POST-INF: TOWARD MULTIPOLAR DETERRENCE

James C. Wendt and Peter A. Wilson

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I. INTRODUCTION[1]

The NATO nations have never had enough conventional forces to deter the Soviets in Europe, and they have relied on NATO's nuclear forces--primarily American--for deterrence. As Soviet conventional and nuclear forces have grown larger and more threatening, the credibility of using U.S. nuclear forces in response to Soviet aggression in Europe has eroded. The decision to place U.S. Pershing II (PII) missiles and ground-launched cruise missiles (GLCMs) in Western Europe was intended to bolster this credibility. The intermediate nuclear forces (INF) agreement, which removes these missiles, although necessary for political reasons, is likely to further erode the credibility of the U.S. threat to use nuclear weapons in the defense of Europe.

In the short run, some technical fixes could compensate somewhat for the removal of the PII and GLCM missiles. But, in the longer run, the current deterrence system, which relies on U.S. nuclear weapons to deter the Soviet Union, is likely to increasingly evolve toward a multipolar system including France, the United Kingdom and China, which possess growing nuclear arsenals playing a larger role in deterrence.

Here we shall analyze the elements of deterrence and examine how U.S. nuclear forces have produced extended deterrence in Europe. This analysis will lead to prescriptions about how best to preserve this system. We shall then analyze the growing role of British, French and Chinese nuclear forces in deterring the Soviet Union from aggression and discuss what steps the United States can take to encourage this evolution in a favorable direction.

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[1]We would like to acknowledge the useful comments by Leon Sloss. Of course, we are solely responsible for all remaining errors of fact and interpretation.

II. CURRENT EXTENDED DETERRENCE CONCEPT

A twofold military threat faces Western Europe. On the one hand, the Warsaw Pact has assembled a preponderance of conventional forces in Eastern Europe and the western Soviet Union which threaten the NATO countries of Europe. Whether one compares the currently deployed forces or the forces available after full mobilization, the Soviets enjoy a considerable advantage in combat divisions within the theater. Moreover, the Soviets now have a large number of nuclear warheads that could be used against targets in Europe. Deterring both conventional and nuclear aggression is the primary goal of the Alliance.

The NATO nations have never had conventional forces equivalent to those of the Pact. When NATO failed to meet the Lisbon goals of 100 divisions in 1952, deterrence depended on American nuclear superiority to threaten the Soviets with massive attacks in the event of Soviet aggression. However, with the increased threat to the American homeland, such threats became less credible.

Currently, NATO expects to deter Soviet attacks through a combination of conventional and nuclear forces. NATO's conventional forces are expected to be strong enough to prevent an easy and rapid Soviet victory. In the event of a Soviet conventional attack, NATO's conventional forces would be expected to hold out long enough for the allies to consult in an orderly manner and to negotiate with the aggressors to terminate the conflict as soon as possible on terms favorable to the Alliance. This period of time is never explicitly stated, but it surely should be measured in weeks rather than days. It is hoped that NATO's conventional forces could hold off an attack indefinitely; however, such an outcome is not expected, only hoped.

If NATO's conventional forces were unable to contain the Pact attack, NATO, after proper consultation, would employ nuclear weapons. Nuclear employment would be expected to accomplish two different goals simultaneously. First, it would compensate for the military deficiencies of NATO's conventional forces and restore the deteriorating

military situation. If the Pact appeared about to break through NATO's defenses, the use of nuclear weapons would have to stop their advance.

Second, nuclear employment by NATO would make the Soviets realize that NATO was willing to escalate the war, despite the costs and risks, and thus cause them to recalculate and cease their aggression. Continued aggression would be met with further nuclear escalation, culminating ultimately in massive attacks against the Soviet homeland unless the Soviets stopped their aggression.

In addition to deterring conventional attacks, NATO must be able to deter nuclear attacks in the theater. Such attacks could be either the first use of nuclear weapons by the Soviets or a retaliatory strike after a first use by NATO.

NATO expects to be able to deter Soviet nuclear attacks by having the ability to respond in such a way that the Soviets could expect to achieve no military edge through these attacks. In addition, NATO must have sufficient forces to threaten to continue this escalation process to any higher level; however, such escalation would have to be controlled.

The threat of nuclear escalation forms the heart of extended deterrence. The guarantee by the United States to use its nuclear weapons--both those stationed in Europe and American strategic forces--in the defense of Europe has deterred Soviet aggression in Europe during the postwar period.

III. EROSION OF EXTENDED DETERRENCE

Obviously, if the escalation process were to completely unfold, the United States, as well as Europe and the Soviet Union, would suffer an unmitigated disaster. Thus, for this policy to be credible, NATO must be able to carefully convey to the Soviets the idea that any particular level of nuclear employment is still limited but is a dangerous step up the escalation ladder.

To carry out such a policy effectively, NATO must have a diverse array of survivable nuclear weapons capable of attacking many different Soviet military targets. Since it cannot know in advance what a Soviet attack would look like, NATO must be prepared to retaliate at any level from a massive, comprehensive, all-theater attack to more limited and local attacks. In each case, NATO must have forces strong enough at least to restore the status quo military situation while threatening further escalation.

During the past 20 years, the ability of NATO's forces to carry out such attacks has degraded. NATO's short-range artillery-fired atomic projectiles (AFAPs) have been modernized. The W-79 203-mm nuclear shell, an enhanced radiation (ER) weapon, has been in production since 1981, but the number and disposition of these weapons has not been made public. A new 155-mm nuclear shell, the W-82, may soon go into production.[1] However, NATO's other short-range nuclear system, the Lance, is becoming obsolescent. At Montebello in 1983, the Allies decided to replace the Lance with a more modern missile, but it remains to be seen whether the Alliance can follow through on this decision.

