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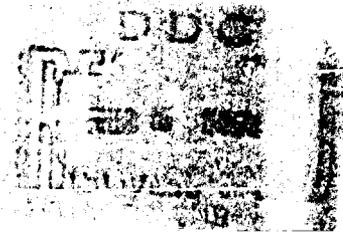
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ARMS CONTROL AND CIVIL DEFENSE

Annex I

"The Question of Crisis Evacuation"

by Jeremy J. Stone

HI-216-RR/1

August 20, 1963

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FOREWORD

This is one of four annexes to an over-all report submitted by Hudson Institute to the United States Arms Control and Disarmament Agency on a study of the interactions of arms control and civil defense. The complete report consists of an over-all summary and four annexes. The summary report, titled "Arms Control and Civil Defense", is a short survey of those considerations and recommendations developed in the study that should be reported to government officials and to interested citizens. The four annexes treat some topics in greater depth. These are:

- I. "The Question of Crisis Evacuation", by Jeremy J. Stone
- II. "Civil Defense and Arms Control Objectives", by Raymond D. Gastil
- III. "Civil Defense Programs in the Present War", by Elisabeth Crawford
- IV. "The Domestic Political Interactions", by A. J. Wiener

The principal research group that conducted the study consisted of the four writers named above together with Nehemiah Jordan and Felix Kaufmann. Additional contributions were made by W. M. Brown, Sara Dustin, Herman Kahn, Frederick C. Rockett, Max Singer, and other members of the Hudson Institute staff, especially in the form of comments on draft reports. The study was under the general direction of the present writer.

Much of the study was conducted in working seminars, in which preliminary views were aired and draft papers reviewed. The summary and some of the annexes were also reviewed in draft by most of the Hudson Institute research staff and by several reviewers in the government. It follows that even the annexes, which are more individual in character than the summary, reflect some degree of community discussion. Nevertheless, the views and recommendations set forth in the several parts are the basic responsibility of their authors, and do not necessarily represent the views of Hudson Institute, its members, officers, trustees, or contract sponsors.

D. G. Brennan

Harmon-on-Hudson, N. Y.

August 20, 1963

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1. INTRODUCTION AND SUMMARY

This Annex is devoted exclusively to the notion of crisis evacuation. In the 1950's there was a belief in civil defense circles that cities might be able to evacuate after receiving warning of an impending attack. Bombers would be reported on their way, warning would be received in a matter of hours (perhaps six to ten) before a strike, cities would be emptied, and the attack would find large portions of the population in relative safety. As the expected warning time decreased to fifteen minutes, this idea was gradually abandoned. Paradoxically, however, the balance of terror became firmer as both sides procured sufficient forces to assure them of a capability for substantial retaliation after an attack. This second-strike capability is likely to increase. As a result, it has become increasingly clear that the "out-of-the-blue" surprise attack problem, to which tactical evacuation had been primarily addressed, is not the most serious concern.¹ In fact it now seems almost certain that general thermonuclear war could occur only as a result of a very serious crisis.

In the 1950's it had been noted by a few strategists, notably Herman Kahn, then of the RAND Corporation, that a war which arose from a prolonged crisis would provide a new dimension of warning--a kind of "strategic" warning. This warning would provide time for many different preparations in both military and civil defense. For many years these ideas were ignored.

Recently there has been new interest in crisis planning and the possibilities for utilizing strategic warning. In particular, the Cuban crisis has dramatically illustrated the nature of such warning. This makes it more likely that we would purchase a crisis evacuation capability, i.e., an evacuation capability designed for use in crises. Furthermore, there is a heightened realization among strategists that threats must be credible and that threats to defend Europe by attacking the Soviet Union are now, or will very soon become, incredible. This further encourages supporters of crisis evacuation, since they argue that dispersion will reduce expected U.S. casualties and hence improve the credibility of U.S. threats.

On the other hand there are many drawbacks to pursuing a crisis evacuation policy. Preparations for the evacuation may tend to accelerate the arms race and make arms control more difficult. The evacuation itself could result in a war induced by Soviet fears of a United States attack. Extended crisis negotiations could result in a U.S. bargaining position weakened by domestic disorder. Even at the outset, an unprecedented evacuation might fail. These drawbacks loom especially large in the case where the United States cannot or will not threaten to strike first after

¹The phrase "tactical evacuation" refers to an evacuation in response to direct observation of an enemy's tactics; in this case, in response to sighting of enemy bombers.

provocation. In this case, an evacuation does not assist in bargaining by reducing expected U.S. casualties from a second strike. Instead its goal is to reduce casualties if a Soviet attack occurs. But the Soviet attack is presumably well deterred by our strategic forces. If an attack occurs, it may avoid cities--in which case evacuation is not clearly preferable to no evacuation. And if many cities are struck the immediate gains in lives saved may be reduced by long-run problems of recovery and recuperation. Finally, U.S. inability to use strategic threats to bring the crisis to a head permits adversaries to stall. It thus encourages crises to drag on until evacuation could become a threat to economic and political well being. For the above reasons, it is not easy to describe realistic circumstances in which a President would order an evacuation--assuming always that he was not threatening a strategic attack. We have therefore concluded that a crisis evacuation capability is undesirable if Europe is not to be defended with U.S. threats to enlarge a European war by initiating strategic strikes. Such a policy of threatening to respond to extreme provocation with large strategic strikes on the territory of the provoking power might be termed a first-strike or extended deterrence policy.¹ We shall use the latter terminology except when referring to a no-first-strike policy i.e., a policy of refraining from strategic strikes except in retaliation for such attacks. Therefore efforts to maintain an extended deterrence strategy refer to efforts to maintain the credibility of a strategic attack in response to provocation. In other words, if some variety of strategic parity is desirable or inevitable in U.S.-S.U. relations we consider the purchase of this capability to be, on the whole, a bad idea.²

However, it is hard to escape the conclusion that if extended deterrence policies are to be the only method of defending Europe, then this capability is necessary. Depending on Soviet arms race responses and on the provocation, evacuation preparations might or might not maintain a believable first-strike posture for a few more years. This also depends on one's assumptions and on one's definition of that posture. A precise discussion would require detailed information and computations, and some

¹An Appendix contains some official quotations bearing on U.S. policy, which, in the author's opinion, indicate that it has often seemed to be a policy of extended deterrence.

²Parity is used here to refer to that strategic situation in which neither side can credibly threaten to strike the other first. (The credibility of such threats is assumed to be closely related to the expected outcomes of the act.) It does not refer to a situation in which U.S. and Soviet forces are "equal." Our military forces are likely to continue to be superior to those of the Soviet Union in many, if not most, respects. The term simply describes mutual deterrence of a first strike by each side.

appreciation of the ways in which strategic parity and extended deterrence postures should be defined.¹

Our conclusion that crisis evacuation preparations should be made if and only if an extended deterrence strategy is to remain U. S. policy, takes into consideration the possible future need for a crisis evacuation capability which could be used against Nth countries. We have argued that the capability necessary to protect against attacks from Nth countries is relatively easily improvised and that it is unnecessary at the moment.

Before summarizing the individual sections, it seems worthwhile to make some further statements concerning the structure of this paper and the views of its author. We do conclude, without much discussion, that continued United States efforts to maintain an extended deterrence policy must include the purchasing of a crisis evacuation capability. This conclusion can be challenged. For example, attempts to maintain an extended deterrence posture with evacuation preparations might be self-defeating. They might provoke adversary purchases of weapons which made strategic attacks more difficult. Extended deterrence policies might therefore best be maintained without accelerating the arms race. But certainly, without a crisis evacuation capability (or equivalent protection), threats of strategic attack will become unpersuasive. It is simply on this basis that we argue that extended deterrence policies and crisis evacuation are linked.

If the United States gives or has given up extended deterrence policies, and if it either tacitly or explicitly accepts the strategic situation which we describe as "parity," crisis evacuation will become much less desirable. The majority of the paper is devoted to this more complicated case.

The emphasis devoted to the parity case is also encouraged by the author's belief that U.S. counterforce first strikes will eventually be quite infeasible, whether or not crisis evacuation is purchased. The quotation of the Secretary of Defense that is given on page 7 lends support to this view.

¹For example, an extended deterrence posture which is often discussed by analysts is the "not-incredible" first-strike posture of Herman Kahn. This might be defined as:

A strategic posture which attempts to deter extreme provocation by purchasing forces and defenses which make it not incredible that the United States might launch a considered and premeditated large-scale first strike upon the Soviet Union if sufficiently provoked.

Although many analysts would argue that this has been United States policy for the defense of Europe in the past, continuation of this policy in the present or future is highly controversial.

We shall continue to refer to the situation in which the United States emphasizes maintenance of threats of strategic attack as the "extended deterrence case." In the strategic context in which such a policy is infeasible, incredible, or undesirable, we shall refer to the "parity" case. Many arguments have more force in one or the other of these two contexts and, using this shorthand, we have attempted to indicate such interactions.

We turn now to summarizing the report. In Chapter II we discuss the purpose of crisis evacuation. This purpose is, for the most part, to improve the United States' "bargaining" position in a crisis. but it also could be purely prudential, and there are other kinds of arguments for it.

In Chapter III we shall point out some of the drawbacks and dangers of crisis evacuation as they apply to the extended deterrence and parity cases.

In Chapter IV we shall consider the effectiveness of the capability. We conclude that it is an effective measure against Soviet second strikes at "value" targets, but that in almost all other likely cases it seems relatively ineffective.¹ There seem to be a number of different responses by which the Soviet Union could attempt to neutralize both our threats of initiating a crisis evacuation and our actual use of such a capability to support an extended deterrence policy. Without such threats the evacuation could be a mistake.

We note that crisis evacuation is a very expensive measure if the evacuation is carried out. This may be almost irrelevant in very serious crises. But it is doubtful if very large-scale evacuations (e.g. 90% evacuated in major urban areas) could be maintained for several months without very substantial advance preparations and some coercion of citizens.

We conclude next that reliance on crisis evacuations does not seem a likely or an important policy for the S. U., basically because of strategic considerations involving the composition and magnitude of the forces on each side.

Finally, spontaneous evacuations will be considered. We shall give reasons why the government will want to discourage large-scale spontaneous evacuations whether or not a crisis evacuation capability exists. We conclude also that the government would probably be capable of discouraging such movements. Other kinds of evacuations are mentioned but are not treated in detail since they are not considered to have strategic impact.

¹"Value" targets refer, in this report, to centers of population (which might be reception areas after an evacuation had taken place) or to cities (which might be relatively emptied of inhabitants). Attacks on such targets are called countervalue attacks. Counterforce attacks are attacks on military targets.

Next, in Chapter V, we shall consider the relationship between crisis evacuation and arms control. We argue that this capability might make the attainment of arms control agreements more difficult. It also might well encourage increased Soviet weapons procurement and development of new weapons and weapons effects--especially those designed for area destruction. We shall examine and reject the argument that an evacuation capability could, at worst, only encourage the Soviet Union to purchase invulnerable weapons, thus stabilizing the arms race or adding to economic difficulties in the Soviet Union.

In discussing the interactions of crisis evacuation with other policies, we shall show that it is not inconsistent with a policy of city avoidance, but that it is seemingly somewhat inconsistent to purchase a crisis evacuation capability and then to proclaim a no-first-strike doctrine.^{1, 2}

Finally, it appears to be feasible simply to refrain from purchasing crisis evacuation plans if we wished to do so. This feasibility derives primarily from the fact that crisis evacuation does not seem to be a useful Soviet strategy considering the magnitude of our forces when alerted by crises and widespread Soviet movements. Hence we need not buy crisis evacuation simply as a defense against Soviet evacuation preparations. If preparations are to be made, there are a variety of ways in which the domestic and foreign effects might be controlled.

¹A no-first-strike policy might be one in which the United States maintained that it would not strike the Soviet Union in an all-out nuclear attack unless the Soviet Union so struck the U.S. or its Allies. This policy should be distinguished from the more commonly discussed no-first-use doctrine in which the United States proclaimed that it would not use nuclear weapons first. These policies are not the same. For example, one might have a no-first-use policy which was supported by a threat to strike first, if the Soviet Union initiated the use of nuclear weapons. Thus, the use of nuclear weapons in Europe by the Soviet Union would trigger an all-out United States response. This is similar to the example provided by the President's speech on Cuba on October 22, 1962, in which he stated:

Third, it shall be the policy of this nation to regard any nuclear missile launched from Cuba against any nation in the Western hemisphere as an attack by the Soviet Union on the United States requiring a full retaliatory response upon the Soviet Union.

The New York Times, October 23, 1962, p. 18.

²Comment by D. G. Brennan: There may be no actual inconsistency; one might purchase an evacuation capability for purely prudential reasons, which would be consistent with a "no-first-strike" doctrine.

