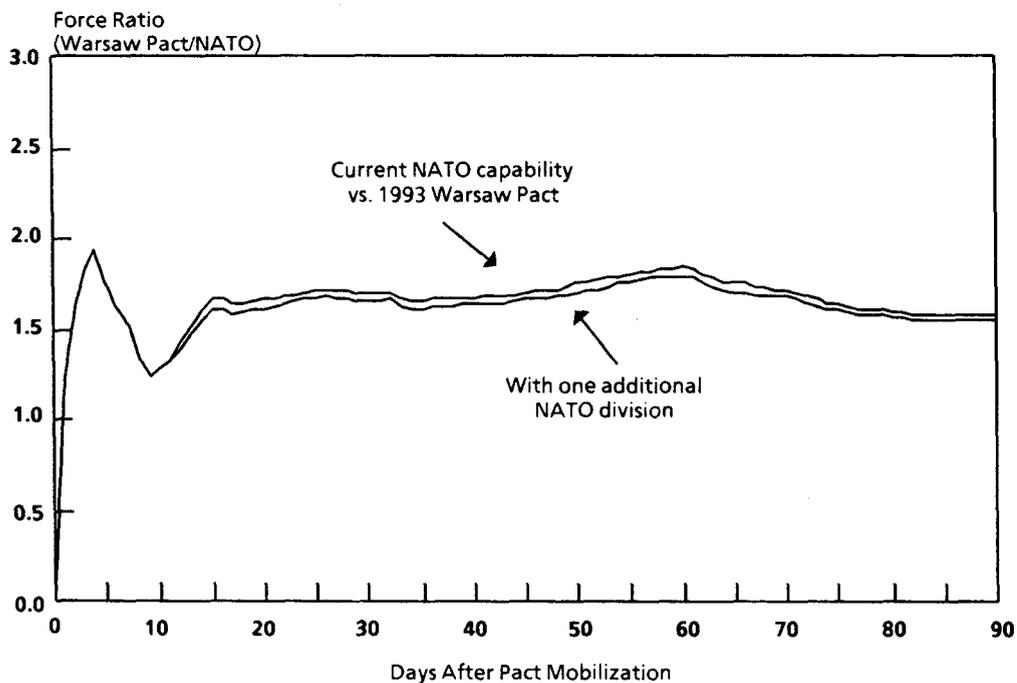
Assuming no increase in costs to recruit and retain needed personnel, the extra 16,000 military personnel needed for the additional division plus the other associated operating costs would total \$1.8 billion a year once the division is fully operational. (These estimates of added personnel assume that the only additions are those needed to fill the division. No increase is assumed in personnel for overhead and support, although another 12,500 soldiers could be required to provide combat and tactical support.) These operating costs could well be

7. It is not clear that this modest increase in NATO's forces would affect the theaterwide balance in any significant way. The Chairman of the House Committee on Armed Services has argued that a large number of additional divisions might be needed to increase substantially NATO's conventional capability--perhaps as many as 10 divisions. (See Congressman Les Aspin, "The World After Zero INF.") Aspin was also quoted as saying that the added investment costs of 10 extra divisions could total about \$75 billion, with added operating costs of up to \$20 billion a year. (See "West Requires New Arms to Alter Soviet Strategy," *Defense News*, October 5, 1987, p. 1.) According to CBO's analysis, adding 10 divisions would also mean adding 160,000 people to the Army just to fill out the divisions. This might well require a return to some form of conscription since it would be difficult, at any reasonable pay rates, for the all-volunteer force to provide enough recruits for such a large Army.

higher if the Army must incur extra recruiting costs to induce enough people who meet its current high-quality standards to join the larger Army. In any case, the operating and support costs associated with this alternative could total \$32.6 billion by 2008. The total cost of carrying out this alternative, then, would be slightly less than that of Alternative II--about \$41 billion.

The impact of one additional NATO division differs, depending on whether its contribution is viewed from the perspective of the entire theater or of a particular corps. Based on costs through the year 2008, adding one division theaterwide does not appear to be any more cost effective than buying more weapons for close combat, as proposed in the previous alternative (see Figure 13). Both alternatives would

Figure 13.
Effect of Additional NATO Forces
on Theaterwide Force Ratios



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