MAXIMALISM AND MINIMALISM IN AMERICAN STRATEGY, 1954-1968

by

LORNE CHEATHAM FLATHER PATON
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Department of **History**

The University of British Columbia
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This thesis will examine the content of American nuclear strategy between 1954 and 1968, and will analyze the factors shaping that strategy. The first problem will be examined within the theoretical context of the maximalist-minimalist strategic continuum. Minimalism, the pole toward which Washington was inclined at the beginning of the thermo-nuclear age, involved a countervalue threat, or a threat to enemy population and industry, and a relatively low assessment of the forces required for this mission. Maximalism, on the other hand, involved a counterforce strategy, that is to say a strategy directed primarily against enemy strategic forces, and a relatively high estimate of the forces required.

Although never entirely embraced by the highest American decision-makers, this latter pole represented the general direction in which American nuclear strategy evolved in the first nine years after Dulles enunciated the doctrine of massive retaliation in 1954. This tendency was evident in Eisenhower's gradual acceptance of the necessity for planning on the basis of a greater than expected
threat; it was also manifest in his reluctant acceptance of coercive deterrence, a strategy dependent primarily upon deterrence through a countervalue threat but also involving a marginal capacity for damage limitation. Even more marked changes came with the advent of Kennedy and McNamara to power in 1961. Between then and the Cuban missile crisis in 1962 there was a distinctly more pessimistic assessment of the greater than expected threat against which provision had to be made. Of yet greater significance, there was also a more energetic pursuit of a capability for coercive deterrence and an important refinement of that strategy in the form of the "hostage city" doctrine, a doctrine which provided for city-avoidance in a thermonuclear exchange. After the missile crisis, however, this tendency was reversed to a substantial extent, and by early 1968, when McNamara left office, American nuclear strategy was in large measure similar to that of the latter Eisenhower years in its emphasis on a nuclear "sufficiency" and on a countervalue policy.

The second problem - the factors underlying these developments - will be examined in terms of four main
variable clusters. Idiosyncratic factors, those characteristics of the decision-makers which are peculiar to them as individuals, exerted some influence in the policy process; Eisenhower's tendency to believe that he could "muddle through" and the more vigorous and rationalizing tendencies of Kennedy and McNamara played a distinct role in the evolution of American nuclear strategy. Technical factors, the state of military research and of the strategic balance, were nevertheless of greater importance. Counterforce arguments, for example, could not gain even marginal acceptance until there had been an improvement in offensive weapons technology. More important, the central fact facing American decision-makers was that it was highly probable that both superpowers would suffer unacceptable damage in a thermonuclear war and that even their greatest efforts could not save them. In the light of this latter consideration, prevention of a thermonuclear conflict was ever the first priority of the United States.

Societal and external factors, though, were most crucial. Influences which were external to the United States, such as the course of Soviet diplomacy and the
state of the N.A.T.O alliance, played an essential part in defining the role which nuclear strategy must fulfill. It was generally agreed, for example, that the Russians did not desire a thermonuclear war, but their desire for expansion of their political influence carried with it some danger of escalation into such a conflict. Given the former consideration, it was hard to justify an all-out effort to attain a warfighting capability; given the latter, it was still necessary to provide at least a countervalue capability, and a case might even be made at times for developing a damage limiting capability.

Finally, the nature of the society itself was a central influence. As was seen during the debate over the "missile gap," the tradition of military superiority still coloured the thinking of the people of the United States, causing them to exaggerate the threat to their security and to hanker after some form of 'nuclear superiority" even when they realized that a thermonuclear war would probably result in a mutual disaster. Itself a component of the credibility of the American deterrent, the climate of public opinion was brought to bear in Congress and at election time. Eisenhower, whose policies failed to
sufficiently reassure his people, found this failure to
be a substantial domestic liability, and a military-
diplomatic liability of even greater magnitude. His
successor was inclined to adopt policies more in accord
with the temper of the American people, both from con-
viction and a sense of political expedience.

Thus, the increasing effectiveness of American
offensive forces, the seemingly unremitting hostility of
the Soviet Union and the concomitant divisions within
N.A.T.O. combined with the optimistic activism of the
Kennedy administration and the domestic currents under-
lying that spirit to create the more aggressive policies
pursued by that administration. Its partial retreat from
those policies during its last year, and the more exten-
sive retreat during the Johnson administration was the
result of the increasingly apparent futility of the arms
race, the Soviet-American detente, and a public opinion
which was less concerned with the quest for superiority.
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One of the most fruitful theoretical tools available to the student of nuclear strategy is the minimalist-maximalist dichotomy. Admittedly, this model in itself constitutes a poor description of actual policy; maximalism has never been accepted in its entirety by those responsible for final decisions on nuclear strategy, and minimalism has been accepted only briefly. Rather than embracing either of these extremes, decision-makers have tended to adopt hybrid strategies, incorporating elements of both in their final decisions. These hybrids, however, have also tended to draw more heavily on one pole than on the other. As a result, the minimalist-maximalist distinction still offers a useful framework for identifying strategic issues and for comparing differences over these issues.

1. STRATEGIC THEORY: THE MINIMALIST-MAXIMALIST CONTINUUM

The essential problems confronting those responsible for nuclear strategy have been determination of the proper objectives for strategic thermonuclear weapons and of the quantity and quality of the forces required to achieve these objectives. These problems, like those in other
areas of human endeavour, frequently involve significant ambiguities and uncertainties. Because there are limitations on the extent to which "the facts speak for themselves," judgment, interpretation, and the weighing of evidence are intrinsic to any policy process. The magnitude of the penalties for error, however, makes this factor - the finitude of human reason and the complexity of human problems - particularly important in the realm of policy on strategic weapons. Under these circumstances, decision-makers have often had to make a number of informed guesses when formulating strategy, and in doing so they have inclined toward one of the two strategic poles.

A. **MINIMALISM**

Minimalism is generally more optimistic than its antithesis in its assumptions about the nature of the opponent and the implications of modern weapons technology. Consequently, it emphasizes the adequacy of a countervalue threat, that is to say a threat to inflict unacceptable damage on the population and economy of the opponent, and it involves relatively low estimates of the forces required for this task.

The starting point for the minimalist analysis is
the proposition that strategic thermonuclear weapons have created an irreversible revolution in the nature of warfare in that they have erased the distinction between victors and vanquished. Given the capacity of these weapons for wreaking enormous devastation in a short period of time, an appreciable defense is impossible, and the participants in a thermonuclear exchange will inevitably be destroyed as viable societies. In this sense, weapons technology has been static ever since the development of the hydrogen bomb and the first intercontinental bomber; despite occasional flux in some aspects of this technology, the central fact of the thermonuclear age has been and will continue to be, the vulnerability of the population and economy of even the most powerful nation. Hence, the hitherto classic definition of war as "an act of violence intended to compel our opponents to fulfill our will" is entirely inapplicable in the case of a thermonuclear conflict. ³

The only rational purpose for thermonuclear weapons, then, is to deter the enemy from initiating such a conflict or from embarking upon a course which could lead to one. Moreover, as the foregoing analysis indicated, the traditional option of creating a deterrent by an unmistakable capacity for defeating the enemy is no longer open.
A countervalue threat, a threat to inflict unacceptable damage on his society, is now the only one which is technically feasible, and faute de mieux, it must be the ultimate deterrent to attack.

Such a prospect might seem dismal indeed at first glance, for national security is dependent in the final analysis upon a threat to commit suicide. This paradox might in turn confront decision-makers with an agonizing dilemma. Preservation of national security obviously involves deterring the enemy from killing one's own people, but it also involves a further objective. Attempts to deter an enemy from resorting to violence in the pre-thermonuclear age had often failed because men's fear of death was paralleled by the belief that there were some values which were worth widespread death and destruction, or at least worth the risk of such calamities. The unprecedented destructive-ness of thermonuclear weapons has without doubt greatly reduced the number of such issues, but there are still some, such as preservation of one's own way of life and of the conditions deemed vital for attainment of this objective, which are worth considerable peril. In view of this, national leaders have two apparently contradictory tasks; they must
ensure the physical survival of their own people while using the threat of a suicidal nuclear war to deter threats to those conditions which make life worth living.

A threat of this nature is obviously credible in the first instance; if one is about to be slaughtered, one has nothing to lose by making the slaughter mutual. In the case of the second task, however, the threat might conceivably lack credibility. Those making the threat might, in rather oversimplified popular terminology, prefer to be "red" than "dead" if the enemy forced the issue. Yet more important, no matter what they would actually do in a crisis, the enemy may believe that this dilemma will cause them to falter in the event of provocations short of an all-out attack on their homeland. This belief - whether it is well founded or not - might in turn encourage him to embark upon such provocations. In such an event, the security offered by the countervalue threat would evaporate; the only choices would be abject surrender or nuclear annihilation.

Happily, so the minimalists argue, this eventuality is extremely unlikely, as is the danger of irrational enemy action. According to them, the enemy is rational, that is
to say he bases his actions on calculations of prospective gains and losses. In addition to this, his commitment to threatening one's own vital interests is far less than his commitment to ensuring the physical survival of his country. It follows from this that he will recognize the common interest of the great powers in avoiding escalation of their political conflicts into a nuclear holocaust and that he will act in accordance with this recognition. Indeed, in view of the vast disparity between his valuation of the marginal gains which might accrue from challenging the deterrent and his assessment of the risks involved in doing so, he will err on the side of caution where there is a possibility, though not necessarily a certainty, of nuclear retaliation. By the same token, this factor also constitutes a guarantee against irrationality; action without consideration of the consequences has become an unthinkable luxury now that those consequences will be so vast. For these reasons the threat of substantial, though not necessarily total, destruction of the enemy population and economy constitutes a highly reliable guarantee of national security.

Their assessment of the capabilities necessary
for this threat is shaped by similar premises. On the one hand the threat which enemy forces may pose to one's own is held to be negligible. Even if he attains a measure of quantitative and qualitative superiority it will not permit him to destroy sufficient forces to save his people from annihilation, and, in the absence of any sudden increase in his perception of threat from oneself, his realization of this will probably discourage him from pursuing such an empty "superiority". On the other hand, it is also assumed that one's own forces will be in constant readiness and that they will operate without technical malfunction when the order to fire is given. Force planning is therefore simply viewed as a direct function of the number of warheads required to inflict unacceptable damage on the enemy. Furthermore, it is assumed that only a fraction of his population and economy, rather than their entirety, need be obliterated in order to achieve this end. The resulting force estimates are literally minimal, inasmuch as they are the product of the most optimistic assessments of the conditions under which one's own strategic forces must operate.

Finally, one more consideration moves the minimalists to favour such estimates. Of necessity, their overriding
concern is with stability, that is to say a state in which a nuclear exchange between the superpowers is highly improbable. This condition may best be assured, they believe, if the cities of each side are open to attack by the other; each side is restrained by its own vulnerability and reassured by the vulnerability of its adversary. Within this context of mutual vulnerability and a concomitant record of mutual restraint, whatever uncertainties which do exist will tend to favour this stability. At the same time, any action - intentional or unintentional - which seems to threaten mutual vulnerability will be highly destabilizing. In the first instance, it will cause the enemy to expand his armaments in order to preserve his deterrent and it will increase his perception of threat. If this should happen, the element of uncertainty will tend to reinforce these threats to peace; with the strategic balance in flux, and with one's diplomatic and strategic restraint in doubt, the opponent will tend to err on the side of too much strength in his force planning and, perhaps, pre-emption in the use of those forces. Expansion of one's own forces beyond the minimum point necessary for a countervalue capability, then, might actually undermine
one's own security by causing an arms race which would exacerbate tensions on both sides.

B. **MAXIMALISM**

Whereas minimalism is a relatively sanguine doctrine based upon a revolutionary view of nuclear weapons and a reassuring view of the opponent, maximalism's emphasis on the perilous uncertainties of the world stems from a less drastic view of these weapons and a more alarming view of the opponent. Its basic pessimism is evident to some extent in its emphasis on the necessity for a force sufficient to destroy virtually all of the adversary's population and industry, rather than only a fraction of it. Of far greater significance, the maximalists also contend that even a large countervalue capability such as this is inadequate by itself and that it must be supplemented by a counterforce capability, that is to say a capability for destroying the enemy's capacity to wreak unacceptable damage upon oneself.7 Finally, it also stresses the need to base force planning on the assumption of the "worst plausible case," that is to say a highly pessimistic assessment of the conditions under which one's forces must accomplish their objectives.8
Maximalists concede that a thermonuclear war could result in horrendous damage, but, unlike the minimalists, they do not believe that such damage is inevitable; it would simply be the result of a failure to take the appropriate precautions. According to them, modern weapons technology still offers the possibility that one side, or perhaps both sides, can develop a capacity for escaping obliteration. In a sense, then, this technology is dynamic; it can yield considerable military and political advantage to the nation which exploits it earliest and most vigourously. Because a counterforce capability is possible, so too is a war-winning capability, that is to say a capability for keeping damage to oneself within tolerable limits while confronting the enemy with the prospect of unacceptable damage to his society if he does not agree to one's peace terms. War – even thermonuclear war – is consequently far from unthinkable; as its consequences can still be limited, it still holds out the prospect of victory, and hence a net gain, for one side or the other.

This consideration receives added weight in the maximalists' analysis as a result of their percep-
tions of the enemy. According to them, it is quite possible that men will act irrationally or that misperception will cause them to commit themselves more deeply and irrevocably to a course of action than they had originally intended. Serious as these problems may be, they are exacerbated by the enemy's extreme interest in bringing about one's downfall and his willingness to risk substantial damage to his homeland in the pursuit of this objective. The political conflict, then, is actually far more intense than minimalist analysis indicates, and the danger of escalation into a military conflict is proportionately greater.

Starting from these assumptions, the maximalists stress the need to leave nothing to chance, to develop forces which can deal with as many eventualities as possible. They argue that the threat of partial devastation may not constitute a sufficiently terrible prospect to deter an aggressive enemy. A countervalue threat, therefore, must be total; the enemy must be faced with the prospect, not just of extensive damage, but of obliteration. Moreover, reliance even on this threat alone involves unacceptable risks; it still makes a nation totally dependent upon the
prevention of war, yet the punishment it holds out is not sufficiently rational and moderate, to make it an adequate guarantee of this. The best method of preventing war and of promoting one's own political interests in peacetime, the argument continues, is to possess a war-winning capability. With this, the enemy will then be faced with the prospect, not just of great sacrifice, but of certain defeat, and hence sacrifice in vain, if he forces the issue. If the deterrent nevertheless fails, such a capability would give one the best chance of preserving one's society and of emerging triumphant at the conclusion of hostilities.

The same spirit also pervades maximalist prescriptions for force planning. Maximalists contend that the favourable state of affairs described above is only possible if every effort is made to ensure that one's strategic forces can carry out their countervalue, and particularly counterforce, missions under the worst plausible conditions. On the one hand, this means that, given the technical possibility that the enemy may be able to reduce one's striking power, and given the political possibility that he may try to do so, it is only prudent to assume that he will deploy his forces as quickly
as his production capacity allows and that they will operate perfectly.

On the other hand, it is equally prudent to assume that one's own forces may perform less efficiently than expected, and that they may even have to undergo an enemy surprise attack. The resulting calculus of forces required is obviously far more complex than the simple minimalist calculations of the number of targets and the number of warheads required to destroy them. Maximalists place far more emphasis on the qualitative prerequisites for a reliable nuclear force - the operating characteristics of its weapons and the nature of the sites on which they are located - than do the minimalists. Measures such as "hardening" missiles by placing them in underground silos are deemed vital if they are to survive on the ground; measures such as development of a wide variety of penetration aids are necessary if such delivery systems are to survive enemy defenses once they are launched. As a complement to this, maximalists also see sheer qualitative expansion as a further means of ensuring one's pre-launch survival and post-launch penetration.

The primary minimalist objection to this position,
of course, is that it is counterproductive, inasmuch as it will precipitate a destabilizing arms race. Maximalists respond that this race is inevitable. The technical and political incentives for engaging in it are so strong that the adversary will do so no matter what one does; indeed, if he sees one lagging behind, he may actually accelerate his efforts. In a dynamic and threatening atmosphere such as this, any residual uncertainties simply reinforce the conclusion that the only hope for safety and stability lies in outstripping the opponent.

II. AMERICAN STRATEGIC POLICY


As was noted earlier, these analytical constructions in themselves provide only a distorted reflection of policy decisions, but they do represent the extremities of a logical continuum along which decisions, and modifications of those decisions, can be traced. The initial purpose of this study is to examine the development of American nuclear strategy along this continuum between 1954 and 1968.
As will be seen in chapters I and VI, there was a general movement away from neo-minimalism in the first eight years after 1954. In chapter I it will be argued that President Eisenhower's policy until 1958 was in many ways one of minimal deterrence; his administration counted on its capability for destroying part of the Soviet urban-industrial complex to act as a deterrent, comparatively little was done to safeguard American strategic forces against a possible surprise attack, and official estimates of the future threats to these forces were relatively low. In his last three years in office, however, Eisenhower began to modify his position. On the one hand, this involved greater efforts to ensure what would today be termed a second-strike countervalue force, that is to say a force so constituted that it could survive a surprise attack in sufficient strength to wreak the desired level of damage on enemy cities. On the other hand, planning was being based more and more on the assumption that the enemy deployments would actually be greater than expected.

It will be argued in chapter II that an even more significant sign of movement appeared in 1960. On the level of declaratory policy, if not actual policy,
the Eisenhower administration had reluctantly modified its previous strategic objectives. This modification, given no consistent appellation by American decision-makers but termed "coercive deterrence" in this study, was a middle ground between the previous countervalue strategy and a counterforce strategy.

As outlined by Eisenhower's last Secretary of Defense, and as progressively defined by Secretary McNamara and various other members of the Kennedy administration, this strategy rested on the belief that it was possible to limit damage to the United States in a nuclear war. This possibility, it was hoped, might enable her to emerge from such a conflict with some small gain over her opponents. Obviously, these propositions bore some resemblance to the maximalists' counterforce doctrine, but the resemblance was essentially superficial. Whereas the maximalists believed that they could actually reduce damage to their country to an acceptable level in a thermonuclear exchange, proponents of coercive deterrence harboured few such hopes. By the same token, while the former believed that a meaningful victory was possible in such a conflict, the latter believed it highly probable that they could only achieve a
Pyrrhic victory, a victory of the devastated over the annihilated.

Consequently, the coercive deterrence school viewed a damage limiting capability primarily in terms of its value in peacetime rather than wartime. Convinced, like the minimalist school, that both sides would suffer terribly in a thermonuclear conflict, they concluded that deterrence of such a conflict was without doubt the most crucial objective and that this must necessarily rest on the ultimate threat of countervalue retaliation. At the same time, it was conceivable, for reasons discussed earlier, that there might be some doubt about American willingness to actually carry out this threat. A damage limiting capability, it was hoped, would counteract these doubts to some extent by marginally reducing the sacrifices involved in doing so.

Closely linked to this, inasmuch as such a capability would require strategic power substantially beyond that required for purely countervalue retaliation, it might even have a psychological effect disproportionate to the actual military power which it represented. Despite the vast changes occasioned by thermonuclear weapons,
vestiges of the atavistic belief that a nation's power was directly proportionate to the number of strategic weapons it possessed still lingered on. Consequently, a vague feeling that he was "inferior" could discourage the enemy from challenging one's deterrent, and could even undermine his confidence in non-nuclear areas of competition. By the same token, a measure of "superiority" - actual or apparent - might also discourage him from seeking a destabilizing counterforce capability; while "parity" or "inferiority" might encourage him to strive for this, "superiority" would offer solid proof that he could not prevail in the arms race.

Haltingly embraced by the Eisenhower administration, this doctrine flourished for most of the Kennedy years. In chapter III it will be seen that Kennedy and some of his key lieutenants were instinctively and intellectually predisposed to a more maximalist position in general and to some form of coercive deterrence in particular. The first Kennedy budget, it will be argued in chapter IV, was a distinct, but still only partially defined, affirmation of this spirit; the definition of unacceptable damage to the Soviet Union was revised upward
and greater efforts were made to protect the American countervalue capability, but there was no clear policy commitment to coercive deterrence.

In the budget formulated in the autumn of 1961, however, there was a firm and unequivocal commitment to this strategic prescription, and this phenomenon will be explored in chapter V. As will be seen in chapter VI, this commitment was so strong that the Kennedy administration added a refinement to this doctrine in 1962 in the form of the "hostage city" strategy. This last development, however, represented the high tide of coercive deterrence, and indeed, of the neo-maximalist strain in American nuclear strategy. It will be argued in chapter VII that between 1963 and 1968 there was a reversion to something approximating the neo-minimalism of the last three years of the Eisenhower era; nuclear strategy was based essentially on a second-strike countervalue capability, this capability was designed to destroy only part of the Soviet urban-industrial complex, and the greater than expected threat was defined in appreciably more limited terms.
B. DETERMINANTS OF AMERICAN NUCLEAR STRATEGY, 1954–1968

To a very great extent, therefore, American nuclear strategy between 1953 and 1968 was cyclical, evolving from a substantially minimalist position to neo-minimalism, to neo-maximalism, and back to neo-minimalism again. Interesting as this discovery may be, it is only a starting point for a more important analysis. The truly significant question to be examined in this study is why this cycle in fact took place.

(a) A NOTE ON METHODOLOGY

The maximalist-minimalist dichotomy provides only a partial and imperfect framework for answering this question. Of necessity, this model, like all models, assumes a kind of strategic Everyman, a homo strategicus who, like homo economicus or homo politicus is part reality, part abstraction. Strategic man, like his analytical brethren, thinks only of his designated field, nuclear strategy in this case, and is not moved by any supposedly non-strategic factors, he thinks long and hard about the state of military technology and the nature of the enemy, but economics, personal predispositions, bureaucratic
rivalries, and the pressures of public opinion are supposed to have little, or no, influence. When the products of this policy process, that is to say specific decisions, are being examined, this model is reasonably useful for the simple reason that decision-makers present these decisions in terms which are amenable to this analysis. The path by which these policies are arrived at, the policy process, is, however, somewhat more tortuous and complex. For this reason, a rather different framework, incorporating four main clusters of variables, will be employed.


The first determinant, technical possibilities, has been examined to some extent in the discussion of maximalism and minimalism, and includes any factors pertaining to the physical ability of a nation to expand or utilize its strategic arsenal. Variables such as the present and expected state of technology and relative economic strength would come under this heading.

A second determinant, external factors, encompasses any trend or event occurring outside the borders of a nation. In the case of the United States, this would
involve the perceived course of Soviet diplomacy, the perceived motives underlying Russian strategy, currents of opinion in N.A.T.O., and other considerations of this nature.

In addition to this, societal factors will also be discussed. Representing characteristics peculiar to a certain society, these include historical traditions, the state of public opinion at a given time, dominant pressure groups within the society, and political arrangements such as a democratic two-party system and a division of powers between an executive and a legislature.

Finally, idiosyncratic factors defined in a strict sense as any characteristics or beliefs which distinguish one decision-maker from another, will be considered. In this study, the term "idiosyncratic factor" will also be used in a somewhat broader sense, denoting a character type typical of one particular leadership group and distinct from another. Some attempt will be made, for example, to distinguish between the individual characteristics of Kennedy and McNamara, but the primary focus of this category will be on the characteristics of the Kennedy administration as a whole as distinct from the Eisenhower administration as a whole.
In summary, this study will outline American nuclear strategy in its most crucial years, 1954 to 1968, and will put it in the context of an ongoing debate over its proper form. At the same time, it will also be argued that this debate, and most particularly its outcome, was not simply the product of abstract strategic theorizing or, as McNamara termed it "theology." In the last analysis, it was the result of reasoned strategic theory meeting the demands of, and being modified by, the practical realities outlined in the preceding typology.
Although elements of the maximalist-minimalist controversy were evident in some of the strategic debates which occurred in the United States during the first decade after World War II, they did not take on a well defined and practical urgency until the mid-1950's. By this time, the heightened Soviet-American tensions following the Korean War, the addition of strategic thermo-nuclear weapons to the American arsenal, and signs of a similar development in the Soviet Union, forced the Americans to recognize that they were living in a new age. Apart from the ensuing debate over massive retaliation, their most immediate concern was for the safety of their retaliatory forces. Despite the fact that President Eisenhower's neo-minimalist approach to this problem was far from unreasonable, he was gradually compelled to make concessions to the concept of a greater than expected threat, if not the worst plausible one, and to pursue a second-strike capability more rapidly than he himself thought desirable. The combination of technical, domestic, and external factors which wrought this was to exert a
powerful and lasting influence on subsequent American nuclear strategy.

I. THE "BOMBER GAP"

A. AMERICAN NUCLEAR STRATEGY IN THE MID-1950's

At the beginning of 1954 Secretary of State John Foster Dulles proclaimed the doctrine of "massive retaliation," and in so doing he sought to convince both America's foes and her allies that her newly acquired thermonuclear capability could compensate for Western deficiencies in conventional forces. For most intents and purposes, this doctrine was rendered obsolete only a few months later, when the Soviet Union displayed aircraft capable of delivering thermonuclear bombs to targets in the United States. Having lost their monopoly on strategic thermonuclear weapons, the Americans, including even Dulles, had to look to more traditional modes of local defense. The problems arising out of the growth of Russian strategic power, however, did not end here.

American nuclear strategy in the mid-1950's was neo-minimalist in several senses. According to estimates
made in early 1955, continental air defenses could inter­ce  
cept only about thirty percent of an attacking force of  
bombers. As it was also believed that as few as one  
hundred thermonuclear warheads could destroy one-half of  
the industry and "tens of millions" of the population of  
the United States, this meant that there could be no real  
protection in a thermonuclear war. In view of this, the  
ultimate safeguard for American security was the deterrent  
offered by the estimated ability of the Strategic Air  
Command (S.A.C.) bombers to destroy about one-third of  
the population of the fifty or sixty largest Russian cities  
and all of the industry concentrated in those cities.  
This latter estimate, however, was predicated on the assump­tion that American striking power could not be impaired by  
an enemy surprise attack. Such an assumption was far from  
unreasonable, as early warning stations could generally  
be relied upon to give S.A.C. sufficient time to launch  
its forces before they could be destroyed on the ground.  
Nevertheless, it was still theoretically possible that  
these stations might malfunction or that the enemy might  
find a way of at least partially circumventing them. In  
either event, S.A.C. could have been decimated.
A number of civilian analysts in the RAND Corporation, most notably Albert Wohlstetter, had tried to convince the government of the necessity for greater efforts to meet this theoretical danger. The essence of their argument was that, contrary to current assumptions, "Deterrence . . . is not automatic." Although it had been assumed that the "balance of terror" was relatively stable because mutual annihilation was inevitable in a nuclear war, the RAND analysts contended that the balance was actually very delicate. Thus, they pointed out that the vulnerability of American bombers while still on the ground and their concentration on a relatively small number of bases in the United States and overseas made it possible that the Soviets might be able to remove the threat to themselves by striking first with even a modest number of bombers. Moreover, this situation would be exacerbated by the dynamism of modern weapons technology; missiles would be even better suited to surprise attack than bombers.