II. THE PURPOSE OF CRISIS EVACUATION

There are three main purposes for a crisis evacuation capability: support of the defense of Europe, protection against Nth country threats, and prudent insurance against the risk of escalation to central war. Other arguments can also be given; some are mentioned below.

2.1 Use of Crisis Evacuation in Defense of Europe

Crisis evacuation is advocated primarily for its possible effect in reducing expected U.S. casualties from a Soviet retaliator attack to a point at which a U.S. counterforce strike becomes sufficiently credible to make an extended deterrence policy possible.

It is argued that such credible nuclear threats can assist in the defense of Western Europe or even of West Berlin. The argument runs as follows: U.S. declaratory policy, i.e., the policy corresponding to our words, has been to threaten a nuclear strike upon the Soviet Union if other means of defending Europe against invasion fail. In fact, the use of our conventional forces in Europe is now expected to rely on the strategy of the "pause." These forces are intended to hold the invading armies for a limited time while the Soviet Union is encouraged to reconsider its actions in the face of U.S. strategic threats. Neither the length of the "pause" nor the time required to evacuate cities can be very clearly defined, but both time periods are roughly of the same magnitude--weeks or, at most, months. Thus the evacuation might be carried out during the pause. Although our conventional forces might be weakening, the credibility of our strategic threats would be increased as our cities emptied. Thus the Soviet Union could be forced by our now "usable" strategic superiority to back down.

It is also possible to argue that an evacuation capability should be purchased for its deterrent effect--that, in combination with our military forces, it would discourage Soviet decision-makers from preparing an invasion or provocation in Western Europe. This argument requires, and even suggests that we encourage, Soviet "perception" of our civil defense purchases. (As a result, if weight is placed upon a deterrent purpose, it seems that one should not be permitted to argue that evacuation preparations will not accelerate the arms race because the Soviet Union will not be aware of them.)¹

Advocates of crisis evacuation argue further that, although this strategy may not work, it is hard to believe that we can continue to threaten credibly to enlarge the scope of a war to a struggle which could

¹Herman Kahn does argue, however, that a U.S. crisis evacuation program would be of great interest or concern only to a Soviet government planning provocation.

result in many tens of millions of dead Americans. If threatening strategic strikes is a necessary policy for the defense of Europe, it is maintained that some way of reducing expected U.S. casualties is essential for the success of the policy.

Certainly much of this argument depends on a basic U.S. national decision to attempt to maintain a posture in which it is not inconceivable that we might launch a nuclear strike upon the Soviet Union if a Soviet attack were overwhelming Europe. Alternatively we might accept as inevitable or desirable a posture in which the United States cannot credibly, or will not, threaten to strike first. Clearly the second choice might involve making some adjustments in forces and/or doctrine for the defense of Europe. Just as clearly, it is becoming very difficult to make the first choice.¹ It is beyond the scope of this report to discuss such issues as the relative feasibility of conventional or nuclear defense of Europe (by NATO or a European force) as opposed to strategic disarming attacks against

¹This was made quite clear by Secretary of Defense McNamara in his public testimony before the House Armed Services Committee concerning the 1964 Defense Budget. He said: "In my statement a year ago, I pointed out that 'as the Soviet Union hardens and disperses its ICBM force and acquires a significant number of missile-launching submarines (as we must assume that they will do in the period under discussion) our problem will be further complicated.' There is increasing evidence that this is the course the Soviet Union is following...."

"A very large increase in the number of fully hard Soviet ICBM's and nuclear-powered ballistic missile-launching submarines would considerably detract from our ability to destroy completely the Soviet strategic nuclear forces. It would become increasingly difficult, regardless of the form of the attack, to destroy a sufficiently large proportion of the Soviet's strategic nuclear forces to preclude major damage to the United States, regardless of how large or what kind of strategic forces we build. Even if we were to double and triple our forces we would not be able to destroy quickly all or almost all of the hardened ICBM sites. And even if we could do that, we know no way to destroy the enemy's missile-launching submarines at the same time. We do not anticipate that either the United States or the Soviet Union will acquire that capability in the foreseeable future. Moreover, to minimize damage to the United States, such a force would also have to be accompanied by an extensive missile defense system and a much more elaborate civil defense program than has thus far been contemplated. Even then we could not preclude casualties counted in the tens of millions. What we are proposing is a capability to strike back after absorbing the first blow." [Our italics] Statement of Secretary of Defense Robert S. McNamara Before the House Armed Services Committee, The Fiscal Year 1964-68 Defense Program and 1964 Defense Budget, January 30, 1963, pp. 29-30.

the Soviet Union. But these issues are very closely bound up in this discussion.¹

In any case, an adequate discussion of first-strike credibility would require precise information on a range of factors and considerably more space than can be provided here. If an extended deterrence posture for the defense of Europe is not maintained, the case for crisis evacuation must rest on its "insurance" value against Nth countries and on its value in a context of parity in protecting against Soviet attacks. This is referred to as its "prudential" value.

2.2 Use of Crisis Evacuation Against Nth Countries

A different reason for purchasing an evacuation capability would be the fear that a new nuclear power might arise that would attempt to deter the United States from some action, such as going to the aid of its allies. Thus if China, with a small supply of missiles, attacked Formosa and threatened a few American cities, the evacuation of our urban areas would lend credence to our threats to destroy the missiles. Evacuation against such a power would be clearly viable, since the fear of pre-emption and the danger of widespread fallout if a nuclear war ensued would be substantially decreased. The likelihood of extended negotiations would be smaller and the evacuees might expect a quick return to cities.

Much of the speculation is undoubtedly some years ahead of its time. In The Nth Country Problem and Arms Control,² it is estimated that twelve countries could develop two to four bombs each, using plutonium, in the near future.³ Assuming, as seems quite likely, that the bombs would be

¹However, it is not necessary to have a very accurate picture of expected casualties following a United States first strike to argue that if the expected number of citizens of NATO countries who would survive a countervalue reprisal is the correct measure for the credibility of our threat, then a U.S. evacuation capability is of little assistance. (For example, it might reduce casualties from some very high number, such as 150 million, to a somewhat lower number, such as 110 to 120 million.) This emphasizes the fact that advocates of crisis evacuation as a support for European defense must argue that the credibility of our threat to strike first can be measured by the number of expected United States survivors. They must also tend to minimize the relevance of the effect of the anticipated war on the only prize over which such a war is likely to be fought--Western Europe. From a European's point of view, defense by threats of a first strike can be characterized by the phrase: "If these weapons are ever used, they will have failed."

²W. Davidon, M. Kalkstein, and C. Hohenemser, The Nth Country Problem and Arms Control (Washington: National Planning Association, 1960) p. 27.

³These were Belgium, Canada, People's Republic of China, Czechoslovakia, France, East Germany, German Federated Republic, India, Italy, Japan, Sweden, Switzerland.

developed by these countries in advance of their capability to construct intercontinental ballistic missiles, one can speculate that there would be some initial difficulties in the threatening of major powers by Nth countries. Moreover, in the immediate future only the spread of nuclear weapons to the People's Republic of China¹ seems likely to be of concern to us. However, Chinese threats could be based on airplane delivery-- although at present only TU-4's (B-29's) seem to be available. These would require at least one difficult mid-ocean refueling after which penetration of our air defenses would be necessary even for one-way missions. Perhaps more likely would be threats of submarine delivery.

Probably the fundamental question at issue is whether we would require evacuation to deal with Chinese aggression. Attempts to invade Formosa might call for the destruction of Chinese ports, or of the invasion craft themselves. Invasions of India might be answered by conventional forces and the nuclear destruction of mountain passes. Meanwhile Chinese nuclear threats against our cities would be deterred by U.S. threats of limited or all-out response against Chinese targets. The examples seem to suggest that there are many possibilities to be compared with the decision to evacuate and then to threaten a U.S.-China "central war." On the other hand, it is difficult to be certain about future problems and an unknown China armed with nuclear weapons.

However, it does seem likely that the capability necessary for the evacuation against China is much more easily improvised than in the case where the second-strike capability of the Soviet Union is feared. This is so for substantially the same reasons that were given above to show why it would be relatively simple to prepare for an evacuation against Nth countries.

2.3 Prudential Uses of Crisis Evacuation

A third possibility for justifying the procurement of an evacuation capability arises from the theory that crises will increase the risk of a Soviet first strike against the United States. Thus an evacuation might protect against this increased risk by making the population somewhat less vulnerable. There are several different cases to be considered. They are treated in greater detail in Section IV.

First, threat of an all-out Soviet countervalue first strike does not seem to justify purchasing crisis evacuation capabilities. Soviet first strikes against value targets are now, or will soon be, capable of destroying most of the United States population and industry and preventing

¹The nature and extent of China's capacity to threaten nuclear attacks is perhaps more likely to be determined by political and economic considerations than it is by technical ones. See Leonard Beaton and John Maddox, The Spread of Nuclear Weapons (New York: Frederick A. Praeger, 1962).

recovery and recuperation for at least several decades, whether or not the population is evacuated. The evacuation might even increase long-run casualties and impede national recovery by giving rise to a very unfavorable postwar ratio of labor to capital. And these attacks are very unlikely.

Soviet counterforce first strikes, on the other hand, would permit the survival of many citizens but, in almost all instances, these citizens are probably best protected in cities. The food, shelters, and medical supplies are almost inevitably either in greater supply or more easily stockpiled in cities than in rural areas.

A third possibility involves the somewhat bizarre notion of limited strategic attacks. These isolated strikes against cities, nuclear reactors, reception areas, and so on are not prevented by an evacuation. Attacks designed to show anger or resolve will never lack for targets.

Thus the basic kinds of Soviet first strikes do not give rise to a clear need for crisis evacuation. However, there remain some intermediate possibilities. As a result of Soviet doctrine, some U.S. cities might be attacked although most of the weapons were directed against forces. In this case, an evacuation could save many lives. But the likelihood of such an attack is reduced by the fact that today it would probably result in the complete destruction of the Soviet Union. A similar situation arises if a counterforce attack degenerates into isolated attacks on cities.

The question arises, therefore, whether a crisis could so substantially increase the risk of one of the Soviet attacks against which an evacuation could protect, as to induce a President to order the movement. In the "parity case," the United States may not be in a position to use threats to end the crisis. The risk thus arises that the crisis will last longer than the evacuation can be sustained. This is a central problem of "prudential" evacuation without first-strike threats. However, even in this case the United States might still be able to threaten unilateral settlement of some crises by force.¹ These settlements might or might not permit an evacuated population to return immediately.

2.4 Other Arguments for Crisis Evacuation

Besides the three basic purposes of crisis evacuation, other arguments can be put forth that are of lesser generality. We mention a few of these.

Rise of a Hitler. It is argued that the risk will always exist of being faced with an enemy leader who shows great determination, perhaps associated with madness of some kind, and such evil intentions that

¹The Cuban crisis of October, 1962 was an example of such a situation.

almost any war is preferable to surrender or the acceptance of one of his ultimatums. Power may corrupt or attract corruption. And the leader who wields it might maintain, as Hitler did, that citizens did not deserve to live if a certain national objective were not attained. Such an approach might lead to ruthless city-trading, for example. This approach, the argument continues, could make desirable the most drastic domestic efforts to make fighting thermonuclear wars feasible. Such efforts might also deter the threats. How realistic these possibilities are, the reader must judge. The essence of this argument is that it would be imprudent to fail to provide for the possibility that U.S. interests might require fighting a thermonuclear war, no matter how unthinkable.

Reassure allies. Some would argue that crisis evacuation preparations would reassure European Allies of our willingness to go to their assistance with strategic nuclear weapons.

2.5 Other Prudential Arguments

There are several supplementary forms of the prudential argument that are somewhat less specific than the possibility given in Section 2.3. One is the insurance argument. Paper plans might cost anywhere from \$.25 to \$5.00 per person and would provide insurance against the eventuality of needing this capability. Another argument involves "technological breakthroughs" and maintains that the strategic context might be changed by sudden weapons developments. This might, in some way, so change the premises on which arguments are based as to make previous reasoning incorrect. For example, an air defense might be developed that permitted a very adequate defense of evacuation reception areas but not of specific fixed points such as cities. This would make evacuation seem more desirable.

Match a possible Soviet evacuation. There is also an argument that a Soviet evacuation designed for strategic advantage might call for a similar U.S. response to maintain our bargaining position. We argue later (in Section 4.3) that a U.S. evacuation is unnecessary for this purpose because our second-strike capability is so large. And current Soviet statements by Premier Khrushchev that the United States could destroy all leading Soviet major cities in the first blow make it seem much less likely that Soviet evacuation threats would transpire.¹

¹Khrushchev's speech before the East Berlin Congress January 16, The New York Times, January 17, 1963.

