The public, on both sides of the Atlantic, is engaged in debate on controversial questions relating to nuclear weapons: the desirability of a nuclear freeze; the deployment of Pershing II and cruise missiles to Western Europe; the production of the MX missile and the B-1 bomber; the development of the neutron bomb; and proposals to reduce the risk of nuclear war by such measures as the withdrawal of tactical nuclear weapons from forward areas and the declaration of a strategy of "no launch on warning."

These questions, however, cannot be thoughtfully discussed, and certainly not adequately answered, until there has been general agreement on the military role of nuclear weapons. If there is confusion in the public mind on this matter, it only mirrors the disagreement among those most familiar with such weapons and their implications.
I would ask the reader momentarily to guess whether the following three statements come from leaders in peace movements:

At the theatre or tactical level any nuclear exchange, however limited it might be, is bound to leave NATO worse off in comparison to the Warsaw Pact, in terms both of military and civilian casualties and destruction . . . . To initiate use of nuclear weapons . . . seems to me to be criminally irresponsible.

I am in favor of retaining nuclear weapons as potential tools, but not permitting them to become battlefield weapons. I am not opposed to the strategic employment of these weapons; however, I am firmly opposed to their tactical use on our soil.

The European allies should not keep asking us to multiply strategic assurances that we cannot possibly mean, or if we do mean, we should not want to execute because if we execute, we risk the destruction of civilization.

The answer is that none do. The first is by Field Marshall Lord Carver, Chief of the British Defence Staff from 1973 to 1976; the second by General Johannes Steinhoff, former Chief of Staff of the Federal German Air Force; and the third by former Secretary of State Henry A. Kissinger.1

And, if one were to accept all three propositions, there follows logically the statement of Admiral Noel A. Gayler, former Commander in Chief of U.S. forces in the Pacific: "There is no sensible military use of any of our nuclear forces. Their only reasonable use is to deter our opponent from using his nuclear forces."2

On the other hand, a number of statements by senior officials in the Reagan Administration have suggested that a nuclear war could be limited. Secretary of Defense Caspar Weinberger contends that: "The nuclear option [i.e., early first use of nuclear weapons] remains an important element in deterring Soviet [conventional] attack."3 And in the same vein, former Secretary of State Alexander Haig, also a former NATO Supreme Commander, concedes that it is unlikely nuclear war could be limited, but argues that "adoption of a policy of no first use would remove a threat which deters Soviet aggression and, therefore, would increase the danger of war."4

More broadly, President Reagan—in proposing a program to develop an anti-ballistic missile defense in March 1983—said that "our objective should be to move to an impenetrable defense against Soviet nuclear strikes, thereby totally neutralizing their offensive nuclear forces." He added that it would be in our interest for the Soviets to
possess a similar defense, thus stating in effect that the Soviet Union and the United States would both be better off if nuclear weapons were totally eliminated. (Under such circumstances, NATO would depend, of course, solely on conventional forces for deterrence of Soviet aggression.) And on June 16, 1983, the President made an even more categorical statement in favor of a non-nuclear world: "I pray for the day when nuclear weapons will no longer exist anywhere on earth."5

A similar thought has been expressed by Melvin Laird, Secretary of Defense in the Nixon Administration: "A worldwide zero nuclear option with adequate verification should now be our goal. . . . These weapons . . . are useless for military purposes."6

These quotations from European and American political and military leaders show the depth of doubt and division that exist today. It is clear that there are three quite contradictory and mutually exclusive views of the military role of nuclear weapons:

- Such weapons can be used in a controlled or selective way, i.e., they have a war-fighting role in defense of the NATO nations. Therefore, a strategy of "flexible response," which has been the foundation of NATO's war plans since 1967, including possible "early first use of nuclear weapons," should be continued. Underlying this policy is the belief that NATO can achieve "escalation dominance"-i.e., NATO can prevent the Warsaw Pact from extending the use of nuclear weapons beyond the level NATO chooses, with the implication that a nuclear war once started can remain limited.

- Any use of nuclear weapons by the United States or the Soviet Union is likely to lead to uncontrolled escalation with unacceptable damage to both sides. Therefore, nuclear weapons have no military use other than to deter first use of such weapons by one's adversary.

- Although initiating the use of nuclear weapons is likely to lead to uncontrolled escalation, with devastation of both societies, the threat of such use by NATO acts as a deterrent to both Soviet conventional and nuclear aggression. It is not practical to build up an equivalent deterrent in the form of conventional forces; therefore the threat of early use of nuclear weapons should never be withdrawn.

I propose to examine these views by exploring four questions:

- What is NATO's present nuclear strategy and how did it evolve?
- Can NATO initiate the use of nuclear weapons, in response to a Soviet attack, with...
benefit to the Alliance?

-Even if the "first use" of nuclear weapons is not to NATO's advantage, does not the threat of such use add to the deterrent and would not the removal of the threat increase the risk of war?

-If it is not to NATO's advantage to respond to a Soviet conventional attack by the use of nuclear weapons, can NATO's conventional forces, within realistic political and financial constraints, be strengthened sufficiently to substitute for the nuclear threat as a deterrent to Soviet aggression?

II

Questions of the military utility of nuclear weapons are addressed most realistically in the context of the possibility of warfare in Europe. Throughout the postwar period the security of Europe has been the centerpiece of U.S. foreign policy; it is likely to remain so indefinitely. In no other region have the two great powers deployed so many nuclear weapons. In no other part of the world are military doctrines which specify the use of nuclear weapons granted such wide-ranging credibility.

