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Colin S. Gray

A commitment by the Administration to ensure that the strategic balance is not allowed to change dramatically over the coming decade may well provide the margin that the White House will need in winning congressional support for its policies at SALT. But an acceleration of the American defense effort will not solve a different class of problems posed by the new accord, problems that may not figure significantly in the Senate's review of SALT but could have a profound impact on superpower arms control.

As the cruise missile issue has made abundantly clear, the ability of the two superpowers to continue to discuss their own strategic relationship at SALT without reference to the possible impact that agreements could have on the security of their allies is rapidly declining. New classes of highly flexible weapons—possessing both strategic and tactical attributes—have made it no longer possible for Washington and Moscow to “compartmentalize” their strategic relationship at SALT. Thus, it is no accident that the major stumbling blocks to agreement following the Vladivostok summit were weapons, like the cruise missile or the Soviet Backfire bomber, that did not easily fit into the categories erected by strategic thinkers a decade ago. These were weapons that seemed to affect primarily theater military balances—in Europe or in Asia—but their ability also to perform strategic missions placed a high premium on including them in SALT.

The Carter Administration has finessed the cruise missile problem by constructing the three-year protocol. But this is not a solution to the dilemma, it simply puts off the matter while some means is sought to find a formula for reconciling Soviet, American and West European interests reflected in the cruise missile issue. This will not be an easy task.

A more permanent arms control solution to the cruise missile problem will require both superpowers to begin addressing not only the strategic balance, but the wider NATO-Warsaw Pact nuclear balance. Whether cruise missiles, the Backfire, the new Soviet SS-20 and the British and French nuclear forces should be introduced into SALT or made the subject of yet another arms control forum is a question that has only begun to be asked. But an answer will be necessary before the end of the decade. Thus, both the Administration and critics of the proposed agreement should ensure that the coming debate does not merely focus on its details and possible military impact. If the SALT process itself is not put under scrutiny, superpower arms control may not survive beyond the protocol.

## THE STRATEGIC FORCES TRIAD: END OF THE ROAD?

**B**y the early to mid-1980s, the United States will be unable to repose confidence in the ability of all save a small fraction of its silo-housed missile force to ride out a Soviet first nuclear strike. The possible implications of this early predictable development, and the policy choices that it poses for the U.S. government, are the subjects of this article.

For nearly 20 years the United States has maintained a triad of strategic forces, comprising silo-housed intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and manned penetrating bombers. An entire leg of this triad is approaching mass obsolescence—as currently deployed in fixed hardened sites. Although the growing debate over the meaning of silo vulnerability is focused heavily upon the issue of whether or not a follow-on ICBM, called MX (missile experimental), should be developed and procured—and if so, how it should be deployed—the MX debate is operating as a catalyst to open, or reopen, discussion of a wide-ranging set of strategic and political issues. At stake in, and closely related to, the MX/ICBM debate are matters of far deeper significance than might immediately be discerned. At one level, it is the technical merits of a particular weapon system, in all aspects, that are being debated—but behind the technical issues lurk such questions as the following: What will the United States ask of its strategic forces in the 1980s and 1990s (i.e., what quantity and quality of strategic posture will be appropriately supportive of American foreign policy)? How do we deter the Soviet Union in plausible (or not implausible) crises and conflicts in the 1980s and 1990s? How do the strategic forces contribute to that deterrence?

To a major degree, technical answers must be driven by broad political-military choice. Our foreign policy goals, be they more or less expansive than in the past, should point to a prudent strategic

Colin S. Gray is a member of the professional staff of the Hudson Institute and was formerly Assistant Director of the International Institute for Strategic Studies, in London. He is the author of *The Soviet-American Arms Race*, the forthcoming book, *Strategic Studies and Public Policy: The American Experience*, and other works.

doctrine for the United States—and such a prudent strategic doctrine, in turn, should indicate greater or lesser interest in particular kinds of strategic capability.

Moreover, the principal (at least potential) adversary cannot sensibly be ignored while Americans debate what *they* would like to do vis-à-vis their strategic nuclear posture. To some highly debatable degree, any U.S. strategic posture has to be relevant to Soviet anxieties, defined, as best we can determine, by Soviet officials and analysts. It should never be forgotten that American strategic forces are about the business of posing not-credible negative sanctions in Soviet minds and, if need be, of imposing such sanctions in action. The current Director of the U.S. Arms Control and Disarmament Agency, Paul C. Warnke, has argued that the United States should not invest in strategic capabilities that mirror Soviet programs, if such capabilities are held *by us* to be undesirable.<sup>1</sup> While there is some sense in this argument, it would be foolish, and could prove fatal, for the United States to neglect the development of the kind of programs that have high leverage in Soviet estimation.

## II

Many people, not excluding some of those knowledgeable about military affairs in general, have great difficulty comprehending what strategic nuclear forces are all about. Their analysis is viewed as an arcane exercise almost totally removed from real political life—that is, in essence there are two kinds of military power, usable (ground forces, tactical air, naval) and unusable (nuclear, and particularly strategic nuclear). Yet it happens to be the case that the health of the strategic nuclear balance is essential for the effectiveness of U.S. foreign and defense policies as a whole.

