THE MUTUAL-HOSTAGE RELATIONSHIP BETWEEN AMERICA AND RUSSIA

By Wolfgang K. H. Panofsky

For nearly two decades the strategic nuclear armaments of the Soviet Union and the United States have been great enough for each to hold the other's civilian population as hostage against a devastating nuclear attack. Living with this situation has not been and will not be easy: it has become, quite simply, one of the major tensions of modern life. Yet the mutual-hostage relationship has been given credit, and probably justly so, for the prevention of massive world wars.

During the last few years, this relationship has been exposed to broader public scrutiny as a result of the SALT I negotiations and treaty, and a number of articles and statements have appeared criticizing U.S. policy with regard to the situation. One critic, Donald Brennan, coined the acronym MAD, for Mutual Assured Destruction, to indicate his view of the policy underlying SALT. While others have not employed quite as harsh terms, they still assert that the terms of the SALT I treaty prohibiting extensive anti-ballistic missile (ABM) deployments do in fact signify a morally repugnant policy of leaving “mass slaughter” as the only option in case deterrence has failed in some way.

The recently named head of the Arms Control and Disarmament Agency, Fred Charles Iklé, cites three “far-reaching dogmas” as implied by current U.S. policies:

One: our nuclear forces must be designed almost exclusively for “retaliation” in response to a Soviet nuclear attack—particularly an attempt to disarm us through a sudden strike.

Two: our forces must be designed and operated in such a way that this retaliation can be swift, inflicted through a single, massive, and—above all—prompt strike. What would happen after this strike is of little concern for strategic planning.

Three: the threatened “retaliation” must be the killing of a major fraction of the Soviet population; moreover, the same ability to kill our pop-

ulation must be guaranteed the Soviet government in order to eliminate its main incentive for increasing Soviet forces. Thus, deterrence is “stabilized” by keeping it mutual.2

The first of these “dogmas” conforms to the technical realities: in the post-SALT I era (and under conditions prevailing throughout the past decade!) our strategic forces must be designed primarily for retaliation in response to nuclear attack. However, I take strong exception to the second and third points, which claim that such a response, according to accepted doctrine underlying SALT, must be both rapid and of massive proportion.

Naturally the present situation is far from ideal. We cannot be relieved of moral responsibility for having permitted a situation to develop in which large segments of the population of both West and East can in fact be sacrificed at the will of political leaders; neither is the situation free from acute danger in case of failure of mutual deterrence. Iklé aptly criticizes the mutual-hostage relationship which these policies imply by eloquently recalling that the threat of the killing of civilians has been condemned as immoral in the codes of both ancient and modern warfare, and by also pointing out the fragility of “stability through deterrence,” for example in scenarios of accident and unauthorized nuclear attack.

Yet how can we do better? The critics seem to imply that the mutual-hostage relationship between the populations of the United States and the Soviet Union is a consequence of policy, and would therefore be subject to change if such a policy were modified. Yet this relationship is a matter of physical fact and is thus grossly insensitive to any change in strategic policy. The reason is simple: the destructiveness of today’s offensive arsenal of nuclear weapons is so overwhelming that deaths would number in the many millions or even tens of millions if only a fraction of the available weapons were delivered against the opponent’s homeland.

In the face of this physical reality much of the recent criticism has concentrated on extending a hope of “low-casualty” nuclear war by advocating a policy of strictly anti-military attacks, or of “controlled” nuclear attacks against selected targets only—either military or civilian.

Neither of these scenarios, however, solves the basic problem of the mutual-hostage relationship. For no one can be sure

2 Iklé, op. cit.
whether an opponent will, in fact, follow a similarly "restrained" policy; he may instead choose a full anti-population response. Moreover, civilian casualties as a result of any massive anti-military attacks would still be enormous. Finally, once the barriers against use of nuclear weapons are broken, escalation toward full-scale nuclear war is exceedingly difficult to prevent.

It is characteristic that none of the recent analyses meet these questions head-on. In essence these papers start with the premise that "there must be a better way" than mutual deterrence, but the viability, let alone the advantage, of other specific policies is not demonstrated.

If the only defect of the criticism deploiring the state of mutual deterrence now extant between the United States and the Soviet Union were a failure to provide concrete alternative prescriptions that would be more likely to prevent nuclear war, this would be a matter of little concern. However, the problem is deeper. Any successful attempt to project an image—however ill-founded—of a "clean" nuclear war generating minimum civilian casualties could make the use of nuclear weapons in limited conflicts more acceptable. The fact remains—irrespective of the extent to which the strategies of either country include plans for deliberate retaliation against the opponent's population—that the peoples of both countries are in jeopardy in any kind of nuclear conflict.