The use of nuclear weapons has been an integral part of NATO's military strategy since virtually the inception of the Alliance.7

Shortly after the North Atlantic Treaty was ratified in 1949, estimates were made of the size of the Soviet military threat as a basis for developing NATO's military strategy and force structure. Believing that the U.S.S.R. could muster as many as 175 divisions against Western Europe, NATO military planners concluded that the Alliance would require 96 of its own divisions—which were larger than those of the Soviet Union—in order to mount an adequate defense. This estimate was accepted by the NATO ministers in February 1952 at their annual meeting in Lisbon.

It soon became clear, however, that the member nations were not willing to meet these so-called Lisbon force goals. Instead, the Alliance turned consciously to nuclear weapons as a substitute for the financial and manpower sacrifices which would have been necessary to mount an adequate conventional defense.

That budgetary considerations were a key factor in NATO's decision to rely on nuclear weapons is evident from the following statement by then Secretary of State John Foster Dulles:
The total cost of our security efforts (and those of our Allies) . . . could not be continued long without grave budgetary, economic, and social consequences. But before military planning could be changed the President and his advisers . . . had to make some basic policy decisions. This has been done. The basic decision was to depend primarily upon a greater [nuclear] capacity to retaliate instantly by means and at places of our own choosing. As a result it is now possible to get and to share more basic security at less cost.

Nor was this new emphasis only rhetorical. A Presidential Directive (NSC-162/2) ordered the Joint Chiefs of Staff to plan on using nuclear armaments whenever it would be to the U.S. advantage to do so. Changes were made in the organization and plans of the U.S. Army so that it would be better able to fight on nuclear battlefields. By late 1953, substantial numbers of tactical nuclear weapons—artillery shells, bombs, short-range missiles, nuclear mines, and others—were beginning to be deployed in Europe. The buildup of NATO tactical nuclear weapons continued steadily, peaking in the mid-1960s at around 7,000. Although large numbers of conventional forces were retained on the continent, until the early 1960s their only purpose was seen to be to contain an attack long enough for nuclear strikes to defeat the aggressor.

If there were any doubts about the seriousness of NATO's nuclear threats in the 1950s, they should have been dispelled by the following statement by General Bernard Montgomery, the Deputy Supreme Allied Commander in Europe, who said in late 1954:

I want to make it absolutely clear that we at SHAPE are basing all our operational planning on using atomic and thermonuclear weapons in our own defense. With us it is no longer: "They may possibly be used." It is very definitely: "They will be used, if we are attacked."

By December 1954, the NATO ministers felt comfortable enough with the nuclear strategy to reduce the force level objective from 96 to 30 active divisions. Two years later, the Alliance formally adopted the policy of "massive retaliation" in a document known as MC 14/2.

Whether the balance of nuclear forces between the Warsaw Pact and NATO, as it was developing during the mid-1950s, justified adoption of NATO's nuclear strategy is arguable. But its merit had become questionable to many by the early 1960s. Soon after taking office in January 1961, the Kennedy Administration began a detailed analysis of
These studies revealed two major deficiencies in the reasoning that had led to the adoption of MC 14/2: first, the relative balance of NATO and Warsaw Pact conventional forces was far less unfavorable from a Western perspective than had been assumed (the power of Soviet forces had been overestimated and that of NATO forces underestimated); and second, there was great uncertainty as to whether and, if so, how nuclear weapons could be used to NATO’s advantage.

President Kennedy, therefore, authorized me as Secretary of Defense to propose, at a meeting of the NATO ministers in Athens in May 1962, to substitute a strategy of "flexible response" for the existing doctrine of "massive retaliation."

The new strategy required a buildup of NATO's conventional forces, but on a scale that we believed to be practical on both financial and political grounds. Instead of the early massive use of nuclear weapons, it permitted a substantial raising of the nuclear threshold by planning for the critical initial responses to Soviet aggression to be made by conventional forces alone. The strategy was based on the expectation that NATO's conventional capabilities could be improved sufficiently so that the use of nuclear weapons would be unnecessary. But, under the new doctrine, even if this expectation turned out to be false, any use of nuclear weapons would be "late and limited."

Our proposal of the new strategy was the result of the recognition by U.S. civilian and military officials that NATO's vastly superior nuclear capabilities, measured in terms of numbers of weapons, did not translate into usable military power. Moreover, we understood that the initial use of even a small number of strategic or tactical nuclear weapons implied risks which could threaten the very survival of the nation.

Consequently, we, in effect, proposed confining nuclear weapons to only two roles in the NATO context:

- deterring the Soviets' initiation of nuclear war;
- as a weapon of last resort, if conventional defense failed, to persuade the aggressor to terminate the conflict on acceptable terms.

The proposed change in NATO's strategy met with strong opposition.

Some opponents argued that the United States was seeking to "decouple" itself from the defense of Europe. These critics shared our view that a "tactical" nuclear war in Europe would quickly escalate to a strategic exchange involving the U.S. and Soviet
homelands, but they saw this danger as the primary factor which deterred Soviet aggression. Any reduction in this prospect, they argued, might cause the Soviets to believe that hostilities could be confined to Central Europe, and thus tempt them into adventures.