Alas for the views of skeptics of this argument, the logic works in both directions. First, behind American foreign policy, worldwide, is the *ultima ratio* of resort to strategic nuclear weapons: if American and allied forces face the possibility or imminent prospect of stark defeat at any point around the periphery of Eurasia when confronted by, say, locally applied Soviet military power, the existence of our strategic nuclear forces should enable us to threaten believably, or in the last resort to employ, a major measure of escalation in pursuit of an improved outcome at a

higher level of violence. Second, should the Soviet Union face defeat in Europe (improbable though that must be judged to be), the eastern Mediterranean, or the Persian Gulf, it might be tempted seriously to employ strategic nuclear forces for an improved outcome—depending upon the quality of the local issues, their broader ramifications (perhaps, for Soviet reputation), and *the perceived state of the strategic nuclear balance*. This, of course, dramatizes and simplifies the likely range of choice. In practice, a Soviet Union in dire straits, in some local imbroglio involving the United States, would probably discern more alternatives than either acquiescence in a local defeat or escalation to a (superpower) homeland-to-homeland nuclear exchange. Nonetheless, the logic holds.

The foreign policy relevance of strategic nuclear forces is most easily, and credibly, demonstrated with reference to NATO. Barring some noteworthy changes in current thought and practice, the time is rapidly approaching when the NATO strategy of flexible response—or flexible escalation as Harlan Cleveland was sufficiently unkind or honest to characterize it<sup>2</sup>—simply should not work. Until the present day, widely acknowledged deficiencies in NATO's local stopping power have been rationalized by reference to the total panoply of Western deterrent potential. Should NATO be losing a war in Europe in a quite unambiguous way, having employed conventional and theater nuclear forces, then the United States would have (initially, probably in a severely limited way) resort to strategic nuclear weapons in an endeavor to restore deterrence—as official jargon will have it. When NATO's basic, and still authoritative, strategy paper, MC-14/3, was negotiated in the mid-1960s, the United States enjoyed a very healthy strategic nuclear imbalance in its favor. A NATO strategy that rested, *in extremis*, upon deliberate, controlled escalation was very sensible. However, simply possessing large and reasonably diverse strategic nuclear forces does not, ipso facto, confer the needed quality of deterrence. Dramatic and apparently enduring trends in the strategic balance should matter for the integrity of NATO's strategic concept of flexible response/escalation.

By and large, participants in the current debate over strategic forces issues agree that the trend in the strategic nuclear balance is adverse: nobody, to my knowledge, is claiming that the United States is not dramatically less well situated, in strategic nuclear terms, in 1978 than it was in 1966-67. Also, after a little thought,

<sup>1</sup> See Mr. Warnke's testimony in *Senate Arms Limitation Agreements*. Hearings before the Senate Committee on Foreign Relations, 92nd Cong., 2nd sess., June 28, 1972. Washington: CPO, 1972, p. 181; and his article, "Apes on a Treadmill," *Foreign Policy*, Spring 1975, pp. 12-29.

<sup>2</sup> See NATO: *The Transatlantic Bargain*. New York: Harper and Row, 1970, p. 82.

very few people would dissent from the thesis that the critically needed backstop to NATO strategy is a United States that could, not incredibly, threaten first (very limited) employment of strategic nuclear weapons. Leaving aside contentious details over the pace of the adverse trend in the strategic nuclear balance, it is reasonably clear that strategic forces can, in principle, be relevant to: the deterrence of crises; the deterrence of inimical behavior in crises; the control of the kind of military "breakout" that might be attempted in desperation from a crisis; and the character and terms of settlement of a war that emerged out of a crisis.

Back in 1974, Henry Kissinger questioned the political utility of strategic nuclear forces when he asked, "What in the name of God is strategic superiority?"<sup>3</sup> It was a pertinent question and it merits a direct answer. Strategic superiority translates into the ability to control a process of deliberate escalation in pursuit of acceptable terms for war termination. The United States would have a politically relevant measure of strategic superiority if it could escalate out of a gathering military disaster in Europe, reasonably confident that the Soviet Union would be unable or unwilling to match or to overmatch the American escalation. It follows that the United States has a fundamental foreign policy requirement that its strategic nuclear forces provide credible limited first-strike options.

Indeed such a requirement relates to many other potential conflict or confrontation situations and areas. Given the geopolitical asymmetries between the two superpowers (the Soviet Union having, in effect, interior lines of communication save toward the Western Hemisphere), as well as growing Soviet military outreach, it is more and more likely that it will be the United States that first feels the acute need to escalate out of a local theater for an improved outcome.<sup>4</sup>

This discussion could be misleading, in that it has dwelt upon the foreign policy relevance of actual strategic nuclear employment, or of crises that threaten such employment. In practice, while acute confrontations arise only rarely, the strategic posture "works" day by day pervasively in diplomacy. Americans' perceptions of their country's relative standing, perceptions by others, and the American sense of what risks are involved in particular possible enterprises—all rest, in part, though in ways that are incalculable, upon assessments of the state of the strategic nuclear

<sup>3</sup> In "News Conference at Moscow," July 3, "Department of State Bulletin," July 29, 1974, p. 215.

<sup>4</sup> A seminal discussion of this subject is in Paul H. Nitze, "Deterring Our Deterrent," *Foreign Policy*, Winter 1976-77, pp. 195-210.

balance. Nobody knows, with any confidence, how a World War III would terminate. Would there be a victor? Does such a concept make sense? But everybody knows which way the balance is tending, and this knowledge contributes to a constricting of American freedom of foreign policy action. Those who are skeptical of the importance of strategic nuclear forces have to explain why it is that the Strategic Arms Limitation Talks (SALT) are, by universal agreement, the centerpiece of East-West diplomatic activity, and really have become the pacer for, and symbolic of, the state of health of East-West relations as a whole. Also, skeptics have to explain why it is that the Soviet Union, which is not known for its neglect of the political meaning of military power, has been competing so vigorously, and expensively, in this region for more than ten years.

