

REPORT TO
NATIONAL COUNCIL FOR SOVIET AND EAST EUROPEAN RESEARCH

TITLE: THE GORBACHEV REVOLUTION:
LIMITING OFFENSIVE
CONVENTIONAL FORCES IN
EUROPE

AUTHOR: Jack Snyder

CONTRACTOR: Columbia University

PRINCIPAL INVESTIGATOR: Jack Snyder

COUNCIL CONTRACT NUMBER: 800-23

DATE: June 1988

The work leading to this report was supported by funds provided by the National Council for Soviet and East European Research. The analysis and interpretations contained in the report are those of the author.

NOTE

This report is an incidental product of the Council-funded research contract identified on the face page. It is not the Final Report under that contract, which is being distributed separately. An earlier version of this report was published in International Security, Vol. 12, No. 4 (Spring 1988).

EXECUTIVE SUMMARY*

The December 1987 U.S.-Soviet Intermediate-range Nuclear Forces Treaty points up the problem of conventional deterrence in Europe, for further "denuclearization" would undermine NATO's defensive capabilities unless the Soviet Union's offensive conventional capabilities are radically reduced.

The following study addresses this dilemma: 1) from the standpoint of Soviet proposals to limit offensive conventional forces in Europe, 2) in terms of Western defense requirements, and 3) according to U.S. policy options regarding conventional arms control.

Thus far, Soviet conventional arms control proposals have only addressed the general principles of conventional restructuring, not its specific content. The touchstone concept, says Gorbachev, is to create forces structures that would be sufficient to repulse a possible aggression, but would not be sufficient for the conduct of offensive operations. A related aim is to rule out the possibility of surprise attack. In addition, the Warsaw Pact has announced a unilateral decision to revise the "military-technical" aspects of its conventional warfighting doctrine to reflect the principles of "non-offensive defense."

One might suspect that such proposals are intended primarily for their propaganda effect, but public relations is not the whole story. Gorbachev's motives for proposing a restructuring of conventional forces in Europe are both economic and strategic. Military expenditures have taken a heavy toll on the Soviet

*Prepared by the National Council

economy, and Gorbachev understands that the Soviet military threat to Europe is a barrier to improved political and economic relations with the West.

The Soviets, acknowledging that the Warsaw Pact enjoys numerical superiority in certain types of conventional weapons, are now proposing "mutual force reductions" in which the side that is ahead in a given category of weaponry would have to accept asymmetrical--that is, disproportionate--cuts in that category. The Soviets acknowledge that the Warsaw Pact must expect to make large, asymmetric cuts in its tank forces as part of a conventional arms control agreement.

However, Soviet military spokesmen have stressed that cuts in the USSR's offensive conventional forces can only occur in the context of mutual East-West reductions. Soviet sources state that NATO enjoys a net superiority in long-range conventional airpower. Thus, demands that NATO take asymmetrical cuts in that area can be expected. The Soviets also allege that the West enjoys an advantage in anti-tank weapons and helicopters. But anti-tank weapons are not offensive, and they should not be subject to reductions according to the principles of non-offensive defense.

Another open question is whether the proposed reductions of offensive forces would take place world-wide, "from the Atlantic to the Urals," or primarily in a narrower zone in Central Europe. The Vienna talks on Mutual and Balanced Force Reductions are now being reorganized along the lines of a Soviet proposal for an Atlantic to the Urals format.

One reason for the vagueness and diversity of Soviet proposals may be that the Soviets disagree among themselves about the proper approach to a defensive conventional strategy. Gorbachev and the civilian defense intellectuals speak in terms of making surprise attacks impossible, of enhancing defensive strategies as opposed to offensive ones, and even of making unilateral force reductions. However, military professionals stress the importance of offensive or "counteroffensive" capabilities and generally do not see a need to restructure the Warsaw Pact's forces.

It is possible that Gorbachev might see significant security benefits in limiting offensive conventional weapons. Especially in light of the Soviet military's evident preoccupation with the threat from NATO's "emerging technologies"--that is, a new generation of precision-guided, deep-strike conventional weapons--the Soviets might be willing to pay a considerable price to halt such deployments. However, it seems probable that Gorbachev will be able to convince the military of the necessity of conventional force reductions only if he can get a reduction in the NATO high-technology threat as a quid pro quo.

In evaluating the desirability of various conventional arms control scenarios, the West must be concerned with: 1) the NATO/Warsaw Pact balance of conventional firepower, (2) NATO's force-to-space ratio on the Central Front, and (3) the East-West offense/defense balance. Any future conventional arms control agreement must be judged by its net effect according to all three criteria.

The Soviets continue to contend that, despite asymmetries in particular types of weapons, there is an overall equality in the NATO/Warsaw Pact conventional firepower balance. However, Western estimates of the European ground-forces balance indicate that the Warsaw Pact presently enjoys an advantage in "Armored Division Equivalents." Some analysts contend that this advantage would be far greater if reinforcements from the rear were added in the event of full-scale mobilization. Thus, conventional arms control could contribute to NATO's security by redressing these imbalances.

Of greater concern is the need to maintain a sufficiently thick NATO forward defense line near the inter-German border in order to maintain NATO's current force-to-space ratio. At present, NATO has enough firepower to provide the minimum acceptable force-to-space ratio, but substantial cuts in its ground forces would raise serious questions about the integrity of NATO's forward defense line. This might be true even if the Soviets accepted asymmetrical cuts in armored forces on the Central Front.

A related question is whether a future arms control agreement would shift the offense/defense balance in favor of the side on the defensive. In some models of conventional warfare in Europe, over half of the attrition exacted against Warsaw Pact armor would be caused by airpower. Therefore, in order to maintain NATO's defensive force posture, conventional arms control should not limit conventional airpower. Banning long-range fighter-bombers

without large cuts in Warsaw Pact armor would throw away a NATO advantage without receiving adequate compensation.

In short, arms control agreements that look favorable according to one of the above criteria might look disadvantageous according to others. Any conventional arms control proposal must be judged by its overall effect on the NATO/Warsaw Pact balance.

A variety of arms control arrangement might be advantageous to both East and West, involving trades of: 1) armor for armor, 2) air for air, 3) air for armor, 4) battlefield nuclear weapons for armor, 4) SDI for armor, or 5) a grand package involving all of the above.

Given the present imbalance between NATO and Warsaw Pact inventories of tanks and heavy artillery, highly asymmetric Soviet cuts in this area may be attractive to NATO. In addition, certain ground-force reductions might also be desirable. For example, because Soviet ground forces outnumber American forces in the Central Front by about 5 to 1, a mutual 50 percent cut in this area would eliminate thirteen Soviet divisions in exchange for two American divisions. This would help to eliminate the possibility of a Soviet surprise attack on Western Europe.

An asymmetric armor-for-armor deal would be most attractive to NATO; an air-for-air deal would be most attractive to the Warsaw Pact; and both sides might perceive benefits in a combination of the two. Yet it may turn out to be impossible to strike a deal by limiting conventional forces alone. Indeed, the Soviets strongly imply that battlefield nuclear weapons must be included

in any restructuring of the NATO/Warsaw Pact military balance. But as long as a successful Warsaw Pact conventional offensive remains a possibility, cuts in battlefield nuclear weapons should be avoided.

Another possibility is that the United States should offer its biggest bargaining chip, the Strategic Defense Initiative (SDI), in exchange for steep, asymmetrical reductions in Warsaw Pact armor.

In summary, NATO should not significantly reduce its force-to-space ratio or scrap its battlefield nuclear weapons unless the Soviets agree to a very radical restructuring of their offensive armored forces. Especially attractive would be a package that includes asymmetric reductions of armor, either in Central Europe or from the Atlantic to the Urals, and the withdrawal of deep-strike missiles and aircraft from the European theater. By linking this package to a broader agreement including limits on SDI, NATO should be able to extract highly favorable terms in a conventional arms control agreement.

NATO should aggressively pursue these possibilities for conventional arms control. If Gorbachev is not serious about conventional restructuring, NATO will gain in terms of public relations, and if he is serious, the military security of both sides could be enhanced and a major source of political tensions could be eliminated.

THE GORBACHEV REVOLUTION:
LIMITING OFFENSIVE CONVENTIONAL FORCES IN EUROPE

Jack Snyder

The Soviet-American agreement to ban intermediate-range nuclear forces (INF) throws into high relief the perennial problem of conventional deterrence in Europe. NATO relies on the threat of nuclear escalation as a crucial element in its strategy for deterring an attack by the Warsaw Pact's numerically superior and offensively poised conventional forces. Consequently, as several prominent Senators and other Congressmen have warned, a drift "down the slippery slope toward European denuclearization" would undermine NATO's security unless Soviet capabilities for a conventional offensive were radically reduced at the same time.¹

Acknowledging this connection between nuclear reductions beyond the INF Treaty and a stabilized conventional balance, the Soviets have proposed mutual reductions in offensive types of conventional weapons, such as tanks and long-range aircraft. According to Soviet arms negotiator Viktor Karpov, "the Soviet position is that armed forces and armaments in Europe should be reduced to such levels as would preclude the possibility of their being used for offensive operations. This could be done first and foremost by scrapping nuclear weapons and by reducing the most dangerous types of arms, which could include tanks, tactical

aircraft and strike helicopters."² The Soviets further acknowledge that they enjoy a numerical superiority in tanks and that "the side that is ahead" in a given category of weapons would have to accept asymmetrical cuts.³

These are astonishing proposals coming from the Soviets, because they would overturn the main tenets of Soviet military science and eliminate the vast bulk of the Soviets' offensively oriented force posture. One might be excused, therefore, for suspecting that such utopian ideas are intended primarily for their propaganda effect. Indeed, Soviet spokesmen have admitted that "already the very fact of the proclamation of the [defensive conventional] doctrine is having a salutary effect on the climate and the situation in the world."⁴

But public relations is not the whole story. Gorbachev's program of domestic restructuring has created both the need and the possibility for restructuring in the military area as well. Radical conventional arms control is needed to shift investment, manpower, and scarce high-technology resources into the civilian sectors that must thrive if Gorbachev's economic program is to succeed. Conventional restructuring is also needed, Gorbachev believes, because the West's fear of offensive Soviet military power leads it to throw up barriers to increased Soviet participation in the capitalist world market. Such radical changes in military policy may now be possible because the Soviet military is politically weaker now than at any time since 1960.⁵

However, the Soviet military and other potential opponents of

conventional restructuring are not utterly supine. While paying lip-service to the idea of a defensive conventional strategy, high-ranking military figures are stressing the need for "counteroffensive" capabilities that would leave the old forces posture intact and open the door to a high-technology conventional arms race. Moreover, they are insisting that the Soviet Army must not restructure unilaterally. Though some civilian scholars have argued for unilateral cuts, the military is demanding that NATO must reciprocate any reductions in offensive Soviet forces.