To carry out deeper, more escalatory attacks against Eastern Europe and the western military districts of the Soviet Union, NATO has relied on its dual-capable aircraft (DCA)--the F-4s and F-16s based in the Federal Republic of Germany (FRG) and Benelux countries and F-111s based

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[1]See Thomas B. Cochran, William Arkin and Milton Hoenig, *Nuclear Weapons Databook, Vol. 1: U.S. Nuclear Forces and Capabilities*, Ballinger: New York, 1983, pp. 308-310.

in the United Kingdom (UK). However, the effectiveness of DCAs has been undermined by the improvements of Pact air defenses and by the introduction of Soviet SS-20, SS-12 and SS-23 missiles. Pact air defenses have become sufficiently effective that penetration by NATO aircraft can no longer be assured--at least not in the small, precise attacks necessary for escalation control. Furthermore, SS-20s have the range and accuracy to attack all NATO air bases and destroy most of the DCA aircraft on the ground.

The PIIs and GLCMs were introduced to address this problem. Because these missiles are mobile, they could be dispersed early--presumably before any fighting occurred. Their dispersal areas are large and the missiles would be well concealed. Thus, these missiles would probably not be located, and they would probably survive in spite of the Soviet theater missile threat.

Moreover, PIIs and GLCMs would be able to penetrate to their targets with high probability because the Soviets have no defense against ballistic missiles and their air defense is not expected to be effective against cruise missiles.

Although the INF treaty eliminates these PII and GLCM missiles, it also eliminates part of the Soviet forces which threatened NATO's intermediate forces. The elimination of Soviet missiles with ranges greater than 500 kilometers will reduce the threat to NATO's airbases. Without such missiles, the Soviets cannot quickly attack NATO air bases located in the United Kingdom with missiles and thus destroy the F-111s unless they use strategic missiles in that role. The Soviets might use strategic missiles, but this would draw down their strategic inventory. Moreover, there would be increased tactical warning from plausible missile launch sites. Backfires or Fencers could attack these bases, but the allied DCAs at those bases would be likely to have warning of such attacks and could launch part of their force.

The elimination of Soviet intermediate-range missiles will reduce the threat to the UK. Thus, the survivability of DCA aircraft in the UK will increase. Eliminating these missiles will not, however, increase the survivability of DCA aircraft located in the FRG and Benelux countries if the Soviets introduce a missile with a range of about 400

to 500 kilometers as allowed by the treaty. As a look at a map shows, such a missile could attack all DCA airbases in West Germany and the Benelux countries. Thus, the survivability of some DCAs will be increased by the INF treaty, but the overall level of survivability will depend upon where these aircraft are based and whether the Soviets introduce a new, short-range missile.

However, even if the survivability of DCA aircraft increases, their ability to penetrate to their targets with high confidence is questionable. Thus, on balance, the removal of Soviet missiles reduces the threat to NATO's DCAs, but these aircraft are probably not adequate to fill the intermediate-range strike role. The DCAs based on the continent would still be vulnerable to missile attacks (if the Soviets build a new missile allowed by the treaty) and the DCAs' ability to penetrate is not adequate. Let us now turn to a consideration of some suggested compensatory measures.

IV. PRESERVING EXTENDED DETERRENCE

COMPENSATORY MEASURES

Several measures could be taken to compensate for the loss of NATO's medium-range missiles. First, U.S. nuclear-powered attack submarines (SSNs) could carry dedicated sea-launched cruise missiles (SLCMs). Such a measure could have several virtues. These missiles would be as militarily effective as the removed GLCMs because, in fact, they are an identical type of missile. In addition, SLCMs would be even more survivable than GLCMs because of the inherent survivability of the SSNs.

On the negative side, relying on SLCMs to fill the nuclear attack role would present major problems. If they were carried on SSNs as a secondary mission, the missiles would not be as readily available when needed because the SSNs would be on-station carrying out their conventional maritime attack role. If the nuclear land-attack role became the primary mission of several dedicated SSNs, the conventional attack role of these SSNs would be degraded unless more boats were acquired. In addition, the command and control of these forces would not be quite as responsive as dedicated land-based forces.

Besides the military shortcomings of SLCMs, many believe that the use of off-shore assets rather than theater-based assets is more escalatory. Thus, even though these missiles could attack the same target set as the GLCMs, the fact that they would be located off-shore might be taken by the Soviets to be a more serious attack.[1]

Nuclear powered ballistic missile submarines (SSBNs) dedicated to NATO also could be used to attack targets in Eastern Europe and the western military districts of the Soviet Union. But these weapons cannot fill the nuclear attack role alone because they lack the escalation control of land-based missiles. The SSBNs are not located on

[1] Even if these problems could be worked out the SLCMs could not compensate entirely for the loss of PIIs. Because of their high speed, PIIs are uniquely suited for attacks against some time-urgent targets.

the continent but are part of U.S. strategic forces. For this reason, many would consider their employment to be more escalatory than the use of PIIs or GLCMs. Furthermore, if SLBMs were fired individually, they could perhaps, be backtracked and the submarine location determined. Thus, all 16 missiles (224 Poseidon warheads) are likely to be fired as a salvo--a large attack for escalation control.

Finally, increasing the number of DCA aircraft in the theater could increase NATO's ability to strike those targets previously targeted by PIIs and GLCMs if these additional aircraft could survive and penetrate Soviet air defenses. The survivability of DCA aircraft operating from air bases in the FRG or Benelux countries depends on whether or not the Soviets introduce a missile with a 500-kilometer range. At least for now, the Soviets do not have such a missile and DCA aircraft based on the continent would not be critically vulnerable.

If the Soviets introduced missiles with such a range, however, the DCA aircraft in Benelux and the FRG would be very vulnerable.

Under those circumstances, perhaps DCA aircraft operating from bases in the FRG and Benelux might give up their nuclear strike role and focus only on their conventional role. Their nuclear strike role could be taken on by present F-111 aircraft based in the UK, bolstered by additional DCA aircraft, perhaps FB-111s transferred from SAC[2] or F-15Es[3].