III

More than two years ago, in the pages of this journal, Paul Nitze wrote:

... the trends in relative military strength are such that, unless we move promptly to reverse them, the United States is moving toward a posture of minimum deterrence in which we would be conceding to the Soviet Union the potential for a military and political victory if deterrence failed.<sup>5</sup>

The situation is worse today than it was when those words were written. The momentum of the Soviet strategic forces build-up has continued, while the quality of Soviet weapons (and particularly the accuracy of Soviet ICBMs) is better than was predicted then.<sup>6</sup> That much is not in dispute.

In terms of the concept discussed in the preceding section—escalation dominance, if you will—the implications are chilling. On current trends in the strategic balance, an American President should, prudently, be deterred from initiating strategic nuclear employment; should he proceed nonetheless, the war would very likely terminate after an almost wholly counter-military exchange (which the Soviet Union should win unequivocally) because the United States could not possibly secure an improved war outcome by initiating attacks against Soviet industry and (through co-location) population. If, as seems plausible, it would likely be the

<sup>5</sup> "Assuring Strategic Stability in an Era of Deterrence," *Foreign Affairs*, January 1976, p. 227.

<sup>6</sup> For example, it has been claimed that in their most recent ICBM tests the Soviet Union achieved an accuracy of close to 0.1 n.m. (or 600 feet). Clarence A. Robinson, Jr., "Soviet Boost ICBM Accuracy," *Aviation Week and Space Technology*, April 3, 1978, pp. 14-16.

United States that was leading the escalation process—given that some theater disaster needed to be reversed—it is very probable indeed that the United States would be challenging the Soviet Union to a competition in risk-running and damage acceptance that the United States could not possibly win. If the Soviet Union will be able, by the mid-1980s, to effect dramatically greater prompt counter-military damage than could the United States, and if Soviet civil defense programs are only half as effective as Leon Gouré and T. K. Jones claim,<sup>7</sup> then it takes a very talented fiction writer to invent acute crises for the 1980s wherein the United States either chooses to initiate nuclear employment, or secures some political advantage from such employment.

If this argument is valid, it means that the Soviet Union would have effectively neutralized the U.S. strategic deterrent, thereby holding the ring square in local conflicts—would have the capability to escalate to strategic nuclear use itself, should local events develop very adversely—and would have a not-implausible concept for a politically meaningful victory in a homeland-to-homeland nuclear war. Many of our more dovish commentators like to wax lyrical on the subject of the deficiencies of the Soviet civil defense program. What those commentators have difficulty explaining is how the United States could rationally initiate attacks upon Soviet urban areas in any event.

As of mid-1978, it is quite evident that the Soviet Union is determined to pose (effectively) a total threat to the silo-housed American ICBM force. There is no other plausible explanation for the Soviet ICBM modernization program. Soviet fourth-generation ICBMs (the SS-16s, -17s, -18s and -19s) are replacing older ICBMs at the rate of 125–150 a year, while a fifth generation is nearing the stage of development when it will be flight-tested.

The SALT process has been, and promises to be, of negative value for the survivability of American silo-housed ICBMs.<sup>8</sup> SALT I, signed in May 1972, really was about two things in contemporary official American estimation. First, and most important, it set the seal upon, and was centrally symbolic of, superpower détente, and ensured the reelection of Richard Nixon. (In syllogistic logic: if SALT means détente, and if détente means "peace," how can one be against SALT?) Second, at the level of strategic reasoning,

SALT I was, supposedly, an arrangement whereby the United States surrendered a greatly superior antiballistic missile technology (for the defense of ICBM silos), in return for a severe arresting of the pace of the Soviet offensive threat to American ICBM silos. Unfortunately, the arrangement did not work. In particular while SALT I effected a freeze on the construction of ICBM launchers (i.e., silos and their ancillary equipment), it did nothing to constrain qualitative improvements.<sup>9</sup> American ABM technology was indeed arrested abruptly, but the Soviet ICBM threat to American silos accelerated. The SALT process, at present, is irrelevant or negative in its impact upon strategic stability, essentially because the Carter Administration gives every evidence of not understanding that the central problems it faces relate not to arms control but to basic defense posture.<sup>10</sup>

When Paul Nitze wrote of "Assuring Strategic Stability in an Era of Détente," an unacceptably high threat to American silos seemed nearly ten years in the future, and all major strategic options were open. The situation is very different in mid-1978. An unacceptable level of threat to our ICBMs could mature as early as 1982-83 (which leaves very minimal lead time for appropriate offsetting action); the B-1 manned bomber has been cancelled (which means that the Soviet Union should face far fewer problems coping with U.S. penetrating manned bombers and cruise missile carriers); the MX ICBM timetable—for an initial operating capability—has been slipped from late 1983 to early 1987 (if ever); and the strategic cruise missile program has been confined to deployment on airborne platforms, and faces severe range constraints in SALT. Interacting very negatively with those facts is the prospect of a comprehensive nuclear test ban—which cannot fail to operate to the American disadvantage. If nuclear testing is prohibited, each side should be inclined to stick, for reasons of reliability, to more conservative nuclear weapon designs, which consume more volume and payload than do designs (not yet fully tested) that are pushing at the frontier of the state of the art. The Soviet Union, given the physical size of its strategic weapon systems, has all the

<sup>7</sup> Leon Gouré, *War Survival in Soviet Strategy: USSR Civil Defense*, Washington, D.C.: Center for Advanced International Studies (University of Miami), 1976; and T. K. Jones, testimony in *Defense Industrial Base: Industrial Preparedness and Nuclear War Survival*, Hearings before the Joint Committee on Defense Production, U.S. Congress, 94th Cong., 2nd sess., Washington: GPO, 1976, Part I.