NATO may, however, have a hard time identifying forces it could safely give up in exchange for Soviet armor reductions. At present, NATO has not much more than the minimum force needed to man a continuous defense line on the Central Front. Even an asymmetric armor-for-armor trade might deplete NATO's defense line beyond the breaking point, leaving it more vulnerable to a Pact offensive. Nevertheless, a variety of offensive reductions can be imagined that might enhance the security of both sides. These involve certain kinds of armor-for-armor, airpower-for-airpower, or airpower-for-armor trades. If limitations on the Strategic Defense Initiative (SDI) were negotiated at the same time, the Soviets might be induced to make highly asymmetric conventional cuts, making NATO's problems easier to solve.

The United States has nothing to lose by actively pursuing Gorbachev's proposals for a strictly defensive restructuring of conventional forces. If Gorbachev backs away from his own proposals, propaganda benefits will accrue to the West.

Alternatively, if Gorbachev strings the West along in inconclusive talks on offensive force cuts, there is little reason to fear that the West will be lulled into reduced defense spending by the mere act of negotiation. In the past, arms talks have stimulated Western defense efforts (to produce bargaining chips), at least as much as they have lulled the West.⁶ If, however, Gorbachev does negotiate in good faith on conventional restructuring, substantial benefits could result. The West would be more secure from Soviet attack, incentives for hair-trigger preemption would be reduced, and--if truly radical conventional restructuring occurred--the path would be cleared for further denuclearization.

In thinking through this issue, I will first discuss Soviet proposals and motivations. What kind of conventional restructuring is the Soviet Union proposing? How do civilian and military views of conventional restructuring differ? What incentives are leading the Soviets to make these proposals? Are these incentives so strong that the Soviets might reduce their offensive conventional forces unilaterally? What disincentives might hinder a restructuring of the Soviets' conventional force posture?

In the second half of the article, I will discuss possible NATO responses to the Soviet proposals. What criteria should NATO use in evaluating the terms of possible conventional arms control agreements? What weapons should be classified as offensive, and hence subject to limitation. What specific trades might be advantageous to both sides?

SOVIET PROPOSALS FOR NON-OFFENSIVE CONVENTIONAL DEFENSE

Soviet proposals have so far addressed only the general principles of conventional restructuring, not its specific content. The touchstone concept, says Gorbachev, is to create "such a structure of the armed forces of a state that they would be sufficient to repulse a possible aggression but would not be sufficient for the conduct of offensive operations."⁷ A related aim is to "rule out the possibility of surprise attack. The most dangerous types of offensive arms must be removed from the zone of contact."⁸ This would be achieved by the "elimination by mutual agreement of such types of offensive weaponry as tactical long-range bombers, tactical missiles, long-range artillery, large armored formations, etc."⁹ Such cuts, the Soviets recognize, would have to be asymmetrical within individual categories of weapons. Thus, the Warsaw Pact has proclaimed its "readiness to rectify in the course of reductions the inequality that has emerged in some elements [of force structure] by way of corresponding cuts on the side that is ahead."¹⁰ In short, the Soviets say, "we are ready for a structure and disposition of our armed forces in zones of contact that would, first, guarantee the other side against sudden attack, and, second, in general exclude the possibility of offensive action against it."¹¹

The Warsaw Pact has also announced a unilateral decision to revise the "military-technical" aspects of its doctrine to reflect

the principles of non-offensive conventional defense. Previously, the Pact had said that its doctrine was defensive at the "socio-political" level, but offensive on the "military-technical" plane. Military spokesmen, however, have stressed that reductions in offensive conventional forces will proceed only as part of an agreement with NATO.¹² Sometimes the transition to "non-offensive defense" is also linked to a ban on battlefield nuclear weapons and a NATO no-first-use pledge.¹³

Beyond this, specifics are lacking. "To specify how many rifles, guns, tanks, aircraft and missiles each side should have is impossible at this juncture," says one Soviet commentator. "The concrete parameters will be determined by agreement."¹⁴ It remains unclear, in particular, which kinds of forces the Soviets see as most offensive. They include tanks as prime candidates for reductions and also acknowledge that the Pact must expect to take asymmetrical cuts in this area. Another category that the Soviets normally mention is long-range attack aircraft.¹⁵ Soviet sources state that half of NATO's firepower resides in its air forces,¹⁶ and that NATO enjoys a net superiority in conventional airpower. Thus, demands that NATO take asymmetrical cuts in that area can be expected.¹⁷

However, nothing so simple as an air-for-armor trade has appeared in Soviet commentary. Rather, there is a tendency to expand the definition of "offensive capability" to cover almost everything. For example, they allege that the West enjoys an advantage in anti-tank weapons and helicopters, implying that the

West must take asymmetrical cuts in those categories.¹⁸ Even if this characterization of the balance were true, it would still be puzzling.¹⁹ Anti-tank weapons are hardly offensive, and so should be left alone, according to the principles of non-offensive defense. According to another expansive definition, "the principle of sufficiency [for defensive operations only] also means ending the drive to outstrip the other side in arms development, renouncing the buildup of rapid deployment and other mobile forces, and of enormous facilities for the movement of troops by air and sea."²⁰

Another open question is whether the proposed reduction of offensive forces would take place world-wide, "from the Atlantic to the Urals," or primarily in a narrower zone in Central Europe. The Vienna talks on Mutual and Balanced Force Reductions (MBFR) are now being reorganized along the lines of a Soviet proposal for an Atlantic to the Urals format. Despite this, Gorbachev continues to stress that "the first step to [wider reductions] could be a controlled withdrawal of nuclear and other offensive weapons from the borders with a subsequent creation along borders of strips of reduced armaments and demilitarized zones."²¹ The model provided by the INF Treaty, however, suggests that world-wide limits might be considered for missiles or aircraft. Thus, different geographical zones might be proposed for different types of weapons or for different stages of a phased agreement.

CIVIL-MILITARY DIVERGENCE ON CONVENTIONAL DEFENSE

One reason for the vagueness and diversity of Soviet proposals may be that the Soviets disagree among themselves about the proper approach to a defensive conventional strategy. Gorbachev and the civilian defense intellectuals normally talk in terms of making surprise attacks impossible or of enhancing the power of the defense relative to the offense. In this, they draw explicitly on the ideas of the West European left and the Palme Commission report on mutual security in Europe.²²

Military professionals, however, stress the importance of offensive or counteroffensive capabilities, even in the broader context of a defensive conventional strategy. The Pact's approach to conventional defense must not be "passive," says Army General A. I. Gribkov, the Chief of Staff of the Warsaw Pact Joint Armed Forces.

Gribkov: In the event of an attack taking place, the Warsaw Pact countries' armed forces will operate with exceptional resolve. While repulsing the aggression, they will also conduct counteroffensive operations. This does not contravene the demands of the [defensive] military doctrine, since--as the experience of the Great Patriotic War and local wars shows--such actions are not only possible but necessary within the framework of defensive operations and battles in individual sectors
....

Q: Anatoly Ivanovich, if I understand you correctly, it could be claimed that all the most important provisions of the military-technical side of the Warsaw Pact military doctrine are already embodied in the building and training of the joint Armed Forces

Gribkov: Yes, that is so. In the past, too, the Warsaw Pact Armed forces trained only to repulse aggressors. Now this process has become even more balanced,

purposeful, and coordinated.²³

In other words, the transition to non-offensive defense would, in Gribkov's view, require little if any fundamental restructuring of Soviet conventional forces.

This reluctance to eliminate offensive capabilities does not mean, however, that the Soviet military sees no merit in a defensive conventional strategy. Even before Gorbachev's discovery of non-offensive defense, authoritative figures on the Soviet General Staff were paying increasing attention to defensive conventional strategies. The former Chief of the General Staff, Nikolai Ogarkov, wrote in 1985 that technological change was undermining the supremacy of the tank on the modern battlefield and the advantage of the attacker over the defender that had allegedly prevailed since World War II. In particular, he saw the development of precision-guided conventional munitions as creating new possibilities for both offensive and defensive operations.²⁴

Colonel-General M. A. Gareev, a holdover from the Ogarkov era who now enjoys increased prominence on the General Staff, has laid out the strategic implications of that view.²⁵ In the past, says Gareev, Soviet military doctrine had assumed that there would be plenty of time to mobilize before the outbreak of war and consequently that Soviet forces would be able to seize the initiative from the outset of the fighting. But this ignored the possibility that NATO might attack without warning, or that Soviet political leaders might be slow in authorizing mobilization and forward deployment out of the fear that mobilization would

inevitably lead to war. Before the Nazi attack, Gareev notes, Soviet authorities counted on "fighting on the territory of others," but reluctance to mobilize in time surrendered the initiative to the Germans and forced the Soviets to fight on the defensive. "Considering all of this, the contemporary system of strategic deployment cannot orient itself exclusively toward one of the contingencies that is most favorable to us, but should be more flexible and ensure an orderly deployment of forces under any conditions through which the imperialist aggressors might unleash a war."²⁶ In particular, the adoption of a more flexible approach is necessitated by "the perfection of means of attack by our probable enemies, their counting on plotting a forestalling blow, and the growing role of the time factor at the beginning of a war."²⁷ These conclusions hold "even in battles in which only conventional arms are used."²⁸

However, even if Soviet forces lose the initiative at the outset of the war, the "defensive" operations that Gareev envisions would be almost indistinguishable from an offensive. Noting a "tendency toward a growing convergence of the forms of action by troops in the attack and on the defense," Gareev points out that both the attacker and the defender will be launching highly accurate strikes against the "second echelons and reserves" of the opponent.²⁹ Thus, says Gareev, "contemporary weapons allow ... great activeness and steadiness of the defense."³⁰ Gareev's thoughts are therefore not of eliminating offensive weapons, but of using them to shore up the defense and to regain the

initiative.