If the United States was to possess a truly effective deterrent, the argument continued, her present and future retaliatory forces had to be able to survive
such an attack in sufficient numbers to inflict unacceptable

damage on the enemy, that is to say she had to possess a

second-strike capability. Numerical strength was important

in this regard, of course, but it was even more important

that the weapons deployed have operational characteristics

which would maximize their invulnerability. Qualitative,

rather than purely quantitative, improvements were therefore

the essential prerequisite for making the "delicate balance

of terror" less delicate.

B. ORIGIN AND SIGNIFICANCE OF THE "BOMBER GAP"

President Eisenhower's reaction to the "bomber
gap," nonetheless, demonstrated that he was still far from

receptive to these arguments. On May Day 1955, the Kremlin

had displayed unexpectedly large numbers of new long-range

aircraft. Confronted by this, and acutely sensitive to

any possibility that the American deterrent might be

endangered, many Air Force officers assumed the worst,
namely a concerted Soviet bid for a counterforce capa-
bility. Throughout the following year, men such as

General Nathan F. Twining, the Air Force Chief of Staff,

and General Curtis E. Le May, the S.A.C. commander, warned

of impending disaster if the United States adhered to her
current deployment schedule for long-range B-52 bombers.\textsuperscript{12}

General Le May warned that by 1958 the Soviets would be "stronger in long-range airpower than we are," and by 1959 they could possess twice as many intercontinental bombers as the United States. Under these latter conditions, the qualitative weaknesses in American retaliatory forces to which the RAND analysts had pointed might lead to disaster:

If everything went in his (the opponent's) favour, and we made all the mistakes possible to make - I might add I don't think this is possible (sic) to happen - but if it did happen, we only have thirty-some bases, and I think that they could be hit; and in that case, we would have practically nothing left to do any retaliating with.

As a result, Le May argued, the enemy "may feel that he should attack" while he enjoyed this momentary advantage.\textsuperscript{13}

The credibility of the deterrent, then, might be endangered because the physical capacity of the United States to retaliate might be called into question.

The Administration shared some of this concern, a fact manifest in Secretary of Defense Charles Wilson's admission that the U.S.S.R. was outstripping his country in production of intercontinental bombers.\textsuperscript{14} It seems
reasonable to conclude, therefore, that it would have eventually taken steps to meet this threat. At the same time, it probably would not have acted as soon as it did, and perhaps not even on the scale it did, had the decision been in its hands alone; Eisenhower and his colleagues had a passion for economy in defense spending, they were generally reluctant to take action unless they believed that there was an immediate and overwhelming need for it, and their statements on the "bomber gap" hardly reflected such a sense of urgency.\footnote{15} The approach of the 1956 congressional and presidential elections, however, lent the support of domestic politics to the Air Force warnings. With prominent Democrats such as Stuart Symington, John F. Kennedy and Henry Jackson using these warnings as a basis for their charges that the "bomber gap" was the result of Republican complacency and "arbitrary fiscal ceilings," it would have been political madness not to have given at least the appearance of closing the "gap."\footnote{16}

In consequence, the Administration decided to expand its program for continental air defense. More significantly, it also decided to accelerate production of B-52's, increase the strength of each B-52 wing from thirty
to forty-five aircraft, and build the Air Force up from 131 to 137 wings. Such actions, of course, gave the United States some additional insurance against surprise attack, but they did not solve the problem which the RAND analysts had stressed. No matter how much they might be strengthened, the anti-aircraft defenses could not offer reliable protection to vulnerable "soft" bases, and, important as it may have been, the number of American bombers compared to the number of Soviet bombers was a highly imperfect indicator of actual strategic invulnerability.

Even Le May, despite a tendency to take an overly quantitative approach at times, had recognized the crucial significance of the ratio of Soviet aircraft to American bases and the probability that the S.A.C. forces would be on the ground when the attackers arrived. Measures such as maximum dispersal of S.A.C. and placement of at least part of its forces on ground alert, or better yet, airborne alert, were therefore essential for dealing with a counterforce threat. Nevertheless, apart from acknowledging that the United States could not rely on her vulnerable overseas bases forever, the President failed to take any significant action in these areas.
In short, Eisenhower was beginning, albeit slowly, to take the possibility of a counterforce threat into account in his force planning. His failure to go beyond an essentially quantitative approach to the problem, however, indicated his persistent belief that the danger remained largely negligible. In 1957 a series of events occurred which ultimately caused him to take these problems far more seriously.

II. THE "MISSILE GAP"

The United States had had a missile program of sorts ever since the end of World War II, but its pace had been sporadic, due to complacency about American technological superiority over the U.S.S.R. and to the massive difficulties involved in developing a serviceable missile. By 1953, though, American intelligence indicated that Moscow was committed to a large-scale effort to develop such a weapon. Furthermore, in February, 1954 a group of technical experts headed by Dr. John von Neumann reported that, with the greater yield-to-weight ratio made possible by the hydrogen bomb, the crucial problem of developing a relatively light warhead for a missile could be solved.
As a result, the von Neumann Committee combined a warning that the U.S.S.R. was several years ahead in missilery with a recommendation that the United States assign the "highest national priority" to this field.\(^{20}\)

In accordance with this, Eisenhower decided to develop an intercontinental ballistic missile (I.C.B.M.), but the scale of his efforts initially fell far short of that envisaged by this committee; indeed, in the summer of 1956 Wilson actually reduced the funds allocated for this program as part of his campaign to offset the current increases in expenditures on bombers. Despite evidence that the Soviet Union was a far more formidable opponent than had hitherto been assumed, the Administration apparently believed that even then it could maintain a significant lead in the race to gain an I.C.B.M. capability. Although she had lost her nuclear monopoly, the United States could still maintain a significant degree of qualitative superiority - or at least so it was hoped.

On August 26, 1957, however, the Soviets announced that they had successfully test fired an I.C.B.M. Although this claim was initially dismissed by many in the West, the
launching of Sputnik on October 4, and of a second satellite a month later, left little room for such doubts. As Eisenhower himself subsequently admitted, "The size of the thrust required to propel a satellite of this weight came as a distinct surprise to us." With the American missile program still beset by serious difficulties and uncertainties, with no provision for early warning of a missile attack, and with the capacity of an intercontinental missile to reach its target within thirty minutes, the future obviously held an unprecedented threat of surprise attack. The principal questions then facing the President were the speed with which this threat would emerge, its precise magnitude, and the countermeasures to be adopted.

Answers were not long in coming. On November 7, 1957 he received a report on the coming peril from the Gaither Committee, a body of experts which had originally been appointed to study American capabilities for active and passive defense but which eventually examined the whole spectrum of strategic questions. Drawing on the earlier RAND analysis, it warned that the greatest threat to the security of the United States was the vulnerability of her strategic forces. With S.A.C. bombers exposed on soft bases
and distributed over only a few airfields, this threat was grave even in an age when bombers were the only delivery systems available to either side. It would increase immeasurably, though, as the U.S.S.R. applied her ever-increasing economic resources to rapid exploitation of her present technological advantage; indeed, she could have as many as one hundred I.C.B.M.s in 1959. To meet these dangers, the report continued, the United States must rapidly expand her defense efforts in order to insure a second-strike capability. In the short run, this meant immediate dispersion of the American bombers and putting a large percentage of them on alert. In the long run, it meant substantial acceleration of the American I.C.B.M. program and concentration on relatively invulnerable second-generation missiles rather than vulnerable first-generation ones.

Eisenhower did not entirely share the Gaither Committee's sense of urgency. Hasty adoption of "crash" programs, after all, might waste scarce resources at a time when his constant passion for a balanced budget was being reinforced by his chief economic advisers' warnings of an impending recession. Yet more important, while he
conceded that Sputnik proved that the Soviets had developed sufficient thrust for an I.C.B.M., he pointed out that this did not necessarily mean that they had made comparable progress on a number of other formidable problems, such as those associated with re-entry of a warhead into the atmosphere. It was by no means certain, then, that Moscow actually possessed a fully operational I.C.B.M. Already skeptical about the Gaither Committee's assessment of the qualitative advances in enemy strategic power, he was naturally dubious about its "hypothetical" projections on the Soviet rate of deployment.

At the same time, he could not afford to base his plans entirely on such an optimistic analysis. A capability for inflicting unacceptable damage on the U.S.S.R. was crucial for American security, and its preservation was therefore vital. The precise magnitude and nature of this threat, however, could not be defined with certainty. This problem was particularly serious in the realm of research and development for two main reasons. Intelligence on enemy efforts in this area was often difficult, if not impossible, until they were well advanced, while the recent and surprising Russian advance in missilery was a constant
reminder of the possibility that these efforts might be underestimated. Furthermore, timely compensatory action might not be possible if the underestimation was too great; the leadtime for modern weapons, the interval between initiation of research and development and actual deployment, was often several years. In view of this, it was only prudent to allow a substantial margin for error by basing research and development programs, if not on some phantasmagorical "worst plausible case," then at least on the assumption that their enemy counterparts were progressing even more rapidly and successfully than was actually anticipated.

The problems of deploying operational weapons also called for assumption of a greater than expected threat, though to a far lesser extent than was true of research and development. Once a weapon had been developed and facilities established for its production, its rate of deployment could in theory be geared to intelligence on the enemy's actual deployments; should assessments of the future threat extrapolated from this prove inaccurate, the relatively short time needed for increased production permitted timely adjustments in deployment schedules. Com-
plete and reliable intelligence on the stationing of enemy forces, nevertheless, was indispensable for this and, in the late 1950's and very early 1960's, this prerequisite was not fulfilled entirely. While data from U-2 reconnaissance flights seemed to be generally satisfactory, the U-2 could not range over all of the Soviet far north, and the dense cloud over that area hampered photography. It was necessary, then, to make at least some provision for the possibility of more extensive deployments than expected.

Moreover, domestic political pressures once again reinforced and, to a certain degree, extended the dictates of strategic prudence. Lingering fears that the Administration was not doing enough to close the "bomber gap" were manifest in actions such as the Senate's addition of almost one billion dollars to the Air Force budget in June, 1956 despite Eisenhower's objections. A year later, while still in the throes of the debate over this "gap," the American people found themselves confronted by the prospect of a new and more terrible "missile gap" in which the enemy lead might be qualitative as well as quantitative. The result was what Eisenhower termed a "wave of near-hysteria" and the "most surprising" consequence of Sputnik. In a poll
taken on November 24, 1957, fifty-three percent of the respondents believed that "there is a need to take a look at our defense policies," and only twenty-six percent expressed approval of these policies. 32 Partly as a reflection of this, partly as an attempt to derive partisan advantage from it, Congress opened a number of hearings on the implications of the Russian achievement. These hearings, the most famous and influential of which were those held by then Majority Leader Lyndon Johnson's Senate Investigating Subcommittee, promised to magnify current public apprehension unless the government expanded its efforts.

President Eisenhower's first State of the Union Message after Sputnik was the product of these factors. Eisenhower, to be sure, had proclaimed that his country undeniably possessed a second-strike capability already:

> Even if we assume a surprise attack on our bases, with a marked reduction in our striking power, our bombers would immediately be on their way in sufficient strength to accomplish this mission of retaliation.

Nevertheless, he simultaneously announced a number of measures designed to enhance the invulnerability of American retaliatory forces. As much in belated response to the bomber threat as in response to the missile threat, S.A.C.
was to be dispersed and placed on fifteen-minute ground alert. These steps, combined with the eventual stationing of I.R.B.M.s in Turkey and Italy, would serve as stopgaps to guard against the existing enemy threat, or perhaps even to stay slightly ahead of it. In the meantime, the United States would seek a more long-term and permanent solution through acceleration of her work on I.C.B.M.s, Polaris submarine launched ballistic missiles (S.E.B.M.s) and on early warning radar capable of giving some notice of missile attack.

Despite all this, the crisis over the "missile gap" deepened throughout the next two years. With only the sparsest data available on enemy deployment plans, and with Eisenhower's unavoidable decision not to reveal the existence of the U-2, speculation was rife. In its usual form, this speculation resulted in a demand that the Administration assume a "worst plausible case," the definitions of "worst" and plausible" varying with the individual or with the group he represented.

Beginning in early 1958, Senator Johnson disclosed supposedly secret testimony presented to his committee by
a number of military critics of government policy. Thus, he revealed that officers such as General Thomas White, Air Force Chief of Staff, General Bernard Schriever, head of the Air Force ballistic missile program, and General James Gavin, the retiring head of Army research and intelligence, were all afraid that the Administration was not speeding up its missile programs sufficiently.\textsuperscript{34} Not too surprisingly, the Senator also used this testimony to support his contention that even the recent acceleration of the American missile programs was inadequate, and a similar theme was evident in a report issued by his subcommittee in late January, 1958.\textsuperscript{35} In what was, if anything, a less restrained vein, other prominent Democrats such as Symington and Kennedy soon seized upon this issue as yet another instance of the dangerous \textit{immobilisme} of the Administration.\textsuperscript{36} Finally, the President's refusal to publish the Gaither Report, and the "leaking" of sections of it to the press, seemed to confirm the impression that an inept President had overruled expert opinion and was now bent upon a course which would seriously endanger American security.\textsuperscript{37}

This impression was strengthened immeasurably in 1959. The President's State of the Union Message emphasized that seven billion dollars would be spent on
missiles in the coming fiscal year, but it also contained an outright rejection of pressures for far greater efforts.

We must guard against feverish building of vast armaments to meet glibly predicted moments of so-called "maximum peril." 38

More detailed - and alarming - elaboration soon came from Defense Secretary McElroy. 39 The United States, he stated, should have approximately the same number of I.C.B.M.s as the U.S.S.R. in 1959. Admittedly, it was possible that Soviet rates of deployment might accelerate thereafter, but the United States would not seek to match her opponent in the production of first-generation I.C.B.M.s; instead, she would concentrate on Polaris, which should be operational by the end of 1960, and the second-generation Minuteman, which was expected to be operational by 1963. Thus, the Administration had consciously decided to permit a "missile gap" to develop during the next few years, should Moscow seek to create one.

In actual fact, this decision was eminently sound from a strategic point of view. The "missile gap," after all, might well fail to develop. Furthermore, even if measures such as early warning were ineffective, enemy numerical superiority did not necessarily mean that the
American strategic forces would be totally annihilated. General Thomas Power, the S.A.C. commander in 1960 and a vociferous prophet of a "missile gap," admitted that an average of three first-generation I.C.B.M.s were required to destroy a soft target such as an airfield or a first-generation missile base. It followed from this that it was not necessary to match Russian missile forces; it was only necessary to have sufficient forces - be they bombers or missiles - to ensure that there would be more targets than effective attackers, and that the surviving forces would be large enough to decimate the enemy in return.

Perhaps most important of all, as the Gaither Committee had pointed out, the operational characteristics of first-generation missiles would be far less satisfactory than those of their successors. Located on unprotected sites, or in lightly protected ones, they were almost as vulnerable as manned aircraft while still on the ground, and, as they required about a quarter of an hour of preparation before they could be fired, their reaction time was no better than that of the bombers on ground alert. Furthermore, their inaccuracy was appalling; the circular error probable (C.E.P.) originally expected of the Atlas
was five miles, and its C.E.P. in 1960, after it had attained operational status and had been extensively tested, was still approximately two miles compared to one-quarter of a mile for bombers.\textsuperscript{42}

Apparently afflicted with a reliability rate of four percent at the outset, they were always undependable.\textsuperscript{43} Indeed, Herbert York, who was a member of the President's Science Advisory Committee (P.S.A.C.) and Director of Defense Research and Engineering at this time, has stated that:

Perhaps only as few as twenty percent of them would have reached their targets in a real war situation during the first year or so of so-called operation readiness.\textsuperscript{44}

Most serious of all, I.C.B.M.s, unlike bombers, could not be recalled once they had been launched.\textsuperscript{45} This factor, in combination with their vulnerability on the ground, left little room for mistakes. Technical malfunctions in early warning radar and human errors in interpreting data from it, however, were by no means impossible. In view of this, it was conceivable that these missiles would be committed to battle on the basis of erroneous warning or that fears of such an eventuality would prevent them from
being fired in time.

In contrast to this, both Polaris and Minuteman promised high efficiency and maximum strategic stability. Stationed on nuclear submarines which were all but invulnerable at sea, the Polaris was virtually immune to surprise attack. Similarly, Minuteman, which had been started in 1957, differed from the liquid fueled Atlas in that it had storable solid fuel and hence could be protected in "hardened" underground sites. With an anticipated high rate of reliability, a reaction time of approximately one minute, a C.E.P. of less than one mile, and a capacity for relatively cheap mass production, it would be an invaluable addition to the American nuclear arsenal when it became operational. Taken together, or even singly, these weapons systems would enhance the credibility of the deterrent immeasurably, for their ability to survive an enemy first strike and to deliver a shattering retaliatory blow would be unquestionable.

Nonetheless, these benefits seemed ethereal to many when they thought of the all too near "missile gap," particularly when the government admitted that this "gap,"
if it materialized, would be the result of a conscious decision by itself. To add to this, in December, 1958 the United States had at last come to the point reached by the Soviet Union a year previously; she had achieved a full-thrust firing of an I.C.B.M. On the threshold of both an operational American I.C.B.M. capability and a possible Russian preponderance in this area, the question of force levels became yet more pressing.

When the Air Force failed to convince the Administration that it should increase the programmed force of 208 Atlases and follow-on Titans by seventy-two more Atlases, it "leaked" predictions that the U.S.S.R. could have five hundred missiles by 1961, compared to about fifty for the United States, and that she could have twice this number in the following year. In a more forthright fashion, officers such as General Power explicitly criticized official policy in testimony to Congress and in public speeches. Thus, in April, 1959, three months after Eisenhower refused the request for an increase in missile forces, he warned that the American deterrent posture was "deteriorating" and combined pleas for more bombers and an airborne alert with an appeal for more missiles. Congress, alarmed by warnings such as
this, and already sympathetic to the Air Force position, appropriated funds for the additional I.C.B.M.s requested by that service. Similarly, when the President rejected the Army's contention that the Nike-Zeus antiballistic missile (A.B.M.) was ready for deployment, its appeal to Congress led that body to vote "preproduction funds" for this purpose.

The Executive countered these congressional attempts to alter its policies with deceptive ease; it simply refused to spend the extra funds appropriated. Within a few months, though, it had become apparent to Eisenhower that he could not fully withstand these pressures.

Paradoxically, developments at the close of the decade offered substantial, if not conclusive, vindication of his approach to force planning. By early 1960 data from the U-2 flights had confirmed him in his doubts about a coming "missile gap," for it indicated that the Kremlin had not deployed more than about ten I.C.B.M.s. These same flights also pointed to a major reason for such a slow rate of deployment two years after the launching of Sputnik; the Soviets' missile program was beset by difficulties
similar to those encountered by its American counterpart, and the accuracy of their I.C.B.M.s was actually inferior.

Closely linked to this, a speech on nuclear strategy delivered by Premier Khrushchev on January 14, 1960 pointed to another possible, though only possible, reason for this phenomenon. Thermonuclear weapons, he contended, had replaced conventional strength as the decisive component of modern armed forces. As a result of this, and as a result of extensive work on these weapons in the Soviet Union, her security had been greatly enhanced; as Khrushchev put it, her present strategic forces were well able to guarantee her "unassailability." This argument in itself provided some reassurance, for as Secretary of Defense Thomas Gates cautiously noted, it seemed to endorse deterrence, rather than war-making, as the appropriate objective of these forces. As such, it joined with his emphasis on the adequacy of existing Russian Strategic forces and current intelligence on their modest rate of growth to cast serious doubt on arguments that the enemy was making a large-scale bid for a counterforce capability.

Of even greater importance, the Premier had used his assessment of the implications of the thermonuclear
revolution to justify his decision to save seventeen billion rubles through reduction of armed forces personnel by one-third. Thus, far from committing himself to the enormous expenditures feared by the American Air Force, Khrushchev seemed to be trying to cut back the defense budget in order to divert scarce resources to his programs for raising the Russian standard of living and maintaining a high rate of economic growth. The logical conclusion to all this was that the threat then facing the United States, and the one which would emerge in future, would probably be a counter-value one.

Parallel to this, the programs accelerated in 1958 were coming to fruition or were about to do so. The first Ballistic Missile Early Warning System (B.M.E.W.S.) installation was to be completed in October, 1960. Finally, the Atlas had progressed to the point where it was declared operational in September, 1959.

Encouraging as this latter development may have been for Eisenhower, it also bore the seeds of trouble for him. As General White himself admitted, the persistent technical difficulties plaguing the Atlas program, and concomitant uncertainties about when, and indeed if, these dif-
difficulties could be resolved had greatly bolstered Eisenhower's position in resisting the pressures for increasing the programmed missile strength in 1959. A year later, with this weapon's evolution to operational status, this obstacle was in large measure removed. Opposition to expansion in its numbers could now be portrayed, not as a prudent refusal to waste money on an unknown quantity, but as a failure to take advantage of a battle-ready weapons system.

Given the climate of public opinion at that time, there could be no doubt about the popular reaction to such a development; forty-seven percent of those polled on February 10, 1960 still believed that the U.S.S.R. was ahead of the United States in I.C.B.M.s, compared to only thirty-three percent who believed that the advantage lay with their own country. This in turn could have serious implications in an election year, and although Eisenhower was not a candidate himself, he had an interest in victory for his party, and hence a vindication for his administration. Thus, in the fiscal year 1961 defense budget the Administration responded to evidence of the emerging strategic threat by providing for placement of one-eighth of S.A.C. on air-
borne alert, but it also bowed to the pressures of evolving military technology and the Air Force-Congressional alliance by agreeing to an additional sixty-three Atlases.
Parallel to this, a far more momentous change, an alteration in the actual objectives of American strategic forces, had been forced upon the Eisenhower administration. The purely countervalue strategy embraced by that administration ever since the dawn of the thermonuclear age was at last giving way to one in which counterforce doctrine played a prominent, though far from dominant, role. This development, manifest in the enunciation of a crude form of coercive deterrence in early 1960, represented an attempt to at least partially resolve a strategic debate which had been mounting in intensity over the last six years.

I. PRESSURES ON THE ADMINISTRATION TO ADOPT A COUNTERFORCE STRATEGY

A. THE COUNTERFORCE CRITIQUE

Dissent with countervalue policy dated from its very inception. As early as 1954, the National Security Council reportedly carried massive retaliation to its logical conclusion by contending "if at one blow the threat
of America's destruction from an atomic attack would be removed, that blow should be struck."¹ In this same year, Twining approached this position when he criticized the Administration for its failure to invest in the forces necessary for a counterforce capability.² Finally, the growing vulnerability of American cities, as well as American strategic forces, was a constant theme in LeMay's warnings of a "bomber gap." Thus, he pointed out that the Russians were "steadily narrowing our present favourable margin" in nuclear power and he emphasized that whereas five years ago the United States could have won a central war with the Soviet Union "without suffering serious damage to this country," the enemy could now inflict grievous injury, on his people in such a war.³

Expositions on the implications of this development and on the advantages of a counterforce capability, however, were presented most completely and most forcefully at the end of the decade. As before, criticism of the prevailing doctrine came primarily from Air Force personnel such as Twining, who had become Chairman of the Joint Chiefs of Staff (J.C.S.) in 1957, White, the Air Force Chief of Staff, LeMay, his Vice Chief, and Mr. Sharp,
the civilian Secretary.

According to them, a countervalue strategy left a potentially dangerous gap between the political interests of the United States and her military capabilities. Preservation of the American homeland, of course, was the most crucial of these interests, yet such a strategy offered an unreliable guarantee of this. As General Twining pointed out, it meant that "the national survival depends upon the will and judgment of an enemy." Unfortunately, the Soviets, like other human beings, were capable of irrationality and miscalculation. Yet more serious, actions which were rational from the Kremlin's point of view might lead to a nuclear cataclysm, for the Russian leaders were dedicated to the destruction of the West and were prepared to risk war with the United States in pursuit of this objective. It was possible, then, that the deterrent might fail, and it was certain that countervalue retaliation alone could not limit the consequences of its failure.

Parallel to this, General White argued:
Then suppose the enemy decided to attack one of our allies to whom we have basic security obligations. Under these circumstances we would be forced to recognize that our decision to support the ally under attack could mean direct attack on our country by unimpaired striking power. I believe that this situation would be apparent to the enemy and to our allies. It seems to me that 'finite deterrence' (a countervalue strategy) equates pretty well with a 'Fortress America' concept.

The "basic security obligations" which White and his colleagues had in mind were primarily those contained in the North Atlantic Treaty. Important as the NATO allies were to the Americans, they were not worth the destruction of the United States herself. Consequently, in the words of General LeMay, there was "some reasonable doubt whether this pledge (to defend Western Europe) would be honoured in case of nuclear war." 8

Limitation of the conflict to Europe was therefore a prerequisite for fulfillment by the United States of her NATO obligations. 9 Escalation, however, would be all but inevitable if she decided to resist a massive and determined Russian attack on this area; the perennial Western inferiority in non-nuclear strength would make prolonged conventional resistance to such an attack impossible, and this would ultimately force the Americans to resort to
strategic thermonuclear weapons. Given a countervalue strategy, this would involve devastation of Russian cities, and the Kremlin would then have both the capacity and the incentive to retaliate in kind.

Under these circumstances, a decision to defend Western Europe would be tantamount to a decision to commit suicide, and it was possible that American decision-makers might recoil before this prospect. It followed from this that the United States' guarantee to her NATO allies lacked credibility, a factor which would make the Soviets bolder in their efforts to expand their influence and which would undermine the Western Europeans' determination to resist these efforts. The result would be a general deterioration of the American diplomatic position and an increasing probability that the United States would ultimately be faced with an agonizing choice between total surrender and a disastrous central war.

The best solution to these problems, the argument continued, was offered by a counterforce strategy, a strategy which provided for the destruction of Soviet strategic forces. As General White admitted, it was conceivable that this strategy would be useless if the Soviets
decided to attack the United States despite certain knowledge that this would lead to their own annihilation and if there was no warning of the coming attack. In this event, the United States would suffer grievously "no matter what we have." Complete surprise, and irrationality on this scale, were nevertheless highly improbable.

Decision-makers had rarely given hostages to fortune by resorting to war unless they had first ascertained that they could not gain their political objectives by peaceful means. Thus, the majority of conflicts had arisen after an extended period of increasing political tensions. The possibility of irrational enemy behaviour would be greatest during such periods, but American vigilance would also be at its height. Consequently, the United States might well have some warning of an impending attack by Soviet strategic forces, and she could then launch a pre-emptive assault against them.

Furthermore, history provided few examples of a completely irrational attack. As Secretary Sharp noted, even the Japanese attack on Pearl Harbour was motivated by the belief that victory was possible. Decisions to go to war, then, were usually based upon a rational cal-
calculation of the prospective benefits and the price to be paid for them.

In view of this, and in view of the fact that the Soviets usually based their actions upon such rational calculations, a counterforce capability, combined with a countervalue one would offer the optimum deterrent. A war-winning capability such as this would maximize the disincentives to an attack on the United States by ensuring that such an attack would bring on, not only widespread devastation of the Soviet Union, but inevitable defeat. Similarly, it would enhance the disincentives to an attack on Western Europe by bringing the costs of defending that area into harmony with the American valuation of her importance. Moreover, such a capability would also provide maximum support for American diplomacy in peacetime, while if hostilities erupted it would enable the United States to survive as a viable society and to dictate peace terms to her opponent. In short, the counterforce school argued that war - even thermonuclear war - need not be a purposeless slaughter; it could still provide a rational means of securing American political objectives, and a war-winning capability would actually increase the
probability of peaceful attainment of these objectives.