Alternatively, if political reasons dictate that some DCAs must be based on the continent to share the nuclear risk, then perhaps some A-10s or AV-8B fighter-bombers could be deployed to carry nuclear weapons. These aircraft could operate from dispersed field sites like PIIs and GLCMs and would be less vulnerable to nuclear missile attacks

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[2]SAC is considering this option. See *Omaha World-Herald*, December 9, 1987, p. 12.

[3]Although the threat of high-speed nuclear tactical ballistic missiles (TBMs) to UK airfields will be eliminated, the vulnerability of UK-based DCA aircraft to preemption will remain worrisome. During the course of a nonnuclear war, the UK would probably be subjected to conventional air attacks. During such attacks, it could be difficult to determine whether the next wave of Soviet heavy fighter-bombers was carrying nuclear weapons.

than aircraft at fixed main operating bases (MOBs). With a combat radius of 600 to 700 kilometers, the AV-8Bs could attack targets in Eastern Europe. A-10s, with their longer range, could attack deeper targets.

Even if DCA aircraft were either out of range of Soviet theater missiles or less detectable and sufficiently survivable on the ground to fill the nuclear strike role, their penetrability would need to be increased so that they could attack and destroy the required target set with some assurance. This could be accomplished by providing them with SRAM II short-range attack missiles or ALCMs, which would allow them to avoid the heaviest Soviet air defenses surrounding key targets.[4]

Enough additional aircraft would have to be added to cover a sufficient number of targets in the Soviet Union. These targets need not be exactly the same as those covered by PIIs and GLCMs, but they would have to be militarily significant both in type and number. Such an increase in the DCA force would have the additional bonus of increasing NATO's conventional forces as well.

Proposals have been made in the mutual and balanced force reduction (MBFR) talks and some suggestions are presently being made to limit the DCA aircraft. In the past, no movement has occurred on this issue. With the removal of PIIs and GLCMs, these DCAs have become more important than ever and should not be constrained in any future agreement.

MODERNIZED SHORT-RANGE NUCLEAR FORCES

As described above, NATO's short-range nuclear forces are also a critical element of deterrence and the Alliance has agreed to modernize these forces by producing a follow-on to the Lance. However, this modernized missile may be difficult to introduce into the FRG because of opposition from some West Germans, especially since the INF treaty calls into question the legitimacy of nuclear missiles for deterrence in Europe. In fact, the Soviets have made various informal proposals, with some support in West Germany, to remove these short-range missiles completely--sometimes called the "triple zero" option.[5]

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[4]The SRAM II is currently expected to become operational in 1993.

[5]See, for example, the speech by Shevardnadze in Bonn, *The Washington Post*, January 19, 1988, p. A10.

The first variant of such proposals is directed toward eliminating all short-range nuclear missiles, i.e., those with ranges under 500 kilometers which have not been included in the INF agreement. Presently, the Soviets have two missiles in this category, the SCUD and the SS-21, while NATO has only the Lance.

Eliminating these short-range nuclear missiles would require NATO to rely entirely on their AFAPs for their short-range nuclear forces. Relying on nuclear artillery alone is less satisfactory because artillery is more cumbersome and less survivable than dedicated missiles. The artillery is dual-capable and the tubes are used for conventional rounds as well as nuclear rounds, thus complicating command and control and logistics. Because the range of the artillery is less than that of the missiles, it must operate further forward, thus increasing its vulnerability. Moreover, because dedicated short-range nuclear missiles would not participate in the conventional battle, they could be hidden until required.

If, however, it becomes necessary to eliminate short-range missiles, NATO's AFAPs should be modernized. The 203-mm howitzers could have their nuclear shells boosted by a ramjet to increase their range to about 75 kilometers.[6] This upgraded 8-inch gun system could take over as a corps support weapon from the Lance. Such an increase in range would increase the survivability of the system because it could be operated further from the forward line of our troops (FLOT). Nevertheless, it would have the range to support the FLOT battle.

As an important indirect effect, eliminating short-range missiles would reduce NATO's conventional capability. The United States is introducing into the theater the Army Tactical Missile System (ATACMS), which is expected to be an important addition to its deep-fire conventional capability. This missile will carry only a conventional warhead (as directed by Congress) but could, of course, also carry a nuclear weapon. It seems unlikely that any agreement would allow the ATACMS to be deployed unless the Soviets were allowed to have some matching conventional missile capability, such as the SS-21.

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[6]See David Miller and Christopher Fuss, *Modern Land Combat*, Salamander Books, Ltd: London, 1987, p. 42.

Thus, eliminating short-range missiles would reduce NATO's nuclear deterrence as well as its conventional capability and should be resisted.

The second variant of triple zero proposals would introduce nuclear-free zones in central Europe. This would mean the elimination of AFAPs, as well as short-range nuclear missiles, and would leave NATO without any short-range nuclear forces. As discussed above, deterrence requires an array of nuclear forces, including short-range forces. Thus, such an agreement would further serve to undermine deterrence in Europe and would not be in the interest of the Alliance.

To circumvent pressures to eliminate battlefield nuclear systems, a modernized Lance follow-on with a range of 300 to 400 kilometers could be proposed.[7] This missile would have many desirable characteristics. With such a range, the missile could operate as a corps support weapon and thus be under the control of a corps commander--a more desirable situation than the present one, in which the short-range 155-mm AFAPs are under division commanders. Furthermore, the missile could be dispersed over a wide area within the FRG and operate approximately as the PII now operates, making it quite survivable on the ground. With such a range, this missile could operate further to the rear but still be able to support the FLOT battle if necessary. Alternatively, it would have the range to attack an array of deeper targets throughout East Germany and the western areas of Poland and Czechoslovakia. Finally, this missile could be used across corps sectors to support allied troops if necessary.

