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While plans for orbital bombs have disappeared, protection of other military assets in space is now of major importance.

satellite threat is limited. Furthermore, critics argue, the Soviets must also confront the technical obstacles to an effective directed-energy antisatellite system. Thus, U.S. efforts can be limited to basic research and development without risk to national security.

However, a policy of unilateral restraint may be politically costly. Any Soviet program unmatched by a comparable U.S. effort is generally subject to a "worst-case" analysis: the Soviets' technical capabilities are extended well beyond those supported by the available evidence. This happened in 1962 when the Soviets were attributed with having an antisatellite system after the dual launching. The testing of an ineffective directed-energy antisatellite system by either side would similarly lead to unnecessary threats to international stability.

Stratospheric Standoff

A third option is now advocated by some observers, including Richard Garwin of IBM and Harvard's Kennedy School of Government and Donald Hafner, former advisor to the U.S. SALT delegation: a treaty to limit the development and deployment of both U.S. and Soviet antisatellites. A model of such an arms-limitation agreement is provided by the 1972 Anti-Ballistic-Missile Treaty, in which the United States and the Soviet Union agreed to limit ABM deployment to two sites (later decreased to one) and placed very broad restraints on the development of new deployment modes.

Antisatellite development is now at a stage similar to that of ABM systems prior to the 1972 agreement: the Soviet Union has a very primitive and unreliable but formally operational antisatellite system, while the United States is in the process of developing the more sophisticated MHV. In the case of the ABM, high cost, technical unreliability, and domestic opposition contributed to the establishment of restraints. With the MHV antisatellite, these factors are less obvious.

Bilateral constraints were the subject of the antisatellite-limitation negotiations conducted sporadically between June 1978 and August 1979. However, the United States and the Soviet Union entered the negotiations with different capabilities and objectives, and various U.S. agencies could not agree on common goals. For example, the air force argued that prior development of a U.S. antisatellite system was necessary as a bargaining chip, while other agencies argued that further development would block any opportunity for limitations. And while the Soviets argued that

the shuttle gives the United States an effective anti-satellite capability, the U.S. stressed that the shuttle is not an antisatellite system.

Increasing tensions between the United States and the Soviet Union after the Soviet invasion of Afghanistan, and the general skepticism about arms control in the Reagan administration, are not conducive to arms-control negotiations in general and antisatellite-limitation talks in particular. Nevertheless, both nations would benefit from unobstructed use of satellite systems, and neither would benefit if the other succeeded in deploying a directed-energy antisatellite system.

Even in the absence of formal arms-control negotiations, tacit limitations are possible. Such an informal process led to a relaxed attitude about reconnaissance satellites and the generally low priority of antisatellite development in the 1960s. If such policies continued, the United States could postpone development of the antisatellite with little risk since current Soviet capability poses a very limited threat.

This risk could be further reduced by "hardening" present U.S. military satellites against possible attack and deploying redundant command, control, and communications systems in space, in the air, and on the ground. Such an approach would serve American interests even if the Soviets proceeded with their own program. The alternative is to sink billions of dollars into a project that is strategically, technically, and fiscally dubious.

Further Reading

"Particle-Beam Weapons." *Aviation Week and Space Technology*, October 2, 9, 16, and 30 and November 6 and 13, 1978.

Bekefi, G., B. Feld, J. Parmentola, K. Tsipis, "Particle-Beam Weapons: A Technical Assessment." *Nature* 284, 5753 (March 20, 1980): 219-225.

Callahan, M., and K. Tsipis, "High-Energy Laser Weapons: A Technical Assessment." Program in Science and Technology for International Security Report #6, Department of Physics, M.I.T.

Garthoff, Raymond L., "Banning the Bomb in Outer Space." *International Security* 5, 3 (Winter 1980/1).

Garwin, Richard, "Are We on the Verge of an Arms Race in Space?" *Bulletin of the Atomic Scientists*, May 1981.

Hafner, Donald L., "Arms-Control Measures for Antisatellite Weapons." *International Security*.

Meyer, Stephen M., "Antisatellite Weapons and Arms Control: Incentives and Disincentives from Soviet and American Perspectives." *International Journal*, Summer 1981.

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*Under the Nuclear Gun (I)***VICTORY
IS POSSIBLE***by Colin S. Gray and Keith Payne*

Nuclear war is possible. But unlike Armageddon, the apocalyptic war prophesied to end history, nuclear war can have a wide range of possible outcomes. Many commentators and senior U.S. government officials consider it a nonsurvivable event. The popularity of this view in Washington has such a pervasive and malign effect upon American defense planning that it is rapidly becoming a self-fulfilling prophecy for the United States.

Recognition that war at any level can be won or lost, and that the distinction between winning and losing would not be trivial, is essential for intelligent defense planning. Moreover, nuclear war can occur regardless of the quality of U.S. military posture and the content of American strategic theory. If it does, deterrence, crisis management, and escalation control might play a negligible role. Through an inability to communicate or through Soviet disinterest in receiving and acting upon American messages, the United States might not even have the option to surrender and thus might have to fight the war as best it can. Furthermore, the West needs to devise ways in which it can employ strategic nuclear forces coercively, while minimizing the potentially paralyzing impact of self-deterrence.

If American nuclear power is to support U.S. foreign policy objectives, the United States must possess the ability to wage nuclear war rationally. This requirement is inherent in the geography of East-West relations, in the persisting deficiencies in Western conventional and theater nuclear forces, and

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in the distinction between the objectives of a revolutionary and status quo power.

U.S. strategic planning should exploit Soviet fears insofar as is feasible from the Soviet perspective: take full account of likely Soviet responses and the willingness of Americans to accept those responses; and provide for the protection of American territory. Such planning would enhance the prospect for effective deterrence and survival during a war. Only recently has U.S. nuclear targeting policy been based on careful study of the Soviet Union as a distinct political culture, but the U.S. defense community continues to resist many of the policy implications of Soviet responses to U.S. weapons programs. In addition, the U.S. government simply does not recognize the validity of attempting to relate its freedom of offensive nuclear action and the credibility of its offensive nuclear threat to the protection of American territory.

U.S. nuclear strategy is immoral.

Critics of such strategic planning are vulnerable in two crucial respects: They do not, and cannot, offer policy prescriptions that will insure that the United States is never confronted with the stark choice between fighting a nuclear war or surrendering, and they do not offer a concept of deterrence that meets the extended responsibilities of U.S. strategic nuclear forces. No matter how elegant the deterrence theory, a question that cannot be avoided is what happens if deterrence mechanisms fail? Theorists whose concept of deterrence is limited to massive retaliation after Soviet attack would have nothing of interest to say to a president facing conventional defeat in the Persian Gulf or in Western Europe. Their strategic environment exists only in peacetime. They can recommend very limited, symbolic options but have no theory of how a large-scale Soviet response is to be deterred.

Because many believe that homeland de-

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fense will lead to a steeper arms race and destabilize the strategic balance, the U.S. defense community has endorsed a posture that maximizes the prospect for self-deterrence. Yet the credibility of the extended U.S. deterrent depends on the Soviet belief that a U.S. president would risk nuclear escalation on behalf of foreign commitments.

In the late 1960s the United States endorsed the concept of strategic parity without thinking through what that would mean for the credibility of America's nuclear umbrella. A condition of parity or essential equivalence is incompatible with extended deterrent duties because of the self-deterrence inherent in such a strategic context. However, the practical implications of parity may be less dire in some areas of U.S. vital interest. Western Europe, for example, is so important an American interest that Soviet leaders could be more impressed by the character and duration of the U.S. commitment than by the details of the strategic balance.

A Threat to Commit Suicide

Ironically, it is commonplace to assert that war-survival theories affront the crucial test of political and moral acceptability. Surely no one can be comfortable with the claim that a strategy that would kill millions of Soviet citizens and would invite a strategic response that could kill tens of millions of U.S. citizens would be politically and morally acceptable. However, it is worth recalling the six guidelines for the use of force provided by the "just war" doctrine of the Catholic Church: Force can be used in a just cause; with a right intent; with a reasonable chance of success; in order that, if successful, its use offers a better future than would have been the case had it not been employed; to a degree proportional to the goals sought, or to the evil combated; and with the determination to spare noncombatants, when there is a reasonable chance of doing so.

These guidelines carry a message for U.S. policy. Specifically, as long as nuclear threat is a part of the U.S. diplomatic arsenal and

provided that threat reflects real operational intentions—it is not a total bluff—U.S. defense planners are obliged to think through the probable course of a nuclear war. They must also have at least some idea of the intended relationship between force applied and the likelihood that political goals will be achieved—that is, a strategy.

Current American strategic policy is not compatible with at least three of the six just-war guidelines. The policy contains no definition of success aside from denying victory to the enemy, no promise that the successful use of nuclear power would insure a better future than surrender, and no sense of proportion because central war strategy in operational terms is not guided by political goals. In short, U.S. nuclear strategy is immoral.

Those who believe that a central nuclear war cannot be waged for political purposes because the destruction inflicted and suffered would dwarf the importance of any political goals can construct a coherent and logical policy position. They argue that nuclear war will be the end of history for the states involved, and that a threat to initiate nuclear war is a threat to commit suicide and thus lacks credibility. However, they acknowledge that nuclear weapons cannot be abolished. They maintain that even incredible threats may deter, provided the affront in question is sufficiently serious, because miscalculation by an adversary could have terminal consequences; because genuinely irrational behavior is always possible; and because the conflict could become uncontrollable.

In the 1970s the U.S. defense community rejected this theory of deterrence. Successive strategic targeting reviews appeared to move U.S. policy further and further from the declaratory doctrine of mutual assured destruction adopted by former Secretary of Defense Robert S. McNamara. Yet U.S. defense planners have not thoroughly studied the problems of nuclear war nor thought through the meaning of strategy in relation to nuclear war. The U.S. defense community

has always tended to regard strategic nuclear war not as war but as a holocaust. Former Secretary of Defense James R. Schlesinger apparently adopted limited nuclear options (LNOs)—strikes employing anywhere from a handful to several dozen warheads—as a compromise between the optimists of the minimum deterrence school and the pessimists of the so-called war-fighting persuasion. By definition, LNOs apply only to the initial stages of a war. But what happens once LNOs have been exhausted? If the Soviets retaliated after U.S. LNOs, the United States would face the dilemma of escalating further or conciliating.

Deterrence may fail to be restored during war for several reasons: The enemy may not grant, in operational practice, the concept of intrawar deterrence and simply wage the war as it is able; and command, control, and communications may be degraded so rapidly that strategic decisions are precluded and both sides execute their war plans. Somewhat belatedly, the U.S. defense community has come to understand that flexibility in targeting and LNOs do not constitute a strategy and cannot compensate for inadequate strategic nuclear forces.

LNOs are the tactics of the strong, not of a country entering a period of strategic inferiority, as the United States is now. LNOs would be operationally viable only if the United States had a plausible theory of how it could control and dominate later escalation.

The fundamental inadequacy of flexible targeting, as presented in the 1970s, is that it neglected to take proper account of the fact that the United States would be initiating a process of competitive escalation that it had no basis for assuming could be concluded on satisfactory terms. Flexible targeting was an adjunct to plans that had no persuasive vision of how the application of force would promote the attainment of political objectives.

War Aims

U.S. strategic targeting doctrine must have a unity of political purpose from the first to

the last strikes. Strategic flexibility, unless wedded to a plausible theory of how to win a war or at least insure an acceptable end to a war, does not offer the United States an adequate bargaining position before or during a conflict and is an invitation to defeat. Small, preplanned strikes can only be of use if the United States enjoys strategic superiority—the ability to wage a nuclear war at any level of violence with a reasonable prospect of defeating the Soviet Union and of recovering sufficiently to insure a satisfactory postwar world order.

However, the U.S. government does not yet appear ready to plan seriously for the actual conduct of nuclear war should deterrence fail, in spite of the fact that such a policy should strengthen deterrence. Assured-destruction reasoning is proclaimed officially to be insufficient in itself as a strategic doctrine. However, a Soviet assured-destruction capability continues to exist as a result of the enduring official U.S. disinterest in strategic defense, with potentially paralyzing implications for the United States. No matter how well designed and articulated, targeting plans that allow an enemy to inflict in retaliation whatever damage it wishes on American society are likely to prove unusable.

Four interdependent areas of strategic policy—strategy, weapons development and procurement, arms control, and defense doctrine—are currently treated separately. Theoretically, strategy should determine the evolution of the other three areas. In practice, it never has. Most of what has been portrayed as war-fighting strategy is nothing of the kind. Instead, it is an extension of the American theory of deterrence into war itself. To advocate LNOs and targeting flexibility and selectivity is not the same as to advocate a war-fighting, war-survival strategy.

Strategists do not find the idea of nuclear war fighting attractive. Instead, they believe that an ability to wage and survive war is vital for the effectiveness of deterrence; there can be no such thing as an adequate deterrent posture unrelated to probable wartime effec-

tiveness; victory or defeat in nuclear war is possible, and such a war may have to be waged to that point; and, the clearer the vision of successful war termination, the more likely war can be waged intelligently at earlier stages.

There should be no misunderstanding the fact that the primary interest of U.S. strategy is deterrence. However, American strategic forces do not exist solely for the purpose of deterring a Soviet nuclear threat or attack against the United States itself. Instead, they are intended to support U.S. foreign policy, as reflected, for example, in the commitment to preserve Western Europe against aggression. Such a function requires American strategic forces that would enable a president to initiate strategic nuclear use for coercive, though politically defensive, purposes.

U.S. strategy, typically, has proceeded from the bottom up. Such targeting does not involve any conception of the war as a whole, nor of how the war might be concluded on favorable terms. The U.S. defense community cannot plan intelligently for lower levels of combat, unless it has an acceptable idea of where they might lead.

Most analyses of flexible targeting options assume virtually perfect stability at the highest levels of conflict. Advocates of flexible targeting assert that a U.S. LNO would signal the beginning of an escalation process that the Soviets would wish to avoid in light of the American threat to Soviet urban-industrial areas. Yet it seems inconsistent to argue that the U.S. threat of assured destruction would deter the Soviets from engaging in escalation following an LNO but that U.S. leaders could initiate the process despite the Soviet threat. What could be the basis of such relative U.S. resolve and Soviet vacillation in the face of strategic parity or Soviet superiority?

Moreover, the desired deterrent effect would probably depend upon the Soviet analysis of the entire nuclear campaign. In other words, Soviet leaders would be less impressed by American willingness to launch an LNO

than they would be by a plausible American victory strategy. Such a theory would have to envisage the demise of the Soviet state. The United States should plan to defeat the Soviet Union and to do so at a cost that would not prohibit U.S. recovery. Washington should identify war aims that in the last resort would contemplate the destruction of Soviet political authority and the emergence of a postwar world order compatible with Western values.

The most frightening threat to the Soviet Union would be the destruction or serious impairment of its political system. Thus, the United States should be able to destroy key leadership cadres, their means of communication, and some of the instruments of domestic control. The USSR, with its gross overcentralization of authority, epitomized by its vast bureaucracy in Moscow, should be highly vulnerable to such an attack. The Soviet Union might cease to function if its security agency, the KGB, were severely crippled. If the Moscow bureaucracy could be eliminated, damaged, or isolated, the USSR might disintegrate into anarchy, hence the extensive civil defense preparations intended to insure the survival of the Soviet leadership. Judicious U.S. targeting and weapon procurement policies might be able to deny the USSR the assurance of political survival.

Once the defeat of the Soviet state is established as a war aim, defense professionals should attempt to identify an optimum targeting plan for the accomplishment of that goal. For example, Soviet political control of its territory in Central Asia and in the Far East could be weakened by discriminate nuclear targeting. The same applies to Transcaucasia and Eastern Europe.

The Ultimate Penalty

Despite a succession of U.S. targeting reviews, Soviet leaders, looking to the mid-1980s, may well anticipate the ability to wage World War III successfully. The continuing trend in the East-West military balance allows Soviet military planners to design a theory of military victory that is

not implausible and that may stir hopes among Soviet political leaders that they might reap many of the rewards of military success even without having to fight. The Soviets may anticipate that U.S. self-deterrence could discourage Washington from punishing Soviet society. Even if the United States were to launch a large-scale second strike against Soviet military and economic targets, the resulting damage should be bearable to the Soviet Union given the stakes of the conflict and the fact that the Soviets would control regions abroad that could contribute to its recovery.

In the late 1960s the United States identified the destruction of 20-25 per cent of the population and 50-75 per cent of industrial capacity as the ultimate penalty it had to be able to inflict on the USSR. In the 1970s the United States shifted its attention to the Soviet recovery economy. The Soviet theory of victory depends on the requirement that the Soviet Union survive and recover rapidly from a nuclear conflict. However, the U.S. government does not completely understand the details of the Soviet recovery economy, and the concept has lost popularity as a result. Highly complex modeling of the Soviet economy cannot disguise the fact that the available evidence is too rudimentary to permit any confidence in the analysis. With an inadequate data base it should require little imagination to foresee how difficult it is to determine targeting priorities in relation to the importance of different economic targets for recovery.

Schlesinger's advocacy of essential equivalence called for a U.S. ability to match military damage for military damage. But American strategic development since the early 1970s has not been sufficient to maintain the American end of that balance. Because the U.S. defense community has refused to recognize the importance of the possibility that a nuclear war could be won or lost, it has neglected to think beyond a punitive sequence of targeting options.

American nuclear strategy is not intended

to defeat the Soviet Union or insure the survival of the United States in any carefully calculated manner. Instead, it is intended to insure that the Soviet Union is punished increasingly severely. American targeting philosophy today is only a superficial improvement over that prevalent in the late 1960s, primarily because U.S. defense planners do not consider anticipated damage to the United States to be relevant to the integrity of their offensive war plans. The strategic case for ballistic missile defense and civil defense has not been considered on its merits for a decade.

In the late 1970s the United States targeted a range of Soviet economic entities that were important either to war-supporting industry or to economic recovery. The rationale for this targeting scheme was, and remains, fragile. War-supporting industry is important only for a war of considerable duration or for a period of post-war defense mobilization.

The United States should plan to defeat the Soviet state and to do so at a cost that would not prohibit U.S. recovery.

Moreover, although recovery from war is an integral part of a Soviet theory of victory, it is less important than the achievement of military success. If the USSR is able to win the war, it should have sufficient military force in reserve to compel the surviving world economy to contribute to Soviet recovery. Thus, the current trend is to move away from targeting the recovery economy.

To date, the U.S. government has declined to transcend what amounts to a deterrence-through-punishment approach to strategic war planning. Moreover, the strategic targeting reviews of the 1970s did not address the question of self-deterrence adequately. The United States has no ballistic missile defense and effectively no civil defense, while U.S. air defense is capable of guarding American air space only in peacetime. The Pentagon has sought to compensate for a lack of rela-

tive military muscle through more imaginative strategic targeting. Review after review has attempted to identify more effective ways in which the USSR could be hurt. Schlesinger above all sought essential equivalence through a more flexible set of targeting options without calling for extensive new U.S. strategic capabilities. Indeed, he went to some pains to separate the question of targeting design from procurement issues.

The United States should identify nuclear targeting options that could help restore deterrence, yet would destroy the Soviet state and enhance the likelihood of U.S. survival if fully implemented. The first priority of such a targeting scheme would be Soviet military power of all kinds, and the second would be the political, military, and economic control structure of the USSR. Successful strikes against military and political control targets would reduce the Soviet ability to project military power abroad and to sustain political authority at home. However, it would not be in the interest of the United States actually to implement an offensive nuclear strategy no matter how frightening in Soviet perspective, if the U.S. homeland were totally naked to Soviet retaliation.

Striking the USSR should entail targeting the relocation bunkers of the top political and bureaucratic leadership, including those of the KGB; key communication centers of the Communist party, the military, and the government; and many of the economic, political, and military records. Even limited destruction of some of these targets and substantial isolation of many of the key personnel who survive could have revolutionary consequences for the country.

The Armageddon Syndrome

The strategic questions that remain incompletely answered are in some ways more difficult than the practical problems of targeting the political control structure. Is it sensible to destroy the government of the enemy, thus eliminating the option of negotiating an end to the war? In the unlikely

event that the United States identifies all of the key relocation bunkers for the central political leadership, who would then conduct the Soviet war effort and to what ends? Since after a large-scale counter-control strike the surviving Soviet leadership would have little else to fear, could this targeting option be anything other than a threat?

The U.S. defense community today believes that the political control structure of the USSR is among the most important targets for U.S. strategic forces. However, just how important such targeting might be for deterrence or damage limitation has not been determined. Current American understanding of exactly how the control structure functions is less than perfect. But that is a technical matter that can in principle be solved through more research. The issue of whether the Soviet control structure should actually be struck is more problematic.

Strategists cannot offer painless conflicts or guarantee that their preferred posture and doctrine promise a greatly superior deterrence posture to current American schemes. But, they can claim that an intelligent U.S. offensive strategy, wedded to homeland defenses, should reduce U.S. casualties to approximately 20 million, which should render U.S. strategic threats more credible. If the United States developed the targeting plans and procured the weapons necessary to hold the Soviet political, bureaucratic, and military leadership at risk, that should serve as the functional equivalent in Soviet perspective of the assured-destruction effect of the late 1960s. However, the U.S. targeting community has not determined how it would organize this targeting option.

A combination of counterforce offensive targeting, civil defense, and ballistic missile and air defense should hold U.S. casualties down to a level compatible with national survival and recovery. The actual number would depend on several factors, some of which the United States could control (the level of U.S. homeland defenses); some of which it could influence (the weight and

character of the Soviet attack); and some of which might evade anybody's ability to control or influence (for example, the weather). What can be assured is a choice between a defense program that insures the survival of the vast majority of Americans with relative confidence and one that deliberately permits the Soviet Union to wreak whatever level of damage it chooses.

No matter how grave the Soviet offense, a U.S. president cannot credibly threaten and should not launch a strategic nuclear strike if expected U.S. casualties are likely to involve 100 million or more American citizens. There is a difference between a doctrine that can offer little rational guidance should deterrence fail and a doctrine that a president might employ responsibly for identified political purposes. Existing evidence on the probable consequences of nuclear exchanges suggests that there should be a role for strategy in nuclear war. To ignore the possibility that strategy can be applied to nuclear war is to insure by choice a nuclear apocalypse if deterrence fails. The current U.S. deterrence posture is fundamentally flawed because it does not provide for the protection of American territory.

Nuclear war is unlikely to be an essentially meaningless, terminal event. Instead it is likely to be waged to coerce the Soviet Union to give up some recent gain. Thus, a president must have the ability not merely to end a war, but to end it favorably. The United States would need to be able to persuade desperate and determined Soviet leaders that it has the capability, and the determination, to wage nuclear war at ever higher levels of violence until an acceptable outcome is achieved. For deterrence to function during a war each side would have to calculate whether an improved outcome is possible through further escalation.

An adequate U.S. deterrent posture is one that denies the Soviet Union any plausible hope of success at any level of strategic conflict; offers a likely prospect of Soviet defeat; and offers a reasonable chance of limiting

damage to the United States. Such a deterrence posture is often criticized as contributing to the arms race and causing strategic instability, because it would stimulate new Soviet deployments. However, during the 1970s the Soviet Union showed that its weapon development and deployment decisions are not dictated by American actions. Western understanding of what determines Soviet defense procurement is less than perfect, but it is now obvious that Soviet weapon decisions cannot be explained with reference to any simple action-reaction model of arms-race dynamics. In addition, highly survivable U.S. strategic forces should insure strategic stability by denying the Soviets an attractive first-strike target set.

An Armageddon syndrome lurks behind most concepts of nuclear strategy. It amounts either to the belief that because the United States could lose as many as 20 million people, it should not save the 80 million or more who otherwise would be at risk, or to a disbelief in the serious possibility that 200 million Americans could survive a nuclear war.

There is little satisfaction in advocating an operational nuclear doctrine that could result in the deaths of 20 million or more people in an unconstrained nuclear war. However, as long as the United States relies on nuclear threats to deter an increasingly powerful Soviet Union, it is inconceivable that the U.S. defense community can continue to divorce its thinking on deterrence from its planning for the efficient conduct of war and defense of the country. Prudence in the latter should enhance the former.

II: A BRIEF HISTORY OF ARMS CONTROL EFFORTS

Can negotiated arms control agreements limit the arms race?

What is the record of past arms control negotiations?

What is the Soviet record of compliance with existing arms control agreements?

Efforts to limit nuclear arms are not new. Plans to limit or prevent their use in war are almost as old as nuclear weapons themselves. The first (unsuccessful) attempt at arms control, the Baruch Plan for the international control of atomic energy, was made in 1946, and other proposals have been made regularly in the years since. Since 1959, sixteen agreements to limit nuclear arms have been signed.

These agreements constitute a commendable achievement and are the result of a careful, measured, step-by-step process which has had bipartisan support. Arms control, rather than disarmament has been the objective of this process, and the distinction is important. Disarmament implies the elimination of weapons and assumes that the weapons themselves are the cause of wars. Arms control starts from a very different premise: namely, that nuclear arms can contribute to stability or instability, peace or conflict, depending on which countries have what kinds and quantities of arms. Arms controllers believe a stable balance of power can be created by regulating the numbers and characteristics of nuclear weapons to reduce or eliminate any incentive to attack first. The goal of arms control, in other words, is to enhance and strengthen deterrence.

Historically, only victorious nations have been able to unilaterally disarm their vanquished foes. The peaceful limitation of armaments, on the other hand, is a much more difficult and far less dramatic process which requires lengthy negotiations among nations that are sovereign equals.* The possession of nuclear weapons creates a situation in which neither the U.S. nor the Soviet Union can dictate terms to the other. In such a situation one party can only influence the behavior of the other through negotiations in which each agrees to limits on its own forces in exchange for comparable limits on the forces of the other party. The key to success, then, is not idealism, nor the imposition of disarmament by either side. Rather, the key to success is shared self-interest (despite rivalries of long standing) in reducing the risk of nuclear war. Indeed, arms control agreements are successful when they serve the interests of all the parties involved. For example, the U.S. and the Soviet Union have said they will not undermine the unratified SALT II Treaty so long as the other side does the same. Both countries are attempting to preserve portions of the agreement, because it contributes to the national security of both the U.S. and the Soviet Union.

*Sheila Tobias, et.al. What Kind of Guns Are They Buying for Your Butter? William Morrow: New York. 1982, p. 287.

During the last few years, the U.S. bipartisan consensus in favor of step-by-step negotiated arms control agreements has broken down. Experts and non-experts alike have grown frustrated at what they see as the lack of progress in controlling nuclear arms. Increasingly they see the arms control glass as half empty, rather than half full. More impressed by how far we have to go than by how far we have come, they demand new approaches.

To be sure, arms control is a limited solution to the dangers posed by nuclear arms; but we cannot unlearn how to make nuclear weapons. As Jonathan Schell has noted in The Fate of the Earth, the only way to eliminate the knowledge, is to eliminate the knower. It can be deduced that if you cannot eliminate the knowledge, you cannot eliminate nuclear weapons. In addition, limited solutions are not satisfying -- either to those who fear extinction or to those who fear the Soviets.

A. Arms Control Treaties Now in Effect

Despite substantial differences, advocates for new arms control initiatives on both sides of the current debate all share a dissatisfaction with the step-by-step arms control process of the past twenty years. The record of that process, and its achievements and failures are summarized in the sections which follow. A brief overview excerpted from the 1981 edition of World Military and Social Expenditures is given on page 61.

1. Agreements to Prevent the Spread of Nuclear Weapons*

The Antarctic Treaty of 1959. Twenty-two nations including the U.S. and USSR have agreed to make the Antarctic continent a demilitarized and nuclear-free zone on the premise that it is easier to prevent the spread of nuclear weapons to new regions than it is to remove them once they have been introduced. The fundamental goal of promoting the peaceful use of the area and encouraging scientific cooperation has been met.

Outer Space Treaty of 1967. This treaty, signed by seventy-six nations, including the U.S. and the Soviet Union, prohibits the placement of nuclear weapons in orbit, on outer space, on the moon, or on other celestial bodies. It also requires the moon and other celestial bodies to be used and explored only for peaceful purposes. The development of space and anti-satellite weapons could jeopardize this agreement but, thus far, it has been observed.

Latin American Nuclear Free Zone Treaty, 1967. Initiated as a result of the Cuban Missile Crisis of 1962, this Treaty sets aside all of Latin America as a nuclear-free zone. Known as the Treaty of Tlatelolco, after the section of Mexico City in which it was signed, it bans the testing, use, manufacture, production, or acquisition of nuclear weapons by the parties themselves directly, indirectly, or on behalf of anyone else.

* This is not quite the same as saying they will comply fully with all provisions of the Treaty. Provisions that would have required dismantling existing forces have been held in abeyance.

Treaties to Control Nuclear Weapons

Efforts to control nuclear armaments began in 1946, when the US proposed placing all atomic weapons under an international authority, which would also exercise the right of inspection of all nations. That plan was not acceptable to the Soviet Union, which did not then have nuclear status. Numerous approaches to the problem of control have been made since then by both sides, and 16 international agreements relating to nuclear weapons have been signed (see below). Negotiations are conducted through a UN Committee on Disarmament (CD), now comprising 40 states, and through US-USSR Strategic Arms Limitations Talks (SALT).

The positive results of over three decades of painstaking negotiations cannot be passed over lightly. They have kept open a dialogue, important in itself for preserving the supremacy of diplomacy over violence. In establishing so clearly the world community's concern for nuclear weapons restraint, they have given an immoral quality to transgressions, which has undoubtedly had some effect in restricting the spread of these weapons.

As a means of preventing escalation in numbers of weapons and their technology, the negotiations appear to have been less successful. The complexity of the issues, the relentless push of technology, make this control even more difficult. Negotiations have been unable to stop the upward spiral. Unofficial initiatives (page 22) have recently suggested some alternative approaches which could breathe new life into efforts at control and perhaps at last begin the reduction process.

To prevent the spread of nuclear weapons—

Antarctic Treaty	December 1, 1959	22 states ¹
Bans any military uses of Antarctica and specifically prohibits nuclear tests and waste.		
Outer Space Treaty	January 27, 1967	76 states ¹
Bans nuclear weapons in earth orbit and their stationing in outer space.		
Latin American Nuclear-Free Zone Treaty	February 14, 1967	22 states ¹
Bans testing, possession, deployment, of nuclear weapons and requires safeguards on facilities. All Latin American states except Argentina, Brazil, Chile, Cuba, are parties to the treaty.		
Non-Proliferation Treaty	July 1, 1968	115 states ¹
Bans transfer of weapons or weapons technology to non-nuclear-weapons states. Requires safeguards on their facilities. Commits nuclear-weapon states to negotiations to halt the arms race.		
Seabed Treaty	February 11, 1971	66 states ¹
Bans nuclear weapons on the seabed beyond a 12-mile coastal limit.		

To reduce the risk of nuclear war between the US and USSR—

Hot Line Agreement and Modernization Agreement	June 20, 1963	US-USSR
Establishes direct radio and wire-telegraph links between Moscow and Washington to ensure communication between heads of government in times of crisis. A second agreement in 1971 provided for satellite communication circuits to improve reliability.		
Accidents Measures Agreement	September 30, 1971	US-USSR
Pledges US and USSR to improve safeguards against accidental or unauthorized use of nuclear weapons.		
Prevention of Nuclear War Agreement	June 22, 1973	US-USSR
Requires consultation between the two countries if there is a danger of nuclear war.		

To limit nuclear testing—

Partial Test Ban Treaty	August 5, 1963	108 states ¹
Bans nuclear weapons tests in the atmosphere, outer space, or underwater. Bans underground explosions which cause release of radioactive debris beyond the state's borders.		
Threshold Test Ban Treaty	July 3, 1974	US-USSR ²
Bans underground tests having a yield above 150 kilotons (150,000 tons of TNT).		
Peaceful Nuclear Explosions Treaty	May 28, 1976	US-USSR ²
Bans "group explosions" with aggregate yield over 1,500 kilotons and requires on-site observers of group explosions with yield over 150 kilotons.		