In short, it seems likely that the Soviet military and Soviet civilians are both sincere in considering the merits of defensive conventional strategies, but they attach nearly opposite meanings to the word "defensive." A somewhat awkward attempt to bridge this gap was a recent article co-authored by Andrei Kokoshin, a deputy director of the U.S.A. and Canada Institute, and V. V. Larionov, a retired military officer who contributed to V. D. Sokolovsky's famous Military Strategy in the 1960s.³¹ The first two pages reiterate the Warsaw Pact proposal to restructure conventional forces "such that no side, in guaranteeing its own defense, would have the forces for a surprise attack on the other side, or for undertaking offensive operations in general."³² The bulk of the article, however, describes the battle of Kursk, in which a heavily armored, numerically superior Soviet force launched a massive counterattack after exacting heavy attrition on Germans attacking an impregnable defense line. The authors admit that Kursk has little relevance as an example of "non-provocative defense." Rather, their point was merely to prove that "a prepositioned defense can resist the powerful onslaught of offensive forces."³³

It remains to be seen whose definition of conventional defense will prevail, if either does. The civilians could argue that arms control based on the principles of non-provocative defense would obviate the need for the counteroffensive capabilities that the military wants. The persuasiveness of this

argument would hinge, presumably, on NATO's willingness to cooperate in such a restructuring and on Gorbachev's political authority vis-a-vis the military.

INCENTIVES FOR CHANGE IN SOVIET FORCES AND DOCTRINE

Gorbachev's motives for proposing a restructuring of conventional forces in Europe are both economic and strategic. Military expenditures have taken a heavy toll on the Soviet economy in usurping a large proportion of funds for industrial investment and in laying priority claim to scarce scientific manpower and high-technology supplies. Conventional forces are the area where big savings might be possible through force reductions.³⁴ Conventional forces are also an area where a costly high-technology arms race in precision-guided deep-strike weapons is on the horizon. Most interpretations of the ouster of Nikolai Ogarkov as Chief of the General Staff include as a major factor his demands for accelerated investment in this area.³⁵

Though Gorbachev's economic reforms are aimed at, among other things, improving Soviet performance in the high-technology sector, big investments in high-technology weaponry in the short run would undermine the needs and logic of Gorbachev's economic plans. Gorbachev is aiming to promote more efficient allocation of productive resources by introducing limited market mechanisms. The military's idea of economic reform has little in common with this. Though military reformers understand that their own

programs hinge on better performance of the civilian economy, they apparently advocate a somewhat streamlined version of the traditional command economy, which would allow them to retain their traditional leverage in requisitioning resources through the administrative apparatus.³⁶ Conventional arms control would help Gorbachev to justify ending this requisitioning system, whereby the army gets the good computer chips and everyone else gets the dregs.

In addition to seeking direct economic gains from conventional reductions, Gorbachev also understands that the Soviet military threat to Europe is a barrier to improved political and economic relations with the West. The hope for increased Soviet integration into the world economy plays a significant role in Gorbachev's domestic economic plans. Unlike Brezhnev, he realizes that trade, credits, and technology transfers will be hindered if the Europeans perceive a looming Soviet military threat.³⁷

Finally, it is possible that Gorbachev and even Gareev might see significant security benefits in limiting offensive conventional weapons. Especially in light of the Soviet military's evident preoccupation with the threat from NATO's "emerging technologies" of precision-guided, deep-strike attacks, halting such deployments might be seen as a major benefit for which the Soviets might be willing to pay a considerable price. Moreover, conventional arms control would enhance Soviet security by clearing the way towards further denuclearization.

BARRIERS TO RESTRUCTURING SOVIET CONVENTIONAL FORCES

One way to address the question of the barriers to restructuring the Soviet conventional posture is to ask why they embarked on an offensive conventional build-up in the first place. The most persuasive explanation is that the emergence of the offensive "conventional option" in the 1960s was due to the preferences and power of the professional military in the Brezhnev years. Given the steep decline in the military's power and autonomy in the Gorbachev period, this barrier to conventional restructuring has been lowered, though not eliminated.

One possible explanation for the Soviets' offensive inclinations in conventional strategy--the export of revolution to Western Europe by force of arms--can be easily ruled out. At least since Stalin's death, "defending the gains of socialism" has been seen as the only legitimate use of Soviet military forces in battle. The diplomatic exploitation of Soviet offensive military power did receive some doctrinal sanction under Brezhnev, but as I have argued, Gorbachev now sees the offensive shadow of Soviet military capabilities as more a hindrance than a help to diplomacy.³⁸

Purely strategic explanations for the Soviets' offensive conventional stance are also unpersuasive or obsolete. In the late 1940s, an offensive conventional capability might have been desired to hold Western Europe hostage in an era of American

atomic monopoly.³⁹ If so, this function is certainly obsolete in the era of nuclear parity. Also in the late 1940s, the Soviets worried that America would rerun its strategy in World War II: keep a toehold in the Old World, mobilize its huge economy for war, and use the toehold as a bridgehead for regaining control of Europe.⁴⁰ Though no one has discovered direct textual evidence that the Soviets still think that way, Michael MccGwire has argued that the need to eliminate the American toehold in Eurasia at the outset of any conventional war was the main consideration impelling the Soviets to adopt an offensive conventional strategy.⁴¹ However, MccGwire now believes that the Soviets have recently downgraded their estimate of the likelihood of a global conventional war, allowing them to move towards a defensive strategy for Central Europe.⁴² A better explanation for the conventional offensive strategy, as it emerged in the 1960s, is the preferences and power of the professional military. Military authorities and commentators began to argue for a conventional option in 1963, in the face of Khrushchev's demands for extreme cuts in conventional manpower.⁴³ A defensive conventional option would have served their purpose poorly, since defense, being easier than offense, could not justify a large, diversified, modernized conventional military establishment.⁴⁴ Khrushchev's policies provoked the disaffection of a whole panoply of conservative vested interests, both civilian and military, and led to his removal. Brezhnev thus learned that these interests, including military interests, had to be accommodated, so he

accepted the expensive, offensive conventional option, even though its quest for a decisive victory might provoke the very nuclear escalation that it promised to prevent.⁴⁵

Under Gorbachev, Soviet politics works differently, and the power of the military has diminished accordingly. Whereas Brezhnev had, until his final years, appeased the military and other interest groups, the whole logic of Gorbachev's reforms compels him to resist the vested interests. Industrial bureaucrats and orthodox ideologues have come in for the heaviest criticism, but the prestige and practices of the military have also come under fire.⁴⁶ Defense Minister Sokolov, removed after hinting that the military was exempt from perestroika, was replaced by Dmitri Yazov, who jumped over fifty more senior officers to take the post.⁴⁷ Yazov, not surprisingly, is a big supporter of Gorbachev's idea of a defensive restructuring of Warsaw Pact force posture.⁴⁸

It should not be concluded, however, that the military is so weak that Gorbachev can force through any military policy he wants. The Chief of the General Staff, Sergei Akhromeev, his key deputy on doctrinal matters, Makhmut Gareev, and the Commander of the Warsaw Pact, Viktor Kulikov, are all holdovers from the pre-Gorbachev era. As Gribkov's Red Star interview demonstrates, the military is still able to express its own interpretation of what current policy is--or should be.⁴⁹ If the military's arguments are convincing, they might win adherents among Politburo members who have spoken against precipitous change, like Shcherbitsky and

Ligachev--or even among Gorbachev allies, like Lev Zaikov, who have connections to military or military-industrial interests.⁵⁰

In short, Gorbachev has strong economic and security incentives for a defensive restructuring of conventional forces in Europe. Moreover, he has fair prospects for pushing this policy through. The main explanation for the emergence of an offensive conventional option under Brezhnev was the power and preferences of the professional military, but now the power of the military has been significantly curtailed. The independent emergence of an interest in a conventional counteroffensive suggests that military preferences may also be evolving.

THE PROSPECTS FOR UNILATERAL SOVIET CONVENTIONAL CUTS

Despite these favorable circumstances, political conditions and economic incentives for conventional restructuring are not so propitious that the Soviet Union can be expected to do it unilaterally. It is true that a few civilian scholars, fearing that NATO will not respond favorably to Gorbachev's proposals for conventional arms control, have begun to argue for unilateral Soviet moves.⁵¹ Their political arguments for unilateral moves are very sophisticated, following the general logic that Gorbachev has applied to other aspects of East-West diplomacy. The United States seeks to wreck the Soviet reforms, they say, by compelling the Soviet Union to run a high-technology arms race in areas of Western comparative advantage, like the SDI. Instead of falling

into this trap, they argue, the Soviet Union should offset SDI with cheap technical countermeasures. Likewise, it should revive Khrushchev's policy of unilateral troop cuts, which coincided with "a rapid growth of the prestige and influence of the Soviet Union and the gradual improvement of the world situation." Soviet security was not harmed by these unilateral moves, they claim, because of "a broad peace offensive which made [it] virtually impossible for the West to bring additional military pressure to bear on our country."⁵²

However, the success of these advocates of unilateral concessions is doubtful. Even on the issue of responding to SDI, there are signs of some backsliding from Gorbachev's stance in favor of cheap countermeasures. Military calls for emulating SDI, common in earlier years, were taboo during most of 1986 and 1987. Recently, however, Akhromeev has been able to reiterate his earlier view that if the United States were to deploy SDI, "the Soviet Union would also have to equip itself with a nuclear shield."⁵³ Thus, even in an area where civilian science advisers can offer countervailing expertise, the military is able to put up a rear-guard battle. Its hand is likely to be even stronger in the area of conventional forces, where few if any Soviet civilians can produce detailed operational analyses to challenge the General Staff.⁵⁴ The civilians complain that "the absence of reliable information is often used by unscrupulous propaganda agencies for the systematic exaggeration of data and the fabrication of nonexistent 'threats'."⁵⁵ According to oral reports, their lack

of expertise is hindering the development of detailed proposals for non-offensive conventional defense, though an Academy of Sciences commission headed by Evgenii Velikhov is seeking to develop such proposals.