Due to its extended range, the number of modernized missiles required to provide adequate military support for NATO's troops might be less than the current total of Lance and AFAP warheads. One possibility might be to eliminate AFAPs along with the Lance as this modernized missile is introduced. Probably fewer overall warheads would be required. A reduction in the overall number of short-range warheads could make the modernization of these forces more publicly acceptable.[8]

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[7]Such a missile has been proposed by General Galvin, SACEUR. See *The Washington Post*, January 23, 1988, p. 21.

[8]Some NATO countries are discussing the possibility of reducing the

INCREASED CONVENTIONAL CAPABILITY

With nuclear deterrence slowly being eroded, NATO's conventional capabilities are more important than ever. As nuclear weapons contribute less to deterrence, conventional forces must contribute more. Increasingly, to be deterred in Europe, the Soviets will have to be convinced that a conventional attack on their part is unlikely to succeed because of the relative strength of NATO's conventional forces.

Over the course of the last several decades, there have been numerous proposals for enhancing NATO's conventional forces. None of these concepts is a panacea, but several have merit and should be pursued. However, in these times of budgetary constraints throughout the Alliance, one cannot be too optimistic about their implementation. In fact, the opposite could happen. The current U.S. fiscal problems are likely to continue and could produce political and economic pressures to reduce unilaterally American troop levels in Europe.

For this reason, many people are hoping that conventional arms control could reduce the Soviet conventional threat. We focus here on the theater nuclear forces required for deterrence; therefore, we shall not discuss the kinds of conventional arms control agreements that would reduce the conventional imbalance and reduce the threat to Europe. But, even if a conventional balance could be attained (a highly unlikely prospect considering the fact that the Soviets' geostrategic position compels them to maintain large conventional forces), West Europeans remember too well what can happen with conventional force balances in central Europe. Nuclear weapons cannot be uninvented, and it seems that Europeans prefer to have some uncalculable risk from possible nuclear employment associated with Soviet aggression in Europe.[9]

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number of short-range systems if they are modernized. See *The Washington Post*, December 23, 1987, p. 12.

[9]This nuclear preference is usually described as European. However, Americans should prefer nuclear deterrence also. During the first half of this century, the United States was drawn into two wars in Europe when conventional weapons did not deter. During the last forty years, nuclear weapons have deterred. Even if the West relies less on nuclear weapons, they are still critical for deterrence.

Because of the continuing need for nuclear deterrence of conventional conflict, conventional arms control discussions should consider not only the quantity of forces on both sides but the nationality of these forces as well. The Americans are, and will remain, the main guardian of European security. The American commitment is both signified and guaranteed by the American force presence in Western Europe. Any Soviet aggression in Europe would necessarily involve large numbers of American soldiers and possibly their dependents. No American president could ignore such a commitment, and no Soviet general secretary could be confident that the United States would not use nuclear weapons in a conflict.

Likewise, the British are formally committed to NATO and back up that commitment with the British Army of the Rhine (BAOR). The French are not formally committed but increasingly seem informally committed to the conventional defense of Germany. More than anything else, the commitment of these troops should give the Soviets pause. In the midst of a major battle for central Europe with large numbers of casualties, the Soviets could not be confident that France or the UK would not resort to nuclear weapons, especially if the battle seemed to be going badly for their troops.

Thus, if attractive conventional arms control agreements are possible and troops (and their weapons and equipment) are to be cut, consideration should be given to the role that the nationality of these conventional forces plays in deterrence. American, British and French troops serve the dual role of strengthening NATO's conventional forces while simultaneously linking nuclear weapons to the battle and creating great uncertainty in Soviet minds about the outcome. Substantial cuts in troops from these nations would serve not only to reduce NATO's conventional capability, but would undermine the deterrence provided by the nuclear forces of these nations.

V. THE EVOLUTION OF DETERRENCE IN EUROPE

Although the threat to Western Europe is from the Warsaw Pact, the Soviets provide the bulk of the Pact's conventional capabilities and all of its nuclear weapons. The United States supplies far less of NATO's conventional capabilities, but the U.S. nuclear guarantee has provided the backbone of extended deterrence.

The United States, however, is not the only NATO power to possess nuclear weapons. Both the United Kingdom and France have nuclear arsenals which are undergoing modernization and expansion. Furthermore, the Chinese have a growing stock of nuclear weapons and the means to deliver them against the Soviet Union. These so-called third-party forces are not only growing in size and scope, but they are beginning to change the nature of nuclear deterrence. Each is contributing to deterrence as the world evolves toward a multipolar system. The United States cannot prevent this evolution; it can, however, encourage this evolution in a favorable direction and use it to U.S. advantage.

FRENCH NUCLEAR FORCES

When France first became a nuclear power in 1961, General Gallois enunciated the rationale of proportional deterrence in *The Balance of Terror*.[1] These forces were intended to deter nuclear attacks against the French homeland through the threat to retaliate in proportion to the value of France. By 1972, when the French had built a triad of strategic forces, the credibility of these French nuclear forces to deter such attacks, especially massive attacks, was reasonably high: After such an attack, what more was there for France to lose? However, deterring Soviet conventional attacks against France has always been more difficult.

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[1] Pierre Gallois, *The Balance of Terror*, Boston: Houghton Mifflin, 1961.

To effectively deter Soviet conventional attacks requires a combination of conventional and nuclear forces. Even though not formally in the NATO military alliance, the French have moved much closer to NATO in recent years, and it is widely believed that they would use their rapid-deployment force (force d'action rapide--FAR) and the 1st French Army to reinforce NATO positions in the event of a major conventional attack by the Soviets.[2] These additional conventional forces would greatly strengthen NATO and perhaps would even prevent an early Soviet military victory.

If NATO's conventional forces were not sufficient and the Soviets appeared ready to break through at some point, French tactical missiles could be used to prevent this. With the addition of Hades, which has a range of about 400 kilometers, the French will have the ability to attack Pact forces along the inter-German border (IGB).[3] With such range, these missiles could be used to support French troops operating forward in the FRG. In the event of the Pact forces overwhelming NATO, especially in an area in which French troops were fighting, these missiles could be fired from France against many Pact battlefield targets with great military effect.