To limit nuclear weapons—

ABM Treaty (SALT I) and Protocol	May 26, 1972	US-USSR
Limits anti-ballistic missile systems to two deployment areas on each side. Subsequently, in Protocol of 1974, each side was restricted to one deployment area.		
Salt I Interim Agreement	May 26, 1972	US-USSR
Freezes the number of strategic ballistic missile launchers, and permits an increase in SLBM launchers up to an agreed level only with equivalent dismantling of older ICBM or SLBM launchers.		
SALT II	June 18, 1979	US-USSR ²
Limits numbers of strategic nuclear delivery vehicles, launchers of MIRV'd missiles, bombers with long-range cruise missiles, warheads on existing ICBM's, etc. Bans testing or deploying new ICBM's.		

1. number of accessions and ratifications. 2. not yet ratified.

Non-Proliferation Treaty, 1968. Ninety-seven nations have signed this treaty and thereby renounced the acquisition of nuclear weapons. States which have nuclear weapons (especially the U.S. and the Soviet Union) have agreed to negotiate in good faith to control the arms race and reduce their own nuclear arsenals. However, more than forty nations have not signed or ratified the treaty. At least some of these are thought to be potential builders of nuclear arms. Still, no new members have publicly joined the nuclear weapons "club" since this treaty was signed, although India detonated a "peaceful" nuclear device, Israel is believed to secretly possess nuclear arms or the ability to produce them rapidly, and some experts believe South Africa may have detonated a nuclear weapon. Pakistan and Argentina are believed capable of producing nuclear arms within a few years. Under the treaty, nations with non-military nuclear facilities (power and/or research reactors) have agreed to subject their facilities to international inspection by the International Atomic Energy Agency (IAEA) to assure that nuclear materials are not diverted to military purposes.

Seabed Treaty, 1971. This treaty prohibits the emplacement of nuclear weapons on the seabed beyond a 12-mile coastal zone. Verification is by each nation's own resources.

2. Agreements to Reduce the Risk of Nuclear War Between the U.S. and the Soviet Union

Hot Line Agreement and Hot Line Modernization Agreement, 1963, 1971. The 1962 Cuban missile crisis demonstrated the importance of direct and prompt communications between U.S. and Soviet leaders. As a result, the two governments agreed to establish a direct communications link consisting of wire telegraph and radiotelegraph circuits between Washington and Moscow with teletype machines at each end. In 1971, a follow-on agreement to modernize the system was signed. The value of the hot line was demonstrated during the 1967 and 1973 Middle East wars, when it was used to clarify intentions and prevent any misunderstanding of U.S. fleet movements in the Eastern Mediterranean.

Accident Measures Agreement, 1971. The danger that nuclear war could start by accident or as the result of some unauthorized act has worried nuclear weapons specialists and ordinary citizens for many years and has received considerable popular attention in films like Dr. Strangelove and Fail Safe. In 1971, the U.S. and the Soviet Union agreed to improve safeguards against this danger, to use the hot line promptly should risk of nuclear war arise from such events, and to provide advance notification of planned missile launches beyond the territory of the launching party and in the direction of the other party.

Prevention of Nuclear War Agreement, 1973. This agreement sets forth general principles of conduct for the U.S. and the Soviet Union and contains mutual pledges that the two countries will consult whenever there seems to be danger of nuclear confrontation.

3. Agreements to Limit Nuclear Testing

Limited Test Ban Treaty, 1963. This first important step limiting the testing of nuclear weapons "in the atmosphere, outer space or under water," was initiated, in part, by widespread public protest over the dangers posed by fallout from nuclear explosions in the atmosphere. It has been called the first and greatest environmental protection act in the world. Between 1945 and 1963, 488 nuclear weapons tests were conducted, an average of more than twenty-seven tests a year, most of them in the atmosphere. Some of the radiation produced by these tests can be detected in the upper atmosphere even today. The treaty did not ban underground nuclear tests but the parties agreed to continue negotiations aimed at achieving agreement that would ban them.

Threshold Test Ban Treaty, 1974. The TTBT, as it is known, represents an important step toward a comprehensive test ban, and prohibits underground nuclear explosions larger than 150 kilotons. To facilitate verification of the TTBT, both sides agreed to exchange scientific information on weapons-testing programs: the number of tests, their locations, and the geological characteristics of the test sites.* The two parties also agreed to consult promptly if an explosion exceeds 150 kilotons, important because nuclear weapons do not always perform precisely according to expectations. The TTBT has not been ratified by the U.S. Senate, but both parties have continued to observe its provisions. However, the Reagan Administration decided in July 1982 that it was not satisfied with the verification provisions of the TTBT and has said it will ask for some adjustments. In particular, the Administration wants the Soviets to permit on-site inspections of "suspicious events."

Peaceful Nuclear Explosions Treaty, 1976. This treaty regulates nuclear explosions for peaceful purposes, mining for example, should either the U.S. or the Soviet Union wish to engage in such activities. It bans "group explosions" with aggregate yields of more than 1,500 kilotons and requires on-site observers for group explosions with a yield greater than 150 kilotons.

Progress Toward a Comprehensive Test Ban

In 1977, the U.S., Soviet Union, and United Kingdom began negotiations on a comprehensive test ban treaty and by 1980, when negotiations were suspended, had made some progress toward completing a draft treaty. The parties had resolved, at least in principle, some difficult verification issues. It was agreed, for example, that seismic stations would be established on the territory of the signatories and that on-site inspection

* This information is important for interpreting seismic data, since explosions in different kinds of rock and/or soil will produce different seismic signals.

of suspicious events would be permitted. This was a significant achievement, since in the past, the Soviets had always been unwilling to agree to on-site inspection. While declining to pursue these negotiations any further for the present, the Reagan Administration has shown some interest in applying similar verification provisions to the earlier TBT.

Agreements to Limit Nuclear Weapons

SALT I

Two agreements, together called SALT I, were signed in 1972 and were significant departures from previously negotiated agreements. One, the ABM Treaty, effectively prevented an ABM race and ranks as one of the most significant arms control achievements of the last twenty years. The other, the Interim Agreement (On Certain Measures with Respect to the Limitation of Strategic Offensive Arms) was essentially a freeze of certain offensive weapons at their 1972 levels. It represented a holding action until a permanent agreement could be negotiated. The ABM Treaty is of unlimited duration but subject to review every five years. The Interim Agreement was to remain in effect until a replacement permanent agreement could be completed, but in any case no more than five years. As it turned out, it took seven years to negotiate its replacement, SALT II.

The ABM Treaty, as modified in 1974, effectively bans the construction of ABM systems by both the U.S. and the Soviet Union, permitting each country no more than 100 launchers at a single location. As a result, both sides have been spared the costs and dangers of an ABM competition, although research on ABM systems is permitted and has continued in both countries. At the time of the Treaty's review in 1977, both sides agreed that it had served their national security interests and did not need to be altered. This was an important vote of confidence but the outcome of the 1982 review, which is underway as of this writing (September 1982), is still uncertain. Some defense analysts insist that we need to build ABMs to protect our ICBMs. Some argue that we should modify or even scrap the treaty. But if we do scrap the treaty and build an ABM system, so will the Soviets and any U.S. gains will be outweighed by Soviet construction of their own system, the very situation the treaty was designed to avoid.

The Interim Agreement, as noted above, froze ICBMs and SLBMs at their 1972 levels. Asymmetries between U.S. and Soviet forces made negotiation of equivalent limits both difficult and controversial. As of the signing date, the Soviets had more than 1,600 ICBMs operational or under construction, while the U.S. had 1,054. However, two areas where the U.S. had significant leads, bombers and MIRV warheads, were not limited. While this more than balanced the nominal Soviet advantage in numbers of ICBMs, it also became a source of later problems, particularly in the case of MIRVs.

* According to John Newhouse in Cold Dawn (Holt, Rinehart and Winston, N.Y., 1973, pp. 179-181), the MIRV ban was made part of a broader proposal and a requirement for on-site inspection attached to it.

Some in the U.S. government sought to negotiate a ban on MIRVs but were unsuccessful in getting their position in a viable, negotiable form adopted within the U.S. Government. As a result, many people feel that the failure to negotiate MIRV limits was a significant missed opportunity. They attribute current concern over the survivability of U.S. ICBMs to the post-1972 Soviet deployment of MIRVs.

SALT I also included limits on missile submarines and SLBM launchers and permitted both sides to build additional missile submarines up to specified ceilings if they dismantled some of their ICBMs. The Soviets have taken advantage of this clause and increased their number of SLBM launchers from 740 to 950 and dismantled an equivalent number of ICBMs. Many arms control experts regard submarine-launched missiles as the most stable deterrent because they are neither as accurate nor as vulnerable as ICBMs.

Finally, SALT I broke new ground in that both sides agreed that verification would be by national technical means, i.e., reconnaissance satellites and other remote monitoring devices. It also established a Standing Consultative Commission as a forum for discussion and resolution of compliance difficulties that might arise during the duration of the agreements.

SALT II and Linkage

SALT II, the somewhat delayed follow-on to SALT I, was signed in 1979 by the U.S. and the Soviets. It is the most comprehensive strategic arms limitation treaty yet negotiated and it sets important quantitative and qualitative limits on many of the most important strategic weapons. But the Treaty was not ratified, largely as a result of the deterioration of U.S.-Soviet relations, and was withdrawn from consideration by President Carter following the Soviet invasion of Afghanistan. Nevertheless, as noted above, each side has said it will do nothing to undermine it so long as the other side does the same.

During the debate over SALT II in 1979, opponents of the treaty insisted that ratification might imply U.S. approval of Soviet misbehavior in various parts of the Third World. The Carter Administration argued that SALT II was in our national interest and not something we were doing to help the Soviets. SALT, they insisted, is necessary because the U.S. and the Soviets are rivals. If the U.S. and the Soviets were not rivals there would be no need for arms or arms control. This argument had little effect and, in fact, a link was formed in the public mind between Soviet efforts to exploit instability in the Third World and their support for SALT. For most Americans, including Ronald Reagan and many of his supporters, apparent Soviet expansionism and support for SALT II seemed incompatible. It is particularly ironic therefore that the Reagan Administration, in response to widely expressed public fears of nuclear war and a burgeoning nuclear freeze movement, largely abandoned the principle of linkage in May of 1982. Instead, the Administration resumed strategic arms limitation talks, now called START (Strategic Arms Reduction Talks), with the Soviets. In doing so, President Reagan was implicitly recognizing what SALT supporters have been arguing since 1978, namely that negotiated limits on nuclear arms contribute to U.S. security, whatever the Soviets might be doing in other parts of the world.

SALT II Provisions

SALT II establishes equal limits on each side's aggregate number of strategic nuclear delivery vehicles--ICBMs, SLBMs, and heavy bombers. The initial ceiling is the same as that agreed by President Ford at Vladivostok, but includes a provision, achieved with some difficulty, to lower that ceiling. Had the Treaty been ratified, the Soviets would have been required to dismantle some 250 launchers for nuclear missiles. However, these provisions have not become operative due to the present status of the Treaty.

Among the specific provisions of SALT II are the following:

- An initial aggregate level of 2,400 strategic systems to be reduced to 2,250 during the term of the Treaty.
- A sublimit of 1,320 on MIRVed ICBM and SLBM launchers and aircraft equipped with long-range cruise missiles.
- A sublimit of 1,200 MIRVed ballistic launchers.
- A sublimit of 820 on MIRVed ICBM launchers.
- Restrictions on testing and deployment of new types of ICBMs.
- Limits on the number of MIRVs permitted on new and existing ICBMs and SLBMs.
- Within the numerical limits set by the Treaty each side has freedom to mix, i.e., freedom to determine its own force-mix within the overall ceiling.

SALT II continues many of the verification provisions established in SALT I. As in the earlier agreement, verification of compliance is by "national technical" means (remote). Interference with these means, or deliberate concealment measures that would interfere with U.S. ability to verify compliance, are prohibited. SALT II also enhances verification by establishing precise counting rules designed to overcome some problems associated with the use of national technical means of verification. For example, we know what Soviet missile launchers look like and which missiles are paired with particular launchers. But it is not possible to see inside a missile to determine whether it carries MIRVs. "Counting rules" are intended to overcome this difficulty. One rule says that if a missile has ever been tested with MIRV warheads, all missiles of that type will be counted as MIRVs. (For a more detailed discussion of SALT II verification, see the article by Les Aspin in Section III.)

B. Compliance with SALT and Other Agreements

One impediment to the negotiation of arms limitation agreements by the U.S. and the Soviet Union is the atmosphere of mutual distrust. In any discussion of arms control, the question of whether we can "trust the Russians" invariably arises. Skeptics doubt that the Soviets can be trusted to abide by the terms of arms control agreements and fear that Soviet noncompliance could put our national security at risk. Of course, the technology of verification (see Section III) has helped ease some of these concerns and removed arms control agreements from the realm of trust, but it has not eliminated all compliance issues.

One way to answer questions about Soviet compliance is to review the record. In 1979, the State Department reported on Soviet compliance with SALT I in response to a request from the Senate Foreign Relations Committee (see "Compliance with SALT I Agreements," below). In releasing the report, then Chairman Senator John Sparkman said, "it is clear from the Report that the dealings between the two sides have not been easy and that there have been disturbing practices. But it is also clear that matters of concern have been resolved." Sparkman concluded, "the Record simply does not support any argument that the Soviet Union has acted in bad faith with regard to the SALT I Treaty and agreement."* In the years since this review was completed questions have been raised by both sides concerning compliance with existing agreements. In all instances these questions have been resolved in the SCC, the forum established by SALT I for discussion of these issues. The U.S. found no grounds for charging the Soviets with violation of the SALT I agreement.

Generally speaking, questions of compliance with existing agreements have arisen where treaty language has been vague or imprecisely worded. This has been a continuing source of problems with SALT I and most of the problems discussed in the State Department compliance report are the result of such imprecision. Consequently, SALT I negotiators were determined to avoid similar problems and their dedication to precision is one reason the treaty took so long to complete. SALT II is replete with detailed agreed definitions and common understandings designed to avoid future problems of interpretation. The definition of MIRV alone covers four pages in the joint draft text of the Treaty.

Alleged Soviet actions in other areas have been of concern to many Americans. For example, in 1979, many people in the Soviet city of Sverdlovsk became sick and some died of an anthrax-like infection. Some people believe the incident was the result of an accident in a Soviet plant producing biological warfare substances. If true, it would have constituted a violation of the 1972 Biological Warfare convention. The U.S. is still attempting to find out exactly what happened and why.

Former National Security Council SALT specialist, Jan Lodal had this to say about Soviet compliance with SALT: "events since SALT I do not support the view that the Soviets are cheating, that they are unreasonably pushing the limits of the agreements, that they are attempting to use

* Media Notice, Committee on Foreign Relations, February 28, 1982, p. 2.

loopholes to their advantage, or that our verification capabilities are inadequate. Rather, the record demonstrates the strength of our verification capabilities, that we are willing to raise questions related to compliance promptly, and that the basic terms of the agreements are being observed."*

Others have argued that arms control verification provisions need to do more than just protect U.S. security. They should also instill confidence in the U.S. public that U.S. interests are being protected. Robert Einhorn makes this point in the second article of this section, "Treaty Compliance," reprinted from the Winter 1981-82 issue of Foreign Policy. From this perspective, Einhorn believes the record of recent agreements has not been satisfactory. He also argues that cooperative verification measures are needed and insists care must be taken in future agreements to reduce ambiguities that have led to verification and compliance controversies in the past.

* Quoted in Gerard Smith Doubletalk (Doubleday & Co., New York and Garden City, 1980), p. 461.

Compliance with SALT I Agreements

United States Department of State
Bureau of Public Affairs



The purpose of this paper is to provide a brief account of the background, discussion, and status of those questions related to compliance with the SALT agreements of 1972—the ABM treaty and the Interim Agreement on strategic offensive arms—which have been raised by the United States and the U.S.S.R. It also provides a brief discussion of matters which have been mentioned in the press but which have not been raised with the U.S.S.R.

Even before talks with the U.S.S.R. on the subject of strategic arms limitation began, the United States established, in the framework of the National Security Council (NSC) system, an interagency group known as the Verification Panel to study questions concerning SALT, with special attention to matters of verification of compliance with the provisions of possible agreements. During the preliminary talks in November and December of 1969, the United States proposed, and the U.S.S.R. agreed, to create a special standing body to deal with questions of implementation of agreements which might be concluded, including questions which might arise concerning compliance. This reflected early recognition and agreement that such matters would require special attention in connection with any agreement as complex as one limiting the strategic weapons of the United States and the U.S.S.R.

Article XIII of the ABM treaty of May 26, 1972, provides for a Standing Consultative Commission (SCC) to, among other things, "consider questions concerning compliance with the

obligations assumed and related situations which may be considered ambiguous."

Article VI of the Interim Agreement provides that the parties use the SCC in a similar manner in connection with that agreement. In December 1972, during the first session of SALT II, the SCC was formally established.

Since the conclusion of the 1972 SALT agreements, procedures have been established within the U.S. Government for monitoring Soviet performance and for dealing with matters related to compliance. All intelligence information is carefully analyzed in the context of the provisions of those agreements, and recommendations on questions which arise are developed by interagency intelligence and policy advisory groups within the NSC system. Currently, these are an Intelligence Community Steering Group on Monitoring Strategic Arms Limitations and the Standing Consultative Commission Working Group of the NSC Special Coordination Committee. Should analysis of intelligence information indicate that there could be a question concerning compliance, this latter group reviews and analyzes the available information and provides recommendations. The President decides whether a particular question or issue is to be raised with the U.S.S.R. based on the study and recommendations of the Working Group and, if necessary, the department and agency principals who comprise the Special Coordination Committee or the NSC itself. After discussion of any question is opened with the U.S.S.R. in the Standing Consultative Commission,

the positions and actions taken by the U.S. representatives are also guided in the same manner.

Questions Raised by the U.S.

Launch Control Facilities (Special-Purpose Silos). Article I of the Interim Agreement states: "The Parties undertake not to start construction of additional fixed land-based intercontinental ballistic missile (ICBM) launchers after July 1, 1972."

In 1973 the United States determined that additional silos of a different design were under construction at a number of launch sites. If these had been intended to contain ICBM launchers, they would have constituted a violation of Article I of the Interim Agreement.

When the United States raised its concern over this construction with the Soviet side, the U.S.S.R. responded that the silos were, in fact, hardened facilities built for launch-control purposes. As discussions proceeded and additional intelligence became available, the United States concluded that the silos were built to serve a launch-control function.

In early 1977, following further discussions during 1975 and 1976 and a review of our intelligence on this subject, the United States decided to close discussion of this matter on the basis that the silos in question were being used as launch-control facilities. We will, of course, continue to watch for any activity which might warrant reopening of this matter.

Concealment Measures. Article V of the Interim Agreement and Article XII of the ABM treaty provide that each party shall not "... interfere with the national technical means of verification of the other Party ..." nor "... use deliberate concealment measures which impede verification by national technical means of compliance with the provisions..." of the agreement or the treaty. Both articles provided that the latter obligation "... shall not require changes in current construction, assembly, conversion, or overhaul practices."

The United States has closely monitored Soviet concealment practices both before and after conclusion of the 1972 SALT agreements. During 1974 the extent of those concealment activities associated with strategic weapons programs increased substantially. None of them prevented U.S. verification of compliance with the provisions of the ABM treaty or the Interim Agreement, but there was concern that

they could impede verification in the future if the pattern of concealment measures continued to expand.

The United States stated this concern and discussed it with the Soviet side. In early 1975 careful analysis of intelligence information on activities in the U.S.S.R. led the United States to conclude that there no longer appeared to be an expanding pattern of concealment activities associated with strategic weapons programs. We continue to monitor Soviet activity in this area closely.

Modern Large Ballistic Missiles (SS-19 Issue). Article II of the Interim Agreement states: "The Parties undertake not to convert land-based launchers for light ICBM's, or for ICBM's of older types deployed prior to 1964, into land-based launchers for heavy ICBM's of types deployed after that time."

This provision was sought by the United States as part of an effort to place limits on Soviet heavy ICBM's (SS-9 and follow-ons). We did not, however, obtain agreement on a quantitative definition of a heavy ICBM which would constrain increases in the size of Soviet light ICBM's (SS-11 and follow-ons). Thus, the U.S. side stated on the final day of SALT I negotiations [May 26, 1972]:

The U.S. Delegation regrets that the Soviet Delegation has not been willing to agree on a common definition of a heavy missile. Under these circumstances, the U.S. Delegation believes it necessary to state the following: The United States would consider any ICBM having a volume significantly greater than that of the largest light ICBM now operational on either side to be a heavy ICBM. The U.S. proceeds on the premise that the Soviet side will give due account to this consideration.

The U.S.S.R. delegation maintained the position throughout SALT I that an agreed definition of heavy ICBM's was not essential to the understanding reached by the sides in the Interim Agreement on the subject of heavy ICBM's and made clear that they did not agree with the U.S. statement quoted above. When deployment of the SS-19 missile began, its size, though not a violation of the Interim Agreement provisions noted above, caused the United States to raise the issue with the Soviets in early 1975. Our purpose was to emphasize the importance the United States attached to the distinction made in the Interim Agreement between "light" and "heavy" ICBM's, as well as the continuing importance of that distinction in the context of the SALT II agreement under

negotiation at the time. Following some discussion in the SCC, further discussions of this question in that forum were deferred because it was under active consideration in the SALT II negotiations.

Subsequently, the U.S. and U.S.S.R. delegations agreed in the SALT II treaty on a clear demarcation, in terms of missile launch-weight and throw-weight, between light and heavy ICBM's.

Possible Testing of an Air Defense System (SA-5) Radar in an ABM Mode. Article VI of the ABM treaty states: "To enhance assurance of the effectiveness of the limitations on ABM systems and their components provided by this Treaty, each Party undertakes: (a) not to give missiles, launchers, or radars, other than ABM interceptor missiles, ABM launchers, or ABM radars, capabilities to counter strategic ballistic missiles or their elements in flight trajectory, and not to test them in an ABM mode..."

On April 7, 1972, the United States made a statement to clarify our interpretation of "tested in an ABM mode." We noted, with respect to radars, that we would consider a radar to be so tested if, for example, it makes measurements on a cooperative target vehicle during the reentry portion of its trajectory or makes measurements in conjunction with the test of an ABM interceptor missile or an ABM radar at the same test range. We added that radars used for purposes such as range safety or instrumentation would be exempt from application of these criteria.

During 1973 and 1974, U.S. observation of Soviet tests of ballistic missiles led us to believe that a radar associated with the SA-5 surface-to-air missile system had been used to track strategic ballistic missiles during flight.

A question of importance in relation to this activity was whether it represented an effort to upgrade the SA-5 system for an ABM role. The Soviets could have been using the radar in a range instrumentation role to obtain precision tracking; on the other hand, the activity could have been part of an effort to upgrade the SA-5 system for an ABM role or to collect data for use in developing ABM systems or a new dual SAM/ABM system. Although much more testing, and testing significantly different in form, would be needed before the Soviets could achieve an ABM capability for the SA-5, the observed activity was, nevertheless, ambiguous with respect to the constraints of article VI of the

ABM treaty and the related U.S.-stated interpretation of "testing in an ABM mode." If the activity was designed to upgrade the SA-5 system, it would have been only the first step in such an effort. Extensive and observable modifications to other components of the system would have been necessary, but these have not occurred.

The United States raised this issue based on the indications that an SA-5 radar may have been tracking ballistic missiles during the reentry portion of their flight trajectory into an ABM test range.

The Soviets maintained that no Soviet air defense radar had been tested in an ABM mode. They also noted that the use of non-ABM radars for range safety or instrumentation was not limited by the ABM treaty.

A short time later, we observed that the radar activity of concern during Soviet ballistic missile tests had ceased.

The United States has continued to monitor Soviet activities carefully for any indications that such possible testing activity might be resumed.

Soviet Reporting of Dismantling of Excess ABM Test Launchers. Each side is limited under the ABM treaty to no more than 15 ABM launchers at test ranges. During 1972, soon after the ABM treaty was signed, the Soviets dismantled several excess launchers at the Soviet ABM test range.

On July 3, 1974, the agreed procedures, worked out in the SCC, for dismantling excess ABM test launchers entered into force. After the detailed procedures entered into effect, the U.S.S.R. provided notification in the SCC that the excess ABM launchers at the Soviet test range had been dismantled in accordance with the provisions of the agreed procedures. Our own information was that several of the launchers had not, in fact, been dismantled in complete accordance with those detailed procedures.

Even though the launchers were deactivated prior to entry into force of the procedures, and their reactivation would be of no strategic significance, the United States raised the matter as a case of inaccurate notification or reporting to make known our expectation that, in the future, care would be taken to insure that notification, as well as dismantling or destruction, was in strict accordance with the agreed procedures.

Soviet ABM Radar on Kamchatka Peninsula. Article IV of the ABM treaty states: "The limitations provided for in Article III [on deployment] shall

not apply to ABM systems or their components used for development or testing, and located within current or additionally agreed test ranges."

In October 1975 a new radar was installed at the Kamchatka impact area of the Soviet ICBM test range. Since article IV exempts from the limitations of article III only those ABM components used for development or testing at current or additionally agreed ranges, location of this radar, which the United States identified as an ABM radar, on the Kamchatka Peninsula could have constituted establishment of a new Soviet ABM test range.

This situation, however, was made ambiguous by two facts.

(1) Just prior to the conclusion of the SALT negotiations in 1972, the United States provided to the Soviet delegation a list of U.S. and Soviet ABM test ranges which did not include the Kamchatka impact area. The Soviet side neither confirmed nor denied the accuracy or completeness of the U.S. listing and indicated that use of national technical means assured against misunderstanding of article IV.

(2) The presence of an older type ABM radar could be viewed as having established the Kamchatka impact area as an ABM test range at the time the ABM treaty was signed.

Though the location of a new ABM radar on Kamchatka was not strategically significant, it was decided that this matter should be raised with the Soviet side in order to set the record straight.

We brought the situation to the attention of the Soviet side. The U.S.S.R. indicated that a range with a radar instrumentation complex existed on the Kamchatka Peninsula on the date of signature of the ABM treaty and that they would be prepared to consider the Kamchatka range a current test range within the meaning of article IV of the ABM treaty. The United States continued the exchange to establish that Kamchatka is an ABM test range, that Sary Shagan and Kamchatka are the only ABM test ranges in the U.S.S.R., and that article IV of the ABM treaty requires agreement concerning the establishment of additional test ranges.

The Soviet side has acknowledged that Kamchatka is an ABM test range and that it and Sary Shagan are the only ABM test ranges in the U.S.S.R. In addition, agreement has been reached in the SCC clarifying the establishment of ABM test ranges.

Soviet Dismantling or Destruction of Replaced ICBM Launchers. Under

the Interim Agreement and the protocol thereto of May 26, 1972, the U.S.S.R. was permitted to have no more than 950 SLBM launchers and 62 modern, nuclear-powered ballistic missile submarines. In addition it was provided that Soviet SLBM launchers in excess of 740 might become operational only as replacements for older ICBM and SLBM launchers, which would be dismantled or destroyed under agreed procedures.

Such procedures were developed in the SCC and became effective on July 3, 1974. The procedures include detailed requirements for the dismantling or destruction actions to be accomplished, their timing, and notification about them to the other party.

By early 1976 the Soviets had developed a requirement to dismantle 51 replaced launchers. It soon became apparent to the United States that the Soviets would probably not complete all the required dismantling actions on all of the launchers on time. Therefore, the United States decided to raise this question with the Soviets, but before we could do so, the Soviets acknowledged that the dismantling of 41 older ICBM launchers had not been completed in the required time period. The Soviets explained the situation and predicted that all the dismantling actions would be completed by June 1, 1976, and agreed to the U.S. demand that no more submarines with replacement SLBM launchers begin sea trials before such completion. Both conditions were met.

Since that time, although we have observed some minor procedural discrepancies at a number of those deactivated launch sites and at others as the replacement process continued, all the launchers have been in a condition that satisfied the essential substantive requirements, which are that they cannot be used to launch missiles and cannot be reactivated in a short time. As necessary we have pursued the question of complete and precise accomplishment of the detailed requirements of the agreed procedures.

Concealment at Test Range. Provisions of the Interim Agreement pertinent to this discussion are:

- Article V (3): "Each Party undertakes not to use deliberate concealment measures which impede verification by national technical means of compliance with the provisions of this Interim Agreement."

- Agreed statement concerning launcher dimensions: "... in the process of modernization and replace-

ment the dimensions of land-based ICBM silo launchers will not be significantly increased."

• Agreed statement concerning test and training launchers: "... there shall be no significant increase in the number of ICBM and SLBM test and training launchers, or in the number of such launchers for modern land-based heavy ICBMs... construction or conversion of ICBM launchers at test ranges shall be undertaken only for purposes of testing and training."

In early 1977 we observed the use of a large net covering over an ICBM test launcher undergoing conversion at a test range in the U.S.S.R.

There was agreement in the United States that this subject could be appropriate for discussion in SALT in the context of the ongoing discussions on the subject of deliberate concealment measures in connection with the SALT II agreement. The subject was initially raised in this context.

In addition we also expressed our view that the use of a covering over an ICBM silo launcher concealed activities from national technical means of verification and could impede verification of compliance with provisions of the Interim Agreement; specifically, the provision which dealt with increases in dimensions of ICBM silo launchers as recorded in the agreed statement quoted above. The United States took the position that a covering which conceals activities at an ICBM silo from national technical means of verification could reduce the confidence and trust which are important to mutual efforts to establish and maintain strategic arms limitations.

It has been the Soviet position that the provisions of the Interim Agreement were not applicable to the activity in question. Nevertheless, they subsequently removed the net covering.

Questions Raised by the U.S.S.R.

Shelters Over Minuteman Silos. Paragraph 3 of article V of the Interim Agreement states: "Each Party undertakes not to use deliberate concealment measures which impede verification by national technical means of compliance with the provisions of this Interim Agreement. This obligation shall not require changes in current construction, assembly, conversion, or overhaul practices."

The United States used shelters which were either 300 or 700 square feet in size over Minuteman ICBM silos to provide environmental protection during initial construction as well

as modernization, from 1962 through 1972. Beginning in 1973, in connection with modernization and silo-hardening work, prefabricated shelters of about 2,700 square feet were used. From four to twelve of these shelters were in place over silos at any given time, for from 10 days to 4 weeks depending upon the severity of the weather.

The Soviets raised this subject, taking the position that the activity was inconsistent with article V of the Interim Agreement since it could be classified as deliberate concealment and that, therefore, it should cease. The United States, based on the nature of the shelters and their use strictly for environmental purposes, not for concealment, believed that their use was consistent with article V.

In early 1977 the United States decided to modify the use of environmental shelters over Minuteman ICBM silos based on explicit confirmation of the common view shared by us and the Soviets that neither side should use shelters over ICBM silos that impede verification by national technical means of compliance with the provisions of the Interim Agreement.

Our use of shelters was modified by reducing their size almost 50% in recognition of that understanding. The Soviets, however, said that the modified shelters still hindered their national technical means in carrying out their verification functions. The United States responded that it had modified the shelters in response to stated Soviet concerns, that it had always been and remained in compliance with the provisions of the Interim Agreement, and that it believed that no further action was necessary.

In November 1978, in the SALT II negotiations, the Soviet side raised a question regarding the distinguishability of launchers equipped for non-MIRV'ed Minuteman II and MIRV'ed Minuteman III ICBM's. They said that the problem of distinguishability was aggravated by the use of shelters over Minuteman launchers.