In short, three competing assessments of Soviet interests in conventional restructuring might be advanced: (1) that they are interested primarily in its propaganda value, (2) that they are so interested in conventional cuts that they will carry them out unilaterally, or (3) that they will make major cuts only if NATO reciprocates through an arms control agreement. Though the first two interpretations cannot be entirely ruled out, the third view seems more plausible. Gorbachev needs and wants a conventional restructuring as a key element in his economic and security strategy, but it seems probable that he will be able to win the argument against Soviet skeptics only if he can get a reduction in the NATO high-technology threat as a quid pro quo.⁵⁶ If so, this raises the question of what the West might safely offer in exchange for a reduction of the Soviet offensive ground-forces threat to Europe.

CRITERIA FOR CONVENTIONAL ARMS CONTROL IN EUROPE

In evaluating possible conventional arms control deals, the West must keep in view three crucial ratios: (1) the NATO/Warsaw Pact balance of conventional firepower, (2) NATO's force-to-space ratio on the Central Front, and (3) the offense-defense balance.⁵⁷

Any deal must be judged by its net effects according to all three criteria. For example, focus solely on reductions in offensive types of forces might actually reduce NATO's security if this led to a thinning-out of NATO's armored forces on the North German plain.

The NATO/Pact Balance

One of the main barriers to conventional arms control in the past has been a disagreement between NATO and the Warsaw Pact about the state of the European conventional balance. While the Soviets deny that they enjoy a net superiority in conventional military power in Europe, Western governments and many independent military analysts contend otherwise. The most sophisticated measures of the ground-forces balance, which express firepower in terms of "Armored Division Equivalents," portray a 1.2:1 Pact advantage at the beginning of the mobilization process. As both sides add reinforcements from the rear, the Pact advantage increases to 1.6:1, in the view of some analysts, or perhaps to as much as 2:1, in the view of others.⁵⁸

Some observers contend that this Pact advantage is offset by NATO advantages in airpower and logistics and also by the advantage of defending prepared ground. The logistics advantage has been estimated by Barry Posen to warrant multiplying NATO's firepower score by 1.5.⁵⁹ The advantage of the defender, which is greater for tactical engagements on a narrow front than it is for the theater as a whole, has been estimated at anywhere from 1.4:1

to over 3:1.⁶⁰ According to purloined lecture notes from the Soviet General Staff Academy, the Soviets hold that attackers need a superiority of 3 or 4:1 in breakthrough sectors, but only 1.0 to 1.5:1 in the theater as a whole.⁶¹ No one has tried to express NATO's advantage in the air as a summary ratio. Though the Pact has more planes and tactical missiles in most categories, most observers contend that NATO's quantitative edge will allow NATO to achieve partial air superiority in the first weeks of the war and then go on to use that air power effectively in the land battle as well.⁶²

NATO's official arms control positions have not accepted these more optimistic assessments of the conventional balance. As a result, at the Vienna talks on Mutual and Balanced Force Reductions, the West has always insisted on asymmetrical Soviet cuts. The Soviets, however, continue to contend that, despite asymmetries in particular types of weapons, there is an overall equality in NATO and Warsaw Pact forces in the European theater.⁶³ Given official Western views of the balance, this Soviet contention will continue to plague any conventional arms talks.⁶⁴ However, if the negotiations are couched in terms of reducing offensive forces rather than redressing the alleged NATO/Pact imbalance, per se, asymmetrical Soviet cuts might be accepted under the guise of reducing destabilizing armored forces. This would give Gorbachev a fig leaf, allowing him to avoid an explicit acknowledgement that Pact forces had been superior all along.

A related question is whether NATO should worry more about

the small imbalance at the beginning of mobilization or about the larger imbalance when forces from the Western USSR arrive at the front. To address the former concern, reductions could be limited to the two Germanies and perhaps Poland and Czechoslovakia. To address the latter, forces throughout Europe from the Atlantic to the Urals--and perhaps world-wide inventories--would have to be limited.

The initial period is of concern because NATO's forward defense line would not be in place until about the fourth day of mobilization.⁶⁵ Assuming that the Pact gets a three or four day jump on NATO's mobilization, the Pact might attack before a coherent forward defense line could be formed. As a result, NATO would lose the substantial advantages of a prepared defense. Moreover, the Pact might gamble on completing a lightning victory before NATO could decide to use nuclear weapons.⁶⁶ On the other hand, recent intelligence revelations suggest that Soviet forces in Germany are less ready for this kind of "standing start" attack than had previously been believed.⁶⁷

Consequently, some Western analysts worry more about a slow, attritional campaign after several weeks of preparatory mobilization on both sides. However, this would give NATO the advantages of a prepared defense and plenty of time to confer on the use of nuclear weapons. Moreover, John Mearsheimer's historical studies show that modern statesmen have launched conventional wars only when they thought that a slow, attritional struggle could be avoided.⁶⁸

In conclusion, conventional arms control could contribute to NATO's security by redressing the small imbalance favoring the Pact at the outset of mobilization, and possibly also the somewhat larger imbalance when reinforcements from the Western USSR arrive. However, even given current force ratios, neither the Blitzkrieg nor the attritional scenario looks attractive from the vantage point of the Soviet war planner. Consequently, redressing the alleged NATO/Pact imbalance need not be the dominant consideration in conventional arms talks.

NATO's Force-to-Space Ratio

Of greater concern is the need to maintain a sufficiently thick NATO forward defense line near the inter-German border. A defender's force needs depend as much on the width of the front to be defended as on the size of the attacking force.⁶⁹ At Thermopylae, a few good Greeks held off the Persian multitudes by clogging the narrow pass so that the Persians could attack them with only a few men at a time. Armored warfare on a thickly defended front is analogous. The advantage of the attacker is that he can choose the time and place of the engagement, using the initiative to build up a substantial local superiority. However, according to Posen's estimates, an attacker cannot profitably concentrate more than three armored division equivalents (ADEs) on a 50-kilometer section of the front.⁷⁰ No matter how many forces the attacker has at his disposal, they will have to be stacked up in reserve, waiting to exploit any breakthrough. If the defender

can deploy one ADE in this sector, then the hypothetical three-to-one exchange ratio in favor of the defender should lead to the destruction of the attackers' first echelon and prevent a rapid breakthrough. This should buy sufficient time for the defender to bring reinforcements to the threatened sector. NATO's present posture allows it to deploy one to two ADEs per 50-kilometer sector at the outset of mobilization. By the second week of mobilization, NATO could then add ten ADEs in reserve to stem concentrated breakthrough attempts.⁷¹ Thus, NATO has enough firepower on the ground to provide the minimum acceptable force-to-space ratio.⁷²

Though NATO's force-to-space ratio is acceptable at present, substantial cuts reducing this force-to-space ratio on likely breakthrough sectors would raise serious questions about the integrity of NATO's forward defense line. This might be true even if the Soviets accepted asymmetrical cuts in armored forces on the Central Front. At Thermopylae, Xerxes would gladly have given up many of his Persians in exchange for a few Greeks. Consequently, NATO should be wary of Soviet assertions that "the threat of offensive operations would naturally become less by sharply cutting the overall numbers of troops."⁷³

The Offense/Defense Balance

The third criterion is whether an arms control deal would shift the offense defense/balance in favor of the side that remained on the defensive. By this yardstick, good arms control

should ensure that the attacker would suffer disproportionate attrition and that the benefits from striking first would be minimized.⁷⁴

What kinds of forces disproportionately aid the attacker and which aid the defender? Certainly, it is easy to design a strictly defensive force starting with a tabula rasa. One might allow fortifications, anti-tank weapons, militia for local defense, and short-range air-defense fighters, while banning everything else. But in the real world the offensive or defensive implications of a particular weapon system depend on the broader context. A fortification can be an offensive weapon if an aggressor uses it to secure his flank or rear so that he can concentrate overwhelming force against his victim on another front.