This is not the first time these questions have been raised—far from it. After former Secretary of Defense McNamara took office, he proclaimed in 1962 a "city-avoiding" strategy designed to minimize civilian casualties in a nuclear war. But during his tenure in office he gradually became convinced that such a policy was unworkable, both on physical and military grounds: civilian casualties in connection with a purely anti-military attack were still apt to number in the many millions and one could not be sure the opponent would also follow a city-avoiding strategy; instead he might choose to target centers of population! Accordingly, McNamara in his later years completely changed his position, moving toward a policy of deterrence and, more specifically, "assured destruction." Without going into the merit of McNamara's conversion, this history illustrates that throughout a period of major change in strategic policy the mutual-hostage relationship between the U.S. and Soviet populations remained

3 Calculations indicate that an attack against all of the U.S. Minuteman silos would result in casualties (U.S. or Canadian) in the multi-million range from fallout alone; from all causes the actual numbers would be still larger.
a physical reality of central importance.

In the face of the unavoidable fact that the populations of both countries are exposed to overwhelming danger in case of nuclear war, emphasis has been placed on stabilizing the political, economic and military relationships between the two countries. In the purely military-strategic sense this search for stability has taken the form of an effort to remove any rational incentive for the initiation of nuclear war. In principle, such an incentive could be removed if technology permitted the evolution of active and passive defense measures which would either almost totally prevent the arrival of enemy nuclear weapons or else eliminate their devastating consequences. In view of the enormous destructiveness of each penetrating warhead and the low performance and high cost of feasible defensive measures, a state of defense-dominated stability appears unattainable. (Brennan remains the principal dissenter from this conclusion.) A defense deployed against a massive nuclear attack, using any technology now known or surmised, would be enormously expensive if it were designed to hold casualties to a small percentage of the population; moreover, a relatively less expensive increase in the opponents' offensive forces would cancel the protection provided by such a defense. These conclusions are valid even if highly optimistic assumptions are made regarding the performance of defense measures—which can never realistically be tested.

Once a tight defensive umbrella is ruled out, stability rests on deterrence achieved by protection of the strategic offensive forces against a totally disabling preëmptive first strike. This, in turn, implies that the strategic nuclear weapons on either side have to be protected against initial attack through hardening, mobility or secrecy of location, and that any moves on either side which would impair these values would be considered destabilizing. Thus, in this situation, the deployment of weapons suitable for an effective attack against the strategic retaliatory forces of the opponent (often termed a "counterforce attack") detract from the margin of stability. However, stability as it has now been achieved does not imply that there is only one preordained option with which the strategic forces would retaliate if they were subject to attack. It is this latter point which apparently is frequently misunderstood by critics of the present situation.

II

What really are the choices which our strategic systems permit
in the event the country is attacked? Once the technical nature of the forces is restricted, making them unsuitable for an effective first strike against the other side's strategic weapons, then certain types of counterforce responses to an enemy attack should no longer be considered real options. Thus, any response which could be interpreted as part of a first-strike posture is ruled out. Specifically, a counterforce attack, which by virtue of its explosive power, accuracy and number of warheads might endanger the land-based, hardened silos of the other side, would have to be explicitly ruled out because that same configuration would also be an essential component of a first-strike attack. However, this is the only restriction on the procedure which is not imposed by deliberate policy or by technical conditions subject to modification. This means that while I agree with Iklé's first point, "that our nuclear forces must be designed almost exclusively for retaliation," as correctly representing the cornerstone of stability in this epoch, the nature of such retaliation is given wide latitude; the other two points made by Iklé in his article seriously misrepresent the current situation by claiming that response is restricted to instant and massive retaliation.

In fact, there is no basic technical reason why any retaliation would have to be swift; a great deal of technical, political and diplomatic effort during the last two decades has gone into measures to prevent just that compulsion. The "hot line" which was first established by the Memorandum of Understanding of June 20, 1963, and whose character was upgraded during the SALT talks, is a case in point. The very purpose of that hot line is to permit an exchange of information among the parties in case a nuclear explosion has taken place on the territory of one of them, and this communication does not preclude subsequent retaliation. Similarly, efforts have been made to harden and diversify command-and-control systems so that no instantaneous "go" orders have to be sent out on first verification of nuclear attack, let alone on warning. Whether these measures on either side of the ocean are fully adequate technically is, of course, a matter about which residual doubt will always remain. Increased awareness of this problem and measures to improve the situation technically are certainly needed.