B. THE PROBLEM OF WESTERN EUROPE

President Eisenhower was well aware of the dangers to which these men pointed. The United States, he realized, would almost inevitably be forced to initiate a strategic thermonuclear exchange if she decided to defend her NATO allies. Thus, during the second Berlin crisis, he had told a group of congressional leaders that "we had no intention of opposing, with ground troops, a full-out attack by a couple of hundred Soviet divisions, but that we would take care of the situation."\(^{16}\) "Taking care of the situation," he believed, would probably result, not merely in a local exchange of tactical nuclear weapons, but in "global war."\(^{17}\)

This consideration, combined with the certainty that the United States would be obliterated in such a war, led to doubts in both the Western and Soviet camps about the credibility of the American guarantee to Western Europe. "Khrushchev," wrote Eisenhower," now hoped to exploit differences among the four Western governments - differences, for example, over the kind of Communist
provocation that could compel the West to go to war."  

As early as November 6, 1957, the Russian leader had sought to capitalize upon the shock following his country's dramatic achievements in missile technology by proposing a new conference of the great powers, a conference which would obviously take place under the shadow of Sputnik. Under pressure from some of her NATO allies, particularly Britain, the United States was forced to respond favourably to this démarche.  

Yet more serious, the Soviets had initiated a new Berlin crisis in late 1958 by threatening to sign a separate treaty with East Germany. In February, 1959, at the height of this second Berlin crisis, Dulles toured Europe in an attempt to strengthen Western solidarity. His findings revealed the persistence of significant divergences between the allies. Britain, acutely conscious of her vulnerability should a thermonuclear war erupt, sought areas of compromise more readily than the Americans wished. France, on the other hand, appeared overly intransigent; as Eisenhower put it, President De Gaulle "seemed to be prepared to use force a little more suddenly than we thought desirable." With the French bent upon an independent
nuclear force de frappe, supposedly as a means of compensating for any lacunae in the American deterrent, this disagreement was particularly serious; it involved, not only a weakening of the diplomatic front against the U.S.S.R., but also the possibility that in some future crisis the United States might be plunged into a central war through hasty employment of this force by her ally.

C. IMPROVEMENTS IN MISSILE TECHNOLOGY

It was necessary, then, to find some means of reasserting American leadership in NATO and of stemming the tide of "Sputnik diplomacy." One such means, of course, might be adoption of the strategy advocated by White and his colleagues. The evolution of offensive weapons technology during the 1950's seemed to present at least some marginal improvement in the prospects for actual implementation of this strategy. As long as intercontinental bombers were the only delivery systems available, the chances for a successful pre-emptive attack were extremely slender; with a time to target of at least three hours, they would probably give their Russian counterparts more than enough time to become airborne before they arrived.
With the coming of the I.C.B.M., however, the time to target was reduced to thirty minutes, and although many Air Force officers still maintained that the bomber was a useful weapon for counterforce operations, the Administration was convinced that, as Gates put it, "a true surprise attack would have to be a missile attack."^24

The Atlas, it was true, was a poor vehicle for this purpose; it was barely adequate for countervalue missions, let alone counterforce ones. At the same time, the Titan, a follow-on to this missile, had a number of improved operational characteristics, most notably a larger warhead which gave it a substantial capability against even hard targets.\(^25\) Moreover, the very fact that even these crude weapons systems represented a vast improvement over their primitive ancestors, the German V-1s and V-2s, gave planners an empirical basis for assuming that further improvements would come about as expected; indeed, Gates felt sufficiently confident about this to suggest that I.C.B.M.s would replace bombers as the backbone of S.A.C. by the mid-1960's.\(^26\) The missile which Gates had in mind when he said this, the Minuteman, would of course be an excellent countervalue weapon, but its
reliability, firing time, and, most important, its accuracy and potential for mass production also promised to give it unprecedented effectiveness as a counterforce weapon.

D. **AMERICAN ECONOMIC SUPERIORITY**

Admittedly, these strategic advantages would come to nothing if the Soviet Union managed to equal American I.C.B.M. deployments. Such an eventuality, though, was by no means inevitable. There was a consensus among both supporters of Administration policy and the most expert critics of that policy that the first-generation "missile gap," if it arose, would be the result of a conscious decision by the United States not to match Soviet efforts in the arms race in the short run. Similarly, there was also a consensus that, should she survive this "gap," she would probably overtake her opponent when Minuteman became operational. 27 The primary consideration which underlay this assumption, and which indeed pointed to the possibility of an eventual American numerical superiority, was indicated by General White when, in response to speculation by one congressman that the U.S.S.R. would maintain the present ratio in missile strength once second-generation missiles
had been developed, he stated:

On the basis of sheer manufacturing probabilities and capabilities, I would say that it is so. Whether he (the Soviet Union) does it or not, which is not part of the premise, is a question. 28

This "question" arose from the fact that gross national product (G.N.P.) of the United States was over twice that of the U.S.S.R., and that the relative sacrifices involved in maintaining a given level of defense spending in the latter country were therefore far greater than those involved in maintaining a similar level in the former. 29 In view of this, and in view of the evidence in Khrushchev's January 14, 1960 speech that he was already beginning to falter under the economic strains of the arms race, there were grounds for believing that the Americans would pull ahead in the long run simply by maintaining their present pace. Furthermore, even if the Russians could compete at this level, it could be argued that the economic restraints operating upon them would eventually cause them to fall behind if the United States rapidly expanded her efforts. In short, there was every chance that American economic superiority could be translated into numerical superiority in I.C.B.M.s if only this
objective were pursued with sufficient determination.

II. COUNTERVAILING PRESSURES AGAINST FULL ADOPTION
    OF A COUNTERFORCE STRATEGY

    Despite this, however, despite marginal improvements
in the technical prospects for a counterforce capability,
and despite continuing diplomatic crises which threatened
to spark a nuclear conflagration, the Air Force could not
gain full acceptance for its prescriptions. The reasons
for this were both technical and political.

A. TECHNICAL IMPOSSIBILITY OF A COUNTERFORCE CAPABILITY

    Perhaps most important, a true counterforce capa-
bility was simply impossible. As long as the time to target
of American I.C.B.M.s remained thirty minutes, and as long
as the Soviets had warning of their coming, it was highly
probable that a significant portion of the Russian land
based strategic forces could escape destruction on the
ground. Moreover, just as the American Polaris was invul-
nerable to attack by Soviet missiles, so were the S.L.B.M.s
aboard Soviet submarines invulnerable to attack by American
missiles. Substantial progress on other means of meeting
this threat - antisubmarine warfare (A.S.W.), civil defense, air defense, and ballistic missile defense (B.M.D.) - was consequently an essential prerequisite for a counterforce strategy. Unfortunately, developments in all of these realms were vastly unencouraging.

A.S.W. presented the most intractable problems. During the late 1950's the Russian force of missile bearing submarines was not as formidable as its American counterpart; the vessels were diesel powered, while the S.L.B.M.s aboard them had to be fired from the surface and from a range of one to four hundred miles. Even then, the difficulties in countering this menace were enormous, and they promised to become greater in the following decade. Efforts at detection by sonar were hampered by the density of the medium which it had to penetrate and by variations in the temperature of this medium, while once contact had been made it was impossible to determine whether or not a submarine was carrying S.L.B.M.s as long as it was submerged. Once the submarine surfaced, of course, interception had to be instantaneous, or it would have launched its missiles. With the development of improved S.L.B.M.s by the U.S.S.R., the range of these missiles - and hence the area which the A.S.W.
forces had to cover - would be increased, while their capability for underwater firing would exacerbate the problem of detection. The difficulties in this area would be further enhanced when the Soviets developed nuclear powered vessels to carry these missiles, for they would be able to remain submerged over a longer period, and their increased speed would complicate the problem of tracking them after they had been detected.

Prospects for civil defense were also bleak. Protection from the actual blast of a thermonuclear explosion was difficult in the extreme. As direct hits on major cities were likely in a thermonuclear exchange, this meant that a high percentage of American industry would be destroyed. Furthermore, although there might be some hope of survival for the population if it could be evacuated to fallout shelters in outlying areas, there would still be extensive material and psychological obstacles to post-attack recovery; stores of food and water might not last until it was safe to emerge, there would be widespread devastation of the countryside, and, of crucial importance, the morale of the survivors might not survive the shock of such sudden and massive losses combined with a dras-
tically changed physical environment. Grave as these difficulties may have seen, the crucial consideration was the fact that civil defense required a high degree of public co-operation for its success. The widespread indifference of the American people to this, however, meant that such co-operation was not likely to be forthcoming.

As was mentioned earlier, an extremely sophisticated anti-aircraft system was being erected, but it was by no means perfect and, as the "bomber gap" failed to emerge and was supplanted by an apprehended "missile gap," it was directed against what was at best a secondary threat. Protection against the main threat, the growing missile power of the U.S.S.R., seemed far in the future.

When the President refused to spend the "pre-production funds" voted for Nike-Zeus, the P.S.A.C., the Navy, and even the Air Force had concurred in this decision. The reason, as Secretary Gates told a House subcommittee, was that the A.B.M. program was "loaded with every known kind of difficulty and problem." Dr. George Kistiakowski, then Chairman of the P.S.A.C., has since testified that Nike-Zeus might have been able to intercept a few first-generation I.C.B.M.s, but that it would have been inef-
ffective when faced with a sophisticated attack. Because the antennae of the radar were steered mechanically, it could detect and track only a relatively limited number of missiles at one time. In addition to this, decoys such as balloons in the shape of the re-entry vehicle could be released by the attacking missile. One method of dealing with this problem was to delay launching the A.B.M.s until re-entry, when atmospheric resistance would permit discrimination between the decoy and the heavier warhead. Nike-Zeus, unfortunately, did not lend itself to such tactics, for the speed was only one-quarter that of the incoming re-entry vehicle. The only remaining alternative was to destroy the decoys by exoatmospheric thermonuclear explosions, but these explosions would also have blacked out the defending radar. All this made it highly probable that this system would be obsolete before it was deployed.

B. **EISENHOWER'S PERCEPTION OF THE DANGERS OF AN ARMS RACE AND THE IMPROBABILITY OF A NUCLEAR WAR**

At the same time, although he had seen some small merit in the counterforce arguments, the main thrust of Eisenhower's political analysis also worked against them.
General White had said, "I cannot agree that the Soviet Union is trying to deter us. Deterrence . . . is a one-sided problem - it is ours." The corollary of this argument was that the course of Soviet Defense policy was determined primarily by the continuing communist urge to dominate the world, the technological options open to the Kremlin, and limitations on the resources available; any unilateral attempts by the United States to end the arms race would only encourage her opponents in their quest for strategic advantage. Eisenhower, on the other hand, was inclined to view the problem of deterrence as a mutual one. Thus, when the preliminary conversations on a test ban treaty showed signs of progress, he announced that the United States would suspend testing of nuclear weapons provided that Moscow reciprocated this gesture. The ultimate deadlock in these discussions, he believed, was more a reflection of the Russian fear of inspection than of an unalterable desire for nuclear superiority. It followed from this view of the enemy that an American bid for a counterforce capability might actually increase his perception of threat and provoke a corresponding expansion of his own forces. The result would then be increased expenditures on nuclear weapons without any in-
crease in security and, indeed, with possible strategic instability.

Two other considerations, though, were more central to his thinking. In spite of his recognition that there was a "remote" possibility of a disastrous central war, he stated that his Administration "came early to the conclusion that the Soviets would not, save under the most extreme provocation, risk a global nuclear war. They might undertake, as in the past, probes that would alarm populations and some governments, but would never carry such activities to the point where all-out retaliation would be the only response a self-respecting nation could take." Moreover, he also believed that "Communists do little on impulse; rather their aggressive moves are invariably the result of deliberate decision." Thus, during the Suez crisis the U.S.S.R. had eschewed threats of nuclear retaliation and of intervention by "volunteers" until it had become clear that the United States herself opposed the actions of Britain and France in Egypt. Similarly, during the Berlin crisis of 1958-1959, Khrushchev had relied primarily on a political threat - a separate treaty with East Germany - rather than on direct threats of military action
or blockade. 48

It seemed to Eisenhower, then, that the Russians did not feel that expansion of their influence was worth a world war, and that they would be guided by this rational calculation of costs and benefits even in crisis situations. The threat of countervalue retaliation alone, then, would provide a reasonably reliable safeguard for American security; the increased willingness to strike first inherent in a counterforce strategy might well constitute the "most extreme provocation" which would bring on a nuclear catastrophe. In view of this, he was convinced that reaffirmation of the American will to resist, instead of vast increases in American strategic power, would re-establish the credibility of the deterrent in both enemy and allied eyes. 49

III. THE ROLE OF DOMESTIC FACTORS IN BRINGING ABOUT A PARTIAL SHIFT

Between 1957 and the beginning of 1960, this line of reasoning and, to a lesser extent, his economy-mindedness, caused the President to join with Army and Navy advocates of a countervalue strategy in opposing the Air Force's
counterforce doctrines. If he had had his own way, it seems probable that he would have continued in this course indefinitely, for he had written:

Why so much of our populace has always seemed to feel that our defense would be immediately improved by an increase of a billion dollars or so, or by the quick call-up of a hundred thousand ground troops, has always been beyond my ken. I determined that this crisis (over Berlin) should not affect our long-range plans for assuring the defense of America without waste. Indeed, it was always my conviction that one purpose of Khrushchev's manufactured crisis was to frighten free populations and governments into unnecessary and debilitating spending sprees.

This position, however, ran counter to two of the most powerful currents in recent American history.

A natural desire for self-preservation, it was true, made it difficult to accept almost total vulnerability in the thermonuclear age. Yet more important, the Americans' historical experience had ill prepared them for this development. Having long lived in relative safety, or at least in circumstances which assured them of victory if hostilities broke out, they had come to assume that this was a natural condition for their country. During the first postwar decade, this assumption had led them to consistently underestimate their enemy, to assume
that they could remain superior with relative ease. As was seen earlier, however, developments in the mid-1950's had dissipated this notion. Then, like a man who has never been sick in his life and who is suddenly laid low by illness, they over-reacted. Popular fears of a "bomber gap" or a "missile gap" were sparked by the experts' - or at least some experts' - prophecies of these "gaps," but the ground had been prepared in advance by the assumption that there could be no strategic middle path; if one was not unquestionably "superior," then one was dangerously "inferior." As Representative Flood put it in 1960:

You see, the public goes back 15 years. Russia was devastated: there were 20 million casualties, her physical plant was destroyed . . . . We had the greatest Air Force in the world, the greatest Army in the world, we had submarines running out of our ears. Their army was shot to pieces. They had no air force worthy of the name compared to ours; they had a few coastal submarines but nothing compared to ours. We had the A bomb; we had the greatest production plant in the world . . . now, when you (Secretary Gates) go around saying "Well, we are only a little bit behind them," that is like being a little bit pregnant.

Apprehension over the "pregnancy," to continue Flood's metaphor, was manifest in fears for the safety of the American countervalue capability. Flood and Senator
Kennedy, however, indicated a further concern obliquely when they suggested that the Soviets' willingness to suffer damage might be greater than that of the Americans. Eisenhower was more forthright in retrospect when he wrote that "Sputnik had revealed the psychological vulnerability of our people." With a nuclear sword of Damocles hanging over them, the American people instinctively sought the shelter of at least a partial return to "superiority," and, equally instinctively, believed that this could be achieved if only sufficient "know-how" and resources were channelled into this effort.

Closely linked to this, another, more recent, current also led many Americans to a similar conclusion. With the growth of liberal internationalism in their country, the people of the United States had come to identify their interests with a broader "natural harmony of interests" between nations. International conflict, particularly when it led to frustration of their aspirations, was consequently seen to be a product of the machinations of evil men. This in turn caused the American people to view defense of their own interests as part of a moral crusade of enlightenment against darkness, principle
against self-seeking. The influence of this characteristic was especially evident when they found themselves in conflict with a culturally backward nation whose leaders were supposed to be fanatically committed to the cause of Communism; as George Kennan pointed out, they tended to overreact to this threat, exaggerating both the adventurousness and the rigidity of Soviet foreign policy. 56

These two strains, reinforced by Khrushchev's apparent belligerence, conflicted with Eisenhower's minimalist tendencies and made many Americans receptive to the Air Force appeals for expanded strategic forces. Admittedly, it is unlikely that a large percentage of them would have agreed with the conclusion of a House Committee in 1960 that "to effectively deter a would-be aggressor we should maintain our armed forces in such a way . . . that, should it ever become obvious that an attack upon us or our allies is imminent we can launch an attack before the aggressor has hit us or our allies." 57 It is yet more improbable that the general public, or even members of the armed services committees in Congress, understood the intricacies of the debate between the counterforce and countervalue schools. 58 Despite all this, however,
it was generally understood that the Air Force stood for "superiority," a position far more in tune with the temper of American public opinion than Eisenhower's emphasis on "sufficiency."

In the final analysis, then, the domestic debate over the "missile gap" went beyond a simple fear that Russian strategic forces might outnumber those of the United States; it was essentially a debate, albeit a vaguely defined one at the popular level, over the appropriate objectives of these forces. Unwilling as he may have been to admit it, the President realized that the tide of this debate was running against him. This, of course, would constitute a serious political liability in the 1960 elections, but there was also another, more serious, implication.

The President could be reasonably certain that the "missile gap" controversy would not cause the Russians to underestimate the physical capacity of the United States to wreak destruction upon them; their intelligence network would see to this. It was quite possible, though, that this controversy would perpetuate doubts in their minds, and in those of the allies of the United States, about her
determination to actually use this capacity. In consequence, no matter how often he reaffirmed the American will to resist, the President's efforts to strengthen the credibility of the American deterrent were undermined by domestic discord on the adequacy of the programmed retaliatory forces.

IV. COERCIVE DETERRENCE INITIALLY DEFINED

This consideration finally led the Administration to abandon its purely countervalue policy, though it still refused to accept counterforce doctrine in its entirety. A compromise strategy, coercive deterrence, was tentatively defined by Secretary Gates in January, 1960. During testimony which he acknowledged to be a reply to current fears over the "missile gap," he told a House subcommittee that "we are adjusting our power to a counterforce theory" and that the United States was no longer planning on "just bombing Russia for retaliatory purposes." In saying this, he apparently envisaged the possibility of a pre-emptive attack on Soviet strategic forces which would limit damage to his country and which, in combination with "attacks on industrial centers and things of that character," might also coerce the Kremlin into ending hostilities on American
Nevertheless, his hopes for such a victory, or indeed for survival, in a thermonuclear conflict were not very high, for he admitted:

What we actually do in this sort of period (a thermonuclear war) in a real operation is something else. I do know for sure.

At the same time, he recognized that the appearance, if not the reality of a counterforce capability might well render a vital service by increasing the credibility of the American deterrent:

The validity of our deterrent must be of such a character - am I doing all right on this, General Twining? - that an enemy will believe his military will be devastated.

In re-stating the overriding importance of deterrence, and in uniting this with a contention that the marginal counterforce capabilities still attainable might add to the deterrent and offer some slight protection if it broke down, Gates had broadly defined what was to be official American strategic doctrine until the mid-1960's. Moreover, he had also initiated the specific planning required to operationalize this doctrine when, in late August, 1960, he had created a tri-service committee and charged it with developing a co-ordinated list of targets for
American strategic forces. The increased size of this list over previous ones was in large measure a reflection of its inclusion of military targets. Finally, at the close of the Eisenhower Administration, work had begun on provision of facilities sufficient to produce just under a thousand Minutemen, the missiles best suited for attacks on these targets.

Despite these signs of movement, however, the Eisenhower administration's commitment to coercive deterrence was still precarious. Gates' enunciation of this doctrine, after all, was coupled with an admission that the U.S.S.R. might still have a short-range numerical advantage in I.C.B.M.s and a statement that future defense expenditures should not exceed approximately forty-one billion dollars. Moreover, closely linked to this latter factor, there had been no decision on the specific number of Minutemen which would actually be deployed, and it was by no means certain that the industrial plant allocated for production of these missiles would be fully exploited. Vigorous and determined efforts to lend substance to the new strategic form came only with the advent of Kennedy and McNamara.
The lingering neo-minimalism of the Eisenhower Administration, a trait which had repeatedly caused it serious embarrassment in domestic politics, differed significantly from the spirit of its successor. Despite a verbal commitment to "negotiation from strength," with all its maximalist overtones, Eisenhower and his lieutenants had in fact pursued a less ambitious policy of "containment" in the realms of both defense and foreign affairs. Thus, while they sought to prevent the Russians from achieving a counterforce capability in the strategic arms race and to halt the expansion of Soviet political influence, their efforts to actually eradicate these problems were generally faltering and infrequent.

In contrast to this, a more activist spirit, a spirit which was more in tune with the temper of the American people, pervaded the Kennedy Administration. Although it recognized that no end to the cold war was in sight, it believed that the scope and adventurousness of Moscow's foreign policy could be reduced; although it realized that the United States would always have the
threat of nuclear devastation hanging over her, it also believed that this vulnerability could be alleviated and that the arms race might eventually be decelerated. Translated into nuclear strategy, this led to the ascendance of coercive deterrence for almost two years following Kennedy's inauguration. McNamara, who had initially inclined toward the spirit prevailing throughout the Eisenhower years, was soon converted in large measure to this newer and more dynamic outlook. Consequently, while he was even more steadfast than Kennedy in his refusal to fully accept the extreme maximalism of the Air Force, he also became an aggressive and dynamic architect of coercive deterrence during his first twenty months as Secretary of Defense.

I. KENNEDY

A. CANDIDATE KENNEDY AND THE "MISSILE GAP"

Roger Hilsman has suggested that President Kennedy came to office with "very well developed ideas about strategic matters."² Victor Lasky, on the other hand, has argued that his apparent expertise was simply a façade for
political chicanery in that he had deliberately raised fears of a "missile gap" in a bid to gain popular support for his presidential campaign. Closely related to this, I. F. Stone contended that candidate Kennedy's position on this matter was determined by promises of more defense contracts to American industry in return for the funds necessary for victory in this campaign. None of these assertions, however, is entirely valid.

Candidate Kennedy's most detailed and systematic exposition on nuclear strategy was presented in the Senate on August 14, 1958, when he charged:

We are rapidly approaching the dangerous period which General Gavin and others have called the 'gap' or the 'missile-lag period' - a period in the words of General Gavin 'in which our own offensive and defensive missile capabilities will lag so far behind those of the Soviets as to place us in a position of great peril.'

The most critical years of the gap would appear to be 1960-1964.

With the growth of Soviet offensive power, and of Soviet capabilities for active and passive defense, the American countervalue capability might be severely degraded. Consequently, "the deterrent ratio (apparently the relative potency of the superpowers' deterrents)
during 1960-1964 will in all likelihood be weighted very heavily against us." Furthermore, the Russians might well have a lead-time of only five years, compared to ten for the Americans. In view of this, and in view of the probability that the U.S.S.R. would continue her vigorous research and development program, the United States might experience the most extreme difficulty in overtaking her even after 1964. These developments, he asserted, might open "a new shortcut to world domination" for the Kremlin.

Kennedy's prescription for this problem was "to keep the deterrent ratio from shifting still farther to the Red side and to lessen their advantage, if possible." To this end, he called for an increase in the store of tankers and air-to-surface missiles for the S.A.C. bomber force, and for acceleration of the American missile and anti-missile programs.

Although he was not very clear on this point, the main thrust of his arguments indicates that maximum protection for the American countervalue capability was to be the principal objective of these measures. Nevertheless, the concept of "deterrent ratios," and the concern
with lessening any Soviet advantage, also pointed to another, albeit imperfectly formulated, theme. Kennedy conceived of the "missile gap," not only in terms of a possible disparity in absolute numbers between American and Russian missile forces, but also in terms of the contrast between the relative invulnerability of the United States in the first postwar decade and her increasing vulnerability in the second. With this problem in mind, he suggested that willingness to accept damage was an important variable in the calculus of deterrence and that even the menace of a Soviet countervalue capacity might weaken the will of the American people to resist a wide variety of threats to their vital interests.  

In addition to this, his analysis indicated that a countervalue capability alone might also be inadequate in another sense; it offered no protection if the deterrent broke down. As Kennedy pointed out, even if such a capability usually constituted a credible deterrent, a central war could break out because the Russian leaders, like Hitler, acted irrationally or because they panicked in a crisis. Of yet greater danger:

Surely we realize the possibilities of serious miscalculation, of war by inadvertence, of having
both sides caught in a course which would lead
to an all-out war which neither originally con-
templated, of the calling of a bluff or of the
sudden spreading of war, are very real possibil-
ities, if we but recall the Soviet Union's mis-
calculations in Korea in 1950, our own miscal-
culations of the Red Chinese reaction in 1951, our
near intervention in Dienbienphu in 1954, the Soviet
threats of rocket war at the time of the Suez in-
vasion in 1956 . . . . We know full well the lack
of communications between ourselves and our adver-
saries, the mutual suspicion and hostility, the
increased risks taken by the Soviets as their
striking power grows.

The possibility of misperception by one side or the other,
then, was a constant threat to peace. Moscow's euphoria
after Sputnik could only enhance this threat.

Even though Kennedy acknowledged that his
country could never fully regain her vanished supremacy,
these arguments pointed to the necessity for some kind
of strategic superiority over the U.S.S.R, rather than
mere parity with her; his emphasis on the supposedly
pernicious influence of Eisenhower's economy - mindedness
pointed to the possibility of achieving this goal. 15

These conclusions, however, were developed neither ex-
plicitly nor at length, and there was little specific
discussion of the extent to which the United States could
attain strategic superiority or of the precise means by
which she could do so. Consequently, Hilsman's assertions
to the contrary, it would be an exaggeration to suggest that Kennedy's pre-election pronouncements constituted a "well developed" policy alternative.

Naturally, it was impolitic for a man with presidential aspirations, and with a concomitant desire to gain acceptance by as many groups as possible, to risk alienating potential supporters by being too precise in his analysis. In the absence of evidence to the contrary, however, one must agree with Richard Fryklund that candidate Kennedy had read little on nuclear strategy. There are, in addition, grounds for believing that what references he did make to expert opinion on this subject represented in some measure an attempt to lend an aura of intellectual respectability to an emotional and opportunistic appeal to the electorate. Even so uncritical a chronicler of his administration as Arthur Schlesinger has admitted that his attacks on the Eisenhower Administration for its "loss" of Cuba to communism stemmed more from a desire to create a campaign issue than from genuine conviction; it seems reasonable to suppose that the same was at least partially true of his strategic pronouncements. On a less conjectural level, Kennedy's initial willingness to have Gates remain at his post for a further year, and
his abandonment of this idea when he was reminded of his recent attacks on Republican strategic policies, indicated that his dissatisfaction with the pace and direction of these policies was not as fundamental as he publicly made out. 18

At the same time, it is doubtful whether this opportunism sprang from anything more sinister than a desire to win votes. Stone, after all, did not offer any concrete proof that Kennedy had made secret deals with American industry and that this accounted for his strategic preferences. In the last analysis his argument rested on the fact that defense budgets rose after the advent of the new President and that a number of industries profited from this. To draw a causal relationship on this basis, particularly when the steel crisis of 1962 demonstrated his capability for opposing even the most powerful industrialists, defies both logic and common sense. 19

Pressures from industry and, more important, from the military, had some influence on his defense policy, but they were not decisive in themselves. Just as Kennedy had appealed to American anti-communism and to the traditional belief in military superiority during his campaign
for the Presidency, so the "military industrial complex" had substantial influence only insofar as it was able to harness these popular currents.