III. DANGERS OF VARIOUS CRISIS EVACUATION POLICIES

Various crisis evacuation policies might be followed. At one bizarre extreme one might envisage "whole cities drilling on a winter night."¹ At the other extreme, formal no-first-evacuation agreements might be concluded with the Soviet Union. Between these two extremes lie the possibilities of purchasing paper plans, of making preparations in rural areas, or of distributing information to citizens concerning reception areas. Alternatively, there is the possibility of taking no action whatsoever. Even this policy may have its own implications, which we refer to in Section 3.3. It is probably neither feasible nor desirable to attempt to discuss the different possibilities and their dangers in an overly systematic fashion. The reader will want to keep in mind that various programs are possible, and the list of dangers should be treated, in part, as a checklist against which proposed programs can be considered.

3.1 Problems Associated with Using an Evacuation Capability

The reader might be asking himself, "Would I ever use a crisis evacuation capability and, if so, when?" The case for a crisis evacuation capability is much weaker if one does not believe that it would be used.²

Soviet pre-emptive attack. Almost all analysts agree that the one time when the Soviet Union would be likely to attack is the situation in which they believed that an American attack was imminent.³ An evacuation

¹Arthur I. Waskow, A Shelter-Centered Society, Peace Research Institute, 1962, p. 3.

²This question is especially appropriate for the present administration. An evacuation capability is very unlikely to be objectively effective beyond, say, the year 1968. Thus, at most, one more administration must consider this problem in this form. If the capability is not to be used, the decision becomes one of resolving the deterrent effect of owning a crisis evacuation capability against the possibility that this purchase would accelerate the arms race. Note that both of these possible effects involve Soviet "perception" of our actions.

³For example, Captain B. Demidov writes:

"...the main task of the armed forces in their combat and operational training...is the study and practice of ways of reliably beating off an enemy surprise nuclear attack, of ways of anticipating his aggressive intentions by means of striking a devastating blow in time. It is this task that determines the direction of military-theoretical thought at the present time."

Colonel I. Sidel'nikov, "On Soviet Military Doctrine," Red Star, May 11, 1962; Captain B. Demidov, "The Decisive Conditions for Creative Development of Soviet Military Science," Kommunist vooruzhennykh sil (Communist of the Armed Forces), No. 9, May 1962, p. 25, in V. D. Sokolovskii, ed., Soviet Military Strategy, A RAND Corporation Translation (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963), p. 64.

would certainly give rise to a very great increase in Soviet fears. This is particularly true because Soviet forces seem to have been created by decision-makers who believe in minimum deterrence. This is the strategy which emphasizes the deterrent effect of relatively few nuclear weapons which might be used to destroy large population centers. It maintains that neither a very large number of weapons nor a very high probability of their delivery need exist to deter an attack. By dispersing the populations of our large cities we very directly remove the foundations for this strategic posture. From the point of view of minimum deterrence decision-makers, we have then very effectively freed our hands for a first strike. This effect will be greatly weakened if, or perhaps when, the Soviet Union has purchased large numbers of hardened and dispersed weapons. Against such a capability, crisis evacuation is both less effective and less destabilizing.

Soviet stalling as a response. One must ask whether or not the Soviet Union might refuse to accede to our demands and might nevertheless refrain from any action which could provoke a thermonuclear war. For example, this might lead to their halting an invading army so as not to provide further provocation. If the umbrella of terror were very firm, their failure to provide sufficient provocation might merely involve not using nuclear weapons, while conventional aggression proceeded. Since an evacuation cannot be held indefinitely, this kind of response could be very embarrassing to our Government, especially in the parity case. It might be forced to de-evacuate without having won any gains or guarantees.

Alternatively, in this extended deterrence case, such stalling could be ended by an attack upon the Soviet Union. The choice would be one of humiliation or holocaust. Of course, without an evacuation, this choice could have arisen even sooner and with smaller chances of national survival if war ensued.

Inadequate evacuation preparations. Depending on the preparations which had been made, the evacuation could have a substantial probability of bogging down. For example, certain groups might refuse to evacuate or might attempt to obstruct the evacuation. The weather might discourage the movement in various parts of the country. Preparations in different areas might be of varying adequacy. While preparations for moving north-eastern urban residents into rural basements might be satisfactory, the preparations for moving Los Angeles residents into rural camp grounds might not. The impact of a crisis evacuation controversy similar to the shelter controversy might have built up resistance to the movement. Certainly, no matter how detailed the plans and comprehensive the training, it will remain possible that this entire enormous and unprecedented operation might fail. However, in the most desperate situations these risks might be viewed as quite irrelevant.

Possibilities for miscalculation to our disadvantage. Some other possibilities should be mentioned, although it may be difficult to assess their significance. A President might miscalculate the effectiveness of the evacuation against the retaliatory capability of the Soviet Union and initiate a first strike, incurring risks to national survival which are increasing with time.¹ There is the possibility that an adversary might believe that the evacuation made limited strategic attacks on empty major cities less dangerous than it actually was. Or an evacuation could be followed by a softening of the adversary's position, which, after it resulted in a de-evacuation, might harden again. Needless to say, negotiations are difficult and take time, and evacuations cannot be repeated easily. Of course, in general, some possibility of miscalculation is going to be associated with any scheme for answering Soviet aggression, and these comments should be viewed in that light.

3.2 Problems Associated with Purchasing or Maintaining an Evacuation Capability

The arms race. The logic of the arms race would seem to imply that a crisis evacuation capability on one side will lead to an increased capability on the part of one's adversary to destroy reception areas. Or an opponent might construct a large number of highly invulnerable missiles and adopt the strategy of threatening to destroy so many cities that the evacuation would not prevent national destruction. In itself the construction of these weapons represents a net "loss" to our national security. It very substantially increases the destruction if war occurs. In fact, by giving rise to the substantial possibility that our country itself would not survive an all-out war, it must be viewed very seriously. The possibility of significant arms control could be reduced by this new impetus to the arms race. These problems are discussed in Section 5.1.

Political reactions. The problems of domestic reaction to evacuation planning are touched upon above. It can be argued that an evacuation capability does not create the anxiety and the need for individual decisions that result from a private shelter program. But it must not be overlooked that the shelter controversy may have sensitized the population to a large number of relevant arguments and fears which need only be triggered.

The political reactions of our allies must also be considered. We noted earlier that the allies might be reassured by our determination. But they might not. It seems highly unlikely that civilian defense capabilities in Europe could provide that level of security which an evacuation capability would afford us. Our protection would arise from our large land area, our distance from the Soviet Union and, to some

¹This is, of course, a subtle form of the argument that the U.S. option to strike should be foreclosed.

extent, from our separation of military targets and cities. But many Soviet weapons can reach our allies. There are many strategic targets in Western Europe and Premier Khrushchev has already announced that he has a weapon so large that it could not be used against France or West Germany without doing damage to his East German ally.¹

The possibility exists that our construction of a crisis evacuation capability, and a corresponding debate, might bring home to the allies the fact that our deterrent of European invasion rests on assuring U.S. (but not European) survival after a Soviet countervalue reprisal. Thus crisis evacuation could emphasize to the Europeans the lengths to which we are willing to go to protect them, but it might also indicate that the arms race was carrying us in the direction of a nuclear strategic stalemate.

3.3 A Basic Problem

The previous two sections have been devoted to problems associated with purchasing, maintaining, and using an evacuation capability. There are also certain problems which arise simply through "thinking" about crisis evacuation. These problems are illustrated by comments made by Winston Churchill in speaking of Geneva Disarmament Conferences. He said:

I believe that the armaments of the world today would be positively even smaller, certainly no greater, if none of these discussions had taken place at Geneva...They have also been a positive cause of friction and ill will, and have given an undue advertisement to naval and military affairs. They have concentrated the attention of governments in all countries, many of them without the slightest reason for mutual apprehension or dispute, upon all sorts of hypothetical wars which certainly will never take place.²

Discussion of crisis evacuation capabilities could, like disarmament debates, focus attention upon unrealistic hypothetical situations and thus give rise to needless purchases of armament to counteract an otherwise easily neglected possibility.

We have no way of knowing what level of discussion or interest in particular military or defense systems will be sufficient to induce a Soviet arms race response. As we indicate in a later section discussing possible Soviet apprehensions, it may or may not be feasible to follow a policy of "letting sleeping dogs lie."

¹Premier Khrushchev's address to the East German Communist Party Congress, January 16, 1963.

²Quoted by Randolph Churchill in While England Slept (New York: G. P. Putnam's Sons, 1938), p. 9.

IV. EVACUATION EFFECTIVENESS

4.1 Soviet Attacks

A crisis evacuation is not especially effective against Soviet first strikes. To summarize the conclusions of this section: countervalue attacks are now, or will soon be, able to destroy the United States whether or not the population is evacuated; counterforce attacks are at least equally well defended against without evacuating the population; and limited strategic attacks may not be discouraged, and may even be encouraged, by crisis evacuation. A few other Soviet first-strike possibilities exist, of relatively low probability, against which a crisis evacuation would be useful if the dynamic effects of evacuation on the crisis did not precipitate an otherwise avoidable war.

On the other hand, a U.S. evacuation would give substantial added protection against Soviet countervalue second strikes if they were measured only in hundreds of megatons (on urban targets) and if no unforeseen weapons or weapons effects made the computation irrelevant.

Countervalue first strikes. There are basically two different ways to compute the damage that could be done by Soviet first strikes at value targets. First there is the relatively straightforward computation of the numbers of deaths and casualties caused by surface bursts of a certain number of megatons. Second, there are the more complicated, but more appropriate considerations involved in assessing the problems of recovery and recuperation after substantial damage has been done to various capital assets such as farm land, productive resources in cities, ports, refineries, and so on.

This discussion contents itself primarily with considering how the Soviet Union could destroy half of the population of the United States despite our evacuated posture. Everett and Pugh¹ have discussed the effects of an attack on an unprepared population in the United States. They indicate, in particular, that if bombs were dropped at random, uniformly over the whole United States, it would require approximately 4,000 megatons (ground-burst) to kill half of an unprepared United States population. This very peculiar targeting makes irrelevant the degree and kind of redistribution of population which might have been carried out in anticipation of the attack. It therefore represents an upper estimate of

¹Hugh Everett, III and George E. Pugh, "The Distribution and Effects of Fallout in Large Nuclear Weapon Campaigns," Operations Research, Vol. VII, No. 2, March-April 1959, pp. 226-248.

the number of megatons necessary to destroy 90 million Americans if the population were moved but were left otherwise relatively unprepared for the attack.¹

In a Hudson Institute report² the Everett-Pugh model is applied to an actual evacuation plan and similar computations are made, assuming a greater degree of preparedness. These results indicate that Soviet ground-burst attacks which were distributed randomly over the entire country could kill 50 per cent of the population with an attack of 7,000 megatons, if the protection factor available were about 20 and if citizens remained in their shelters for about one month. These are merely orienting figures, since the kind of attack discussed is certainly not one which would occur. Nor, for that matter, could an evacuation which distributes population uniformly over the United States be considered feasible. Instead, evacuees would be in evacuation areas and attacks could be aimed at them. Thus the estimates tend to be high in this regard.

A similar uniform evacuation of the population east of the Mississippi over that same area would result in the distribution of 120 million people over an area of about 630,000 square (nautical) miles. Even assuming shelters with a protection factor of 200, and assuming that people remain in the shelters full-time for the first month, 50 per cent of the total United States population could be destroyed with approximately 5,000 megatons devoted to attacks east of the Mississippi.³

Consider next, a still more realistic evacuation. The evacuation designed by the Hudson Institute discusses an area in the northeastern United States which includes the states of Virginia, West Virginia, New York, Pennsylvania, and all of the states to the northeast of these. The population of this area, which constitutes almost the whole of OCD Regions 1 and 2, is approximately 58 million. In the evacuation discussed, about 90 per cent of the population of about one-half of the land area is moved because they live in, or downwind from, industrial centers or military targets. Of the approximately 50 million people evacuated, it is computed that even with the highest protection factor considered, 200, an

¹The "unprepared" population assumed here has, for the most part, a protection factor of between 2 and 4, i.e., the population would receive between 1/2 and 1/4 of the radiation being received above ground without shelter. Shelter on the ground floor of residential wood-frame or brick structures would give such protection. If basements existed, they would give protection factors of 20 to 50.

²Strategic and Tactical Aspects of Civil Defense with Special Emphasis on Crisis Situations (Final Report), (White Plains, New York: Hudson Institute, Inc., 1963).

³These computations assume that shelter occupants remain in shelters for a full month and then leave the shelter for 12 hours each day of the second month. The computations ignore fallout after 60 days. They also ignore the effects of weathering and the extent to which recovery from radiation may occur.

attack involving 1500 megatons and directed at the reception areas would result in the death of 45 of the 50 million evacuees.