This qualification notwithstanding, it is possible to make rough judgments about the relative offensiveness of different weapons.⁷⁵ In fact, the U.S. Army has done so. In calculating armored division equivalents, the Army gives weapons different scores depending on whether they are to be used in offensive or defensive tactical operations. Tanks and armored personnel carriers are the only categories that are given a higher value in the offensive than on the defensive. Anti-tank weapons, artillery, mortars, and armed helicopters all count more when they are used in a defensive operation. (See Table 1.) Fixed-wing aircraft are not scored in this way by the Army, but one civilian analyst boosts by 20 percent the value of close-air-support

Table 1

Offensive and Defensive Weapons

	<u>Value in:</u>	
	Offense	Defense
Tanks	64	55
Armored personnel carriers	13	6
Anti-tank weapons	27	46
Artillery	72	85
Mortars	37	47
Armed helicopters	33	47

Source: William Mako, U.S. Ground Forces, appendix tables A-2 through A-14, pp. 114-125. One armored division equivalent equals 47,490 points. Based on U.S. Army figures for 1974.

planes, like the A-10, when they are used in the defensive.⁷⁶

Some of these classifications are open to debate. It might be argued, for example, that all forces, even tanks, are more effective on the defensive, since they can take advantage of terrain cover, whereas their targets must expose themselves during the attack. In relative terms, however, the defender's terrain advantage is more essential for vulnerable anti-tank weapons or for armed helicopters, which must hide behind the tree-line. In contrast, the tank's combination of firepower, maneuverability, and protection diminishes the defender's advantage. This is much less true for lightly protected armored personnel carriers, the army's scoring notwithstanding. Conversely, many analysts would dispute the army's view that self-propelled artillery is a

predominantly defensive weapon, given its role in suppressing anti-tank defenses during a breakthrough attempt. For this reason, conventional arms control proposals often seek to limit both tanks and artillery.⁷⁷

Tanks represent over two-thirds of the firepower in a Soviet armored division and over one-third of the firepower in a Soviet mechanized division. The comparable figures for an American division are about two-fifths and one-fourth, respectively.⁷⁸ Thus, especially in the Soviet case, there is plenty of room for reducing the proportion of offensive firepower.

There is also plenty of room on both sides for increasing the investment in fortifications, which tend to favor the defender. NATO cannot build a Maginot Line because of the Germans' aversion to the symbolic division of their country. However, more limited, but still useful measures could be taken to prepare barriers and pill-boxes in key breakthrough sectors. Such defenses were highly successful in the 1973 Arab-Israeli War.⁷⁹ One study argues that \$5 billion invested in fortifications would have a payoff equal to \$25 billion invested in ten additional maneuver divisions.⁸⁰ At present, NATO intends to do most of its terrain preparation during the first few days of mobilization. According to one estimate, even this level of fortification and mining, if successfully completed before an attack, might multiply the effectiveness of the forces on the forward defense line by as much as one-third.⁸¹ Investing in better terrain preparation does not depend on arms control, of course. It would be desirable even on a unilateral

basis. However it might be more palatable to the Germans, as part of a conventional arms control package.

Identifying offensive and defensive types of aircraft and missiles is an especially knotty problem. In one view, NATO airpower as a whole should be seen as defensive, in the sense that its job is either to kill offensive Soviet tanks or to destroy Soviet airpower (which exists to hinder the killing of Soviet tanks). This view notwithstanding, some distinctions can be made. Some aircraft are primarily defensive by almost any standard. Specialized air-defense interceptors, like the F-15, are obviously in this category.⁸² Similarly, close-air-support planes like the A-10 are specialized tank killers, and they work best in the tactical defensive.⁸³ Moreover, their lateral mobility makes them especially valuable for containing unexpected breakthroughs anywhere along the front. In Posen's dynamic model of conventional combat on the Central Front, over half of the attrition exacted against Pact armor in critical breakthrough sectors was caused by close air support.⁸⁴ Conventional arms control should not limit such weapons.

Other kinds of planes and missiles are primarily offensive. Many analysts assume, for example, that there is a big first-strike bonus for attacks against airfields, command posts, or air defenses carried out by tactical missiles or long-range fighter-bombers. The side that strikes first and stays on the offensive, it is assumed, can destroy aircraft on the ground, crater runways, and disrupt the coordination of air defense efforts. This might

keep enough of the opponents' offensive and defensive aircraft out of the skies for long enough that his force can be destroyed piecemeal.⁸⁵ If so, each side would have a strong incentive to attack preemptively at any sign of mobilization by the other.⁸⁶

One might be skeptical about the size of this alleged preemption bonus. Air defenses are always alert, and so would be hard to catch completely by surprise. Aircraft are stored in hardened shelters, which for the most part are not especially vulnerable to air or conventional missile attack. Cratered runways can be repaired in a few hours. Thus, it is not immediately obvious that attackers would impose more meaningful damage than they would suffer. Indeed, in one respect, there is a big first-strike disadvantage. Normally, air-defense fighters cannot use air-to-air missiles beyond visual range because it is impossible to determine in a reliable way whether the approaching blip is an attacking foe or a friendly craft returning from a bombing mission in the enemy's rear.⁸⁷ In the first sortie of the war, however, defenders would know that all the blips were enemies. Despite these factors, the belief in a first-strike bonus in a European air battle is widespread, and thus is a problem that arms control should address.

In short, it is possible to distinguish defensive aircraft, like the A-10 and the Soviet Su-25, from offensive air attack weapons, like the F-111, Tornado, Su-24, and Backfire bombers, and the SS-21 surface-to-surface missile. Because defensive aircraft kill armor and work best in the tactical defensive, they should

not be limited. Offensive air attack weapons, however, combine range, payload, and penetration capability so as to threaten the survival of the command and control and air defense capability of the other side.⁸⁸ Since they arguably work best in that role when used preemptively, they should be considered candidates for limitation. It goes without saying that strictly defensive interceptor aircraft like the F-15 should not be limited. "Swing" aircraft like the F-16, which can perform either air-to-air or long distance air-to-ground missions, pose a more difficult problem.

Trade-Offs and Interactions among the Three Criteria

In some cases, each of these three criteria--the NATO/Pact firepower balance, the force-to-space ratio, and the offense/defense balance--might lead to a different conclusion. Deals that look good according to one criterion might look disadvantageous according to the others. For example, trading ten Pact ADEs for five NATO ADEs would improve the firepower balance, but it would be ruinous from the standpoint of NATO's force-to-space ratio. Similarly, banning long-range fighter bombers would reduce incentives to preempt in the air war, but it would throw away a NATO advantage without receiving adequate compensation.

Sometimes, however, big advantages by one criterion might offset small disadvantages according to others. Thus, if NATO could trade a small number of its tanks for a large number of the Pact's, the adverse impact on the force-to-space ratio might be

compensated by the overall reduction in the Pact's offensive capability. This would be especially true if NATO reductions could be taken in American forces in southern Germany, where unfavorable terrain makes a Pact attack unlikely to succeed. In short, any proposal must be judged by its overall effect, not by giving veto power to each criterion.

SOME SPECIFIC TRADING PROPOSALS

A variety of deals might be advantageous to both sides, involving trades of armor for armor, air for air, air for armor, battlefield nuclear weapons for armor, SDI for armor, or a grand package involving all of the above. As a rule, the more comprehensive the deal, involving more types of weapons, the easier it is to create incentives for both parties to the agreement, but the greater also will be its technical complexity and the time required to negotiate it.

Armor for Armor

The obvious problem with a simple armor-to-armor trade is the asymmetry in the present inventory of the two sides. The Soviets have accepted that the side that is ahead in a given category should give up more, but with the present disparity, any straight armor-for-armor trade would have to be quite asymmetrical to be attractive to NATO.

If Gorbachev wants to cut expensive, forward-deployed Soviet

maneuver divisions unilaterally, but needs a token exchange from NATO for domestic political reasons, it would be quite easy to devise arms control formulas that look even but turn out to be highly asymmetric in their effects. For example, Senator Sam Nunn has proposed equal 50 percent reductions of U.S. and Soviet forces in the MBFR region of Central Europe. Since Soviet ground forces outnumber American ones in this area by about 5 to 1, this trade could eliminate thirteen Soviet divisions (10 from East Germany) in exchange for two American divisions taken from southern Germany, where NATO's force-to-space ratio is more than adequate.⁸⁹ This would go far toward eliminating any chance of a Soviet standing start attack. However, it would have no effect on a long, attritional war unless the Soviet units were disbanded and their equipment destroyed rather than just pulled back to the Soviet Union. In fact, it would make the long-war balance worse for the West, since it might be impossible to bring the two American divisions back to Germany.⁹⁰

Even somewhat less uneven trades might still be advantageous to NATO. Assume that the Soviet Union dismantles 4,500 tanks out of a Pact total in the MBFR region of about 17,000. In exchange, the United States dismantles 1,500 tanks out of a NATO total there of about 7,000. Translating this into firepower scores, the Soviets would be relinquishing about six ADEs, NATO less than two. At the same time both would be decreasing the proportion of offensive weapons in their force structure. For both reasons, NATO would be more secure against a Pact attack, at least in the

early weeks of a war. After such a trade, the Pact/NATO ADE ratio would be 18:24 at the beginning of mobilization, 34:31 after two weeks, and 75:44 after 90 days.⁹¹

The Soviets might not be interested in such trades unless they are linked to reductions in other forces. Indeed, their discussions of asymmetric armor reductions are always in the context of trades in other categories of weapons, where NATO may enjoy an advantage. Consequently, it is important to consider possible airpower trades as well.

Air for Air

Devising limits on offensive conventional airpower involves a number of dilemmas. One is its overlap with nuclear missions at one end of the spectrum and air defense missions at the other. Conventional deep-strike forces, like U.S. F-111s and Soviet SS-21s, double as theater nuclear forces. Thus, destroying or withdrawing F-111s from Britain is bound to intensify European complaints that the American nuclear deterrent is being decoupled from NATO. On the other end of the spectrum, scrapping only specialized deep interdiction aircraft would leave intact "swing" aircraft that are also capable, in some measure, of preempting enemy airfields. But scrapping swing airpower would diminish the air defenses of both sides, which are desirable to preserve.

Another problem is the easy return in crisis of aircraft banned from the central region. Limits only on the MBFR region would be attractive because of their simplicity and because they

would take first-strike weapons out of each other's range. But it is easy to fly aircraft back into harm's way on short notice.⁹² This problem would be solved if the planes were scrapped and covered by global limits, rather than just limits for Central Europe. This, however, could adversely affect air balances against China and Third World states.