<sup>8</sup> This point is now conceded by Secretary Harold Brown, *Department of Defense Annual Report: Fiscal Year 1979*, February 2, 1978, Washington: GPO, 1978, p. 106.

<sup>9</sup> A different and erroneous impression was conveyed by officials before Congress in 1972. It was argued that the identification of "heavy" and "light" ICBM categories, with the latter constrained (in U.S. interpretation) to a throw-weight no larger than that of the SS-11—2,000 lbs. at most—was an important achievement in the attenuation of the threat to the silos. The worth of this SALT achievement became very evident by 1975 when the Soviet Strategic Rocket Forces began deploying "light" ICBMs (the SS-19) with a throw-weight of 7,000–7,500 lbs.

<sup>10</sup> However, it would be unjust to level all criticism at the current Administration. President Carter's negotiating leverage in SALT is hampered by a decade of American underinvestment in strategic nuclear forces.

payload necessary to accommodate such conservative designs—the United States does not.

No single indicator of relative strategic prowess can be used as *the* evidence for one, as opposed to a rival, trend in the strategic balance. But on every important indicator the Soviet Union is either ahead—as in megatons, “equivalent megatonnage” (a measure of surface blast damage potential), missile throw-weight, and numbers of strategic nuclear launch vehicles (SNLVs)—or is catching up rapidly, as in missile accuracy and numbers of warheads.<sup>11</sup> In dynamic as opposed to static “bean counting” terms, the prospect that we face in the 1980s is a Soviet Union that can disarm us forcibly of the land-based ICBM leg of our strategic triad, and which might possibly be able to hold down its civilian casualties to a level below that suffered in the Great Patriotic War of 1941-45—even if the United States should proceed all the way up the escalation ladder.

On current trends, the former prediction is close to certain, the latter is plausible. And SALT II, as currently designed, has no impact of merit for future stability upon these arguments. If, as reported, SALT II specifies a common SNLV ceiling of 2,250, a common MIRV (multiple, independently targetable reentry vehicle) launcher ceiling of 1,200, and a common MIRVable ICBM ceiling of 820, the enormous throw-weight in the Soviet ICBM force<sup>12</sup>—with its clear implication for subdivision for MIRVing—provides capacity to spare for the evolution of a total threat against American hard targets (missile silos and command-and-control facilities).

#### IV

There are no cheap and clever solutions to the problem that Soviet theoretical silo-killing prowess poses. It is possible that the obsolescence of the American silo-housed ICBM force should be viewed not as a problem, but rather as a historic arms control opportunity. Unfortunately for the promise in this line of thought, the United States is not, at present, developing a parallel threat against Soviet ICBM silos on a scale at all likely to promote enthusiasm in Moscow for a major SALT-negotiated drawdown in

<sup>11</sup> See Paul H. Nize's press conference statement, "Current SALT II Negotiating Posture," Washington, D.C.: The Committee on the Present Danger, March 28, 1978, particularly the appendix.

<sup>12</sup> By the early 1980s, the Soviet ICBM force should enjoy roughly a 5:1 advantage in throw-weight over its American "equivalent" (ten million lbs.: two million lbs.). In strategic calculations throw-weight is not everything, but this is not a trivial advantage—particularly since Soviet ICBM accuracy is approaching that of the United States.

strategic forces. (Indeed, the recent SALT II negotiating record illustrates unambiguously the fact that the Soviet Union is interested in effecting only the least level of reduction in offensive forces that it can secure, and in delaying the execution of such a reduction as long as possible.)

As of mid-1978, the United States cannot address the silo-vulnerability problem in SALT—because that problem is not, as yet, perceived in Moscow to be a common one. Silo vulnerability, to refer to a general point made earlier, does not become an arms control problem, capable of being addressed seriously in SALT, until it is first approached as an urgent defense policy problem. When the Soviet Union observes that the United States is in the process of both solving its silo-vulnerability problem, and—as a consequence perhaps—is developing a major potential threat to Soviet silo-housed ICBMs, then silo vulnerability (and the character of land-based missile forces more generally) should become an arms control issue relevant to SALT.

Generically, the United States has four classes of alternatives vis-à-vis the threat that Soviet fourth-generation ICBMs will pose to the 1,054 Minuteman and Titan ICBMs.<sup>13</sup> The United States could: seek to defend its silos; threaten to launch its ICBMs on positive warning and (some) assessment of the weight and character of attack (a policy styled LOA, or launch on assessment); choose to phase out its ICBM force and rely instead upon a dyad of SLBMs and manned bombers/cruise missile carriers; or seek to preserve the strategic triad by means of land-mobile deployment of ICBMs. Three of these options have major SALT connections (defend silos; move to a dyad; and land-mobile ICBMs), but defense planners today should not presume that they will be SALT-constrained. It is prudent to assume that arms control inhibitions, as negotiated in SALT II, will apply. But it is also sensible to consider what might be done if the Senate should fail to ratify the treaty (or the Protocol), or on the expiration of a three-year Protocol that may, on present indications, ban deployment and testing but not development of a land-mobile ICBM.