Perhaps a more relevant estimate of the vulnerability of an evacuated populace arises through its dependence on the existence of survival industry, i.e., industry necessary for recovery and recuperation. The problems of survival industry have been discussed by Sidney G. Winter, Jr. in testifying before the Holifield Committee.¹ This testimony does not discuss the likely effect of evacuations or large blast shelter programs, both of which could result in low percentages of survival industry and high surviving percentages of people. However, it does provide data from which certain relevant conclusions can be drawn. Winter suggests that, if the ratio of surviving capacity in most industries to surviving population is not much less than half the prewar ratio, support of the population at the 1929 level of consumption or better should be possible. Normally studies find this relation a reason for optimism since, even if survival industry is targeted, the "collateral" per cent of population loss is not much less than half the percentage loss of survival industry. With crisis evacuation, however, attacks on survival industry could produce considerably smaller ratios. Attacks on the 100-300 most important such targets might reduce survival industry to 40% to 20% of its prewar total. If surviving population were maintained, for example, at about 90% (18 million fatalities), by an evacuation, the relevant ratio would be between .44 and .22. Hence attacks measuring one to three thousand megatons on industrial targets could make even over-all estimates of the adequacy of surviving industry for maintaining evacuated populace at 1929 living standards less compelling. The bottleneck problems would be intensified and the adequacy of the food supply diminished by the larger number of survivors. These and related problems should be further examined with respect to evacuation.

Counterforce first strikes. The case is fairly strong against using an evacuation to protect against counterforce Soviet first strikes. Basically, if Soviet counterforce strikes were the only concern, it seems that the population would be better protected in cities.

The cities have the largest quantities of food supplies and medical facilities; the population is most comfortably housed in this environment; and the crisis period would be better utilized for the improvisation of shelter protection than for transition and relocation of citizens. Also, the evacuated population may tend to lose some of its capacity to maintain itself against an attack as conditions and supplies tend to run low in the reception areas and, in the long run, as the season changes.

¹Civil Defense--1961, Hearings Before a Subcommittee of the Committee on Government Operations, House of Representatives, Eighty-Seventh Congress, First Session, August 1, 2, 3, 4, 7, 8, and 9, 1961. See also Winter, Sidney G., Jr., The Sources of Economic Collapse, RM-8662, 29 March 1961. U.S. Air Force PROJECT RAND.

Another reason for not evacuating is that the buildings in urban areas may be more suitable for fallout protection than many of the homes in rural areas. Rural homes often lack basements, especially in the southern part of the country.¹ Even with basements, crowding of 30 people into a basement, as called for by typical evacuation plans, will restrict the amount of time during which the occupants can remain in the shelter. By contrast, without an evacuation basements would not generally be densely packed.

It seems likely that evacuation against a counterforce attack would be especially undesirable, if the above arguments are accepted, in most of the eastern United States, since few force targets are in the East. Evacuation against a counterforce attack might be unnecessary also for cities such as Los Angeles and San Francisco.²

Certain urban areas are near targets which cannot be moved. This is the case with Norfolk, Virginia, which is close to a large number of surface ships and submarines, a naval air station, and the headquarters for the Atlantic Fleet. In such cases, evacuation of a particular city might well be desirable.

In general, assuming the completion, in about 1966, of the current missile construction program, any rational Soviet counterforce strike would have to attack so many hardened missile sites that fallout protection would be a very serious problem, especially in the western United States. The long period during which it might be necessary to remain in shelters against such a hazard emphasizes the benefits of having people remain in their homes in preference to improvised rural shelters. Furthermore, the clouds of fallout resulting from attacks on the western states containing the missile sites are likely to be so dense and all-inclusive that the urban areas covered by them might not be within reach of any suitable reception area.

Limited strategic attacks. The question arises whether evacuation might not be a valuable procedure to forestall either U.S.-initiated or

¹In the northern half of the United States 50 to 90 per cent of the population have ready access to basements--the higher percentages are in the East. In the southern part of the country the percentages are much nearer 10 to 20 per cent. In each section, rural areas into which evacuees would move would have a significantly lower number of basements than the average for that part of the country. The national average is about 60 per cent. Norman A. Hanunian, Hearings Before a Subcommittee on Government Operations, House of Representatives, 87th Congress, First Session, Civil Defense, 1961, August 1, 2, 3, 4, 7, 8, and 9, p. 222.

²Of course such cities could be made force targets by a previous dispersal of SAC bombers to civilian airports or the assignment of Polaris submarines to ports in or near them.

S.U.-initiated limited strategic attacks. These attacks might involve the destruction of an isolated city or a port or an atomic reactor. The object would be to show resolve and to indicate to the enemy the cost of continued escalation.

But resolve and annoyance can be expressed by attacking reactors, empty cities, empty ports, and reception areas after an evacuation. In fact, evacuation could even permit less provocative limited strategic attacks on cities and thus encourage them. This is particularly true in the parity context. However, if an extended deterrent posture is maintained, the evacuation will signal a U.S. readiness to initiate a central war rather than to indulge in limited strategic attacks. This could be very effective as a deterrent to isolated attacks.

Other possibilities. The possibilities just considered are somewhat extreme. In order to judge how appropriate they are, it is worthwhile to consider how other kinds of attacks might arise.

First there is the possibility that the Soviet Union might attack a few cities while reserving a greater part of its weapons for military targets. Inasmuch as present U.S. doctrine, in the form of speeches by the Secretary of Defense, calls for maintaining the option of attacking Soviet value targets as such if, and only if, American cities are bombed, it is hard to justify such a Soviet first strike.

Another possibility is the counterforce attack which degenerates into countervalue targeting during the course of the war. In this case many lives would be saved by the evacuation.

Countervalue second strikes. Roughly speaking, crisis evacuation--which is designed primarily to protect against moderate or small Soviet countervalue second strikes--is not especially efficient in other situations. The exact efficiency in this case depends, of course, on the number of megatons which the Soviet Union can deliver after a U.S. attack. Such a U.S. attack could occur only in a very serious crisis, probably involving war in Europe. It must be assumed, therefore, that Soviet forces are on alert. However, this only begins to hint at the complications involved in trying to assess the magnitude of a possible second strike. The possibilities for U.S. coercion of Soviet residual forces; the possibility of new Soviet secret weapons; the possibility of secret location of missiles; the number of Soviet delivery vehicles; the size of weapons; the accuracy and designated ground zeros of Soviet weapons; the efficiency of U.S. air defense systems; the capabilities of antisubmarine devices; and many other considerations are involved. Furthermore, the magnitude of attacks which the U.S. would fail to survive is not known.

It is difficult to assess the entire situation in any one rough computation but, if necessary, the situation might be characterized as follows: if hundreds of megatons are delivered on urban targets, whether

or not they are evacuated, the possibilities for recovery and recuperation are probably high to medium. If, on the other hand, the Soviet second-strike megatonnage on urban targets is counted in the thousands of megatons, the possibilities for recovery within decades rapidly become medium to low even with evacuation. It must also be remembered that relatively few preparations for recovery and recuperation are in existence at this time and that new weapons effects and new kinds of weapons might very well make the counting of delivery vehicles and megatonnage irrelevant. These computations are therefore very tentative. For big civil defense programs, they could be made more certain. But it seems probable that Soviet second-strike capabilities will be measured in thousands of megatons within this decade.

Possible Soviet strategic responses to an evacuation and threatened nuclear strike. We have considered elsewhere the effect on Soviet procurement and development of weapons of purchasing an evacuation capability. It is also important to consider more immediate Soviet reactions to an evacuation which is being either threatened or undertaken in a crisis. In Section III we mentioned the problem of a Soviet pre-emptive attack, the Soviet strategy of stalling, and the possibility of their offering us unreliable inducements to de-evacuate. Soviet threats to destroy Europe have also been mentioned.

What other possibilities are open to the Soviet Union which are not associated with increased procurement of weapons? First and foremost, of course, there is the possibility of a Soviet backdown, halt, compromise, or concession. These are more likely in the extended deterrence case than in the parity case. In any case, one probably ought to assume, to be prudent, that the crises which are relevant to this discussion will arise only in dealing with adversaries who have considered the possibility that the United States would evacuate.

Perhaps more important than the possibilities mentioned so far is the possibility of really tough adversary responses. These are probably quite consistent with the crises which our discussion must assume. One example of such a response would be a limited strategic attack. When neither side has the capability of attacking the other in a full-scale fashion without unacceptable retaliation, there is a certain logic to threats of limited attacks. One should not lightly discount the possibility that logic will have an impact on strategic decisions--no matter how seemingly bizarre its consequences--when such strong pressures and violent crises are upon us. Our discussion of limited strategic attacks indicated that our evacuation would tend to be strategically advantageous against this Soviet strategy if we had a counterforce capability. Whether or not an evacuation capability represents a strategic advantage in the parity case may be controversial. The advantage would accrue if the attacks of each side were carefully matched in yield while each attempted to exact a greater number of casualties. However, if attacks are not so carefully matched, if stockpiles are large with respect to the number of exchanges envisaged, or if the weapons are not directed to population targets, the advantage is much less clear. Against specified urban

limited strategic attacks, the evacuation would have prudential value. Whether or not it has a significant prudential value in the more dynamic actual situation is less clear.

Another possibility for a desperate adversary might be to announce that a sufficient number of his missiles and bombs were all given substantially the same "target"--for example, the northeastern United States--to guarantee its destruction no matter how war might break out. The point of the Soviet announcements would be to dramatize the issues by specifying an exact (minimum) cost to striking first.¹

A possibility which certainly must not be ignored is that the Soviet Union might simply continue the attack against Europe, announcing that it refused to believe that the United States would carry out its commitments by initiating a war which could destroy its allies. We must not forget that our "bluff" might be called and that we might have to carry out our threats.

Tough Soviet decision-makers might announce that if an attack were aimed at the Soviet Union, other countries would be destroyed--to determine the future world order, to retaliate against U.S. military allies, and to weaken our alliances. The list might include Germany, Great Britain, or even the Philippines and Australia. This strategy would dramatize the fact that the Soviet Union held virtually every part of the world hostage for our "good behavior." There is evidently a range of possible strategies which would bring home to U.S. decision-makers the import of their actions in terms of innocent lives and nations.

Another possible, and perhaps even likely, Soviet strategy would be to threaten the use of a secret weapon or of a large number of secret missiles which, it would be claimed, would effectively destroy the United States, evacuated or not. These threats are different from the previous discussion on methods of neutralizing an evacuation through procurement, in that these weapons need not exist. Some uncertainty about the outcome of a disarming attack can be created in a U.S. decision-maker's mind by even partially unfounded Soviet assertions. We would be facing undefined risks of total destruction.²

¹Ordinarily U.S. decision-makers might expect to disrupt the Soviet retaliatory forces in a first strike to such a degree that any attack mounted thereafter would be relatively disorganized. It becomes impossible for the United States decision-makers to be sure exactly which localities would be attacked or the degree of damage which would be done to them. This makes the entire situation something of a lottery and prevents a very clear visualization of the outcome of a U.S. first strike.

²For example, Premier Khrushchev announced to the Supreme Soviet on January 14, 1960 that the Soviet Union had a new and "fantastic" weapon in "the hatching stage." Another possibility is that the Soviet Union might claim to have built a Doomsday Machine (with a technological breakthrough) which would be triggered by any U.S. attack upon it. Although there might be considerable doubt among U.S. decision-makers about the existence of this device, one would expect that a very small probability of its reality would suffice to deter the United States.

The U.S. partial disarming attack, which will remain an implied threat of any evacuation, will certainly require postattack coercion for its "success." Therefore, it would be logical to expect a Soviet announcement that their forces could not be coerced because they had automatic responses built into them. These might be mechanical devices or doctrine which permitted or ordered the commanders in the field to fire under certain circumstances. Thus, for example, U.S. decision-makers could be faced with the fact that even if the war ended successfully, attacks from Soviet submarines might still continue.

It must also be remembered in trying to estimate U.S. resolve that aggression is never completely "naked." In fact, there are always excuses and other methods for inhibiting defensive responses. For example, if the Soviet Premier subtly announces that he has lost control of the government to certain rightists and intimates that only a certain U.S. concession will in fact permit him to regain control, and if he indicates that time will permit him to retreat, such a "straw" would create a certain amount of uncertainty.

It should be clear, from the foregoing, that there are many Soviet measures which might be taken, without an increase in Soviet capability, to make more difficult a U.S. policy which combined crisis evacuation and threats of a nuclear strike. Whether or not these measures would succeed in deterring an aroused United States decision-maker is difficult to predict.

4.2 Other Considerations

Feasibility of evacuation. There exist many uncertainties about the feasibility of an evacuation of the kind which we are discussing. For example, there are the unprecedented problems of evacuating tens of millions of people in the face of an unprecedented threat.