A final problem is that the payoff that the Soviets might be most interested in--a ban on high-accuracy, deep-strike "emerging technologies"--might be impossible to verify. Precision-guided munitions would be especially difficult to monitor, since they are small, numerous, easily concealed, and in some cases consist of nothing more than strap-on kits that improve the accuracy of ordinary bombs.⁹³ Likewise, advances in target acquisition capability by airborne radar are hard to limit, since the same kinds of systems have an indispensable role in air defense. Consequently, the best way to limit "emerging technologies" is to limit their delivery platforms--deep-strike aircraft and surface-to-surface missiles, including such proposed systems as NATO's ATACMs or a follow-on to the Lance missile.

Given all of these difficulties, the simplest solution would be to prohibit deployment of all systems of a given payload within range of the opponent's airfields. This would cover systems like the Soviet SS-21, Backfire, and Fencer, the American F-111, and the European Tornado. A more complicated alternative would be to place low global limits on the number of such systems. Either of these arrangements would hinder Pact efforts to preempt NATO's

command and control, theater nuclear forces, and airpower, a mission which has had a high priority in the Soviets' conventional offensive strategy. On the other hand, such limitations on airpower would hinder NATO's ability to use its offensive airpower to offset the Pact's advantage in offensive ground forces.

Air for Armor

Looking at each of the trades described above separately, the asymmetric armor-for-armor deal would be more attractive to NATO. The air-for-air deal would be more attractive to the Pact. Both sides might perceive benefit in a combination of the two. Indeed, this deal might be quite easy to make, because the Soviets probably rate the threat of the "emerging technologies" more highly than NATO does. Given the urgency of Ogarkov's plea for funds to parry this threat, the Soviets should jump at a chance to curtail it through arms control. Some Western analysts, however, are quite skeptical about the cost-effectiveness of deep interdiction, even with improved weapons.⁹⁴ It is always smart business to trade away goods that are overvalued by the buyer.

Battlefield Nuclear Weapons or SDI for Armor

Because of the Soviet advantage in conventional forces as a whole, it may turn out to be impossible to strike a deal by limiting conventional forces alone. Indeed, the Soviets strongly imply that battlefield and other tactical nuclear weapons must be included in any restructuring of conventional forces.⁹⁵ Perhaps

if tanks and artillery were banned from the Atlantic to the Urals, further denuclearization of the European continent would be desirable. But as long as a successful Pact conventional offensive is still a possibility, cuts in battlefield nuclear weapons should be avoided.⁹⁶

An alternative source of bargaining leverage is SDI. People usually think of SDI as a bargaining chip to be traded for cuts in offensive strategic nuclear forces. But why should the United States have to surrender bargaining chips to get the Soviet Union to agree to a symmetrical 50 percent reduction in offensive strategic forces? Why isn't half of America's nuclear arsenal payment enough for half of Russia's? Rather than paying twice for strategic reductions, America should offer its biggest bargaining chip, SDI, in exchange for steep, asymmetrical reductions in conventional armor.

An overt trade of this kind is unlikely, however, because of the apparent incommensurability of the goods to be exchanged. Moreover, devotees of SDI might portray such an arrangement as forfeiting America's security in favor of Europe's. Nonetheless, as part of a simultaneously negotiated nuclear and conventional package, the prospect of SDI limits would probably pry loose significant Soviet concessions on conventional forces. Such a deal would certainly be attractive to Gorbachev and should be attractive to the United States as well. Given its complexity, this package would take time to negotiate and might have to unfold in stages, but getting good agreements that solve real security

problems is more important than getting quick, superficial fixes.⁹⁷

CONCLUSIONS AND CAVEATS

The first rule of arms control is that it should not make a basically stable situation less stable. NATO's conventional forces are already sufficient to make a quick Soviet victory unlikely. Moreover, NATO's nuclear deterrent is credible enough to make any Soviet gamble on such a victory intolerably risky. Consequently, NATO should make sure that its formidable present deterrent is not sacrificed for an arms control will-o'-the-wisp. In particular, NATO should not significantly reduce its force-to-space ratio or scrap its battlefield nuclear weapons unless the Soviets agree to a very radical restructuring of their offensive armored forces.

Nevertheless there are plausible trades that might benefit both sides, increasing the stability of the situation. Especially attractive would be a package that includes asymmetric reductions of armor, either in Central Europe or from the Atlantic to the Urals, and withdrawal of deep-strike missiles and aircraft from the European theater. By linking this package to a broader agreement including limits on SDI, NATO should be able to extract highly favorable terms.

This optimism hinges on evidence that Gorbachev's proposals for restructuring conventional forces are made in good faith.

Gorbachev has powerful economic incentives to desire such restructuring and no good strategic reasons to shun it, provided that NATO reciprocates. The only apparent barrier is the Soviet military's desire to retain "counteroffensive" options as part of any switch to a more defensive conventional strategy. However, Gorbachev probably has the political power to overcome military objections as long as he can show that he is getting valuable concessions from NATO, such as limits on SDI or conventional "emerging technologies."

NATO should aggressively pursue these possibilities for conventional arms control. If Gorbachev is not serious, NATO will expose him and score a propaganda coup. If he is serious, as seems likely, the military security of both sides could be enhanced and a major source of political tensions eliminated.

NOTES

Among the numerous people who offered helpful suggestions and criticisms, I would particularly like to acknowledge Ted Greenwood, Philip Karber, Robert Legvold, Barry Posen, and Cynthia Roberts. Hope Harrison provided research assistance, and the National Council for Soviet and East European Research provided financial support.

1. Les Aspin, "The World after Zero INF," speech delivered to the American Association for the Advancement of Science, Crystal City, Virginia, September 29, 1987, p. 2. See also Sam Nunn, "NATO Challenges and Opportunities: A Three-Track Approach," speech to a North Atlantic Treaty Organization Symposium, Brussels, April 13, 1987.

2. Viktor Karpov, TASS, October 12, 1987; Foreign Broadcast Information Service, Daily Report, Soviet Union (hereinafter FBIS), October 13, 1987, pp. 4-5.

3. Warsaw Pact communique, Pravda, May 30, 1987. Gorbachev himself has noted asymmetries in the conventional force postures of the two alliances "due to history, geography, and other factors, adding that "we are in favor of removing the disparities ... by reducing their numbers on the side that has a superiority in them." Speech in Prague, April 10, 1987; Pravda, April 11, 1987.

4. Vladimir Petrovskii, Deputy Foreign Minister, quoted by TASS, June 22, 1987, cited in FBIS, June 23, p. AA3.

5. For elaboration, see Snyder, "The Gorbachev Revolution: A Waning of Soviet Expansionism?" International Security, Vol. 12, No. 3 (Winter 1987/88), pp. 93-131.

6. See the detailed, empirical study by Sean M. Lynn-Jones, "Lulling and Stimulating Effects of Arms Control," in Albert Carnesale and Richard N. Haass, Superpower Arms Control: Setting the Record Straight (Cambridge, Mass.: Balinger, 1987), pp. 223-274.

7. M. S. Gorbachev, "The Reality and Guarantees of a Secure World," Pravda, September 17, 1987, pp. 1-2; FBIS, September 17, p. 24.

8. Pravda, February 14, 1987; Current Digest of the Soviet Press (hereinafter CDSP), Vol. 39, No. 7, p. 23.

9. Comments by Major General Vadim Ivanovich Makarevskii, a retired officer now on the staff of the Institute for World Economy and International Relations, at a roundtable discussion, "Of Reasonable Sufficiency, Precarious Parity, and International

Security," New Times, No. 27 (July 13, 1987), pp. 18-21; FBIS, July 16, 1987, p. AA5.

10. Pravda, May 30, 1987, p. 2.

11. Lt. Gen. Mikhail Abramovich Mil'shtein, in the New Times roundtable; FBIS, July 16, 1987, p. AA2. Another formulation specifies the "goal of reorganizing the armed forces of the sides, such that defensive actions would be guaranteed greater success than offensive operations." - V. Avakov and V. Baranovskii, "V interesakh sokhraneniia tsivilizatsii, Mirovaia ekonomika i mezhdunarodnye otnosheniia (hereinafter MEiMO), No. 4 (1987), p. 30.

12. Colonel-General M. A. Gareev, Deputy Chief of the General Staff, Moscow TV news conference, June 22, 1987; FBIS, June 23, 1987. Colonel-General N. F. Chervov of the General Staff's arms control directorate has said that "one should not expect unilateral steps on the part of the Warsaw Pact. The NATO countries must take practical steps to meet the Warsaw Pact halfway." *Ibid.*, p. AA3.

13. Makarevskii, FBIS, July 16, p. AA5.

14. Mil'shtein, FBIS, July 16, p. AA3.

15. Gareev press conference, June 22, 1987; FBIS, June 23, 1987, p. AA7. For a discussion of the offensive, first-strike character of NATO's deep-strike air capability, see the interview of Army General A. I. Gribkov, Chief of Staff of the Warsaw Pact Joint Armed Forces, Krasnaia zvezda, September 25, 1987, pp. 2-3; FBIS, September 30, 1987, p. 5. Thanks to Stephen Meyer for this citation.

16. Christopher Donnelly and Phillip Petersen, "Soviet Strategists Target Denmark," International Defense Review, Vol. 19, No. 8 (1986), p. 1049, citing Gen. Col. M. Zaytsev, "Organizatsiia PVO," Voyennyi vestnik, No. 2 (1979), p. 23.

17. Major General V. Tatarnikov, "Vienna: Crucial Stage Ahead," Krasnaia zvezda, September 2, 1987, p. 3; FBIS, September 10, 1987, pp. 1-2. A civilian making the same argument is Aleksandr Bessmertnykh, Deputy Minister of Foreign Affairs, Moscow television interview, May 30, 1987; FBIS, June 3, p. CC6.

18. Gareev and Chervov press conference, June 22, 1987; FBIS, June 23, 1987. These and all other Soviet commentators deny that there is an overall imbalance of conventional forces favoring the Soviet Union.