The U.S. side made clear to the Soviets that our use of shelters over Minuteman silo launchers was for environmental protection only and that it was not a deliberate concealment measure. In the interest of satisfying both sides' verification concerns, however, we indicated that we were prepared to forego the use of the shelters. Subsequently, because of our view of the importance of verification and because of the stated Soviet concern, we decided to discontinue using these shelters. In May 1979, in the context of resolving the distinguishability issue,

the United States ceased using the shelters in question.

The sides subsequently agreed to record, in a common understanding to paragraph 3 of article XV of the SALT II treaty, that no shelters which impede verification by national technical means shall be used over ICBM silo launchers.

Atlas and Titan-I Launchers. The protocol developed in the SCC governing replacement, dismantling, and destruction of strategic offensive arms, as noted above, provides detailed procedures for dismantling ICBM launchers and associated facilities, one principle of which is that reactivation of dismantled launchers should take substantially more time than construction of a new one.

There are 177 former launchers for the obsolete Atlas and Titan-I ICBM systems at various locations across the continental United States. All these launchers were deactivated by the end of 1966.

The Soviet side apparently perceived an ambiguity with respect to the status and condition of these launchers, based on the amount of dismantling which had been done and its effect on their possible reactivation time. They raised this issue in early 1975.

The U.S. view was that these launchers were obsolete and deactivated prior to the Interim Agreement and were not subject to that agreement or to the accompanying procedures for dismantling or destruction. However, we did provide some information on their condition illustrating that they could not be reactivated easily or quickly. The discussion on this question ceased in mid-1975.

Radar on Shemya Island. Article III of the ABM treaty states: "Each Party undertakes not to deploy ABM systems or their components except... within one ABM deployment area... centered on the Party's national capital... and within one... deployment area... containing ICBM silo launchers..."

In 1973 the United States began construction of a new phased-array radar on Shemya Island, Alaska, at the western end of the Aleutian Island chain. The radar became operational in early 1977. This radar is used for national technical means of verification, space tracking, and early warning.

The Soviets raised a question in 1975, suggesting that the radar was an ABM radar which would not be permitted at this location.

The U.S. side discussed this matter with the Soviets and as a result, we believe, eliminated any concern about

possible inconsistency with the provisions of the ABM treaty.

Privacy of SCC Proceedings. Paragraph 8 of the regulations of the SCC states: "The proceedings of the Standing Consultative Commission shall be conducted in private. The Standing Consultative Commission may not make its proceedings public except with the express consent of both Commissioners."

Prior to the special SCC session held in early 1975 to discuss certain questions related to compliance, several articles appeared in various U.S. publications with wide circulation. These articles speculated about the possibility of certain Soviet "violations" of the SALT agreements which were to be discussed and tended to draw the conclusion that there were violations, based on what was purported to be accurate intelligence information.

The Soviets have expressed to us their concern about the importance of confidentiality in the work of the SCC and about the publication of such items. They were apparently particularly concerned about press items that may appear to have official U.S. Government sanction.

We have discussed with the Soviets the usefulness of maintaining the privacy of our negotiations and discussions and limiting speculation in the public media on SCC proceedings, as well as the need to keep the public adequately informed.

In March 1978, the Soviets repeated their position on the need for privacy of SCC proceedings and objected to the release to the public, in February 1978, of the U.S. paper on compliance with the SALT I agreements. The United States responded by explaining the factors underlying the U.S. view on the need to provide the public with information concerning compliance. The Soviets have not formally raised this matter again since that time.

Dismantling or Destruction of the ABM Radar Under Construction at Malmstrom AFB. When the ABM treaty was signed on May 26, 1972, the United States had ABM defenses under construction in two deployment areas for the defense of ICBM's. Since the ABM treaty permitted each party only one such ABM system deployment area, the United States immediately halted the construction, which was in its early stages, at Malmstrom AFB, Montana. Specific procedures for the dismantling or destruction of the ABM facilities under construction at Malmstrom were negotiated as part of the protocol on procedures for ABM

systems and their components, signed on July 3, 1974.

Dismantling of the ABM facilities under construction at Malmstrom was completed by May 1, 1974.

In late 1974 we notified the U.S.S.R. in the SCC that dismantling activities at the Malmstrom site had been completed. Somewhat later, the Soviet side raised a question about one detailed aspect of the dismantling which they apparently felt had not been carried out in full accord with the agreed procedures.

We reviewed with the Soviet side the actions taken by the United States to dismantle the Malmstrom site and also showed them some photographs of the before-and-after conditions there. The question was apparently resolved on the basis of that discussion.

U.S. Radar Deployments. Paragraph 2 of article I of the ABM treaty states: "Each Party undertakes not to deploy ABM systems for a defense of the territory of its country and not provide a base for such a defense" In paragraph (b) of article VI, the sides undertook "not to deploy in the future radars for early warning of strategic ballistic missile attack except at locations along the periphery of its national territory and oriented outward." An agreed statement initialed by the Heads of Delegation on May 26, 1972, states: "The Parties agree not to deploy phased-array radars having a potential (the product of mean emitted power in watts and antenna area in square miles) exceeding three million, except as provided for in Articles III, IV, and VI of the Treaty, or except for the purposes of tracking objects in outer space or for use as national technical means of verification."

When the ABM treaty entered into force, the United States had deployed as part of its ballistic missile early warning system (BMEWS) two large radars on U.S. territory—the phased-array FPS-85 radar in Florida and a nonphased-array radar in Clear, Alaska. Since that time, the United States has constructed a large phased-array radar on Shemya Island (see discussion above) and has initiated construction of two, large phased-array radars (PAVE PAWS) for early warning of SLBM attack. The latter are located at Otis Air Force Base, Massachusetts, and Beale Air Force Base, California.

In October 1978, the Soviets expressed concern that the PAVE PAWS radars, along with the other large phased-array radars in the United States, could enable the United States to have a radar base for an ABM de-

fense of U.S. territory. They asked the United States to clarify this matter.

The United States responded in the SCC to the Soviets' expressed concern over our radars. We advised the Soviet side that the PAVE PAWS radars are for early warning of strategic ballistic missile attack and that their deployment is in full compliance with the ABM treaty. We said that they are replacing older early warning radars which have become obsolete and that as a secondary function they will be used for tracking objects in outer space. Additionally, we provided technical information—much of which is in the public domain—to make clear that they are for early warning and are not ABM radars. We noted that the other radars mentioned by the Soviets provide early warning coverage from other areas in the United States. The Soviets took note of this clarification.

Other Questions and Charges

The process of monitoring Soviet activity and analyzing the information obtained in order to decide whether any particular matter needs to be raised with the Soviet side has been described above. Activities not raised with the U.S.S.R. as ambiguous or of possible concern have also been examined by the United States. In those cases, analysis of the available intelligence information showed that they did not warrant discussion or categorization as inconsistent with the agreements. Generally, it has been the practice to avoid public discussions of these matters.

From time to time, articles have appeared in U.S. periodicals and newspapers alleging Soviet violations of the provisions of the SALT I agreements. As indicated earlier, these reports or commentaries have been generally speculative and have concluded or implied that violations or "cheating" by the Soviets had taken place.

Among the subjects most recently or frequently mentioned are those listed below.

"Blinding" of U.S. Satellites. Soviet use of something like laser energy to "blind" certain U.S. satellites could be an activity inconsistent with the obligations in article XII of the ABM treaty and article V of the Interim Agreement "not to interfere with" or "use deliberate concealment measures" which impede verification, by national technical means, of compliance with the provisions of those agreements.

In 1975 information relevant to possible incidents of that nature was thoroughly analyzed, and it was de-

terminated that no questionable Soviet activity was involved and that our monitoring capabilities had not been affected by these events. The analysis indicated that the events had resulted from several large fires caused by breaks along natural gas pipelines in the U.S.S.R. Later, following several reports in the U.S. press alleging Soviet violations and in response to questions about those reports, the U.S. press was informed of those facts by several U.S. officials.

Mobile ABM. From time to time, it has been stated that the U.S.S.R., in contravention of article V of the ABM treaty, has developed, tested, or deployed a mobile ABM system, or a mobile ABM radar, one of the three components of a mobile ABM system.

The U.S.S.R. does not have a mobile ABM system or components for such a system. Since 1971 the Soviets have installed at ABM test ranges several radars associated with an ABM system currently in development. One of the types of radars associated with this system can be erected in a matter of months, rather than requiring years to build as has been the case for ABM radars both sides have deployed in the past. Another type could be emplaced on prepared concrete foundations. This new system and its components can be installed more rapidly than previous ABM systems, but they are clearly not mobile in the sense of being able to be moved about readily or hidden. A single complete operational site would take about half a year to construct. A nationwide ABM system based on this

new system under development would take a matter of years to build.

ABM Testing of Air Defense Missiles. Article VI of the treaty specifically prohibits the testing in an ABM mode of missiles which are not ABM interceptor missiles, or giving them ABM capabilities. Our close monitoring of activities in this field have not indicated that ABM tests or any tests against strategic ballistic missiles have been conducted with an air defense missile; specifically, we have not observed any such tests of the SA-5 air defense system missile, the one occasionally mentioned in this connection in the open press.

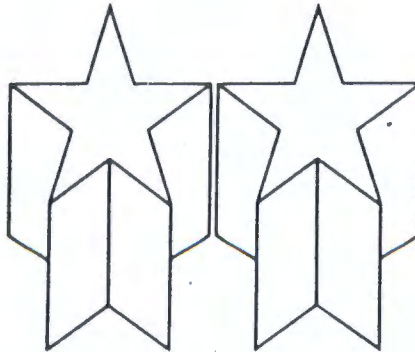
Mobile ICBM's. The development and testing of a mobile ICBM is not prohibited by the Interim Agreement, but the United States stated in SALT I that we would consider deployment of such systems to be inconsistent with the objectives of the agreement. We do not believe the Soviets have deployed an ICBM in a mobile mode.

The possibility that the Soviet SS-20, which is a mobile intermediate-range ballistic missile system, has been given or could be given ICBM range capabilities has been discussed in the press. The SS-20 is being deployed to replace older medium- and intermediate-range missiles. It is judged to be capable of reaching the Aleutian Islands and western Alaska from its present and likely deployment areas in the eastern U.S.S.R.; however, it cannot reach the contiguous 48 States from any of its likely deployment areas in the Soviet Union.

While the range capability of any missile system, including the SS-20, can be extended by reducing the total weight of its payload or adding another propulsion stage, there is no evidence that the Soviets have made any such modifications to the SS-20. We have confidence that we would detect the necessary intercontinental range testing of such a modified system.

Denial of Test Information. It has been reported in some articles on SALT that the Soviets have violated the Interim Agreement by encoding missile-test telemetry and that such activity is contrary to the provision of article V of the Interim Agreement. Such activity would be inconsistent with those provisions of the Interim Agreement if it impeded verification of compliance with agreement provisions; it has not been considered to have done so. The SALT II agreement includes a specific provision that neither party may deliberately deny telemetric information whenever such denial impedes verification of the provisions of the treaty.

Antisatellite Systems. It has been alleged that Soviet development of an antisatellite system is a violation of the obligation not to interfere with national technical means of verification of compliance with SALT provisions. Since development of such systems is not prohibited, this program does not call into question Soviet compliance with existing agreements. The actual use of an antisatellite system against U.S. national technical means is prohibited, but this has not occurred.



TREATY COMPLIANCE

by Robert J. Einhorn

Testifying before Congress in July 1981, Eugene Rostow, director of the Arms Control and Disarmament Agency (ACDA), put his finger on one of the central dilemmas of arms control: "No arms control agreement can contribute to the goal of a peaceful world unless we have confidence that the Soviet Union is abiding by its terms." The problem, of course, is that it is very difficult to have confidence in the behavior of a powerful and secretive adversary that has demonstrated time and again that it has few scruples about making gains at U.S. expense when good opportunities present themselves.

Americans do not trust the Russians, and this deep-seated distrust has contributed to the belief that the Soviets cannot be counted on to live up to their obligations under arms control agreements. How, many Americans might ask, can you expect the Soviets not to cheat in arms control when they claimed their invasion of Afghanistan was requested by the Afghan leader who was executed upon the arrival of Soviet troops?

A Louis Harris and Associates poll conducted shortly after the 1980 U.S. presidential election points out how distrust of the Soviets can undercut domestic support for arms control. Although 90 per cent of those polled favored the idea of "President-elect Reagan sitting down with the Russians to try to come to an agreement on controlling nuclear arms," about half of the 90 per cent agreed with the statement that "because the chances are that we will keep our end of the bargain and the Russians will not, we should not sign any agreement limiting nuclear weapons."

Conscious of the public's attitudes—and

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convinced themselves of the merits of a prudent and skeptical approach toward dealing with the Soviets—all U.S. administrations engaged in arms control negotiations in recent decades, whether Republican or Democratic, have sought to avoid any implication that they would rely on trust or good will in implementing agreements with the Soviets. Instead, they have maintained that such agreements would be based on the ability to monitor, through the use of sophisticated intelligence-gathering techniques, whether the Soviets were actually abiding by their commitments. In other words, effective verification measures and compliance procedures would compensate for a lack of trust in the Soviet Union and would promote the public confidence and support necessary to sustain arms control efforts in a democratic society. How well has this approach worked?

Controversial questions regarding Soviet compliance have arisen in implementing several of the arms control agreements concluded during the past decade:

- *SALT I*. In the case of the 1972 SALT I accords—the Anti-Ballistic Missile (ABM) Treaty and the Interim Agreement on the Limitation of Strategic Offensive Arms—the problems have come not in observing Soviet behavior, but in determining whether certain observed Soviet activities should be regarded as consistent with the agreements' provisions.

Among the more widely publicized of these issues were whether construction of new silos the Soviets claimed were for launch-control purposes was consistent with the ban on building additional silos for intercontinental ballistic missiles (ICBMs); whether the tracking of ballistic missiles in flight by the SA-5 antiaircraft radar was consistent with the ban on testing such radars in an ABM mode; and whether the replacement of the SS-11 ICBM with the much larger SS-19 was consistent with the ban on converting launchers for light ICBMs to launchers for heavy ones.

Officials involved in monitoring SALT compliance in the Nixon, Ford, and Carter administrations acknowledge that the Soviets have tried to exploit ambiguities and have disregarded U.S. views on the spirit of the accords. But they argue that little basis exists for the

charge that actual violations have been committed. They also maintain that they promptly raised questionable activities with Moscow and that in all such cases U.S. concerns were allayed.

A highly vocal group of critics has challenged these assessments, contending that the United States was too hesitant in raising troublesome issues with the Soviets, too weak in objecting to Soviet actions, and too expedient in minimizing the significance of Soviet misconduct. They argue that U.S. concerns were not truly alleviated through diplomacy and that U.S. readiness to retreat from earlier interpretations of what constituted violations has legitimated Soviet cheating.

- *Threshold Test Ban Treaty (TTBT)*. Although the 1974 TTBT has not formally entered into force, both the United States and the USSR declared in 1976 that, pending ratification, they would abide by its 150-kiloton limit on nuclear tests. But monitoring such a limit with precision is difficult because seismic measurements recorded at long distances from nuclear explosions may often provide only a rough estimate of explosive yield. Anticipating this problem, the TTBT provides for the exchange of information, including geological data and actual yields of certain past tests, that would help both parties refine their yield estimates. With the TTBT not yet ratified, however, its data exchange provisions have not been implemented.

Since 1976 the U.S. intelligence community has been unable to classify several Soviet tests with confidence as falling above or below the 150-kiloton threshold. The United States has repeatedly pressed the Soviets for information that could assist its measurements of the questionable tests. The Soviet response has been to declare tersely that the tests were indeed below the threshold and to remind the United States that much of the information requested would be exchanged as soon as Washington ratified the TTBT. So the uncertainty persists. And although some Soviet tests, especially at the high end of the range of uncertainty, do provide valid grounds for suspicion, no one on the U.S. side knows for certain whether any of them exceeded the threshold.

• *Biological Weapons Convention (BWC)*. Early in 1980, information that had accumulated over many months led to concern within the American government that a 1979 anthrax epidemic in the Ural Mountains city of Sverdlovsk might have indicated a Soviet violation of the BWC, a multilateral agreement banning the production, development, and stockpiling of biological warfare agents. The available evidence suggested that an accidental explosion at a military installation long suspected as a possible biological weapons research and production facility had released illegal biological weapons agents into the atmosphere. The matter was raised through diplomatic channels with the Soviets, who confirmed the outbreak of anthrax in Sverdlovsk, but maintained that the disease was of natural origin—caused by eating infected meat.

Because the Soviet explanation appeared inconsistent with information available to the United States, Washington pressed for consultations between experts of the two countries. The Soviets, however, refused to hold the consultations or provide additional information that could shed light on the Sverdlovsk epidemic. The situation now seems to be stalemated.

Secretary of State Alexander Haig, Jr. recently brought another BWC compliance question to the public's attention. He told a Berlin audience on September 13, 1981, that "we now have physical evidence from Southeast Asia which has been analyzed and found to contain abnormally high levels of three potent mycotoxins . . ." This evidence—based on laboratory analysis of a leaf and stem sample and subsequently reinforced by additional evidence—raise the possibility that Vietnamese troops have been using lethal toxins banned by the BWC against Kampuchean resistance forces. Since the mycotoxins found are not believed to occur naturally in Southeast Asia and no large scale biological fermentation facilities are known to exist there, the implication is that the Soviets have manufactured the toxins and provided them to Vietnam in violation of the BWC. The United States has reported its findings to a U.N. experts group and has also pursued the matter through diplomatic channels.

Soviet Violations?

The place to start in assessing the record is the criterion assigned primary importance over the years by administrations of both parties. According to that criterion, verification and compliance arrangements must be capable of protecting U.S. security. More specifically, they must be able to identify militarily significant—although not necessarily all—violations and to do so early enough to permit America to take whatever compensatory actions are necessary. Opinions differ sharply on whether the Soviets have violated the agreements mentioned above. But even with a pessimistic view of Soviet behavior under each of the agreements, the record does not seem all that unsettling, if evaluated solely on the basis of this security-oriented criterion.

Even if the Soviets have frequently cheated under SALT I, they have not gained significant security advantages through such cheating. For example, although the SA-5 radar seems to have tracked re-entry vehicles on numerous occasions before the activity stopped, most experts concur that the SA-5 antiaircraft system could not achieve an ABM capability without substantial upgrading and testing of other components of the system, such as interceptors. And SS-19 deployment, strategically the most serious issue, can hardly be regarded as a violation, since it was inconsistent not with the provisions of SALT I, but with the unilateral U.S. interpretation of those provisions.

Similarly, from a strictly military perspective, the American inability to determine whether several Soviet nuclear tests exceeded 150 kilotons does not look very threatening. At the time of the 11BF negotiations, the United States recognized that, even with the help of the treaty's data exchange, considerable uncertainty in measuring the yields of Soviet tests would remain. But the main U.S. objective was to deny the Soviets the option of further high-yield testing on which their weapons program had relied. And the U.S. government understood that such high-yield tests—i.e., much greater than 150 kilotons—could easily be identified as breaches of the treaty, even if tests much closer to the threshold could not.

Equally important, it determined that foreseeable U.S. weapons requirements could be met through testing below 150 kilotons. For these reasons, the risk that the Soviets might get away with a number of tests somewhat above the threshold, perhaps even at yields approaching twice the threshold, did not at that time—and does not now—seem to have major military significance.

BWC compliance should also be viewed in a historical context. In 1969 the Nixon administration ordered the destruction of all U.S. biological weapons, reasoning that possession of such weapons would not significantly affect the military balance between states already possessing nuclear weapons. To impose matching constraints on the Soviets, it subsequently negotiated the BWC. The administration figured that even hard-to-verify constraints would at a minimum complicate and limit the size of any clandestine Soviet biological weapons program. In any event, Soviet non-compliance would pose only a marginal security threat, given the low estimate of the military utility of such weapons.

Even if the Soviets have frequently cheated under SALT I, they have not gained significant security advantages through such cheating.

Judging the record solely from the security perspective, however, does not appear sensible. Verification and compliance arrangements should not only protect U.S. security; they should also instill confidence in the American public that its interests are being protected and that the agreements are functioning fairly and effectively. And public confidence will often depend less on esoteric assessments of whether possible violations are militarily significant than on simple perceptions of whether the Soviets are cheating, regardless of the military significance.

From this perspective, the record of recent years is hardly satisfactory—whether or not the Soviets have cheated. As a result of the uncertainty and controversy surrounding the implementation record, the American public

is, at best, confused about arms control compliance. At worst, it is deeply suspicious, disillusioned, and divided.

If arms control is to have much of a future, the record of the past decade must be improved. The U.S. government should make every effort to insure that the implementation of arms control agreements not only protects important U.S. security interests, but also reduces the uncertainties and controversies concerning issues of even minor military significance that have had such a corrosive effect in recent years on public confidence and support. These efforts should focus on three components of the arms control implementation process: developing the agreement itself, pursuing compliance issues diplomatically with the Soviets, and dealing with Congress and the American public.

Developing Sound Agreements

While formulating agreements, the U.S. government should keep in mind the importance of minimizing two main sources of compliance problems: uncertainties in monitoring Soviet behavior and ambiguities in determining whether observed Soviet behavior is consistent with the agreement. An essential means of minimizing the first difficulty is to rely more heavily on cooperative verification measures in future agreements to supplement U.S. national technical means (NTM) of verification. NTM are the array of sophisticated methods of data collection based outside the territory of the state being monitored and operated unilaterally by the monitoring state without the approval or participation of the state being monitored. U.S. NTM include photographic, radar, and electronic surveillance capabilities; seismic installations; and air sampling systems.

By contrast, cooperative measures are negotiated verification arrangements requiring the approval and often the participation of the state being monitored. Cooperative measures can take many forms, including arrangements for collecting data—e.g., seismic installations—as well as measures for facilitating the collection of data by NTM—e.g., restrictions on concealment practices and prenotification requirements. Cooperative measures may involve

activities on the territory of the state being monitored—e.g., on-site inspection—as well as non-intrusive activities—e.g., data exchanges.

Since the 1972 SALT I accords, which could be monitored confidently by NTM, the use of cooperative measures has increased considerably. To facilitate verification of the more complex restrictions of the now moribund SALT II treaty, several such measures were negotiated, including counting rules, restrictions on telemetry encryption, and an agreed data base. The high-water mark for cooperative measures was reached in the comprehensive test ban (CTB) negotiations. Although the fate of those currently suspended talks is at best uncertain, the parties have worked out a framework for conducting on-site inspections and installing seismic stations on one another's territory.

In the future, it will be necessary to go well beyond even the more path-breaking cooperative measures achieved to date. For example, if a future SALT agreement limits the number of missiles rather than missile launchers, some form of continuous on-site surveillance of points of access to missile production facilities might be necessary. A chemical weapons ban would require on-site procedures to monitor the destruction of stocks and the deactivation of production facilities. And various collateral constraints, data exchanges, and provisions for distinguishing between like systems will need to become standard features of future agreements.

The United States, however, should not have illusions about the ease of gaining Soviet acceptance of such measures. The Russian penchant for secrecy borders on the pathological. Whether their motive is to conceal strengths, weaknesses, or both, the Soviets seem to feel they have more to gain by preserving tight controls on information and access to their territory than by agreeing with the Western notion that openness promotes stability and security.

Moscow's insistence on sovereignty over monitoring activities on Soviet territory will be a serious obstacle. But it may be possible to devise arrangements that give the Soviets nominal sovereignty and control, but that in practice provide the United States with the

reliable data it needs. In the CTB talks, for example, the United States agreed that the Soviets would own and operate the seismic stations in the USSR, provided those stations would have high-quality instruments and special authentication devices to insure that, even with Soviet technicians present, the seismic data could not be falsified. This pragmatic and technically innovative solution could provide a useful model for future measures.

An even greater obstacle will be the Soviet belief that cooperative measures should not provide more information about Soviet military activities than is strictly necessary to verify treaty obligations. The United States will have to be resourceful in devising measures that can insure access to treaty-related information without divulging unrelated military secrets. Setting up chemical weapons destruction facilities in isolated locations, for example, could permit on-site observation without disclosing such secrets. But segregating information in that way often will not prove feasible. An inspection capable of verifying whether the Backfire bomber's range had been increased through modification of its engine, for example, would unavoidably disclose military secrets. And although the United States should press the Soviets to be more forthcoming—to recognize that the problem-avoiding benefits of disclosing some additional information will often outweigh the risks—they are unlikely in many cases to agree.

Sometimes U.S. negotiators will insist on imprecise formulations to preserve U.S. flexibility.

Moreover, Soviet resistance to intrusive measures is not the only factor limiting their future usefulness. The United States, despite its much greater tolerance for intrusive verification, would also feel compelled to reject arrangements that compromised important secrets. And intrusive methods are not always effective verification tools. On-site inspection is hardly worthwhile, for example, when the monitoring party cannot detect or pinpoint the location of suspicious activities that would jus-

tify an inspection or when the offending side could quickly remove all traces of prohibited activities from the inspection area.

The United States should—indeed must—rely on cooperative measures more and more to perform the demanding verification tasks ahead. But it should not hold the false hope that, by themselves, such measures can solve U.S. compliance problems.

Potential Ambiguities

In formulating future agreements, the United States should also try to reduce the potential for disputes over what constitutes a violation. Previous problems of this nature have fallen into two categories.

The first involved several instances in SALT I where the United States issued unilateral interpretations of treaty provisions in the hope that they would have a constraining effect on Soviet behavior. In most cases, including the SS-19 matter, they did not, setting the stage for compliance disputes in which the United States was unable to sustain its interpretations in the face of the firm Soviet view that Moscow was bound only by agreed provisions, not unilateral U.S. statements. As a result of this unsatisfactory experience, U.S. negotiators in SALT II correctly avoided unilateral statements as a device for constraining the Soviets and instead used those statements only as a means of putting on record how the United States planned to act under certain provisions, thus protecting against possible legal challenges to those actions.

The second category of problems involved disputes in implementing fully agreed but imprecise treaty obligations, such as the SALT I restrictions on testing in an ABM mode and deliberate concealment. The advice invariably given to avoid such problems is to make treaty obligations as detailed, quantifiable, and unambiguous as possible.

This is sound advice, but the basic problem in seeking precise agreements is not a lack of diligence or skill in treaty drafting. Rather, the elimination of ambiguity is often either disadvantageous or infeasible. Sometimes U.S. negotiators will insist on imprecise formulations to preserve U.S. flexibility. In SALT II, the

United States preferred not to define precisely the key term "launcher" largely because of the risk that a specific definition might limit future basing options for the MX missile. Often the negotiators settle for generality because they simply cannot anticipate the wide range of contingencies likely to arise in implementation. Indeed, it would be illusory to expect rules governing complex and dynamic military developments to be so specific and comprehensive as to preclude differences of interpretation.

Thus, although cooperative measures and carefully formulated provisions can help reduce future compliance problems, they cannot eliminate them. The negotiation of sound agreements is an essential step toward improving the compliance record, but it is only the first in a continuing process.

Compliance Diplomacy

Diplomacy is an indispensable tool for dealing with the inevitable problems that arise after arms control agreements enter into force. But using it successfully requires a realistic appreciation of what it can and cannot do. Most important, compliance diplomacy with the Soviets is a consensual process, not a judicial one. No authority can render verdicts of guilt or innocence, order the Soviets to provide information, or compel them to alter illegal or borderline behavior. If satisfactory resolutions of compliance problems are to be achieved, Washington must persuade, pressure, or otherwise bring the Soviets to see that cooperating in some fashion is in their own interest.

Despite the obvious limitations of such a consensual process, diplomacy can often play a valuable role in compliance matters. It can facilitate exchanges of information capable of alleviating concerns. It can produce more precise understandings to reduce future ambiguities. When a party has consciously or inadvertently committed a violation, it can be used to press the violator to stop the activity and perhaps to take tangible and observable steps that provide a measure of assurance that the activity will not recur. And even when a violator refuses to cooperate, diplomacy can be used at least to confirm or expose such an unhelpful attitude and

to provide a justification for any unilateral steps necessary to rectify the situation. How can the United States make the most out of compliance diplomacy with the Soviets?

> *Maintaining Confidentiality.* If the Soviets are determined, for one reason or another, to be unresponsive, no approach will pry information from them. But if a constructive response is attainable, the most promising means of eliciting it will be to deal with them on a confidential, non-polemical basis. Greater Soviet responsiveness to private diplomacy can be attributed in part to Moscow's resistance to sharing military or other sensitive information publicly. Also, in cases where the Soviets are asked to alter their behavior, they will not want the world to see them giving in to U.S. pressure.

It may often be tempting to deal publicly with compliance matters to promote what may be valid goals, such as generating international pressures for more scrupulous Soviet compliance behavior. But in cases where tangible Soviet cooperation is required for an acceptable outcome—e.g., physical alteration of deployments and negotiation of new guidelines—such public efforts will likely be counter-productive.

There may, however, be a strong justification for going public in the event of the possible use of prohibited weapons, especially if third parties are involved, as in the case of the possible use of mycotoxins in Southeast Asia. Although the adverse effects of non-compliance with restrictions on construction, deployment, or testing can in theory be reversed through quiet diplomacy or at least stopped before serious damage is done, the consequences of the use of prohibited weapons usually cannot be corrected. The pressing need is to prevent any further use, and public exposure may well be the quickest and surest deterrent. But since the deterrent value of such public diplomacy will depend largely on the credibility of the case presented, the United States should bend over backward to avoid overstating its case or conveying the impression that it is more interested in discrediting the Soviets than deterring violations.

> *Raising Issues Routinely.* Whenever reliable information raises questions about Soviet

compliance, whatever the military significance of the possible violations, Washington should pursue those questions expeditiously with Moscow, provided sensitive intelligence sources and methods are not compromised. Failure to raise them could convey the impression to the Soviets that the United States was indifferent to minor violations or unable to detect them, either of which could weaken the deterrent against cheating at more significant levels. Moreover, erring on the side of raising too many issues rather than too few could help make the process more routine and less confrontational, perhaps over time contributing to a somewhat freer exchange of information.

> *Using Productive Channels.* In the past, the United States has handled compliance issues with the Soviets through normal diplomatic channels, senior-level contacts, and consultative bodies such as the Standing Consultative Commission (SCC)—the bilateral forum responsible for SALT implementation. In general, the results have been best with a standing mechanism such as the SCC. Because the highest levels of the Soviet government sanctioned the SCC, Soviet participants have a mandate to discuss sensitive matters that might otherwise be way out of bounds. Without such a standing mechanism, requests for ad hoc compliance consultations take on a more confrontational character, with the accused party put on the defensive and overly circumspect about sharing information. Since the absence of consultative mechanisms has made the BWC and TTBT cases more difficult to handle, the creation of such mechanisms should be part of the U.S. approach for dealing with those problems.

> *Seeking Practical Solutions.* In some cases, initial—and even repeated—diplomatic efforts may not alleviate U.S. concerns, perhaps because of Soviet unwillingness to provide sufficient information or differing U.S.-Soviet views on whether a particular activity is prohibited. In such circumstances, the United States has four choices: do nothing and let the unresolved issue fester; renounce the agreement without further diplomatic efforts; try once again to extract information from the Soviets or get them to agree their behavior is

prohibited; or propose a practical solution that gives the United States assurances about future Soviet behavior even if it does not eliminate uncertainties about—or pass legal judgment on—past Soviet actions.

In many situations, the best course will be to choose the last approach. Among the wide variety of practical solutions Washington might propose are the negotiation of new common understandings that clarify ambiguities in original provisions, modification of certain deployments or activities to make them less worrisome, termination of questionable activities, or agreement on additional verification measures.