The problems of transportation, as well as some other problems, have been considered in a recent Hudson Institute report.¹ This report concludes that, at least on paper, the crisis evacuations considered here might be completed in a week or two. During this period it is suggested that the evacuees might improvise substantial amounts of fallout protection in the reception areas. The combined labor of many people could be expected to result in a greater increase in civil defense capability than has been purchased in the last ten years. The improvised protection would be almost entirely fallout protection. It would result from increasing the protection factors of basements to between twenty and two hundred. In the many parts of the country in which basements are uncommon, evacuees would find it necessary to dig shelters of various kinds.

¹Strategic and Tactical Aspects of Civil Defense with Special Emphasis on Crisis Situations (Final Report), (White Plains, New York: Hudson Institute, Inc., 1963).

Weather would be a very important factor in considering the feasibility of evacuation. Other important aspects of the necessary planning would be: the printing of leaflets that would describe to citizens where they should go; and the stocking of reception areas with the necessary supplies. The interested reader is referred to the report cited above for further details.

Economic costs of crisis evacuation. The gross national product of the United States is approximately \$550 billion a year, which means that, formally, losses resulting from a total disruption of the economy are about \$1.5 billion a day. Although a few productive operations might continue during the evacuation, this would be balanced against the depletion of inventories. Thus, in an evacuation lasting one month, losses might be on the order of tens of billions of dollars. This is a relatively short period, since the movement itself might take two weeks. The evacuation would also result in the loss of perishable goods, and much equipment might deteriorate from lack of care. There is also the possibility of unexpected problems. To take a possibly unrealistic example, if fires broke out because houses were untended, large cities might simply burn down.

Evacuations in which persons performing nonessential tasks are moved first provide an easier transition in some ways and lower economic costs for a period. However, partial evacuations of 25% to 50% of the urban population do not seem sufficient to improve the credibility of a first strike, although they may heighten adversary fears that a more complete evacuation will follow.

The costs of the evacuation might be quite irrelevant in the context of a situation serious enough to call for evacuation.

Feasibility of extended evacuation. It is especially difficult to assess the feasibility of long-term evacuations when the evacuations themselves have not yet been designed. For example, in the western and southwestern United States it seems likely that an evacuation might entail large numbers of people living in tents and camping out. Except in areas such as southern California, it is difficult to imagine that an evacuation of this type could last through a winter. Much depends on the time of year when the evacuation is initiated. If six months remain before the onset of winter, much might be improvised. On the other hand, an evacuation in October might result in such difficulties by December that it would have to be prematurely ended. The possibility of initiating an evacuation during the coldest months seems small. During an extended evacuation, there could also be problems of morale and political solidarity. Problems might include: desires to de-evacuate; rumors that the evacuation is pointless due to large Soviet weapons; the hardships of the sick, elderly, and very young; the advent of winter; and so on.

Domestic military problems might arise through the dependence of military systems on civilians, such as SAGE air defense centers requiring

American Telephone and Telegraph employees, or SAC bases requiring civilian supplies of enormous quantities of fuel for extended air alerts.

Over significant time periods, such as several months, the effect on our allies and on other nations around the world of our withdrawal from normal economic life will be appreciable.

An extended evacuation is more likely in the parity case than in the extended deterrence case.

Lead time. An important question for this study involves the length of time necessary to construct evacuation plans, if it is desired to do so. Evidently this depends in great measure on the kind and scope of the plans desired.

If, for example, the plans envision an evacuation which permits an attack on Chinese missile sites if China threatens a few American cities, then the plans might be relatively simple, as we indicated in Section 2.2, "Use of Strategic Evacuation Against Nth Countries."

On the other hand, an evacuation designed to protect against a Soviet second strike of perhaps 500 weapons might require not only extensive evacuation preparations but preparations to permit recovery and recuperation as well. Evacuation into prepared rural shelters, for example, could involve years of construction as well as a period of planning.

There is, unfortunately, a great deal of scope for wishful thinking in the design of a crisis evacuation. For example, although it might be possible to evacuate a certain percentage of the population of a certain number of cities by a certain day, it might still be true that if the war occurred on that day, supplies and food would not be sufficient to maintain the population through the necessary period of shelter. There is also the possibility, mentioned before, that the destruction of empty cities could prevent recovery and recuperation, despite the best-designed evacuation plan. And, although many smaller cities could be evacuated fairly quickly, the most likely targets for countervalue attacks--the large urban areas--could not. Even the possibility that evacuation plans might consciously or unconsciously assume suitable weather must be considered.

There is a further possibility that new weapons effects or new large weapons might be such as to make otherwise adequate plans inadequate. Finally, there is even the possibility that adequate plans must include measures as diverse as educating the public (to prevent resistance to the carrying out of the plans)¹ and reassuring the Soviet Union that an evacuation designed against the Chinese is not a threat directed against them. Of course, some of these uncertainties might turn out to be unexpectedly favorable.

¹This might involve the resistance of city dwellers who do not want to leave cities as well as the resistance of rural home owners who do not want to receive evacuees.

Despite all of these concerns, it is surely impossible to say that six months of suitable tension and great efforts would not permit the establishment of some kind of evacuation ability. Such paper plans might permit the 90% evacuation of large cities in weeks and smaller ones in days. The speed with which they could be fabricated probably depends very greatly on the extent to which a pre-evacuation "mobilization base" has been prepared. The most essential of such preparations are intellectual decisions concerning the nature and scope of the total evacuation in various regions. These would permit detailed work to go forward in crises in an efficient manner.

4.3 Soviet Evacuation Effectiveness

According to unclassified estimates, United States second-strike capability is already extremely large. It has been estimated that the United States second-strike capability may be larger at this time than the Soviet first-strike capability. In any case, by about 1965 the United States plans to have approximately 1500 ICBM's hardened or in submarines. SAC also owns approximately 500 long-range bombers on fifteen-minute alert. It is not at all unlikely, therefore, especially in the face of a provocative Soviet evacuation (which would alert U.S. forces) that the United States could threaten to deliver, on second strike, several thousand megatons in more than a thousand delivery vehicles. If, as a result of an effective evacuation and shelter program, many persons survived a U.S. retaliatory attack, the difficulties of recovery and recuperation would still remain. If even the first few hundred Soviet cities were destroyed, the prospects for Soviet recovery and recuperation would seem dubious at best. As a result, assuming no revolutionary change in the balance of strategic forces, the United States can still claim, in any crisis bargaining session, that it holds the entire Soviet Union hostage using long-run economic effects as well as short-run weapon effects. Conversely, Soviet decision-makers considering the prospect of an evacuation must face the fact that they cannot reduce U.S. forces sufficiently to threaten credibly to go to war with that goal in mind.

Soviet evacuation must therefore be judged as prudential only, i.e., as movement undertaken without regard to bargaining; it will simply save lives if war occurs.

At present a lag in doctrine seems to be influencing Soviet planning. Typical manuals state that "a large part of the population will remain in the cities and in inhabited areas." This seems to be due to a desire to keep the economy undisturbed to permit the waging of the war and to permit military movements. This underlines the lack of intent to achieve bargaining advantage which, as we understand modern strategy, requires lowering the expected number of casualties that could result from an adversary second strike. Thus a Soviet attempt to use evacuation for strategic bargaining is unlikely, because of the size of our retaliatory forces. As a result, it seems feasible and consistent with our posture up to this time to defend against Soviet evacuations with an overwhelming

retaliatory capability that also serves to keep the probability of Soviet surprise attack very low. If this is so, it seems unnecessary to purchase our own civil defense capabilities out of fear that Soviet purchases will gain them some sort of advantage. If civil defense programs could protect agriculture and greatly strengthen the ability of a country to recover without its cities, the situation could be changed. In the meantime, offensive strength (retaliatory capability) seems the answer to potential Soviet passive defensive strength.

This discussion must necessarily fall short of an assurance that the Soviet Union will not evacuate and then try to use this in bargaining. But it does seem that such a Soviet strategy would be a great miscalculation.

4.4 Spontaneous Evacuations and Other Movements Utilizing Strategic Warning

In this section we discuss an important and peculiar problem. It is often argued that an evacuation capability must be purchased because any other policy would "lock the people in" when a very serious crisis arose. It is asserted that if the evacuation is to occur in any case, it might as well be done properly.

We argue that spontaneous evacuations are likely to be small and almost certain to be strategically insignificant. They might well be large enough, however, to disrupt the economic life of certain cities and to weaken the United States bargaining position. It seems, then, that the government might well want to discourage large spontaneous evacuations, whether or not it decided to purchase a capability for initiating planned movements. We also conclude that spontaneous movements could be discouraged by informal government efforts if there had not been attacks upon the United States itself.

Other kinds of evacuations are mentioned which utilize strategic warning but which do not have strategic impact.

Spontaneous evacuation: likelihood, magnitude, strategic impact. Since it will be our thesis that the government may well consider spontaneous evacuations less desirable than either no evacuation or government-sponsored movements, it is not unreasonable to consider the case in which the citizen is given absolutely no assistance or is even discouraged.

Citizens will first ask, "Where can I go?" The average citizen is unlikely to be making fine distinctions between different kinds of attacks, first and second strikes, and so on. But if security against Soviet first strikes remains the criterion by which locations are judged, almost any area will require fallout protection and hence seem of dubious safety. For example, by 1965, Soviet first strikes of 5,000 MT or so will not likely be infeasible. A military and population attack of about this size would find only about 25% of the population in areas which do not require some kind of shelter preparations. If variations in the possible winds are

considered, the number of people who would have been assured of needing no protection falls to about 10%.¹ Assuming that fear of fallout is a motivating force in any domestic evacuation, rural motels and hotels are not going to seem suitable. Instead, access to a home in which preparations can be made will be necessary. The population of the areas in which basement shelters would be suitable against such an attack represents about another 25% of the total. The population of rural areas could be increased perhaps five times with extensive arrangements, but without such preparation many rural families might refuse strangers.

Of course, spontaneous evacuations might not depend on the objective decreases in risk which can be obtained. Cities might simply appear to be more dangerous than other areas, whether or not this was the case. But if many areas seem equally dangerous, the comfort and psychological security of staying at home may be a determining factor. Even in large cities, the possibility that cities will not be attacked may--partly because it is a hopeful thought, and partly because the government could encourage it--become part of the strategic considerations of citizens at large.

If a satisfactory place of relative safety is found to which one might evacuate, the problem will arise of predicting the likely length of stay. It could be very difficult to predict the length of time before the crisis would erupt. Even the relatively definite Soviet six-month ultimatums have a way of stretching themselves out. The median family has about \$500 in liquid assets.² In motel-style living, this would last about 25 days. In a relative's home, the main consideration could be the loss of income earned, but sharing costs could be onerous. The payments on the evacuated house might be defaulted. The prospect of guessing wrong about the crisis and returning in debt is likely to loom large.

Also, loss of earned income may be correlated with loss of job. Many people must ask formally or informally for the right to take days off. In large firms which intend to continue doing business, pressure would be put on people to stay. The prospect of losing a job is obviously a very serious one for most people. Perhaps almost as serious is the possibility that evacuees will return to be ridiculed by neighbors and co-workers.

Evacuations could occur in which families sent their children (possibly accompanied by the mother) to the homes of relatives. Such movements circumvent the difficulties due to loss of job, earned income, or respect,

¹E.D. Callahan, et. al., The Probable Fallout Threat Over the United States, Prepared for the Office of Civil Defense Mobilization (Burlington, Mass.: Technical Operations, Inc., 1960).

²29% of the population have no liquid assets (as defined by bonds, checking and savings accounts, and shares in savings and loan associations and credit unions). 64% have less than \$1,000 and 89% have less than \$5,000. See Statistical Abstract of the United States 1962 (Washington: U.S. Government Printing Office, 1962), No. 441, p. 328.

although they do not resolve the problem of finding a place of safety and predicting the necessary length of stay. But although families may be willing to be divided at first, they may change their minds.¹

Also evacuation of women and children is likely to seem pointless to many men who cannot visualize their families surviving without their help in a world that may seem capable of overwhelming even their own able-bodied efforts. If the postwar world is pictured as one of hunger, plunder, and lingering sickness, families may fear separation far more than destruction.

Finally, there is the possibility, open to relatively few, of evacuations to other countries.

At the other extreme, there is a kind of short-term spontaneous evacuation which seems relatively plausible. This is the movement which results from "tactical" political warning. Because of the many ties to home and job, some citizens might keep a car ready and loaded during tense periods rather than leave. After extensive publicized military alerts, the announcement that the President will make a "fundamental major policy address to the nation on matters of the highest importance" might suddenly trigger the movement of a group of evacuees.² They might consciously be leaving town until the speech could be assessed in relative safety, with the expectation of returning if the crisis either had passed or seemed not yet to be near a peak.