At the present time, the option of defending ICBM silos is not a serious contender for the solution to the silo-vulnerability problem. Aside from the many technical issues involved, this option would involve abrogating, or fundamentally renegotiating, the ABM Treaty of 1972. Should the strategic offensive forces side of SALT be arrested by a failure of the Senate to ratify SALT II, then it is

<sup>13</sup> I have discussed this subject comprehensively in *The Future of Land-Based Missile Forces*, Adelphi Paper No. 140, London: The International Institute for Strategic Studies, Winter 1977.

just possible that the ABM Treaty might be a casualty of the general political fallout that would ensue. However, the ballistic missile defense (BMD) option has relatively few strong advocates in 1978. This may, to be sure, be more a matter of fashions in ideas than it is of detailed analysis. Though it is widely believed that the scale and sophistication of the offensive threat has now outrun the capabilities of active defenses, this belief probably rests on untested assumptions, about resource allocations in particular. If the United States were willing to devote to ballistic missile defense (BMD) the kind of funding over many years that the MX ICBM might well require, it is conceivable that probable Soviet attack levels for the late 1980s and 1990s could be defeated, at least in the sense of limiting sharply their counter-military effect. Indeed it is even possible that, as we approach the end of the century, the technological balance between offense and defense might be overturned in favor of the defense as a consequence of deployment of space-based laser BMD technology that could attack ICBMs in flight before they released their MIRVs.

However, for the 1980s, any ballistic missile system promises to be more a complication for the attack than a high-confidence defense.<sup>14</sup> Moreover, if the ABM Treaty regime were to end, the Soviet ability to deploy such systems rapidly in the 1980s is probably going to be far more impressive than the American ability to do so. Certainly even SALT I has brought no reduction in the burden of peacetime defense expenditures on the U.S.S.R.—it spent more on strategic forces in 1972-77 than it had in the period 1967-72! And, more specifically, the severe braking effect of the ABM Treaty upon American research on BMD may be contrasted with an increase in Soviet activity in that area.

The second option, toward which the United States is edging, *faut de mieux*, is to adopt the ICBM firing tactic of launch on assessment (LOA). Senior Carter Administration defense officials have been uttering more and more friendly references to this tactic. For a country with a \$2 trillion GNP and a defense budget of more than \$120 billion—after nearly a generation's warning that the silo-vulnerability problem was coming—to be compelled even to think very seriously about LOA is little short of a disgrace.

For LOA is potentially accident-prone (what if the warning signals, and even the early stages of an attack, are misassessed?), is vulnerable to deliberate Soviet degradation of American strategic early warning facilities, and—in effect—would represent an all-

<sup>14</sup> This might not be true, were the United States permitted to deploy an ABM with multiple warheads.

time nadir in strategic thought and planning (against what do we launch?). The Congress should discourage the slide toward acceptance of this option, and instead insist upon some more intelligent and less accident-prone resolution of the problem. The most that can be said for the several variants of launch on (radar) warning is that it is healthy that Soviet leaders have, in the back of their minds, a residual fear that "the United States just might do it." Therefore, the proper place of LOA in American strategy is of the "we do not rule it out" variety. But, LOA should not be thought of as anything save a desperate quick tactical fix, and a small supportive element contributing to useful uncertainty in Soviet defense planning.

v

The last two options are the serious contenders for determination of the character of the U.S. strategic posture through the year 2000: namely, a move to a dyad—*withdrawing the ICBM force from the active inventory—or a move to a survivable land-based missile deployment*. A dyad vs. triad debate is waiting just over the horizon to convulse the American defense and arms control community. At the present time the debate is focused upon the MX follow-on ICBM, and particularly its preferred basing mode. Opponents of the triad structure may well succeed in effecting a move to a strategic dyad, by means of aborting the birth of MX—and hence may be able to sidestep fundamental strategic issues that should be addressed in a dyad-triad debate.

The case for a dyad of SLBMs and air-breathing elements (penetrating bombers and cruise missiles) is supported by arguments of greater and lesser degrees of sophistication. At its most simple-minded, the dyad case amounts to the observation that a large imbalance in silo-killing protection, in favor of the Soviets, can be neutralized—as by magic—if we remove the silos from the force posture. Great logical skill is not required in order to perceive that this argument (to stretch a term) is basically one for unilateral disarmament.

The dyadic preference is somewhat confused, in that it tends to be advanced by a scattershot of arguments. It is unclear whether the base case for a dyad rests upon the claimed irrelevance of ICBMs, per se, or the alleged deficiencies in the proposed MX ICBM program in particular. Given that critically important elements in the MX program are, at present, undefined in detail (e.g., total size of force, number and yields of warheads, basing mode, and deployment dates), attempts at definitive and final

discussion are likely to be premature at least as to specifics.<sup>15</sup> In any event the simmering debate on specifics should at least run alongside serious discussion of whether or not the United States needs an ICBM force: What does, or might, an ICBM force contribute to American and allied well-being that could not adequately be provided by a strategic forces dyad? This is a very serious question and it merits a more direct answer than it has received as yet.

It is usual to observe that ICBMs are the most accurate, most "ready," most reliable, most easily commanded, and generally most flexible for diverse possible employment, of all U.S. strategic nuclear forces. Manned bombers and cruise missiles would be slow to reach their targets and would be subject to attention by Soviet active defenses. And current SLBMs are not always on station (40 to 50 percent of the nuclear-powered, ballistic-missile-firing submarines [SSBNs] might be destroyed in port), are less accurate than ICBMs (because of small cumulative errors in the submarine's navigation system), and cannot receive firing instructions at any depth.