There is, of course, a somewhat disturbing and untidy quality about these practical solutions. They will not resolve troublesome questions about what precisely the Soviets did in the past or why they did it. But given the nature of the process, such questions are destined to remain unanswered. Although the United States can repeatedly press for explanations, the Soviets cannot be forced to turn over more information than they consider to be in their interest. Neat, clear-cut determinations of Soviet guilt or innocence may frequently prove elusive.

In any event, the elimination of all gnawing doubts about past Soviet behavior should not be the test for how well a compliance issue is resolved. The test should be a pragmatic one—whether the solution provides reliable assurances that the questionable activity will not continue in the future and whether the solution is achieved in time to prevent harm to U.S. security.

> *Carrots and Sticks.* To achieve such solutions, the United States will have to offer the Soviets incentives for cooperation as well as make it clear that there will be penalties for failing to be responsive to U.S. concerns. In the past, Americans often told the Soviets that their cooperation in resolving compliance questions could have a positive effect on U.S.-Soviet relations. Now, given the bleak state of those relations and the sizable obstacles to their marked improvement, such an offer might not seem very credible. But incentives should exist for Soviet responsiveness, regardless of the pre-

vailing international climate. At a minimum, Moscow should be able to expect that if it does in fact provide a thorough and convincing explanation, the United States will be satisfied. And Americans must demonstrate that they are prepared to accept equitable solutions that address legitimate Soviet concerns as well as their own.

Just as with carrots, sticks are harder to use effectively when bilateral relations are in a deep freeze. But it is essential that, even during a period of tension, the Soviets perceive real penalties for failure to cooperate on compliance matters. Among the wide range of steps the United States must be prepared to take, if necessary, are publicizing Soviet actions internationally, pursuing military measures permitted by the agreement that could offset any gains the Soviets may have achieved through possible non-compliance, or withdrawing from the agreement itself.

Any decision on withdrawal should be based on a dispassionate calculation of U.S. interests. In the BWC case, withdrawal would hardly be advantageous because the United States would not resume biological weapons production anyway; it is better for the USSR to be bound by hard-to-verify constraints than by none at all; and U.S. withdrawal could lead to the unraveling of the entire multilateral agreement, which could have destabilizing consequences in parts of the world where biological weapons might have appeal as a cheap deterrent. A more sensible U.S. response to a continued Soviet lack of cooperation would be to strengthen U.S. capabilities for defending against biological attack, pursue diplomatic efforts to improve the BWC's verification measures, and propose observable dismantling or modification of suspicious Soviet facilities.

Promoting Confidence

Even if the executive branch has negotiated sound agreements and pursued compliance issues effectively with the Soviets, its approach toward implementation will not be successful unless it instills confidence at home—in the bureaucracy, in the Congress, and in the public—that the agreements are functioning well and that U.S. interests are being pro-

tected. And in this third critical area, the record has not been good.

The public's lack of confidence has resulted to a significant extent from the sharply differing views voiced by opinion leaders, both in and outside government. Much of this discordant debate can be attributed to genuine differences of view on highly ambiguous compliance situations. But part can be traced to the fact that opposing sides have often talked past each other—with one side tending to focus on the narrow legal aspects of compliance issues and the other tending to focus more broadly on Soviet military activities which, if not strictly illegal, seemed inconsistent with the U.S. objective of promoting stability through arms control. Consequently, a variety of Soviet actions have been lumped together in a misleading way under the rubric of compliance: possible violations in a strict sense, violations of unilateral U.S. statements, Soviet activities that were insensitive to U.S. concerns or needlessly close to the ragged edge of legality, and activities seen as strategically disadvantageous. The result has been to distort and confuse the public debate and to give the impression of more disagreement on bona fide compliance questions than probably existed.

Some of the harshest public debate has concerned the behavior of U.S. administrations rather than the Soviets. Critics have charged that, for various political reasons—e.g., to preserve détente or SALT ratification prospects—incriminating intelligence has been kept from key members of the executive branch as well as from Congress and the public. In other words, according to some critics, the United States has in effect colluded with the Soviets in covering up violations.

The best way to maintain the administration's credibility and to counteract the confusion stemming from the cacophony of official and unofficial voices is for the executive branch to share more information with Congress and the American public. At present, the foreign affairs, armed services, and intelligence committees of both the House and the Senate are informed, on a classified basis, of any specific understandings reached in the SALT SCC. The two intelligence committees also have access to

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the classified monitoring reports prepared by the intelligence community. In addition, the Carter administration issued two unclassified reports to the public dealing, albeit tersely, with SALT I compliance and SALT II verification issues.

Compliance diplomacy with the Soviets is a consensual process, not a judicial one.

This sharing of information could go considerably further. In addition to access to monitoring reports, appropriate committees could periodically be given classified reports explaining why particular compliance matters would or would not be raised with the Soviets. Classified reports could be sent to Congress not just furnishing understandings reached in compliance consultations, but also summarizing the issues raised at those meetings and the responses given. The public could be informed through less detailed, unclassified reports that periodically summarized the work of compliance bodies. Unlike the reports to Congress, the public reports would be released only when the issues were no longer under consideration with the Soviets.

Among the risks involved in greater sharing of information is that leaks could compromise further intelligence collection efforts or reduce the prospects for a constructive Soviet response. But the admirable record of the congressional intelligence committees in safeguarding information on covert intelligence operations demonstrates that when special efforts are made confidentiality can be preserved.

A related risk is that the official release of public reports could have an inhibiting effect on Soviet participation in compliance discussions. The Soviets attach great importance to the SCC rule that the commission's proceedings should be conducted in private. But as long as U.S. public reports are objective and are not released while issues are under active consideration, Soviet participation is not likely to be affected. The Soviets recognize that the alternative is likely to be leaks of a much more damaging nature.

Promoting public confidence and understanding will depend not just on the quantity of information shared, but on its balance and objectivity. This may involve resisting pressures from differing directions. On the one hand, there may be a tendency at times to want to hold back on troublesome but inconclusive information or to minimize its worrisome character. But as long as reliable procedures exist to preserve confidentiality, the information, warts and all, should be shared. In any event, attempts to control or manipulate the information are bound to fail—to be exposed by disgruntled bureaucrats.

On the other hand, the administration should resist pressures to portray Soviet compliance behavior in a worse light than is warranted by the available facts. Uncomfortable as it may be politically to appear to be defending or rationalizing Soviet behavior, the administration should provide a forthright explanation when the Soviets do in fact have a valid position and when the United States would be justified in dropping a matter or accepting a compromise. Leaving the Congress and public with a worse impression of Soviet behavior than warranted would only subject the administration to criticism later for an inability to rectify the perceived misconduct.

Living with Uncertainty

The Reagan administration has made clear that verification and compliance will be central elements in its approach to arms control. In a July 1981 speech outlining the administration's basic principles in the field of arms control, Haig emphasized that agreements must contain effective means of verification and mechanisms for securing compliance. "Unverifiable agreements," he said, "only increase uncertainty, tensions, and risks." Rostow underlined the importance attached to verification and compliance by devoting one of the administration's first contacts with the Soviets on arms control—his August 21 meeting with Chargé d'affaires Aleksandr Bessmertnykh—to a presentation of U.S. thinking on the subject.

It is good that the administration has set its sights high in the area of verification and compliance. But both the administration and the

American public should also have realistic expectations about what is achievable. In particular, they should recognize that there is no such thing as trouble-free implementation. Gaps in U.S. monitoring capabilities and ambiguities in treaty provisions will inevitably arise. Agreed solutions to compliance problems will not always be found, and those that are found will not be perceived by everyone as adequate. And the most candid and thorough reports will not prevent public disagreements in a field as controversial as arms control.

The question that must be asked is whether the best that can realistically be expected is good enough. The answer will depend to a large extent on whether the Soviet Union will be prepared to relax its habitual resistance to the sharing of information needed to build confidence and avoid compliance difficulties. And it will depend on whether the United States will be prepared to live with the unavoidable residual uncertainties in the compliance process and with solutions that are often less than fully satisfactory.

In a more basic sense, the answer will depend on the value that the two countries place on arms control. If they both believe their national interests can be served by negotiating and adhering to arms control agreements, they will have the incentive to adopt the pragmatic and constructive approaches needed to make the implementation process function reasonably well, even with its inherent shortcomings. But if either or both of them do not feel they have an important stake in the conclusion and continued operation of arms control agreements, the process is destined to fail no matter what efforts are made to try to improve on recent experience.

III

VERIFICATION OF ARMS CONTROL AGREEMENTS

- What technical capabilities exist to verify compliance with arms control agreements?
- What verification problems have been created by new weapons developments?
- Is there a need for on-site inspection to verify compliance with some arms control agreements? What are the prospects for agreement on such methods?

A. Technical Feasibility

The importance of modern remote verification techniques, including but not limited to photo-reconnaissance satellites, cannot be overstated. Without these techniques, first employed in the early 1960s, recent arms control agreements probably could not have been reached. For years prior to the development and improvement of satellite monitoring, efforts to negotiate arms control agreements foundered because of mutual suspicion and demands by the U.S.--to which the Soviets were unwilling to agree--for on-site inspection. In 1955, President Eisenhower tried to break this impasse by offering his "Open Skies" proposal. The President hoped an arrangement whereby both the U.S. and the Soviet Union were permitted to fly over each other's territory and observe one another's military installations would serve as a confidence-building measure and permit successful arms control negotiations. The Soviets however, rejected this proposal as a thinly veiled attempt to gather nuclear-targeting data. However, beginning in 1956 the U.S. unilaterally opened Soviet skies by conducting overflights with U-2 reconnaissance aircraft. After many unsuccessful attempts, the Soviets finally shot down a U-2 over their territory in 1960, causing a major international incident. This was not the first or only incident of its kind, although it is the best known. Many U.S. intelligence gathering aircraft have been shot down around the periphery of the Soviet Union over the years. Reconnaissance satellites have largely replaced such flights, although aircraft which fly just outside Soviet borders are still used to collect special kinds of information. More important is the fact that arms control agreements made legitimate the use of reconnaissance satellites for verification have been accepted by both sides.

The reprinted material which follows is taken from the September 1982 issue of the Federation of American Scientists Public Interest Report. Existing U.S. capabilities to verify Soviet military activity are summarized, including imaging reconnaissance satellites, electronic reconnaissance satellites, and various other surveillance and monitoring systems. Also presented is an analysis by the F.A.S. of how a FREEZE could be verified, including a checklist indicating which intelligence systems would be used to monitor each of the three FREEZE components: testing, production, and deployment.

National Technical Means*

Imaging Reconnaissance Satellites

"KH-11"

The KH-11 satellite won fame in 1978 when CIA employee William Kampiles went to jail for selling its interpretation manual to Soviet agents. The big spacecraft, which probably weighs about 10,300 kilograms, usually flies at altitudes of about 300 to 600 kilometers. That means that its imaging system probably returns fairly wide-area pictures of the ground. But if it also carries longer focal-length telescopes, it could zoom in on more interesting targets for greater detail. The "ground resolution"—meaning the smallest size of objects distinguishable—of KH-11 images is probably between 2 and 5 meters, depending on what assumptions we make about its telescopes and sensors.

The military virtue of the KH-11 is that it operates nearly in "real time." It doesn't use cameras with photographic film, but instead forms images on an electronic focal plane. A scanning mirror sweeps across the satellite's field of view, and the light from the mirror registers on the focal plane as a series of electrical impulses which become digital "bits" of data, either recorded for later playback or directly transmitted to the earth stations of the U.S. Air Force Satellite Control Facility. It is possible, but not certain, that KH-11 data is beamed upward to the satellites of the Air Force Satellite Data System, from which it is relayed to ground stations. In any case, the Satellite Control Facility Remote Tracking Station in Greenland can pick up KH-11 signals minutes after the satellite has passed over the Soviet Union. Again via the Satellite Data System satellites, the Remote Tracking Station can pass the data immediately to the Air Force satellite headquarters in Sunnyvale, California for further processing. Because this is a CIA-owned satellite, at some point the images go to CIA headquarters for analysis.

Most likely the sensors on the KH-11 are multi-spectral—they form images in several bands of visible and infra-red light. These images can carry information that is just as valuable as the details of size and shape produced by the finer resolution of "close-look" photographs, as we shall see below. The KH-11 satellites keep recording images and transmitting data until their maneuvering fuel runs out—which takes upwards of two years. The U.S. seems to keep two of these spacecraft operating at any one time.

"Big Bird"

The "Big Bird" satellite, primarily an Air Force vehicle, stays up about six months, weighs about 11,000 kilograms, and flies somewhat lower than the KH-11—between about 160 and 280 kilometers. Maneuvering at lower altitudes, where some air resistance against the vehicle accumulates, probably uses up a good deal of thruster fuel. But the main limit on the satellite's lifetime is its use of old-fashioned photographic film to record images. The satellite surveys larger areas with a camera developed by Kodak that develops the film on board and then transmits a television-scanned image of the developed picture. The satellite also

carries a few (some say 4, others 6) film pods that it can send back to earth for development. These are no doubt used to have the satellite take a more detailed look at specially chosen targets.

"Close-look"

A third type of imaging satellite can take quite close-up pictures, resolving objects on the ground which are perhaps six inches across. This "close-look" satellite can swoop in to altitudes as low as 80 or 90 miles, photographing the ground with color film. The film is released on command for re-entry and then caught in mid-air by special airplanes based in Hawaii. The close-look satellites run out of fuel and film more quickly than the other types, and they usually stay in orbit for 60 days or so.

Since the "Big Bird" became available, the Air Force has flown the close-look satellites much less than before and apparently is almost out of them. The most recent went into orbit at the end of February, 1980. According to the trade press, both the "Big Bird" and the close-look satellites will be replaced in 1984 with a large satellite that will have a long lifetime and take very detailed pictures as well.

ELECTRONIC RECONNAISSANCE

"Ferret"

From time to time, when the Air Force launches a Big Bird, it attaches a much smaller satellite which jumps up to a higher orbit, over 400 miles up. This smaller satellite probably collects information about Soviet radar, indicating what frequencies and types of signals the Soviets are using to watch out for incoming planes and missiles. Since the U.S. has flown very few of these in recent years, one might speculate that the Big Bird or the KH-11 can collect some of the same types of information.

"Rhyolite-Chalet"

The United States has also sent up a series of geosynchronous satellites—they revolve around the equator once every 24 hours, thus hovering over one spot—for intelligence purposes. In a spy trial a few years ago, this type of satellite was identified as "Rhyolite," although the name has probably changed by now (the new name may be "Chalet"). The Rhyolite type of satellite collects the telemetry—the information on rocket performance—sent back by Soviet missiles when they are tested. It may pick up other kinds of military communications inside the Soviet Union as well.

A likely candidate for the most recent satellite in the Rhyolite series is one launched in March, 1981. It probably has more sensitive listening devices than the earlier versions. Senator John Glenn, who in 1979 expressed doubts about the verifiability of the SALT II agreements, now says he thinks new developments do make them verifiable. In 1979, Secretary of Defense Brown said that in a year or so we could replace the eavesdropping capabilities we lost in Iran. Apparently we have. (We also have ground-based listening posts in China.)

OCEAN RECONNAISSANCE

The Navy has another kind of electronic intelligence

satellite for monitoring the oceans. These satellites fly in a series of four—a “mother ship” and three sub-satellites nearby. By detecting the radar and communications signals of ships from more than one receiving point, the Navy can locate the ships. If necessary, the imaging reconnaissance satellites or aircraft could be assigned to take pictures.

“UNKNOWN”

In January, 1982, the U.S. launched yet another type of intelligence satellite, one from which apparently three sub-satellites split off. This set of satellites flies at about 360 miles up, not 600 like the ocean reconnaissance type. And while the plane of the ocean reconnaissance satellite orbit is inclined about 62.5 degrees to the equator, the inclination of this new type is 97 degrees. That brings the satellites closer to the poles and allows them to cover more of the earth's surface. They would have a better view of the Soviet naval ports north of the Arctic circle than do present U.S. ocean reconnaissance satellites.

MISSILE WARNING

Defense Support Program (DSP)

With 3 satellites in geosynchronous orbit (1 over the Eastern Hemisphere and 2 over the Western Hemisphere) the DSP system provides early warning of ICBM and SLBM launches by infrared detection of rocket plumes. The satellites also carry visible light detectors and radiation sensors for detecting nuclear explosions and provide surveillance of missile test launches.

NUCLEAR EXPLOSION DETECTION

“Vela Hotel”

Launched in the 1960's into orbits 60,000 miles up, these satellites carried “bangmeters,” or nuclear explosion detectors for monitoring the atmosphere and space for violations of the partial test ban treaty. The last working pair of these satellites still provide some data.

Defense Support Program

The U.S. missile early warning satellites also have some ability to detect the electromagnetic radiation from nuclear explosions.

Global Positioning System (GPS)

The new military navigation system satellites also carry a system called “IONDS”—the Integrated Operational Nuclear Detection System. Combinations of signals from the ultra-violet and x-ray sensors which will eventually be carried by all 18 of the GPS satellites will give the precise locations, using time of flight measurements, of any nuclear explosions in the atmosphere or in space out to 11,000 miles.

Seismic Sensors

Seismic stations around the globe detect underground nuclear explosions. In connection with the incomplete draft treaty for a Comprehensive Nuclear Test Ban Treaty, the Soviet Union has agreed to the placement of additional unmanned stations on Soviet soil.

UNDERWATER ACOUSTIC SURVEILLANCE SYSTEM

The U.S. Navy has the world's oceans virtually “wired for sound,” using both seabed and mobile acoustic sen-

sors. These are useful not only for keeping tabs on nuclear-capable Soviet ships but also for detecting any nuclear tests in the oceans.

GROUND-BASED MONITORING POSTS

The U.S. Intelligence Community maintains a network of electronic “listening posts” and test observation radars near most of the major Soviet missile-testing areas. For example, posts in Turkey monitor the IRBM and developmental SLBM testing range at Kapustin Yar, while two listening posts in Sinkiang, China's western-most province bordering on Soviet Central Asia, monitor the main ICBM test complex at Tyuratam. Listening posts in Norway monitor operational tests of SLBMs fired from submarines in the White Sea. Additional facilities are believed to exist at other locations.

OTHER SPECIAL RADARS

Soviet test warheads descending to their impact areas on the Kamchatka Peninsula or in the Western Pacific are tracked during the high-altitude portion of their flights by the giant “Cobra Dane” phased-array radar at Shemya Air Force Station, Alaska, and during their near-earth trajectories by the shipborne “Cobra Judy” phased-array radar.

PLANES AND SHIPS

SR-71, U-2, and TR-1 Aircraft

These high-altitude reconnaissance platforms, based in the United States, Europe, and Japan, fly along coastlines and border areas of the Soviet Union and Warsaw Pact nations, peering into the foreign territory with side-looking radars, cameras, and electronic intelligence receivers.

Electronic Intelligence Submarines and Ships

So-called “Holystone” submarines—Los Angeles-class nuclear attack submarines specially configured for signal and communications intelligence missions, eavesdrop along the coastlines of the USSR. Intelligence-gathering surface ships overtly perform a similar mission.

HUMINT

Intelligence analysts also garner information from agents, defectors, emigrés, defense attachés, businessmen, tourists, and from the painstaking collation and sifting of published literature.

ON-SITE INSPECTION

Under the Protocol to the 1974 Treaty on Underground Nuclear Explosions for Peaceful Purposes, the Soviet Union and the United States agreed to detailed “on-site” inspection procedures whose general principles were carried over into the negotiations for a comprehensive ban on all nuclear tests. While not immediately available to the intelligence community to assist in verifying agreements, such inspection arrangements are clearly not as far out-of-reach as they once were.

In verifying the delivery vehicle and nuclear warhead production bans which could be a part of a far-reaching comprehensive nuclear freeze agreement, on-site verification would be selectively employed to further investigate—with the intent of definitively identifying—ambiguous activities which are detected by national means but whose explanation remains unclear. □

VERIFICATION OF A MODEL FREEZE: MONITORING TASKS

A comprehensive freeze on the testing, production, and deployment of nuclear weapons and their primary delivery vehicles could be broken into seven key provisions which are distinct for the purposes of negotiation and analysis but interlocking and mutually reinforcing from the perspective of verification:

(1) a freeze of "indefinite duration" (like the ABM Treaty), without modernization,* on the deployment of ICBMs, SLBMs, IRBMs, and (if necessary) GLCMs;

(2) a numerical freeze—permitting modernization and one-for one replacement of delivery vehicles, but with no increase or modernization of weapons load—on strategic bombers, other "dual-capable" aircraft assigned a nuclear role, nuclear-armed ships and subs, and nuclear artillery and battlefield missiles;

(3) a prohibition on the flight testing of "new" or significantly modified ballistic missiles, and a low limit on the number of operational ballistic missile flight tests;

(4) a Comprehensive Test Ban (CTB) on nuclear explosions;

(5) a shut-down of existing main assembly facilities for intercontinental, submarine-launched, and intermediate-range ballistic missiles, and a prohibition on the transfer of this activity to other sites*;

(6) a shut-down of existing key nuclear component fabrication and final assembly facilities for nuclear weapons, and a prohibition on the transfer of this activity to other sites; and

(7) the international inspection and installation of safeguards at all nuclear facilities to permit a verifiable cutoff of weapons-grade nuclear materials production and the conversion or disposal of existing stockpiles.

I. The Deployment Freeze. Few would dispute that a freeze on the number of deployed strategic nuclear delivery vehicles can be adequately verified. Soviet missiles are unambiguously identified with either fixed ICBM launchers, in the case of large liquid-fueled ICBMs, or easily counted submarines, in the case of submarine-launched ballistic missiles. As Secretary Brown testified during July 1979 Senate hearings on ratification of the SALT II Treaty, "We have high-confidence in our ability to monitor the number of fixed ICBM launchers, SLBM launchers, and heavy bombers ("high-confidence" means a counting error of 10% or less—see chart). Brown noted that ICBM silos are "readily identifiable during construction, and take a year or more to build."

The missiles themselves, he reported, "require extensive support facilities, including missile handling equipment, checkout and maintenance facilities, survivable communications, and nuclear warhead handling, storage, and security facilities. Our intelligence collectors regularly examine the existing ICBM fields, but in addition they also conduct extensive surveys of the Soviet Union at periodic intervals for evidence of additional ICBM activity. The intelligence community judgment is that we would detect a Soviet effort to deploy a significant number of excess fixed ICBM launchers even if they departed substantially from

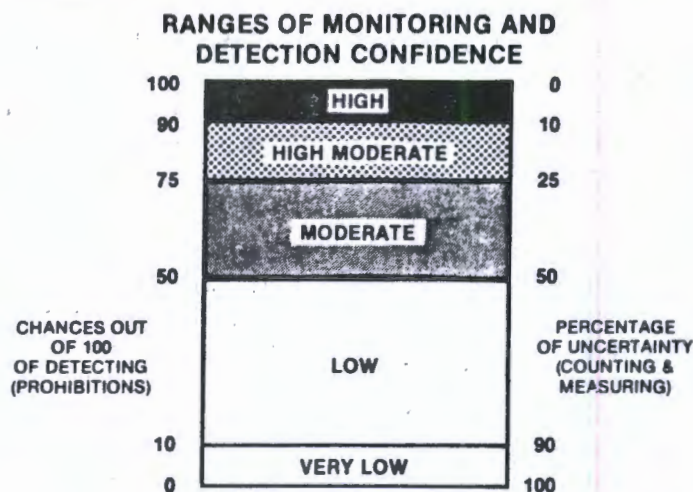


Chart provided by Secretary of Defense Harold Brown to indicate the ranges of monitoring and detection confidence afforded by U.S. "National Technical Means" of verification.

their current deployment practices." In other words, even if the Soviets were to deploy their missiles in salt mines or grain elevators, U.S. ability to monitor ICBM-associated support, transport, communications, and security measures guarantees a high probability of detection.

"Turning to SLBMs," Brown testified, "we monitor the launch, fitting out, and sea trials of each submarine. We also monitor Soviet ballistic missile submarines at operational bases, at sea, and at overhaul facilities. In addition, we search for evidence of SSBN-related activity at other facilities, and we monitor naval activities generally with a wide range of intelligence collection systems. We are confident we can monitor closely the number of SLBM launchers."

As for strategic bombers, Brown said, they are "large in size, built at a small number of plants, and deployed at a limited number of operational bases which are closely monitored. The total inventory of heavy bomber-type aircraft can be monitored with confidence."

Potential prohibitions on major modernizations (e.g., adding a new stage, more reentry vehicles, etc.) and system replacement for new production are primarily verifiable through monitoring other aspects of the Soviet weapons program, for the simple reason that before a new missile or reentry vehicle can be installed in a silo, it must first be developed, tested, and produced. Under one scheme, the only replacement permitted would be for missiles fired in operational tests, and since no new production would be allowed under a freeze, this would foster a tendency to conserve missiles, leading to few tests and therefore few "opportunities" for replacement. However, since transporting a Soviet missile from its storage area and loading it into a silo requires, according to official testimony, "a minimum of two or three days," there is a significant chance that missile replacement in violation of the freeze would be detected by imaging reconnaissance satellites.

*See box entitled "Should Limited Production and Replacement be Permitted?"

VERIFICATION OF A NUCLEAR

INTELLIGENCE SYSTEMS:

MONITORING TASKS:

	Imaging Reconnaissance Satellites	Electronic Reconnaissance Satellites	Ocean Surveillance Satellites	Missile Warning Satellite	Nuclear Explosion
					Satellites "Vela Hotel" IONDS
I. Deployment Freeze					
A. Count fixed ICBM/IRBM launchers*	X	X			
B. Count mobile ICBM/IRBM/GLCM launchers*	X	X			
C. Count SLBM launchers*	X	X	X		
D. Count launchers for MIRVed missiles*	X				
E. Count strategic bombers (incl. ALCM)*	X	X			
F. Count other primary nuclear mission aircraft (e.g., FB-111, Backfire...)	X	X			
G. Count nuclear-armed ships/subs (incl. those with SLCMs, ASROCs, SUBROCs,...)	X	?	X		
H. Count nuclear artillery/battlefield missile units, weapon depots	X	?			
II. Delivery Vehicle Testing Freeze					
A. To monitor (prohibited) testing of new ICBMs/ SLBMs/IRBMs, monitor flight tests of existing missiles to detect:					
1. Changes in length, diameter, launch-weight and throw-weight (no greater than 5%)	X	X			
2. Number of stages/type of propellant (no change permitted)	X	X			
3. Number of RVs (no increase from maximum number tested for each type)	?	X			
4. Weight of RVs (no decrease from lightest test flown)		X			
5. RV performance (no increase in ballistic coef- ficient above maximum already tested and no maneuvering)	?	?			
B. Monitor limit on operational ballistic missile flight tests (6 or less per year)	X	X	X	X	
III. Nuclear Weapons Testing Freeze (CTB)					
A. Detect ambiguous seismic events					
B. Monitor activity/geography at potential test sites	X	?	?		
C. Detect evidence of nuclear explosions on land/in sea/air/space				X	X
D. Identify ambiguous events					
IV. Ballistic Missile/Strategic Bomber/SSBN Production Freeze*					
A. Monitor shut-down of existing main assembly plants and shipyard(s)	X				
B. Detect ambiguous activity at other facilities	X	X			
C. Identify ambiguous activity	X	?			
V. Nuclear Warhead Production Freeze					
A. Monitor shut-down of existing key nuclear com- ponent fabrication facilities	X	?			
B. Detect ambiguous activity at additional facilities	X	?			
C. Identify ambiguous activity at additional facilities	X	?			
VI. Weapons-Grade Nuclear Materials Cutoff					
A. Monitor military nuclear materials production facilities	X	?			
B. Detect ambiguous activity at civilian nuclear facilities	X	?			
C. Identify ambiguous activity	X	?			

*Comprehensive freeze could include a ban on replacement of these systems from new production.

Xⁱ = indirect assistance in monitoring provision.

FREEZE: TASKS AND SYSTEMS

Detection Ground-based Seismic Sensors	Acoustic Underwater Surveillance	Ground Based Monitoring Posts	Test Observation Radars	Aircraft and Ships	HUMINT and Overt Collection	On Site Inspection	Overall Monitoring Confidence Level (estimate)
							high
							high moderate
							high
					Counting Rule		high
							high
		X		X	X		high moderate
	X			X	X		high moderate
		?		X	X		high moderate
		X	X	X	X		moderate-high moderate
		X	X	X	X		high moderate
		X	X	X	X		high
		X	X	X	X		high moderate
			X	X	X		high
	X	X	X	X	X		high
X	X						high moderate
		?		?			high moderate
X	X			X			high moderate
						X	moderate-high moderate
							high
		X	X	X	X		moderate
					X	X	low-high
		?		?	X		high
		?		?	X		low-moderate
		?		?	X	X	low-high
					X		high moderate-high
					X		low-moderate
					X	X	low-high

Lesser modifications to the missile might be accomplished in less time and be considerably harder to detect, given that routine maintenance, including replacement of defective components, would be *permitted* under a freeze. Thus a prohibition on major modifications to existing missiles would be verifiable chiefly as a consequence of monitoring the testing prohibitions of the freeze agreement.

A freeze on mobile ICBMs and IRBMs, "while more difficult than counting silos," Brown testified, "is a manageable task.

"For example, the Soviets are now deploying the mobile SS-20 IRBM, and we can estimate the number of launchers deployed with reasonable confidence. If the Soviets made special efforts to conceal mobile ICBM launchers, or if they deployed a system without central support facilities, the uncertainties could be larger. But covert deployment of a force on a scale large enough to be militarily significant would be a formidable task, requiring successful concealment of a large number of deployed launchers, and of their production, support and training exercises as well, and deployment without central support facilities would entail operational disadvantages."

While complaining about the novel "instability" caused by the Pentagon's alleged inability to target the "highly mobile" SS-20s, the Reagan administration has issued regular updates on the exact number of SS-20 launchers

THE SYSTEMS CAN WORK TOGETHER

The different types of reconnaissance systems, both imaging and electronic, can be used in conjunction with one another to improve the information "take." For example, the Defense Meteorological Satellites (not mentioned above) can let the controllers of the imaging satellites know when the areas they want to survey are free of cloud-cover, so that satellite maneuvers can be made and the cameras turned on. Analysts of the digital images from the KH-11 may find new missile sites of special interest that they want the Big Bird to take a closer look at, or that justify an even closer look by the high-resolution film-return satellites.

The detection of a missile launch by early warning satellite over the Eastern Hemisphere could help the radar operators in the North Pacific to prepare to monitor the re-entry into the atmosphere of Soviet test warheads.

Navy analysts might combine information taken from pictures of Soviet ports, the signals received by ocean reconnaissance satellites, data from their extensive underwater acoustic sensor system, and sightings from ships and aircraft to keep close tabs on Soviet naval deployments.

Those who observe Soviet rocket tests might first learn that a test is under preparation from KH-11 images, then pick up the telemetry from the test using the "Rhyolite" satellite, then observe the re-entry vehicles (missile warheads) from a special radar ship in the North Pacific.

deployed and the number of SS-20 sites at various stages of completion, even to the extent of having sufficient confidence to accuse the Soviets of violating their own unilateral SS-20 European deployment freeze by completing construction of bases begun before the freeze took effect. Clearly, a deployment freeze on at least this current generation of Soviet IRBMs is adequately verifiable.

All these conditions apply to the threatened potential unverifiability of ground-launched cruise missiles as well. Although the missiles themselves are small and probably in some cases not directly accessible to counting, they will be embedded in transport, security and launch-control systems that is monitorable, and during peacetime they will be deployed in main operating bases which can be surveyed from aircraft and satellites.