Other critics maintained that the proposed buildup of NATO's conventional forces was totally beyond what the Alliance would be willing to support. Still others argued that we had greatly exaggerated the dangers of limited uses of nuclear weapons.

The argument raged for five years. It was not until 1967 that NATO adopted the strategy of "flexible response," inscribing it in a document known as MC 14/3.

The revised strategy proposed to deter aggression by maintaining forces adequate to counter an attack at whatever level the aggressor chose to fight. Should such a direct confrontation not prove successful, the strategy proposed to escalate as necessary, including the initial use of nuclear weapons, forcing the aggressor to confront costs and risks disproportionate to his initial objectives. At all times, however, the flexible response strategy specified that efforts should be made to control the scope and intensity of combat. Thus, for example, initial nuclear attacks presumably would be made by short-range tactical systems in an attempt to confine the effects of nuclear warfare to the battlefield. Even so, the strategy retained the ultimate escalatory threat of a strategic exchange between U.S. and Soviet homelands to make clear the final magnitude of the dangers being contemplated.

"Flexible response" has remained NATO's official doctrine for more than 15 years. Its essential element, however-building sufficient conventional capabilities to offset those of the Warsaw Pact-has never been achieved. Indeed, during the late 1960s and early 1970s, the Alliance may have fallen farther behind its opponent. Although NATO has made considerable strides in improving its conventional posture in more recent years, most military experts believe that the conventional balance continues to favor the Warsaw Pact; they thus conclude that an attack by Soviet conventional forces would require the use of nuclear weapons, most likely within a matter of hours. NATO's operational war plans reflect this belief. The substantial raising of the "nuclear threshold," as was envisioned when "flexible response" was first conceived, has not become a reality.

Before turning to the question whether NATO can initiate the use of nuclear weapons-in response to a Soviet attack-with benefit to the Alliance, I should perhaps comment
For much of the postwar period, Soviet military doctrine appears to have assumed that war between the great powers would include the use of nuclear weapons. Soviet publications stressed the use of both long- and intermediate-range nuclear weapons in the initial hours of a conflict, to destroy concentrations of enemy forces and the ports, airfields, and other facilities necessary to support military operations. And these publications emphasized as well the use of tactical nuclear weapons on the battlefield.

The way that Soviet soldiers trained, the protective clothing and decontamination equipment with which they were equipped, and the nature of their military exercises—which for years always included a nuclear phase—suggested that the written expressions of Soviet military doctrine constituted deadly serious descriptions of the way the U.S.S.R. planned to fight the next war.

In fact, until the mid-1960s, writings of Soviet military officials consistently maintained that the only conflict possible between the great powers was an all-out nuclear war. They asserted, moreover, that it was possible to prevail in such a conflict, and they urged the military and social preparations necessary to ensure that the U.S.S.R. emerged triumphant from any nuclear conflict. It was these writings which, in the late 1970s, were used so devastatingly by opponents of nuclear arms control in the debate on the SALT II Treaty.

By that time, however, this portrayal of Soviet military doctrine was becoming badly out of date.

Official Soviet doctrine changed slightly in the mid-1960s as Soviet writers began to admit the possibility of a "war by stages" in Europe, in which the first phase would be a conventional one. Although they asserted that this initial stage would be very short, and further noted that the conflict "inevitably" would escalate to all-out nuclear war, the previous doctrinal rigidity had been broken.

Soviet experts and military officials debated the inevitability of nuclear escalation throughout the 1960s and much of the 1970s. By the time of a famous speech of Leonid Brezhnev at Tula in 1977, the question seems to have been settled: Soviet theorists then admitted the possibility of a major protracted war between East and West in which nuclear weapons would not be used.

Indeed, the Soviets now officially maintain that they would not be the first to make use
of nuclear weapons. As stated by Defense Minister Ustinov in 1982: "Only extraordinary circumstances—a direct nuclear aggression against the Soviet state or its allies—can compel us to resort to a retaliatory nuclear strike as a last means of self-defense."  

This is a new position for the U.S.S.R. It was first articulated by Brezhnev at the U.N. Special Session on Disarmament in June 1982. Previously, Soviet spokesmen had only been willing to say that they would not use nuclear weapons against non-nuclear powers.

Along with this shift has come the explicit and repeated renunciation of what Soviet spokesmen had declared for more than two decades: that it was possible to fight and win a nuclear war. All Soviet writers and political leaders addressing this question now solemnly declare that "there will be no victors in a nuclear war."

Does this doctrinal shift suggest that the U.S.S.R. is no longer prepared for nuclear war in Europe? Certainly not. In addition to the deployment of intermediate-range SS-20 missiles, the Soviets are busily modernizing their shorter-range nuclear-armed missiles in Europe (SS-21s, SS-22s and SS-23s). Two types of artillery tubes capable of firing nuclear charges have been seen with Soviet units in Eastern Europe in larger numbers in recent years. And there are now many more aircraft capable of delivering nuclear bombs deployed with Soviet forces in Europe than was the case not many years ago.

The U.S.S.R. is obviously prepared to respond if NATO chooses to initiate nuclear war. I turn, then, to the question of whether NATO can initiate the use of nuclear weapons, in response to a Soviet conventional attack, with benefit to the Alliance.

III

Doubts about the wisdom of NATO's strategy of flexible response, never far from the surface, emerged as a major issue in the late 1970s; debate has intensified in the ensuing years. The debate hinges on assessments of the military value of nuclear weapons.  