Against these common arguments, advocates of accepting a dyad claim that the sea-based deterrent force can be improved to have most of the present attributes of a land-based missile force (very high accuracy, "readiness" on station—through the very long range of the Trident I and II missiles—and ease and security of communications), and that it is far from self-evident that the United States needs the particular strong attributes of an ICBM force in its military posture. For *prompt* neutralization of hardened targets, and for the execution of limited nuclear options, the ICBM clearly is superior to its SLBM and bomber/cruise missile rivals—provided it is deployed survivably. But, there are people who discern no great need for a large *prompt* hardened-target kill capability, and who admit to a willingness to sacrifice an SSBN or two, and probably some unfired SLBMs, as a consequence of charging the sea-based deterrent force with limited nuclear option responsibilities.

The fundamental case for retaining an ICBM force in a strategic nuclear triad does not rest upon alleged deficiencies in the sea- and air-based forces. The Trident II SSBN *will* have intercontinental range (approximately 7,500 miles), meaning that it can be "on

station" to a degree dramatically better than previous SLBMs; also, if the United States proceeds sensibly to deploy an extremely low frequency (ELF) communication system for the command of SSBNs, war plan execution orders should be capable of being transmitted with a reliability very close to that pertaining to command of ICBMs. Finally, the accuracy of SLBMs can be improved to the degree desired in the 1980s by means of utilizing stellar inertial navigation to compensate for errors in the submarine's navigation instruments, "plugging in" to the satellites of the Navstar Global Positioning System, or through the employment of terminal sensing devices. In principle, at least, Navstar and terminal guidance can be degraded or "spoofed," but one would be giving the adversary a set of major technical and, above all, operational problems to solve.

Similarly, the case for retaining an ICBM force could be posed, unwisely, in terms of the uncertainties that surround the likely performance of cruise missiles. At the present time no one knows just how secure the pre-launch and penetration survivability of the air-launched cruise missile (ALCM) force will be in the late 1980s. Optimism or pessimism is, in good part, related to the preferred conflict scenario. Unlike the B-1 manned bomber, the B-52 ALCM-carrier cannot be dispersed to a very large number of airfields, does not have a very impressive runway escape speed, and is not significantly hardened against nuclear weapon effects. All of this means that a Soviet ballistic-missile barrage attack against predictable airfield escape routes is very likely to impose heavy attrition (down with every B-52 will go 20 ALCMs). How effective Soviet air defense will be against cruise missile carriers and individual ALCMs is a matter of speculation. However, it is prudent to assume that Soviet airborne warning and control systems (AWACS), directing the MiG-29 (an improved MiG-25 that can "look down" and "shoot down"), will pose a non-trivial threat at (and beyond) the frontier of Soviet airspace; while the SA-10 surface-to-air missile and its successors should impose yet more attrition. Doubts concerning the survivability of cruise missiles may be well or ill founded, but they cannot be unrelated to the total strategic context, notably whether Soviet air defenses are assumed to have been suppressed effectively by precursor ICBM and SLBM strikes.

*The basic case in favor of a strategic forces' triad, which includes a substantial and survivable ICBM element, is that it compels a dispersion of adversary investment, preparation and attention. In the early 1960s, the American defense community understood, almost as an axiom,*

<sup>15</sup> For example, the most thoroughgoing critique of the MX program I have encountered rests in part on elements in an assumed program that are in fact open to change or modification. See M. Callahan, *et al.*, *The MX Missile: An Arms Control Impact Statement*, Cambridge, Mass.: Program in Science and Technology for International Security, MIT, March 1978.

that strategic stability flowed from the existence of large and diverse forces.<sup>16</sup> Our current official defense and arms control community apparently has retrogressed in the quality of its strategic thought. The Carter Administration endorses, at least in principle, the idea of deep reductions in strategic nuclear forces and, in practice, has simplified the Soviet defense problem by cancelling the B-1 manned bomber and delaying (possibly aborting) the MX ICBM. It is not essential that senior officials in the defense and arms control area have credentials as strategic theorists, but it is reasonable to expect them to understand that a very large and diverse strategic posture (a triad plus) has to be inherently more stabilizing than a smaller dyad.

Behind this general proposition, two supporting arguments, in particular, need to be registered. First, if the Soviet Union faces a U.S. strategic forces dyad, as opposed to a triad, the potential payoff from research, development and deployment in the regions of antissubmarine warfare and air defense have to rise dramatically. Also, since the Soviet Strategic Rocket Forces would be deprived of most of their hard targets in the United States—as the ICBM force is phased out—they would have warheads to spare for missions that previously, for reasons of resource limitation, had to be accorded only a low priority. Specifically, unilateral American abandonment of its ICBM force would, in the mid-1980s, free more than 5,000 megaton-range, very accurate, Soviet reentry vehicles for barrage-attack assignment against our airbreathing and sea-based strategic nuclear forces. A strategic dyad properly augmented to compensate for the loss of the ICBM force could well cost more to sustain and modernize than would a triad embracing the MX ICBM.

Second, technically trained and focused Western strategists have a tendency to forget that strategic power, latent or applied, should be developed and exercised for political ends. Even if the United States made the necessary effort to offset the absence of ICBMs, might it not—in political perceptual terms—have extreme difficulty persuading itself, and others, that a dyad was the strategic equivalent of a triad? This potential difficulty would be compounded by the fact that the move to a dyad was less than freely chosen. American ICBMs, in peacetime, would have been coerced out of their silos by the theoretical Soviet silo-neutralizing threat.

