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What Do We Do with Nuclear Weapons Now?

by

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He first joined Lawrence Livermore National Laboratory in 1952 after two years on the teaching and research staff of the University of California. In 1965 he was appointed the director of the laboratory. In 1972 he was made associate director at large, and on his retirement in 1988, he was named director emeritus.

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Workshop for the Future of U.S. Nuclear Weapons Policy

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affect the European security situation, especially in its nuclear dimension.

A similar degree of cooperation in the Far East seems much further off. The U.S.-Japan security alliance is the most stabilizing force in that area, especially as regards nuclear security. Priority efforts in both countries must be devoted to maintaining this alliance regardless of economic competition and its attendant political fallout. This may entail closer U.S.-Japanese cooperation on matters such as maritime strategy.

Whether the present situation in China will evolve into disaster or some form of stable government cannot be foretold. It seems likely that China will continue to view its nuclear power status both as a form of insurance and as a political equalizer. To what extent it will cooperate in international nuclear (and other arms) security arrangements will depend on the overall political relations of China with the major nuclear powers.

The worldwide nuclear non-proliferation regime may become more difficult to maintain as security guarantees become more difficult to give. The danger of nuclear proliferation may be increased and complicated by the likely spread of advanced military and intelligence technologies.

In the end, conferees agreed that, while the shape of a future nuclear weapons policy is not clear, it is necessary that we have such a policy and that it be in tune with the new needs for stability. Nuclear weapons are too destuctive a potential force for their disposition to be left to the vagaries of international interactions.

Preface

On Feb. 22-25, 1990, the University of California Institute on Global Conflict and Cooperation held a workshop at UCSD regarding the Future of U.S. Nuclear Weapons Policy. Approximately thirty participants, many with extensive relevant government experience, came to the workshop from academia, the weapons laboratories and the defense industry. Our purpose was to identify questions and options rather than to recommend answers.

A report on the workshop is planned for publication later in the year. It will present the papers and as much of the discussion as feasible. The attached is a summary of the main ideas discussed, written for the early use of participants and others interested. The structure and emphasis inevitably reflect my own approach to the subject, and the order of this summary does not always follow the order in which subjects were discussed. What is substantive and informative should be credited to the participants, to whom John Ruggie, the director of IGCC and co-organizer of the workshop, and I are very grateful. Mistakes are my own.

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others from well-founded fears of the Soviet Union on the part of its neighbors.

Conclusions

The workshop was a forum for raising important questions about U.S. nuclear policy: Should we continue to rely to some degree on nuclear deterrence? If so, on whose behalf and to deter what kind of events? What other roles might nuclear weapons play, particularly in other hands? If nuclear weapons continue to have a role, how should they be targeted, how many should there be, and how should they be deployed? What are the major control and instability questions associated with various future political regimes?

A range of answers to these questions was discussed. It was apparent that a dominant factor would be the degree of cooperation in security matters possible between the U.S. and its allies – including a unified Germany – and the Soviet Union. If a high degree of cooperation is feasible, a common nuclear policy can be adopted by the cooperating entities and there is a chance of reducing the nuclear risk for the long term. The policy could put more or less emphasis on the nuclear component of deterrence. Possibilities range from using nuclear deterrence to deter rearmament and major conventional threats, down to delegitimizing and working to ban nuclear weapons. If little cooperation is possible, on the other hand, the range of feasible U.S. nuclear policies is likely to be much more restricted and the dangers greater.

Because much of the world relevant to nuclear policy is in a state of flux, we cannot predict the degree of security cooperation that eventually will prove possible. Thus, it is too soon to settle upon a nuclear policy for the future. But it is not too soon to put the weight of the U.S. behind cooperative security arrangements in Europe that would eventually involve both a unified Germany and the Soviet Union. Such arrangements may prove to be the only way that the U.S. can positively

INSTABILITY QUESTIONS

(1) Associated with Present Deployments. To an undesirable degree, currently deployed and some prospective forces rely on rapid reaction to protect against vulnerabilities. Examples include strategic and tactical aircraft, some mobile missiles, and missiles in silos. The forces can be made less volatile without affecting their deterrent capability, although the Soviet Union may have a more significant problem than the U.S. in this regard. Deep cuts can provide an opportunity to decrease this potential for instabilities on a bilateral basis. However, clear national policy guidance to that effect is needed if U.S. arms control and deployment decisions are to alleviate the problem.