Moreover, and far more crucial, President Kennedy's insensitivity to the domestic political implications of retaining Gates attests to the essential sincerity of his electoral pronouncements; had he been primarily an opponent seeking to play upon the fears of his people, he would never have even considered such an action.

B. KENNEDY'S THEORY OF INTERNATIONAL RELATIONS

To some extent, his criticism of the Eisenhower Administration, and the maximalist strains in his speeches, were simply a reflection of the widespread emotional reaction to Sputnik. To a yet greater extent, they were a product of a reasoned theory of international relations and of the role of military power in that sphere. Already broadly defined long before he had decided on a career in politics, this theory had been developed in more detail by the time Kennedy attained the Presidency.

In a study of appeasement written twenty years
before his accession to power, he had concluded;

We must always keep our armaments equal to our commitments. Munich should teach us that; we must realize that any bluff will be called. We cannot tell anyone to keep out of our hemisphere unless our armaments and the people behind these armaments are prepared to back up the command, even to the ultimate point of going to war. There must be no doubt in anyone's mind, the decision must be automatic; if we debate, if we hesitate, if we question, it will be too late.

One of the main themes in this passage, the necessity for preventing enemy miscalculation of one's physical capacity and determination to implement a threat, combined with an emphasis on the role of public opinion in this regard, was central to both his campaign speeches and to his deliberations in office. Similarly, a second theme, the need for ample military power to support one's political commitments, was also a continuing concern for him.

These general principles were supplemented by, and partially reflected in, two more specific ones which he developed in the late 1950's. Kennedy, unlike Eisenhower, assumed that the Kremlin's willingness to risk a central war was directly and substantially influenced by shifts in the strategic balance. This assumption, evident in his statements as a senator, provided him
with an intellectual nexus between the realms of foreign and defense policy on the eve of power. Thus, as Theodore Sorensen has testified, he saw an integral relationship between Sputnik, the second Berlin crisis, renewed conflict in Indochina, growing Russian influence in Cuba, and a variety of Soviet military and economic aid programs in the Third World. \(^{22}\)

Furthermore, his perception of threat was increased even more when, on January 6, 1961 Khrushchev made a major speech on the principles guiding his foreign policy. \(^{23}\) The Premier contended that world wars between the superpowers and "local wars" - presumably wars between one superpower and major allies of the other - would escalate into a nuclear exchange and must therefore be avoided. In addition to this, though, he emphasized that the political and economic struggle with the West would continue unabated, and that the tide of world history favoured the cause of communism as never before.

As a result, he proclaimed his unqualified support for "wars of national liberation," that is to say wars "which began as uprisings of colonial peoples
against their oppressors (and) developed into guerilla wars." Of greater immediate danger, he again raised the question of Berlin, renewing his threat to sign a separate peace with East Germany, should the West refuse to recognize the "real situation" in that city.

"Kennedy," wrote Sühlesinger, "accepted Khrushchev's rejection of nuclear war as honest enough; any other position in the President's view would have been mad. But the bellicose confidence which surged through the rest of the speech and especially the declared faith in victory through rebellion, subversion, and guerilla warfare alarmed Kennedy more than Moscow's amiable signals assuaged him. Confronted by the prospect of an impending showdown in Berlin, the President wanted strategic power, both for diplomatic leverage and for protection against possible escalation of the political confrontation into a military one.

Furthermore, although he saw progress in techniques of counter-guerilla warfare and expansion of conventional force levels as the essential answer to "wars of national liberation," he also believed that the bell-
cose confidence" which magnified this threat also had its roots in the expansion of Soviet nuclear capabilities. In summary, increasing American strategic forces was a vital prerequisite for turning back the tide of "Sputnik diplomacy in Europe and, to a lesser extent, in the Third World.

Such an increase would also serve another purpose, a purpose shaped largely by the second principle. Despite occasional statements on the need to end the arms race, Kennedy had relatively little hope in this regard during the first two years of his administration. The reasons for this were twofold. To a certain extent, he felt that the climate of opinion in the United States limited his options, for he did not believe that disarmament was a popular issue. In addition to this, and of far greater importance, he himself was extremely skeptical about the degree of genuine Soviet interest in this issue. This was illustrated by an incident which took place during the Pugwash conference on disarmament held in Moscow in December, 1960. Walt Rostow and Jerome Wiesner, who were to become respectively Deputy Special Assistant for National Security Affairs and Science
Adviser to the President, were approached by V. V. Kuznetsov, an official of the Soviet Foreign Office, in regard to Kennedy's statements on the "missile gap." Kuznetsov warned that the U.S.S.R. would be forced to react if the United States expanded her nuclear power, but the Americans were unimpressed. According to Schlesinger:

Restow replied that any Kennedy rearmament would be designed to improve the stability of the deterrent and that the Soviet Union should recognize this as in the interests of peace; but Kuznetsov, innocent of the higher calculus of deterrence as recently developed in the United States, brusquely dismissed the explanation.

The calculus of deterrence to which Schlesinger referred seems to have been a concern for hastening the establishment of a secure second-strike capability. Underlying this concern, though, was the assumption that unilateral accretion of strategic power by the United States offered a surer guarantee of strategic stability than efforts to halt the arms race by conscious restraint in deployments. Believing that he was faced by a confident and aggressive opponent, the new President assumed that the U.S.S.R. was seeking a counterforce capability and that serious negotiations on ending the arms race were therefore impossible. It followed from this that the
only possible solution to this problem was to confront the
Kremlin with tangible proof that it could not prevail in
the arms race, and this called for rapid and unabated
expansion of American strategic power; failure to do so
would only perpetuate this competition. 28

These themes - the need to prevent miscalculation,
the need to solve the problems of "Sputnik diplomacy" and
the arms race, and the overriding necessity for superior
strategic power to accomplish these ends - were summarized
in Kennedy's inaugural address when he said of the Russians:

We dare not tempt them with weakness. For only
when our arms are sufficient beyond doubt can we
be certain, beyond doubt that they will never be
deployed. 29

As a corollary of this, he proclaimed, "Let us never negoti-
ate out of fear. But let us never fear to negotiate." 30

"Negotiation from strength," more of a political slogan
than a guide for policy under Eisenhower, was a first
principle for his successor. Significant as it may have
been, however, it provided only a broad guideline for
nuclear strategy.

Kennedy, who was determined from the outset to
be a strong president, made certain that the subsequent
definition of a suitable strategy conformed to his political guidelines, and he also took a strong interest in the more technical aspects of defense planning. At the same time, the multitudinous demands of the Presidency forced him to delegate most of the responsibility in this area to Robert S. McNamara, a man whom he later characterized as the ablest of his lieutenants. 31

II. McNAMARA

A. INITIAL SATISFACTION WITH EISENHOWER'S POLICIES

Although conclusive evidence on McNamara's attitudes prior to becoming Secretary of Defense is somewhat sparse, his outlook at first seemed to bear more resemblance to that of the preceding administration than to that of the one to which he had been appointed. On February 6, 1961 he held an off-the-record news conference in which, according to the New York Times, he praised his predecessor's efforts, stated that there was no "missile gap" because the Soviet Union had not engaged in an all-out effort to produce I.C.B.M.s, and denied that the American deterrent was in any way inadequate. 32 The statement on the "missile
gap" was denied by the White House on the following day, and the new Secretary of Defense soon followed suit, stating that there was no "deterrence gap" but repudiating reports that he had questioned the existence of a "missile gap" and emphasizing that Moscow could well seek to create such a gap in future. 33

Three years later, though, McNamara himself took back much of this denial, for he stated that "I think I left the impression that I was questioning the previous intelligence estimates, which was certainly the fact." 34 Moreover, Schlesinger, a man with a patent interest in emphasizing the veracity and good judgment of both Kennedy and his advisers, has written that "McNamara, in a candid background talk to newspapermen, was ready to dismiss the (missile) gap as an illusion." 35 It seems reasonable to conclude, then that the New York Times version of this conference was essentially accurate.

It seems equally reasonable to conclude that, in failing to establish a connection between the dynamism of Soviet foreign policy and Russia's entry into the thermonuclear age, in dismissing the possibility of a current "missile gap," in neglecting the possibility of a future
one, and in failing to emphasize the need for American nuclear superiority, he was leaning toward a neo-minimalism which differed significantly from the convictions of his new chief.

His prompt return to the official line may be viewed, as I. F. Stone views it, as the action of a morally weak man who was more concerned with the power and prestige of office than with the needs of national security and the dictates of moral integrity. McNamara was perfectly capable of forcefully advancing his views during Cabinet debates and, when he deemed the matter to be vital, he was even capable of appealing to the general public.

B. McNAMARA'S CONCEPT OF LOYALTY

Nonetheless, such appeals were rare. The reason for this, and a partial explanation for his reversal after the February 6 news conference, may be found in his concept of loyalty:

To some degree, my view of loyalty is in the nature of a belief about how men move forward toward some objective. A group of people in any pursuit - a church or educational structure, for example - establishes an objective and unless in effect each
is loyal to the organization, the objective cannot
be reached. If each begins to substitute his own
judgment, you fragment and weaken the organization.
It's far better to move together toward a reasonably
acceptable goal than toward one just a few degrees
off from it, on your own. 37

C. HIS INEXPERIENCE

His inexperience in matters of nuclear strategy
was yet more important. At the conclusion of his tenure
as Secretary of Defense McNamara admitted that it could
not be concluded "that I and my associates clearly under­
stood, or even perceived all of the multi-faceted aspects
of this vastly complex problem (general nuclear war) from
the very outset," and he went on to state that "my own
views have matured and become more precise since that
time." 38 Apart from service during the Second World War
as an expert in statistical controls, he had had little to
do with military affairs; after the war he had joined the
Ford Motor Company and had remained there for the next
fifteen years, becoming president of that company in
November, 1960, a month before he accepted a position in
the Cabinet. 39 During this period he had read only one
book on military affairs - Oskar Morgenstern's The Question
of National Defense - and this volume offered only a
general and incomplete analysis of the problem of nuclear strategy.

In consequence, he stated that when Kennedy asked him to become Secretary of Defense, "I felt unqualified, I really did," and he at first declined the invitation; acceptance came only when the President-elect renewed his request and pointed out that he would be as much of a novice in his office as McNamara would be in his. Acutely conscious of his own lack of expertise, the new Secretary of Defense was still feeling his way in his new job, and his exposition of February 6 was less a finalized policy position than a preliminary and tentative statement on what evidence he had been able to assimilate in the short time he had been in office.

D. HIS ACTIVISM

Finally, McNamara's temperament was similar to Kennedy's in a very fundamental sense. Much as the substance of his first news conference resembled pronouncements by Eisenhower or Gates, the spirit with which he approached his tasks was markedly different from that
of his predecessor. Endowed with a vigorous activism, and having enjoyed an almost unbroken career of success in problem solving he was a ready convert to many of Kennedy's maximalist inclinations; both believed that the world could be moved, albeit to a finite degree, if sufficient will, intelligence, and resources were devoted to this end.
MOVEMENT TOWARD NEO-MAXIMALISM: THE FISCAL YEAR 1962 BUDGET

This cast of mind made an imprint, though only a partial one, on the first defense budget which Kennedy and McNamara presented to Congress. For them, as for their predecessors, the problem of nuclear strategy involved five main issues. First, they had to establish how large a strategic force was currently at Russia's disposal. Second and even harder, they had to predict the future magnitude and nature of this force. On the other hand, they had to determine appropriate force levels for themselves in the face of this threat. Closely linked to this, they also had to weigh the technological options open to them, a task which, in the early 1960's, primarily involved comparison of the relative merits of bombers and missiles for offensive missions, and judgment of the prospects for a successful defense against enemy offensive forces. Finally, and underlying this whole calculus, it was also necessary to determine the specific objectives which the American strategic forces were to accomplish. This in turn involved a choice between continuance of Eisenhower's de facto countervalue policy, implementation of his verbal commitment to coercive deterrence, or complete acceptance
of counterforce doctrines.

Admittedly, the resulting decisions were similar in many respects to those incorporated into the fiscal year 1962 defense budget originally prepared by the Eisenhower Administration. Kennedy and McNamara shared their predecessors' reluctance to meet the maximalist demand for a force of improved intercontinental bombers to complement the growing missile forces. Moreover, they too concluded that an effective A.B.M. system was not yet feasible, a factor which militated against the most extreme counterforce arguments of the maximalists.

At the same time, however, their assessments of the existing threat and of the future one were far less sanguine than those of the Eisenhower Administration. This consideration, and the belief that a greater margin for uncertainty had to be made in planning a second-strike capability, accounted in some measure for the new administration's decision to accelerate American strategic deployments. Yet more important, this decision also reflected an inclination to favour coercive deterrence over a purely countervalue policy. More of an ill-defined tendency than a final policy decision in this budget,
this was to become a specific and overriding theme in the next one.

I. DEPARTURES FROM THE APPROACH OF THE EISENHOWER ADMINISTRATION TOWARD FORCE PLANNING

A. THE PROBLEM OF ESTIMATING THE CURRENT THREAT

In assessing the existing threat, Kennedy and McNamara were inclined to leave little to chance. Roger Hilsman, who was Director of Intelligence and Research in the State Department between 1961 and 1963, has indicated that McNamara's doubts about the existence of a "missile gap" persisted after his February 6 new conference and that he consequently "pressed hard for better intelligence." Kennedy, too, seems to have shared this skepticism after being briefed by the intelligence community when he became President. Theodore Sorensen, whose close personal relationship with the President qualified him to speak with some authority on his subject, has written:

But before all U-2 flights were ended on May 1, 1960, their photography indicated that Khrushchev had been bluffing. Apparently his first I.C.B.M. had been too costly, too cumbersome and too vulner-
able a weapon for mass production and deployment. He had settled, instead, for a very few of these missiles while pushing ahead on the deployment of medium-range missiles aimed at Europe and the development of a better I.C.B.M. ³

Apparently, then, Kennedy was in large measure satisfied with the validity of the reassuring intelligence from the U-2. To add to this, Schlesinger, the semi-official historian of the Kennedy years, stated that cessation of these flights did not necessarily present a serious intelligence problem, for "new intelligence methods and sources cast doubts on the estimate (of a 'missile gap') in the winter of 1960-61." ⁴ The President and his Secretary of Defense, then, were in essential agreement that there was probably little, if any, disparity between American and Soviet strategic forces.

Unfortunately, probability was not certainty. As was noted earlier, the U-2 data involved some residual uncertainties, due to the limited range of this aircraft and to the dense cloud over the northernmost reaches of the U.S.S.R. Moreover, the most important new source of information which Schlesinger apparently had in mind, the Samos observation satellite fired into orbit on January 31,
1961, seems to have functioned imperfectly at the outset. According to Hilsman:

But even as late as June, 1961 the evidence was contradictory and the intelligence community continued to be split, with some Air Force estimates still going as high as three hundred Soviet missiles deployed and some Navy estimates as low as ten. It was not until the summer and fall of 1961 that the Americans discovered the true situation . . . .

As long as this situation persisted, the maximalist inclinations of both Kennedy and McNamara militated against acceptance of the lower estimates as a basis for force planning; even if they privately accepted these estimates, they felt that strategic prudence compelled them to provide a margin for error.

Furthermore, the climate of American opinion served to reinforce this conclusion. Eisenhower's experience had demonstrated that merely denying the existence of a "missile gap," without conclusive evidence in support of this denial, would not necessarily allay popular fears of such a "gap." The surest way of resolving this problem, and the accompanying problem of Soviet doubts about the credibility of the American deterrent, was to ensure, in the words of Kennedy's inaugural speech, that "our arms are sufficient beyond doubt."
Given the time required to make adjustments in the programmed missile forces' rate of deployment, and given the persistent conviction that the threat, while serious, did not warrant efforts on a wartime scale, this principally involved changes in the alert arrangements for S.A. C. bombers. Thus, in his budgetary message of March 28, 1961, Kennedy announced that he would follow through on Eisenhower's decision to provide a capability for putting one-eighth of these aircraft on airborne alert and that he would increase the fraction of this force on ground alert from one-third to one-half.  

B. THE PROBLEM OF PREDICTING THE FUTURE THREAT

Parallel to this, the difficulties involved in fathoming the future course of enemy deployments seemed to militate even more strongly in favour of more maximalist assumptions. The Russian missile program, after all, had apparently been retarded by an unwise technical choice, rather than by conscious restraint. Just as the Kremlin had not sought to create a "bomber gap" when it perceived that the resources available to it would be better spent in exploiting the possibility for creating a "missile gap", 
so the current failure of a first-generation "missile gap," to materialize could well portend a crash program by the Russians to correct their mistake and to finally gain nuclear superiority with an improved, second-generation, I.C.B.M.  

The uncertainties, moreover, did not end here. Writing in 1957, a Soviet army officer had concluded that "technically, creation of a potent defense system against ballistic missiles is fully feasible." As Army Secretary Stahr pointed out, there was evidence that the Soviets were now heavily engaged in this area. Should they achieve a technical breakthrough, the menace to the American capacity for wreaking unacceptable damage upon them might be even greater than if they gained superiority in offensive missiles. Moreover, Kennedy recognized that "the first nation to perfect a missile defense would have an immense psychological advantage as well as military," and "A.B.M. diplomacy," a counterpart to "Sputnik diplomacy," would be all but inevitable.

The essential answer to the problem of these future threats was a vigorous research and development program and a capability for manufacturing sufficient
weapons to offset them if they emerged. This latter consideration, Kennedy and McNamara stated, was largely responsible for their decision to double the production capacity for Minuteman, thereby enabling the United States "to move to still higher levels of strength more swiftly should future conditions warrant doubling our production." 11

To a lesser extent, the planned increases in American forces in being were also designed to offset these threats. The changes in the bomber alert arrangements, it was stressed, would serve as a vital stop-gap during the critical years 1962-1963, when the American missile force was still relatively small and when Russian I.C.B.M. strength might be considerably greater. 12 As a longer-term solution, Kennedy and McNamara had decided to increase the programmed Polaris force from nineteen to twenty-nine submarines and to accelerate their rate of production. 13 In addition to this, the date by which Minuteman was to be operational was advanced one year, so that the United States would have a few of these missiles ready for combat in late 1962. 14 Finally, the projected Minuteman force was to be increased by sixty missiles through deferment of the three train-based
mobile squadrons originally funded in favour of three more
fixed-base squadrons.  

II. **SIMILARITIES WITH THE APPROACH OF THE EISENHOWER
ADMINISTRATION TOWARD NEW WEAPONS SYSTEMS**

Having decided on a net additional expenditure
of approximately one billion dollars on the Polaris and
Minuteman alone, Kennedy and McNamara were highly reluctant
to commit themselves to further heavy outlays on
new weapons systems whose strategic value seemed question­able. In consequence, their positions in regard to
the projected B-70 bomber and the Nike-Zeus A.B.M.
system bore a strong resemblance to the positions taken
by their predecessors.

A. **RELUCTANCE TO DEPLOY A NEW BOMBER**

Originally conceived in 1953, the B-70 was to
be a high-speed, high-altitude successor to the B-52
with an improved capability for penetrating enemy defenses.

In January, 1958, the Eisenhower Administration had com­mitted itself to actual development of this aircraft as
a weapons system, but subsequent progress in missilery
occasioned a reassessment of this commitment, and in
lll.

December, 1959 it decided to limit itself to work on prototypes. Under pressure of the 1960 elections, however, it reversed its position again, and announced that it had decided to restore the B-70 program to its previous status. Almost inevitably, this decision came under close scrutiny by the new administration.

During the ensuing debate, the Air Force defended the B-70 with expositions on the dangers of over-reliance on new and relatively untested missile systems, on the positive benefits of bombers, and on the necessity for a more advanced bomber if these benefits were to be guaranteed in future. Missiles had been tested for only a relatively short period of time, the Air Force argued, and, even more serious, they had never been tested under combat conditions. Their reliability in wartime - and hence their effectiveness as a deterrent in peacetime - was consequently shrouded in much uncertainty. Closely linked to this, as missiles could not be recalled after launching, they offered only two options in the event of attack; they could be committed to combat on warning, or they could be left on the ground, the latter course exposing them to an onslaught in which their chances of survival would be open to serious question.¹⁹
Heavy reliance on I.C.B.M.s, moreover, would greatly enhance the gravity, and the probability, of effective enemy countermeasures. Thus, if the United States concentrated primarily on these missiles, this would encourage the Soviets to perfect an A.B.M., which in turn would negate, not merely part of her retaliatory capacity, but almost all of it.\(^{20}\) To add to this, there was a further drawback to missiles, for, according to General White, they bred a kind of Maginot-mindedness," a national psychology . . . of a completely static and almost a negative aspect."\(^{21}\)

In contrast to this, the argument continued, bombers offered a far more reliable, and far more flexible, means of surmounting the dangerous uncertainties of the world. Unlike missiles, they had evolved over many years, and had repeatedly proved themselves in combat. In addition to this, they also greatly expanded the number of options available to decision-makers if war broke out. After the initial warning, the bomber force could be launched to prevent its destruction on the ground, but it need not be directed against targets in the Soviet Union until the warning had been confirmed. Furthermore,
this force would be well suited to counterforce missions; it would be extremely accurate, could search out imperfectly located targets, could make target assessments, and could be re-directed in accordance with these assessments.\textsuperscript{22}

In peacetime, on the other hand, a substantial bomber contingent would increase the diversity, and hence the over-all invulnerability, of American strategic forces. A contingent such as this would cause the enemy to divert scarce resources in what would probably be an ineffective and disproportionately expensive attempt to counter the specific threat which it presented. In so doing, it would also raise the price of his efforts to erect an all-encompassing system of countermeasures, and, indeed, might ultimately force him to spread himself too thin in these efforts.\textsuperscript{23} Finally, the "dynamic" character of the bomber would help to perpetuate that offensive spirit which is essential to deterrence in peacetime and to victory in wartime.\textsuperscript{24}

The B-52, of course, had afforded most of these strategic advantages in the past, but production of this aircraft was scheduled to end in the autumn of 1962. Moreover, by the late 1960's, the effectiveness of the
B-52 force would be seriously impaired, both by its age and by the increasing sophistication of Soviet anti-aircraft defenses. In view of this, the argument concluded, it was vital that a follow-on, the B-70, be developed and deployed as quickly as possible.

Kennedy and McNamara were far from convinced by these arguments; they were dubious about the operational characteristics of the B-70 itself, they were satisfied that the B-52 force could perform its tasks adequately beyond the 1960's, and, most important, they were convinced that the relative significance of strategic bombers of any kind would decline greatly as America advanced further into the missile age. McNamara pointed out that the B-70 was an extremely expensive weapons system; full development of it would cost 2.7 billion dollars, while it would cost a further 4.5 billion to produce a force of two hundred of these aircraft. Furthermore, like other bombers, it would be far more vulnerable on the ground than hardened missile sites, it had a dangerously long ground reaction time, and it did not lend itself to airborne alert measures. Rather than representing an improvement, then, the B-70 would actually be more vulnerable to surprise attack than the aircraft which it
was supposed to supplant.

Even if it was able to escape destruction on the ground, continued McNamara, it might also be less well equipped than the B-52 for destroying its target. Bombing missions had traditionally been accomplished by the penetration of both the aircraft and the gravity bombs within them through enemy air defenses. Naturally, an improved Soviet capability for destroying attacking aircraft would make these missions more difficult as long as they were dependent upon this technique for their success. A solution to this problem, however, seemed to be in the offing as a result of progress in work on the Skybolt air-to-surface missile (A.S.M.), which was to be fired from the aircraft before it came within range of the enemy air defenses. Unfortunately, the B-70 had not been designed to employ A.S.M.s. The B-52, on the other hand, could be adapted to carry these missiles with relative ease, and was therefore assured of a high degree of penetrability.

Finally, while Kennedy and McNamara believed that residual uncertainties about the operational characteristics of missiles, combined with the capacity of aircraft to operate under positive control, made a bomber force of
some kind necessary for at least the next few years, they were dubious about the long-term requirement for such a force. By the late 1960's, after all, the United States would have a large force of advanced missiles in her arsenal and, in their eyes, this development would in all probability make the bomber obsolete.

In summary, the B-70 seemed to be an inferior species of a strategic genus whose future value was very much in doubt. Consequently, the new administration decided to keep open the option of an advanced bomber by continuing a program of development and testing, but it also refused to commit itself to production at that time.

B. SKEPTICISM ABOUT BALLISTIC MISSILE DEFENSE

The Nike-Zeus A.B.M. program met a similar fate. Having failed to persuade the Eisenhower Administration to begin at least limited production of this system, the Army sought to win over its successor.27 A successful A.B.M. system could protect both the populace and the strategic forces of the United States against the growing Russian I.C.B.M. threat, Army spokesmen contended, and
it could also yield substantial psychological and political benefits in the realm of foreign policy. As the Nike-Zeus project was the only existing American anti-ballistic program, it was therefore vital that it be developed and deployed as rapidly as possible.

The defensive note struck in this last argument—that Nike-Zeus, though imperfect, was the only A.B.M. system available to the United States—presaged its rejection. McNamara had readily perceived the advantages of an effective A.B.M. system but he was equally quick to recognize that Nike-Zeus hardly constituted such a system. As he told the House Armed Services Committee:

Recognizing the importance of the anti-I.C.B.M. system to the defense of the United States, we have carefully considered the question of moving parts of the Nike-Zeus system into the production phase before the development, test, and evaluation phase is completed. There are, of course, sound reasons for favouring such steps to speed up the deployment of this system. Successful development may force an aggressor to expend additional resources to increase his I.C.B.M. force. It would also make accurate estimates of our defensive capabilities more difficult for a potential enemy and it would complicate the achievement of a successful attack. Furthermore, the protection that it would provide, even if for only a portion of our population, would be better than none at all.

Unfortunately, he continued, "there are still widespread
doubts as to whether the Nike-Zeus system should ever be deployed," and he was inclined to share these doubts:

There is still considerable uncertainty as to its technical feasibility and, even if successfully developed, there are many serious operating problems yet to be solved. The system, itself, is vulnerable to ballistic missile attack and its effectiveness could be degraded by the use of more sophisticated I.C.B.M.s screened by multiple decoys. Saturation of the target is another possibility, as I.C.B.M.s become easier and cheaper to produce in coming years. Finally, it is a very expensive system in relation to the degree of protection that it can furnish.

III. NEW PERSPECTIVES ON THE GOALS OF AMERICAN STRATEGIC FORCES

Perhaps the most basic decision, though, the one which would create a concrete and coherent nuclear strategy, by relating these decisions on weapons systems and force levels to the objectives which they were to accomplish, had not yet been formulated definitively. At the same time, there were a number of distinct intimations of an impending change in the direction of American nuclear strategy. McNamara, though still refusing to commit himself to any particular strategy, had commissioned a number of studies which reflected some interest in the counterforce position and great interest in flexi-
bility in the rate of retaliation. Kennedy had gone even farther, readily accepting, and even anticipating, many of the recommendations of the strategic reassessments then underway.