For this first-use of tactical nuclear weapons to be credible, however, the French would have to be able to deter a Soviet retaliatory nuclear attack, in particular a precise, limited attack against military targets within France. This problem has become particularly acute since the Soviets began introducing the SS-20 into their inventory. The SS-20 has the range and accuracy to attack a limited but critically important set of targets within France. Many airfields, lines of communications (LOCs) and command, control, and communication (C3) sites are quite vulnerable and far from Paris. But, more important, the French forces that could respond to such attacks would be vulnerable.

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[2]For a discussion of the changing French doctrine, see Diego A. Ruiz Palmer, "Between the Rhine and the Elbe: France and the Conventional Defense of Europe," *Comparative Strategy*, Vol. 6, No. 4, December 1987, p. 471 ff.

[3]See "French To Begin Flight Tests of Hades Nuclear Missiles," *Aviation Week*, January 18, 1988, p. 30.

To deter such attacks, the French would have to have forces which could survive such an attack, penetrate Soviet defenses and attack some set of key targets in the western military districts of the Soviet Union. In addition, they must have strategic forces capable of much larger attacks against the Soviet industrial base.

French nuclear capabilities appear to have been designed with such capabilities in mind. The current aerodynamic component is the Mirage IV, capable of delivering nuclear bombs and an air-to-surface missile (air-sol a moyenne portee--ASMP) against a limited number of targets in the Soviet Union. This component of the triad is being modernized with the introduction of the Mirage 2000--all of which will carry the ASMP. The ASMP allows penetrating aircraft to stand off about 300 kilometers from their target and thus increases the probability of penetrating to the target.

If deployed, the SS-20 could quickly and accurately attack and destroy these aircraft on their bases. Without a theater missile with a range over 500 kilometers, the Soviets would have to attack with aircraft such as the Fencer and the Backfire bombers or use strategic forces such as the SS-25. The manned aircraft would not be as rapid, nor would they have the penetrativity of ballistic missiles.[4] The use of the SS-25 would draw down the Soviet missile inventory and reduce overall Soviet target coverage. Thus, after the INF treaty, this component of French nuclear forces will become more survivable.

Another leg of the French strategic triad will also become more survivable and a potentially more effective deterrent with the removal of the SS-20s. The 18 S-3s in silos on the Plateau Albion have the capability of attacking a limited number of targets in the Soviet Union. However, these missiles in their fixed silos are vulnerable to SS-20 attacks. With the removal of the SS-20s, these S-3s will be more survivable and hence a more effective deterrent. If the S-X mobile missile replaces the S-3, the S-X will be more survivable than the S-3 because it will be dispersed in large patrol areas in France.

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[4]French air defenses will undergo a major upgrade with the deployment of the E-3 airborne warning and control system (AWACS).

Finally, the modernization and expansion of the French SSBN force will increase the number of strategic warheads which could be delivered against the Soviet Union by the French strategic forces. By 1995, these warheads could total over 600 and could destroy between 35 and 50 percent of Soviet production facilities.[5] Such a potential threat would certainly give the Soviets pause.

Thus, the elimination of the SS-20 removes a troublesome problem for the French. No other Soviet system can replace it, because theater missiles of sufficient range to attack targets within France are not allowed by treaty. This reduced threat plus modernization of the French forces should serve to increase the credibility of the French forces and improve their potential effectiveness.

BRITISH NUCLEAR FORCES

The British have never stressed the independent deterrence provided by their nuclear forces, but they have always emphasized the interdependent role that these forces play within the NATO Alliance. The formal rationale for these forces is referred to as the "second nuclear decision center." Independent British decisionmaking within NATO in the use of nuclear weapons is to lead to greater deterrence because

> The nuclear decision, whether as a matter of a retaliatory response or in another circumstance, would, of course, be no less agonizing for the United Kingdom than for the United States. But it would be a decision of a separate and independent Power, and a Power whose survival in freedom might be more directly and closely threatened by aggression in Europe than that of the United States. This is where the fact of having to face two decision-makers instead of one is of much significance.
>
> Soviet leaders would have to assess that there was a greater chance of one of them using its nuclear capability than if

[5]See John Prados, Joel S. Wit and Michael J. Zagurek, Jr., "The Strategic Nuclear Forces of Britain and France," *Scientific American*, Vol. 255, No. 2, August 1986, p. 33 ff.

> there were a single decision-maker across the Atlantic. The risk to the Soviet Union would be inescapably higher and less calculable. This is just another way of saying that the deterrence of the Alliance as a whole would be stronger, the more credible, and therefore the more effective.[6]

Thus, the British reserve the right to use their nuclear weapons in their own defense when "Her Majesty's Government may decide that supreme national interests are at stake." This second decisionmaking center rationale is seldom discussed or questioned. However, it is fair to consider how credible is the use of nuclear weapons by the British independently of the United States and under what circumstances.

Deterring conventional attacks requires a combination of conventional and nuclear forces. The British Army of the Rhine currently is about 55,000 strong, is integrated into the NATO command structure and is responsible for defending a corps sector in Central Europe. If the Pact conventional forces were concentrating their attack against the British in the I British Corps Sector and were threatening to overwhelm the British, they would have their own nuclear artillery and Lance missiles--battlefield nuclear systems--to prevent a breakthrough. The use of these forces could probably stop a Soviet conventional advance and would certainly escalate the war.

The credibility of such a response depends on how well British nuclear forces could deter any Soviet nuclear retaliation. Just as in the French case, the critical attack to be deterred is a limited, precise attack directed against British military forces, particularly those in the United Kingdom. With the introduction of the SS-20, this problem has become more serious, because these missiles are capable of rapid, precise, limited attacks against targets in the United Kingdom.

To credibly deter such nuclear attacks, the British would require forces able to survive such attacks and then penetrate Soviet defenses to attack military targets in the western Soviet Union in a precise, limited, controlled manner. Furthermore, the British need survivable strategic forces capable of inflicting significant damage on the Soviet homeland.