(2) Associated with Deep Reductions. Deep reductions will also make new instabilities possible: cheating, defenses, and the allegiance of third countries will all be more significant, and meaningful remobilization and rearmament will become possible. The thresholds at which these new instabilities are of concern have not been identified. Both technical and political factors enter into their determination.

(3) Associated with New Political Arrangements. If the present and major potential nuclear powers evolve towards cooperative security arrangements, presumably there will be fewer potential instabilities associated with changes in the balance of power. If they do not, however, the old balance of power instabilities may return. In theory, the spread of nuclear weapons could restabilize the situation. In practice the dangers associated with this spread and the accompanying competition could be considerable. It is possible that the U.S. and the Soviet Union, which may have similar interests in maintaining the status quo, will act in concert to limit conflict and crisis situations. There is some precedent for such U.S.-Soviet cooperation, but there are also enormous obstacles to it — some stemming from political instabilities in the Soviet Union, some from U.S. commitments to its allies, others from the differing nature of the two political systems, and still

What Do We Do with Nuclear Weapons Now?

I. The Environment for Nuclear Policy

This is a time of fundamental change in much of the world, particularly those regions relevant to U.S. nuclear policy. In the Soviet Union, Central and Eastern Europe, China, and perhaps elsewhere, the range of potential political outcomes has broadened significantly during the past several months. We begin this summary with a brief overview of the areas that seem especially relevant to U.S. nuclear policy.

THE SOVIET UNION, over the long run, is likely to remain a large, militarily powerful state. The road to the long run, however, could include anything from peaceful modernization to civil war. Gorbachev has considerable support, including support from powerful pro-modernization groups in the military and the organs of state security, but he also faces widespread dissatisfaction and daunting problems. Apocalyptic views are not hard to find in the Soviet Union.

Regarding questions of security and defense, no single opinion prevails. Historically, support for military reforms has been cyclical, dependent on the leadership's need for military support in order to acquire and retain power. As of yet, there is no indication of structural change that would alter this dependence. However, many in the Soviet Union, both in and outside of the military, believe that technological change has made historical Soviet deployments obsolete; that getting into an arms race with the U.S. was a mistake; that much demobilization should be carried out, along with, according to some academics, an evolution to a minimum nuclear deterrent posture. On the other hand, some think that nuclear parity has offered political advantages in dealing with the U.S., and

that having nuclear weapons allows the Soviet Union more latitude than would otherwise be the case in accepting new developments in Europe. Nuclear modernization continues in the Soviet Union as it does in the U.S. There are serious economic constraints on the pace of demobilization and of any radical change that would require money and commitment of advanced technologies.

GERMANY, in the general view, will be unified soon. The new Germany will face security issues and constraints vastly different from those of the FRG. It will no longer be the front-line state that it has been for the past forty years. Nevertheless, early proposals — for instance, a demilitarized East Germany with Berlin 40 km from the Polish border — seem unlikely to constitute a permanent arrangement.

Future German attitudes towards nuclear weapons on German soil, whether U.S., Soviet, French, or German weapons, will depend on the security relationships possible in Europe and on Germany's voice in determining them. Particularly important factors will be U.S. nuclear policy in Europe, and the extent to which the U.S. and Germany can cooperate in determining this policy. Shorter-range NATO nuclear weapons on German soil are already being phased out and the future of any nuclear weapons in Germany is uncertain.

COOPERATIVE EUROPEAN SECURITY arrangements ideally should include the unified Germany as a full-fledged member, fully involve the Soviet Union, not threaten any European state, keep the U.S. involved, and be consistent with the developing economic-political structure of Europe. The suggestion was made that the Conference on Security and Cooperation in Europe (CSCE)be a mechanism to that end. This would have the advantage of involving all relevant states and embodying useful agreed upon principles. However, CSCE is a conference, not a security alliance. NATO has the mechanisms of a security alliance, but is not sufficiently inclusive, and it is aimed at an enemy which may no longer exist. The

CONTROL QUESTIONS.

(1) Arms Control. Arms control was not the central workshop topic, but participants agreed that it will remain a major item on the security agenda of the U.S. and Soviet Union, for political and economic reasons as well as for its role in improving nuclear security. It will be essential that arms control be carried out so as to minimize both first-strike advantages and the dangers associated with alerting or otherwise redeploying forces in crises. None of this will happen if the choice of remaining weapon systems after reductions is left to the vagaries of competitive budget exercises and other such considerations.