A. **CONSENSUS ON OVER-ALL POLICY; THE NITZE REPORT**

The first important re-assessment, the Nitze Report, was submitted to Kennedy while he was still President-elect. According to Schlesinger:

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This report provided an incisive analysis of the case for a more diversified defense posture. It then offered useful descriptions of the relationship between defense policy and disarmament and of the balance-of-payments problem before concluding with some sketchy paragraphs on foreign policy.  
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More specific direct evidence on the content of this report, unfortunately, is lacking, but there is some indirect evidence on the line of argument which it advanced. Only a few months before the 1960 elections, while Nitze was still a professor, he had written a study on the proper relationship between American foreign and defense policy in the cold war. Entitled *Political Aspects of National Strategy*, it made a strong case for transcending a purely countervalue strategy in order to meet the challenge of "Sputnik diplomacy."
According to him, the core objective of the Soviet leaders was to maintain their power in the U.S.S.R. After this, they sought control over the communist bloc and, finally, the weakening of any other powers which might present a threat to them.\(^{31}\) As long as Russia was comparatively weak, her leaders had been extremely cautious in pursuing this last objective for fear of jeopardizing the other, more important ones.\(^{32}\) By the time Khrushchev came to power, some of their original ideological fervor had been dissipated, but it had also been institutionalized in the party bureaucracy, while recent advances in the economic and military power available to them made it possible to pursue a more aggressive foreign policy.\(^{33}\) Seeking to establish a position in which they could "negotiate from strength," they would probably continue to strive for nuclear superiority and, indeed, they might eventually believe themselves sufficiently powerful to try to disarm the United States by a surprise attack upon her strategic forces.\(^{34}\)

While emphasizing that this situation called for more energetic efforts to protect the American counter-value capability, Nitze also argued that such a capability
alone might be inadequate. "I suspect," he wrote, "that if we rely merely on a class B capability (a countervalue capability) the Russians may be able to test our resolutions piecemeal and over time in such a way that our response might well be quite different from the expected response to a sudden attack." 35 This consideration, and a concern for limiting damage to the American people if war broke out, led him to conclude that the United States should ideally have a capacity "substantially to disarm the enemy while preserving our own essential core as a nation capable of exercising policy and thereby leaving the enemy no practical choice but to accommodate himself to our political will." 36

Obviously, a thoroughgoing counterforce capability would be necessary in order to accomplish this, and Nitze was realistic enough to acknowledge that such a capability was probably impossible. 37 Having reluctantly made this admission, he still asserted that it was technically possible for the United States to achieve at least a partial counterforce capability. 38 In view of this, and in view of the aggressiveness of enemy foreign and defense policy, he concluded that his country should attain such a capability.
This, he hoped, would demonstrate the American will to resist and, if deterrence failed, would "protect the particular limits within which we might choose to fight a limited war against expansion to some other level by the other side." 39

Such a presentation was bound to make an impression on Kennedy, who had been putting forward similar, if less sophisticated, arguments for the last three years; to tell him that "negotiation from strength" was the only way of dealing with "Sputnik diplomacy," and that some provision must be made for limiting the consequences of a central war, was to preach to the converted. If there was a definite consensus on these issues, however, and if there was a rather broad agreement that the most appropriate strategic posture lay somewhere between an inadequate countervalue posture and an impossible counterforce one, there was still uncertainty about the requisite force levels and the exact methods of tactical employment which could best achieve the desired political objectives.

B. THE PROBLEM OF IMPLEMENTING THIS POLICY

As a first step in remedying these lacunae,
McNamara ordered Nitze, whom he had appointed Assistant Secretary of Defense for International Security Affairs, and General Lyman Lemnitzer, Twining's successor as Chairman of the J.C. S., to:

Prepare a draft memorandum revising the basic national security policies and assumptions relating to 'counterforce' strikes and the initiation of the use of tactical weapons.

Closely related to this, and equally important, he had also given Lemnitzer a further task:

Prepare a "Doctrine" which, if accepted, would permit controlled response and negotiating pauses in the event of thermonuclear attack.

Unfortunately, these instructions were not issued until March 6, 1961, and both studies were not due until several weeks after the President was to present his message on the defense budget.

In consequence, as the hearings on this budget revealed, the new Secretary of Defense was still undecided on a number of strategic issues. Replying to a question by a member of the House Armed Services Committee about his position on the current targeting controversy, he said:

I don't believe that the terms 'finite deterrent' (a countervalue policy) and 'counterforce' are used
sufficiently consistently or precisely to warrant an application of either one of them to the program that I am presenting to you.

I would simply summarize the program I presented and the program the President recommended as being a program which will permit the survivability of a substantial element of the force sufficient to assure that after a surprise attack our force is great enough to destroy the attacker, that is, destroy its warmaking capacity and thereby act as a deterrent to a strike against us.

This statement obviously indicated a belief in the overriding necessity for a second-strike capability; indeed, McNamara had earlier characterized an invulnerable strategic force as "an absolute essential element of believability and credibility of our deterrent." Nevertheless, his failure to define the nature of the "warmaking capability" which was to be destroyed - whether it was to be Soviet strategic forces, the population and industry which created them, or both - illustrated his hesitation on the ultimate problem of targeting. While he acknowledged that this problem was crucial, he also admitted that he was not yet certain about the level of destruction which the Russians and Chinese deemed to be unacceptable. As a result, he also was unwilling to commit himself to a more specific policy until he had seen the results of the studies then in
Kennedy was less tentative in his pronouncements. Admittedly, in his March 28 message, he had stressed the need for a second-strike capability without explicitly defining the missions designated for that capability. He went farther than his Secretary of Defense, however, in intimating that a greater margin of nuclear superiority would be the order of the day in future. Repeating a number of earlier themes, he stressed that the American strategic forces must be so powerful as to "convince all potential aggressors that any attack would be futile," to "reduce the danger of irrational or unpremeditated general war," and to strengthen American diplomatic power.

Moreover with Moscow's recent withdrawal of its previous concessions in the Geneva test ban negotiations, and with its simultaneous proposal that any agreement be supervised by a tripartite body hamstrung by a unanimity rule, Kennedy was in no mood to hold back the expansion of American armaments. Thus, when he stated that his country must "insure the adequacy of our bargaining power for an end to the arms race," he was in effect reaffirming the necessity for expansion of American strategic
power as a precondition for genuine progress in negotiations on arms control and disarmament. 48

Finally, and most significant, he pointed to the possibility that control over the targets to be attacked and the rate at which they were destroyed might improve the chances that the United States could survive, and even protect her political interests, if the deterrent broke down:

Our weapons systems must be usable in a manner permitting deliberation and discrimination as to timing, scope, and targets in response to civilian authority: and our defenses must be secure against prolonged re-attack as well as a surprise first strike. 49

In short Kennedy proclaimed a belief that the United States could gain maximum security through a combination of strength and flexibility in employing that strength.
The President's conviction was reinforced and developed in further detail in the months between these announcements and the Cuban missile crisis. Similarly, while still forcefully opposing Air Force arguments for a full counterforce capability, McNamara came to share his chief's enthusiasm for coercive deterrence.

Technical analysis was in some measure responsible for this, inasmuch as it indicated the continuing superiority of the American research and development program and of the strategic forces which followed in its wake. Translated into terms of tangible military effectiveness, however, it seemed that this superiority would always be relatively slight; all but the most wildly optimistic estimates indicated that the United States, like the Soviet Union, would inevitably be destroyed as a viable society in the event of an all-out nuclear conflict.

The essential force in the ascendance of coercive deterrence was political, rather than technical, analysis,
for it was this factor which justified the enormous expense involved in pursuing what would at best be a marginal damage limiting capacity. Although they realized that the Soviet Union did not want a thermonuclear war, Kennedy and McNamara were more concerned by the dangers inherent in her apparent belief that America was even more fearful of such a cataclysm, and in her concomitant penchant for "Sputnik diplomacy." Moreover, although they believed that the Kremlin saw its countervalue capability as the ultimate guarantee of its security, they also believed that it still hoped to transcend this capability in order to gain final victory in the Cold War. Coercive deterrence was born primarily from these problems; it was designed to make at least some provision against the distinct possibility of a nuclear holocaust, and to lessen the probability of such a holocaust by convincing Moscow of the perilous futility of both "Sputnik diplomacy" and its quest for superiority in the arms race.

Closely linked to this, though, it was also designed to quiet the N.A.T.O. allies' doubts about the credibility of the American guarantee, to encourage them to strengthen their non-nuclear forces, and, bound up with
both of these concerns, to minimize the disruptive potential of the French force de frappe. Finally, Kennedy and McNamara also adopted coercive deterrence in an effort to convince the American public of the permanent superiority of their arms; only then would the danger of popular fears over various weapons "gaps," occasioned by periodic Russian strategic advances and by the dissatisfaction of many military men with the shape of current defense budgets, be allayed.

I. THE FALLOUT SHELTER PROGRAM

The first major step in the construction of a capability for coercive deterrence was taken only two months after Kennedy's message on the fiscal year 1962 defense budget. Karl Kaysen, his Deputy Special Assistant for National Security, had earlier raised the question of civil defense in a study which concluded that the United States should either revitalize her half-hearted and ineffectual efforts in this sphere or cease them entirely. As he had previously shown little interest in this question, Kennedy probably would not have acted on Kaysen's study at this time, had it not been for the tensions created by the
Bay of Pigs fiasco. Having presided over an adventure which had caused both friends and opponents to question his judgment and firmness of purpose, Kennedy was more concerned than ever about the danger of war by miscalculation and about the need to limit damage in the event of such a war. Civil defense, or more specifically a national system of fallout shelters, seemed to offer at least a partial solution to these problems and to the exigencies of domestic politics.

On the one hand, it appeared that such a system would afford some degree of protection without provocation. According to McNamara, it could save between ten and fifteen million lives, and this in turn might help to strengthen America's deterrent by symbolizing her will to resist. At the same time, he also pointed out that pronouncements by his Soviet counterpart indicated that this measure would not enhance Moscow's perception of threat. On the other hand, and somewhat less important, Sorensen wrote of the more politically-minded Kennedy:

Nor was he unmindful of the fact that New York's Governor Nelson Rockefeller, who appeared then to be his most likely opponent in 1964, was criticizing the Administration's 'complacency' in much
the same terms Kennedy had applied to the 'missile gap' in earlier years.

Strategic prudence and political expedience, then, led the President to announce on May 25 that he had tripled the appropriations requested for civil defense in order to establish a nation-wide network of fallout shelters. As a symbol of the importance which he attached to this program, and of his desire to co-ordinate it with other major components of American nuclear strategy, he also transferred responsibility for it from the civilian Office of Civil Defense Mobilization to the Secretary of Defense.5

Events in the spring and summer confirmed the American decision-makers in this course. Kennedy's summit meeting with Khrushchev in Vienna had been vastly unencouraging. Confronted by deadlock on issues such as the test ban treaty and the future shape of the United Nations executive, faced with the threat of a separate treaty with East Germany if the question of Berlin was not settled by the end of 1961, and fearing that a Soviet belief in his own irresolution had contributed to this intransigence, Kennedy was yet further convinced of the
necessity for "negotiation from strength" and for insurance against nuclear war. Far more serious, however, was the Berlin crisis which followed the President's return from Vienna, and which culminated in the erection of a wall dividing that city. Emphasizing the implications of this crisis for American vital interests, he told President Kekkonen of Finland that the Russians' policy toward that city "is designed to neutralize West Germany as a first step in the neutralization of Western Europe. That is what makes the present situation so dangerous." So grave did the situation seem to him, indeed, that Pierre Salinger, his Press Secretary, has recorded that "It was J. F. K.'s private assessment that the odds were one in five that the Wall and our reaction to it might have ignited World War III." Under these conditions, he renewed his request for a fallout shelter program on July 25, and a hitherto reluctant Congress now approved the necessary funds with dispatch.

II. THE FISCAL YEAR 1963 DEFENSE BUDGET: THE BID FOR NUCLEAR "SUPERIORITY," AND CONTINUED REJECTION OF COUNTERFORCE ARGUMENTS

A. CONTINUING OBSTACLES TO A COUNTERFORCE CAPABILITY
The most crucial decisions, however, were yet to come. Kennedy and McNamara realized that even a thorough-going system of fallout shelters could not ensure survival as a viable society in the absence of protection against blast and thermal effects, and both men recognized that such protection was all but impossible. Civil defense, therefore, could effect only marginal damage limitation, and it could yield only a relatively minor improvement in America's deterrent or her diplomatic power. Hopes for decisive advances in these areas consequently focused on the possibility of decimating enemy strategic forces before they reached American cities.

One method of achieving this objective, of course, might have been an active defense against missiles, that is to say an efficient A.B.M. system. Although a number of writers later suggested that fear of an accelerated arms race gave McNamara an a priori hostility to Nike-Zeus and indeed to all A.B.M. systems, the evidence available points to a different interpretation.

On August 30, 1961 Russia had resumed nuclear
testing in the atmosphere. During the ensuing debate on whether or not the United States should follow suit, the possible benefits for the American A.B.M. program soon became a central issue. McNamara, while acknowledging that it was not absolutely essential, joined with the J. C.S. in urging that there was a military requirement for resumption, and that part of this requirement was ballistic missile defense. This very argument, however, indicated that the technical problems afflicting Nike-Zeus were still unresolved, and even so zealous an advocate of counterforce doctrines as Air Force Chief of Staff LeMay refused to join the Army in its solitary campaign for at least limited deployment of twenty-six Nike-Zeus missiles at that time.

Thus, the Secretary of Defense expressed the majority opinion when he pointed to uncertainties about the effects of nuclear explosions in the atmosphere and to the problems of target discrimination and interceptor speed in once again refusing to deploy Nike-Zeus. Furthermore, he also reflected a consensus on the future of missile defense in telling the Senate Armed Services Committee that "we must bear in mind that no matter how
much we spend, we simply cannot in this day and age pro-
vide absolute defense for the continental United States."  

In view of this, the only remaining possibility and one strongly emphasized by the Air Force - was a superiority in offensive weapons sufficient to virtually annihilate enemy forces. In spite of continued efforts by this service to convince Kennedy and McNamara of the value of bombers for such a role, both men agreed with their predecessors on the decisive importance of I.C.B.M.s in this regard.  Consequently, the strategic deliberations preceding the fiscal year 1963 defense budget turned essentially on the number of missiles the United States should acquire.

McNamara apparently took the lead in opposing the enormous Air Force request; according to Schlesinger, "he did not believe that doubling or even tripling our striking power would enable us to destroy the hardened missile sites or missile-launching submarines of our adversary."  The line of reasoning which led him to this position, and which led the President to support him wholeheartedly, was outlined in greater detail by
Sorensen:

He and Kennedy agreed . . . that . . . to seek a 'first strike' capability - designed theoretically to render the enemy incapable of damaging us severely, the kind of capability advocated in some Air Force quarters - was not only unnecessarily expensive and provocative but not really feasible. An enemy could always protect or conceal enough missile power to inflict at least thirty to fifty million fatalities on this country, especially by using more submarine-launched missiles. And he could easily offset our attempts to outbuild him by increasing his own forces as he saw ours grow.

Given this analysis, neither man had any illusions about the capacity of these systems, taken singly or together, for ensuring the survival of their country in a nuclear war. Thus, Kennedy declared:

When that day (the outbreak of a nuclear war) comes, and there is a massive exchange, then that is the end, because you are talking about . . . 150 million fatalities in the first eighteen hours.

McNamara was, if anything, even more emphatic in his refusal to accept the facile optimism of the counterforce school. "The Pentagon," he complained, "is full of papers talking about the preservation of a 'viable society' after nuclear conflict. That 'viable society' phrase drives me mad. I kept trying to comb it out, but it keeps coming back."
B. CONCOMITANT DETERMINATION TO ATTAIN SOME DEGREE OF SUPERIORITY IN OFFENSIVE MISSILES

Rejection of counterforce arguments, however, did not necessarily involve resignation to a purely countervalue strategy. Admittedly, McNamara subsequently claimed that he and his colleagues in fact operated within this latter framework in force planning; in 1968 he wrote:

I have noted that our present superiority is greater than we had planned. How this came about is a significant illustration of the intrinsic dynamics of the nuclear arms race.

In 1961 when I became Secretary of Defense, the Soviet Union had a very small operational arsenal of inter-continental missiles. However, it did possess the technological and industrial capacity to enlarge that arsenal very substantially over the succeeding several years. We had no evidence that the Soviets did plan, in fact, fully to use that capability. But, as I have pointed out, a strategic planner must be conservative in his calculations; that is, he must prepare for the worst plausible case and not be content to hope and prepare merely for the most probable.

Since we could not be certain of Soviet intentions, since we could not be sure that they would not undertake a massive build-up, we had to insure against such an eventuality by undertaking a major build-up of our Minuteman and Polaris forces. Thus, in the course of hedging against what was only a theoretically possible Soviet build-up, we took decisions which resulted in our current superiority in numbers of warheads and deliverable megatons. But the blunt fact remains that if we had had more accurate information about
planned Soviet strategic forces, we simply would not have needed to build up as large a nuclear arsenal as we have today.

While this may have been an accurate reflection on his fears in 1968 of a perpetual and destabilizing competition in strategic arms, and of his concomitant determination to convince the Soviet leaders of his desire to arrest this competition, it was hardly an accurate description of American calculations in 1961. Far from being a mere prisoner of military technology and uncertainty about enemy intentions, a confident and determined Kennedy Administration had consciously decided to embrace coercive deterrence in an attempt to meet the most outstanding threats to American security, and to buttress its own domestic political position.

Carl Kaysen, who was a participant in the deliberations on the fiscal year 1963 defense budget, offered a view of it which differed significantly from the one cited above. According to him, the offensive forces envisaged in this budget "were larger in relation to projected Soviet forces than would have been required for minimum deterrence (a countervalue policy) alone, even allowing
for a generous margin of uncertainty on the growth of Soviet forces, their effectiveness, and the post-attack performance of our own programmed forces. The margin over deterrence (through a countervalue strategy) was justified in terms of the idea of 'damage limitation' should deterrence fail . . . ."\textsuperscript{23}

This interpretation is confirmed by the evidence available on the attitudes of both Kennedy and McNamara at this time. Sorensen has recorded that the Secretary of Defense "in effect acknowledged that he was agreeing to a nuclear force above the level of pure deterrence (a countervalue policy), but that the additions could be justified as forces to limit the Soviet's ability to do further damage should deterrence fail."\textsuperscript{24} Moreover, he also argued that such a capacity to limit damage was necessary in order to strengthen the credibility of the American deterrent:

If we believe what we say about being prepared to fight an all-out nuclear war if one should be forced upon us, then we must take whatever reasonable measures are available to us to protect our population.\textsuperscript{25}
Despite Schlesinger's contention that the President accepted these arguments only reluctantly and with some reservations he was, to say the least, in wholehearted agreement with his Secretary of Defense. As was seen earlier, Kennedy had adopted a similar position well before his election to the Presidency, while his actions in the first half of 1961 attested to his growing inclination to translate that position into policy. In addition to this Sorensen has indicated that his attitudes had not changed by the autumn of 1961. Thus, he summarized Kennedy's conception of a deterrent capability at this time as one which could both inflict unacceptable damage on the enemy's cities and limit damage to the United States, thereby "denying him all prospect of victory or even survival."  

The goal of "nuclear superiority" - a term which Eisenhower and his lieutenants had defined in fact as a secure countervalue capability - had now been redefined to include a capacity for destroying a substantial portion, though by no means the entirety of Russian strategic forces. With this, the strategy outlined by Gates as essentially a theoretical and long-range pos-
sibility had at last become a reality.

In order to achieve this superiority the Kennedy Administration provided for eight hundred Minutemen in this budget. Furthermore, testimony by Dr. John S. Foster, Director of Defense Research and Engineering in 1968, indicated that initial work on a vastly improved I.C.B.M. had also been oriented to counterforce missions. Thus, when a Senator asked him if the extremely accurate multiple independently targetable re-entry vehicle (M.I.R.V.) had been designed simply as a response to the Soviet A.B.M. threat, he replied:

Not entirely. The M.I.R.V. concept originally generated to increase our targeting capability rather than to penetrate A.B.M. defenses. In 1961-62 planning for targeting the Minuteman force it was found that the total number of aim points exceeded the number of Minuteman missiles. By splitting up the payload of a single missile (deleted) each (deleted) could be programmed (deleted) allowing us to cover these targets with (deleted) fewer missiles. (Deleted.) M.I.R.V. was originally born to implement the payload split-up (deleted). It was found that the previously generated M.I.R.V. concept could equally well be used against A.B.M. (deleted).

The starting point for these decisions was the Americans' recognition that they now had a margin of
strategic advantage over their opponents in the autumn of 1961, and their belief that they could continue to enjoy this advantage in future without having to substantially increase their present level of expenditures. Having at last overcome their problems with Samos, they were now sufficiently confident about the reliability of their intelligence to have Roswell Gilpatric, the Deputy Secretary of Defense, proclaim an official and definitive end to the "missile gap" on October 21, 1961. In the most crucial passage of his speech, he announced that "we have a second strike capability which is at least as extensive as what the Soviets can deliver by striking first." Thus, Gilpatric had in effect announced a new "missile gap," this time one favouring his country, at the very moment when he had laid the old one to rest.

As was the case with the old "gap," the new one was both quantitative and qualitative. The United States, which had only six I.C.B.M.s in January, and twenty-eight in September, had forty-eight Atlases at the end of November. The U.S.S.R., on the other hand, had a maximum of fifty I.C.B.M.s by this latter date, compared with about twenty at the beginning of the year.
Even more significant than these bare figures, however, was the qualitative aspect of the strategic balance. Whereas most of the Atlas sites were being hardened, albeit to varying degrees, and whereas the improved Atlases were about to be replaced by the more advanced Titan and Minuteman, there were few signs of comparable advances in the Soviet Union. Her numerical strength, and hence the effectiveness of her I.C.B.M. forces, was reduced for most purposes by the fact that some of her I.C.B.M.s were situated on sites which had a refire capability. As there were more missiles than launching facilities, some weapons would perforce have to be held in reserve until the initial salvo had freed sufficient facilities to permit their firing. This meant, of course, that the first wave of attacking missiles would be substantially smaller than the total Russian I.C.B.M. force, but it also meant that there would necessarily be a pause between the first and second salvos, a pause occasioned by the time required to prepare the reserve force for launching.

This latter factor, combined with Samos's ability to pinpoint Russian sites in advance, would
greatly facilitate American attempts to destroy at least some of the opposing missiles. Closely related to this, once Samos had made concealment virtually impossible, the main guarantee for the invulnerability of Russian I.C.B.M.s evaporated, for they were located in close proximity to one another and only a few of them were even slightly hardened.36 Finally, Moscow's I.C.B.M.s were still highly inaccurate, a characteristic which made it possible for the United States to secure a second-strike countervalue capability with a relatively small number of weapons and which consequently freed the remainder of her missiles for counterforce missions. 37

Yet more important, the Americans had grounds for believing that this "gap" could be maintained in the years ahead, and perhaps even widened somewhat, if the continued their efforts at the current level of intensity. It had come, after all, despite the Russian lead in missilery, and despite relatively lagardly American efforts in this sphere. Admittedly, the Kremlin now seemed determined to step up its rate of missile deployments; on July 8 Khrushchev had announced an increase of three billion rubles in the Russian defense budget, and
much of this would inevitably be devoted to strategic forces. \footnote{38} Even after this, however, the Americans estimated that the Soviet Union would not have even one hundred and fifty inferior I.C.B.M.s until late 1962 or mid-1964. \footnote{39}

In addition to this, although it was anticipated that the Soviets would further expand their forces in response to Gilpatric's stark revelations, a total of less than six hundred Russian strategic missiles - S.L.B.M.s as well as somewhat improved I.C.B.M.s - was expected by 1965. \footnote{40} Given these projections, and given the probability that the more advanced Minuteman II would be operational by this date, it appeared reasonable to assume that the programmed American forces could threaten, or at least seem to threaten, a substantial number of Soviet strategic weapons.

Paradoxically, it was hoped that such a threat would actually bring about an ultimate deceleration in the arms race. The Russians, it was true, had given some indications that they were genuinely concerned for the safety of their countervalue capability, and that this concern underlay their increased military expenditures;
at Vienna, Khrushchev had told Kennedy that the American strategic expansion had created pressures on him to follow suit, Mikhail Kharmolov, press chief for the Soviet Foreign Office, had repeated this warning in a conversation with Salinger, and the Soviet premier had cited the threat presented by the Kennedy increases in his speech of July 8. Furthermore, it seemed that Khrushchev was still dismayed by the heavy demands which the defense budget was making on his country's troubled economy, a fact manifest in Kharmalov's pointed reference to the desirability of diverting resources from the arms race to improvement of the standard of living. At the same time, there could be no certainty that the U.S.S.R was genuinely willing to halt this race.

"Superiority," after all, remained the official goal of Soviet nuclear strategy, and there was no guarantee that the latest Russian increments were anything more than the prelude to a bid for a counterforce capability. This somber view of enemy intentions was given further weight when, on October 30, the U.S.S.R exploded a fifty megaton bomb, hailing this achievement in terms reminiscent of those employed after the launching of
Sputnik. Although this weapon was seen more as a propaganda device than a military one, the very fact that it had been developed seemed ominous, for it was evidence of a Soviet interest in warheads far larger than those possessed by the United States, warheads which, if united with a sufficiently advanced missile to deliver it, could pose a grave threat to even hardened I.C.B.M. sites in the United States.

To add to this, on October 24, Marshall Radion Malinovsky, the Soviet Defense Minister, claimed that his country had actually solved the problem of missile defense and asserted that the socialist camp would emerge victorious from a nuclear war. While American officials were extremely skeptical about this claim, it reinforced their apprehension that the enemy was still determined to seize upon any strategic advantages which seemed open to him.

In view of these signs of a persistent and dangerous ambivalence in Russian nuclear strategy, continuation of the Unites States' policy of simply reacting to ensure the safety of her countervalue capability seemed inadequate. If the precedents of the "bomber gap" and the "missile gap"
were any guide, it seemed that although such a policy might deter the U.S.S.R. from actually initiating a thermonuclear exchange, it would not strike at the heart of the problem, for she would still hope that a technological breakthrough or a sudden spurt in her weapons deployments would at last yield her a counterforce capability. The surest method of solving this problem, the American decision-makers concluded, was to confront her with an overwhelming qualitative and quantitative superiority and to thereby convince her that she could never prevail in the arms race; only then might she admit the futility of her quest for superiority, and only then might she at last accept the logic of stability through secure countervalue capabilities on both sides. 48

The arms race in itself, however, was not regarded as the most serious threat to American vital interests and to peace. Moscow's repeated efforts to expand its political influence under cover of its nuclear umbrella, that is to say its continued resort to "Sputnik diplomacy" was the central problem in American eyes. Khrushchev, it was true, had made some conciliatory gestures. On September 29, six weeks after work had begun on the Berlin Wall, he sent the
first of a number of secret letters to Kennedy. In this, he expressed a willingness to re-examine those issues which had kept his country in conflict with the United States ever since World War II, provided that the United States reciprocated, and he further stated that negotiations on Berlin and Southeast Asia could be resumed. As a follow-up to this letter, he also announced on October 17 that Western willingness to seek a mutually agreeable solution to this problem made it possible for him to cancel his December 31 deadline for an agreement on Berlin.