Those measures (such as improving the accuracy of strategic warheads, adding multiple warheads to intercontinental missiles, etc.) which appear to threaten land-based missile silos are the
main causes of arguments, albeit highly unpersuasive, for the need for rapid response, or even launch-on-warning. There has been a flood of calculations regarding the alleged vulnerability of the land-based Minuteman forces. Such projections use a range of numbers of enemy missiles that assume multiple Soviet warheads yet to be developed; these are to impact with assumed explosive powers and at various distances from the silos. Calculations on the survival of strategic aircraft under attack and estimates of their ability to deliver nuclear weapons are less numerous and more difficult; there are no meaningful calculations at all on the vulnerability of our strategic submarines.

Apparently, the reason for this disparity of calculational effort is that computations of Minuteman vulnerability can easily be made with a wide variety of models, even if the assumptions are difficult to justify; there is no specifically known physical vulnerability for nuclear missile submarines. However, calculations even for Minuteman are dubious since Minuteman vulnerability is very steeply dependent on the accuracy of the attacking missiles, and the performance of such missiles and hardened silos under actual combat conditions is uncertain. Moreover, it is very difficult to predict precisely how in a heavy attack one missile will affect another: dust or debris produced by one missile impact may destroy another incoming warhead and the radiation from one nuclear explosion can disable a companion missile. For these and other reasons an attacker could have little confidence in his calculated ability to reduce the number of Minuteman survivors to the very small number "negligible" as a retaliatory threat.4 Thus, even though the more extreme projections of the Soviet threat beyond this decade (unless limited by future SALT agreements) indicate very few Minuteman survivors from a Soviet attack, Minuteman remains a substantial contributor to deterrence.

Whatever the vulnerability may be of each member of the

4 A retaliatory attack would have to be very small indeed to be "negligible." Indeed, neither leaders nor serious observers in either country should pay much attention to the spuriously precise analyses cranked out by military computers to "determine" levels of damage from nuclear attack. Such calculations usually take into account only "prompt" casualties, that is those resulting from blast or prompt radiation. Few analyses consider fallout, and none of those generally used take into account such post-attack effects as fire, damage to food supplies, medical care and productivity, or epidemics. As Iklé notes, the omission of such after-attack effects leads to substantial underestimates. It is another instance of the way in which, in his words: "The jargon of American strategic analysis works like a narcotic. It dulls our sense of moral outrage about the tragic confrontation of nuclear arsenals, primed and constantly perfected to unleash widespread genocide."
"triad" of strategic retaliatory forces (submarines, land-based missiles and bombers), there is no technical method in view by which either side could mount a fully disabling and synchronized attack against the combination of nuclear strategic forces of the other. Thus, neither the present nor the foreseeable technical situation creates a need for a rapid, and possibly ill-considered, response to attack.

It is equally incorrect to state that such a counterattack must be a single massive strike. With the exception of being denied a counterforce strike against the other side's hardened silos, the choice in numbers and kinds of targets—be they military or civilian—is governed only by the technical features of the command-and-control system and the doctrine which governs its application. Therefore, the answer to the President's oft-quoted question: "Should a President, in the event of a nuclear attack, be left with the single option of ordering the mass destruction of enemy civilians, in the face of the certainty that it would be followed by the mass slaughter of Americans?" delivered as part of the State of the World message in 1970, is "No, he should not." And he does indeed have many other choices. Thus, Iklé's third point—"The threatened 'retaliation' must be the killing of a major fraction of the Soviet population"—also does not correctly describe the current situation, either before SALT or after.

The President himself has now said, in his fourth foreign policy message of May 1973: "An aggressor, in the unlikely event of nuclear war, might choose to employ nuclear weapons selectively and in limited numbers for limited objectives," and "If the United States has the ability to use its forces in a controlled way, the likelihood of nuclear response would be more credible, thereby making deterrence more effective and the initial use of nuclear weapons by an opponent less likely." These statements justify more convincingly the need for a large variety of nuclear options—not as a means to abolish the mutual-hostage relationship between U.S. and Soviet citizens but to strengthen deterrence against first use of nuclear weapons of all kinds. SALT has not impaired these more limited responses; on the contrary, the severe ABM restraints of the SALT treaty have assured penetration of even small missile attacks and therefore have broadened the range of possible retaliation.

Mankind has indeed succeeded in creating a situation in which
the vast stockpiles of nuclear weapons in the world can no longer be "rationally" used. But is that enough? Although the above discussion clearly refutes the claim of Iklé and others that the present strategic doctrine requires a rapid and massive retaliatory response, the critics have performed a valuable service by shaking confidence in the long-range "stability" which the present arrangements imply. Whether or not credit has been given correctly to the role of nuclear weapons in having prevented large-scale war after World War II, it is true that this record may be broken at any time by a nuclear accident, by escalation of a war initiated by third powers, or by unauthorized attacks. There is no meaningful way to predict whether these "irrational" nuclear catastrophes can be avoided throughout this century and beyond as long as the enormous nuclear stockpiles grow, or even remain.