The possibilities for verification of agreed limitations seem very good, particularly for cooperative verification under an open skies agreement. Aircraft will see far more than satellites, and higher-resolution satellite imagery will be increasingly available. A cooperative security structure would both require and take advantage of such improved verification.

(2) Safety and Security. In the future, the existence of nuclear weapons in contested regions of the world (the Middle East, the Soviet Union, China) may pose safety and security problems. In addition, such problems may exist in regions where there is no armed conflict but where the authorities have not admitted the existence of nuclear weapons, so that discussion of safety and security problems is impossible. A U.S. policy to deal with these issues is desirable, but the effectiveness of any policy depends on the overall state of cooperation possible among all countries concerned.

(3) Disposal of Excess Weapons. If large reductions take place, large amounts of fissile material will be available for either civilian purposes or military stockpiling. The INF Treaty did not make provision for the disposal of such material, which in this case was a small fraction of the amount available to the two sides. Policies to cover disposal of this material would be advisable, both to limit the rate of any future rearmament and to prevent the material from finding its way into other hands.

The third proposal is to target only the principal cities in the Soviet Union and perhaps other countries. The main rationale for such targeting would be to move towards minimum numbers of warheads as early as possible.

Targeting doctrine will depend in part on which of the above approaches to nuclear policy is adopted, or allowed by political circumstance. But, given the catastrophic potential of nuclear escalation, the nuclear missions that may be realistic for the U.S. and other major powers may be quite limited, regardless of the nuclear policy adopted. The same may not be true of all potential new nuclear actors.

The roles of the services and their missions have played a major part in determining the actual approach to targeting adopted in the U.S., and presumably in other countries as well. Any revision of nuclear policy must be accompanied by a reconsideration of the organizations that will carry out the policy and of the roles and missions assigned to the various branches of service concerned. This question was not dealt with at the symposium, but must form part of any further study.

(2) Numbers and Types. The numbers of nuclear weapons systems associated with either of the first two targeting approaches would probably run to the thousands, although perhaps a few thousand rather than the tens of thousands at present. The numbers associated with the last targeting approach might be as low as a few hundred, depending on the survivability of the systems deployed. The types of systems would vary depending on the nature of the political entity deploying the systems, as well as on traditional considerations of effectiveness and survivability.

Thus, assuming it chose to deploy nuclear weapons at all, a pan-European security alliance with no immediate enemy might have some aircraft and cruise missile delivery capability, but no short-range nuclear weapons systems of the "assault breaker" type. Nuclear weapons would be in the background of deterrence in this situation, but the political and military mechanisms required to bring them to bear would exist.

European Community could also provide an approach to a security organization but, again, security mechanisms would have to be created.

Whatever provisional and permanent arrangements are made, certain conditions must be met by the participating states if cooperative security is to work. All states must agree not to attempt to change borders by force or threat of force. Highly desirable, if not essential, are commitments by members to aid any other member against aggression and to abide by mutually agreed upon limitations on relevant forces, areas of deployments, exercises, etc. Perhaps there should be an alliance force, as with NATO, that would incorporate elements from the member states and would be trained to intervene in actions anywhere on the continent. Such a force might reduce the obstacles that defensive alliances and balance of power arrangements have had in the past with efforts to unite politically in time to deter war effectively.

At present, there is no obvious threat in Europe. This may mean that now is the time to begin building meaningful cooperative security arrangements. On the other hand, without an obvious enemy, it may be difficult to obtain serious commitments from the countries to be involved. In particular there are understandable reservations, especially on the part of newly formed Eastern and Central European governments, regarding "collective security" or any arrangement that might in the future infringe militarily on their newly found sovereignty.

JAPAN remains united in its desire to rely on its security alliance with the U.S. and not to procure nuclear weapons of its own. This disposition is not likely to change soon, at least not as a result of any factor internal to Japan. External factors that could cause it to change would be a nuclear Korea, or growing estrangement with the U.S. together with an increased threat from the Soviet Union or China. If the U.S.-Japan alliance can be kept intact, Japan can be a significant factor for stability through diplomatic support of cooperative policies, economic aid and credits. However, if economic rivalries lead to disaffection, a rearmed Japan could cause serious

global security problems, both through direct actions and through a failure to support cooperative security mechanisms.