II. A Numerical Freeze on Dual-Capable Launch Platforms and Delivery Vehicles. To prevent circumvention of the freeze and diversion of superpower energies into a destabilizing tactical/theater-nuclear arms race, a freeze on the numbers and payloads of such systems would be desirable. However, because many of these systems perform both conventional and nuclear missions, and their production and support systems are intimately connected to those for conventional weapons, a freeze on replacement and modernization of these systems does not seem politically feasible for the immediate future.

What *would* be feasible in the near term would be to freeze the current inventories of such weapons by type, for example: long-range strategic bombers (B-52/B-1; Bear, Bison/new Soviet bomber); peripheral attack bombers (F-111, Backfire); long-range nuclear-certified attack aircraft (e.g., A-6, Blinder); nuclear-armed attack submarines (SSN-688, Charlie/Alfa classes) nuclear-cruise missile-equipped surface ships (Iowa, Kirov); and nuclear artillery/battlefield missiles (8-inch, 155mm artillery, Lance, Pershing 1-A, Frog, Scud and Scaleboard missiles). Also frozen would be the nuclear payloads of such systems. One-for-one replacement and modernization of the *delivery vehicles* could be permitted, and transfer of deployed or currently stockpiled weapons to these new platforms could be allowed, *but with no increase in weapons load.*

According to one retired member of the intelligence community, each side has a fairly good idea of which forces on the other side *actually are assigned* a nuclear mission, as opposed to being theoretically "capable" of performing one. Special training, communications, operations, and security measures accompany the deployment of "nuclear-certified" units in the field, making moderate-to-high-confidence verification of a numerical freeze on these systems quite feasible. In addition to imaging and electronic reconnaissance satellites, both countries maintain ocean surveillance satellites to keep track of world-wide naval deployments, and the United States has the added benefit of information gleaned from a unique worldwide acoustic surveillance system.

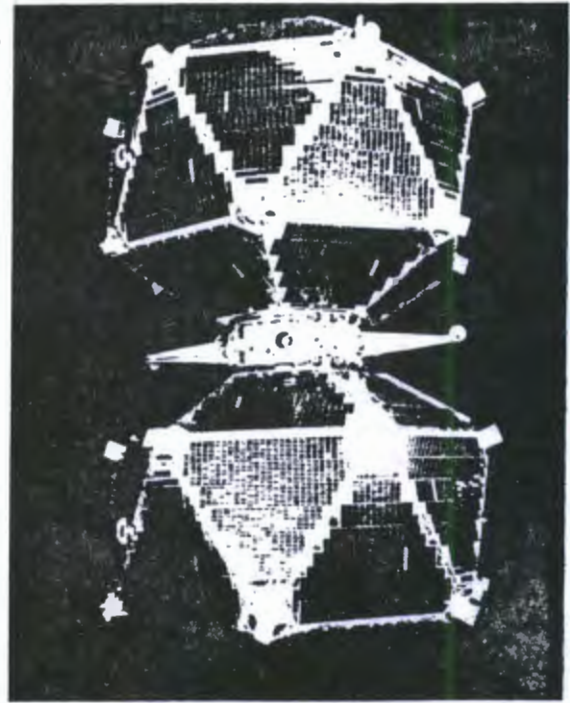
Deployments of theater and tactical nuclear weapons in and around Europe, the key area of confrontation for these systems, are also monitored by SR-71, U2R, and

other reconnaissance aircraft which overfly border areas and peer into Eastern Europe, monitoring activity at known nuclear weapons storage sites, and looking for signs of additional sites and dual-capable units. National Security Agency and military intelligence "listening posts" also gather vital signal (SIGINT) and communications (COMINT) electronic intelligence (ELINT) about the locations and operations of dual-capable units.

Based on our own intelligence analysis of Soviet dual-capable weapons payload capabilities, a common data base could be established with the Soviets on which systems should be included, and maximum allowable weapons load counting rules could be developed to ease verification tasks. For example, if one version of the *Backfire* can carry more weapons than another, then all versions might be considered as carrying the larger weapons load. The nuclear weapons themselves could not be modernized or replaced with newly produced versions. This provision would be verifiable mainly through the freeze on warhead production, which would preclude a supply of new warheads for tactical and theater systems.

Many observers have expressed the concern that the widespread deployment of cruise missiles threatens to make the freeze unworkable. Although cruise missiles are a legitimate cause for concern, they do not represent *that* great a departure from previous systems. It has already been suggested above how the deployment of GLCMs might be frozen and verified in a manner similar to mobile IRBMs.

Because deployed ALCMs must be attached to aircraft, which can be monitored with high confidence, ALCM deployment could be frozen and reliably monitored under a freeze, particularly if the parties adopted rules, as in SALT II, limiting ALCM deployments to heavy bombers.



TRW "Vela-Hotel" nuclear explosion detection satellite.

However, for a host of reasons—including Soviet dependence on a variety of short- and medium-range cruise missiles, difficulties in distinguishing between shorter- and longer-range versions, the fact that they use technologies and components in common with conventional weapons and can in theory be assembled in any one of thousands of light manufacturing facilities, and because their testing is not easily monitored—it will probably prove difficult to include cruise missiles in the nuclear delivery vehicle production and testing bans.

(Continued on page 10)

SHOULD LIMITED PRODUCTION AND REPLACEMENT BE PERMITTED?

In the view of many freeze advocates, the main purpose of the freeze is to halt the arms race rather than to eliminate the deterrent, in whole or in part, by degrading its reliability or otherwise diminishing its effectiveness. A conscious process of disarmament through year-by-year reductions in existing arsenals is the usual approach to reducing the size and destructiveness of the nuclear deterrent.

It is within this context, then, that the question arises as to how much replacement of worn-out weapons should be permitted under a freeze so as to preserve the deterrent's effectiveness pending disarmament. If, at the time a freeze goes into effect, both sides have adequate stockpiles of reserve missiles, permitting replacement could still be consistent with the shut-down of main missile assembly facilities. But it is also possible that either or both sides would insist on maintaining a capacity for producing spare missiles as a hedge against aging, technical failures, and breakdown of the treaty regime.

If production of spares for currently deployed missile systems were allowed to continue under a freeze, assuring that this output would not become a proxy for major modernization should still be possible through close monitoring of the testing restraints which would be part of any freeze agreement. However, foreclosing the option of production for replacement as well as for modernization would make the prohibited modernization of deployed or stockpiled missiles that much easier to verify.

Likewise, a ban on the modernization or replacement of strategic nuclear submarines and bombers could be included in a freeze agreement, but in their primary role as *launch platforms* for delivery vehicles (SRAMs, cruise missiles, SLBMs), they do not represent the cutting edge of the current arms race. As long as their *number* and *payloads* were frozen, bombers and submarines themselves could be replaced or even modernized without severe repercussions on the stability of the strategic balance. If only as a tremendous cost-saving measure, however, their inclusion might be desirable.

Their deployment can be effectively hemmed in, however. The shutdown of nuclear warhead production facilities will, at a minimum, drastically curtail the number of cruise missiles which potentially could be armed with nuclear warheads. Those nuclear ALCM and GLCM deployments existing at the time a freeze enters into force can be frozen and monitored effectively. That leaves the problem of what to do about SLCMs—sea-launched cruise missiles.

Deployment of nuclear-armed SLCMs on submarines and surface ships could be restricted to those ships and subs which were commonly identified as having a nuclear role at the time the freeze is negotiated. Under the warhead production segment of the freeze, no new warheads could be produced for these systems, but, for example, existing warheads in the tactical airdrop inventory, such as B-61 bombs, could be redeployed on SLCMs, provided that for each eligible sub or surface combatant so equipped, the equivalent in weapons delivery capability is retired from whatever force gave up these weapons. As a purely hypothetical example, one squadron of A-6 carrier attack planes, or Blinder bombers, might be exchanged for the payload equivalent in attack subs armed with SLCMs. In other words, a technologically and numerically frozen, but free-floating, population of warheads might be redeployed, under agreed "exchange rates" based on real payload-carrying capacities, on a numerically frozen, but replaceable and upgradeable inventory of "dual-capable" delivery vehicles.

Finally, the deployment of conventionally-armed long-range cruise missiles on vessels not included in the theater nuclear forces of either side might be prohibited in the interest of easing the task of verification.

III. Delivery Vehicle Testing Freeze. The verification of a ban on the testing of new missiles and major modifications to existing missiles could be accomplished under a freeze much the way it would have been under the SALT II Treaty. A set of percentage changes in key missile size and performance parameters would be agreed upon as constituting the boundary between "old" (permitted) and "new" (banned) missile testing. Over an extended test series of 20 to 30 firings required to validate a new design of major modification, these limits could be monitored with high confidence using a broad array of collection systems, including imaging and ELINT satellites, ground-based listening posts, test observation radars, and high-flying SR-71/U2R aircraft.

A limit on the number of operational tests would be monitored by these and other systems, including the DSP early warning satellites and ocean surveillance satellites.

IV. A Comprehensive Test Ban. During the Carter administration, the United States, the Soviet Union, and the United Kingdom reached agreement on the broad issues involved in verifying a test ban agreement, but at least half the "details" of the verification scheme remain to be worked out. Agreement was reached, however, on placing unmanned seismic monitors on the territory of each of the three parties in such a way as to gather seismic data from

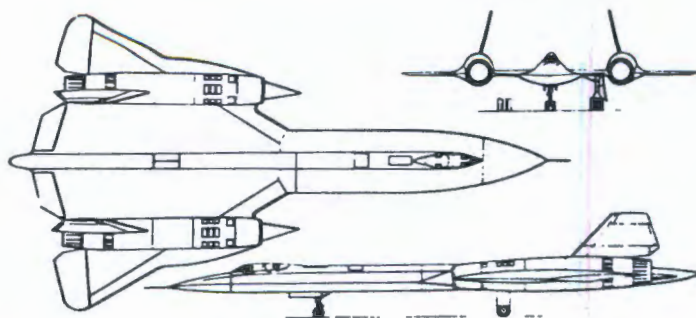
ACRONYM GUIDE

ALCM—Air-Launched Cruise Missile
COMINT—Communications Intelligence
CTB—Comprehensive Test Ban
DSP—Defense /Support Program (satellite)
ELINT—Electronic Intelligence
GLCM—Ground-Launched Cruise Missile
GPS—Global Positioning System (satellite)
HUMINT—Human Intelligence
ICBM—Intercontinental Ballistic Missile
IRBM—Intermediate Range Ballistic Missile
NTM—National Technical Means (of verification)
SIGINT—Signal Intelligence
SLBM—Submarine-Launched Ballistic Missile
SLCM—Sea-Launched Cruise Missile
SRAM—Short-Range Attack Missile (open bombers)
SSBN—Sub-Surface Ballistic Nuclear (missile submarine)
SSN—Sub-Surface Nuclear (attack submarine)
SOSUS—Sound Surveillance System

all possible test sites. These data would not be the sole means for verifying compliance with the test ban, but instead would be integrated into the worldwide seismic monitoring network and, even more importantly, into the stream of data coming from other relevant U.S. collection systems, including imaging, ELINT and Vela satellites, underwater acoustic sensors, and atmospheric sampling aircraft to detect signs of "venting."

It was also agreed during the Carter-era negotiations that on-site inspections would be allowed in the case of doubts about suspicious events that could not be allayed by data exchange and consultation. More precisely, there could be a hierarchy of requests and mandatory responses that would lead to either an on-site inspection or a *prima facie* case that there was indeed something to hide. In short, a comprehensive test ban would be adequately verifiable. Debate on this point more often than not represents the displaced doubts of CTB opponents concerning its *desirability*, not the ability of U.S. monitoring systems to confine cheating under a test ban to occasional very-low-yield tests which themselves carry at least some risk of detection, if only through agents, emigres, and defectors.

V. Ballistic Missile Production Freeze. According to Secretary Brown's 1979 testimony, "our intelligence system has enabled us to build a comprehensive understanding of the Soviet ICBM system from design



Three-view of the SR-71A high altitude reconnaissance aircraft operated by the U.S. Strategic Air Command (SAC)

IMAGE INTERPRETATION

Techniques for interpreting pictures taken from the air were already highly developed by the end of World War II and probably did not change much during the early 1960's when the first spy satellites became available. Now, however, the advent of high-speed, high-capacity computers has given the image interpreters a whole new set of tools.

Traditionally, photo-interpreters have analyzed the pictures collected for them by examining the size and shape of objects, the shadows they cast, the patterns that objects and their surroundings form, the tone or shade of the light coming from the objects or their background, and the texture of the surfaces. The interpreters could then draw both on their own experience and knowledge and on specially designed "keys" to draw conclusions about the pictures. The key would probably consist of both verbal descriptions and actual pictorial examples of the different kinds of installations of military interest.

For example, the interpreter might see a picture with excavations, mine headframes, derricks, piles of waste, conveyor belts, bulldozers, power shovels, but with just a few buildings. His key would suggest that this is a mine. Special kinds of equipment, the tone or color of the waste piles and the ore piles, as well as knowledge of the local geology might further indicate that this was a uranium mine.

Another picture from a different location might show facilities for storing and handling large quantities of the same kind of ore observed coming out of the mine. Provisions for large sources of heat and mechanical energy and particular types of processing equipment identify the plant as a uranium mill. (The shadows cast by the equipment might help to determine its shape and measure its size.)

Still another plant, elsewhere, might show characteristics of being a highly enriched uranium fuel fabrication plant. Besides a few characteristic buildings, it would probably have extraordinary security arrangements (fences and watchtowers) and special facilities for handling radioactive materials. (A plutonium reprocessing plant for extracting fissionable plutonium from spent nuclear fuel would have those features and particular patterns of chemical processing equipment and waste storage facilities as well.) From the science of "cratology"—the study of special-purpose containers—the interpreters might get a very good idea of where the nuclear fuel was being shipped and why.

Modern image gathering and processing have greatly refined the traditional art of the photo-interpreter. For example, the interpreter doesn't just form a general impression of the tone of the light reflected from the surfaces in the picture. With digital images, he gets an exact measure of the amount of light which registered to form each pixel, or dot, making up the whole picture. Through "multi-spectral" imaging, the analyst has a record of how much light of different kinds was reflected, absorbed, scattered, or emitted by the same surface. With that information, the analyst can deduce more information about the surfaces in the picture. Camouflaging and the surrounding foliage, for example, would have different spectral reflectance properties.

Computers can take the image information gathered by the satellite and further enhance it in a variety of ways. Some of the techniques of image processing include:

- Building multi-colored single images out of several pictures taken in different bands of the spectrum, making the patterns more obvious;

- Restoring the shapes of objects by adjusting for the angle of view and lens distortions;

- Changing the amount of contrast between objects and backgrounds;

- Sharpening out-of-focus images;

- Extracting particular features while removing the background;

- Enhancing shadows;

- Suppressing glint.

With two or more images of the same scenes, the computers can build three-dimensional "stereo" pictures, fit other pictures taken at difference angles onto the same grid, and detect how the scene has changed from one picture to the next. This change detection is useful, for example, in spotting new weapons deployments, such as mobile nuclear missile sites.

The image interpreters can use all these techniques to extract more information from the pictures they examine. But the computers can also use the techniques to help the interpreters decide which of the many thousands of pictures gathered every year to pay more attention to. The computers are learning themselves to recognize patterns. For example, the computer might be fed all the pictures of Soviet ICBM fields and told to display only those which show some difference with previous pictures; the difference might indicate construction of new launch silos.

through deployment. We know that the Soviets have four design bureaus for the development of their ICBMs. We monitor the nature of the projects and the technologies pursued at these bureaus. We know which bureau is working on each of the new or significantly modified ICBMs known to be under development. We have a reasonably good idea of when they will begin flight testing of these missiles. Missile production takes place at several main

assembly plants and at hundreds of subassembly plants, employing hundreds of thousands of workers."

Then-Undersecretary of Defense William Perry testified, "We monitor the Soviet activity at the design bureaus and production plants well enough that we have been able to predict every ICBM before it even began its tests."

Defense Intelligence Agency Director Maj. General Richard Larkin and Vice Director for Foreign Intelligence Edward M. Collins informed the Joint Economic Committee, in prepared testimony of July 8, 1981, that "there are 134 major final assembly plants involved in producing Soviet weapons as end products. In addition, we have identified over 3,500 individual installations that provide support to these final assembly plants." A table accompanying their report noted that "missile materiel" was produced in "49 plants," and they provided a table giving a five-year annual breakdown of Soviet missile production by type.

Clearly, our national intelligence system has amassed a considerable body of knowledge, over more than 20 years of constant observation, concerning the Soviet ballistic missile production system. This accumulated stock of knowledge, in conjunction with current monitoring capabilities, would permit a shutdown of ICBM, IRBM, and SLBM main assembly plants to be verified. Given a willingness to forego further development of conventional bombing capability, and bilateral agreement on what constitutes a "long-range strategic bomber," there is no technical reason why main bomber assembly plants could not also be closed down. And given the present state of knowledge and monitoring confidence concerning each side's production system, the freeze could very likely be extended to include major subsystem manufacturing facilities (e.g., for missile stages and reentry vehicles) as well. Since nothing would be coming in or out of these facilities in their shut-down condition, any significant alteration in their operating status would not long escape detection by the variety of sensors deployed on imaging reconnaissance satellites. Doubts about the mission of facilities not included in the freeze could be resolved, in the first instance, by intensive monitoring by national means (possibly facilitated by "cooperative measures") and subsequently by data exchange and "voluntary" on-site in-

spections along the lines worked out for the draft Comprehensive Test Ban Treaty.

VI. Nuclear Warhead and Weapons-grade Materials Production Ban. For perhaps a two-or three-year period, a ban on nuclear warhead production could be implemented and verified along the same lines as the ballistic missile production ban, as it would take at least that long to secretly replicate warhead production facilities. The ban would involve placing in caretaker status the principal *nuclear* component fabrication and final assembly facilities for nuclear warheads and bombs. For example, on the U.S. side this would include the unique U-235, U-238, and lithium-deuteride "secondary" component fabrication facilities at the Y-12 plant in Oak Ridge, Tenn., the Rocky Flats "primary" (fission-stage) facility outside Denver, Colorado, and the Pantex assembly plant near Amarillo, Texas. Similar Soviet facilities no doubt have been identified and are already under frequent surveillance by U.S. intelligence systems.

During this warhead production moratorium, agreements could be negotiated placing all nuclear facilities and materials stockpiles under IAEA safeguards (suitably strengthened, if necessary), creating the basis for long-term confidence that the warhead production ban would be respected. The CTB system of "voluntary" on-site inspections to resolve serious treaty-related ambiguities could be maintained to buttress the IAEA system of safeguards, leading to a verifiable cutoff in weapons grade-materials production. □



B. Verification Problems and Prospects
for On-Site Inspection

Long-range cruise missiles pose particularly difficult verification problems. They can carry either nuclear or conventional warheads, but there is no easy way to determine from external inspection the nature of their explosive payload. Moreover, their range (as with all aircraft) can be altered by changing the payload, fuel load, and/or flight profile. The Soviets have not yet deployed long-range air-launched cruise missiles, although they may have tested some. However, they do have sea-launched cruise missiles with ranges up to and exceeding 800 kilometers. Verification of limits on such weapons could be a problem in Phase II of the Reagan Administration's START plan.

The deployment of mobile ICBMs could also pose serious verification problems in the future, although U.S. intelligence seems able to ascertain (with reasonably high confidence) the number of SS-20 mobile intermediate-range missiles deployed by the Soviets. Verification of limits on such weapons, if they are agreed upon, could depend on on-site inspection or other cooperative forms of verification.

As noted at the beginning of the discussion of verification, reconnaissance satellites and other remote monitoring technologies have made for some time on-site inspection unnecessary. But the issue has arisen once again. As arms control agreements become more ambitious and the kinds of limits contained in them more detailed, it may be necessary to seek agreement on some kinds of on-site inspection. Many Reagan Administration officials believe that future progress in arms control will be impossible without it. What are the chances for agreement on such procedures?

In the Comprehensive Test Ban negotiations which began in 1977 and last conducted in 1980, U.S., British, and Soviet negotiators agreed, at least in principle, on procedures which for the first time would permit on-site inspection on Soviet territory. In those negotiations the Soviets agreed to the establishment of tamper-proof, remote seismological stations on their territory and to on-site inspections of military installations by experts to investigate suspicious events. However, the CTB has not been completed or signed and ratified, and many key Reagan Administration officials seem strongly opposed to it.

In recent months the Soviets have given some new hints that they might be willing to permit on-site inspection. In an interview in the fall of 1981, Chairman Brezhnev noted that national means of verification were better suited to a state's security but said that some other (unspecified) forms of verification might be worked out. In June 1982, Georgy Arbatov, head of the Soviet institute specializing in American affairs, joined fifteen members of the independent Commission of Disarmament in recommending on-site inspection under some conditions. Still another positive sign came in the summer of 1982 when Soviet Foreign Minister Andrei Gromyko offered, for the first time, to place Soviet civilian

nuclear power reactors under international supervision, something the Soviets had refused to allow since the signing of the Non-Proliferation Treaty in 1968.*

U.S. negotiators should continue to explore the significance of these developments and clarify their meaning. It is one thing to agree to on-site inspection in principle, but quite another to agree to concrete provisions. Nevertheless, these statements by Soviet leaders give reason for optimism that some new forms of verification might be agreeable to the Soviets. Of course, it is generally assumed that the Soviets are the only significant barrier to agreement on on-site inspection, but as the following article by Joel Wit points out, the U.S. too might have trouble agreeing to such procedures.

In the last article of this section, former CIA Director William Colby discusses the verifiability of a nuclear freeze. Speaking before the Senate Foreign Relations Committee in June of 1982, Colby argues that monitoring Soviet forces and weapons development will be easier with a negotiated agreement such as the Freeze than without it. He is optimistic that the Soviets would agree to the required monitoring provisions and that internal political considerations would constrain major violations of agreed upon clients. Most importantly, he argues that even if the Soviets were to violate an agreement in some small degree undetected by U.S. monitoring, it is unlikely that the balance of power between the superpowers would be seriously affected.

* Washington Times, July 9, 1982.

Who's afraid of on-site inspection?

By Joel S. Wit

Recently there have been indications from Soviet officials that they are willing to consider on-site inspection as a means of verification for nuclear arms control agreements. While these statements have come as a surprise to some American officials, they are in fact part of an evolutionary trend which began six years ago.

After nearly two decades of effectively rejecting on-site inspection, the Soviet position began to change in the mid-'70s. The Treaty on Underground Nuclear Explosions for Peaceful Purposes, signed in 1976 but never ratified by the United States, includes detailed inspection procedures. In a memorandum submitted that fall to the United Nations Secretary-General, Foreign Minister Gromyko indicated the Soviet Union was willing to consider "voluntary" on-site inspections in connection with any future comprehensive test ban.

The Soviet position continued to evolve during the comprehensive test ban negotiations under the Carter administration. The Russian "voluntary" proposal envisaged that a request would be made for an inspection. A refusal could be construed as an admission of guilt and as justification for withdrawing from the agreement.

However, the Soviets did not want to work out the details of an inspection — for example how many persons and what types of equipment would be allowed — in advance, but only on an ad hoc basis. In contrast, the United States wanted prior agreement on such details. By the beginning of 1978, just after two negotiating rounds, the Soviets agreed to reconsider their approach. By the end of the summer of 1978, important progress had been made in deciding which specifics could be included in a protocol. The on-site inspection discussions then bogged down, as did the talks themselves, for other reasons.

Of course, inspecting nuclear test sites is one thing; inspecting actual weapon installations would be another. At the moment, it is not clear whether inspections will be a central element in the Reagan arms control package although they may well be called for as a last resort. Warhead and launcher limits can generally be verified using "national technical means" such as satellites.

Other more restrictive provisions might require "cooperative" measures. For example, a ban on mobile missiles might require monitoring devices on each country's soil to make sure that these weapons are not roaming the countryside. On-site inspections, such as those visualized under the test ban negotiations, could sometimes clear up ambiguities which neither national technical means nor cooperative measures can deal with.

While the US has spent a great deal of time arguing over whether the Soviets would accept on-site inspections as well as other verification measures beyond national technical

means, we need to ask whether the US itself is willing to accept such measures, given that the Soviets will demand equal rights and are likely to exercise them. The very individuals most concerned about Soviet cheating and therefore most likely to demand on-site inspections are also likely to squirm at the thought of Russian inspection teams operating in this country.

A case in point occurred during the comprehensive test ban negotiations. Inter-agency agreement changing the traditional requirement for mandatory on-site inspections, inspections which could not be refused, was reached only after the Joint Chiefs of Staff realized there were places in the US where they did not want Soviet inspectors poking around. A similar problem could arise in the not too distant future if the administration goes ahead with "dense pack" basing for the MX missile. Does the Pentagon, or anyone else for that matter, want Soviet inspectors going into the tunnels to make sure there are no extra missiles?

The problem of "adequate" verification of arms control agreements is not likely to fade away. Technological developments emphasizing mobility and concealment for nuclear weapons to maximize survivability will make monitoring treaty compliance more difficult. The political pressures for adequate verification are not likely to decrease. In spite of the public's desire to achieve real arms control, support rapidly evaporates if it is perceived that the Soviets could violate a treaty with impunity.

Moreover, if nuclear arsenals are really reduced, confidence in verification will have to increase since violations will acquire greater significance. It is one thing to secretly build 100 extra missiles if each side has 2000 missiles and another if each side only has 200.

As a result, on-site inspections probably cannot be avoided. It is important, however, to maintain a healthy skepticism as to their real benefits. Inspections are a deterrent to cheating and are useful for political symbolism. They might well not uncover violations by a determined evader. According to an old government proverb, "if you need it, you can't get it and, if you get it, you don't need it." Moreover, since inspection is going to be a two-way street, it could entail some real costs. The US tends to assume the Soviet Union does not like inspections because it is a closed society. However, when confronted with the real possibility of Soviet inspections here, many Americans also are not likely to view the prospect with much pleasure.

For all these reasons, both the US and the Soviet Union will have a common interest in approaching inspections in a cooperative rather than an adversarial spirit. Neither country will particularly like inspections but political as well as military realities will dictate that they will have to live with them.

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PREPARED STATEMENT OF HON. WILLIAM E. COLBY

Mr. Chairman, thank you for this opportunity to speak to this Committee on the subject of a nuclear freeze and particularly its verifiability. The freeze proposal of course, does not suggest unilateral American restraint but calls for negotiations with the Soviet Union to produce a "mutual and verifiable freeze." I believe that this is possible to negotiate, that it is in the interest of the United States and that it is also in the interest of the Soviet Union. We must interrupt the escalation of these weapons by both sides in a contest in which a step by one is inevitably followed by an equal or greater step by the other.

On the subject of verification, it is essential to recognize that the United States will be monitoring developments in Soviet military forces and weaponry whether there is an agreement between these two nations or not. The intelligence services of our country are responsible for keeping us informed of this potential danger to our society. Admiral Bobby Inman, in a recent statement, said that he believes the capabilities of the United States with respect to these targets are very high. While I do not have access to classified material at this time, I am certain that the quality that we had when I was in office, and I am sure the improvement since then, fully support his statement. Thus, we are not talking about a new obligation for our intelligence services; they have the obligation of such monitoring today.

It is equally important to recognize that monitoring Soviet forces and weaponry will be easier for us with a negotiated arrangement such as a freeze than it is at present. The provisions of SALT I and SALT II both contained a number of provisions designed to ease the process of monitoring the forces and weapons covered by those agreements. Agreements of non-concealment, specific numerical limitations, testing and notification rules, and provisions for registration of forces all ease the problem of monitoring Soviet forces. The numerical limitations limit the number of such targets that need to be identified, even though the remaining territory, of course, must be examined to determine possible violations. The whole process is easier under agreement than it is in its absence.

The third important fact is that an agreement provides a vehicle for communicating with the other side about these forces, which does not exist in its absence. An agreement provides channels for requests for reassurance, clarification of ambiguities and actual changes in Soviet behavior to comply with the agreement. In the absence of an agreement, none of these exist, and the request for reassurance can be turned off with the same cold or propagandistic response that the Soviets are so fond of giving with respect to things about which they have not agreed. The monitoring history of SALT I has presented a number of examples of exactly such communication which have been declassified for public knowledge. None of these would have occurred in the absence of that agreement.

A freeze might indeed require some additional intelligence coverage in order to be fully verifiable. Our intelligence today provides general

estimates of such matters as the production of nuclear weapons, but a freeze might call for more precise assurances that such production fully stops. The problems of obtaining such assurances, however, can be negotiated and additional monitoring arrangements made to provide them. Electronic sensors implanted in appropriate places, inspection visits to suspected areas, arrangements for third party or neutral determination of questions raised, all offer possible vehicles to provide the necessary assurances. It is too easy to say that the Soviets would not agree to such arrangements as they have dropped their opposition to these kinds of procedures when shown the necessity. In the negotiations with respect to peaceful nuclear explosions, the Soviets have accepted inspection teams. In SALT II, they agreed to report the numbers of their forces. The success of electronic sensors in the Sinai between the Egyptians and Israeli provide a case history of showing that such devices can operate to reassure and lessen suspicions. The Soviets are never going to have the kind of open society that we have, nor will there be a Moscow edition of Aviation Weekly, but I believe that these issues are subject to negotiation and that the Soviets have moved in the necessary direction.

An agreed freeze would place an additional pressure on the Soviets. Publicly asserting adherence to such an arrangement would be known broadly within Soviet society and in my view would be generally accepted by the people of the Soviet Union for the benefits in American restraint it would bring. If the Soviets developed a secret program to violate such an agreement, they might hope and plan to escape the various sensing and other devices that we employ. They would have to run the risk, however, that such a treacherous action would arouse the opposition of a number of the Soviet individuals who would have to be involved in such a program--and these would be substantial in number. Among these individuals rejecting the program, the Soviets would have to anticipate the potential of defection or secret communication of the fact of violation to the American side. Colonel Oleg Penkovsky made contact with British and American intelligence precisely because he was appalled at the leadership which was conducting the affairs of the Soviet Union and the threat that it presented to world peace. The Soviets, with all their control machinery, could not be confident that among the large number of people who have to be engaged in a substantial scenario of violation, there would not be some who would alert the world to Soviet treachery. With an agreement, any such report of course would be followed up with demands for specific assurance on the specific matters learned, again a course of action which would not be available in the absence of an agreement.

As a last point, we must place the matter of verification in perspective. Even if the Soviets were able to violate an agreement in some small degree without revelation to the United States, it has to be asked whether this would have any major impact on the balance of power between us. In a world with 50,000 nuclear weapons, it is hard to imagine that the secret development of a few more would change the balance of power, even though it might be a breach of contract.

The purpose of verification is not the accumulation of legal evidence for a court of law. It is to protect our nation against Soviet forces and weaponry. If we protect our nation against the threat of another generation of Soviets nuclear weapons through a freeze, we would be substantially ahead ahead even if the Soviets were to successfully cheat in a minute and marginal program. Any program which offered the prospect of a strategic advantage to the Soviets by definition would have to be of a size and consequent visibility that we could identify it long before it became a direct threat and take defensive action against it. We could also in the interim raise it through the channels of an agreed procedure for reassurance or for change in Soviet behavior.

For these reasons, Mr. Chairman, it is my considered view that a mutual and verifiable freeze" on the development of additional nuclear weaponry by the Soviet Union or the United States would be feasible to negotiate. We do not have to, nor should we, "trust" the Russians. But we could watch them as we benefit from a freeze agreement to improve our coverage of Soviet military forces. And we could both benefit from stopping the mindless piling up of more of these terrible weapons.

Thank you, Mr. Chairman.

IV

ARMS CONTROL NEGOTIATIONS AND RECENT PROPOSALS

- What are some of the factors that shape the arms control negotiating process?
- What are the advantages and disadvantages of recent proposals and agreements such as SALT II, START, the Freeze, and No-First-Use?