Unfortunately, these gestures were overshadowed by the Soviet resumption of atmospheric testing, for it signalled a new attempt at military - diplomatic coercion. This fact, manifest in the Premier's statement to two British visitors that he hoped to shock the West into concessions on Berlin and disarmament reinforced the American perception of threat. Indeed, Kennedy concluded, in Sorensen's words, "that an actual nuclear confrontation might be required before Khrushchev understood that Kennedy's conciliation would not permit humiliation." Under these circumstances, a damage limiting
capability, symbolizing the substantial risks which the United States was prepared to take in defense of her interests, seemed necessary for "negotiation from strength," and for protection in the event of the eruption of a thermo-nuclear conflict.

This diplomatic climate in turn kept the problems associated with Western European security in the forefront of American calculations. As McNamara pointed out, it appeared that "the danger to our Western European allies from a Soviet nuclear attack was far greater at the moment than the danger to this country."\(^53\) The main reason for this - apart from the fact that the most important Russian-American political disputes were rooted in that area - was the apparent possibility that the United States would not bring on her own nuclear destruction for even the most valued ally.

Such a possibility, explored in blunt, if elegant, fashion by French writers such as Gallois and Beauffre, was one of the main subjects covered in Kennedy's meeting with President De Gaulle prior to the Vienna summit.\(^54\) De Gaulle's continuing skepticism about the American
guarantee, and the widespread doubts which he mirrored, were serious in part because they provided the main rationale for the force de frappe. By giving the French the capability to precipitate a catalytic war, this force threatened to take the final decision on responses to a Soviet invasion out of the hands of the United States. By stimulating nuclear longings in German hearts, it also threatened to encourage the growth of yet another independent nuclear force, a prospect which alarmed Washington almost as much as it did Moscow. Even more significant, allied division over American credibility threatened to encourage the Russians in their own variety of "brinkmanship" in Europe, a policy fraught with perils of miscalculation and escalation of a political conflict into an unintended war.

As a further complication, the Kennedy Administration joined with its predecessor in recognizing that the continued N.A.T.O conventional weakness made a non-nuclear defense of Western Europe impossible. The logical conclusion flowing from this realization, of course, was that the United States must be prepared to strike first if she was to protect this area. Thus, in a speech delivered in early June, Gilpatric had stated:
The current doctrine is that if N.A.T.O. forces were about to be overwhelmed by non-nuclear attacks from the (Communist) bloc countries, N.A.T.O. would make use of nuclear arms. Similarly, in a March, 1962 article in the Saturday Evening Post, Kennedy publicly repeated an earlier private assurance to DeGaulle to this effect:

But Khrushchev must not be certain that, where its vital interests are threatened, the United States will not strike first.

Given this awareness, and given the certainty that an American first strike would provoke Soviet retaliation, it seemed only prudent to provide for substantial destruction of the enemy strategic forces, as well as enemy cities, in that first strike. Needless to say, a capability for accomplishing this might also enhance the credibility of threats such as the one contained in Kennedy's Saturday Evening Post article by bringing the potential costs to the United States into a closer, if still imperfect, harmony with the stakes involved. In this manner, the disincentives to a conventional attack on the N.A.T.O. allies, as well as a nuclear one, would be proportionately increased.
The objectives of coercive deterrence as envisaged in the fiscal year 1963 defense budget, however, went beyond simply strengthening the existing policy of deterrence through the threat of massive retaliation in Europe. Whereas the Eisenhower administration recognized that N.A.T.O.'s conventional inferiority would place the United States in an agonizing dilemma if the Soviets ever invaded this area, it took comfort from its conviction that the danger of escalation into a nuclear conflict would deter them from such a provocation. Its successor, however, was not so sanguine. While most in the Kennedy administration believed that a Soviet invasion was highly unlikely, they also emphasized that miscalculation, or escalation from some local conflict, might conceivably lead to such an invasion. Although they may well have been prepared to resort to nuclear weapons in extremis, they were naturally unenthusiastic about such a prospect, particularly when the N.A.T.O. allies' failure to live up to their earlier commitments on conventional force levels would necessitate early use of these weapons.

If the allies at last met these commitments, Kennedy and his lieutenants reasoned, a non-nuclear
defense of Western Europe might actually be possible. Even if this were not possible N.A.T.O forces would at least be able to hold out longer against the invaders, thereby affording Moscow more time for second thoughts about the risks of nuclear conflict inherent in such an invasion. Finally, by ensuring that all reasonable alternatives short of surrender would be exhausted prior to the decision on whether to use nuclear weapons, and by ensuring a relatively prolonged non-nuclear conflict involving extensive casualties, a strong conventional capability would increase the probability of an ultimate American nuclear response. In the last analysis, such a capability would make the choice between resistance and abject surrender, between full support for allies suffering heavily in defense of N.A.T.O.'s vital interests and desertion of those allies, starker. By so doing, it would increase the probability that Washington would fully honour its commitments. 59

From the American point of view, then, bolstering N.A.T.O.'s conventional strength would enable the West to have its strategic cake and eat it too; it would simultaneously decrease the probability that the United
States would have to make good its nuclear guarantee to Western Europe and increase the credibility of that guarantee. Unfortunately, the N.A.T.O. allies did not share this enthusiasm. Thus, in his conversation with Kennedy shortly after the President had held out the prospect of a multilateral seaborne nuclear force "once N.A.T.O.'s non-nuclear goals have been achieved," De Gaulle maintained that this new emphasis was merely further evidence of America's unwillingness to come to N.A.T.O.'s aid with nuclear weapons. 60

Furthermore, the Germans had echoed these doubts, and even Harold Watkinson, the British Defense Minister, had warned that:

Such a policy (building up N.A.T.O. conventional forces) might merely indicate that we should not have the courage ever to use the nuclear weapon in any circumstances. 61

Four months after Watkinson made this statement, in October, 1961, any remaining doubts about the deep-rooted European opposition to this policy were dissipated when General Lauris Norstad, the N.A.T.O. Supreme Commander, informed his superiors in Washington that, in Schlesinger's words, "every document we submitted stressing conventional war-
Faced with this situation, the Kennedy administration had to choose between reversion to its predecessor's policy and finding a means of meeting allied objections. Given its vigorous activism, and given its assessment of the present Soviet threat, it naturally chose the latter course. As verbal reassurances alone had proved futile, physical reassurance in the form of "nuclear superiority" sufficient to threaten at least a part of the Soviet strategic forces appeared to provide such a means. Such a capability, after all, could well unite with N.A.T.O.'s expanded conventional strength to limit damage to Western Europe if the Russians attacked; not only might it deter them from resorting to tactical nuclear weapons once they realized that they could not prevail at the non-nuclear level, but it might also cause them to cease hostilities altogether, for fear of escalation to a level of violence at which they would be at a distinct disadvantage.

In addition to this, domestic influences also played a significant part in the development of coercive deterrence. As was noted earlier, Kennedy and his advisers
shared the predispositions of their own people to a great extent. The reasoning which led them to seek a marked strategic advantage over their opponents, it was true, was based to a great extent on the realities of contemporary international relations and strategic currents. At the same time, most of them instinctively accepted the necessity for a measure of "nuclear superiority" as a first principle; reasoned analysis frequently tended to proceed from this starting point, determining how much "superiority" could reasonably be pursued and pointing to the most suitable purposes for which it could be used. Similarly, their tendency to dismiss out of hand many Soviet, and even allied, objections to their strategic prescriptions as ill-informed or simply unsophisticated reflected the Americans' traditional tendency to assume that their own superior wisdom and good intentions were self-evident.  

The extent of these domestic influences, however, did not end here. Perhaps most important in this regard, a variety of disputes between the Executive and the armed forces threatened to re-arouse that "psychological vulnerability of the American people" to which Eisenhower
Kennedy and, to an even greater extent, McNamara continued to oppose the Air Force attempts to gain acceptance for full development of the B-70 as an operational weapons system. The reasons which McNamara cited for this opposition bore a strong resemblance to those employed in the previous year; the B-70 was vulnerable to enemy air defenses, it was not suited for carrying A.S.M.s, and it was highly vulnerable on the ground. Furthermore, in his fiscal year 1963 posture statement, as in his fiscal year 1962 one, the Secretary of Defense raised the broader question of the relative importance of manned bombers of any kind as more and more I.C.B.M.s entered the American arsenal. By this time, though, he was clearly concerned with questions beyond the purely technological characteristics of the two weapons systems.

In his message of March 28, Kennedy had stressed that American nuclear weapons must be under unquestionable civilian control. McNamara, apparently with Kennedy's approval, had decided that bombers were less amenable to such control than missiles. The evidence pointing to this
conclusion, admittedly, is somewhat fragmentary, but this in itself is hardly surprising; no Secretary of Defense would willingly alarm opponents, allies, and his own people by emphasizing the possibility that his government might not be in full control of all American strategic forces. Nevertheless, there are indications that McNamara thought that there was a chance, albeit a marginal one, that this might in fact be the case.

One indirect indication of this was his reaction to a question by Chairman Rivers of the House Armed Services Committee about the action he would take if the Soviet Union deployed an effective A.B.M. system. In his reply, the Secretary of Defense rejected the possibility of circumventing such a system by concentrating on a weapon which it was not designed to intercept, namely bombers. He contended instead that he would offset this hypothetical missile defense by building more missiles, justifying this on the grounds that they would still have a "far higher probability of successful penetration than bombers."66

Reasonable as this argument may have seemed at
first glance, it hardly reflected McNamara's actual assessment of bomber penetrability. In 1968 he stated:

One of the first actions I took when I came to the (Defense) Department 7 years ago was to examine the penetration capability of our bombers. There was some argument about it at the time, but the argument ranged between an ability for 90 percent of our bombers to penetrate versus someone else's belief that it would be only 80 to 85 percent. So there was no disagreement in the Department whatsoever, then or since, about the ability of our bombers or missiles to penetrate Soviet Defenses on which they were spending twice as much as we were to defend against them . . . . Yet we felt they were buying essentially nothing for those vast expenditures in the way of added protection for their country . . . ."67

In view of this, it seems reasonable to conclude that the Secretary of Defense was being far from candid in his stress on these supposed technological technical drawbacks of manned aircraft, and this in turn suggests that his argument hid an ulterior motive.

As was seen earlier, one of the Air Force arguments in favour of the bomber was that, unlike the missile, it bred a determined and offensive spirit, rather than "Maginot mindedness," among the American people.68 The main implication of this argument, at least in McNamara's eyes, was that bombers were less vulnerable to last -
minute civilian hesitations on the brink of war than were missiles, for they had to be launched on warning. Alarmed by this, and recognizing that the fail-safe system, like all human constructions, might break down in a crisis, he bluntly told some of his congressional critics:

I do not think we can put it in the hands of a bomber pilot to decide which target to launch his missile against or when to launch.69

This fear, rather than some obsessive belief in the strictly technical superiority of missiles or an equally obsessive determination to impose his will on the military regardless of the merits of its arguments, accounts in large measure for McNamara's essential hostility to bombers.70

Whether or not this hostility was well founded, it united with the Administration's refusals to meet Air Force demands for more I.C.B.M.s and Army demands for deployment of Nike-Zeus to create a great deal of resentment within the armed forces. By themselves, of course, the military were powerless; officers such as Admiral Anderson and General Le May, who did not join in the Kennedy-McNamara strategic consensus, were eased out of office without undue difficulty.72 Their alliances with
various members of Congress, however, still gave them some political leverage. Under pointed questioning by well disposed legislators, military men were able to air publicly their differences with the Executive, and to thereby make a broad appeal for popular support. Moreover, they could also secure congressional aid in the form of repeated supplemental appropriations for those forces which the White House had not approved. 73

The Administration, of course, could, and did, follow its predecessor's example by refusing to spend the extra funds provided by Congress. Unfortunately, the public revelations of disagreements between it and its military advisers, with the accompanying suggestions that American security was still not being adequately provided for, presented a far more serious problem. Like the much publicized European doubts about the American deterrent, these revelations might cast doubt on the credibility of this deterrent, and might thereby encourage the Kremlin in its perilous probing of Western defenses. Yet more serious, as was the case with the earlier "missile gap," such revelations might create widespread public apprehension about the state of
America's defenses. While their fears of a missile gap had materially subsided by the first months of 1961, the Americans were still highly sensitive to any suggestion that the U.S.S.R. was outdistancing their country, an attitude evident in their demands for resumption of atmospheric testing. It was always possible, then that the gloomy pronouncements of the military, and perhaps some Russian strategic advance which seemed to lend weight to these pronouncements, would re-arouse fears that the United States was imperilled by some new strategic "gap."

This possibility, rather the supposedly irresistible pressures of the "military-industrial complex," was the dominant domestic influence in the formulation of coercive deterrence. To McNamara and Kennedy, believing that they lacked the political capital to completely oppose both Air Force I.C.B.M. requests and the B-70 program, and fearing resignations in the J.C.S. if they seemed too unresponsive to its recommendations, this strategy seemed an ideal method of limiting the repercussions of the current strategic controversies. Charges of insufficient attention to national security
would be harder to sustain, after all, if the Administration could point to an I.C.B.M. force so "superior" that it could threaten Russian strategic forces as well as Russian cities. By the same token, such a "superiority" would promote long-term stability by re-instilling a degree of confidence, if not complacence, in the American people. Such a confidence would cushion the blow in the unlikely event of another Soviet achievement on the order of Sputnik and would enable them to adopt that combination of steadfastness and restraint which was vital in the thermonuclear age.77
COERCIVE DETERRENCE AT ITS ZENITH: THE ADOPTION OF THE "HOSTAGE CITY" STRATEGY, 1962

Closely linked to its decisions on force levels, the Kennedy administration had also refined its predecessor's definition of coercive deterrence. For the Eisenhower administration, this strategy had involved massive and simultaneous attacks on both Soviet cities and Soviet strategic forces in the event of a thermonuclear war. Under Kennedy, however, this emphasis on a single, convulsive, launching gave way to the "hostage city" concept.

This concept represented a twofold departure from the previous doctrine. First, and most important, it provided for flexibility in targeting. Thus, American strategic forces were to be launched solely against their Russian counterparts in the opening stages of a thermonuclear exchange, while the forces threatening enemy cities were to be held in reserve as a deterrent to attacks on American cities. In addition to this, it also envisaged the possibility of restraint, not only in targeting, but in rates of fire as well. By discharging relatively few missiles in the opening salvos, the doctrine went, the United
States might be able to convince the U.S.S.R. to similarly limit her own response. This in turn might lessen collateral damage to urban areas, decrease the chances of escalation into a countervalue exchange, and facilitate bargaining on a negotiated end to hostilities.

Publicly defined in a series of statements culminating in McNamara's June, 1962 speech at Ann Arbor, this refinement of coercive deterrence was significant in two senses. On the one hand, it was a highly sophisticated attempt to deal with the problem of actually fighting a nuclear war. Drawing upon segments of counterforce doctrine and upon the work of civilian theorists, the men of the strategic New Frontier saw in the "hostage city" doctrine some hope for minimizing damage to the United States and for ensuring an end to the conflict on terms favourable to herself. In the final analysis, however, their faith in this doctrine as an operational guide in actual hostilities was more declaratory than real. On the very eve of its formulation, key advisers such as Gilpatric and McNamara were still questioning its basic premises. Furthermore, by early 1962, the Administration's commitment
to civil defense, a vital factor in this strategy, had markedly abated. Most telling of all, American policy in the Cuban missile crisis was based on the assumption that escalation would be extremely likely, and probably inevitable, in a thermonuclear exchange. Consequently, it seems reasonable to conclude that this strategy was considered to be at most a highly improbable option in the event of such an exchange. The Kennedy administration's assessment of its value as an operational guide, then, hardly accounts for the prominence which it ultimately attained.

Of far greater importance, the "hostage city" strategy was also viewed as a potentially credible bluff which might resolve some of the most intractable political and diplomatic problems confronting the Administration. First and foremost, Russian "Sputnik diplomacy" was continuing unabated. Of equal concern, the N.A.T.O. allies were still reluctant to meet their obligations on conventional forces, and the force de frappe still threatened to make a shambles of any American attempt to avoid escalation of a conflict in Western Europe. Finally,
Congress was locked in a mounting struggle with the Executive over the B-70, and was increasingly vociferous in its complaints that the Administration's policy in this matter could imperil national security. Beset by these problems, and rapidly exhausting alternative solutions, Kennedy and his advisers at last concluded that the "hostage city" strategy might offer at least a partial method of resolving them.

I. THE GROWTH OF THE "HOSTAGE CITY" STRATEGY

This concept sprang from two main sources. William W. Kaufmann, an eminent writer on nuclear strategy and an ex-speech writer for McNamara, has emphasized the importance of Air Force arguments:

...the proponents of the strategy of flexible response, led by General Thomas D. White, Air Force Chief of Staff, recommended a posture which would be so designed and controlled that it could attack enemy bomber and missile sites, retaliate with reserve forces against enemy cities, if that should prove necessary, and also exert pressure on the enemy to end the war on terms acceptable to the United States. The recommendations specifically stated that the posture should be designed, not for the case of a first strike against the Soviet Union, but for the retaliatory role, especially since important military targets would remain for attack in the second strike.
This account, however, is misleading; whereas Kaufmann gave the impression that something resembling the "hostage city" strategy was at the heart of White's recommendations, it would seem that quite the opposite was true.

Admittedly, elements of this strategy had played a part in counterforce doctrine. Recognizing that even the most massive American bomber attacks probably could not destroy all of the opposing strategic forces, some of the first members of the counterforce school had presented the "hostage city" strategy as in effect a second line of defense. Faced with the prospect of obliteration if it destroyed American cities, they argued, the Kremlin would be under the heaviest possible pressure to direct its surviving forces against military targets in the United States. Given American nuclear superiority, this meant that the United States would emerge from a nuclear war relatively unscathed and completely victorious.

Nevertheless, the Air Force was always uncomfortable with this argument. Too much depended upon the rationality and restraint of an enemy who seemed all too frequently irrational and unrestrained. Moreover, basic
instinct rebelled at the idea that a nuclear war could actually be limited through human volition. It was not surprising, then, that this primitive version of the "hostage city" strategy enjoyed even less prominence in counterforce doctrine once the I.C.B.M. had improved chances for a completely successful surprise attack on enemy forces. The counterforce school now argued that countervalue attacks should be avoided simply because they diverted American strategic forces from their primary objective, namely destruction of Russia's capacity for devastating the United States. Furthermore, even this kind of limitations seemed improbable to many in this school. Thus, in the spring of 1961, General White concluded a discussion of the options in a general nuclear war by stating:

This time element is going to be so short that we probably will end up with a mix of all types of targets, doing the most damage we can against each.

In view of all this, and in view of his subsequent denunciation of the strategy which McNamara outlined at Ann Arbor, it seems probable that White's main recommendation was a strategy designed to totally disarm
the U.S.S.R. in a massive first strike. To the extent that he espoused the "hostage city" concept at all, he probably presented it as an improbable and unreliable supplement to this basic counterforce strategy.

The second, and more influential, source of strategic inspiration was the community of civilian defense analysts which had emerged after World War II. Although this was not the major theme in most of their writings, and although they varied in the relative optimism of their conclusions, prominent writers such as Glenn Snyder, Morton Kaplan, Klaus Knorr, and indeed Herman Kahn, had examined the possibility that strategic nuclear war might be limited. Their basic premise - one which set them distinctly apart from the counterforce school - was that unrestrained nuclear war would very probably be a catastrophe no matter how large and effective the forces at America's disposal. As some enemy forces would survive even the most massive surprise attack, reliance on physical destruction of those forces alone was inadequate. Consequently, it was also necessary to reckon with the problem of how the enemy intended to employ his remaining nuclear power.
This problem could be dealt with in two inter-related ways, the argument continued. By concentrating on enemy strategic forces, and by withholding one's countervalue capability, it might be possible to force the adversary to reciprocate this restraint. The conflict would then center around attrition of the opposing military forces, rather than the deliberate massacre of the combatants' respective populations.

In addition to this, a gradual rate of fire, rather than a massive and spasmodic one, was desirable. If a multitude of weapons was launched simultaneously, the enemy might believe that he was about to come under all-out attack, or, if he suffered substantial collateral damage to his urban areas, he might conclude that they were about to be obliterated. In either case, he would probably launch an attack against American cities, as well as any remaining American strategic forces. An unrestrained rate of fire, then, might actually defeat the purpose of restraint in targeting. In contrast to this, a small initial attack might convince the enemy of one's own firmness of purpose while offering a comparatively small provocation. Such a combination of
reassurance that one was willing to set bounds on the level of violence for the time being, and the threat of escalation if these bounds were not observed, might well cause the Kremlin to reciprocate this restraint. In addition to this, by prolonging the time span of a nuclear exchange, this combination might also give it time to reassess a course which could lead to its eventual destruction or defeat, and might consequently induce it to negotiate an end to that exchange.

The identity of the men who transmitted these ideas to Kennedy and McNamara cannot be established with certainty. Nitze, who had close contacts with the civilian strategists, and who was a strategist in his own right, may have advanced this case in his interim report on national security in late 1960. Yet more likely, ex-members of the RAND Corporation who had moved to posts in the Defense Department; such as Alain Enthoven and Charles Hitch, may have preached the gospel of limited nuclear war.8

Whatever the source of his enlightenment, Kennedy had displayed almost immediate interest in this
concept. As was seen earlier, he had specified in his message of March 28, 1961 that American strategic weapons "must be usable in a manner permitting deliberation and discrimination as to timing scope, and targets" and that they must also be "secure against prolonged re-attack."\(^9\) McNamara had evidenced a somewhat more guarded interest when he directed the J.C.S. study on "controlled response and negotiating pauses."\(^10\) By late 1961, the status of this strategy had progressed to the point where, according to Sorensen, the President believed that the American second-strike capability should be sufficient to:

... destroy (a), if necessary, the aggressor's cities and population and (b) enough of his remaining military strength, while still retaining some reserve of our own, to convince him that he could neither complete our destruction nor win the war.\(^11\)

Throughout the first half of 1962 this strategy was also accorded ever-increasing importance in public statements by McNamara. On January 19, 1962, in his annual posture statement, he supplemented his past criticisms of manned bombers with the argument that:

... reliance on warning and quick response means
that the bombers must be committed to the attack very early in the war and cannot be held in reserve to be used in a controlled and deliberate way.  

A month later, he affirmed that the "controlled and deliberate" response envisaged in the "hostage city" strategy had become a new and vital option which his country would consider in the event of a thermonuclear war:

We may have to retaliate with a single massive attack. Or, we may be able to use our retaliatory forces to limit damage to ourselves and our allies by knocking out the enemy's bases before he has had time to launch his second salvos. We may seek to terminate a war on favourable terms by using our forces as a bargaining weapon - by threatening further attack. In any case, our large reserve of protected firepower would give the enemy an incentive to avoid our cities and to stop a war. Our new policy gives us the flexibility to choose among several operational plans, but does not require that we make any advance commitment with respect to doctrine or targets.  

In early May, when the semi-annual meeting of N.A.T.O. foreign and defense ministers convened at Athens, the Secretary of Defense forcefully sought to win his N.A.T.O. colleagues over to this strategic prescription.  

The essence of his exposition at the Athens meeting, and his most definitive public endorsement of this doctrine, was presented in a speech delivered at Ann Arbor,
Michigan on June 16, 1962. A nuclear conflict, he stated, was highly improbable:

... given the current balance of nuclear power, which we confidently expect to maintain in the years ahead, a surprise nuclear attack is simply not a rational act for any enemy. Nor would it be rational for an enemy to take the initiative in the use of nuclear weapons as an outgrowth of a limited engagement in Europe or elsewhere. I think we are entitled to conclude that either of these actions has been made highly unlikely.15

Unfortunately, improbability was not impossibility, and the United States had to provide against the outbreak of such a conflict:

... the mere fact that no nation could rationally take steps leading to a nuclear war does not guarantee that a nuclear war cannot take place. Not only do nations sometimes act in ways that are hard to explain on a rational basis, but even when acting in a 'rational' way they sometimes, indeed disturbingly often, act on the basis of misunderstandings of the true facts of a situation ... .

The United States has come to the conclusion that, to the extent feasible, basic military strategy in a possible general nuclear war should be approached in much the same way that more conventional military operations have been regarded in the past. That is to say, principal military objectives in the event of a nuclear war stemming from a major attack on the alliance should be the destruction of the enemy's military forces, not his civilian population.

The very strength and nature of the alliance forces make it possible for us to retain, even in the face
of a massive surprise attack, sufficient reserve striking power to destroy an enemy society if driven to it. In other words, we are giving a possible opponent the strongest imaginable incentive to refrain from striking our own cities.\textsuperscript{16}

Thus, the "hostage city" strategy had risen to the eminence of established official doctrine - and had been presented in a manner which came very close to the "advance commitment with respect to doctrine or targets" which McNamara had avoided only four months earlier.

II. FACTORS UNDERLYING THIS DEVELOPMENT

A. THE RELATIVE IMPORTANCE OF THE DETERRENT AND WAR-WINNING ASPECTS OF THIS STRATEGY

One of the major causes of this phenomenon, of course, was the Kennedy administration's desire to broaden its options even in a thermonuclear war. Its predecessor's definition of coercive deterrence had represented an improvement over the purely countervalue strategy which it had previously embraced; the counterforce attacks which were to accompany the attacks on enemy cities would lessen damage to the United States to some extent. Unfortunately, it was still highly probable that a substantial portion of
the opposing forces would escape destruction, and, with their own cities destroyed, it was equally probable that the Russians would direct a large number of weapons against American cities. A thermonuclear war, then, would still be essentially a mutual and futile massacre.

If the conflict was governed by the rules laid down in the "hostage city" strategy, however, there was a chance that this state of affairs might be changed considerably. As McNamara presented it in his Ann Arbor speech, it was "a strategy designed to preserve the fabric of our (the Western allies') societies if war should occur."

Such an outcome might come about, of course, if an end to this exchange could be negotiated before the superpowers had exhausted their nuclear arsenals. Moreover, it seemed possible that Western society might be protected even if a negotiated end to the exchange was impossible. Admittedly, city-avoidence might achieve relatively little in itself; it was estimated that, in the absence of protection against fallout, casualties would only be reduced from 215 million to about 70 million. Nevertheless, this strategy might perform a crucial service, inasmuch as it might minimize direct
hits on urban areas, and hence might minimize the threat from blast and thermal effects. This in turn might greatly enhance the value of a national fallout shelter system; indeed, it was estimated that a purely counterforce exchange, together with such a program, might decrease the number of victims to 25 million.19

Another attractive aspect of this strategy was the fact that it might enable the United States to impose its political will on the U.S.S.R. at the close of hostilities. As was seen above, a countervalue exchange, or a convulsive countervalue-counterforce exchange, could in all probability serve no rational political end; by ensuring that both sides would be mortally ravaged, it made any talk of "victory" meaningless. Closely linked to this, it also meant that much of the American nuclear superiority would in effect be useless in wartime; a large percentage of American forces would be targeted on cities already ravaged, or on weapons sites already destroyed or vacated. In contrast to this, the prolonged counterforce exchange envisaged in the "hostage city" strategy might permit the United States to bring far more
of her sizeable numerical superiority to bear in the
service of her political goals.