CHINA is divided and the present leadership is weak. The nature and orientation of any future durable leadership are not clear, nor is it clear when such leadership might arise. The support of the Chinese military is necessary for the survival of any regime, and there is much talk in China of strengthening the military. More resources continue to be allocated to nuclear modernization than to other military modernization programs. A politically weak, isolated China could be a danger to its neighbors and may be prone to selling military and nuclear hardware to unstable polities. On the other hand, a Chinese leadership interested in recapturing a place among the world's leaders may well cooperate with initiatives by other great powers that do not directly infringe on China's interests. China and Japan continue to be concerned about one another, each being particularly sensitive about the other's relationship with the U.S.

OTHER POTENTIAL AND ACTUAL NUCLEAR POWERS are motivated primarily by internal views of their local security situation. To varying degrees, these views may be affected by the changes in Europe and by U.S. and Soviet policies. Policies that help limit nuclear proliferation include restraint in the threat of nuclear use on the part of nuclear powers; support of collective security mechanisms, mainly by the U.S. and the Soviet Union; inhibitions on the transfer of relevant technologies; and the support of most major powers for an international anti-proliferation regime. Some of these policies are hostage to continued cooperation among the major powers, some to the continued willingness and ability of the U.S. and the Soviet Union to support client states. The various regions of concern with regard to nuclear proliferation — the Middle East, South Asia, South Africa, the Koreas — will each be affected differently. At present, the U.S. and its partners in the non-proliferation effort do not have

III. Questions for Nuclear Policy

The questions that a nuclear policy must address are grouped here under three general headings:

Questions dealing with nuclear weapons deployment — including targeting, numbers, types of systems;

Questions dealing with nuclear weapons control, understood to include arms control as well as safety and security questions;

Questions dealing with instabilities, whether associated with new or old deployment and control regimes.

DEPLOYMENT QUESTIONS.

(1) Targeting; Roles and Missions. At whom should nuclear weapons be targeted under the various policies, and for what purposes? This question has always provided a difficult test for the application of any policy. Three very different proposals were discussed:

One is the continuation of the present targeting approach, in which the U.S. targets essentially all assets that its potential opponents (mainly the Soviet Union) may consider of value, excepting "population per se." Much of the population, however, would be located and destroyed along with the targets. This target coverage, it was argued, could be maintained with significantly fewer weapons than now deployed. It might be appropriate if the relationship between the Soviet Union and the U.S./ NATO does not change to one of much greater cooperation, but it is not the only targeting doctrine appropriate to that situation.

A second proposal is to target against only significant military projection forces, both nuclear and conventional. This approach might be suited to a cooperative deterrence policy in a multipolar world. The purpose would be to deter rearmament, renewed threats and remobilization.

Delegitimization is incompatible with the practice of deploying nuclear weapons to deter situations that might lead to central war, i.e., general war involving the major powers. Such situations now seem unlikely, but in part that may be a result of the existing nuclear deterrence policies of the two superpowers. In this regard, the essential policy judgment the U.S. must make is whether nuclear weapons used as a deterrent would help maintain stability or, on balance, would increase the likelihood of situations that might lead to central war. If central war does occur, or even if it seems reasonably likely, any agreement to ban nuclear weapons will be at risk.

BACK TO THE BALANCE OF POWER. Difficulties in establishing or maintaining any kind of cooperative security organization could lead back to a balance of power approach to security. Under such a regime, the U.S. might establish temporary alignments and participate in arms control agreements as it did in the 1920s, but there would be no effective permanent security structure such as NATO or those discussed above. The U.S. would rely on its own military force for security, probably in the form of technologically advanced naval and air forces, with minimum reliance on overseas bases. Deployment of space and anti-satellite weaponry is more likely in this case than in others, as are development and deployment of ballistic missile and other defenses.

The traditional problem of the balance of power approach is that the balancing forces often come into play too late to avoid war. Perhaps the existence of nuclear weapons and the increased transparency of military preparations would help in this regard, but that is far from obvious. This approach to security is not desirable. Certain trends, such as intra-West economic competition, could nevertheless weight the scales in that direction. A balance-of-power world could lead to new arms races and might seriously damage cooperative attempts to limit levels of armaments and arms technology sales.

an adequate mechanism to deal with "closet" nuclear and near-nuclear states, in large part because the ambiguous status of these states cannot be officially admitted or acted upon. This may lead to difficulties in dealing with nuclear security and safety matters.