A. Negotiation

Arms control negotiations have been compared to chess matches. It would be more appropriate to compare these negotiations to team chess matches in which the players facing each other across the chess board are only there to move the pieces and report on the other team's moves but have far less say over their own moves than one might suppose. Instead, proposals and counterproposals are made only after lengthy study and analysis by lawyers, diplomats, and weapons experts on each team and only after considerable debate among team members over appropriate strategies and moves. Within the U.S. government, for example, at least five different agencies are part of the team: The Arms Control and Disarmament Agency (ACDA), the Departments of State and Defense (the Secretary of Defense and the Joint Chiefs of Staff are both represented), the CIA, and the White House National Security Council. Moves are made only after lengthy negotiations among team members and compromises are common. Negotiations within each nation to decide on negotiating strategies, proposals, and responses to the other side's proposals are often as difficult and politically sensitive as negotiations between two nations.

The Reagan Administration's START proposals illustrate this process. Debate within the Administration (prior to public announcement) was intense. The Pentagon and ACDA seem to have favored one approach and the State Department another. Published reports suggest that the final proposals are an amalgam of these two positions reflecting State's preferred position in Phase I and the Pentagon's in Phase II (see section on START below).

The U.S. and the Soviet Union both share a common interest in mutually beneficial arms control agreements, despite their long-standing rivalry. Mistrust is strong on both sides but there seems to be a common recognition that neither would benefit from nuclear war and agreements to reduce that danger can increase the security of both sides. Thus, unlike chess, the objective of arms control negotiations is to produce two winners, not one, (although the process is competitive). If one side is seen as a winner then the other side may be unable to accept the results, and the agreement is not likely to be successful.

Experienced diplomats have long noted differences that distinguish one nation's negotiators from another's. Chief U.S. START negotiator Edward Rowney recently pointed out that the Soviets play chess, while in the U.S., Pac Man has become the national pastime. Chess, of course, is

slow-paced and requires deliberation and patience. Videogames on the other hand, are fast-paced, require quick reflexes, and allow little time for deliberation and thought. These games may well reflect some differences in national styles. For example, long-time observers of U.S.-Soviet negotiations point out that the U.S. is sometimes too willing to offer new proposals when those already offered are turned down. The Soviets on the other hand, are more inclined to take the long view, say "Nyet" to initial U.S. offers, and wait for the U.S. to come up with proposals more to its liking.

U.S. party politics also influence the negotiating process, producing changes in personnel, strategy, tactics, and objectives, not to mention pressures to achieve results in time for quadrennial presidential elections. The U.S. has made at least three major shifts in its arms control policies since 1976. In 1977 the Carter Administration decided to seek a more ambitious SALT II agreement than the one President Ford and Chairman Brezhnev outlined in Vladivostok in 1974. The withdrawal of the SALT agreement from Senate consideration following the Soviet invasion of Afghanistan was a second shift, while the Reagan Administration's START proposals represent a third shift.

On the other hand, the Soviets do not have to contend with elections every four years and as a result, tend to be far more constant in strategy, tactics and personnel than the U.S. For example, while three different officials headed the U.S. SALT delegation between 1973 and 1979, the head of the Soviet delegation remained unchanged for most of the period and was nicknamed "Iron Pants" in honor of his long service in that post.

Some Americans are inclined to look at these differences and conclude that our negotiators are hopelessly outclassed and likely to get out-negotiated in most dealings with the Soviets. In fact, that has not been the case and over the years U.S. lawyers and diplomats have proved to be very able negotiators indeed.

In addition to all these factors, negotiators must contend with the problems created by military technology and in particular, the asymmetries of U.S. and Soviet forces. As noted in Section I, U.S. and Soviet strategic nuclear forces consist of weapons with different characteristics, and in different proportions. Negotiators must find mutually acceptable formulas for limiting weapons on both sides. As a result, agreement is rarely possible without numerous trade-offs and compromises in which one side accepts limits on one class of weapons in exchange for limits by the other side on another class of weapons.

In this section we will look at some of the proposals and negotiating options that have been offered and discussed in recent months. In "Nuclear Bargaining", Leslie Gelb, a former State Department official (in the Carter Administration) with experience in SALT II, presents President Reagan with some thoughts on available negotiating options and some of the factors that should be considered in choosing among them. In the following sections we will briefly describe some recent proposals and review their pros and cons.

B. The Nuclear Freeze

A bilateral freeze would essentially halt completely the testing, production, and deployment of nuclear weapons and their delivery systems by both the U.S. and the Soviet Union.

The bilateral freeze on production and deployment of nuclear weapons was first proposed in 1980 by Randall Forsberg, Director of the Institute of Defense and Disarmament Studies in Brookline, Massachusetts. Of course it is not an entirely new idea, having been discussed as early as 1964. Indeed, the SALT I Interim Agreement of 1972 was, in most respects, a freeze. Yet, in its most recent form, the idea of a freeze has blossomed into a national movement which embraces diverse groups of citizens from virtually every part of the United States.

In the U.S. Senate, the Kennedy-Hatfield Resolution (S.J. Res. 163) urged a freeze on the testing, production, and further deployment of warheads, missiles, and other delivery systems, and urged subsequent negotiations leading to "major, mutual and verifiable reductions" in nuclear weapons.

In July 1982 the House Foreign Affairs Committee approved a resolution supporting a bilateral freeze and coincidentally urging ratification of SALT II, a vote not supported by the full House. Instead, the House approved, by a two-vote margin, the Broomfield resolution favored by President Reagan, which calls for reductions first and then a bilateral freeze. This approach essentially supports the President's efforts to negotiate reductions in nuclear arms in the START talks, while production of nuclear weapons continues.

Despite the setback, referenda calling for an immediate bilateral freeze will be on the ballot in seven states and a number of cities in the Fall 1982 elections. Together, some 25 percent of the American people will have a chance to express their views on the freeze through the ballot.

Arguments for the Freeze:

- An immediate freeze would be a valuable first step toward halting the arms race. It has wide public support, and because of its simplicity could be more easily negotiated.
- The freeze would be easier to verify than limits on the numbers of new weapons, especially with respect to the testing and deployment of weapons.
- The freeze would stop the planned acquisition of major new destabilizing weapons (such as the MX missile) which could lead to a new round of the arms race.
- The freeze would not leave the U.S. in a vulnerable position. The U.S. already has an assured ability to retaliate after a first strike and is not inferior to the Soviets. We have more than 4,000

warheads at sea on invulnerable submarines, and these are more than adequate for a second strike. In contrast, the Soviet Union has about 75 percent of its nuclear arsenal in land-based missiles which are vulnerable to our ICBMs.

Arguments Against the Freeze:

- A bilateral freeze would lock the U.S. into a strategically inferior position vis-a-vis the Soviet nuclear arsenal, because they have more long-range and intermediate-range land-based missiles than we, and because these missiles pose a threat to our land based ICBMs as well as to Europe.
- The bilateral freeze would be hard to verify, especially with regard to the production of new weapons. There would always be doubts that the Soviets were complying with the terms of such an agreement.
- It would permit the Soviets to improve their air defense (against bombers) and anti-submarine warfare systems, threatening two key parts of the Triad, our bombers and missile submarines.
- The proposal is too vague. Would dual-purpose systems (nuclear or conventional) be included? What about partially completed systems such as missile submarines under construction? Would completion be permitted?
- The Soviets face little if any internal pressure to negotiate reductions with us. If we agree to a bilateral freeze, they would enjoy an advantage and would have no incentive to negotiate arms reduction agreements with us.
- NATO would regard it as a repudiation of our promise to install Pershing II and cruise missiles in Europe. It would weaken NATO.
- A freeze would stop replacement of vulnerable weapons (e.g. fixed land-based ICBMs) by more survivable ones (e.g. submarines); this would have a destabilizing effect on the balance of power.

Some of these points are debated by Sen. Mark Hatfield and Richard Burt in the second article in this section.

C. SALT II

SALT II would set an initial aggregate ceiling of 2,400 on U.S. and Soviet strategic nuclear weapon launchers, and requires that this ceiling be reduced to 2,250 during the term of the treaty. It would set a sublimit of 1,320 on MIRVed ICBM and SLBM launchers and aircraft equipped with cruise missiles. It would set further sublimits of 1,200 on ballistic missiles, and 820 on MIRVed ICBM launchers. It would restrict testing and deployment of new types of ICBMs, permitting each side one new type. It would limit the number of MIRVs on existing and new types of ICBMs. In addition it contains numerous other provisions as well as detailed counting

rules, definitions, agreed statements, and common understandings to facilitate verification of compliance with the treaty, and avoid, as much as possible, any future misunderstandings.

As previously noted, SALT II was signed in 1979 but it has not been ratified. However, both sides have said they will do nothing to undermine the agreement if the other side does the same. Moreover, the Senate Foreign Relations Committee has approved (in July 1982) a resolution sponsored by Senator Percy, instructing the Administration to avoid actions that would undercut SALT I and SALT II so long as the Russians also avoid such actions. But the Reagan Administration (and the Percy Resolution) view this arrangement as an interim measure, presumably to be observed only until a START agreement can be negotiated.

Arguments for SALT II:

- SALT II is the most comprehensive arms control treaty completed to date, and it contains significant limitations on all kinds of nuclear delivery systems.
- SALT II goes beyond a freeze and would actually begin the process of reductions of nuclear weapons.
- Both the U.S. and the Soviet Union have invested many years in the process, and it makes little sense to discard the treaty now.
- SALT II is available now, while START could take years to negotiate and may not result in a completed agreement even then.
- Ratification and implementation of the verification and compliance procedures specified in the treaty would put the U.S. in a far better position to protect its interests than under the current situation created by the ambiguity of non-ratification.

Arguments Against SALT II:

- The treaty is flawed in that it codifies a unilateral Soviet advantage of 308 heavy missiles.
- Verification provisions are ambiguous in failing to explicitly ban encryption (coding) of telemetry broadcast by Soviet test missiles in a way that would prevent the U.S. from interpreting the data.
- It would permit force expansion rather than reduction. Soviet ICBM forces could grow to over 8,000 ICBM warheads under SALT II.
- Formalizing SALT II would make achievement of START goals more difficult by establishing unacceptable precedents for a future agreement. For example, the Backfire bomber is not included in the aggregate of Soviet strategic forces.
- Consensus on behalf of the treaty is lacking, and verification would be divisive.

In the third and fourth articles of this section, two members of the House of Representatives who have been strong supporters of arms control for many years weigh the merits of a freeze, SALT II and START. In the first, Les Aspin (D, Wisc.) argues persuasively that SALT II is preferable to a freeze. In the second, Tom Downey (D, New York) notes that SALT II "in the hand" or a freeze, are preferable to START, which could be a constructive step but might take five years to negotiate.

D. START

The Reagan Administration's START proposals are two-phased. In the first phase the Administration would seek to reduce the number of ballistic missile warheads by at least one-third, to about 5,000. No more than half of the remaining ballistic missile warheads would be on land-based missiles. The Administration's proposal would also seek to cut the total number of all ballistic missiles (ICBMs and SLBMs) to an equal level about half of the current U.S. level. In the second phase the U.S. would seek reductions in the overall destructive power of each side's arsenals to equal levels, including a mutual ceiling on ballistic missile throw weight below the current U.S. level. (Note that these are proposals only, and it is unlikely they would be incorporated unchanged into a treaty.)

Arguments for START:

- The proposal focuses on the most destabilizing systems--ballistic missiles and ICBMs in particular. The potential vulnerability of each side's ICBMs to ICBMs on the other side creates a dangerous "use them or lose them" situation.
- The proposal calls for significant reductions in ballistic missile forces on both sides to about half the aggregate number now deployed by both sides.
- The proposal would limit ballistic missile warheads, because that would limit the total number of targets that can be attacked by the Soviets.
- The proposed sublimit on ICBM warheads (2,500) would limit the number of hard targets that can be attacked (i.e., missile silos and command bunkers) thus closing any "window of vulnerability."
- The U.S. would be permitted to deploy the MX and Trident II missiles as replacements for older missiles. Some analysts believe the replacement of vulnerable systems with less vulnerable ones makes deterrence more stable.

Arguments Against START:

- The proposal will take years to negotiate, and during that time, the arms race will continue unabated.
- In terms of warhead-to-silo ratio, this proposal could leave the U.S. worse off than at present, or under SALT II. The Soviets

would be permitted --,500 land-based warheads while we could have as few as 200 (MX) ICBM launchers--a ratio of 12 to 1. Their current ratio is 4.65 to 1.

- START would reduce the number of submarines we could deploy and thus weaken the numerical strength of the most invulnerable leg of our Triad.
- START would not limit the Soviet Backfire bomber (although many of its proponents criticized SALT II for failing to include the Backfire in its aggregate ceilings.
- START contains no limits on throw weight in the first phase (SALT II would limit throw weight).
- It fails to deal with the production of spare missiles and the possibility that they could be reloaded into empty silos. (SALT II deals with this problem by prohibiting storage of spare missiles near launchers and banning the development of rapid reload equipment.)
- START fails to remedy the ICBM vulnerability problem.
- START fails to end the arms race and permits replacement of existing missiles with newer more destabilizing ones.

E. NO FIRST-USE

This proposal would make it a matter of U.S. policy not to be the first to use nuclear weapons. Since the early 1950s, U.S. officials have said they would be willing to use nuclear weapons first, if necessary to turn back a conventional Soviet attack against Western Europe. Nuclear weapons are seen as a way of balancing superior Warsaw Pact ground forces. NATO would try to stop a Soviet conventional attack on Western Europe with conventional, that is non-nuclear weapons. But if that were to prove unsuccessful, it is NATO doctrine (since 1967) to employ nuclear weapons to turn the tide of battle and avert defeat.

Despite its longevity, the policy has been beset by contradictions for almost its entire life. It seems to mean one thing to Americans and quite another to Europeans. While U.S. officials have refused to commit to no-first-use, they nevertheless insist that it is U.S. policy to limit escalation and stop the fighting at the lowest possible level. In this respect, first-use is seen as a means of demonstrating to the Soviets NATO's seriousness of purpose and convincing the Soviets to seek a quick end to the hostilities.

For many European leaders, in contrast, the threat of first-use is an effective deterrent precisely because it raises the spectre of escalation to general nuclear war. The possibility that the use of tactical battlefield nuclear weapons to stop a Soviet attack might escalate uncontrollably to general nuclear war is not only plausible, but likely. For many Europeans this danger of escalation is the vital ingredient which

makes the threat of first-use an effective deterrent against a conventional attack. (Analysts refer to this as "manipulating the risk.")

Paradoxically, as nuclear arsenals in the U.S. and especially the Soviet Union have grown, it is this very danger of escalation that has led many thoughtful Europeans and Americans to question the policy. They consider first-use to be a suicide pact which no longer makes it a credible deterrent.

In the Spring 1982 issue of Foreign Affairs magazine four former high-ranking government officials, McGeorge Bundy, George Kennan, Robert McNamara, and Gerard Smith have proposed abandonment of the policy of first-use and adoption of a policy of no-first-use (see fifth article of this section). The Union of Concerned Scientists, with substantial support from leading members of the scientific community, has also come out strongly in favor of no-first-use. Moreover, the Soviet Union pledged in June 1982 that it would not be the first to use nuclear weapons. Here are some of the arguments by those who favor and oppose adopting a no first-use policy.

Arguments for No-First Use:

- The distinction between nuclear and all other kinds of weapons is the only clear firebreak against general nuclear war. The firebreak should be widened, because even the small-scale use of nuclear weapons is unlikely to remain limited.
- Warsaw Pact conventional strength is overestimated relative to NATO's conventional strength; with modest improvements, NATO's conventional military forces can be strengthened to serve as an adequate deterrent to Warsaw Pact aggression. A no-first-use policy would draw new attention to the importance of maintaining and improving NATO's conventional forces in Europe, and renewed emphasis on conventional defense would demonstrate U.S. resolve to defend Europe more than the threat of first-use.
- A no-first-use policy would reduce requirements for nuclear weapons to roughly those we already have--in other words, sufficient for retaliation. It would eliminate the need to match everything the Soviets do and eliminate the need to expand our nuclear forces by building an extensive "war-fighting" capability.
- A no-first-use policy would increase the political coherence of the NATO alliance by eliminating a divisive issue. Political coherence and unity are at least as important for deterrence as military capability.
- A no-first-use policy would neutralize the argument, made in Europe, that plans for modernization of NATO's intermediate-range theater nuclear weapons (TNF) reflect an American hope to keep any nuclear war limited to European territory.

- A no-first-use policy would encourage arms control agreements with the Soviets.
- A no-first-use pledge would not eliminate the ultimate deterrent value of nuclear weapons.

Arguments Against No-First-Use:

- No-first-use would undermine the credibility of NATO's deterrent strategy. It would be profoundly destabilizing; an asymmetrical situation would result in NATO facing the Soviet threat of conventional attack without a counter-balancing deterrent.
- No-first-use is simply an empty pledge like the 1930s treaty that outlawed war. It would be unenforceable, and we could not assume it would be honored by the Soviets.
- No-first-use would require a significant increase in U.S. and NATO conventional military forces which would be very costly and might well require a return to the draft in the U.S. European NATO members have been unwilling to increase their conventional forces by the amount necessary to provide adequate security.
- A no-first-use pledge would be perceived by our NATO allies as abandonment of the mutual security principles which underlie the alliance.

In the article that follows the Foreign Affairs reprint, Wall Street Journal correspondent Neil Ulman relates the views of some prominent Germans who are opposed to the idea of no-first-use as well as his own objections to the idea. Principal among these are their concerns over what they perceive as inadequate NATO conventional strength and the political risks inherent in moving to a no-first-use policy. A rebuttal letter by the Bundy, et.al. group concludes this section with a response to these and other arguments against no-first-use.

F. COMPREHENSIVE TEST BAN

A comprehensive test ban would complete the process begun in 1963 by the limited test ban treaty. It would prohibit virtually all nuclear tests, especially those underground, except for a few underground tests too small (less than 5 kilotons) to reliably monitor using available seismic technology.

Negotiations on such a treaty were begun by the U.S., the United Kingdom, and the Soviet Union in 1977, and achieved considerable progress prior to their last meeting in 1980. Agreement was reached "in principle" on some forms of on-site verification and the emplacement of tamper-proof automatic seismic monitors on the territory of the signatories. However, the Reagan Administration has declined to resume these talks and is opposed to negotiation of CTB (see the eighth article of this section: "Risky Talk on Treaties").

- A CTB would halt the proliferation of nuclear weapons.
- A CTB would reduce the danger of nuclear war by preventing each side from attaining high confidence in the performance of its nuclear weapons.
- A CTB would preserve the current U.S. lead in nuclear weapon technology.

Arguments Against the CTB:

- It would make it impossible to identify defects or deterioration in the U.S. nuclear weapons stockpile and thus would erode the credibility of deterrence.
- A CTB would make it impossible to test new weapon designs. This could lead to the break up of existing nuclear design teams and the loss of expertise that they represent.
- A CTB would be hard to verify. Small, clandestine tests could be conducted by either side without detection, giving them an advantage.

G. DEEP CUT PROPOSALS

Dissatisfaction with the slow pace of step-by-step arms control efforts has led some arms control supporters to urge more drastic steps that would result, if accepted by the U.S. and the Soviets, in sharp reductions in existing nuclear arsenals. Former Ambassador George Kennan for example, has proposed a 50 percent cut in operational forces. Others have proposed three years of 10 percent annual reductions within the SALT II framework. In yet another proposal, retired Admiral Noel Gayler has recommended that the U.S. and the Soviet Union turn in large numbers of nuclear devices to an international agency which would supervise their conversion into fuel for nuclear power plants. Here are the pros and cons of each of these proposals:*

- Such a bold approach could have wide public appeal and make it difficult for each side to appear reluctant to reduce.
- Both sides would probably rely less heavily on MIRVed ICBMs, depending on weapons modernization choices.
- All categories of Soviet MIRV missiles, including the SS-18, would be halved.
- Reductions would be relatively balanced. The Soviets would reduce more launchers, the U.S. would reduce more warheads on launchers.

* Drawn from "Deep Cuts" by Michael Krepon, in Nuclear Arms Control: Options for the 1980s, the Arms Control Association, 1982.

Arguments Against:

- Deep-cut proposals are very hard to negotiate and often lead to public posturing.
- The number of U.S. ballistic missile submarines, the most secure part of the Triad, would be cut to sixteen with perhaps as few as eight on station at any one time. This would make them more vulnerable to Soviet Anti-Submarine Warfare.
- As the size of the forces on both sides goes down the value of cheating goes up (because small differences take on greater importance) and thus demands on verification increase.

Three Years of 10 Percent Annual Reductions
Within SALT II Framework:

Arguments For:

- Reductions based on SALT pose the least problems of negotiability and verifiability.
- The Soviets would have to dismantle about twice as many launchers as the U.S. and about 600 more warheads on launchers.
- Forces on both sides would be shifted to more stable areas of competition--sea-based and air-breathing (aircraft and cruise missiles) forces.

Arguments Against:

- Reductions in warheads would be largely offset by ongoing modernization programs.
- The Soviets could have a net reduction of only 600 warheads on launchers while the U.S. could actually increase warheads on launchers during the three year period.
- Because the two sides would be up against different SALT ceilings the U.S. might have to dismantle more ICBMs and SLBMs than the Soviets.

Gayler Proposal:Arguments For:

- The proposal is both simple and dramatic and easy for the public to understand.
- It would enhance the security of both sides by leading to deep and rapid reductions in nuclear weapons on both sides.
- Both sides would most likely turn in their most vulnerable weapons, and preserve their least vulnerable. As a result stability would be enhanced.

Arguments Against:

- There would be no way to verify the size of each side's remaining stockpiles or production rates of new nuclear devices. New devices could be produced to replace those dismantled.
- There is no certainty each side would turn in ICBM warheads first. It is more likely that they would turn in their oldest and least effective weapons.

H. PROPOSALS TO AVOID NUCLEAR WAR

It is generally agreed that even if efforts to negotiate reductions in nuclear weapons are successful, nuclear arms in substantial numbers are likely to be on the scene for many years to come. With that in mind, Senator Gary Hart (D, Colo.) has urged the U.S. and the Soviets to negotiate procedures which would help avoid accidental nuclear war. The Senate Foreign Relations Committee recently endorsed such steps in the Percy Resolution, including:

- prior notification of all missile and space launches.
- a ban on multiple missile launches.
- a prohibition of tests of new, more accurate re-entry vehicles (warheads).
- a strict annual ceiling on ballistic missiles tests of any kind.

Arguments for More Restrictive Measures:

- Would increase stability of deterrence by reducing fears of surprise attack and reducing danger that both sides might feel compelled to adopt launch-on-warning or launch-under-attack policies.
- The proposals are relatively simple and could be easily verified by national technical means.

Arguments Against More Preventive Means:

- Limits on testing could lead to reduced confidence in the viability of the U.S. deterrent.

The President's Options

NUCLEAR BARGAINING

By **Leslie H. Gelb**

MEMORANDUM FOR THE PRESIDENT.
SUBJECT:
STRATEGIC ARMS REDUCTION TALKS.

With your proposal for reducing Soviet and American long-range nuclear weapons by one-third, you have regained the initiative from the Western European and domestic nuclear-freeze and disarmament groups and put the Soviet Union on the defensive. But a year from now, the talks with Moscow due to begin this Tuesday will be deadlocked, both we and the Russians will be poised to deploy new and more devastating weapons, the peace movements are likely to regain momentum, and you will be in the initial phase of a Presidential campaign, vulnerable to charges of dragging your feet on arms control.

What are you going to do then? Cut back on your ambitious proposal, settle for a more modest treaty and run as a peace candidate, as President Nixon did in 1972? Or will you do what President Ford did in 1976 — hold the line in the negotiations in order to hold onto the conservative vote (remember, you were challenging him in the Republican primaries then and accusing him of being soft on the Russians) and run as the man who wouldn't give in to Moscow? And what risks will either course hold for the nation's security?

There may be much in this memo you will not like, particularly coming from someone who was very much involved in negotiating the 1979 strategic arms limitation treaty, SALT II, which you found "fatally flawed." Let me assure you that this memo is not an argument for any one particular viewpoint. For the most part, the facts and judgments set forth represent the weight of expert opinion

Leslie H. Gelb, The Times's national-security correspondent, headed the State Department's Bureau of Political and Military Affairs from January 1977 to July 1979.

within your own Administration, as well as outside it. But some of the points may not have gotten to you because most of the people in your inner circle don't have much of a background in the highly complex field of strategic arms. That may have been evident to you after you had to alter your announced positions on how to deploy the projected MX missile, whether to abide by the unratified SALT II treaty, and other such matters.

This memo, as is the case with many news stories, is a way for your experts to send a message to their boss that otherwise might not reach you until it's too late. Let me try to define the key questions and hard choices as they see them.

Does the Soviet Union have superiority in strategic nuclear forces over the United States?

No, except for land-based missiles, and exactly what that means is open to argument. Each side's missiles are about equal in accuracy and reliability. But the Russian land-based missiles are much bigger than ours. This means they have more throw weight. That, in turn, means they can carry more nuclear warheads with greater explosive power to destroy targets protected by concrete and steel, like missile silos and command centers. But the gap will be narrowed as we deploy new warheads on our land-based missiles in the next couple of years. If and when the powerful new MX missile is deployed, the gap will be effectively closed.

In virtually all other strategic systems, the United States is in the lead, although the Soviets are closing.

American ballistic-missile-launching submarines are much quieter — and, therefore, harder to find — than their Soviet counterparts, and our anti-submarine-warfare capability is far better than theirs. This means that while the Russians can't find our submarines at sea, we can locate most of theirs. In other words, we have an invulnerable retaliatory force at sea and they don't — at least not for the next few years. Also, our submarine-

launched missiles are more accurate and reliable than theirs.

American long-range bombers, although aging, are clearly superior to the equally aged Soviet force. Many more of our bombers could get through to their targets, even though the Russians have been spending more on their anti-aircraft defenses, which are far better than ours.

American cruise missiles — pilotless miniature aircraft with their own guidance systems — are superior to the Russian ones.

Civil defense counts for practically nothing on either side, given the overwhelming problems of blast and radioactive fallout. While American efforts are negligible, the potential effectiveness of Moscow's program has been vastly exaggerated, as your intelligence estimates show.

In nuclear command, control, communications and intelligence — the top leaders' capability of knowing what is going on and sending messages to those who push the buttons — the two sides are about equal.

In the number of nuclear warheads and bombs, which is generally regarded as the best measure of nuclear strength, the United States still has the edge, with a total now of about 9,000, though the Russians are coming close.

The experts who look at all of these factors call the strategic balance a draw. Put another way, I have yet to meet a senior American military officer involved in this subject who would trade the American arsenal for the Soviet one. Only those experts who focus exclusively on Soviet superiority in land-based missiles think otherwise. And here the debate among the experts ascends to the level of theology.

In theory, Moscow could use only a few hundred of its land-based missiles with multiple warheads to destroy 90 percent of our land-based missiles, a good chunk of our bombers and whatever submarines are in port — what has become known as the "window of vulnerability." This would leave you with at least 2,500

strategic nuclear warheads, mainly in submarines out at sea. Since few of these warheads would have the necessary accuracy and megatonnage to destroy protected Russian missiles, the theory is that you would be faced with the choice of hitting Soviet cities — thus inviting a counterattack on American cities — or doing nothing. In these dire circumstances, so the argument goes, you might choose to do nothing, and submit to Moscow's demands.

How realistic is this scenario? Would Russian leaders really assume they could launch so technically perfect an attack; that you would simply let American missiles sit in their holes and be destroyed without launching them during the attack, or that you would consider the estimated five million to 20 million instant American deaths to be a simple surgical operation not requiring a full-scale response against the Soviet heartland? No one I talked to was complacent about the power of Soviet land-based missiles; they all regarded it as an element of instability that should be dealt with. At the same time, almost all of them felt that in warning of that problem — in saying it gave the Russians a "definite margin of superiority" — you and many of your top aides disregard counterbalancing American strengths. Thus, in a crisis, you should not feel the need to make pre-emptive concessions, as some experts say you would.

I have heard it said that in urging steps to overcome Soviet "superiority," you are worried about public "perceptions" of the nuclear balance that could affect other governments' attitudes, whatever the actual balance may be. The answer to this is simple: World perceptions of the Soviet-American balance will be shaped to a large extent by what you and your senior advisers say about it. Moscow has unquestionably had the momentum, going from clear inferiority to parity in one decade. But if this proves anything, it is that both sides have the capacity to match the other's strength. As we and they deploy new weapons — within the limits of present and perhaps future arms controls — gaps in individual categories will open and close.

Would reducing warheads by one-third, as you proposed, eliminate the theoretical Soviet threat to our land-based missiles?

No. Some of your experts argue that there is greater safety in fewer missiles on both sides, but most see no change. The "window of vulnerability" derives from the calculation that the Soviets have 5,000 land-based war-

heads for destroying our 1,000-plus land-based missiles — a ratio of five to one. Even after the reductions contemplated in your proposal, that ratio would remain the same. (And a ratio of two to one would be sufficient.) In other words, your campaign charge that SALT II did not close the "window" can be turned against your own negotiating proposal.

In fact, this theoretical opening cannot be negotiated away unless the Russians agree to eliminate all, or at least most, of their big land-based missiles — their SS-18's and SS-19's — and no one has the slightest hope of persuading Moscow to give up its one advantage. In the near term, the problem can be solved only by giving our land-based missiles a high degree of invulnerability, by making them mobile or basing them in some deceptive manner. Your Administration has been casting about for a year and a half for some such scheme, with no success. No one else has any bright ideas. It may be that the only available solutions are worse than the problem. This would seem to be true of a new proposal you will soon be hearing from the Pentagon — that we build even more missiles, in order to multiply the targets the Soviets would have to shoot at.

Do we need "bargaining chips" in our negotiations with Moscow — new weapons projects we might be prepared to scrap in return for Soviet concessions?

Yes. Moscow is impressed by American technology and will bargain to curtail our inventiveness. But our chips must be weapons we would really want to keep if we did not get a worthwhile quid pro quo. And here you have a problem.

The one new system that worries the Russians most is the MX missile, because of the threat it would represent to their land-based missiles. It is also the system that faces the greatest skepticism in Congress, because of the difficulty of making it any less vulnerable than our present land-based Minuteman missiles. If you don't divine some better scheme for basing the MX, it looks as though Congress won't appropriate the money. If you don't cash this chip with Moscow soon, it may not be around to cash later.

You must know that our current arsenal is filled with bargaining chips that were never bargained away. Maybe you would just as soon it happened that way again — all those new missiles to clearly re-establish American advantages. But, as we have seen before, that's self-defeating. Moscow catches up sooner or later, and we end up being more worried than ever.

That is exactly what happened with MIRV's — multiple independent targetable warheads — at the beginning of the SALT I negotiations a decade ago. We were ready to test them in 1969, well ahead of the Russians. So, instead of seeking a prohibition on the new weapon, we grabbed our advantage and went ahead with deployment. By the time the Russians caught up, they had big missiles on which to put their MIRV's. And this gave them the very capability of destroying our land-based missiles that so frightens us today.

Is there any connection between the negotiations on medium-range missiles in Europe now under way in Geneva and the strategic-arms talks due to start June 29?

Yes, and a very important one. In Europe, our allies are pressing us to make a deal with Moscow to reduce the nuclear threat to their countries. Your proposal for doing that is the "zero option": The United States would give up its plans for deploying medium-range missiles in Western Europe — Pershing 2's and ground-launched cruise missiles — if the Soviet Union dismantled its existing SS-20's and other medium-range missiles.

The problem is that our new medium-range missiles will be able to hit Soviet territory from European soil. For that reason, Moscow would be very unlikely to make any deal on medium-range missiles without knowing at least the outlines of a strategic (intercontinental) arms agreement. In other words, the Russians will probably want to look at all the missiles — strategic and medium-range — we might be able to bring within range of Soviet territory before they agree to limits in either category.