The nuclear balance has changed substantially since the Kennedy Administration first proposed a strategy of flexible response. Both sides have virtually completely refurbished their inventories, increasing the number of weapons of all three different types—battlefield, intermediate-range and strategic—and vastly improving the
performance characteristics of both the weapons themselves and their delivery systems. Because the Soviet Union was so far behind the United States in the early 1960s, the quantitative changes, at least, appear to have been more favorable for the U.S.S.R. The ratio of warheads on strategic and intermediate-range launchers, for example, has shifted from a very great U.S. advantage in 1962 to a far more modest advantage at present.

As the Soviet Union moved toward and then achieved rough parity in strategic and intermediate-range forces, a crucial element of the flexible response strategy became less and less credible.

It will be recalled that the strategy calls for the Alliance to initiate nuclear war with battlefield weapons if conventional defenses fail, and to escalate the type of nuclear weapons used (and therefore the targets of those weapons), as necessary, up to and including the use of strategic forces against targets in the U.S.S.R. itself. Given the tremendous devastation which those Soviet strategic forces that survived a U.S. first strike would now be able to inflict on this country, it is difficult to imagine any U.S. President, under any circumstances, initiating a strategic strike except in retaliation against a Soviet nuclear strike. It is this reasoning which led to the much criticized statement by Henry Kissinger in Brussels in 1979, quoted earlier. Kissinger's speech was criticized not for its logic, however, only for its frankness.

In short, a key element of the flexible response strategy has been overtaken by a change in the physical realities of the nuclear balance. With huge survivable arsenals on both sides, strategic nuclear weapons have lost whatever military utility may once have been attributed to them. Their sole purpose, at present, is to deter the other side's first use of its strategic forces.

Thus, given that NATO would not be the first to use strategic nuclear weapons, is it conceivable that the first use of tactical weapons would be to its military advantage?

The roughly 6,000 NATO nuclear weapons now deployed in Europe consist of warheads for air-defense missiles, nuclear mines (known as atomic demolition munitions), warheads for shorter-range missiles, nuclear bombs, and nuclear-armed artillery shells. The North Atlantic Assembly recently published a rough estimate of the distribution of these weapons. It is shown in the table below.

U.S. NUCLEAR WARHEADS
Located in Europe in 1981

Bombs to be delivered by aircraft 1069

Artillery Shells (203mm and 155mm) 2000

Missiles: Pershing IA 270

Lance and Honest John 910

Air Defense and Atomic Demolition Charges 1750

Total 5999

According to these figures, nuclear artillery shells comprise the largest portion of the stockpile, about one-third of the total. They are also the weapons which cause the greatest worry.

There are two types of nuclear artillery shells in the NATO inventory: those for 155mm howitzers and those for 203mm cannons. Both the howitzers and cannons are dual-capable: they can be used to fire shells containing conventional explosives as well as nuclear weapons. The precise ranges of these systems are classified, but most accounts put them at around ten miles. Because of the short range of nuclear artillery, the guns and their nuclear shells tend to be deployed close to the potential front lines of any conflict in Europe—there are, in effect, approximately 2,000 short-range nuclear warheads concentrated at a few sites close to the German border.

Atomic demolition munitions (ADMs) also raise particular concerns. These weapons are about 25 years old and probably no longer reliable. Intended to block mountain passes and other "choke points" on potential Soviet invasion routes, their effects would be felt on NATO territory. Moreover, to be effective they would have to be emplaced before a war actually began. Such an action could aggravate a crisis and would probably contribute to the likelihood of the war starting. At the same time, because ADMs would have to be used at the very onset of the conflict, their use would mean that NATO had not tested the ability of its conventional forces to contain a Warsaw Pact invasion.

Similar problems beset nuclear-armed air defense systems. They are old and probably unreliable. And they are intended for use at the onset of a conflict—to disrupt the large-scale air attacks that would accompany a Warsaw Pact invasion—thus negating the strategy of "flexible response."
In an acute crisis in which the risk of war seemed to be rising, these characteristics of nuclear artillery, mines, and air defense systems would be likely to lead to pressures on NATO’s political leaders, particularly the U.S. President, to delegate the authority to release these weapons to the military commanders on the scene. Whether such authority were delegated or not, it is these characteristics—most importantly the vulnerability of NATO’s nuclear artillery—which lead many observers to predict that the Alliance would use tactical nuclear weapons within hours of the start of a war in Europe. In effect, whether its military or civilian leaders retained decision authority, NATO would be likely to face the choice of either using its battlefield nuclear weapons or seeing them overrun or destroyed by the enemy.

In terms of their military utility, NATO has not found it possible to develop plans for the use of nuclear artillery which would both assure a clear advantage to the Alliance and at the same time avoid the very high risk of escalating to all-out nuclear war.

Current guidelines on the initial use of nuclear weapons date from the early 1970s. A former member of the High Level Group, a special official committee established by NATO in 1978 to examine the Alliance’s nuclear posture, stated recently that despite discussions lasting for years, "NATO has not yet managed to agree on guidelines for the follow-on use of nuclear weapons if a first attempt to communicate NATO’s intentions through a controlled demonstrative use did not succeed in persuading the adversary to halt hostilities." Two problems stand in the way.