It is interesting to specify arbitrarily how a spontaneous evacuation might distribute people over the largest 100 cities. Figure 1 gives some possibilities. We note that the results of these spontaneous evacuations are likely to be very poor from a strategic point of view. Even the evacuation discussed first leaves 33 million in the first 100 cities (see Figure 2), although 50% of major urban areas are uprooted. The evacuees are sure to be very badly distributed (compared to a planned movement) for attacks measured in thousands of megatons.

Will the Government want to discourage large-scale spontaneous evacuations? Crisis evacuation may or may not be considered desirable and feasible by the Government. In the former case, suitable preparations for official movements will be made, but as is indicated above spontaneous evacuations are unlikely to be strategically significant. And they might even be harmful. During a period of negotiation, it

¹Four months after the British evacuation in September 1939, 88% of the evacuated mothers and accompanied children, and nearly half of the unaccompanied children, had returned. See Richard M. Titmuss, Problems of Social Policy (London: His Majesty's Stationery Office and Longmans, Green and Co., 1950), pp. 171-174.

²Such statements with some variation were common on the 22nd of October, 1962, during the Cuban crisis.

FIGURE 1Definition of the Arbitrarily SpecifiedSpontaneous Evacuations in Figure 2

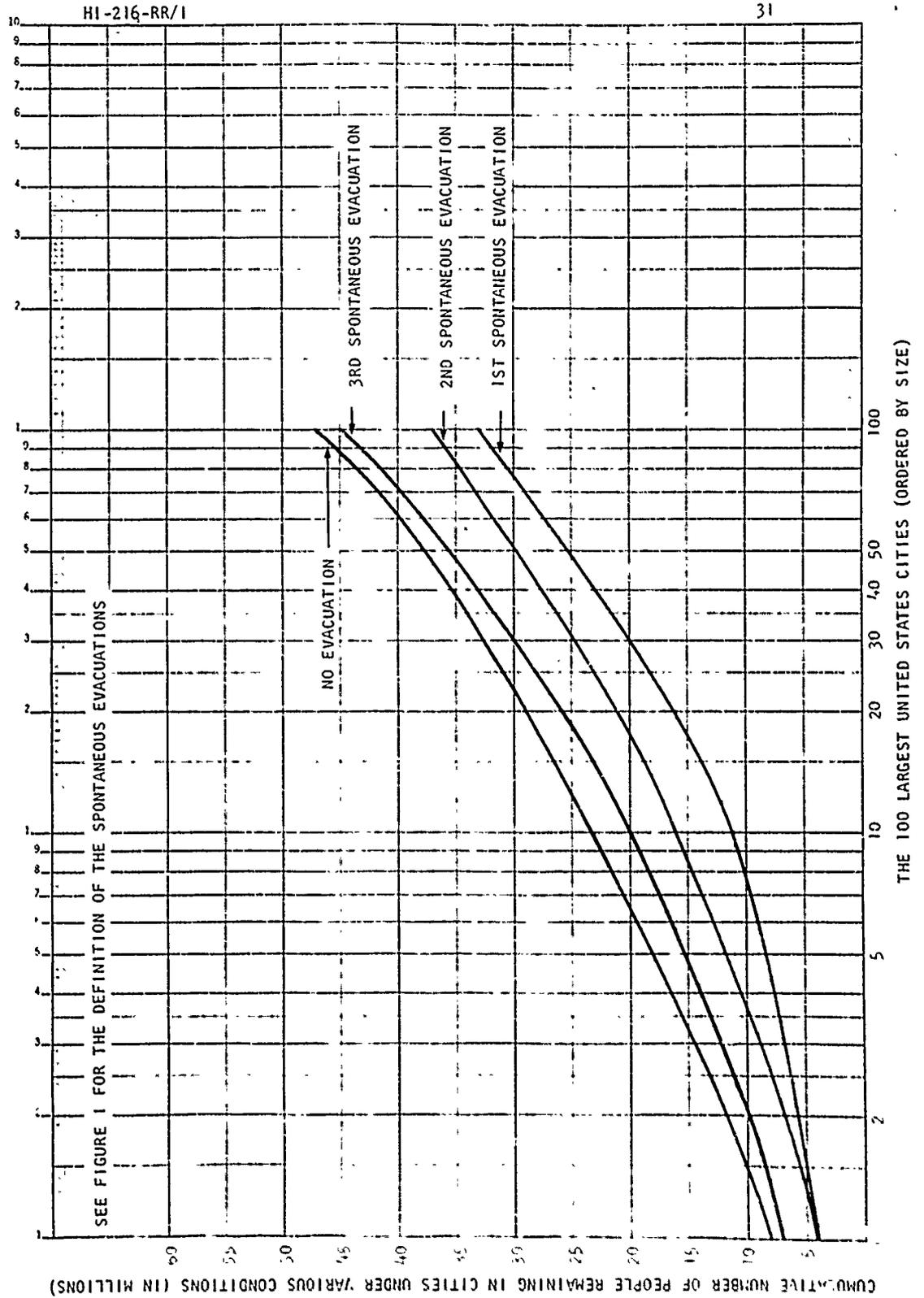
1st spontaneous evacuation: 50% of the largest 10 cities leave
20% of the next largest 20 cities leave
5% of the next largest 20 cities leave
1% of the next largest 50 cities leave

2nd spontaneous evacuation: 25% of the largest 50 cities leave
10% of the next 50 cities leave

3rd spontaneous evacuation: 10% of the largest 10 cities leave
1% of the next 90 cities leave

The 10th largest city is St. Louis, Missouri	population	750,026
The 30th largest city is Newark, New Jersey	population	405,220
The 50th largest city is Tulsa, Oklahoma	population	261,685
The 100th largest city is Topeka, Kansas	population	119,484

FIGURE 2. CITY "HOSTAGES" IN FOUR SITUATIONS



seems unlikely that our position would be improved by signs of instability and concern among civilians. For example, large-scale spontaneous evacuations would result in domestic economic disruptions which might encourage an adversary to stall in the hope that they would become greater. If spontaneous evacuations become large enough to be strategically significant, they could give rise to Soviet fear of surprise attack and a possible pre-emption, although it must be recognized that a Soviet pre-emption is likely to be very highly deterred. There are also domestic political reasons for wishing to keep people calm and for giving the impression that the situation is under control.

Deterrence of spontaneous evacuation. Assuming that a spontaneous evacuation is undesirable, it is worthwhile to consider how it might be controlled. Although it is difficult to believe that the U.S. government could lock its citizens in cities with roadblocks in a time of danger, it would probably be a mistake to think that evacuees cannot be influenced by less obvious mechanisms.

The Government might call on everyone to remain calm, and it might deplore signs of fear in the face of an enemy "test of nerve." It might recall previous threats that failed and indicate that we could again face down the danger with courage. A stress on our policy of giving the enemy "the greatest possible incentive" for avoiding our cities, and fallout maps showing a paucity of places to go, could combine to make cities seem safer. As in Berlin under Soviet threats, a spirit could be developed in which fleeing would seem disloyal. Government, state, and city employees could be requested to set an example. The Government could refuse to close schools or to permit the crisis to be an excuse for failure to meet business obligations, and so on.

Other kinds of evacuations. There are other kinds of crisis evacuations which have advantages and drawbacks different from those discussed so far. Among these are: 1) evacuations designed to minimize collateral damage from military attacks--for example, movement from cities near submarine bases, missile sites, SAC bases, SAGE control centers, and so on; and 2) evacuations resulting from Soviet threats to attack a particular city. A few words might be said about these possibilities.

There is something unfair and peculiar about not making special attempts to provide for the protection of citizens who reside near high-priority targets. A notion of "equal protection" seems sufficient to demand that some thought be given to the protection of cities that, like Tucson, seem highly likely to be destroyed in a general war. A government-sponsored evacuation of target areas would lend emphasis to our stated intention of avoiding population areas in war, without the provocative removal of many hostages which a large-scale crisis evacuation entails. In many ways, however, the target-area movements would have the same disadvantages as a large-scale evacuation, although they would be of lesser magnitude.

The second possibility, that of evacuations against selected reprisals, involves limited strategic attacks. A particular city might be threatened and its evacuation encouraged by the enemy. The threatened country might or might not wish to evacuate that particular city. Although it is difficult to predict the strange context in which such threats might be made, it seems clear that very little, if any, advance preparation is necessary for the evacuation of the isolated centers. The entire country would be in a position to assist this "disaster area." If a threat were made to destroy an unnamed city, much greater difficulties would arise.

V. ARMS CONTROL AND ARMS RACE CONSIDERATIONS

Crisis evacuation is potentially so significant a measure, and at present is so neglected, that it would probably be fruitful to examine in detail its relationship with many arms control measures. These include a ban on major military movements and measures to reduce the possibility of a surprise attack. We shall discuss some more general implications of a crisis evacuation policy, beginning with the problem of Soviet reactions. We also discuss particular interactions between this civil defense policy and three other U.S. policies which might be undertaken unilaterally. We then discuss long-run problems and finally the feasibility of bans or restraints on crisis evacuation. Inasmuch as substantial progress in arms control almost certainly requires giving up extended deterrence strategies and in view of the preceding arguments linking crisis evacuation to such policies, Section V is composed primarily of arguments against evacuation.

5.1 Soviet Reactions

Immediate possibilities for arms control. As we noted, buying a crisis evacuation capability conveys to a cautious adversary a serious interest in maintaining a U.S. extended deterrence posture. This would seem to encourage the Soviet Union to believe that a large number of Soviet missiles are necessary.

But also, and perhaps more important, the vigorous pursuit of measures designed to enhance threats of a nuclear strike is probably incompatible with successful negotiations with the Soviet Union. It is interesting to note, in this regard, that crisis evacuation does not bring about the "position of strength" which is often considered to be an important negotiating asset.¹

It seems impossible to avoid basing a decision to authorize (or to fail to authorize) crisis evacuation plans on speculations. In particular the magnitude and type of U.S. preparations which would be sufficient to have an unfortunate impact on the immediate prospects for arms control cannot be known.

¹It would be such an asset if it put great pressure on the Soviet Union to negotiate an arms control agreement quickly. However since any attack by the United States on the Soviet Union could only follow great provocation, and since the arms race has not, in the past, provided an immediate and overriding necessity for agreement, one can speculate that the Soviet Union would be encouraged simply to refrain from provocation until this new capability is neutralized by new weapon effects or increased quantities of weapons. Thus evacuation plans might decrease the immediate likelihood of Soviet concessions on arms control.

Acceleration of the arms race. We have argued that the likely Soviet response to a vigorous United States crisis evacuation program would be to purchase additional missiles rather than to improve their passive defense preparations.

Perhaps the most important reason for this is the fact that the missiles improve Soviet chances of preventing an attack while passive defense only decreases the destructiveness of war if war occurs. Between these two goals decision-makers on either side have not, in the past, ever chosen to emphasize the second.

And, as indicated in Section 4.3, U.S. second-strike capability is so large that an extremely extensive defense program would have to be initiated even to guarantee the immediate survival of a significant percentage of the Soviet population after a United States counter-value second strike. Furthermore, if Soviet production costs become comparable to our own, \$1 billion a year for five years will purchase, install, and maintain 1,000 Minuteman-type missiles.¹ The purchase of such missiles would very substantially decrease the likelihood of a United States first strike of any kind. On the other hand, compared to current Soviet arms race expenditures, these missiles could not logically be termed a great increase in the Soviet arms program.² In terms of "cost-effectiveness," the purchase of missiles is considerably superior to that of civil defense. Thus evacuation may lead, not to a "defense-defense" race, but to a "defense-offense" race.

As we have noted, the Soviet Union is under no immediate pressure to make the purchases that our evacuation capability demands since they should not expect an unprovoked evacuation. However, the need for missiles is fairly clear if deterrence is to be maintained in serious crises that may occur over time. Figure 3 indicates why.³ It plots the number of people in the most densely populated areas before and after an evacuation that is described in a Hudson Institute study of the northeastern United States. Notice, for example, that the number of people in the densest 1,000 square miles (12 million) can be found, after evacuation, spread over 10,000 square miles. Roughly speaking, Soviet second-strike capability must be increased by a factor of five or ten to hold the same number of people "hostage."

¹Hearings on Military Posture and H.R.9751 (as distributed by the Committee Secretary), Committee on Armed Services, House of Representatives, Eighty-Seventh Congress, Second Session, January and February, 1962.

²Since blast shelter programs would cost billions of dollars, if not tens of billions, the offensive weapons are preferable economically to a program which attempts to remove hostages from the threat of immediate destruction.

³This graph was constructed by ordering counties by density of population.