19. NATO Information Service, NATO and the Warsaw Pact, Force Comparisons (Brussels, 1984), shows 18,400 Pact anti-tank

guided weapon launchers in or easily deployable to the European theater (35,400 west of the Urals) versus 12,340 for NATO (19,170, including North America). Attack helicopters are counted at 560 (900) for NATO, 1,135 (1,175) for the Pact; unarmed helicopters at 1,900 (6,000) for NATO, 1,180 (1,375) for the Pact.

20. Makarevsky, FBIS, July 16, 1987, p. AA3.

21. Pravda, September 17; FBIS, September 17, pp. 24-25.

22. See Avakov and Baranovski, MEIMO, No. 4 (1987), p. 30. For a summary and evaluation of European proposals for a non-offensive defense, see David Gates, "Area Defence Concepts, Survival, Vol. 29, No. 4 (July/August 1987), pp. 301-317; and Jonathan Dean, "Alternative Defense--Answer to NATO's Post INF Problems?" International Affairs (London, forthcoming).

23. Gribkov, FBIS, September 30, 1987, p. 7. For another statement of the view that the defensive doctrine does not mean "passivity," see Rear Admiral G. Kostev, Professor of Military Sciences, "Nasha voennaia doktrina v svete novogo politicheskogo myshleniia," Kommunist vooruzhennykh sil (September 1987), pp. 9-15. Similarly, Colonel General V. M. Gordienko argues that "tanks and tank troops are strong not only on the offensive but also in defense. They are capable of quickly becoming an armored shield in the aggressor's way, repulsing the strike by his forces, and moving on to the offensive." Quoted in Trud, September 13, 1987, p. 1; FBIS, September 23, p. 70.

24. N. V. Ogarkov, Istoriia uchit bditel'nosti (Moscow: Voenizdat, 1985), p. 49.

25. M. A. Gareev, M. V. Frunze--Voennyi teoretik (Moscow: Voenizdat, 1985). The following analysis was spurred in part by the comments of William Burroughs at a conference on Soviet defense policy at the Kennan Institute for Advanced Russian Studies, Woodrow Wilson International Center for Scholars, Washington, D.C., September 21-23, 1987, though Burroughs should bear no responsibility for the particular interpretation I give here.

26. *Ibid.*, p. 242.

27. *Ibid.*, pp. 242-243. For a recent reassertion of the view that the "surprise factor" is the "crucial element" in NATO's deep-strike air strategy, see Marshal Viktor Kulikov, commander in chief of the Warsaw Pact Joint Armed Forces, "NATO: The Threat Remains," Narodna armiya (Sofia), October 13, 1987; FBIS, October 16, p. 3.

28. Gareev, Frunze, pp. 243-244.

29. Ibid., p. 245.

30. Ibid., p. 246.

31. Kokoshin and Larionov, "Kurskaia bitva v svete sovremennoi oboronitel'noi doktriny," MEiMo, No. 8 (August 1987), pp. 32-40.

32. Kokoshin and Larionov, quoting Pravda, May 30, 1987, p. 33.

33. Kokoshin and Larionov, MEiMO, No. 8, p. 39. Another important point is their reiteration of Gareev's argument that the problem in June 1941 was not that the Soviets lost the initiative, but rather that the obsessive desire to fight on the territory of others lured them into a deployment that was vulnerable to preemption. Ibid., p. 37.

34. Sophisticated studies of the effects of restraint in Soviet defense spending have concluded that freezing military outlays at the 1980 level would result in a 0.5 to 1.0 percent increase in per capita consumption. Abraham Becker, Sitting on Bayonets: The Soviet Defense Burden and the Slowdown of Soviet Defense Spending (Santa Monica: RAND/UCLA Center for the Study of International Behavior, JRS-01, December 1985), p. 33, citing Gregory Hildebrandt, "The Dynamic Burden of Soviet Defense Spending," in Joint Economic Committee, The Soviet Economy in the 1980s, Part 1, pp. 331-350, and Mark Hopkins and Michael Kennedy, The Tradeoff between Consumption and Military Expenditures for the Soviet Union during the 1980s (Santa Monica: RAND R-2927, November 1982). These do not address the effects of larger cuts, however, or of defense cuts on investment in civilian high technology sectors. For the argument that "the most critical economic burden of defense expenditures is the preemption of advanced technology and sapping of the economy's innovational energies," see Stanley H. Cohn, "Economic Burden of Soviet Defense Expenditures: Constraints on Productivity," Studies in Comparative Communism, Vol. 20, No. 2 (Summer 1987), pp. 145-162.

35. See Bruce Parrott, The Soviet Union and Ballistic Missile Defense (Boulder: Westview, 1987); and Jeremy Azrael, The Soviet Civilian Leadership and the Military High Command, 1976-1986 (Santa Monica: RAND R-3521-AF, June 1987).

36. George Weickhardt, "The Soviet Military-Industrial Complex and Economic Reform," Soviet Economy, Vol. 2, No. 3 (July/September 1986), pp. 193-220, esp. pp. 211 and 220. For an argument stressing the long-run compatibility of military and civilian economic modernization, see Abraham Becker, "Gorbachev's Program for Economic Modernization and Reform: Some Important Political-Military Implications" (Santa Monica: RAND P-7384, September 1987).

37. See Snyder, "The Gorbachev Revolution: A Waning of Soviet Expansionism?"

38. For elaboration and supporting citations, see *ibid.*

39. This is argued, with little or no textual evidence, by Thomas Wolfe, Soviet Power and Europe (Baltimore: Johns Hopkins, 1970). Notra Trulock and Phillip Petersen have uncovered a rare statement from 1965 that explicitly asserts "Europe will remain hostage to the Soviet Army." Notra Trulock and Phillip Petersen, "Soviet Views and Policies toward Theater War in Europe," a paper presented at a conference on Soviet defense policy at the Kennan Institute for Advanced Russian Studies, Woodrow Wilson International Center for Scholars, Washington, D.C., September 21-23, 1987, p. 4.

40. Raymond Garthoff, Soviet Strategy in the Nuclear Age (New York: Praeger, 1958), p. 136, citing a 1950 article in Voennaia mysl'.

41. Michael McGwire, Military Objectives in Soviet Foreign Policy (Washington, D.C.: Brookings, 1987).

42. Michael McGwire, "Soviet Military Objectives," World Policy Journal, Vol. 4, No. 4 (Fall 1987), pp. 723-731. In particular, he notes the incentive to stay on the defensive in Europe in the event of a limited war in the Near East.

43. Carl Linden, Khrushchev and the Soviet Leadership (Baltimore: Johns Hopkins, 1966), pp. 191-192; and Thomas Wolfe, Soviet Strategy at the Crossroads (Cambridge: Harvard, 1965), pp. 121-123, 131, and 149-152.

44. For theoretical support, see Barry Posen, The Sources of Military Doctrine: France, Britain, and Germany between the World Wars (Ithaca: Cornell, 1984), esp. p. 49.

45. For elaboration of this and the following arguments, see Snyder, "The Gorbachev Revolution: A Waning of Soviet Expansionism?"

46. This is extensively documented by Dale Herspring, "On Perestroika: Gorbachev, Yazov, and the Military," Problems of Communism, Vol. 36, No. 4 (July-August 1987), pp. 99-107.

47. New York Times, May 31, 1987.

48. Pravda, July 27, 1987, p. 5.

49. Indeed, it is even conceivable that the authority of the military may already be rebounding from its nadir in June 1987,

when then-candidate Politburo member Boris Yeltsin charged the military with "smugness, boasting, and complacency." Krasnaia zvezda, June 17, 1987. Though pressure for military reforms has been maintained, outright denunciations of this kind have not been repeated.

50. Snyder, "The Gorbachev Revolution: A Waning of Soviet Expansionism? A final barrier to conventional arms control, some argue, is the Soviets' need to maintain a large force in Eastern Europe to prevent revolts there. However, none of the reductions in armored forces discussed in this paper would prevent the Soviet Union from using light infantry forces to maintain its hegemony in Eastern Europe.

51. Vitaly Zhurkin, Deputy Director of the U.S.A. and Canada Institute, Sergei Karaganov, a section head at the Institute, and Andrei Kortunov, a senior researcher there, "Reasonable Sufficiency--Or How to Break the Vicious Circle," New Times, No. 40 (October 12, 1987), pp. 13-15. See also their article in S.S.A.: Ekonomika, Politika, Ideologiya (December 1987).

52. Zhurkin, et al., "Reasonable Sufficiency," p. 14. They also stress that "the bulk of the costs of the military confrontation is accounted for by the combined arms units and conventional armaments." *Ibid.*, p. 15.

53. New York Times interview, October 30, 1987, p. A6. For background on this issue, see Parrott, The Soviet Union and Ballistic Missile Defense, ch. 5. Gorbachev continues to call for cheap countermeasures to SDI. See his interview with Tom Brokaw, New York Times, December 1, 1987, p. A12.

54. For a discussion of the military's analytical monopoly, see Condoleezza Rice, "The Party, the Military, and Decision Authority in the Soviet Union," World Politics, Vol. 40, No. 1 (October 1987), pp. 66-71. For Akhromeev's opposition to unilateral Soviet reductions of conventional forces and to a conventional strategy of "passive defense," see his "Doktrina peredotvrashcheniia voyny, zashchity mira i sotsializma," Problemy mira i sotsializma, No. 12 (December 1987), pp. 23-28.

55. Zhurkin, et al., "Reasonable Sufficiency," p. 15.

56. In part, this hinges on one's assessment of how powerful Gorbachev is, not only vis-a-vis the military, but in general. For two quite different assessments, see Thane Gustafson and Dawn Mann, "Gorbachev's Next Gamble," Problems of Communism, Vol. 36, No. 4 (July/August), pp. 1-20; and Jerry Hough, "Gorbachev Consolidating Power," *ibid.*, pp. 21-43.

57. For a more comprehensive discussion of the factors affecting the conventional balance and NATO's prospects in a

conventional war, see John J. Mearsheimer, "Numbers, Strategy, and the European Balance," International Security, Vol. 12, No. 4 (Spring 1988), pp. 174-185.