First, since the assumption is made that NATO will be responding to a Warsaw Pact invasion of Western Europe, and since the artillery has short range, the nuclear explosions would occur on NATO’s own territory. If a substantial portion of the 2,000 nuclear artillery shells were fired, not only would the Warsaw Pact likely suffer heavy casualties among its military personnel, but large numbers of NATO’s civilian and military personnel also would likely be killed and injured. There also would be considerable damage to property, farmland and urbanized areas.

Moreover, there is no reason to believe that the Warsaw Pact, now possessing tactical and intermediate-range nuclear forces at least comparable to those of NATO, would not respond to NATO’s initiation of nuclear war with major nuclear attacks of its own. These attacks would probably seek most importantly to reduce NATO’s ability to fight a nuclear war by destroying command and control facilities, nuclear weapon storage
sites, and the aircraft, missiles, and artillery which would deliver NATO’s nuclear weapons. Direct support facilities like ports and airfields would likely also be attacked in the initial Warsaw Pact nuclear offensive. Thus the war would escalate from the battlefield to the rest of Western Europe (and probably to Eastern Europe as well, as NATO retaliated).

What would be the consequences of such a conflict? In 1955 an exercise called "Carte Blanche" simulated the use of 335 nuclear weapons, 80 percent of which were assumed to detonate on German territory. In terms of immediate casualties (ignoring the victims of radiation, disease, and so forth), it was estimated that between 1.5 and 1.7 million people would die and another 3.5 million would be wounded-more than five times the German civilian casualties in World War II-in the first two days. This exercise prompted Helmut Schmidt to remark that the use of tactical nuclear weapons "will not defend Europe, but destroy it."18

Additional studies throughout the 1960s confirmed these results. They prompted two of my former aides in the Pentagon to write in 1971:

Even under the most favorable assumptions, it appeared that between 2 and 20 million Europeans would be killed, with widespread damage to the economy of the affected area and a high risk of 100 million dead if the war escalated to attacks on cities. 19

Have the more modern weapons deployed on both sides in the 1970s changed the likely results of nuclear war in Europe? Not at all! A group of experts were assembled recently by the U.N. Secretary General to study nuclear war. They simulated a conflict in which 1,500 nuclear artillery shells and 200 nuclear bombs were used by the two sides against each other's military targets. The experts concluded that as a result of such a conflict there would be a minimum of five to six million immediate civilian casualties and 400,000 military casualties, and that at least an additional 1.1 million civilians would suffer from radiation disease.20

It should be remembered that all these scenarios, as horrible as they would be, involve the use of only a small portion of the tactical nuclear weapons deployed in Europe, and assume further that none of the roughly 20,000 nuclear warheads in the U.S. and U.S.S.R.'s central strategic arsenals would be used. Yet portions of those central forces are intended for European contingencies: the United States has allocated 400 of its submarine-based Poseidon warheads for use by NATO; the Soviet Union, it is believed, envisions as many as several hundred of its ICBMs being used against targets
Is it realistic to expect that a nuclear war could be limited to the detonation of tens or even hundreds of nuclear weapons, even though each side would have tens of thousands of weapons remaining available for use?

The answer is clearly no. Such an expectation requires the assumption that even though the initial strikes would have inflicted large-scale casualties and damage to both sides, one or the other—feeling disadvantaged—would give in. But under such circumstances, leaders on both sides would be under unimaginable pressure to avenge their losses and secure the interests being challenged. And each would fear that the opponent might launch a larger attack at any moment. Moreover, they would both be operating with only partial information because of the disruption to communications caused by the chaos on the battlefield (to say nothing of possible strikes against communications facilities). Under such conditions, it is highly likely that rather than surrender, each side would launch a larger attack, hoping that this step would bring the action to a halt by causing the opponent to capitulate.

It was assessments like these which led not only Field Marshall Lord Carver, but Lord Louis Mountbatten and several other of the eight retired Chiefs of the British Defence Staff as well, to indicate that under no circumstances would they have recommended that NATO initiate the use of nuclear weapons.

And it was similar considerations which led me to the same conclusions in 1961 and 1962.

It is inconceivable to me, as it has been to others who have studied the matter, that "limited" nuclear wars would remain limited—any decision to use nuclear weapons would imply a high probability of the same cataclysmic consequences as a total nuclear exchange. In sum, I know of no plan which gives reasonable assurance that nuclear weapons can be used beneficially in NATO's defense.

I do not believe the Soviet Union wishes war with the West. And certainly the West will not attack the U.S.S.R. or its allies. But dangerous frictions between the Warsaw Pact and NATO have developed in the past and are likely to do so in the future. If deterrence fails and conflict develops, the present NATO strategy carries with it a high risk that Western civilization, as we know it, will be destroyed.

If there is a case for NATO retaining its present strategy, that case must rest on the
strategy's contribution to the deterrence of Soviet aggression being worth the risk of nuclear war in the event deterrence fails.

IV

The question of what deters Soviet aggression is an extremely difficult one. To answer it, we must put ourselves in the minds of several individuals who would make the decision to initiate war. We must ask what their objectives are for themselves and their nation, what they value and what they fear. We must assess their proclivity to take risks, to bluff, or to be bluffeed. We must guess at how they see us—our will and our capabilities—and determine what we can do to strengthen their belief in the sincerity of our threats and our promises.

But most difficult of all, we must evaluate all these factors in the context of an acute international crisis. Our problem is not to persuade the Soviets not to initiate war today. It is to cause them to reach the same decision at some future time when, for whatever reason—for example, an uprising in Eastern Europe that is getting out of control, or a U.S.-Soviet clash in Iran, or conflict in the Middle East—they may be tempted to gamble and try to end what they see as a great threat to their own security.