On the positive side, there is increasing pressure for more layers of safety devices, better communications, etc. Moreover, there may also be hope that Permissive Action Links (PALs)—devices which by mechanical means prevent one military echelon from executing a strike without permission from a higher level—may be used for strategic as well as tactical nuclear-weapons systems. On the negative side, we have the ever-increasing complexity of nuclear delivery systems and the increasing destructive power at the command of a single submarine commander. Finally, there is the problem of maintaining high standards of diligence and responsibility on a routine basis for a protracted number of years.

A possible constructive step in arms-control negotiations would be an agreement on progressively tightening the political and technical command-and-control provisions over the strategic systems of the nuclear powers. This is clearly a move not subject to verification, but the incentive to violate such an accord appears small enough so that such a provision might be negotiable.

But in the last analysis, the risk of accidental war cannot be eliminated. Our hope for avoiding a nuclear catastrophe over the long range rests on continually reducing the product of the two variables that define the risk—the number of nuclear weapons in strategic stockpiles and the chance of any one of them being delivered through accidental launch or unauthorized use. Without a steady decrease in this index, the future is indeed dim.

In short, even though the present degree of stability is greater
than the critics suggest, there can be no assurance that it will in fact prevent the outbreak of nuclear war either by accident or through conflict introduced by third countries. The critics of the present doctrine have done substantial harm by their unsubstantiated claim that some strategic policy—not accompanied by a dramatic reversal in the growth of nuclear armaments—can relieve the inhumanity of the present situation, even perhaps the risk of accidental war.

In another respect, the emphasis of the SALT critics on the use of nuclear weapons against military targets has given new incentives and justification for the procurement of counterforce weapons such as highly accurate nuclear warheads. Such developments would be destabilizing by being physically indistinguishable from weapons designed for a preëmptive attack against the opponent's retaliatory forces. In addition there is the revival of the word "controlled." This refers to the military use of strategic nuclear weapons in actual war-fighting, while presumably minimizing the risk of escalation to a full-scale nuclear conflict. Yet, if such a risk could really be minimized—a highly dubious assumption—then such a development would, in fact, remove a factor that now deters the outbreak of large-scale war.

IV

I do not know or foresee a solution to the problem which Iklé states: "By taking advantage of modern technology, we should be able to escape the evil dilemma that the strategic forces on both sides must either be designed to kill people or else jeopardize the opponent's confidence in his deterrent." In the absence of any specifically proposed, let alone established, resolution of this problem, statements such as these tend to mislead civilian policymakers and extend false hopes that technology will lead us out of the nuclear dilemma. Ill-founded attempts to "sanitize" nuclear war are a disservice to the maintenance of stability, as well as to efforts to reduce areas of risk.

In essence, the critics of a primarily deterrent posture and the advocates of "nuclear war-fighting" assume that scientific progress will somehow alter the existing realities. I can see no technological basis for this assumption. Specifically:

No technological distinction exists or can be created between those nuclear weapons endangering the deterrent forces of the opponent in a first or preëmptive strike (and thus decreasing
stability) and weapons designed to attack the same forces by retaliation.

There is no demonstrable break between nuclear weapons designed for limited attacks and those designed for "strategic" retaliation.

Anti-military nuclear attacks of substantial size will almost certainly generate enormous civilian casualties.

Whatever plans or technological preparations the United States may make to fight a "controlled" nuclear conflict, there can be no certain method to protect the U.S. population in case the opponent decides to respond with an anti-population attack.

Available casualty estimates understate the effects of large-scale nuclear war; such consequences as epidemics aggravated by maldistribution of medical care, fire, starvation, ecological damage and societal breakdown are well-nigh incalculable.

From these inescapable conditions it follows, in my judgment, that the only clear demarcation line giving a "fire-break" in the use of weapons in war will continue to be the boundary between non-nuclear and nuclear devices. Mere shifts in policy and strategic doctrine will neither eliminate the hostage role of the populations of the United States and the Soviet Union, nor decrease the danger of nuclear catastrophe through accident or through unauthorized attack. Nor will they, in Churchill's words, "cover the case of lunatics or dictators in the mood of Hitler when he found himself in his final dugout." Only the relaxation of political tensions, coupled with bold steps limiting and reducing the quality and quantity of arms, and with ever-increasing vigilance over the control, safety and nonproliferation of nuclear weapons, can offer hope that nuclear disaster can be avoided.