NEW TECHNOLOGIES AND NEW IDEAS FOR THEIR USE may significantly change the nature of the security problems. One view is that, in this regard, the 1990s may turn out to be like the 1920s, when the technologies and ideas that would determine the next war were unaffected, indeed unacknowledged, in the arms control and diplomatic activities of the time. In the coming decade, new technologies — including very accurate weapons; real-time, accurate, world-wide intelligence; and much of the technological infrastructure for nuclear weapons — will be more widely and cheaply available. It was also noted that for the past several decades the U.S. has had to deter an adversary who was doctrinally averse to taking high risks. This fortunate situation may not hold in the future.

II. Options for Nuclear Policy

The following are some basic approaches to nuclear policy. While the original choice of approaches is that of the author, each approach was considerably sharpened and, in some cases, transformed by the workshop discussion.

COOPERATIVE DETERRENCE. Under this approach the U.S. would continue to deploy nuclear weapons so as to deter nuclear attack and induce caution in at least some of the circumstances that might lead to war. Where possible, nuclear deterrence would be exercised on behalf of and under the aegis of cooperative arrangements aimed at preventing the emergence of threats from in or outside of the cooperative structure. NATO

provides a current example of such a structure, but it may not be inclusive enough for future needs. Deploying conventional and nuclear forces to prevent the emergence of a threat is a more difficult role, politically and militarily, than is containment of a clear external threat. In a political sense, deterrence may be the victim of its own success.

Europe is the most promising locale for such "cooperative nuclear deterrence." Nuclear weapons will remain on the European political and security agendas due to the capabilities of the nations involved and to the fact that some of them are nuclear powers. Cooperative nuclear deterrence could offer an acceptable framework for dealing with these circumstances. A cooperative security organization of the type discussed in the previous section would be needed. It should eventually be open to all the nations of Europe, East and West, that are willing to guarantee each other's borders and set relevant force levels by agreement. The U.S., Germany and the Soviet Union should be fully involved members. Initially, NATO could support the new organization and later become part of it.

Objections to this approach include the following: (a) It maintains nuclear weapons as part of the deterrent forces even though they have no obvious targets. Some such step, however, may be the price for providing Germany access to, and some responsibility for, nuclear deterrent forces without having nuclear weapons under German control. (b) It may give the Soviet Union too much power over European security arrangements too soon. (c) Absent an obvious threat, intra-West economic competition may prevent lasting meaningful security arrangements among Western powers.

CONTINUATION OF NATO. It may be inadvisable or impossible to include the Soviet Union in a formal mutual security arrangement at this time. In addition, the states of Eastern Europe may not desire to be included in such an arrangement or may not meet the conditions for inclusion. Under such circumstances, continuation of NATO as a security alliance may be desirable. Both nuclear and conventional deployments would require considerable changes to reflect the new reality — namely, that there is no longer a threat of imminent attack. The main role of deployments would be to keep the NATO allies together on remaining security questions, including the eventual nuclear and military posture of a unified Germany. A variant on this approach would be a security organization based on the present European Community, generally of the type proposed by France. The U.S. would have a much smaller role in such an organization. Some governments in Europe would prefer that the U.S. have a significant role in any security arrangement. The eventual consensus, if there is one, is not likely to emerge for some time, in any case not until the "4+2 talks" are over and the rest of the European governments have considered their results.

DELEGITIMIZATION. In this option, nuclear weapons would be treated like chemical and biological weapons, i.e., rather than relying on them for any purpose the U.S. would work to ban them. This option presumes the possibility of a cooperative security framework, as does the first option, but nuclear weapons would not be part of a cooperative deterrent. There is considerable popular support for this stance, especially in Europe, although it has never rallied an electoral majority in nuclear weapons states.

Unlike chemical and biological weapons, however, nuclear weapons can be demonstrably effective, perhaps decisive, in a variety of military missions. Therefore, a much tighter security regime than can be achieved today (one including, but not limited to, inspection) would be required for an effective ban. The feasibility of a universal ban would depend on the resolve of all nuclear weapons states to abandon such weapons, demonstrated by drastic reductions and tight verification agreements, and on inducing others to forego nuclear weapons. Other forms of indiscriminate force projections, such as strategic bombing, may have to be delegitimized as well.