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[6]From a British White Paper cited in Lawrence Freedman, *Britain and Nuclear Weapons*, London: Macmillan Press, 1980, p. 5.

Currently, Buccaneers and Jaguars carrying nuclear bombs could carry out attacks against Soviet military targets. The Buccaneers and Jaguars are being replaced by Tornados in an attack role. Such aircraft could attack targets throughout the western Soviet Union. However, these aircraft would be very vulnerable to Soviet SS-20 attacks while on the ground and unlikely to survive such a Soviet retaliatory attack against their air bases. Without the SS-20, these aircraft would be somewhat more survivable.

Increasingly effective Soviet air defenses have reduced the assurance that these aircraft could penetrate to their targets. But there has been some discussion of providing the Tornados with French ASMP missiles or developing a new joint British-French air-launched cruise missile (ALCM) that would improve the Tornado's penetrativity of Soviet air defenses.[7]

British strategic forces are also being modernized. By 1995, with the acquisition of the American D-5 missile, the UK will be capable of delivering about 500 nuclear warheads against the Soviet Union. Such an attack could destroy 40 to 50 percent of Soviet production capacity.[8]

Thus, just as for the French, the elimination of the SS-20 increases the credibility of the British nuclear forces because a critical vulnerability has been removed. British modernization should increase the potential effectiveness of their forces and thus increase the overall contribution to deterrence of these forces.

CONTRIBUTION OF BRITISH AND FRENCH NUCLEAR FORCES TO DETERRENCE

French and British nuclear forces could probably deter attacks against their own country and their own forces, but what role might these nuclear forces play in deterring attacks against all NATO countries, in particular the FRG?

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[7]See *Aviation Week*, December 21, 1987, p. 25.

[8]See Prados, Wit, and Zagurek, *op. cit.*, p. 33 ff.

The contribution of French and British conventional forces in Europe greatly strengthens conventional deterrence because these forces increase NATO's conventional capability perhaps enough to prevent a Soviet victory. However, French and British nuclear forces probably contribute even more to deterrence of conventional attacks in Central Europe.[9]

With the participation of French and British conventional forces along with those of the other allies, any Pact attack in Central Europe would likely produce a large battle across the Central Front. The Soviets could attempt to concentrate their attacks against German, Dutch, or Belgian corps sectors and only hold in the U.S. and UK sectors. But, this would restrict Soviet strategy and would be a dangerous gamble for the Soviets. Even if the United States did not use nuclear weapons (either dual-key or U.S. only) in the other corps sectors, the Soviets would have no assurance that the battle had not involved France or Britain enough to prompt the employment of their nuclear weapons.[10] If the Soviets used nuclear weapons, even if confined to the FRG, the danger would be even greater. The Soviets could not be certain that such use would not involve France or the UK and lead them to retaliate. Even if Soviet nuclear employment did not involve the French or British, the Soviets could never be completely certain about any country's actions, especially under circumstances never before encountered.

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[9]Secretary of Defense McNamara initially criticized these British and French nuclear forces as being destabilizing and not contributing to deterrence. Not until 1974 in Ottawa did the United States accept the deterrent role of these nuclear forces.

[10]Because the French are not predeployed as part of the "layer cake," but would probably be used as reserves, a Soviet planner could not be certain of French force deployments.

THE INCREASED SIGNIFICANCE OF A NUCLEAR-ARMED CHINA

The Soviet high command has viewed the SS-20 as a deep strike weapon for the Asian theater, as well as the European theater, with potential use against China. Similarly to their role against British and French deep targets, the SS-20s could be used as very accurate, high-speed countermilitary weapons to attack Chinese conventional and nuclear forces.

Currently, the Chinese have deployed nuclear forces in relatively modest numbers. In particular, they have deployed only a very small number of land-based ballistic missiles with a range sufficient to reach the European zone of the Soviet Union. The current weapons are the CCS-3 and CCS-4, both second-generation, liquid-propelled ballistic missiles. Published reports suggest that the Chinese have deployed fewer than 20. Of greater immediate significance to the Soviet military planner is the more substantial deployment of the CCS-2 intermediate-range ballistic missile (IRBM) which can threaten Soviet targets throughout Asia. Public evidence indicates that the Chinese may have deployed at least 60 launchers of the CSS-2 with a range of approximately 3000 kilometers.[11]

Although the Chinese have placed military modernization and expansion at the bottom of their list of priorities during the current period of "four modernizations," they are continuing a steady R&D effort in advanced ballistic missile systems. Currently, they have test-fired a variant of the CSS-4 with multiple independently targetable reentry vehicles (MIRVs). In addition, the Chinese have under development a mobile SCUD class tactical ballistic missile which could be launched from a wheeled transporter/erector/launcher (TEL) and have a range of about 600 kilometers. They have also test-fired a variety of solid propelled IRBM-class weapons, which include a Polaris class SLBM. During the 1990s, the Chinese will have the option of deploying a substantially larger nuclear strike force with weapons developed during this decade. These could include more MIRVed variants of the CSS-4

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[11]See *Defense and Foreign Affairs Handbook*, The Perth Corporation: Washington, DC, 1987, p. 195.

based in silos and other hardened facilities and land-mobile, solid-propelled IRBMs and intercontinental ballistic missiles (ICBMs).[12] The Chinese appear to have developed the mobilization base to deploy a force which could put the European zone of the Soviet Union at very substantial risk.

Like the French and UK theater and strategic nuclear forces, China's nuclear strike potential will confront the Soviet high command with an increasingly acute contingency planning dilemma. The Chinese could become a significant independent nuclear decision authority which the Soviets will have to consider during a hypothetical war involving NATO and the Warsaw Pact. Even if the Chinese remain studiously neutral during a war in Europe which may or may not spill over into Northeast Asia, the Soviets will have to decide what to do about China. The Soviet political-military establishment faces the prospect that China could become the dominant Asian military power following a major war in Europe, especially a war that remains indecisive during the conventional phase or shifts to a major thermonuclear engagement with the United States.