There is another problem — a political one, and with our own allies. The initiative for deploying American medium-range missiles in Europe came from the European governments, with the primary aim of assuring a physical link between our military strategy and the defense of Western Europe. If you reached some kind of strategic-arms accord with Moscow without a simultaneous agreement on medium-range missiles, it would revive European fears that we are taking care of our own strategic concerns and ignoring theirs.

All of which is to say that the two negotiations are tied together and have to be thought of that way.

Should you continue to observe the limitations imposed by the SALT I and SALT II treaties?

Thus far, you have succeeded in having it both ways — condemning

SALT II and abiding by it. You campaigned against the treaty, saying it locked the United States into a position of inferiority; once in office, you saw that the treaty kept the Russians from making large immediate additions to their arsenal while permitting you to go forward with the new strategic programs you espoused.

But now, pressures will arise within your Administration to break certain provisions that stand in the way of still further American advance. One example is Dense Pack, the latest scheme for basing the MX. It would have new silos dug close together, forcing the Russians to concentrate many missiles in a small target area. The Soviet missiles, according to this theory, would have to come so bunched up that their first explosions would detonate their subsequent warheads prematurely, thus leaving most of our MX's undamaged.

Whatever the realism of this concept — and it doesn't have many adherents yet — it would contravene the SALT II ban on new silos. It would also create pressures for departing from the 1972 treaty restrictions on antiballistic missiles (ABM's), for its proponents would want such weapons to defend their MX clusters. In fact, even without Dense Pack, some of your officials will press you to reopen the ABM treaty so that you can have antimissile defenses for any MX's you deploy. And that would raise the arms race to a new level.

Each side would suspect the other of greater readiness to launch a first strike and rely on its ABM's to lessen the effects of a retaliatory blow. Each side would be under greater pressure, in some desperate confrontation, to beat the other to the punch. The balance would be dangerously destabilized, and all this without any real assurance that the ABM's would work as planned.

In sum, it is clearly in the American interest to abide by the treaty limits. If the limits were removed, the Russians — whose production lines are open and whose missiles can take more warheads than ours — could add more nuclear weapons far more quickly than we. Anyone who pushes you to upset SALT II ought to have a very powerful case.

Are the Russians at all likely to accept your proposal for a one-third mutual reduction in warheads?

No, and they've already said as much. It asks them, in effect, to give up their one area of advantage — in large land-based missiles — without offering to forgo any of the projected new American weapons. First, the Russians will say, "Tell us what's wrong with SALT II," and will press

for some modified version of that pact. Then, if you refuse to reconsider the treaty, they could offer some of their bargaining chips in exchange for some of yours. Or they could try to stop your strategic programs by reiterating their proposal for a freeze on new deployments.

Freeze proposals make effective propaganda, and that is important in itself. Negotiating with Moscow is in good part a game of patience, and your ability to be patient will depend on public support at home and in Europe for your negotiating position. The Western peoples will have to believe that you are being fair; otherwise, there will be a drumbeat for unilateral concessions on your part.

Is getting an agreement in the next year or two critical to containing the arms race?

Yes and no. The only new weapons we might be ready to begin deploying in the next year or so are cruise missiles. The MX is not due until 1986 at the earliest; the new Trident submarine missile, not until 1989; the B-1 bomber, not for another two or three years. The Russians are not expected to deploy their new weapons any earlier.

But there is something else to worry about — momentum. As the development and testing programs on both sides gather steam, it will be much harder to stop deployment later, when mutual renunciation of certain new weapons may become necessary for agreement.

In any event, given all the facts and the initial positions of both sides, the negotiations in their first phase will most probably lead to a stalemate. What will be your options then?

OPTION ONE: Hold the line. This means making no concessions and getting no agreement.

There will be substantial sentiment in your Administration for just that course. Many of your top officials are convinced that our big mistake in the past was not sticking to our position and waiting for the Russians to come around. They want to prove they're right. They would be equally satisfied, however, if Moscow did not come around, since, in their minds, it would justify the new American deployments. You may believe in this approach yourself.

But it could boomerang. Moscow will not be bargaining from a position of weakness. We have no grounds for expecting the Soviet leaders to capitulate to our demands out of fear of the new weapons on our production lines. All past experience points to their determination to match us again, weapon for weapon.

Sure, the Russian economy is in

trouble, but so is ours. What if our own economic situation causes Congress to cut back on some of your bargaining chips? And what if public opinion here and in Europe comes to see you as the main stumbling block to an agreement? You could end up with no treaty and few new weapons. And if the peace and arms-control movements gain in strength, you could also be defeated in a bid for a second term.

OPTION TWO: Hold onto your proposal for a one-third reduction in strategic missiles, but offer something more to make it more attractive to Moscow.

Your proposal places no limits and offers no reductions on the number of bombers and cruise missiles. You could agree to reduce our bomber total from 400 to 300 and to limit each bomber to about 20 air-launched cruise missiles.

Moscow, of course, can be counted on to demand limits on sea-launched cruise missiles as well. The Russians are not likely to agree to cutting back on their land-based missiles while we deploy several thousand cruise missiles on our submarines, as you plan to do. So this approach would give little promise of breaking the deadlock. But it would put the ball back in Moscow's court and show that you're trying to find a compromise.

OPTION THREE: Agree to modify the SALT II treaty to your own and Soviet satisfaction.

You could try to lower the treaty's ceilings — from 2,250 to, say, 1,750 for missiles and bombers, and from 1,200 to 900 for missiles with MIRV's. You could try to remove the treaty's prohibitions against our building big missiles — so that, if we wanted to, we could build missiles as big as their SS-18 — and against replacing old silos with new ones. You could try to tighten up on verification provisions. Moscow might accept something along these lines, and that would go a long way toward responding to the treaty's critics. With all these

changes, you could call the treaty your own.

There doesn't seem to be a soul in Washington willing to bet on your going in this direction. Everyone says you've gone too far in condemning the treaty ever to retrace your steps. However, if you don't like what you see coming at you a year hence, a Reaganized SALT II might not look so bad by comparison.

OPTION FOUR: Offer a mutual

freeze on further deployments, and perhaps on testing and production as well.

You have rejected this approach as one that would leave us in an inferior position; reconsidering would make sense to you only if you were won over by the view that what we have is parity. Moscow, it should be noted, has given you an interesting variation to think about. The Soviet leader, Leonid I. Brezhnev, has spoken of freezing deployments but permitting testing and production, even while doing the "utmost" to curtail them. You aren't ready to make any new deployments for a while anyway, and the Soviet proposal would let you go ahead with your testing and development programs.

But it is true that a freeze is a tricky political enterprise, and once in for a penny, in for a pound, and you could well find yourself deprived of the bargaining chips that might be helpful in bringing about reductions.

OPTION FIVE: Propose a trade-off banning the most threatening new weapons on both sides — say, no American MX and no Soviet SS-18; no American Pershing 2 and no Soviet SS-20.

The United States would be forgoing future deployments in order to eliminate existing Soviet weapons. That might not seem so appealing to Moscow, but it could be far more appealing than the prospect of seeing the new American weapons in place. The Europeans would be ecstatic about removing the SS-20, and American conservatives could delight in the banishing of the dreaded SS-18.

You could also propose eliminating all land-based missiles with multiple warheads. Restricting missiles to single warheads would go a long way toward reducing the risk of a first strike, since the attacker would have to use up most of his warheads and

have few left for continuing the exchange.

For this kind of approach, timing would be critical. As noted above, you may be losing support in Western Europe for deploying the Pershings and in Congress for deploying the MX. If these trends grow, you'd want to move sooner rather than later. But if your support holds up, Moscow would take both the swap offer and the single-warhead idea more seriously.

What conclusions can be drawn from all this?

Two of your options — hold the line, or hold it but add sweeteners — are options that you like but that promise only stalemate.

Two other options — modify SALT II, or propose a freeze — could produce interim agreement, but you don't like either of them.

The fifth option — eliminate the most threatening weapons on both sides — represents a long shot at best.

Whatever approach you choose, you have got to ask your experts to concentrate hard on two subjects about which very little thinking has been done.

The first is cruise missiles. Your Administration has developed programs for deploying more than 10,000 of these drones, which can carry nuclear or conventional warheads and be launched from land, sea and air. The cruise missile could be an invaluable addition to our security or a dangerous complication. We ought to have some idea of the answer now, before we find ourselves in the same situation we faced with MIRV's 10 years ago.

In an age of technological advances that will make all bombers and all ballistic missiles, whether on land or at sea, vulnerable to enemy attack, the cruise missile could represent a secure and survivable system. Because these missiles are small, highly mobile and easily hid-

den, Moscow could not count on locating and destroying them in a first strike. All or most of them would be available for a retaliatory strike — a kind of ultimate deterrent.

But what happens when Moscow matches us in this new weapon? Flying only at subsonic speeds, cruise missiles are not first-strike weapons — yet. But the day of the supersonic and intercontinental cruise missile is not far off.

How will either side be able to keep tabs on these new first-strike weapons of pinpoint accuracy in the other's arsenal? Being small and easy to move and hide, they cannot be counted with the certainty that American and Soviet satellites can count each other's missile silos, bombers and submarines. There is no sure way to verify a cruise missile's range, no way to tell whether it is carrying a conventional or nuclear warhead. And apart from being a potential nightmare for the strategic balance, cruise missiles affect prospects for achieving reductions in other weapons. The Russians will not agree to big cuts in their ballistic missiles and bombers if they must prepare to face thousands of new cruise missiles.

The second subject that has not been given enough thought in your Administration is prevention of nuclear war. The main cause of an outbreak of nuclear hostilities, if it came, would not lie in weapons but in circumstances, surprises, failures in communication, crises escalating out of control. To get at these issues, you have to go beyond traditional arms control, which can limit competition, channel it along more predictable lines, ban certain weapons, stabilize the balance and build some mutual confidence, but which can't do much of anything else. Dealing with the issues of war prevention would require talks of an entirely new dimension, in a hitherto unexplored realm. You seemed

willing to do this in proposals you made during your recent European trip.

The hurdles are enormous. Yet, for any President who is seriously committed to world peace, the time for such talks has arrived. The subject is so new that it is difficult to spell out exactly what the negotiations would cover. Certainly, they would seek to reduce fears of surprise attack by requiring advance notification of missile tests, by banning tests of depressed-trajectory missiles, which could strike targets even more quickly than ballistic missiles, and by improving hot-line communications and procedures — points you yourself enumerated while in West Germany.

But even these technical fixes are not enough. The talks should also stimulate a renewed effort to prevent the further spread of nuclear-weapons capabilities among other nations. As the negotiations go on, they could provide for a series of confidence-building measures, such as talks on a regular basis between the American and Soviet military chiefs of staff, biannual talks between the Secretary of State and the Soviet Foreign Minister and even a meeting every year or every other year between the President and the Soviet leader. Regularizing such contacts would depoliticize them to some degree and make them more businesslike. If you're lucky, you may be able to solve some of the major problems, but the minimum goal ought to be to prevent the problems from becoming worse.

The Falklands crisis is the most recent reminder of how hard it is for leaders to prevent situations from escalating out of control. Imagine what that crisis might have been had it flared between two nuclear-armed nations, particularly two superpowers, each with strong feelings about its national image. Your new weapons programs and your strategic-arms negotiating proposal are necessary but not sufficient conditions for keeping the peace. ■

From U.S. World and News Report, April 5, 1982.

Pro and Con

A Freeze on Nuclear Weapons?

YES—The arms race “could subject the entire world to holocaust”



**Interview With
Senator
Mark O. Hatfield**

Republican,
Of Oregon

Q Senator Hatfield, why are you sponsoring a proposal in Congress that calls upon the superpowers to put a freeze on nuclear-weapons construction?

A Because the U.S. has had superiority in nuclear weapons ever since World War II, when the Soviets didn't even have the bomb, and yet it is evident that the more nuclear weapons we build, the more they will build. And the result is less security in the world. Nuclear superiority is not only a meaningless term in the age of multiple overkill, it is a hindrance at the bargaining table.

Now not only do the Soviets have the bomb, but by the end of this century an estimated 60 nations will be capable of building nuclear weapons. We must halt this kind of madness. It could subject the entire world to nuclear holocaust—the end of the planet.

Q Wouldn't a freeze simply perpetuate the substantial Soviet advantage in medium-range nuclear weapons in Europe?

A First of all, the U.S. has a massive nuclear-weapons capability in Europe. The Soviets have 2,000 missiles, and we have 1,200. The U.S. total includes invulnerable, forward-based submarines, two of which could knock out every major Russian city.

Globally, we have over 9,000 warheads, and the Soviets have 7,000. Furthermore, our warheads are far more accurate. When we look at the nuclear arsenals in their totality, we have a more destructive arsenal than the Soviets.

Q Could a freeze prevent the building of our B-1 and Stealth bombers and leave the Soviets free to enlarge their air defenses?

A You must remember that there are other parts of our arsenal that will survive an attack and have significant deterrence value. Secondly, we can seek to negotiate a collateral agreement constraining U.S. and Soviet air-defense improvements.

Q But wouldn't the U.S. bomber force be rendered virtually useless against Russia if our airborne-cruise-missile program were killed by a freeze?

A Absolutely not. First, current war plans call for pre-attacks on Soviet air defenses that would leave them badly damaged. In addition, our current bomber, the B-52, is now equipped to suppress air defenses. The Air Force is on record saying that the B-52 bomber will have a penetration capability at least until 1990 and perhaps well beyond. Also, it is worth noting that the production of a new Soviet bomber the Pentagon claims is being developed would be prohibited with a freeze.

Q What about the vulnerability of land-based missiles?

A The Soviet Union's nuclear arsenal is more vulnerable than ours because 70 to 75 percent of it is based on land;

NO—It “would perpetuate an unstable situation” that increases the risk of war



**Interview With
Richard R. Burt**

Director of Politico-Military
Affairs, Department of State

Q Mr. Burt, why is the Reagan administration opposed to a nuclear-weapons freeze?

A There are two basic reasons:

The first is that we think it would lock us into some military disadvantages. In Europe, the Soviet Union has a force of 600 intermediate-range missiles with 1,200 warheads. The Soviets thus have a massive capability to target our allies. The U.S. has no equivalent systems. Furthermore, the Soviet Union has developed over the last 15 years a new generation of intercontinental ballistic missiles which threatens a large fraction of our existing land-based missile force. Again, we have no equivalent capability. We cannot allow these disadvantages to continue in perpetuity.

Secondly, the administration believes that we can do better than a freeze.

Q Better in what way?

A Our objective, both in the current talks in Geneva on intermediate-range nuclear forces and in the forthcoming strategic-arms talks, will be significant reductions in the existing arsenals of both sides. We believe that if both sides' forces are frozen at current levels, the Soviet Union will have no incentives whatsoever to take our proposals for reductions seriously. In fact, the only reason we have negotiations going on now in Geneva on intermediate-range missiles is that the North Atlantic Treaty Organization in 1979 decided to modernize its capabilities in response to the Soviet buildup of intermediate-range nuclear forces.

Q Looking beyond the situation in Europe, where you say the Soviet Union has a substantial advantage, wouldn't a freeze leave the U.S. with a big edge in strategic warheads all told?

A Well, there are many different ways to measure the overall balance. The fact is that by most measures of strategic nuclear capability the Soviet Union is ahead of the United States right now.

We believe that both the Soviet Union and the United States should reduce the level of nuclear arms they presently possess. So the real question is not how to accomplish a freeze at existing numbers; it is how to achieve limitations at reduced levels. And that's what the Reagan administration wants—agreed limits at reduced levels. We want to negotiate significant reductions, and history has shown that the only way to do that is to give the Soviets incentives for negotiating.

Q Would a freeze actually end the nuclear arms race?

A No. First of all, a freeze would be extremely difficult to verify and therefore would not limit the Soviets' ability to increase their nuclear force.

Secondly, even assuming for the moment that one could

Interview With Senator Hatfield *(continued)*

only 25 percent of our missiles are land based. Any negotiation could include discussion of options such as moving the Minuteman 3 missile from land bases to small, coastal-based submarines—which would reduce fears regarding our vulnerability.

First-strike capability is a purely theoretical notion. Second, knowing that we have such great power to retaliate, why, unless an accident occurred, would the Soviets attempt a first strike? Finally, a freeze would seriously reduce Soviet confidence in a first strike by placing a cap on warheads and halting testing activity which is needed for accuracy.

Q Were we to have a freeze, how would Soviet compliance be verified, in light of Russia's past refusal of on-site inspection?

A The U.S. has an elaborate satellite detection system. We have a multitude of other intelligence-gathering mechanisms. Illegal activity could be detected more easily with a freeze than without a freeze because *any* testing or production activity would suggest a violation. Today we are faced with detecting very subtle deviations and changes in activity, which is far more difficult.

Q How do you respond to the contention of administration officials that a freeze would destroy any chance of negotiating an agreement to reduce nuclear arsenals and limit the nuclear-arms race on a broad basis?

A The logic of that idea escapes me. We have to first create a freeze to get a change of direction. A freeze would not impair our ability to reverse the current upward arms escalation. Instead, it would stop the arms race so that it could be reversed. You can't throw a freight train coming down the track into reverse until you first stop it.

Q Another objection being raised is that the movement for a nuclear freeze in this country will impair U.S. defenses by undermining support for the administration's buildup—

A First, don't forget we also halt the Soviet buildup. There isn't any question that a freeze would challenge the administration's present defense program. The Reagan defense program, compared to the Carter budget, provides for a 49 percent increase in military spending, whereas nondefense programs have diminished by some 12 percent.

It weakens America to commit over 200 billion dollars over the next six years to nuclear weaponry at a time when the economy needs capital to modernize its production capability and channel more manpower and womanpower toward scientific and engineering fields so that we can better compete in the international marketplace.

This, too, is a matter of national security.

Q Do you see any comparable movement toward a nuclear freeze in the Soviet Union?

A It is very difficult to assess the mood of the people in a closed society. But Americans who have recently visited the Soviet Union frequently say that the Russian people don't want nuclear war. Eventually, that feeling will have to erupt, even within a closed society.

As for the open societies of the West, our allies are attracted to a nuclear freeze. If we back the idea, America's leadership worldwide would be enhanced. □

Interview With Mr. Burt *(continued)*

verify it, such a freeze would perpetuate an unstable nuclear situation, one that would increase the risk of war rather than reduce it.

Finally, such a freeze would leave totally unconstrained many other military developments which could directly threaten the nuclear balance. These include improvements in submarine warfare and air defenses.

Q In your view, the kind of freeze being advocated in Congress could not be verified—

A There are a variety of proposals, but the proposals I have seen call for a freeze in warhead production, testing and deployment. As I noted, it would be very difficult to verify such a freeze. It would require extensive on-site inspections, which the Soviets have traditionally rejected.

Q Many people urging a freeze argue that if the arms race continues, it will lead to a nuclear war. How do you answer that?

A We are concerned, as everyone should be, about the dangers of a nuclear war.

The best ways to minimize the chances of a nuclear war are through the maintenance of a balance of power and the negotiation of significant reductions. We have been able to avoid a nuclear war since the advent of the nuclear age by maintaining an equilibrium in military capabilities, and that is the policy of this administration.

Q In light of the growing push for a freeze, is the administration going to move quickly into strategic-arms talks?

A We have spent several months extensively analyzing our options in the strategic-arms area. Secretary of State Haig said recently that our analysis will be complete in a matter of weeks. We want to approach these talks seriously, with a thoughtful opening position. We should be prepared in the near future for negotiations, international conditions permitting.

Q Would a freeze help cut defense spending by large sums and thereby help reduce the deficit, the source of so much concern in this country?

A Experience has shown that existing arms-control agreements have not resulted in great savings. A freeze at existing levels—levels that most people believe are already too high—would probably not result in real savings. Agreed limits at much reduced levels would possibly save money.

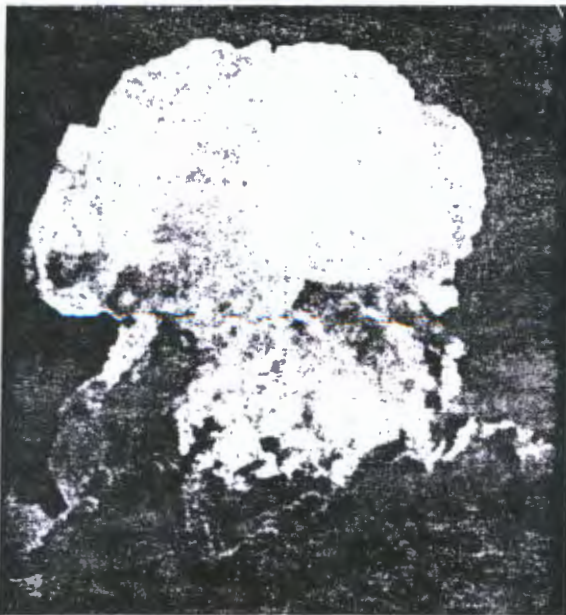
And, of course, this is our goal.

Q Are you concerned that the growing U.S. peace movement could force the administration into a freeze or some form of unilateral action to curb our nuclear-arms buildup?

A No. I think most people recognize that, to be effective, any arms-control measure has to limit both the United States and the Soviet Union. I don't think any responsible politician in this country is going to advocate unilateral disarmament.

The proposals for a freeze reflect the genuine concerns of the American people about the arms race. We share those concerns. President Reagan has said that he, as much as anyone, wants to come to grips with this troubling problem. The question is the best way of doing it. It is not the overall objectives of the freeze we oppose; it is the tactics of accomplishing these objectives. □

Growing fear of nuclear war has sparked widespread debate over limiting the arms race.



DEPARTMENT OF DEFENSE

From

THE WASHINGTON POST, THURSDAY, APRIL 15, 1982

Les Aspin

Freeze? Why Not Just Okay SALT II?

Ford had a better idea. Gerald Ford, that is.

He wanted the country to approve the nuclear weapons accord he worked out at Vladivostok. But Jimmy Carter rejected that agreement, and spent years negotiating a slightly different package, SALT II. Now we are being urged to push for a freeze on nuclear weapons. We could do better, however, if we ratified SALT II, the bird in the hand. SALT II, which is still pending before the Senate, wouldn't freeze the Soviet arsenal; it would reduce it.

The nuclear freeze debate is very helpful. It has reached right down into town meetings and alerted far more people to the dangers of a runaway arms race. But there are three key problems with making a freeze our official negotiating position.

First, it would simply be one more jolting change in our negotiating stance. We already have an "A" for lack of consistency; let's not try for an A+.

Where once we had a nonpartisan foreign policy, we have now made arms control the most partisan of foreign policy issues. Ford negotiated the Vladivostok accords. He did a good job. We should have ratified Vladivostok. But, no, along came Jimmy Carter saying he could do better. The ceilings on weapons were too high, he said. Chuck Vladivostok, and I will work out a better deal. So we chucked Vladivostok, and years later Carter came up with SALT II. It was a good package. But, then, Ronald Reagan came along saying he could do a better job. The ceilings in SALT II were too high, he said. Chuck SALT II, and I will work out a better deal.

The freeze people are now agreeing with Ronald Reagan's wish to chuck SALT II and pursue the better deal. But why? SALT I, Vladivostok, SALT II—each is of limited duration. None was designed as the final word. Each was designed as a stepping stone, an earnest of good intentions to prepare the ground for broader arms control measures. An important step in this continuing process would be to ratify SALT II so we could move on to SALT III (or START I, or whatever acronym).

The second problem with the freeze concept has already been pointed out—correctly for a change—by President Reagan. A freeze clamps down on the strategic issues that make Kremlin planners sweat, but it doesn't address those issues that make American planners sweat. To have any hope of negotiating successfully, each side must have something the other would like to get at. Otherwise, there is no incentive to make a deal.

We are worried that the huge numbers of Soviet MIRVed missiles or their inventory of very large missiles could successfully wipe out our land-based ICBMs in a first strike. We want reductions in either or both of these categories. The freeze simply leaves those threatening missiles in place.

On the other hand, what worries the Soviets is what we are preparing to do. We are working on a new Trident D5 sea-based missile that will make their land-based missiles vulnerable. Then there's the MX missile, which would also make their land-based missiles vulnerable. Third, we are developing sea-launched cruise missiles, and fourth, we are working on the Pershing II missile, which could be launched from Europe to hit Soviet targets in a matter of minutes. The Russians want to get at all four of these weapons. For us to get what we want, we need both a freeze and reductions. For the

Soviets to get what they want, all they need is a freeze. At that point, there is no incentive for them to talk about reductions.

The third problem with the freeze proposal is that two moves away in this chess game we are presented with nothing but bad alternatives; we can give up either our knight or our bishop. Either way we get rooked. The freeze is proposed as an open-ended policy to last until reductions are agreed upon. The Soviets will have every incentive to hold religiously to the freeze while stonewalling on the reduction talks. Any proposal to drop the freeze will be seen by freeze advocates as a step backward and perceived around the world as American perfidy—while the Soviets sit quietly at the negotiating table behind their Cheshire grins. We will be forced either to stick with the freeze and its disadvantages or to play the role of ogre and resume the arms race. Neither is to our benefit. Neither advances the cause of arms control.

The freeze debate is the best thing to come down the pike in years, because it is awakening the public concern about nuclear weapons. Arms control is, after all, a very political process. The Kennedy-Hatfield resolution before the Senate helps to focus the political issues and give the public a flag around which to rally.

The freeze proponents say the freeze is only the first step; the second step is to get reductions in nuclear weapons. Fine. But how about going straight to the second step? Let's ratify SALT II.

Under SALT II, the Soviets would have to dismantle about 10 percent of their most threatening weapons. That's a reduction in arms. And reductions are what both the freeze advocates and the Reagan White House have declared as their goal.

We are following the SALT II numerical

restrictions right now. Every time we build a new missile submarine, we dismantle an old one. The Russians are doing the same thing: every time they build a new missile sub, they dismantle an old one. The only provision that hasn't been put into effect—and which won't go into effect until and unless there is a ratified treaty—is the one that would limit the total number of strategic delivery vehicles (missile launchers and heavy bombers) to 2,250 on each side. Under that provision, the Soviets would have to get rid of more than 250 of their missiles or bombers. The United States is already under the ceiling.

SALT II also forbids either side from developing and deploying more than one new type of ICBM; that's one new type after ratification. That would put a real brake on the arms race.

The Reagan people ought to like SALT II. The administration, after all, is abiding by SALT II just as if it were ratified. And there is not a single weapons system in Reagan's five-year defense plan that is inconsistent with SALT II. In fact, the plan looks as if it were drafted with ratification of SALT II in mind.

Freeze advocates may find some drawbacks to SALT II. Granted. There are drawbacks to any policy one can think of. But SALT II has two key advantages over a freeze. First, it goes beyond a freeze and provides for reductions. Second, it has already been worked out with the Russians. It has been signed and sealed. Unlike the freeze proposal, we don't have to invest time negotiating the fine print with Moscow.

Freeze advocates say they want a freeze now followed by efforts toward reductions. If we ratify SALT II, we get reductions now and can then sit down at the negotiating table to pursue broader and deeper reductions.

Rep. Aspin (D-Wis.) is a member of the Armed Services Committee



By Tom Chalk.

From The New York Times, August 3, 1982.

WASHINGTON — The strategic arms reduction talks are finally under way in Geneva, but is the Administration's arms reduction proposal the holy grail of arms control, as President Reagan would have us believe?

At best, Start will take half a decade to negotiate. But we could probably have a mutual and verifiable nuclear freeze in only a year or so. And we could have the second strategic arms limitation treaty — SALT II — today, if the Administration was willing to ratify it.

Mr. Reagan's arms reduction proposal probably would do more good than harm but it isn't worth the wait. A limited and narrow proposal, it reduces each side's total deployed ballistic missiles to 850, deployed intercontinental ballistic missiles to 425 and warheads to about six per missile. That's all it does.

The freeze and SALT II, by contrast, are far-reaching solutions to a wide variety of military and arms control problems. The freeze would, immediately upon ratification, prohibit the further testing, production and deployment of nuclear weapons. Under SALT II, some nuclear weapons would be allowed limited additional production, others would be allowed limited technological improvements, some would be frozen at present levels, still others would be banned entirely.

If all three plans were available for

Start. SALT. Freeze.

By Thomas J. Downey

implementation today, the United States would gain the most by adopting the arms limitation treaty, the freeze or — preferably — both. Start is a very weak third choice on its merits, let alone its negotiability.

This is not an academic question. Later this week, the House of Representatives is to vote on whether to direct the President to approve SALT II and negotiate a nuclear freeze. The Administration bitterly opposes this legislation, arguing that it would undercut the strategic arms reduction talks.

To understand why sacrificing SALT II and the freeze to save Start would be like throwing gold overboard to save brass, we can take the Administration's objections to SALT II and use them as yardsticks for measuring all three plans:

1. SALT II does not limit the Soviet Union's Backfire bomber.

This is the only specific objection to SALT II ever raised by President Reagan himself. In fact, SALT II limits production of the Backfire to 30 per year. The freeze limits it to zero. Start does not limit it at all.

2. SALT II allows the Soviet Union

to retain 308 heavy intercontinental ballistic missiles.

SALT II and the freeze each allows the Soviet Union 308 heavy I.C.B.M.'s; Start allows 425. SALT II and the freeze limit the throw weight — the warheads and their vehicle — of these missiles to 16,000 pounds each; Start does not limit throw weight at all.

3. SALT II lets the Soviet Union produce an unlimited number of missiles and quickly reload their silos with them.

While SALT II does not control production of missiles, it prohibits development, testing and deployment of rapid-reload equipment. The freeze prohibits all missile production, although it has no effect on existing missiles or their reloading equipment. Start does nothing about either missile production or reloading equipment.

4. SALT II counts launchers, which do not matter. Start counts missiles and warheads, which do.

In fact, Start does not count total missiles or warheads, which cannot be verified. It counts "deployable missiles," which are the same as launchers. SALT II also counts total launch-

ers and warheads per launcher, which by simple multiplication is the same as Start's "deployable warheads."

5. SALT II does not solve the problem of the vulnerability of United States I.C.B.M.'s.

True, but neither does Start, and the freeze does. SALT II and Start each allows the Soviet Union to have highly accurate, well-tested multiple-warhead missiles that can each destroy several American I.C.B.M. silos. But by prohibiting testing of these missiles and lowering confidence in their reliability, the freeze solves our I.C.B.M. vulnerability problem, while Start does not.

6. SALT II permits the arms race to continue.

True, but it limits the arms race more than Start does. Only the freeze ends the arms race. For example, the freeze allows no new types of I.C.B.M.'s while SALT II allows one for each side. But Start allows an infinite number of new types of missiles.

None of this is to say that Start is worthless. It would be a modest, constructive addition in the context of SALT II, the freeze or both. But in no sense is it a replacement for either.

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From Foreign Affairs, Spring, 1982.

McGeorge Bundy
George F. Kennan
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NUCLEAR WEAPONS AND THE ATLANTIC ALLIANCE

W

e are four Americans who have been concerned over many years with the relation between nuclear weapons and the peace and freedom of the members of the Atlantic Alliance. Having learned that each of us separately has been coming to hold new views on this hard but vital question, we decided to see how far our thoughts, and the lessons of our varied experiences, could be put together; the essay that follows is the result. It argues that a new policy can bring great benefits, but it aims to start a discussion, not to end it.

For 33 years now, the Atlantic Alliance has relied on the asserted readiness of the United States to use nuclear weapons if necessary to repel aggression from the East. Initially, indeed, it was widely thought (notably by such great and different men as Winston Churchill and Niels Bohr) that the basic military balance in Europe was between American atomic bombs and the massive conventional forces of the Soviet Union. But the first Soviet explosion, in August 1949, ended the American monopoly only

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one month after the Senate approved the North Atlantic Treaty, and in 1950 communist aggression in Korea produced new Allied attention to the defense of Europe.