<sup>16</sup> This sound idea has been revived recently in Richard Burt, "Reducing Strategic Arms at SALT I: How Difficult, How Important?", in Christoph Bertram, ed., *The Future of Arms Control: Part I: Beyond SALT II*, Adelphi Paper No. 141, London: The International Institute for Strategic Studies, Spring 1978, pp. 4-14.

The demise of the land-based leg of the U.S. strategic forces triad, should it occur, may be traced by future historians not to the kind of arguments advanced immediately above, but rather to the fact that particular aspects of the follow-on ICBM program to the Minuteman III were intolerably vulnerable to challenge (given the context of defense debate in the United States). The dyad-triad debate now hangs in domestic political terms upon the outcome of the MX issue. If the case for the MX ICBM is lost, then—in all probability—the United States will abandon its land-based missile force.<sup>17</sup>

By way of basic reference, as of mid-1978 the MX ICBM concept envisages the following: a missile weighing 192,000 pounds with slightly more than 8,000 pounds payload, to be deployed in numbers ranging between 150 and 300, in a multiple aim point (MAP) basing mode. The multiple aim points may consist of buried trenches (13-20 miles in length), dispersed and hardened horizontal or vertical shelters, or pools of water.<sup>18</sup> The cost of the MX ICBM system, including ten years of operation and maintenance, could be between \$25 and \$40 billion. The intention is to provide, as a base case, 5,000 individual aim points—i.e., points that Soviet strategic forces would have to cover—with the possibility of economical further increases in aim point numbers should the scale of the Soviet threat expand beyond initial expectations.

The debate over MX embraces a wide range of concerns, any one of which could prove fatal to the deployment prospects of the system. These concerns include anxieties over increasing strategic instability; fears of a negative impact upon prospects for arms control; technical uncertainties over the viability of the selected MAP basing mode against plausible Soviet threats; cost considerations; environmental sensitivities; and suspicion that many, and perhaps enough, of the tasks of MX could be performed by more capable SLBMs and cruise missiles.

The paradox is that although fundamental MX program decisions, positive or negative, should be made on strategic and arms control grounds, at the present time it is the secondary issues of the basing mode and of cost that are dominating informed discussion. No honest advocate of the MX system can deny that there are indeed difficulties in both these areas, which must be

<sup>17</sup> Logically, this need not be true. But, the B-1 analogy is a powerful one. The Carter Administration said "not the B-1," rather than "no new penetrating bomber"—however, this amounts, in practice, to a distinction without a difference.

<sup>18</sup> See my article, "The MX Debate," *Surrender*, May-June 1978 (in press).



overcome before any clear-cut decision could be taken. The buried-trench concept, which was the leading candidate for the MAP system until the end of 1977, has fallen foul of anxieties over its potential vulnerability to ill-understood nuclear weapon effects that may have a special character in such a trench environment. And, of course, it is important to develop the most cost-effective possible basing mode, one that clearly provides a major multiplication of aim points that would force the Soviet Union, if it were to attempt to counter such a multiplication, to a scale of effort it would not readily undertake.

Yet, important as these technical issues remain, it does seem almost certain that a cost-effective and robust MAP basing mode can in fact be found, which will not be subject to easy challenge on technical grounds.

At that point, opponents of the MX are sure to raise objections on the grounds of alleged crisis and arms control instability, and claimed incompatibility with the SALT process. Thus, it is important to face up now to the arguments in these areas.

To review briefly the central line of argument, the overwhelming purpose of an MX ICBM program is to support American foreign policy. To that end the United States needs a survivable land-based missile force. Such a force strengthens pre- and intra-war deterrence, and should improve the prospects for tolerable conditions for early war termination. Even if, in theory, a truly massive Soviet first strike could defeat MX in the late 1980s and 1990s, the existence of 150-300 MXs in 5,000-plus possible aim points cannot help but increase Soviet attack uncertainties to a very healthy degree, and enforce a tremendous, and vastly disproportionate (to that destroyed), consumption of Soviet missile payload. At the least, then, early action on MX deployment would defer Soviet attainment of some facsimile of "escalation dominance" for many years.

This brings us to the question of timing. As things look from the perspective of 1978, any U.S. resort to limited nuclear options in the mid-1980s could meet with a devastating Soviet reply that would still be almost strictly counter-strategic. On this estimated timing of the increase in the Soviet threat, an MX ICBM deployed over the period 1987-91 would not, on the face of things, be a timely program. But there are no overriding technical obstacles that cannot be overcome—in the judgment of well-informed experts—so as to permit the deployment of a technically solid MX system over the period 1984-88. And such a program either defeats that Soviet advantage definitively, or pushes it out into the

early 1990s, thereby according us the necessary lead time to effect a basic restructuring of our strategic forces for long-term stability.

In addition, MX might restore the arms-competitive initiative to the United States. Although the expensive initial MAP basing mode decision would have been coerced by the level and quality of the predicted Soviet threat, a sound MAP concept should pose the Soviet Union an impossible attack task—in that the United States should be able thereafter to multiply aim points at will and far more cheaply than the Soviet Union could add payload to its ICBM force. Moreover, to the degree that an American MX ICBM force poses a growing threat to the very large fraction of Soviet strategic forces capability that is housed in silos, the Soviet Union should be driven into an expensive offsetting MAP configuration. Resources that Moscow devotes to concrete-lined tunnels, or dispersed shelters, are resources not expended upon offensive capability (aim points, *per se*, are no threat).