The possibility also exists that very large Soviet rockets might be loaded with multi-megaton weapons and installed in secret locations. This would represent an acceleration of the arms race in an undesirable direction and might well nullify the effects of the evacuation. This is probably feasible.¹

Encouraging the Soviet Union to purchase invulnerable weapons. One argument against worrying about the effects of a United States purchase of an evacuation capability runs as follows. If the Soviet Union does not purchase the missiles necessary to counteract the advantage gained by our having an evacuation capability, then some advantage will accrue to us. If in fact the Soviet Union does purchase the invulnerable missiles that make the evacuation capability useless for an extended deterrence policy, then there will be no net loss (relative to the no-evacuation case) from the standpoint of national security. Neither country will be able to attack the other and the evacuation capability will simply have speeded up the evolution of Soviet military posture. However, during the time that the arms race has been accelerated, the possibilities for arms control are probably correspondingly diminished. Furthermore, the argument demands that one put a relatively low evaluation on the proliferation of Soviet weapons and the possibility that very large weapons might be deployed by the Soviet Union.

¹For example, it has been estimated that a 20 megaton bomb might weigh five tons. The Soviet Union put five tons in orbit in May, 1960. (See "Space Vehicle Log," Aviation Week and Space Technology, March 12, 1962, p. 187.) Since payloads will increase, and yield to weight ratios will decrease, the yield of possible ICBM's will increase rapidly. It is somewhat more difficult to put payloads in orbit than to launch them in an intercontinental trajectory. As for the problem of secrecy, in discussing the potentialities for arms control of satellite reconnaissance, D. G. Brennan points out:

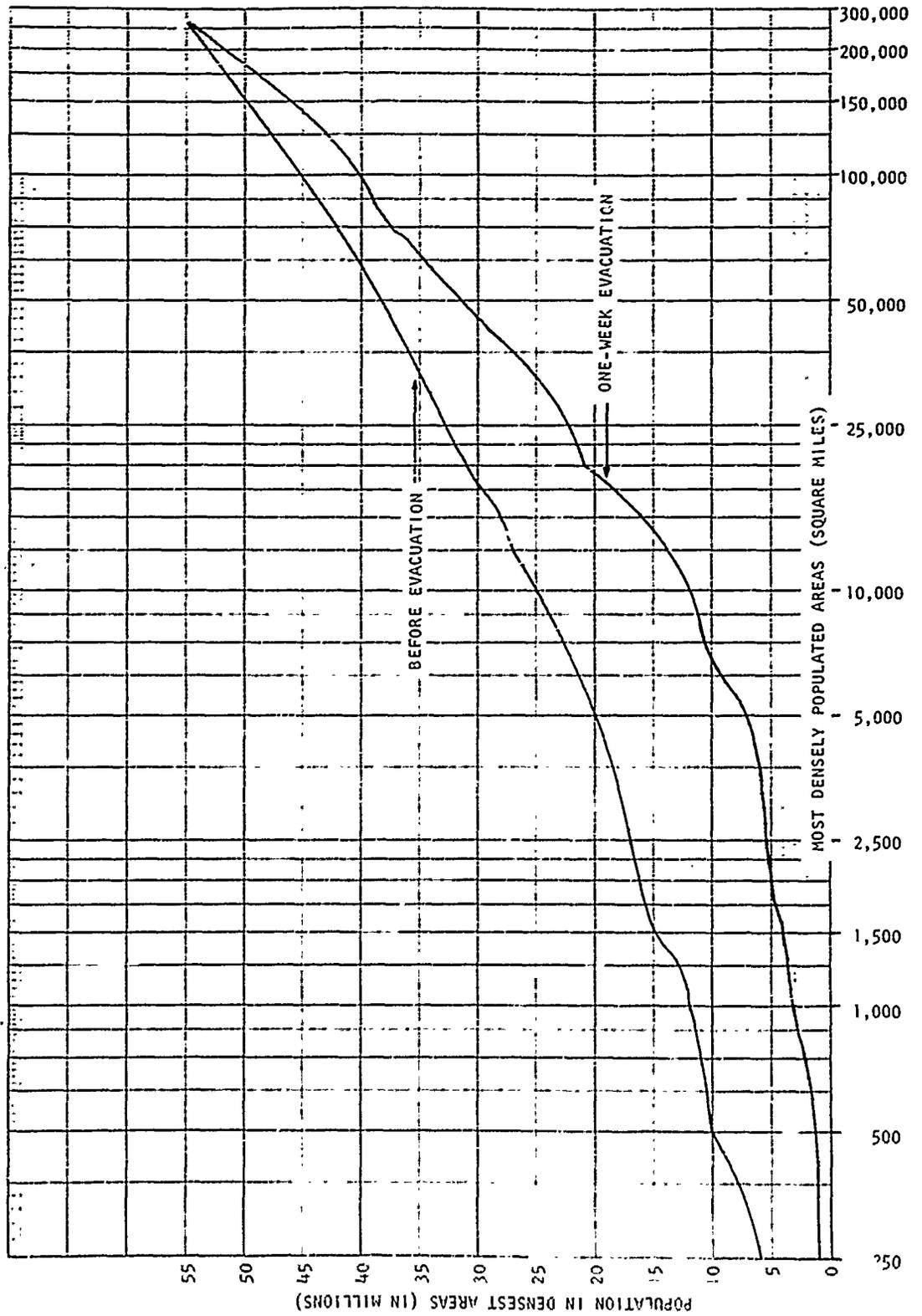
It seems to me that, with the aid of periods of darkness, occasional periods of cloud cover, and only a modest amount of ingenuity, it would be possible to build fixed missile sites one after the other ('like sausages,' as Khrushchev has put it) that would not be identified as such by an eight-foot ground resolution capability in the reconnaissance system.

He also points out that:

There are large areas of the Soviet Union that are covered with solid clouds for weeks at a time.

Donald G. Brennan, "Arms and Arms Control in Outer Space," Outer Space: Prospects for Man and Society, ed. Lincoln P. Bloomfield (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1962), p. 137.

FIGURE 3. NORTHEAST UNITED STATES
POPULATION DISTRIBUTIONS BEFORE AND AFTER EVACUATION



5.2 Interactions with Other Policies

The relationship between city avoidance and evacuation. The question arises whether a country which professes a doctrine of city avoidance in war should also maintain a policy of crisis evacuation. There is evidently no logical contradiction between the idea of restricting your weapons to military targets and at the same time attempting to insure that your population is safe from attack. And the ability of the enemy to destroy empty cities in response to attacks on his unevacuated cities is probably sufficient to insure that the evacuated country make some attempts to control its offensive weapons.

What is peculiar about this conjunction of policies is the fact that a country with an evacuated population is in a position to make more credible strategic threats. From the point of view of the adversary, his opponent is attempting to limit war and simultaneously to threaten unlimited war. (In the present strategic situation this threat is implied.)

But these two policies are not in a relation of contradiction that tends to make them mutually exclusive. That is, an evacuation does not force one to attack an adversary's civilians nor does the avoidance of such attacks make an evacuation impossible. The contradiction is one of spirit and not one which is necessarily reflected in any real practical difficulty. The best way of formulating the effect of conjoining these two policies is probably this: Counterforce targeting doctrine¹ without evacuation is much harder to mistake for a policy of threatening partial disarming attacks than it would be with evacuation. Evacuation is capable of making city-avoidance seem like an offensive threat to decrease reliance on postattack coercion and thus increase the credibility of an extended deterrence policy. Of course, if city avoidance is put forth, not as an arms control attempt to decrease destruction if war occurs, but as a method of strengthening the credibility of strategic threats, it is quite consistent with crisis evacuation.

Crisis evacuation and a no-first-strike pledge. It is also worth considering whether or not there is some kind of contradiction between a United States proclamation that we will never strike another country first under any circumstances and preparations for a crisis evacuation.

In the discussion which we have given of the strategic implications of an evacuation program, the main arguments have been that an evacuation capability could be used to enhance an extended deterrence policy against the Soviet Union and also that it could perform a similar function against Nth countries. Obviously these two uses of crisis evacuation conflict with a policy of not threatening to strike first.

¹A doctrine of striking only forces except as a response to attacks on one's own value targets.

On the other hand, the proclamation really has only psychological significance. Obviously, the country cannot commit itself in any concrete and communicable way never to strike first under any circumstances. Since a war can be started by giving a few orders and pressing buttons, it is not even possible to condition the military or the civilian population to make it difficult to initiate the war. Thus the no-first-strike pledge provides no real guarantee to an adversary of U.S. intentions, in the kind of serious crisis in which considerations of evacuation become relevant. Moreover, it is not unreasonable to argue that preparations for a crisis evacuation could play an important insurance role against a possibility that a no-first-strike pledge would be given up in the face of very serious provocation.

Crisis evacuation and urban air defense systems. A crisis evacuation is certainly, in a fundamental sense, a substitute for an urban air defense (including missile defense) system. If the latter could be economically and efficiently constructed, the former would be unnecessary. However, it cannot. If urban defense systems were thus neglected because of cost or inefficiency, then crisis evacuation programs might become useful.

On the other hand, it is often argued that such urban defense systems would be destabilizing. The argument is that they might weaken deterrence by being too effective and, as a result, the arms race would be accelerated. To the extent that such systems are not purchased because we believe this, we should not purchase an evacuation capability which would have a similar and possibly a greater effect.

5.3 Long-Run Considerations

Arms races after a crisis evacuation. Let us assume, for the moment, that a crisis ended with concessions made by the Soviet Union that were directly related to the impact of our crisis evacuation on the strategic situation. Since, as we have indicated above, the evacuation is relatively easily neutralized in the long run by increased arms purchases, the development of area weapons, or even by the destruction of empty cities, it is logical to believe that the Soviet Union would be especially eager to purchase whatever was necessary to make sure that these concessions were not forced from it again.

As a result, an evacuation capability can be thought of as something which might work once but which is very unlikely to work twice. This means that the argument for purchasing this capacity for use in tense periods must put great weight on the importance of wresting enormous concessions from the Soviet Union during the first big crisis. For example, one might argue that the nature of the world was to be determined in one large military crisis, after which such substantial reorganizations of world political power would result as to make relatively irrelevant the old cold war possibilities. In the extreme, this involves believing that the crisis evacuation is useful because it will precede a United States

first strike (after provocation) and a "winning of the cold war." This is so far from United States policy that it is especially important to remember that, in the absence of such a permanent settlement, the crisis evacuation defers by only a few years at most the point at which it becomes impossible to deter the Soviet Union from extreme provocations by threat of a United States first strike.

It is also worth remembering that an evacuation represents a violent domestic upheaval. This distinguishes it from very serious foreign crises and raises the specter of dramatic and unpredictable changes in the public attitude.

Impact on disarmament levels. It is somewhat difficult to judge the impact on future disarmament levels of the purchase, on one or both sides, of a crisis evacuation capability. Assuming, as seems fairly likely, that the future will see relatively invulnerable weapons on both sides, evacuation might seem a somewhat irrelevant capability even after disarmament had progressed to relatively low levels. This is because an evacuation, without a threat to initiate a counterforce attack, would not be especially useful. A possible exception to these statements involves limited strategic attacks and the controversy over their nature touched upon in Section 4.1.

5.4 What Can Be Done?

There are a variety of measures which might be taken to soften the impact of the crisis evacuation possibility on the arms race. These measures range from not holding practice drills to a formal agreement with the Soviet Union, involving observers, not to initiate a crisis evacuation first. The possibility is also discussed that an evacuation capability might be purchased simply and solely against Nth countries. This raises unusual problems and, for a few years at least, it may not be feasible to make this choice.

Restraint. The feasibility of restraints on crisis evacuation planning depends on what they are intended to accomplish and on their formulation. A U.S.-S.U. agreement that permitted no citizens unnecessary movements from cities in crises is clearly unenforceable. On the other hand, if a no-first-evacuation policy is to be only an informal statement of U.S. intention not to evacuate first--the purpose of which is to slow down the arms race--then the policy might be both feasible and practical although not necessarily successful.

Agreements not to evacuate first probably assume that the United States adopts a policy of city avoidance in an either explicit or informal fashion. Such a policy is consistent with both an acceptance of strategic nuclear parity and an attempt to maintain superiority as part of an extended deterrence posture. In the latter case, threats to strike first

must be associated with limits on war. In the case of parity, deterrence of war by massive retaliation can be replaced with deterrence of attacks by threats to attack in kind, i.e. to attack Soviet cities if, and only if, U.S. cities are struck. Since city avoidance is a policy of not attacking cities first, no contradiction arises

Different policies of restraint are possible. In an "active restraint" category could be placed policies that require negotiation. Policies which are concerned simply with restraining our own actions might be termed policies of passive restraint. In Section 3.3, "A Basic Problem," some comments were made relevant to the choice between categories.