With a force which by the end of 1962 had grown
to approximately 200 I.C.B.M.s and 144 S.L.B.M.s, compared
to Soviet forces estimated at 75 to 100 I.C.B.M.s, she
was eminently well equipped to prevail in a gradual war
of attrition. Indeed, this knowledge in itself might
compel the Soviets to cease a struggle which they knew
they could not win, and to negotiate an end to hostilities
while their surviving nuclear forces gave them some slight
bargaining power. In any case, the result would be essen­
tially the same; peace on American terms.

Finally, these possibilities also presented a
solution to a more specific problem which had plagued
Washington ever since the dawn of the thermonuclear age.
Although there is room for doubt in this regard, it seems
probable that the Americans would have ultimately resorted
to strategic thermonuclear weapons in defense of Western
Europe if all other means failed; this area was too
important, and too many American troops were committed
there, for them to have done otherwise. It is unquestion-
able, though, that they would have done so very grudgingly; allies, even vital ones, were not as vital as the American homeland. The "hostage city" strategy seemed to be a very appropriate solution to this conundrum, inasmuch as it offered a chance of defending this area without sacrificing the United States herself.

Within this context, salvation, and indeed victory, might come from several quarters. First, the very fact that the United States would probably have to strike first might be turned to advantage if this strategy was employed. By making an unmistakably limited response, such as an attack on one or two relatively minor strategic bases well removed from populated areas, Washington might be able to convince the Russians that it was willing to restrict both its targeting and its rate of fire if they likewise. With the awful decision on whether or not to unleash a nuclear holocaust now resting squarely on their shoulders, it was quite possible that the Soviet leaders might then agree to these fundamental "rules of the game" from the very outset. 21 At the same time, the very fact that strategic thermonuclear weapons had been launched might also convince them of America's determination to resist
their attack on Western Europe with all the means at her disposal. Given the vast imbalance in the superpowers' nuclear arsenals, this in turn might force them to recognize that victory was physically impossible and to withdraw their forces from Western Europe and cease the strategic exchange.

Alternatively, the combination of reassurance and threat of escalation might achieve the same ends by working on the Kremlin's assessment of the relative risks involved. As Nitzé had pointed out in the study examined earlier, Soviet foreign policy objectives, like American ones, had varying priorities; preservation of Soviet society was of overriding importance, control over the communist bloc came second, and undermining the power of the Western camp was subsidiary to both of these.22 As a conflict in Western Europe would probably stem from the last concern, or perhaps indirectly from the second one, it was quite possible that the Russian leaders might reassess their course once they realized that it was unquestionably threatening their very existence. Thus, confronted by the prospect of ultimate ruin for a less than vital objective,
they might conclude that survival was the better part of
valour, and agree to American peace terms.

Appealing as these theoretical advantages may have
been to Kennedy and McNamara, however, it is extremely
unlikely that they had much genuine faith in the "hostage
city" strategy's prescriptions for victory, or even survival.
Projections of casualty rates in a thermonuclear conflict,
after all, were inevitably speculative, and it was eminently
possible that the figures cited in support of this strategy
were overly optimistic. Moreover, even assuming that
these figures were reasonably accurate, they still probably
represented a level of damage which would be intolerable
to the West. With these factors in mind, McNamara re-
minded his Ann Arbor audience of the sober and inescapable
fact that "damage to the civil societies of the alliance
resulting from nuclear warfare could be very grave." 23

Yet more fundamental, the chances of actually
limiting a thermonuclear exchange were manifestly slender.
Collateral damage to urban areas might be so extensive that
the enemy might conclude that the United States was bent
upon destruction of his population and industry. In this
case, countervalue retaliation would be all but inevitable. It was possible, too, that his valuation of the stakes involved might be so high that he would ultimately choose mutual extinction in a countervalue exchange over a purely counterforce one. On a less theoretical level, Soviet strategic doctrine held that a nuclear war would involve spasmodic attacks on both enemy cities and enemy strategic forces. With the Russians firmly committed to this doctrine, with Soviet I.C.B.M.s insufficiently accurate for precise targeting, and with Soviet strategic forces so quantitatively and qualitatively inferior that they were ill suited for anything but a cataclysmic first strike, it was highly unlikely that they would limit their response in any way once a central war erupted.

The influence of these considerations was evident in the marked reluctance of a number of key Administration officials to accept this revolutionary new strategy. As late as November 17, 1961 a highly skeptical McNamara had asserted:

I think it is at least as likely that our cities would be attacked as that our military targets would be attacked. I don't share the views of some that only the military installations would be targeted.
In a similar vein, Gilpatric had stated on June 6 that:

I, for one, have never believed in a so-called limited nuclear war. I just don't know how you build a limit into it once you start using any kind of a nuclear bang.26

Significant as these signs of skepticism may have been in themselves, the lack of reaction from other Administration spokesmen was equally revealing. When the Secretary of Defense had inadvertently contradicted the official line on the "missile gap" on February 6, after all, he recanted almost immediately, and even the President had joined in the accompanying chorus of denials and "explanations." The fact that this did not happen in the wake of these later statements indicated that the kind of limited nuclear war envisaged in the "hostage city" strategy had not yet become a settled and major policy, even in Kennedy's mind.

In addition to this, it would seem that the Kennedy administration had little real faith in this strategy, even after it had become public policy. One indication of this was its attitude toward fallout shelters. As was seen earlier, such shelters were a vital complement to this strategy, and it would have been reasonable to suppose that Administration interest in the former would have
risen as its interest in the latter increased. In fact, precisely the opposite happened.

Civil defense had publicly been accorded the highest priority in the summer of 1961. At that time it was viewed essentially as a response to the Bay of Pigs and Berlin crises, rather than as part of a broader strategic plan. Six months later, when the "hostage city" strategy was beginning to emerge, the Administration's enthusiasm for civil defense was beginning to wane. Having originally given the impression that he would seek a revolutionary and all-encompassing fallout shelter program, Kennedy ultimately settled for far less. As Sorensen admitted:

The legislation in 1962 simply requested a long-range program of Federal incentives for the construction of community shelters in schools, hospitals, libraries, and similar public centers, the cost to be shared by state and local governments and non-profit institutions. These would supplement the sixty million existing shelter spaces identified in a quietly successful Defense Department survey, but made no pretense of covering everyone ...  

Moreover, plans for public education on civil defense had also been significantly diluted. In order to maximize the number of people with at least rudimentary
training in this area, the Administration had originally decided to mail information manuals to all American households. By early 1962, however, it had decided to leave these manuals in post offices and local civil defense offices, where those who were sufficiently interested, and sufficiently well informed, could obtain them. This modification, of course, ensured that only a very small percentage of the American people would ever see these manuals.

Naturally, the Administration had good reasons for adopting this less ambitious course. Congress, which had traditionally been skeptical about the value of civil defense, had passed the modified Kennedy program only reluctantly, and was clearly opposed to any further broadening of it. Yet more important, Kennedy's appeals, together with the tensions engendered by the Berlin crisis, led to an unanticipated and alarming public reaction:

Merchants quickly sold home survival kits, ration packs, sandbags, periscopes and phoney fallout suits and salves. A national controversy raged over whether those who had provided for their own survival could shoot less diligent neighbours demanding access, or whether those barred from a shelter would block up its air shafts . . . .
Jingoist groups thrived on the level of near-hysteria which was reached - at least in some parts of the country - as increased discussion only made it obvious that no program could save everyone. Some shelter owners, believing the claims of *Life* magazine and others that shelters could enable 90-97 percent of the population to survive a nuclear attack, said it would be 'just another war.' Pacifist organizations assailed shelters as though they were a substitute for our efforts on peace. Local civil defense officials proved in some cases to be overzealous or confused. 31

Having inadvertently opened this Pandora's box, it was in many ways understandable that Kennedy should seek to close it by de-emphasizing civil defense. 32 At the same time, there is no evidence that he and his advisers were particularly worried about the implications of this retreat for the "hostage city" strategy; indeed, their proclaimed belief in this strategy rapidly increased as the priority accorded to the fallout shelter program declined. In view of this discrepancy between the new direction taken in strategic doctrine and the fate of a policy which was vital for its implementation, it seems reasonable to conclude that the position of this strategy was tenuous at best in the minds of American decision-makers.
Even more striking evidence of this may be found in American policy during the Cuban missile crisis of October, 1962. If Kennedy and his lieutenants had truly believed in the possibility of a limited nuclear war such as that posited by the "hostage city" strategy, they surely would have given serious consideration to contingency plans centered around it. When they were confronted with a scenario based upon this possibility, however, their reaction was one of horrified incredulity.

One of the options considered as a response to the Soviet I.R.B.M. and M.R.B.M. deployments in Cuba was a conventional air strike against the missile sites. Unfortunately, this action was fraught with peril, for it probably would have caused severe casualties among the Russian personnel stationed at these sites, and would have created heavy pressures on Khrushchev to react violently. This in turn raised the question of whether the violence could be contained or whether all-out escalation was inevitable. The overwhelming consensus, according to Sorensen, was that the latter would be the case:
The air-strike advocates did not shrink from the fact that a Soviet military riposte was likely. 'What will the Soviets do in response?' one consultant favouring this course was asked. 'I know the Soviets pretty well,' he replied. 'I think they'll knock out our missile bases in Turkey.' 'What do we do then?' 'Under our N.A.T.O. Treaty, we'd be obligated to knock out a base inside the Soviet Union.' 'What will they do then?' 'Why, then we hope everyone will cool down and want to talk.' It seemed rather cool in the conference room as he spoke.\(^\text{34}\)

It should be noted that McNamara, the public champion of limited nuclear war, was almost certainly one of those most dismayed by this scenario; he had originally favoured doing nothing in response to the Soviet deployment, and, once the dangers of such a passive course were pointed out to him, he had been one of the first to suggest a naval blockade as a relatively unprovocative alternative.\(^\text{35}\) The logic of the "hostage city" doctrine, then, still seems to have played a minimal part, if any, in his private views on nuclear strategy.

Kennedy's attitude was essentially similar. Rather than publicly reaffirming the possibility, and indeed the desirability, of limited nuclear war, he had emphatically rejected this possibility in his crucial speech of October 22:
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.\footnote{36}

Having affirmed the inevitability of escalation in a nuclear conflict, the President then adopted the naval blockade as a means of both keeping the chances of such a conflict relatively low for the present and convincing the Soviets of American determination to ultimately risk such a catastrophe if they did not withdraw their missiles from Cuba.

B. FACTORS MAKING THIS STRATEGY DESIRABLE FOR DETERRENCE

Thus, the strategy enunciated at Ann Arbor was not regarded primarily as a blueprint for fighting a nuclear war. Its true significance was indicated by Schlesinger when he concluded a discussion of it by observing:

"A threat meant as a bluff but taken seriously," as Henry Kissinger wrote, "is more useful for purposes of deterrence than a 'genuine' threat interpreted as a bluff."\footnote{37}

From this point of view, the feasibility, or even désir-
ability, of the "hostage city" strategy in actual hostilities were relatively minor issues; what was more important was the psychological effect which a declared belief in this strategy might have on the Soviets, the N.A.T.O. allies, and domestic critics of the Administration in peacetime.

A key audience toward which the Americans had directed their statements on the "hostage city" strategy, of course, was the Kremlin. According to Schlesinger, one of the main purposes of these statements was to allay Soviet fears of a pre-emptive attack. By emphasizing their preference for weapons systems which could survive a first strike, he argued, the Americans hoped to communicate their intention not to launch such an attack themselves. Thus reassured, Moscow in turn might be less inclined to resort to pre-emption. 38

McNamara went even further in this retrospective emphasis on the theme of reassurance. In an interview published in the Saturday Evening Post in December, 1962 he told Stewart Alsop:

I believe myself that a counterforce strategy
(the "hostage city" strategy) is most likely to apply in circumstances in which both sides have the capability of surviving a first strike and retaliating selectively.  

Second-strike capabilities on both sides, he went on to say, would minimize the probability that either would launch a massive pre-emptive attack against its adversary. Each would recognize that, while it could not escape unacceptable damage to itself, it could inflict such damage on the other even after a surprise attack on its forces; consequently, it would also recognize the utter futility of pre-emption. According to him, this was the main thrust of his speech at Ann Arbor. If this interpretation is accepted, then his statements on the "hostage city" strategy must be taken as essentially an attempt, not only to reassure the Kremlin about American intentions, but also to convince it of the urgent necessity for rendering its forces invulnerable.

It should be remembered, however, that both Schlesigner's and McNamara's accounts were delivered after the traumatic experience of the Cuban missile crisis. Contemporary evidence on American attitudes prior to this crisis reveals a markedly different cast of mind. In the
Secretary of Defense's Ann Arbor speech, there was no explicit statement on the need for invulnerable Soviet strategic forces, and some ambiguity on whether or not the United States would actually strike first; indeed, his main theme was the superiority of American strategic power. 41

Moreover, if he was really concerned about the threat of a pre-emptive attack inherent in vulnerable Soviet strategic forces, he surely would have been the first to take alarm at the Russian missile deployments in Cuba. The Soviet I.R.B.M.s and M.R.B.M.s, after all, were highly vulnerable on the ground, and hence could only be used in a first strike. To add to this, they had one great advantage which I.C.B.M.s based in the Soviet Union did not have; their close proximity to the United States meant that the Americans would have only two or three minutes' warning of their coming, compared to approximately fifteen minutes for I. C.B.M.s, and this meant that any S. A. C. aircraft not on airborne alert could probably be destroyed on the ground. 42 Nevertheless, McNamara was initially so insensitive to these considerations that he saw little, if any, additional threat from these weapons.
Furthermore, to the extent that their military characteristics, rather than their psychological implications, led him to abandon this position, he was more concerned about the pre-emptive potential of their short time to target than about their vulnerability on the ground. 43

It is extremely unlikely, then, that the Secretary of Defense had proclaimed the "hostage city" strategy either to reassure the Soviets about American intentions or to educate them about the advantages of invulnerable strategic power. To a very limited extent, his public statements on this strategy may have been designed to gain Soviet acceptance of his guidelines for the conduct of hostilities if they erupted. His overriding concern, however, was to lessen the chances of such a war by convincing Moscow that his country had an overwhelming nuclear superiority.

This concern stemmed from the administration's perception that the tide of "Sputnik diplomacy" was still continuing in full force in the first half of 1962. In his posture statement for Fiscal Year 1963, McNamara has stated:
What Mr. Khrushchev seems to be seeking is a virtual capitulation by the (N.A.T.O.) alliance. He is trying to show that the Soviet Union now has the power to dictate the future shape of the world. They were, therefore, still committed to a course which involved serious risks of a direct military confrontation between the two superpowers. To add to this, they also appeared to be relying on the threat of escalation in support of "wars of national liberation." Thus, with the conflict in Indochina in mind, McNamara asserted that Moscow was hoping that fear of nuclear war would prevent the West from resolutely opposing such wars.

In the Kennedy administration's eyes, then, previous efforts to deal with this Soviet penchant for "brinkmanship" had simply not provided a lasting solution to this problem. The United States had repeatedly affirmed her determination to defend her vital interests, had probably always possessed a second-strike countervalue capability, and undoubtedly had one by the autumn of 1961. This "genuine" threat of countervalue retaliation, however, had only brought about temporary relief; the Soviets would retreat when they met strength, but would renew their advances once they detected signs of weakness among their
opponents.

As was seen in the previous chapter, the decisions on force levels for F. Y. 1963 were basically designed to create a more "genuine" threat - or rather one which was more "genuine" in Soviet eyes - in order to coerce the U.S. S.R. into adopting a more cautious foreign policy. The "hostage city" strategy was a complement to this blueprint for American nuclear superiority in two senses. On a rather crude level, it was intended to heighten the impression that the Kremlin's relative strategic power was rapidly declining. It emphasized, after all, that the American margin of superiority was so great that the United States could sustain a Russian surprise attack on its forces and could still both destroy any remaining enemy forces and inflict unacceptable damage on Soviet cities. Even more ominous than this explicit threat, though, was an implicit threat; if American strategic forces could do all this in a second strike, they might well be able to cripple Russia's strategic power in a first strike. 46

On a somewhat more sophisticated level, this strategy was also designed to demonstrate to Moscow that
the calculus upon which it had based its diplomatic forays was clearly becoming invalid. It seemed that "Sputnik diplomacy" was probably dependent upon a bluff, inasmuch as the Russian leaders were as worried at the prospect of a nuclear war as their American counterparts. Nevertheless, the Soviets felt that their opponents would hesitate to challenge this bluff as long as the United States could save neither herself nor her allies in such a war, and as long as they appeared more willing than the West to risk this catastrophe. The certainty of mutual extinction and uncertainty about the Kremlin's true intentions, therefore, tended to work in its favour.

The "hostage city" strategy, coupled with the growing American nuclear superiority, seemed to offer a means of reversing this process. By positing a situation in which the Russians would be under heavy pressure not to go beyond a purely counterforce attack, and by ensuring that such a limitation would inevitably favour the West, it would confront them with the possibility of actual defeat in a thermonuclear exchange. Moreover, whatever their assessment of the probable course of hostilities, they would have to take into account the possibility that faith in this
strategy would make the United States even more determined to resist them. Rather than being able to harness ambiguity and uncertainty for their own ends, they would then have to recognize that these elements were working against them. With this, Washington's deterrent against threats to its vital interests might be greatly strengthened.

Such a development, or the prospect of such a development, also promised to aid the Americans in dealing with a number of the most outstanding points of difference between themselves and their N.A.T.O. allies. It would appear, indeed, that their proclamation of the "hostage city" strategy was directed as much toward these allies as toward the Soviet Union.

Admittedly, one of the reasons why the United States sought to win over at least two of them, Britain and France, was the simple fact that their co-operation was probably indispensable if this strategy was to succeed. Although the nuclear power available to these two nations was small compared to that of the superpowers, it still had great potential for disrupting the delicate balance of restraint in a limited thermonuclear engagement; even a
few weapons directed at her cities, after all, might provoke the U.S.S.R. into a countervalue attack. With this in mind, McNamara emphasized at Athens and Ann Arbor that the strategy which he had just outlined could protect Western Europe as well as the United States. This common interest, he argued, also gave the allies a common interest in coordinating their targeting policies on the basis of this doctrine.

At the same time, the Americans also had a number of ulterior motives in seeking to gain acceptance for this strategy. While they were concerned about limiting a nuclear war, they were far more concerned about preventing its outbreak altogether. As was seen in the previous chapter, they feared that two main currents within the alliance might needlessly plunge them into such a cataclysm. The first, and most alarming, of these was the development of the French force de frappe. With an operational force impending, with France stridently committed to countervalue retaliation against even a conventional attack, and with the possibility that her nuclear enthusiasm might spread to Germany, it seemed increasingly imperative that the Americans establish a closer control over their wayward ally.
Granted, they had sought to achieve this by a variety of means in the past. They had tried to reassure her by resolutely opposing Soviet "Sputnik diplomacy" and by declaring their determination to aid the allies if they were attacked. They had proposed a multilateral N.A.T.O. force as an alternative to separate European forces. They had tried to impede the development of the force de frappe by refusing to give France classified information on nuclear weapons. All this, however, seemed to have availed them little by the end of 1961.

Their growing nuclear superiority offered a better hope for containing the tide of proliferation. Its influence on the French might be increased even farther, though, if it was presented in terms which struck directly at the rationale for their force. The "hostage city" strategy seemed well suited for this purpose; it offered reassurances for doubts about America's dependability as an ally, it pointed to the dubious utility of this force for either deterrence or defense, and by implication it even questioned the force's value as an international status symbol.
Having failed to convince the French of all this at Athens, the Americans resolved to try again. On the one hand, they arranged for Secretary of State Dean Rusk to go to Paris on June 19 in an effort to secure France's agreement to a co-ordinated targeting policy. On the other hand, they also arranged for Secretary McNamara to make his Ann Arbor speech only three days before this visit. Within this context, his speech was clearly intended to prepare the way for Rusk by publicly demonstrating the irrationality, and indeed perilousness, of France's adherence to an independent nuclear course. In this way, it was hoped Paris would be under maximum pressure to respond favourably to Rusk's _demarche_.

At the beginning of his address, the Secretary of Defense acknowledged:

It has been argued that the increasing vulnerability of the United States to nuclear attack makes us less willing as a partner in the defense of Europe and hence less effective in deterring such an attack. Nevertheless, he contended that the "hostage city" strategy invalidated this argument by providing the United States with a vehicle for winning a nuclear war, and hence
with a highly powerful deterrent.

In addition to this, and even more fundamental, he also sought to dispel the illusion that "independent national nuclear forces are sufficient to protect the nations of Europe." Thus, he asserted:

... relatively weak national nuclear forces with enemy cities as their targets are not likely to be sufficient to perform even the function of deterrence. Indeed, if a major antagonist came to believe there was a substantial likelihood of its being used independently, this force would be inviting a preemptive first strike against it. In the event of war, the use of such a force against the cities of a major nuclear power would be tantamount to suicide, whereas its employment against significant military targets would have a negligible effect on the outcome of the conflict. Meanwhile, the creation of a single additional national nuclear force encourages the proliferation of nuclear power with all its attendant dangers.

In short, limited nuclear capabilities, operating independently, are dangerous, expensive, prone to obsolescence, and lacking in credibility as a deterrent. Clearly, the United States nuclear contribution to the alliance is neither obsolete nor dispensable.

At the same time, the general strategy I have summarized magnifies the importance of unity of planning, concentration of executive authority, and central direction. 53

N.A.T.O.'s and France's - best hope for security, in other words, was still strict compliance with the American strategic
Parallel to this, the Kennedy administration was also using the "hostage city" strategy in an attempt to resolve a second problem, namely that conventional weakness which made a prolonged non-nuclear defense of Western Europe all but impossible. Under the shadow of the Berlin crisis, the Secretary of Defense made certain that the need for greater European non-nuclear forces was "a major subject of discussion" at the December, 1961 N.A.T.O. council of Ministers meeting.54

By the time of the Athens meeting and the Ann Arbor speech, his campaign had been given added impetus by a reassessment of Russian conventional strength which he had ordered and which was then underway.55 Up to then it had generally been assumed that the U.S.S.R. had approximately 175 divisions, a figure which made even the declared N.A. T.O. goal of 30 active and 30 reserve divisions seem inadequate. Naturally, the apparent hopelessness of the Western position in this sphere had long worked against the American case for meeting these goals. By the summer and autumn of 1962, though, the Department of Defense
studies had reduced this figure to between 50 and 60 divisions, with only 22 of these on the crucial central front. Although McNamara obviously could not have had such precise information at the time of his Ann Arbor speech, the very fact that he had commissioned this study, and his remark that a substantial increment in N.A.T.O. conventional strength was "well within alliance resources," indicated that he had very definite suspicions to this effect.  

Consequently, he emphasized to his N.A.T.O. colleagues that the estimate of 175 army divisions was probably wildly inaccurate, and pointed out that a conventional defense of Western Europe might indeed be possible if they would only live up to their original commitments. With this, he went on to argue, the deterrent to purely conventional attacks could be increased and the possibility of escalation from conventional to nuclear hostilities could be obviated. As was seen in the preceding chapter, such arguments involved the danger that the allies would take America's renewed passion for non-nuclear power as yet more proof of her faltering nuclear commitment. The "hostage city" strategy, however, seemed to provide an
answer to such fears. By stressing American strategic power and American determination to employ it if necessary, Washington hoped to at last unquestionably establish the credibility of its nuclear guarantee. After this had happened, it was hoped, the last obstacle to a conventional buildup would disappear.

Finally, this strategy was intended to blunt at least some domestic criticism of administration defense policy. The Air Force had become, if anything, even more vocal in its complaints by early 1962. On February 28 Le May had told a sympathetic Senate committee that the Administration's failure to develop the B-70 as a full weapons system and its refusal to add another 100 Minutemen to the programmed missile forces "might weaken the nation's strike power" to a dangerous degree. Alarmed by warnings such as these and aroused by the Executive's manifest lack of respect for its opinions, Congress was all too willing to respond to this service's pleas for support.

In the spring of 1962, indeed, it seemed that this body was bent upon a direct confrontation with the Administration, for the House Armed Services Committee had tripled
the appropriation for the B-70, renamed the RS-70, and
had emphatically directed that these funds be spent in
their entirety. Although this particular crisis was laid
to rest when Kennedy persuaded Chairman Vinson to withdraw
his committee's uncompromising directions, the potential
for further confrontations still remained. 60  Closely
linked to this, with congressional elections due to take
place in the autumn, the Republicans were both proclaiming
the need for greater military superiority and denouncing
the Democrats for their alleged failure to meet this
need. 61

In order to minimize Air Force criticism, ease
congressional apprehension, and strengthen its electoral
position, then, the Administration had to find a striking
symbol of its commitment to "nuclear superiority." The
"hostage city" strategy offered precisely such a symbol.
To the extent that it focused on the attrition of enemy
strategic forces, it bore a superficial resemblance to
counterforce doctrine. This resemblance, hopefully,
might convince Air Force champions of that doctrine that
their civilian superiors were beginning to accept the
logic of their position. While such reassurance could not
end their dissent on force levels, it might at any rate lessen vehemence of the dissent. Even if this did not happen, the proclamation of the "hostage city" strategy afforded the Administration a refutation of military and congressional charges that it was content with some form of "parity" with the U.S.S.R. or that it was "maginot-minded." Such charges, after all, might lose much of their weight if the government was apparently so confident about its nuclear strength that it could envisage the possibility of waging a purely counterforce conflict — and prevailing — even after an enemy surprise attack.

Thus, the rise of the "hostage city" strategy was the doctrinal counterpart to the F. Y. 1963 defense budget's provisions for American strategic superiority. Taken together they represented the Kennedy administration's growing determination to give substance to Eisenhower's definition of coercive deterrence, and indeed to improve upon it. While it was designed in part to lessen damage to the United States in a thermonuclear war, this was a relatively minor aspect of the strategy in the minds of both Kennedy and McNamara. Unlike some of the more en-
thusiastic civilian advocates of this strategy, and unlike members of the counterforce school, neither man really believed that such a strategy could enable his country to escape an intolerable degree of devastation in such a conflict. They did believe, though, that more barriers to such a catastrophe could be erected and that American political interests could be best protected if the United States enjoyed a position of nuclear strength. Having risen to this height in the summer of 1962, this policy was to meet its greatest test only a few months later with the coming of the Cuban missile crisis.

The tide of maximalism, which had advanced steadily between 1957 and 1962, began to ebb with equal rapidity in the winter of 1962-1963. In the realm of strategic objectives, this phenomenon was manifest in the decline of coercive deterrence and in the resurgence of countervalue doctrine as embodied in the "assured destruction" concept. In the realm of attitudes toward force planning, it took the form of a more cautious definition of the "greater than expected threat" and of a reversion to "adequacy" rather than "sufficiency beyond doubt" as a criterion for dealing with that threat.