In such a crisis, perceptions of risks and stakes may change substantially. What may look like a reckless gamble in more tranquil times might then be seen merely as a reasonable risk. This will be the case particularly if the crisis deteriorates so that war begins to appear more and more likely. In such a situation, the advantages of achieving tactical surprise by going first can appear to be more and more important.

As I have indicated, the launch of strategic nuclear weapons against the Soviet homeland would lead almost certainly to a response in kind which would inflict unacceptable damage on Europe and the United States—it would be an act of suicide. The threat of such an action, therefore, has lost all credibility as a deterrent to Soviet conventional aggression. The ultimate sanction in the flexible response strategy is thus no longer operative. One cannot build a credible deterrent on an incredible action.

Many sophisticated observers in both the United States and Europe, however, believe that the threat to use tactical nuclear weapons in response to Warsaw Pact aggression increases the perceived likelihood of such an action, despite its absolute irrationality. They believe that by maintaining battlefield weapons near the front lines, along with the requisite plans and doctrines to implement the strategy that calls for their use, NATO confronts the Warsaw Pact with a dangerous possibility which cannot be
In contemplating the prospect of war, they argue, Soviet leaders must perceive a risk that NATO would implement its doctrine and use nuclear weapons on the battlefield, thus initiating an escalatory process which could easily get out of control, leading ultimately to a devastating strategic exchange between the two homelands. It is not that NATO would coolly and deliberately calculate that a strategic exchange made sense, they explain, but rather that the dynamics of the crisis would literally force such an action—or so Soviet leaders would have to fear.

Each step of the escalation would create a new reality, altering each side's calculation of the risks and benefits of alternative courses of action. Once U.S. and Soviet military units clashed, perceptions of the likelihood of more intense conflicts would be changed radically. Once any nuclear weapon had been used operationally, assessments of other potential nuclear attacks would be radically altered.

In short, those who assert that the nuclear first use threat serves to strengthen NATO's deterrent believe that, regardless of objective assessments of the irrationality of any such action, Soviet decision-makers must pay attention to the realities of the battlefield and the dangers of the escalatory process. And, in so doing, they maintain, the Soviets will perceive a considerable risk that conventional conflict will lead to the use of battlefield weapons, which will lead in turn to theater-wide nuclear conflict, which will inevitably spread to the homelands of the superpowers.

In fact, it was a desire to strengthen the perception of such a likely escalation that led NATO to its December 1979 decision to deploy the new intermediate-range Pershing II and the nuclear-armed cruise missiles in Europe. The key element in that decision was that the new missiles would be capable of striking Soviet territory, thus presumably precipitating a Soviet attack on U.S. territory and a U.S. retaliation against the whole of the Soviet homeland. The new weapons thus "couple" U.S. strategic forces with the forces deployed in Europe, easing concerns that the Soviets might perceive a firebreak in the escalatory process. So long as the escalation is perceived to be likely to proceed smoothly, the logic continues, then the Warsaw Pact will be deterred from taking the first step—the conventional aggression—which might start the process.

But for the same reason that led Henry Kissinger to recognize that a U.S. President is unlikely to initiate the use of U.S.-based strategic nuclear weapons against the
U.S.S.R., so a President would be unlikely to launch missiles from European soil against Soviet territory.

And, as I have indicated, more and more Western political and military leaders are coming to recognize, and publicly avowing, that even the use of battlefield nuclear weapons in Europe would bring greater destruction to NATO than any conceivable contribution they might make to NATO's defense.

There is less and less likelihood, therefore, that NATO would authorize the use of any nuclear weapons except in response to a Soviet nuclear attack. As this diminishing prospect becomes more and more widely perceived-and it will-whatever deterrent value still resides in NATO's nuclear strategy will diminish still further.

There are additional factors to be considered. Whether it contributes to deterrence or not, NATO's threat of "first use" is not without its costs: it is a most contentious policy, leading to divisive debates both within individual nations and between the members of the Alliance; it reduces NATO's preparedness for conventional war; and, as I have indicated, it increases the risk of nuclear war.

Preparing for tactical nuclear war limits NATO's ability to defend itself conventionally in several ways. Nuclear weapons are indeed "special" munitions. They require special command, control and communications arrangements. They require special security precautions. They limit the flexibility with which units can be deployed and military plans altered. Operations on a nuclear battlefield would be very different than those in a conventional conflict; NATO planning must take these differences into account.

Moreover, since most of the systems that would deliver NATO's nuclear munitions are dual-purpose, some number of aircraft and artillery must be reserved to be available for nuclear attacks early in a battle, if that became necessary, and are thus not available for delivering conventional munitions.

Most important, though, the reliance on NATO's nuclear threats for deterrence makes it more difficult to muster the political and financial support necessary to sustain an adequate conventional military force. Both publics and governments point to the nuclear force as the "real deterrent," thus explaining their reluctance to allocate even modest sums for greater conventional capabilities.

To the extent that the nuclear threat has deterrent value, it is because it in fact increases the risk of nuclear war. The location of nuclear weapons in what would be
forward parts of the battlefield; the associated development of operational plans assuming the early use of nuclear weapons; the possibility that release authority would be delegated to field commanders prior to the outset of war—these factors and many others would lead to a higher probability that if war actually began in Europe, it would soon turn into a nuclear conflagration.