The instability arguments against MX reflect shallow strategic reasoning, but are sufficiently popular to require answer. The most fashionable claim is that MX deployment will promote crisis instability in that it will place the Soviet Union in a condition where, in an acute crisis, it will have to use its silo-housed ICBMs, or risk losing them. First, it is far from certain that U.S. MX deployment will pose a total counter-silo threat to Soviet ICBMs—an MX force *can* be designed that has only a very limited counter-force potential. Second, an MX procurement decision would be well advertised, and would provide the Soviet Union with at least six-years notice for devising an offsetting survivable land-based deployment (or for a near-total move of its strategic missiles to sea-based deployment). Thus, it is implausible that the Soviet Union will ever be placed in the unstable "use them or lose them" context *vis-à-vis* its ICBM force that some arms control-oriented commentators have suggested.

Indeed, to the extent arms race instability does emerge, it will have been the result not of any MX ICBM deployments but of the Soviet deployments, and tests, that today are promoting such instability. MX is an American *response* to a potentially total Soviet threat to the silo-housed U.S. ICBM force. MX may drive the Soviet Union to an expensive MAP system, that perhaps might entail some sacrifice in missile accuracy and payload—all of which would be positive developments in the American perspective. In political terms, which is the proper way to view the strategic arms competition, the ultimate point is that the United States cannot tolerate Soviet unilateral acquisition of a near-total silo-threatening

capability, or being coerced into a strategic forces dyad (with the attendant simplification of Soviet defensive tasks).

As I write, the status of an MX ICBM, deployed in a MAP mode, in the current SALT negotiations is uncertain. In principle, each separate aim point (particularly if dispersed vertical shelters were adopted) could be defined as a launcher—and launcher numbers were frozen in SALT I (a provision to be carried over into SALT II). Moreover, the pending three-year Protocol to SALT II prohibits the testing and deployment of land-mobile missiles. Thus, a key issue in any SALT III negotiations will be just this question of multiple aim points/launchers. Given a combination of Soviet ICBM payload, accuracy and launcher numbers that may then be driving the United States toward possible MAP ICBM deployment, how should the United States respond if the Soviet Union claims that MAP ICBM deployment is (by multiplying missile "launchers") in violation of some agreement? A strategically sensible and appropriate reply is not difficult to identify, but the U.S. arms control community is all too likely to take such a Soviet objection seriously. The appropriate American arms control response would be to claim that each multiple aim point complex comprises a *single* ICBM launcher—a fact that may be checked through the medium of adequate verification arrangements.

Overall, MX should be thought of as a weapon program that is essential for the support of forward-placed allies, in that supportive limited first-strike options could be threatened credibly, secure in the knowledge that the United States had a residual ICBM force that could deter attack upon itself. From the standpoint of genuine progress in SALT, MX should be beneficial. Indeed, the Arms Control and Disarmament Agency should be a strong supporter of an MX program. MX is the system that should persuade very tough-minded Soviet officials that the hard-target counterforce race cannot be won. The logic of MX is fully compatible with a substantive SALT III agreement. But, for leverage in SALT, the United States cannot depend on the *idea* of the MX ICBM based survivably. The Soviet Union has to observe the evolution of a real program.

In sum, the cost, environmental and basing mode aspects of the MX debate are all resolvable, if one comes fairly to grips with the strategic and arms control issues discussed above. If MX proponents are correct, or plausibly correct, then the devotion of less than three percent of the defense budget over a ten-year period to MX has to be a bargain. It is more likely than not that any of the current MAP concept contenders for MX deployment would be

good enough. In looking for "the best," the United States is losing months of lead time that could be devoted to development of an adequate system.

As for the environmental arguments against MX, they too depend on perspective. The allocation of relatively small areas of the continental United States may indeed be required to provide the necessary dispersion. And such areas would then become theoretical targets of Soviet nuclear attack, just as key cities and surrounding areas already are. But the amount of actual environmental damage will surely be negligible, both absolutely and in relation to the importance of the program to an adequate defense posture—for the United States and for the nations throughout the world who depend on the maintenance of a proper superpower strategic nuclear balance.

#### VII

One cannot be confident that the U.S. defense community will behave sensibly and preserve the triadic structure of its strategic force posture. Every major argument of merit suggests the necessity for the United States to move ahead urgently to phase out the silo-housed Minuteman-Titan ICBM force in favor of an MX ICBM deployment, housed in a multiple-aim-point system. MX should be purchased because it solves critical security issues, and because every alternative suggested thus far is unambiguously inferior. The United States confronts a principal foreign adversary who addresses the problem of strategic warfare in a distressingly traditional fashion. MX should impose an impossible task upon Soviet defense planners, should provide at least the credible promise of the kind of war-waging capability that Soviet leaders respect, and should provide a major incentive for the Soviet Union to negotiate a substantive SALT III agreement.

The United States and its allies *might* be able to sustain their vital interests in the context of an American move to a strategic forces dyad of SLBMs and cruise missiles. But why should the risk be taken? The Soviet Union, irreverent of Western stability theory and defense anxieties, has chosen to develop a potentially total threat to American hardened strategic forces and facilities. The MX ICBM, deployed survivably in an appropriate MAP mode, is a modest and prospectively effective reply.