All of this suggests that one consequence of the INF treaty will be to further the evolution of a multipolar deterrent system, because the elimination of the SS-20 will remove a major threat to the countries close to the Soviet Union. One of the central strategic questions for the United States is how this evolving multipolar nuclear deterrent structure should be crafted to serve U.S. long-term national interests. The outcome of the negotiations on strategic arms reduction talks (START), the strategic defense initiative (SDI) negotiations, and other European arms control attempts will have a profound effect on whether the historical consequences of the INF treaty support or undermine the geostrategic objectives of the United States.

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[12]For CSS-2/3/4 characteristics, see *Jane's Weapon Systems, 1986-1987,* Jane's Publishing Company: London, 1987, p. 2.

VI. ENCOURAGING MULTIPOLAR DETERRENCE

Pressure is growing in the United States to reduce its forward presence in Europe. Some argue that the current American fiscal crisis is due to the overextension of U.S. military commitments around the world and that it could be improved by reducing some commitments, beginning with the largest--Europe.[1] Others argue that American interests are becoming less important in Europe and more important in other parts of the world, especially Southwest Asia and the Pacific Rim.[2] But, whatever the rationale, it seems quite possible that some American forces may be removed from Europe. If the American presence in Europe is reduced, some approach must be found to enable Europeans to take more responsibility for their own security.

Most discussions for increasing Western European responsibility for their own defenses usually focus on NATO's conventional forces. If the United States removes some of its conventional forces, then Western Europe must supply more conventional forces if deterrence is to be maintained. Unfortunately, most observers familiar with the situation in Europe predict that reductions in U.S. conventional forces will lead to reductions in Western European conventional forces as well. Suggestions for increasing Europeans' responsibility for their own security usually founders on this dilemma. Deterrence, however, is produced by a combination of conventional and nuclear weapons, and as argued above, some promising avenues for increasing Europeans' responsibility for their own security may exist in the realm of nuclear forces.

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[1]See David Calleo, *Beyond American Hegemony--The Future of the Western Alliance*, New York: Basic Books, Inc., 1987, and Paul Kennedy, *The Rise and Fall of the Great Powers*, New York: Random House, 1987.

[2]See *Discriminate Deterrence*, Report of the Commission on Integrated Long-Term Strategy, Washington D.C., U.S. Government Printing Office, January 1988, and Zbigniew Brzezinski, *Game Plan*, Boston: The Atlantic Monthly Press, 1986.

By considering the role of the nuclear third-party forces in deterrence, the United States can encourage their development and help to create greater responsibility on the part of the Europeans for their own defense. American political support for European nuclear forces and encouragement for their development can be one element in increasing the responsibility of the allies for their own security. If necessary, and if requested, technical support could also be provided. In addition, the actions which the United States takes in the arms control arena can have a major effect on third-party nuclear forces.

The main objective of the START negotiations is the reduction of both U.S. and Soviet strategic offensive forces by 50 percent. Each side would be limited to 6000 strategic warheads carried by 1600 strategic launchers. This substantial constriction of the nuclear strike potential of both superpowers will further the trend toward a multipolar deterrent system as described in the preceding section.

With smaller total long-range strike forces to use against potential Eurasian and North American targets, the Soviet military planner will be constrained. The constraint will likely have a major effect on the deterrence of Eurasian conflicts: The Soviets will not have enough launchers to simultaneously attack all desired time-urgent military targets within the United States, United Kingdom, France and China.

To compensate, the Soviets may well maintain a refire potential for their ICBM launchers. This would allow a certain portion of the smaller arsenal to conduct military operations against a nuclear-armed third party and rapidly reconstitute for North American military operations. However, this situation is not as desirable for the Soviets as one in which they had enough launchers to cover all targets.

Thus, it seems that with growing nuclear third-party forces, a 50 percent reduction of Soviet nuclear forces in a START agreement would place the Soviets in an increasingly difficult situation. They would have 6000 strategic warheads and would be faced with 6000 U.S. warheads and about 1000 British and French warheads. But, more importantly, even acting alone, any one of three allies could credibly threaten the

Soviets with substantial damage if their own vital interests were at stake.

Although the Soviets have consistently tried to include the British and French nuclear forces in an arms control agreement in Europe, no agreements have yet considered these or Chinese forces. If the Soviets gain no constraints on the evolution of the French, British and Chinese nuclear forces as part of a START agreement, they may well focus on this issue in any follow-on START II negotiations.

For the most part, the French, British and Chinese forces deter the Soviets and do not threaten the United States. Hence, it is in the U.S. interest to exclude these forces from any consideration. Moreover, because these are independent forces, the United States could not negotiate their reduction in any case unless it was willing to cut its own forces to compensate--an option that is clearly unacceptable.

Although the United States cannot directly control the number of these third-party forces, it could undermine their effectiveness by agreeing with the Soviets to deploy ballistic missile defenses (BMD). Defending against a large-scale U.S. ballistic missile attack would be a daunting task for the Soviets; however, a Soviet BMD could be much more effective against smaller, less sophisticated third-party forces and could undermine their potential effectiveness.[3] These countries could take steps to increase the ability of their strategic weapons to penetrate defenses, but these steps are usually expensive and technologically demanding.[4]

A U.S.-Soviet agreement to deploy defenses would be greeted with hostility by China and the two nuclear-armed allies of the United States because a Soviet BMD deployment would greatly undermine the credibility

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[3]For example, the Soviet deployment of 800 ABM interceptors could reduce the destructiveness of a French attack on Soviet production facilities from 35 to 50 percent. The destruction of a British attack against this same defense could be reduced from 40 to 50 percent to 1 to 7 percent of Soviet production facilities. See Prados, Wit, and Zagurek, *op. cit.*, p. 33 ff.