Soviet predictions of such a risk, in fact, could lead them to initiate nuclear war themselves. For one thing, preparing themselves for the possibility of NATO nuclear attacks means that they must avoid massing their offensive units. This would make it more difficult to mount a successful conventional attack, raising the incentives to initiate the war with a nuclear offensive. Moreover, if the Soviets believe that NATO would indeed carry out its nuclear threat once they decided to go to war—whether as a matter of deliberate choice or because the realities of the battlefield would give the Alliance no choice—the Soviets would have virtually no incentive not to initiate nuclear war themselves.

I repeat, this would only be the case if they had decided that war was imminent and believed there would be high risk that NATO's threats would be fulfilled. But if those two conditions were valid, the military advantages to the Warsaw Pact of preemptive nuclear strikes on NATO's nuclear storage sites, delivery systems, and support facilities could be compelling.

The costs of whatever deterrent value remains in NATO's nuclear strategy are, therefore, substantial. Could not equivalent deterrence be achieved at lesser "cost"? I believe the answer is yes. Compared to the huge risks which the Alliance now runs by relying on increasingly less credible nuclear threats, recent studies have pointed to ways by which the conventional forces may be strengthened at modest cost.

V

Writing in these pages only 15 months ago, General Bernard Rogers, the present Supreme Allied Commander in Europe, stated that major improvements in NATO's conventional forces were feasible at a modest price. These improvements, he said, would permit a shift from the present strategy requiring the early use of nuclear weapons to a strategy of "no early use of nuclear weapons." General Rogers estimated the cost to be approximately one percent per year greater than the three percent annual increase (in real terms) which the members of NATO, meeting in Washington, had agreed to in 1978.
An experienced Pentagon consultant, MIT Professor William W. Kaufmann, has taken General Rogers' suggestions of four percent annual increases in NATO defense budgets and analyzed how those funds could best be allocated to improve the Alliance's conventional defenses. After an exhaustive analysis, he concluded that a conventional force could be acquired which would be sufficiently strong to give a high probability of deterring Soviet aggression without threatening the use of nuclear weapons.23

Recently, an international study group also analyzed the possibilities for moving away from NATO's present nuclear reliance.24 The steering committee of this "European Security Study" included among its members General Andrew Goodpaster, who once served as the Supreme Allied Commander in Europe; General Franz-Josef Schulze, a German officer, formerly Commander in Chief of Allied Forces in Central Europe; and Air Marshall Sir Alasdair Steedman, formerly the United Kingdom's military representative to NATO.

Their report concludes that NATO's conventional forces could be strengthened substantially at very modest cost—a total of approximately $20 billion which would be spent over a period of five or six years. For comparative purposes, note that the MX missile program is expected to cost $18 billion over the next five years.

The European Security Study stated that to constitute an effective deterrent, NATO's conventional forces did not have to match specific Soviet capabilities. Rather, these forces need only be strong enough to create serious concerns for Warsaw Pact planners whether or not their attack could succeed.

To accomplish this, the study concluded, NATO's conventional forces would have to be able to:

- stop the initial Warsaw Pact attack;
- erode the enemy's air power;
- interdict the follow-on and reinforcing armored formations which the Pact would attempt to bring up to the front-lines;
- disrupt the Pact's command, control, and communications network; and
- ensure its own secure, reliable, and effective communications.

The report outlines in detail how NATO could achieve these five objectives utilizing newly available technologies, and accomplishing with conventional weapons what
previously had required nuclear munitions. These technological advances would permit the very accurate delivery of large numbers of conventional weapons, along with dramatic improvements in the ability to handle massive quantities of military information.

The effectiveness of the new technologies was testified to most recently by Senator Sam Nunn, a leading congressional expert on European defense issues:

We now have at hand new conventional technologies capable of destroying the momentum of a Soviet invasion by means of isolating the first echelon of attacking forces from reinforcing follow-on echelons. These technologies . . . capitalize on three major advances. The first is the substantially improved lethality of improved conventional munitions . . . . The second is the . . . growing capability of microelectronics to enhance the rapid collection, processing, distribution, and ability to act upon information about the size, character, location, and movement of enemy units . . . . The third is improved ability to move and target quickly large quantities of improved conventional firepower against enemy force concentrations.25

The potential of these new conventional technologies is great. Unfortunately, they have not yet been accepted by any NATO nation for incorporation in its force structure and defense budget.

Moving from the present situation to revised strategic doctrines, war plans, and force structures to implement a conventional deterrent strategy could not be accomplished overnight. Still, over time, NATO's basic strategy could be modified within realistic political and financial constraints.

The process should probably begin with a statement by the Alliance, at a summit meeting of its heads of government, of its intention to move to a policy of deterrence of Soviet conventional-force aggression solely through the use of non-nuclear forces.

This statement of intention could then be followed by the drafting of detailed plans and programs. Conventional defense improvements would be set in motion; new doctrines debated and approved; parliaments tested as to their willingness to support the modestly larger expenditures necessary for strengthening the conventional forces.

In the meantime, immediate steps could be taken to reduce the risk of nuclear war. For example:

- Weapons modernization programs designed to support a strategy of early use of
nuclear weapons—such as those to produce and deploy new generations of nuclear artillery shells—could be halted.