The "crude" atomic bombs of the 1940s have been followed in both countries by a fantastic proliferation of weapons and delivery systems, so that today the two parts of a still-divided Europe are targeted by many thousands of warheads both in the area and outside it. Within the Alliance, France and Britain have developed thermonuclear forces which are enormous compared to what the United States had at the beginning, although small by comparison with the present deployments of the superpowers. Doctrine has succeeded doctrine, from "balanced collective forces" to "massive retaliation" to "mutual assured destruction" to "flexible response" and the "seamless web." Throughout these transformations, most of them occasioned at least in part by changes in the Western view of Soviet capabilities, both deployments and doctrines have been intended to deter Soviet aggression and keep the peace by maintaining a credible connection between any large-scale assault, whether conventional or nuclear, and the engagement of the strategic nuclear forces of the United States.

A major element in every doctrine has been that the United States has asserted its willingness to be the first—has indeed made plans to be the first if necessary—to use nuclear weapons to defend against aggression in Europe. It is this element that needs re-examination now. Both its cost to the coherence of the Alliance and its threat to the safety of the world are rising while its deterrent credibility declines.

This policy was first established when the American nuclear advantage was overwhelming, but that advantage has long since gone and cannot be recaptured. As early as the 1950s it was recognized by both Prime Minister Churchill and President Eisenhower that the nuclear strength of both sides was becoming so great that a nuclear war would be a ghastly catastrophe for all concerned. The following decades have only confirmed and intensified that reality. The time has come for careful study of the ways and means of moving to a new Alliance policy and doctrine: that nuclear weapons will not be used unless an aggressor should use them first.

II

The disarray that currently besets the nuclear policy and practices of the Alliance is obvious. Governments and their representatives have maintained an appearance of unity as they persist in

their support of the two-track decision of December 1979, under which 572 new American missiles of intermediate range are to be placed in Europe unless a satisfactory agreement on the limitation of such weapons can be reached in the negotiations between the United States and the Soviet Union that began last November. But behind this united front there are divisive debates, especially in countries where the new weapons are to be deployed.

The arguments put forward by advocates of these deployments contain troubling variations. The simplest and intuitively the most persuasive claim is that these new weapons are needed as a counter to the new Soviet SS-20 missiles; it may be a recognition of the surface attractiveness of this position that underlies President Reagan's striking—but probably not negotiable—proposal that if all the SS-20s are dismantled the planned deployments will be cancelled. Other officials have a quite different argument, that without new and survivable American weapons which can reach Russia from Western Europe there can be no confidence that the strategic forces of the United States will remain committed to the defense of Western Europe; on this argument the new missiles are needed to make it more likely that any war in Europe would bring nuclear warheads on the Soviet Union and thus deter the aggressor in the first place. This argument is logically distinct from any concern about the Soviet SS-20s, and it probably explains the ill-concealed hope of some planners that the Reagan proposal will be rejected. Such varied justifications cast considerable doubt on the real purpose of the proposed deployment.

An equally disturbing phenomenon is the gradual shift in the balance of argument that has occurred since the need to address the problem was first asserted in 1977. Then the expression of need was European, and in the first instance German; the emerging parity of long-range strategic systems was asserted to create a need for a balance at less than intercontinental levels. The American interest developed relatively slowly, but because these were to be American missiles, American planners took the lead as the proposal was worked out. It has also served Soviet purposes to concentrate on the American role. A similar focus has been chosen by many leaders of the new movement for nuclear disarmament in Europe. And now there are American voices, some in the executive branch, talking as if European acceptance of these new missiles were some sort of test of European loyalty to the Alliance. Meanwhile some of those in Europe who remain publicly committed to both tracks of the 1979 agreement are clearly hoping that the day of deployment will never arrive. When the very origins of a new proposal become the source of irritated argument

among allies- You started it! something is badly wrong in our common understanding.

A still more severe instance of disarray, one which has occurred under both President Carter and President Reagan, relates to the so-called neutron bomb, a weapon designed to meet the threat of Soviet tanks. American military planners, authorized by doctrine to think in terms of early battlefield use of nuclear weapons, naturally want more "up-to-date" weapons than those they have now; it is known that thousands of the aging short-range nuclear weapons now in Europe are hard to use effectively. Yet to a great many Europeans the neutron bomb suggests, however unfairly, that the Americans are preparing to fight a "limited" nuclear war on their soil. Moreover neither weapons designers nor the Pentagon officials they have persuaded seem to have understood the intense and special revulsion that is associated with killing by "enhanced radiation."

All these recent distempers have a deeper cause. They are rooted in the fact that the evolution of essentially equivalent and enormously excessive nuclear weapons systems both in the Soviet Union and in the Atlantic Alliance has aroused new concern about the dangers of all forms of nuclear war. The profusion of these systems, on both sides, has made it more difficult than ever to construct rational plans for any first use of these weapons by anyone.

This problem is more acute than before, but it is not new. Even in the 1950s, a time that is often mistakenly perceived as one of effortless American superiority, the prospect of any actual use of tactical weapons was properly terrifying to Europeans and to more than a few Americans. Military plans for such use remained both deeply secret and highly hypothetical; the coherence of the Alliance was maintained by general neglect of such scenarios, not by sedulous public discussion. In the 1960s there was a prolonged and stressful effort to address the problem of theater-range weapons, but agreement on new forces and plans for their use proved elusive. Eventually the proposal for a multilateral force (MLF) was replaced by the assignment of American Polaris submarines to NATO, and by the creation in Brussels of an inter-allied Nuclear Planning Group. Little else was accomplished. In both decades the Alliance kept itself together more by mutual political confidence than by plausible nuclear war-fighting plans.

Although the first years of the 1970s produced a welcome if oversold détente, complacency soon began to fade. The Nixon Administration, rather quietly, raised the question about the long-run credibility of the American nuclear deterrent that was to be

elaborated by Henry Kissinger in 1979 at a meeting in Brussels. Further impetus to both new doctrine and new deployments came during the Ford and Carter Administrations, but each public statement, however careful and qualified, only increased European apprehensions. The purpose of both Administrations was to reinforce deterrence, but the result has been to increase fear of nuclear war, and even of Americans as its possible initiators. Intended as contributions to both rationality and credibility, these excursions into the theory of limited nuclear war have been counterproductive in Europe.

Yet it was not wrong to raise these matters. Questions that were answered largely by silence in the 1950s and 1960s cannot be so handled in the 1980s. The problem was not in the fact that the questions were raised, but in the way they seemed to be answered.

It is time to recognize that no one has ever succeeded in advancing any persuasive reason to believe that any use of nuclear weapons, even on the smallest scale, could reliably be expected to remain limited. Every serious analysis and every military exercise, for over 25 years, has demonstrated that even the most restrained battlefield use would be enormously destructive to civilian life and property. There is no way for anyone to have any confidence that such a nuclear action will not lead to further and more devastating exchanges. Any use of nuclear weapons in Europe, by the Alliance or against it, carries with it a high and inescapable risk of escalation into the general nuclear war which would bring ruin to all and victory to none.

The one clearly definable firebreak against the worldwide disaster of general nuclear war is the one that stands between all other kinds of conflict and any use whatsoever of nuclear weapons. To keep that firebreak wide and strong is in the deepest interest of all mankind. In retrospect, indeed, it is remarkable that this country has not responded to this reality more quickly. Given the appalling consequences of even the most limited use of nuclear weapons and the total impossibility for both sides of any guarantee against unlimited escalation, there must be the gravest doubt about the wisdom of a policy which asserts the effectiveness of any first use of nuclear weapons by either side. So it seems timely to consider the possibilities, the requirements, the difficulties, and the advantages of a policy of no-first-use.

III

The largest question presented by any proposal for an Allied policy of no-first-use is that of its impact on the effectiveness of NATO's deterrent posture on the central front. In spite of the doubts

that are created by any honest look at the probable consequences of resort to a first nuclear strike of any kind, it should be remembered that there were strong reasons for the creation of the American nuclear umbrella over NATO. The original American pledge, expressed in Article 5 of the Treaty, was understood to be a nuclear guarantee. It was extended at a time when only a conventional Soviet threat existed, so a readiness for first use was plainly implied from the beginning. To modify that guarantee now, even in the light of all that has happened since, would be a major change in the assumptions of the Alliance, and no such change should be made without the most careful exploration of its implications.

In such an exploration the role of the Federal Republic of Germany must be central. Americans too easily forget what the people of the Federal Republic never can: that their position is triply exposed in a fashion unique among the large industrial democracies. They do not have nuclear weapons; they share a long common boundary with the Soviet empire; in any conflict on the central front their land would be the first battleground. None of these conditions can be changed, and together they present a formidable challenge.

Having decisively rejected a policy of neutrality, the Federal Republic has necessarily relied on the nuclear protection of the United States, and we Americans should recognize that this relationship is not a favor we are doing our German friends, but the best available solution of a common problem. Both nations believe that the Federal Republic must be defended; both believe that the Federal Republic must not have nuclear weapons of its own; both believe that nuclear guarantees *of some sort* are essential; and both believe that only the United States can provide those guarantees in persuasively deterrent peacekeeping form.

The uniqueness of the West German position can be readily demonstrated by comparing it with those of France and the United Kingdom. These two nations have distance, and in one case water, between them and the armies of the Soviet Union; they also have nuclear weapons. While those weapons may contribute something to the common strength of the Alliance, their main role is to underpin a residual national self-reliance, expressed in different ways at different times by different governments, which sets both Britain and France apart from the Federal Republic. They are set apart from the United States too, in that no other nation depends on them to use their nuclear weapons otherwise than in their own ultimate self-defense.

The quite special character of the nuclear relationship between the Federal Republic and the United States is a most powerful reason for defining that relationship with great care. It is rare for one major nation to depend entirely on another for a form of strength that is vital to its survival. It is unprecedented for any nation, however powerful, to pledge itself to a course of action, in defense of another, that might entail its own nuclear devastation. A policy of no-first-use would not and should not imply an abandonment of this extraordinary guarantee—only its redefinition. It would still be necessary to be ready to reply with American nuclear weapons to any nuclear attack on the Federal Republic, and this commitment would in itself be sufficiently demanding to constitute a powerful demonstration that a policy of no-first-use would represent no abandonment of our German ally.

The German right to a voice in this question is not merely a matter of location, or even of dependence on an American nuclear guarantee. The people of the Federal Republic have demonstrated a steadfast dedication to peace, to collective defense, and to domestic political decency. The study here proposed should be responsive to their basic desires. It seems probable that they are like the rest of us in wishing most of all to have no war of any kind, but also to be able to defend the peace by forces that do not require the dreadful choice of nuclear escalation.

IV

While we believe that careful study will lead to a firm conclusion that it is time to move decisively toward a policy of no-first-use, it is obvious that any such policy would require a strengthened confidence in the adequacy of the conventional forces of the Alliance, above all the forces in place on the central front and those available for prompt reinforcement. It seems clear that the nations of the Alliance together can provide whatever forces are needed, and within realistic budgetary constraints, but it is a quite different question whether they can summon the necessary political will. Evidence from the history of the Alliance is mixed. There has been great progress in the conventional defenses of NATO in the 30 years since the 1952 Lisbon communiqué, but there have also been failures to meet force goals all along the way.

In each of the four nations which account for more than 90 percent of NATO's collective defense and a still higher proportion of its strength on the central front, there remain major unresolved political issues that critically affect contributions to conventional deterrence: for example, it can be asked what priority the United

Kingdom gives to the British Army of the Rhine, what level of NATO-connected deployment can be accepted by France, what degree of German relative strength is acceptable to the Allies and fair to the Federal Republic itself, and whether we Americans have a durable and effective answer to our military manpower needs in the present all-volunteer active and reserve forces. These are the kinds of questions—and there are many more—that would require review and resolution in the course of reaching any final decision to move to a responsible policy of no-first-use.

There should also be an examination of the ways in which the concept of early use of nuclear weapons may have been built into existing forces, tactics, and general military expectations. To the degree that this has happened, there could be a dangerous gap right now between real capabilities and those which political leaders might wish to have in a time of crisis. Conversely there should be careful study of what a policy of no-first-use would require in those same terms. It seems more than likely that once the military leaders of the Alliance have learned to think and act steadily on this “conventional” assumption, their forces will be better instruments for stability in crises and for general deterrence, as well as for the maintenance of the nuclear firebreak so vital to us all.

No one should underestimate either the difficulty or the importance of the shift in military attitudes implied by a no-first-use policy. Although military commanders are well aware of the terrible dangers in any exchange of nuclear weapons, it is a strong military tradition to maintain that aggressive war, not the use of any one weapon, is the central evil. Many officers will be initially unenthusiastic about any formal policy that puts limits on their recourse to a weapon of apparently decisive power. Yet the basic argument for a no-first-use policy can be stated in strictly military terms: that any other course involves unacceptable risks to the national life that military forces exist to defend. The military officers of the Alliance can be expected to understand the force of this proposition, even if many of them do not initially agree with it. Moreover, there is every reason for confidence that they will loyally accept any policy that has the support of their governments and the peoples behind them, just as they have fully accepted the present arrangements under which the use of nuclear weapons, even in retaliation for a nuclear attack, requires advance and specific approval by the head of government.

An Allied posture of no-first-use would have one special effect that can be set forth in advance: it would draw new attention to

the importance of maintaining and improving the specifically American conventional forces in Europe. The principal political difficulty in a policy of no-first-use is that it may be taken in Europe, and especially in the Federal Republic, as evidence of a reduced American interest in the Alliance and in effective overall deterrence. The argument here is exactly the opposite: that such a policy is the best one available for keeping the Alliance united and effective. Nonetheless the psychological realities of the relation between the Federal Republic and the United States are such that the only way to prevent corrosive German suspicion of American intentions, under a no-first-use regime, will be for Americans to accept for themselves an appropriate share in any new level of conventional effort that the policy may require.

Yet it would be wrong to make any hasty judgment that those new levels of effort must be excessively high. The subject is complex, and the more so because both technology and politics are changing. Precision-guided munitions, in technology, and the visible weakening of the military solidity of the Warsaw Pact, in politics, are only two examples of changes working to the advantage of the Alliance. Moreover there has been some tendency, over many years, to exaggerate the relative conventional strength of the U.S.S.R. and to underestimate Soviet awareness of the enormous costs and risks of any form of aggression against NATO.

Today there is literally no one who really knows what would be needed. Most of the measures routinely used in both official and private analyses are static and fragmentary. An especially arbitrary, if obviously convenient, measure of progress is that of spending levels. But it is political will, not budgetary pressure, that will be decisive. The value of greater safety from both nuclear and conventional danger is so great that even if careful analysis showed that the necessary conventional posture would require funding larger than the three-percent real increase that has been the common target of recent years, it would be the best bargain ever offered to the members of the Alliance.

Yet there is no need for crash programs, which always bring extra costs. The direction of the Allied effort will be more important than its velocity. The final establishment of a firm policy of no-first-use, in any case, will obviously require time. What is important today is to begin to move in this direction.

v

The concept of renouncing any first use of nuclear weapons should also be tested by careful review of the value of existing

NATO plans for selective and limited use of nuclear weapons. While many scenarios for nuclear war-fighting are nonsensical, it must be recognized that cautious and sober senior officers have found it prudent to ask themselves what alternatives to defeat they could propose to their civilian superiors if a massive conventional Soviet attack seemed about to make a decisive breakthrough. This question has generated contingency plans for battlefield uses of small numbers of nuclear weapons which might prevent that particular disaster. It is hard to see how any such action could be taken without the most enormous risk of rapid and catastrophic escalation, but it is a fair challenge to a policy of no-first-use that it should be accompanied by a level of conventional strength that would make such plans unnecessary.

In the light of this difficulty it would be prudent to consider whether there is any acceptable policy short of no-first-use. One possible example is what might be called "no-early-first-use," such a policy might leave open the option of some limited nuclear action to fend off a final large-scale conventional defeat, and by renunciation of any immediate first use and increased emphasis on conventional capabilities it might be thought to help somewhat in reducing current fears.

But the value of a clear and simple position would be great, especially in its effect on ourselves and our Allies. One trouble with exceptions is that they easily become rules. It seems much better that even the most responsible choice of even the most limited nuclear actions to prevent even the most imminent conventional disaster should be left out of authorized policy. What the Alliance needs most today is not the refinement of its nuclear options, but a clear-cut decision to avoid them as long as others do.

VI

Who should make the examination here proposed? The present American Administration has so far shown little interest in questions of this sort, and indeed a seeming callousness in some quarters in Washington toward nuclear dangers may be partly responsible for some of the recent unrest in Europe. But each of the four of us has served in Administrations which revised their early thoughts on nuclear weapons policy. James Byrnes learned the need to seek international control; John Foster Dulles stepped back somewhat from his early belief in massive retaliation; Dwight Eisenhower came to believe in the effort to ban nuclear tests which he at first thought dangerous; the Administration of John

F. Kennedy (in which we all served) modified its early views on targeting doctrine; Lyndon Johnson shelved the proposed MLF when he decided it was causing more trouble than it was worth; and Richard Nixon agreed to narrow limits on anti-ballistic missiles whose large-scale deployment he had once thought indispensable. There were changes also in the Ford and Carter Administrations, and President Reagan has already adjusted his views on the usefulness of early arms control negotiations, even though we remain in a time of general stress between Washington and Moscow. No Administration should be held, and none should hold itself, to inflexible first positions on these extraordinarily difficult matters.

Nor does this question need to wait upon governments for study. The day is long past when public awe and governmental secrecy made nuclear policy a matter for only the most private executive determination. The questions presented by a policy of no-first-use must indeed be decided by governments, but they can and should be considered by citizens. In recent months strong private voices have been raised on both sides of the Atlantic on behalf of strengthened conventional forces. When this cause is argued by such men as Christoph Bertram, Field Marshal Lord Carver, Admiral Noel Gayler, Professor Michael Howard, Henry Kissinger, François de Rose, Theo Sommer, and General Maxwell Taylor, to name only a few, it is fair to conclude that at least in its general direction the present argument is not outside the mainstream of thinking within the Alliance. Indeed there is evidence of renewed concern for conventional forces in governments too.

What should be added, in both public and private sectors, is a fresh, sustained; and careful consideration of the requirements and the benefits of deciding that the policy of the Atlantic Alliance should be to keep its nuclear weapons unused as long as others do the same. Our own belief, though we do not here assert it as proven, is that when this possibility is fully explored it will be evident that the advantages of the policy far outweigh its costs, and that this demonstration will help the peoples and governments of the Alliance to find the political will to move in this direction. In this spirit we go on to sketch the benefits that could come from such a change.

VII

The first possible advantage of a policy of no-first-use is in the management of the nuclear deterrent forces that would still be

necessary. Once we escape from the need to plan for a first use that is credible, we can escape also from many of the complex arguments that have led to assertions that all sorts of new nuclear capabilities are necessary to create or restore a capability for something called "escalation dominance"—a capability to fight and "win" a nuclear war at any level. What would be needed, under no-first-use, is a set of capabilities we already have in overflowing measure—capabilities for appropriate retaliation to any kind of Soviet nuclear attack which would leave the Soviet Union in no doubt that it too should adhere to a policy of no-first-use. The Soviet government is already aware of the awful risk inherent in any use of these weapons, and there is no current or prospective Soviet "superiority" that would tempt anyone in Moscow toward nuclear adventurism. (All four of us are wholly unpersuaded by the argument advanced in recent years that the Soviet Union could ever rationally expect to gain from such a wild effort as a massive first strike on land-based American strategic missiles.)

Once it is clear that the only nuclear need of the Alliance is for adequately survivable and varied *second strike* forces, requirements for the modernization of major nuclear systems will become more modest than has been assumed. In particular we can escape from the notion that we must somehow match everything the rocket commanders in the Soviet Union extract from their government. It seems doubtful, also, that under such a policy it would be necessary or desirable to deploy neutron bombs. The savings permitted by more modest programs could go toward meeting the financial costs of our contribution to conventional forces.

It is important to avoid misunderstanding here. In the conditions of the 1980s, and in the absence of agreement on both sides to proceed to very large-scale reductions in nuclear forces, it is clear that large, varied, and survivable nuclear forces will still be necessary for nuclear deterrence. The point is not that we Americans should move unilaterally to some "minimum" force of a few tens or even hundreds of missiles, but rather that once we escape from the pressure to seem willing and able to use these weapons first, we shall find that our requirements are much less massive than is now widely supposed.

A posture of no-first-use should also go far to meet the understandable anxieties that underlie much of the new interest in nuclear disarmament, both in Europe and in our own country. Some of the proposals generated by this new interest may lack practicability for the present. For example, proposals to make

“all” of Europe—from Portugal to Poland—a nuclear-free zone do not seem to take full account of the reality that thousands of long-range weapons deep in the Soviet Union will still be able to target Western Europe. But a policy of no-first-use, with its accompaniment of a reduced requirement for new Allied nuclear systems, should allow a considerable reduction in fears of all sorts. Certainly such a new policy would neutralize the highly disruptive argument currently put about in Europe: that plans for theater nuclear modernization reflect an American hope to fight a nuclear war limited to Europe. Such modernization might or might not be needed under a policy of no-first-use; that question, given the size and versatility of other existing and prospective American forces, would be a matter primarily for European decision (as it is today).

An effective policy of no-first-use will also reduce the risk of conventional aggression in Europe. That risk has never been as great as prophets of doom have claimed and has always lain primarily in the possibility that Soviet leaders might think they could achieve some quick and limited gain that would be accepted because no defense or reply could be concerted. That temptation has been much reduced by the Allied conventional deployments achieved in the last 20 years, and it would be reduced still further by the additional shift in the balance of Allied effort that a no-first-use policy would both permit and require. The risk that an adventurist Soviet leader might take the terrible gamble of conventional aggression was greater in the past than it is today, and is greater today than it would be under no-first-use, backed up by an effective conventional defense.

VIII

We have been discussing a problem of military policy, but our interest is also political. The principal immediate danger in the current military posture of the Alliance is not that it will lead to large-scale war, conventional or nuclear. The balance of terror, and the caution of both sides, appear strong enough today to prevent such a catastrophe, at least in the absence of some deeply destabilizing political change which might lead to panic or adventurism on either side. But the present unbalanced reliance on nuclear weapons, if long continued, might produce exactly such political change. The events of the last year have shown that differing perceptions of the role of nuclear weapons can lead to destructive recriminations, and when these differences are compounded by understandable disagreements on other matters such

as Poland and the Middle East, the possibilities for trouble among Allies are evident.

The political coherence of the Alliance, especially in times of stress, is at least as important as the military strength required to maintain credible deterrence. Indeed the political requirement has, if anything, an even higher priority. Soviet leaders would be most pleased to help the Alliance fall into total disarray, and would much prefer such a development to the inescapable uncertainties of open conflict. Conversely, if consensus is re-established on a military policy that the peoples and governments of the Alliance can believe in, both political will and deterrent credibility will be reinforced. Plenty of hard questions will remain, but both fear and mistrust will be reduced, and they are the most immediate enemies.

There remains one underlying reality which could not be removed by even the most explicit declaratory policy of no-first-use. Even if the nuclear powers of the Alliance should join, with the support of other Allies, in a policy of no-first-use, and even if that decision should lead to a common declaration of such policy by these powers and the Soviet Union, no one on either side could guarantee beyond all possible doubt that if conventional warfare broke out on a large scale there would in fact be no use of nuclear weapons. We could not make that assumption about the Soviet Union, and we must recognize that Soviet leaders could not make it about us. As long as the weapons themselves exist, the possibility of their use will remain.

But this inescapable reality does not undercut the value of a no-first-use policy. That value is first of all for the internal health of the Western Alliance itself. A posture of effective conventional balance and survivable second-strike nuclear strength is vastly better for our own peoples and governments, in a deep sense more civilized, than one that forces the serious contemplation of "limited" nuclear scenarios that are at once terrifying and implausible.

There is strong reason to believe that no-first-use can also help in our relations with the Soviet Union. The Soviet government has repeatedly offered to join the West in declaring such a policy, and while such declarations may have only limited reliability, it would be wrong to disregard the real value to both sides of a jointly declared adherence to this policy. To renounce the first use of nuclear weapons is to accept an enormous burden of responsibility for any later violation. The existence of such a clearly declared common pledge would increase the cost and risk of any

sudden use of nuclear weapons by either side and correspondingly reduce the political force of spoken or unspoken threats of such use.

A posture and policy of no-first-use also could help to open the path toward serious reduction of nuclear armaments on both sides. The nuclear decades have shown how hard it is to get agreements that really do constrain these weapons, and no one can say with assurance that any one step can make a decisive difference. But just as a policy of no-first-use should reduce the pressures on our side for massive new nuclear forces, it should help to increase the international incentives for the Soviet Union to show some restraint of its own. It is important not to exaggerate here, and certainly Soviet policies on procurement are not merely delayed mirror-images of ours. Nonetheless there are connections between what is said and what is done even in the Soviet Union, and there are incentives for moderation, even there, that could be strengthened by a jointly declared policy of renouncing first use. At a minimum such a declaration would give both sides additional reason to seek for agreements that would prevent a vastly expensive and potentially destabilizing contest for some kind of strategic advantage in outer space.

Finally, and in sum, we think a policy of no-first-use, especially if shared with the Soviet Union, would bring new hope to everyone in every country whose life is shadowed by the hideous possibility of a third great twentieth-century conflict in Europe—conventional or nuclear. It seems timely and even urgent to begin the careful study of a policy that could help to sweep this threat clean off the board of international affairs.

IX

We recognize that we have only opened this large question, that we have exhausted no aspect of it, and that we may have omitted important elements. We know that NATO is much more than its four strongest military members; we know that a policy of no-first-use in the Alliance would at once raise questions about America's stance in Korea and indeed other parts of Asia. We have chosen deliberately to focus on the central front of our central alliance, believing that a right choice there can only help toward right choices elsewhere.

What we dare to hope for is the kind of new and widespread consideration of the policy we have outlined that helped us 15 years ago toward SALT I, 25 years ago toward the Limited Test Ban, and 35 years ago toward the Alliance itself. Such consideration can be made all the more earnest and hopeful by keeping in mind one simple and frequently neglected reality: there has been no first use of nuclear weapons since 1945, and no one in any country regrets that fact. The right way to maintain this record is to recognize that in the age of massive thermonuclear overkill it no longer makes sense—if it ever did—to hold these weapons for any other purpose than the prevention of their use.

From The Wall Street Journal, July 9, 1982.

No First Use? Germans Answer Bundy & Co.

By NEIL ULMAN

In the debate over nuclear weapons, no people have more reason than the Germans to fear the nuclear horror and wish it would somehow pass from them. Both NATO and Warsaw Pact forces stockpile battlefield nuclear weapons in Europe. As the Germans know only too well, any war that erupted there would be fought on their territory. Their foreign and defense policies are aimed at preventing that.

Yet they reacted with anxiety and dismay last April when four prominent Americans proposed in an article in *Foreign Affairs Quarterly* that the United States work toward a policy renouncing any first use of nuclear weapons in Europe. Foreign Minister Hans-Dietrich Genscher immediately reaffirmed Germany's adherence to the NATO strategy of flexible response. That strategy contemplates the use of nuclear weapons if it appeared that NATO's outnumbered forces in Europe were in danger of being overrun by a conventional Warsaw Pact attack.

A German government spokesman privately deplored the "no first use" article by McGeorge Bundy, former special assistant for national security affairs to Presidents Kennedy and Johnson; George F. Kennan, former U.S. ambassador to the Soviet Union; Robert S. McNamara, former secretary of defense, and Gerard Smith, chief U.S. SALT negotiator from 1969 to 1972. A top German foreign ministry official saw "great problems" caused by the article, and a parliamentary leader promised there would be a German response.

The Germans have now replied. Karl Kaiser, director of Germany's top foreign policy research institute; Georg Leber, Social Democratic member and vice president of the parliament (and a former defense minister); Alois Mertes, a Christian Democrat and member of the parliamentary foreign affairs committee, and Franz-Josef Schulze, a retired general and former commander of NATO's Central European forces, have all joined in another *Foreign Affairs* article to reject the idea of "no first use." However pacific its intent, they say, such a policy would only "make war more probable."

While they are writing in their private capacities, their article is "very close to the thinking of the German government," says Deputy Foreign Minister Peter Corterier who traveled through the U.S. last week on government-business.

The thinking is worth having. More than a discussion of military strategy or arms control, it is also a telling commentary on German-American relations. It is the troubled confidence in those relations that spills over, however indirectly, in disputes over East-West trade and the Soviet gas pipeline as both Germans and Americans compulsively examine each nation's commitment to the other. For in ways that Messrs. Bundy & Co. may not have imagined and that most Americans might initially find difficult to fathom, the Germans have found the political implications of "no first use" to be "profoundly disturbing."

"No first use" is a military loser for NATO, and that may explain why the Soviets have been suggesting it for years and why it was a highlight of Leonid Brezhnev's recent disarmament message to the United Nations.

As the German authors explain, a "no first use" pledge by NATO would concede a huge military advantage in Europe to the numerically superior Warsaw Pact. "Even in the case of a large-scale conventional attack against the entire European NATO territory, the Soviet Union could be certain that its own land would remain a sanctuary (from nuclear response) so long as it did not itself resort to nuclear weapons," the Germans write. (Elsewhere, in another *Foreign Affairs* article, Gen. Bernard Rogers, NATO's Supreme European commander, points out another military disadvantage of "no first use." It would give up "the tactical advantage to the defender" wherein a nuclear threat acts as "a restraint on the tactical massing of Warsaw Pact forces preparatory to an assault.")

But more immediate and profound than the military implications of "no first use" would be its political consequences, say the German authors. It would, they charge, "... destroy the confidence of Europeans and especially of Germans in the European-American Alliance as a community of risk and would endanger the strategic unity of the Alliance and the security of Western Europe."

Therein, of course, lies the diplomatic value to Soviet policy of "no first use." Even if no shot is ever fired, "no first use" could be a wedge to drive between the U.S. and Germany.

The German authors' warning goes to the heart of the current malaise in Germany over the American commitment to the alliance. "German debate over the American nuclear commitment to defend Europe is like the Loch Ness Monster,"

says Germany's Mr. Corterier. "It has to come up from time to time."

Americans have consistently risked hundreds of thousands of troops and billions of dollars in this century to defend Europe, says the junior minister. What is new in the age of Soviet-American strategic nuclear parity "is that the U.S. risks its very existence for Europe." It is natural for Europeans to wonder from time to time if the U.S. really means that and to look for reassurance that it does.

In the "no first use" proposal, however, the German authors writing in *Foreign Affairs* saw "a withdrawal of the U.S. from its previous guarantee . . . at stake." The Germans find any such suggestion particularly difficult to deal with at a time when their government is supporting a NATO decision to deploy medium-range nuclear missiles in Germany should current Soviet-American arms control talks on those missiles fail. With NATO asking the Germans to take more risk on their soil, any suggestion that the U.S. would wriggle out of its share of risk is most unhelpful.

Finally, say the Germans, uncoupling the risk of nuclear attack from conventional attack can only make conventional war more thinkable, therefore more likely. The alternative, a buildup of conventional NATO forces to match the Warsaw Pact, would leave Germany "transformed into a large military camp for an indefinite period of time." Neither the German economy nor German society could stand that, they say. "And even if we had a conventional balance, we would still need the link with the American nuclear umbrella," says Mr. Corterier.

The arms control debate isn't simple and it isn't over. But there is instructive paradox for peace marchers in the fact that those who face the nuclear horror most starkly find only more danger in "no first use," one of the season's catchier quick fixes.

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