[4]See James C. Wendt, *British and French Strategic Forces: Response Options to Soviet Ballistic Missile Defense*, P-7188, The RAND Corporation, March 1986.

of these third-party nuclear forces. Undermining the credibility of third-party forces would serve no purpose for the United States and could profoundly alter U.S. relations with its major European allies and China.[5]

The Reagan Administration wants to negotiate a START agreement without major constraints on a mid-1990s option to deploy the first phase of the SDI program. In turn, the Soviets have clearly indicated that they will strongly resist the ratification of this option under the guise of a loose interpretation of the ABM Treaty. Currently, the Soviet leadership appears to be adamant in trying to constrain the U.S. missile defense deployment options during the life of a START agreement.

The Soviets may genuinely fear the U.S. potential to transform the strategic balance with operational strategic defenses. Alternatively, the Soviets may fear SDI technology, not as SDI, but rather as advanced space combat means. These advanced earth-based and space-based combat weapons could provide the United States with operational space supremacy during the course of a Eurasian war. Because of the increased importance of space-based sensors and of navigation and communications platforms in support of advanced theater weapon operations, a "space denial" capability would give the possessor a large military advantage.

Events of the last two years may have moderated the Soviets' concern. First, they have witnessed the disastrous failures of the U.S. space program. Second, U.S. military budgets have been reduced. Thus, the Soviets may become more relaxed about the U.S. potential to rapidly alter the global military balance by the mid-to-late 1990s. With increased confidence that the future threat of a U.S. space combat potential can be contained, the Soviets might find the prospective deployment of a "thin" BMD system attractive.

Of course, the Soviets might choose to unilaterally break out of the ABM Treaty but such a move would have far different diplomatic and political consequences. Under those circumstances, consideration should

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[5] In the long term, other countries who are unfriendly to the United States could acquire nuclear weapons and a capability to deliver these weapons against the U.S. homeland. Thus, the United States should continue an active R&D program to be ready to construct a homeland defense if it becomes necessary in the more distant future.

be given to technical assistance to third-party forces so that they could maintain their effectiveness against the Soviets.

VII. CONCLUSIONS

Because of geopolitical circumstances, the Soviets are likely to have, for the foreseeable future, a preponderance of conventional forces that could be used to threaten the security of Europe. Located in the middle of Eurasia with traditional enemies on all sides, they believe that they require large conventional forces for their security. Furthermore, controlling their East European satellites requires substantial conventional forces. Ironically, the economic reforms of the Gorbachev regime may well lead to a period of enhanced political and social instability in Eastern Europe. This instability will limit the extent to which the Soviets can reduce their forward-deployed forces in Eastern Europe. To provide for its own security in the face of this Soviet threat, NATO is likely to require nuclear deterrence for the foreseeable future.

The INF treaty has served, on the one hand, to reduce somewhat the credibility of NATO's nuclear deterrent insofar as such deterrence depends on a wide range of U.S. theater nuclear forces. On the other hand, the treaty may help to highlight the shifting of nuclear deterrence away from the bipolar dominance of the two superpowers. A Eurasian multipolar nuclear deterrent system is evolving. The United States must, therefore, develop a coherent long-term strategy to ensure that the multipolar security structure evolves in a way that satisfies U.S. central national security interests.

In the short term, NATO can take a number of steps to compensate for the loss of PIIs and GLCMs. For example, additional DCAs could be based in the UK. Such aircraft would be out of the range of tactical ballistic missiles allowed by the INF treaty and thus be nearly as survivable as the mobile PII and GLCM launchers. Equipped with a SRAM II missile or a short-range ALCM, they could probably penetrate the Warsaw Pact air defenses well enough to attack important military targets in the western USSR. Such a deployment would also add to NATO's conventional capabilities.

If political reasons dictate that some DCAs should be based on the continent, NATO could deploy A-10s or AV-8Bs in the FRG or Benelux countries in a nuclear strike role. These aircraft could operate from dispersed field sites and could be more survivable than aircraft operating from fixed MOBs.

NATO's nuclear battlefield systems are a critical link in deterring attacks and should not be removed. In fact, modernization of these forces is essential. Lance should be replaced with a follow-on system, ideally with a greater range (perhaps 300 to 400 kilometers), to allow it to operate further from the FLOT as a corps support weapon. To make such modernization more politically acceptable, the United States and its allies should seriously consider a post-Montebello battlefield reduction regime in which nuclear artillery systems would be demobilized at a ratio greater than one-for-one as the new mobile missiles were introduced into the NATO theater. If, however, the West German political environment precluded this modernization, the 203-mm self-propelled, nuclear gun-howitzers that are deployed as corps support weapons should be upgraded.

American troops guarantee the involvement of the United States in any war in Europe and should not be unilaterally withdrawn. Even if attractive conventional arms control agreements are possible, U.S. force cuts should be minimized. Equally important are the French and British troops, which likewise link their national nuclear deterrent forces to any war in Germany.

British and French nuclear forces deter the Soviets and do not threaten the United States. As these forces are modernized, they will become more important to the deterrence structure in Europe and they should be offered American political support and, perhaps, technical support, if requested. Moreover, the United States should not forget the indirect role that China plays in this Eurasian security system. In addition, the U.S. arms control strategy must include the designing of nuclear arms agreements that protect the nuclear modernization programs of the UK and France.

This argument suggests that START reductions and constraints on the SDI program are in the long-term interest of the United States. START reductions would reduce Soviet nuclear forces at a time when third-party nuclear forces were expanding and thus it would constrain Soviet targeting options.

Ballistic missile defenses deployed by both the United States and the Soviet Union would probably be ineffective against each other's large nuclear forces, but they could be quite effective against third-party forces. The attitude of the Soviet Union toward the ABM Treaty may change during the 1990s and the Soviets could come to favor a thin BMD. If the United States agreed with the Soviets to deploy a BMD, it would probably generate considerable hostility among America's major European allies and China. Such a policy would not be in the long-term interest of the United States.