There are a variety of goals with which these policies might concern themselves. On the one hand, in crises there are problems of reciprocal fear of surprise attack and of discouraging the Soviet Union from a reckless miscalculation--the coupling of an evacuation of theirs with strategic threats. Alternatively the goals might refer to nontense periods and involve slowing down the arms race, encouraging disarmament proceedings, and accelerating Soviet change from a countervalue to a counterforce posture.

It is difficult to speculate on the value of different actions in the absence of more information on Soviet attitudes and decision-making processes. For example, a no-first-evacuation pledge, which we illustrate at the end of this section, might assist in crises by dampening fears. It might put a limit on the number of second-strike weapons the Soviet Union felt it needed. It might emphasize the "finite" in finite deterrence by acknowledging the existence of hostages on both sides. It could reaffirm the policy that our avoidance of Soviet cities depended on Soviet avoidance of our own. On the other hand, this amount of attention devoted to crisis evacuation might simply give rise to Soviet fears, accelerate the arms race, and even produce domestic political outcries.

Following is a list of ten possible ways to try to diminish or eliminate the arms control problems associated with crisis evacuation policies.

1. No practice evacuations
2. No preparations in rural areas
3. No advance education of the public
4. No purchase of paper plans
5. No preparations at all
6. Statements by assistant secretaries that evacuation is undesirable
7. Presidential comments in press conference that crisis evacuation is ridiculous and unworkable

8. Private assurance to the Soviet Union
9. Public exchanges of notes and a no-first-evacuation agreement
10. Exchanges of observers in main cities

The job of the observers referred to in possibility 10 would be to report each day whether or not these cities seemed to be evacuating. Somewhere between possibilities 5 and 6 would be a combination private pledge and warning to the Soviet Union. This could indicate that we would not evacuate first and also that we would consider such a Soviet act as a provocation.

Buying evacuation for Nth countries only. If one happens to believe that an evacuation capability would not be useful against a major nuclear power, one might still desire to purchase this capability because of the threats posed by other, smaller nuclear powers. The problem would arise of resolving conflicting demands involved in stabilizing one's relations with the Soviet Union while purchasing a somewhat provocative capability. There are several obvious methods which seem appropriate.

First, one might try to purchase an evacuation capability in such a fashion that it would be clearly inadequate against the larger threat, although still useful against a smaller one. This is probably infeasible. Second, one might try to explain one's actions and strategic views to the Soviet Union and thus, so to speak, try to excuse one's purchases. This might or might not work.¹ Third, one might attempt to purchase the capability in secret. Fourth, one might attempt to give the Soviet Union certain assurances or attempt to offer it certain kinds of inspection or guarantees, as indicated by a U.S.-S.U. no-first-evacuation agreement. Fifth, one could wait until the new nuclear threats actually existed. If this were possible, it might well be the best idea.

For a variety of technical reasons involving the vulnerability of Soviet forces, present-day Soviet responses to an actual United States evacuation directed against a new nuclear power would necessarily (and justifiably) be more strenuous and provocative than is likely to be true later in the decade. (They would have to go on alert, move bombs, and so on.) Therefore, the possibility should not be overlooked that, within five years or so, U.S.-Soviet military and political postures may make evacuation against a third country considerably less threatening to major powers. These comments apply, with somewhat less force, to the purchase of evacuation plans for use against Nth countries only.

¹So let leaders are presumably well aware of the possibility that capabilities for aggression may outlast their originators. On the other hand, if the Nth country danger is symmetric with respect to the two countries, the Soviet Union may well see evacuation as especially appropriate to its own problems. It might consider our actions justifiable and also destined to be balanced by a corresponding decision of its own. Additional Soviet missiles might still be purchased.

VI. CONCLUSIONS

By and large, the Arms Control and Disarmament Agency may find that a crisis evacuation program will interfere with traditional methods of achieving arms control and disarmament. These difficulties will stem from a variety of effects, some of which have been studied in this annex; others are treated elsewhere in the study. In particular, crisis evacuation programs, depending somewhat on their size and publicity, may tend to encourage larger and more numerous Soviet weapons and, on the domestic front, many of those concerns and fears which were seen during the fallout shelter controversy.

From the arms control and disarmament point of view the decision to embark on such evacuation programs is very much like decisions concerning other defensive programs, such as urban air defense systems. Their purchase would represent a new round in the arms race--a shift from purchasing more and more offensive weapons to accepting the inevitability of some retaliation and attempting to protect against it in an effective way.

As a result, it seems to us that arms control interests are quite clearly arrayed against a crisis evacuation program. And if such a program is purchased, the Arms Control and Disarmament Agency might well be interested in seeing that it was small or not public or both. On the other hand, it is impossible to discuss these issues solely from the point of view of arms control problems. Our general conclusion is that, on balance and speaking abstractly, a strong U.S. commitment to an extended deterrence posture would make crisis evacuation desirable. If it seems inevitable or desirable to give up strategic threats, this capability seems, on the whole, an undesirable purchase.

The following specific conclusions are itemized.

1. If one assumes that a) threats of general war are unlikely to arise except through conflict in Europe and b) that the U.S. guarantee to NATO may require a strategic strike in response to aggression, then a two-week crisis evacuation should not be considered an obviously infeasible method of protection. The time may well be available for the movement and detailed classified information on Soviet second-strike capability is necessary to determine its exact present effectiveness. Its future effectiveness is likely to decline.

2. That crisis evacuation could be effective in improving the credibility of U.S. strategic threats depends, among other factors, on the assumption that this credibility is primarily influenced by expected U.S. casualties and not by the expected casualties of NATO as a whole. (Expected European casualties will remain high due to Western European inevitable vulnerability to countervalue reprisal.) This assumption is controversial.

3. A crisis evacuation program is not now necessary for use against Nth country attacks. Since the construction of such a capability does

not have a very long lead time, it does not seem necessary to procure crisis evacuation for this purpose alone at this time.

4. A crisis evacuation is not likely to be effective against general Soviet first strikes at cities, against similarly comprehensive attacks on forces only, or against limited strategic attacks. Against certain conceivable but unlikely mixed attacks, it could be useful.

5. If the United States loses or gives up the capability to threaten strategic attacks in crises, our inability to threaten unilateral settlement is likely to be a characteristic of most, but not all, serious crises. (Cuba seems an exception.) In such situations crisis evacuation is perhaps more likely to weaken the U.S. negotiating position than to strengthen it.

6. No United States evacuation should be undertaken without a) assessing the risks of a desperate Soviet pre-emptive attack, b) determining the likely effect of Soviet stalling, and c) deciding on the conditions that will permit de-evacuation.

7. The effectiveness of crisis evacuation in maintaining U.S. national survival is probably most severely limited by the problems of recovery and recuperation if cities are lost. A few thousands of megatons on urban targets might make these problems insurmountable even with evacuation with present preparations for recovery and recuperation.

8. Tough Soviet responses to a crisis evacuation and to U.S. strategic threats are appropriate to serious crises, and crisis evacuation is by no means a clearly "winning" strategy in the face of them.

9. Strategically significant U.S. or Soviet spontaneous evacuations in crises are very unlikely.

10. Soviet evacuation could not improve the Soviet bargaining position. An effective U.S. threat of overwhelming destruction, using U.S. forces alerted by the movement would almost certainly remain. Nor do Soviet crisis movement plans seem to be designed with this goal in mind. Rather they seem the product of doctrinal lag.

11. Public U.S. crisis evacuation preparations would be likely to trigger domestic fears aroused by the fallout shelter controversy. They would also seem to make arms control or disarmament agreements that limited Soviet weapons much less likely.

Recommendation

A crisis evacuation program should not be purchased unless 1) expectations for U.S. and Soviet force procurement are such that Soviet second-strike forces could not, by attacking U.S. cities, destroy our capacity to recover and recuperate, 2) U.S. policy calls for continued efforts to maintain an extended deterrence strategy, i.e., to do more than acquire the military capability to "strike back" after strategic attack, and 3) further study is made of the many problems involved in evacuation movements.

APPENDIX

U.S. EXTENDED DETERRENCE POLICY

To what extent is it stated United States policy to support the defense of the Free World with the "threat" or the "warning" that the United States might attack the Soviet Union with massive numbers of strategic weapons in some contingency other than a direct Soviet attack upon the United States? This appendix briefly notes the author's views on that question as interpreted in the light of certain official U.S. Government statements.¹

First of all, many references to this problem content themselves with the assertion that "we will never strike first." That we will never strike first is very clearly United States policy if it refers to situations in which no provocation has taken place. Not striking "first" also definitely includes those cases in which United States fear might be considered a substitute for Soviet aggression and might lead to a "pre-emptive" attack. Thus, discussing a Presidential statement to which we shall return, President Kennedy said:

I don't--it was not intended to suggest, as Mr. Salinger said, that this meant that the United States would take aggressive action on its own part or would launch an attack.

A so-called pre-emptive attack on its own part is not our policy nor the policy of previous administrations.²

If statements that "we will never strike first" ignore provocations, then what threats is it United States policy to make in an effort to deter these provocations? An early statement of United States policy that has never been denied was Secretary of State Dulles's doctrine of "massive retaliation." He said, on January 12, 1954:

...the President and his advisers, as represented by the National Security Council, had to take some basic policy decisions. This has been done. The basic decision was to depend primarily upon a great capacity to retaliate, instantly, by means and at places of our choosing. Now the Department of Defense and the Joint Chiefs of Staff

¹A useful discussion of this problem appears in an article by Michael Brower, "Nuclear Strategy of the Kennedy Administration," Bulletin of the Atomic Scientists, October, 1962.

²Statement made at a news conference, March 29, 1963, The New York Times, March 30, 1963.

can shape our military establishment to fit what is our policy, instead of having to try to be ready to meet the enemy's many choices.¹

This statement is almost ten years old. Nevertheless the possibility of massive United States attack in response to lesser aggression did not stop being a part of United States policy. In the March 31, 1962 issue of The Saturday Evening Post, Stewart Alsop quoted President Kennedy, after an interview, as having said that "in some circumstances we might have to take the initiative." The article created a considerable stir. Through Pierre Salinger, The White House clarified its remarks by saying:

The quotation given in the Alsop article must be read in total context....It has always been clear in such a context as a massive conventional attack on Europe by the Soviet Union, which would put Europe in danger of being overrun, the West would have to prevent such an event by all available means. This has been United States policy since the late Nineteen forties and it represents no change.²

In a similar vein the 1963 Procurement Hearings contain the following statement. It results from questions submitted in writing and answered subsequent to the hearings, presumably after some considerations.

Secretary McNamara: ...The term "unacceptable damage" is a relative one....For example, we have made it quite clear that the defense of Western Europe is as vital to us as the defense of our own continent and that we are prepared to back up our commitments there with our strategic nuclear power no matter what degree of damage might result should the deterrent aspect of this policy fail.³

In Bonn, Germany, the President said on June 23, 1963:

So long as our presence is desired and required, our force and commitments will remain. For your safety is our safety, your liberty is our liberty, and any attack on your soil is an attack upon our own.⁴

¹American Foreign Policy 1950-1955, Basic Documents Volume 1, Department of State Publications 6446, General Foreign Policy Series 117, (Washington, D.C.: U.S. Government Printing Office, 1957), p. 82.

²The New York Times, October 17, 1957.

³U.S. Congress, Senate, Hearings Before the Committee on Armed Services, Military Procurement Authorization, Fiscal Year 1964, 88th Cong., 1st Sess., 1963, H.R. 2440 (S. 843), p. 89.

⁴The New York Times, June 24, 1963.

If the "defense of Western Europe is as vital to us as the defense of our own continent" and if an attack on German soil is really an attack "upon our own," then a long step has been taken toward explaining how a "first strike" might be the United States response to provocation in Europe.

The possibility that our defense of Europe might be an attack is further emphasized by the commonly perceived choice between "retreat and holocaust." Thus:

If we are to retain for ourselves a choice other than a nuclear holocaust or retreat, we must increase considerably our conventional forces.¹

Since retreat is not United States policy, one must conclude that, until we increase "considerably" our conventional forces, the Soviet Union must expect "nuclear holocaust" as a response to certain lesser provocations in Europe.

One should not conclude that these policy statements refer only to Europe and reflect the particular problems of European defense. The clearest threat that we might initiate massive strategic strikes on lesser provocations occurred over Cuban missiles. This has been quoted earlier (see footnote 1, p. 5). The statement definitely implies--though it may not literally require--a massive attack upon the Soviet Union in circumstances that need not include a Soviet attack upon the United States; thus a Cuban missile launched against Brazil or Panama would be sufficient provocation.

¹Annual Budget Message to the Congress, Fiscal Year 1963, Public Papers of the Presidents, John F. Kennedy, 1962 (Washington: U.S. Government Printing Office, 1963), p. 28.