- The Alliance's tactical nuclear posture could be thoroughly overhauled, with an eye toward shifting to a posture intended solely to deter the first use of nuclear weapons by the Warsaw Pact. Such a shift would permit major reductions in the number of nuclear weapons now deployed with NATO's forces in Europe; no more, and probably less, than 3,000 weapons would be sufficient. Those weapons which raise the most serious problems of release authority and pressures for early use—atomic demolition munitions and nuclear air defense systems—could be withdrawn immediately. Nuclear artillery could be withdrawn as the program to improve the conventional posture was implemented.

- The creation of a zone on both sides of the border in Europe, beginning in the Central Region, within which no nuclear munitions could be deployed, could be proposed to the Soviets. The agreement to create such a zone could be verified by on-site inspections on a challenge basis. The Soviet Union has stated officially that it supports a nuclear-free zone, although it proposed that the width of the zone be far greater than is likely to be acceptable to NATO. If agreement could be reached on the size of the zone and adequate methods established to verify compliance with the agreement, such an agreement could build confidence on both sides that pressures for early use of nuclear weapons could be controlled. The January 1984 international conference in Stockholm on confidence-building measures in Europe would be a logical forum in which to discuss such an idea.

VI

I now want to conclude this article by stating unequivocally my own views on the military role of nuclear weapons.

Having spent seven years as Secretary of Defense dealing with the problems unleashed by the initial nuclear chain reaction 40 years ago, I do not believe we can avoid serious and unacceptable risk of nuclear war until we recognize—and until we base all our military plans, defense budgets, weapon deployments, and arms negotiations on the recognition—that nuclear weapons serve no military purpose whatsoever. They are totally useless—except only to deter one's opponent from using them.

This is my view today. It was my view in the early 1960s.
At that time, in long private conversations with successive Presidents-Kennedy and Johnson-I recommended, without qualification, that they never initiate, under any circumstances, the use of nuclear weapons. I believe they accepted my recommendation.

I am not suggesting that all U.S. Presidents would behave as I believe Presidents Kennedy and Johnson would have, although I hope they would. But I do wish to suggest that if we are to reach a consensus within the Alliance on the military role of nuclear weapons-an issue that is fundamental to the peace and security of both the West and the East-we must face squarely and answer the following questions.

- Can we conceive of ways to utilize nuclear weapons, in response to Soviet aggression with conventional forces, which would be beneficial to NATO?

- Would any U.S. President be likely to authorize such use of nuclear weapons?

- If we cannot conceive of a beneficial use of nuclear weapons, and if we believe it unlikely that a U.S. President would authorize their use in such a situation, should we continue to accept the risks associated with basing NATO's strategy, war plans and nuclear warhead deployment on the assumption that the weapons would be used in the early hours of an East-West conflict?

- Would the types of conventional forces recommended by General Rogers, Professor William Kaufmann and the European Security Study, serve as an adequate deterrent to non-nuclear aggression by the U.S.S.R.? If so, are we not acting irresponsibly by continuing to accept the increased risks of nuclear war associated with present NATO strategy in place of the modest expenditures necessary to acquire and sustain such forces?

- Do we favor a world free of nuclear weapons? If so, should we not recognize that such a world would not provide a "nuclear deterrent" to Soviet conventional aggression? If we could live without such a deterrent then, why can't we do so now-thereby moving a step toward a non-nuclear world?


4 Speech in Washington, April 6, 1982.


7 An excellent brief history of NATO's conception of the role of nuclear weapons is presented in J. Michael Legge, "Theater Nuclear Weapons and the NATO Strategy of Flexible Response," Santa Monica ( Calif.): RAND Corporation, R-2964-FF, April 1983. For this section I have also drawn on unpublished writings of David A. Rosenberg and David Schwartz.


10 Much of the following discussion is based on James M. McConnell, "The Shift in Soviet Military Development from Nuclear to Conventional," manuscript to be published in International Security.


12 D. F. Ustinov, "We Serve the Homeland and the Cause of Communism," Izvestia, May 27, 1982.

13 For this section, I have drawn on Arms Control and National Security, Washington: Arms Control Association, 1983; the unpublished writings of William W. Kaufmann and Leon V. Segal; and recent discussions with military and civilian experts, not all of whom agree with one another.

17 A 100-kiloton tactical nuclear weapon would be needed to destroy approximately 50
to 100 armored fighting vehicles (e.g., tanks) in dispersed formation, the equivalent of
a regiment. Such a weapon would create general destruction (of structures and people)
in a circle with a diameter of 4.5 miles (an area of 15 square miles). A blast circle of
this size, in typical Western European countries, would be likely to include two or
three villages or towns of several thousand persons. In addition, depending on the
nature of the weapon and height of burst, a much larger area could be affected by
fallout. Several hundred of such tactical nuclear weapons would be required to counter
an armored development in Europe. See Seymour J. Deitchman, New Technology and

comment and the exercise result are cited in Jeffrey Record, U.S. Nuclear Weapons in

& Row, 1971, p.128.

20 General and Complete Disarmament: A Comprehensive Study on Nuclear

21 This discussion is based on a presentation by Vice Admiral John M. Lee (Ret.) in
St. Petersburg, Florida, December 17, 1981.

23 Unpublished writings of Professor Kaufmann.

24 Strengthening Conventional Deterrence in Europe, Report of the European

Battle Bots
How the World Should Prepare Itself for Robotic Warfare

Denise Garcia