58. For the former estimate, see Barry Posen, "Is NATO Decisively Outnumbered?" International Security, Vol. 12, No. 4 (Spring 1988), pp. 186-202. Somewhat more pessimistic studies are cited in Andrew Hamilton, "Redressing the Conventional Balance: NATO's Reserve Manpower," International Security, Vol. 10, No. 1 (Summer 1985), pp. 111-136, see esp. Table 3. William Mako, U.S. Ground Forces and the Defense of Central Europe (Washington, D.C.: Brookings, 1983), offers the fullest explanation of how division equivalents are calculated.

59. Barry Posen, "Is NATO Decisively Outnumbered?" and "Measuring the European Conventional Balance: Coping with Complexity in Threat Assessment," International Security, Vol. 9, No. 3 (Winter 1984/85), pp. 47-88.

60. Hamilton, "Redressing," p. 122, note 7.

61. Donnelly and Hines, "Soviet Strategists Target Denmark," pp. 1047-1051, figure 5.

62. See, for example, Ted Greenwood, "The Role of Airpower in a NATO-Warsaw Pact Conventional Conflict," in Philip Sabin, ed., The Future of U.K. Airpower (London: Brassey's, forthcoming, 1988).

63. Chervov and Gareev press conference, FBIS, June 23, 1987.

64. On this and other barriers to progress in conventional arms control, see Robert D. Blackwill, "Conceptual Problems of Conventional Arm Control," International Security, Vol. 12, No. 4 (Spring 1988), pp. 28-47.

65. Philip A. Karber, "In Defense of Forward Defense," Armed Forces Journal International (May 1984), pp. 27-50, esp. p. 37.

66. Richard Betts, Surprise Attack (Washington, D.C.: Brookings, 1982), is the most thorough analysis of this problem. Challenging Betts's view that attempts to achieve surprise almost always succeed at the outset of a war is Ariel Levite, Intelligence and Strategic Surprises (New York: Columbia, 1987).

67. Aspin speech, September 29, 1987, p. 12.

68. John J. Mearsheimer, Conventional Deterrence (Ithaca: Cornell University Press, 1983).

69. Posen, "Measuring the European Conventional Balance," p.

55 and passim; John J. Mearsheimer, "Why the Soviets Can't Win Quickly in Central Europe," International Security, Vol. 7, No. 1 (Summer 1982), pp. 3-39; and Mearsheimer, "Numbers, Strategy, and the European Balance."

70. This discussion is based on Posen, "Measuring the European Conventional Balance," pp. 74-78.

71. This assumes 1 ADE per 50 km along 500 km of rough terrain and 1 ADE per 25 km along 250 km of flat terrain, yielding a requirement of 20 ADEs to cover the front with no strategic reserve. NATO would have 22 or more ADEs on the central front at the outset of mobilization. Calculations based on Posen, "Is NATO Decisively Outnumbered?" and Posen, "Measuring the European Conventional Balance," p. 75.

72. Philip Karber, using a slightly different method of measurement, reports similar findings. Karber, "Forward Defense," pp. 34-36.

73. Viktor Karpov, TASS, October 12, 1987; FBIS, October 13, p. 5.

74. For a theoretical treatment, see Robert Jervis, "Cooperation under the Security Dilemma," World Politics, Vol. 30, No. 2 (January 1978), pp. 167-214.

75. It is a widely believed myth that the European powers were unable to define "aggressive" armaments in the 1930s because of the inherent intellectual difficulty of the task. In fact, the powers failed to agree on such a definition because some of them did not want to give up their offensive weapons and because all of them sought to define as "defensive" whatever type of weapon they happened to have in disproportionate quantity. The problem was entirely volitional, not intellectual. Indeed, then as now, serious arms controllers identified tanks, heavy mobile artillery, and long-range ground-attack aircraft as the preeminently offensive weapons. The conclusion is made quite clear in Marion Boggs, Attempts to Define and Limit "Aggressive" Armament, University of Missouri Studies, Vol. 16, No. 1 (Columbia, Mo.: University of Missouri, 1941), pp. 41, 48-49, and 98-100.

76. Joshua Epstein, Strategy and Force Planning (Washington, D.C.: Brookings, 1987), table D-1, note "r."

77. For example, Robert Blackwill, "Conceptual Problems of Conventional Arms Control," proposes "common ceilings on tanks and artillery," p. 47. Aspin's September 29 speech, p. 12, stresses deep reductions and limitations on armored forces--primarily tanks.

78. Mako, U.S. Ground Forces and the Defense of Central

Europe, appendix tables A-2 through A-14, pp. 114-125.

79. Major J. B. A. Bailey, Royal Artillery, "The Case for Pre-placed Field Defences," International Defence Review, No. 7 (1984), pp. 887-892.

80. J. F. C. Tillson, "The Forward Defense of Europe," Military Review, Vol. 66, No. 5 (May 1981), p. 74. This figure does not include the ten divisions' annual operating costs, which Tillson estimated at \$3.5 billion.

81. Philip Karber interview, September 1987.

82. Because of its long range, the F-15 can also operate in an offensive role, escorting fighter bombers in attacks on ground installations behind enemy lines. But if fighter-bombers were banned, then the F-15 would be strictly defensive, except for the F-15E, which has its own ground-attack capability. See Alfred Price, Air Battle Central Europe (New York: Free Press, 1986), esp. pp. 37-46 and 173-177.

83. *Ibid.*, pp. 92-101.

84. Posen, "Measuring the European Conventional Balance," p. 66.

85. See Greenwood, "The Role of Airpower in a NATO-Warsaw Pact Conventional Conflict," esp. pp. 16-19; Price, Air Battle Central Europe; and Lt. Col. D.J. Alberts, USAF, Deterrence in the 1980s: Part II, The Role of Conventional Airpower, Adelphi Paper No. 193 (London: International Institute for Strategic Studies, 1984).

86. In addition, if NATO were the winner in this duel to destroy the air defenses of the other side, the Soviet Union might lose confidence in its ability to detect and parry nuclear attacks by NATO fighter-bombers flying through the corridors cut during the course of the conventional air war. This could trigger Soviet nuclear preemption out of fear that Soviet strategic command and control in Moscow was becoming vulnerable. See Barry Posen, "Inadvertent Nuclear War? Escalation and NATO's Northern Flank," International Security, Vol. 7, No. 2 (Fall 1982), pp. 28-54; and Posen, "Is NATO Decisively Outnumbered?"

87. Price, Air Battle Central Europe, pp. 162-163. The use of IFF (identification friend-or-foe) transponders and pre-designated return corridors are only a partial answer to this problem.

88. Deep-strike aircraft might be retained in small numbers, sufficient to provide a theater nuclear deterrent in the wake of the INF Treaty, but insufficient to mount a significant

conventional first strike. For tables summarizing the characteristics and counting the inventories of these weapons, see John M. Collins, U.S.-Soviet Military Balance, 1980-1985 (Washington: Pergamon-Brassey's, 1985), esp. pp. 218 and 268.

89. Nunn speech, April 13, 1987.

90. David Yost, "Beyond MBFR," Orbis, Vol. 31, No. 1 (Spring 1987), pp. 99-134, has a good discussion of the effect of geographical asymmetries on conventional arms control.

91. These calculations are based on Mako, U.S. Ground Forces and the Defense of Central Europe. A widely publicized RAND Corporation study has found that the Pact would have to accept asymmetrical reductions at a ratio of 5:1 (e.g., 20 Pact ADEs for 4 NATO ADEs) for NATO to be able to hold its forward defense line at M + 30. The need for this extreme asymmetry is in part due to NATO's force-to-space ratio problem. In part, however, the RAND findings are driven by assumptions about the firepower balance and Pact reinforcement rates that are much more pessimistic than Posen's. See James Thomson and Nanette Gantz, "Conventional Arms Control Revisited: Objectives in the New Phase," September 1987, discussed in the New York Times, November 12, 1987. Force-to-space deficits resulting from such a trade could be offset by adding fortifications or anti-tank infantry to the front line.

92. This would even be a problem for a ban on deep-strike weapons from the Atlantic to the Urals.

93. Price, Air Battle Central Europe, esp. chs. 4 and 5, describes current "smart" munitions. See also Benjamin Lambeth, "Conventional Forces for NATO," in Joseph Kruzal, ed., American Defense Annual, 1987-88 (Lexington, Mass.: D. C. Heath & Co., 1987). Office of Technology Assessment, U.S. Congress, New Technology for NATO: Implementing Follow-On Forces Attack, OTA-ISC-309 (Washington, D.C.: U.S. Government Printing Office, June 1987), discusses future systems.

94. Greenwood, "The Role of Airpower in a NATO-Warsaw Pact Conventional Conflict," pp. 40-42, argues that interdiction near the battlefield is more effective than deep interdiction, except for attacks on small numbers of high-value fixed targets in the enemy's rear.

95. "No clear boundary exists between conventional weapons and nuclear weapons," says Viktor Karpov, FBIS, October 13, p. 4. For an evaluation of such a proposal, see Joseph S. Nye, "For a 'Triple-Zero' Pact," New York Times, October 11, 1987, p. E27. For Soviet insistence on including "dual capable" nuclear systems in conventional arms talks, see Serge Schmemmann, "West Rebuffs East on Pact on Europe Troop Cuts," New York Times, December 6, 1987, p. 23.

96. For the argument that nuclear first-use options must be retained as a hedge against disaster even if the conventional balance is improved, see Richard Betts, "Conventional Deterrence: Predictive Uncertainty and Policy Confidence," World Politics, Vol. 37, No. 2 (January 1985), pp. 153-179.

97. SDI is not the West's only "off-agenda" bargaining chip. Warner Schilling reminds me that, insofar as greater integration in the world capitalist economy is one of the indirect goals of Gorbachev's arms control diplomacy, the West might gain bargaining leverage by making this economic linkage explicit.