To some extent, technical factors were responsible for this; as the decade progressed, American decision-makers became more firmly convinced that they probably could not limit damage to themselves appreciably in a thermonuclear war. As was the case with the rise of maximalism, however, diplomatic and political factors were at the heart of its decline. Most significant of these was the Soviet-American détente which followed the Cuban mis-
sile crisis and public revelation of the Sino-Soviet split. With this development, American decision-makers felt less and less need to provide against the possibility of a central war and increasingly came to recognize that such an action might fuel a destabilizing arms race. As a complement to this, the American people were gradually losing much of that "psychological vulnerability" which had been so troublesome, during the "missile gap" period. Having recognized that the Russian threat was formidable but finite, and having lost much of their instinctive yearning for "nuclear superiority," they were distinctly less susceptible to alarmist appeals than they had been a decade earlier. In the wake of these developments, the strategic climate of opinion in the late 1960's bore a strong resemblance to that of the last four years of the Eisenhower administration.

I. CHANGES IN THE CONTENT OF AMERICAN NUCLEAR STRATEGY

A. REPUDIATION OF THE "HOSTAGE CITY" STRATEGY

Not too surprisingly, the "hostage city" strategy was the first casualty in this changing climate.
In the December, 1962 Saturday Evening Post interview McNamara said of his Ann Arbor speech:

I think in some ways the press overplayed that part of the speech (which dealt with this strategy). I carefully qualified what I said, and I made it clear that this was only one of a series of options.

Such a statement, of course, hardly accorded with the actual content of this speech. It was nevertheless significant because it was the first concrete sign that the administration was coming to doubt the wisdom of its most recent strategic innovation.

Further evidence of this came when the Secretary of Defense presented his F. Y. 1964 posture statement a month later. Although he still stressed the desirability of a purely counterforce exchange, and although he stated that the United States was providing for such a contingency, he also conceded that there were formidable obstacles to its implementation. It was extremely unlikely, he argued, that the Soviets would restrain their rate of fire. Consequently, "in a second strike situation we would be attacking, for the most part, empty sites from which the missiles had already been fired," and Russian cities
would be the only appreciable targets remaining for American
strategic forces. Moreover, Soviet strategic doctrine
consistently rejected the possibility of restraint in tar-
getting:

In talking about global nuclear war, the Soviet
leaders always say that they would strike at the
entire complex of our military power including
government and production centers, meaning our
cities.

If they were to do so, we would, of course, have
no alternative but to retaliate in kind.

The logical conclusion implicit in these argu-
ments - that the safeguards against escalation into a
countervalue exchange were almost impossibly slender -
came increasingly to the fore in his succeeding posture
statements. Finally in his F. Y. 1968 statement he said:

If we were to strike after they struck us, the
question is what we would launch our missiles
against? I think all would agree that we would
launch against their cities. (Deleted.) They have
already launched all their missiles against us.

For all practical purposes, then, he had publicly re-
nounced the "hostage city" strategy. Thereafter, although
he occasionally found it politic to pay lip service to
this concept, he did so only in passing, and clearly
portrayed it as a minor option which would at best offer minimal returns.  

B. RETURN TO AN ESSENTUALLY COUNTERVALUE POLICY: THE ADVENT OF ASSURED DESTRUCTION

Underlying this development, and of most fundamental importance, the United States had virtually abandoned her flirtation with counterforce doctrine, and instead relied almost entirely on a countervalue strategy. In the jargon of the mid-1960's, this meant that American security rested essentially on an "assured destruction capability," a capability which McNamara best defined in early 1968:

Assured Destruction is the capability to inflict unacceptable damage on the U.S.S.R. calculated under conservative assumptions, even after a surprise Soviet first strike. We calculate our Assured Destruction potential in the unlikely scenario in which our forces are on a day-to-day alert and the Soviet forces are fully generated and in which the Soviets launch their whole alert I.C.B.M. and S.L.B.M. force in a surprise counterforce attack which catches all our I.C. B.M.s and non-alert bombers on the ground and all our S.S.B.N.s (missile-bearing submarines) which are not on patrol at their tenders. The surviving U. S. forces then are launched at Soviet cities.
According to Dr. Foster, this concept crystallized in the minds of American decision-makers in 1963, and it is highly likely that the Secretary of Defense had it in mind when he reminded the House Armed Services Committee:

In adding to a defense budget as large as the one we now have, we begin to encounter the law of diminishing returns, where each additional increment of resources applied produces a smaller increment of overall defense capability.

As a partial reflection of this spirit, the Department of Defense decided in November, 1964 to freeze American missile strength at 1000 Minutemen and 54 Tital IIs. The real turning point, however, came in early 1965, when McNamara publicly set forth the concept of assured destruction for the first time, and when he clearly treated damage limitation as a separate problem. As defined in his F. Y. 1966 posture statement, and in his subsequent ones, the former was a "first objective," while the latter was relegated to a definitely inferior status. Potential for damage limitation, which had only recently been considered an important component of deterrence, was now regarded as only a marginal hedge against the collapse of the countervalue deterrent.
In accordance with this new strategic perspective, the Americans placed less and less emphasis on the search for weapons which could limit the consequences of a Russian attack. What damage limiting capability they did develop tended to be a by-product of the necessity for guaranteeing the American second-strike countervalue capability. Thus M.I.R. V., the multiple warhead system once designed as a counterforce weapon, came to be regarded in the late 1960's as primarily a means of offsetting a possible Soviet A.B.M. system and only secondarily as a vehicle for damage limitation. Moreover, to the extent that it was directed against the Soviet Union rather than China, the limited Sentinel A.B.M. system which McNamara announced on September 17, 1967, and which Nixon renamed Safeguard nineteen months later, had taken on a similar character. Once seen as the possible salvation of American cities, ballistic missile defense (B.M.D.) now was regarded as simply a means of guarding against the accidental launching of a few Russian missiles and of affording added protection to the American assured destruction capability.
This essential reliance on the threat of counter-value retaliation, rather than some kind of damage limiting superiority, obviously represented a substantial return to the strategic policy of the latter Eisenhower years. The similarities, moreover, did not end here. As was seen earlier, the Kennedy administration, at least in its first two years, had inclined toward a rather broad definition of what constituted unacceptable damage to Soviet society; the consensus at that time was that this could not be established precisely and that it was best to err on the side of too high a level of destruction. By 1965, however, McNamara had embraced his predecessors' belief that the threat of widespread, but far from total, devastation represented an adequate deterrent. Moreover, this definition of "widespread devastation" also coincided in large measure with that of his predecessors; in 1965 he put it at one-quarter to one-third of Russia's population and two-thirds of her industrial capacity, while by 1968 he had reduced this estimate to between one-fifth and one-quarter of her population and one-half of her industry.¹³
C. **MORE CONSERVATIVE DEFINITION OF THE GREATER THAN EXPECTED THREAT**

Finally, attitudes toward force planning were also coming to resemble those prevailing in the latter Eisenhower years. In the first two years of the Kennedy administration there had been a tendency to plan rates of deployment, as well as research and development programs, in anticipation of a substantially greater than expected threat. Naturally enough, this cast of mind persisted in some measure throughout the rest of the decade; it was only prudent, after all, to allow for a margin of error in the uncertain business of providing against present and future strategic threats. At the same time there had been a distinct retreat from Kennedy's "sufficiency beyond doubt" by 1968.

This retreat was evident to some extent in the American reaction to Russia's acceleration of her I.C.B.M. deployments in the mid-1960's. Between 1963 and 1967 it was thought that she would not offer a serious challenge to American numerical superiority in I.C.B.M.s, and her slow rate of deployment seemed to bear out this prediction; she was believed to have just over 200 missiles in 1964,
approximately 200 in 1965, and only 340 in 1966.\textsuperscript{14} By this latter date, however, she had acquired the SS-11, a second-generation missile roughly comparable to the Minuteman, and this advance had apparently encouraged her to bring her strength up to 720 I.C.B.M.s in 1967.\textsuperscript{15} With this, and with a Soviet force of about 1000 I.C.B.M.s expected by late 1968, the United States was once again faced with the urgent problem of how far she could permit her adversary to overtake her before her retaliatory capability was endangered.\textsuperscript{16}

In the last situation of this kind, the "missile gap" of 1957-1961, Kennedy had rejected Eisenhower's policy of "adequacy" and had opted instead for a large and unquestionable margin of superiority. McNamara, after a brief hesitation, had concurred. Seven years later, however, the Secretary of Defense chose a course which would have been considered heretical in the Kennedy administration of 1961-1962. In defending his decision not to increase the presently programmed force of American I.C.B.M.s, he cited a statement by Donald Quarles, Eisenhower's Secretary of the Air Force in 1956, that:
So great is the destructive power of even a single weapon that these capabilities (to perform a given mission) can exist even if there is a wide disparity between the offensive or defensive strengths of the opposing forces . . . . It is crucially important that we maintain the level of strength constituting a 'mission capability.' It is neither necessary nor desirable in my judgment to maintain strength above that level.17

"Although the technology of strategic nuclear war had undergone dramatic changes since 1956," McNamara contended, "the general principle laid down by Secretary Quarles is as valid today as it was then."18 In saying this, he had in effect reaffirmed his predecessors' belief that it was not necessary to possess numerical superiority or even parity, in order to guarantee the American second-strike countervalue capability.

To add to this, a similar spirit was also manifest in Washington's approach to the qualitative aspect of the arms race. By early 1968, the growing sophistication of Russia's weaponry was, if anything, a greater concern to American decision-makers than the quantitative expansion of her strategic forces. In 1963 she had erected a defensive system around Leningrad which may have had some capability against ballistic missiles, and in 1964
she had begun to deploy a system resembling Nike-Zeus around Moscow. Crude as these beginnings may have been, the very deployment of these weapons, combined with the Soviets' continued expressions of enthusiasm for B.M.D., suggested the possibility that American retaliatory forces might ultimately have to contend with far more formidable Russian defenses. Moreover, the introduction of the SS-11 I.C.B.M. into the Kremlin's arsenal in 1965, and of the 25-megaton SS-9 in late 1967, also pointed to the possibility that its offensive weapons would also have a far greater counterforce capability in future.

With these developments in mind, McNamara said of the greater than expected threat:

As was the case last year, the most severe threat we must consider in planning our 'Assured Destruction' forces is a Soviet deployment of a substantial hard target kill capability in the form of highly accurate small I.C.B.M.s or M.I.R.V.ed large I.C.B.M.s, together with an extensive, effective A.B.M. defense. A large Soviet I.C.B.M. force with a substantial hard target kill capability might be able to destroy a large number of our MINUTEMAN missiles in their silos. An extensive, effective Soviet A.B.M. defense might then be able to intercept and destroy a large part of our residual missile warheads, including those carried by submarine launched missiles. In combination,
therefore, these two actions could conceivably seriously degrade our 'Assured Destruction' capability. \[21\]

The United States' vigorous research and development program, he continued, had afforded her a number of options for dealing with this threat; she could replace all of her Polaris S.L.B.M.s with M.I.R.V.ed Poseidon S.L.B.M.s, locate her land-based missiles in "superhard" silos, deploy A.B.M.s to protect these missiles, or construct a new and improved bomber. At the same time, however, he also told the House Armed Services Committee that these options should not be exploited as yet:

Again, may I remind you that all of these missile and bomber options are directly related to the combined Greater-Than-Expected Threat, and until we have some evidence that this threat is actually beginning to emerge, we need not and should not decide to deploy any of these systems. Instead, we should carefully time our actions on all of them in step with the development of the threat, keeping in mind the various development, production, and deployment leadtimes involved. \[22\]

Thus, American policy in this sphere had returned to the spirit of the latter Eisenhower years; research and development programs were still to be based on the assumption of a greater than expected threat, but actual deployments were to be geared to the threat as it actually materialized.
II. FACTORS WHICH BROUGHT ABOUT THIS CHANGE  

A. INCREASING DIFFICULTY IN ATTAINING A DAMAGE LIMITING CAPABILITY AND THE DANGERS OF RETURNING TO A POLICY OF "LAUNCH ON WARNING"

In a sense, this evolution in American nuclear strategy stemmed from current technical trends. Whereas it had seemed highly probable in the early 1960's that the Soviets could inflict unacceptable damage on the United States even in a second strike, this had become a certainty by 1968. The reason for this, of course, was the expansion and improvement of their I.C.B.M. forces, along with the addition of nuclear powered submarines and improved S.L.B.M.s to their navy. Naturally, as these forces were deployed, the task of limiting damage to the United States became proportionately more difficult. Consequently, by the latter part of the decade, the two superpowers had reached a stalemate in which, given the current state of military technology, each could maintain an assured destruction capability with relative ease while neither could gain an appreciable damage limiting capability.

It was possible, of course, that technological break-throughs might end this stalemate in future. By 1968
the United States was beginning to make substantial progress in the technology of multiple warheads, and it was predicted with a reasonable degree of confidence that the M.I.R.V. ed Minuteman III would have a C. E. P. of only-quarter of a mile.\textsuperscript{24} Given such accuracy, it might at last be possible to destroy hardened Soviet I.C.B.M. sites in a first strike. In addition to this, the weapons systems which made up the Sentinel A.B.M. system were far superior to the old Nike-Zeus, and indeed were superior to their Russian counterparts.\textsuperscript{25} If Sentinel was expanded substantially, then, it might conceivably be able to intercept a large number of surviving enemy I.C.B.M.s and S.L.B.M.s. In this manner, advances in offensive and defensive weaponry might open the way to something resembling a counterforce strategy.

It was at least equally possible, nevertheless, that this prospect would prove to be illusory, and that the United States would still suffer grievous losses in a thermonuclear war. Even M.I.R.V. ed I.C.B.M.s, after all, could not destroy Russian submarines at sea, and, as they still required thirty minutes to reach the U.S.S.R., it was entirely possible that a large percentage of the Soviet land based forces would be airborne by the time they
arrived. Moreover, despite substantial progress in A.B.M. technology over the last decade, this area was still beset with difficulties and uncertainties. Problems such as electronic blackout, decoy discrimination, radar vulnerability, and electronic jamming were still unresolved, or only partially resolved.\(^{26}\) A B. M. D. network, in addition would be dependant for its success upon the perfect functioning of all of the various radars, computers and missiles which comprised it. Unfortunately, the unprecedented complexity of such a network made it probable that at least one of these components would malfunction in a nuclear environment.\(^{27}\) Finally, it was well within the Soviet Union's capability to nullify American A.B.M. deployments by expanding her I.C.B.M. forces and by MIRVing those forces.\(^{28}\)

This latter consideration in turn raised an alarming possibility. With both sides disposing of sizeable forces of M.I.R.V.ed weapons, the repercussions could well go beyond mere negation of each other's defenses, for they would also possess a significant capability for destroying hardened missile sites. The situation would then come to
resemble that which had existed a decade earlier, when the land-based forces of the superpowers were dependent upon a policy of "launch on warning" for their survival, and when there was a concomitant danger of pre-emptive attack by one side or the other. Should this occur, the security of both sides would be undermined; they simply would have given up the relative stability ensured by mutually invulnerable strategic forces for the instability of mutually vulnerable ones.

B. THE SOVIET-AMERICAN DÉTENTE

To the extent that it pointed in any one direction, then, technical analysis seemed to indicate the futility, and perhaps even the perilousness, of a continued arms race. Political analysis led even more clearly to this same conclusion. With the growth of the Soviet-American détente, the Americans embarked upon a fundamental reassessment of the threat facing them. In consequence of this, they began to place more weight on the Soviet Union's desire to ensure her own security, rather than her desire for expanded political influence, as the primary determinant of her nuclear strategy. By the same token, they
also recognized that the danger of nuclear war had decreased significantly in the new diplomatic climate.

One of the most important factors in this analysis was the emergence of the Sino-Soviet conflict. The Americans had had some inklings of this rift for several months, a fact manifest in their hopes for Soviet agreement to the neutralization of Laos, but they did not fully accept its reality until the summer of 1962. By early 1963 McNamara, who had spoken of a monolithic "Sino-Soviet drive for world domination" only six months earlier, was sufficiently certain about this development to publicly state that "very distinct differences in tactics (between China and the U.S.S.R.) have become apparent." The Soviet Union, he contended, had more to lose in a nuclear war, and hence was the more cautious of the two. China, on the other hand, was "by far the more belligerent and the more reckless, and therefore, very dangerous to the peace of the world." Thus, in the eyes of the Secretary of Defense, and in the eyes of Kennedy, the Chinese were beginning to replace the Russians as the major threat to American security.
This line of reasoning also led to a re-examination of Khrushchev's motives for engaging in "Sputnik diplomacy." Having once believed that this policy was directed entirely against the West, the Americans now came to recognize the possibility that it had in a sense been directed against China. Confronted by growing Chinese impatience with Russian domination of the communist bloc, it could be argued, Khrushchev may have felt compelled to create at least the appearance of a dynamic and successful struggle against the West. Now that he had failed to contain Peking's challenge, it could also be argued, he would no longer have the same incentive for pursuing such a dangerous policy; indeed, he might well find it necessary to seek a rapprochment with the United States as a result of this new threat.

The strongest motive force underlying "the great turning," however, was the traumatic experience of the Cuban missile crisis. On the one hand, the Russians had clearly been faced with a stark choice between continuation of their policy of confrontation, with all its attendant perils, and adoption of a more moderate stance. Impressed by both American determination and American restraint in
this crisis, they seemed to be beginning to move in the latter direction in early 1963; the apprehended Soviet reprisals against Berlin had not materialized, and Khrushchev had displayed renewed interest in the possibility of a test ban treaty.  

Speaking at American University on June 10 of that year, Kennedy had both acknowledged this development and sought to advance it further. In a world menaced by thermonuclear weapons, he stated, the superpowers had a common interest in seeing to it that those weapons would never be fired. This community of interest made it imperative that they adhere to a fundamental rule:

Above all, while defending our own vital interests, nuclear powers must avert those confrontations which bring an adversary to the choice of either a humiliating defeat or a nuclear war.

This, of course, necessitated a change in the Soviets' attitudes; they must give up "Sputnik diplomacy." At the same time, the President emphasized that his own country must re-evaluate its position in the cold war:

But I also believe that we must re-examine our own attitude - as individuals and as a Nation - for our attitude is as essential as theirs.
Once this parallel process was definitely underway, the level of Soviet–American conflict might finally be contained with some certainty. "If we cannot end now all our differences," Kennedy said, "at least we can help make the world safe for diversity." 

The first fruit of this speech, and of the American demarches which followed it, was the partial test ban treaty signed in August. In part a genuine attempt to arrest the Soviet-American arms race, in part an attempt to embarrass the French and Chinese, this treaty was seen to be significant principally as a symbol of the superpowers' agreement on the importance of reducing tensions between themselves. In the warm glow of this thaw in their relations, Stewart Alsop observed that "... suddenly there is an official consensus, clearly reflected in public statements of the President and his chief lieutenants, that a war between Russia and the United States just isn't going to happen." Thus, the Americans had concluded that Khrushchev had at last accepted their determination to protect their vital interest, and had consequently given up hope in "Sputnik diplomacy;" as McNamara told Alsop, the cause of stability had been
advanced after the Cuban missile crisis because the Soviet premier now knew "that, if necessary, the tiger will bite." 43

After some hesititation, Washington also concluded that Khrushchev's successors shares this conviction, and that they would not risk a return to the diplomacy of confrontation even if their nuclear capabilities were expanded. Consequently, when the limited A.B.M. network was deployed around Moscow, and when what was briefly thought to be another A.B.M. system was deployed farther West, the problem was viewed almost entirely as a strategic one; there was no suggestion, at least by top civilian decision-makers, that this was a prelude to another series of Soviet diplomatic offensives. 44

Even more significant, in early 1968, when increases in Russia's naval strength in the Mediterranean might have been taken as foreshadowing of a new attempt to translate her strategic advances into diplomatic gains, McNamara explicitly denied any link between her activities in these two spheres:

Whereas Soviet developments in the area of strategic systems . . . give evidence of a continuing search for security through more advanced arms, ostensibly
military applications of power such as recently increased levels of Soviet naval activity appear to be primarily diplomatic gestures aimed at recouping political losses suffered as a result of Moscow's inability to forestall Israel's victory over the Arabs in June, 1967.  

Given this continued belief in the essential caution of Soviet policy, there was a proportionate decline in the perceived need for nuclear power beyond that required for a reasonably secure countervalue capability.

At the same time, the Cuban missile crisis was also a sharp reminder of the dangers of seeking too great a margin of superiority over the U.S.S.R. As was seen in an earlier chapter, Moscow had repeatedly warned the Americans against the rapidity with which they were expanding their nuclear forces in 1961. After Kennedy's March, 1962 Saturday Evening Post interview, in which he had indicated that his country might be the first to resort to nuclear weapons, Khrushchev seems to have become even more alarmed. During Salinger's visit to the U.S. S.R. in May of that year, he stated that he had ordered a special military alert after the publication of this interview, and warned that:

Not even Eisenhower or Dulles would have made the statement your President made. He now forces us to reappraise our position.
At first dismissed as essentially propaganda, or
as attempts to trick the United States into a premature
slowdown in her strategic expansion, these warnings took
on a new significance after the Soviets attempted to
deploy missiles in Cuba.

Such a desperate action, the Americans concluded,
could not be explained simply in terms of the Soviet
Union's desire to expand her influence. Instead, it seemed
in large measure an attempt by her to offset an apprehended
threat to her deterrent forces. As a result of this
analysis, they became more firmly convinced than ever that
the Kremlin could, and would, react against any attempt
by the United States to build up a significant damage
limiting capability. In addition to this, they also began
to give more attention to the possibility that they, as
well as their opponents, were responsible for the perpetua-
tion of the arms race. Finally, and closely related to
both of these conclusions, they were also coming to place
more and more emphasis on the possibility that the risks
inherent in an unrestricted arms race outweighed any
possible gains, particularly in an era of subsiding diplo-
matic conflict.
The chastening effect of all this was evident to some extent in December, 1962, when Kennedy spoke to an interviewer about the differences between wanting to be President and actually being President:

I would say that the problems are more difficult than I had imagined them to be. The responsibilities placed on the United States are greater than I imagined them to be, and there are greater limitations on our ability to bring about a favorable result than I had imagined them to be. 49

A month later, in his F. Y. 1963 posture statement, McNamara gave a more explicit and comprehensive exposition on the changed strategic perspective which was beginning to emerge within the administration:

As the events of last October have so forcefully demonstrated, the expanding arsenals of nuclear weapons on both sides of the Iron Curtain have created an extremely dangerous situation, not only for their possessors but also for the entire world. As the arms race continues and the weapons multiply and become more swift and deadly, the possibility of a global catastrophe, either by miscalculation or design, becomes even more real.

More armaments, whether offensive or defensive, cannot solve this dilemma. We are approaching an era when it will become increasingly improbable that either side could destroy a sufficiently large portion of the other's strategic nuclear force, either by surprise or otherwise, to preclude a devastating retaliatory blow. This may result
in mutual deterrence, but it is still a grim prospect. It underscores the need for a renewed effort to find some way, if not to eliminate these deadly weapons completely, then at least to slow down or halt their further accumulation, and to create institutional arrangements which would reduce the need for either side to resort to their immediate use in moments of acute international tension.  

The most immediate necessity, the Americans recognized, was for the Soviets to abandon their reliance on strategic weapons which could only be used in a first strike. Consequently, in his *Saturday Evening Post* interview, and in his succeeding posture statements, he in effect encouraged them to deploy hardened weapons by stressing that he considered such deployments inevitable and by acknowledging that he even considered them desirable.  

A more complex problem developed as the Soviets began to rapidly expand their missile forces in the mid-1960's. In a sense, this expansion was a reaction to their precarious strategic position at the beginning of the decade. One of the reasons why they had rejected the idea of a limited nuclear war was the simple fact that they did not have the forces required for such a protracted
conflict; Khrushchev had a strong desire to divert funds to the consumer sector, and he was in effect operating on a strategic shoestring, relying solely on a relatively small countervalue capability for deterrence.  

Such a minimalist posture, of course, had some similarity to that initially adopted by Eisenhower. Just as Eisenhower had come under increasing domestic criticism for this policy, however, so did Krushchev. Furthermore, the nature of this criticism was similar in both cases; the leadership must take into account the possibility of an enemy surprise attack, it must not remain content with "adequacy," but must seek "superiority," and it must devote more attention to the problem of limiting damage to the homeland if the deterrent broke down. Finally, to complete the parallel, there was in both cases a substantial increase in nuclear power following a change in the political leadership.

The ultimate purpose of this expansion, however, was less clear; the Russians might be making a bid for a counterforce capability, or they might simply be seeking a second-strike countervalue capability. While maintain-
ing deployment schedules and research and development pro-
grams sufficient to provide the option of offsetting the
former threat if it emerged, the Americans concluded that
the latter was more probable. As McNamara told the House
Armed Services Committee:

The Soviet leaders clearly wish to achieve a
military posture which will give them capabilities
more closely in balance with our own, and the
growth of our own capabilities over the last
several years has no doubt been a factor in their
budgetary decisions.\footnote{54}

Given this conviction, Washington was inclined to place
more emphasis on conciliation, and less on the chimera of
superiority, in their strategy.

Aware of the possibility that their earlier
decisions had aparked the current Soviet buildup, yet
also seeking to warn the Kremlin to keep this buildup
within acceptable bounds, the Americans, and particularly
McNamara, advanced the "action-reaction" hypothesis in
their public statements. Stressing, as it did, the crucial
role of uncertainty about the opponent's future capabili-
ties in one's own force planning, it was in large measure
an oversimplified and misleading explanation of American
nuclear strategy from 1961 to 1963. It was, however, a useful tool for setting out Washington's views on the most appropriate guidelines for the superpowers' respective strategies, for it focused on the need for mutual strategic restraint to parallel their increased diplomatic restraint.

In keeping with this strategic perspective, the Americans were inclined to seek a reduced margin of superiority, one which was less likely to heighten Moscow's perception of threat. Similarly, they contented themselves with deployment of a limited A.B.M. system, rather than the far more extensive Nike-X system, so that the Soviets would not fear that their deterrent was being impaired. Finally, and as a logical complement to this, they also sought Russian agreement to a freeze on both the numbers and characteristics of the weapons at the superpowers' disposal. Beginning with President Johnson's message of January 21, 1964, this policy eventually led to the initiation in 1969 of the strategic arms limitation talks, and to a partial agreement three years later.

Needless to say, the growth of this political and strategic détente also had a vital impact on America's
relations with her N.A.T.O allies. The "hostage city" doctrine, her most ambitious attempt to reshape these relations, soon proved to be either a failure or a disruptive influence; the Germans saw it as evidence of her unwillingness to risk all-out nuclear war, the British denounced it as an attempt to drive them from the nuclear club, the French refused to co-ordinate their targeting policy, and all resisted further increases in their non-nuclear force quotas. Happily, the lessening of Soviet-American tensions more than compensated for this setback. After the United States had unquestionably demonstrated her firmness of purpose in the Cuban missile crisis, and after it became clear that Moscow was not likely to risk another confrontation in Western Europe, the debate over the credibility of the American nuclear guarantee largely subsided. By the same token, the problems of non-nuclear defense and of a possible catalytic war became less acute as the Soviet threat receded. Thus, Washington's N.A.T.O. commitments became less and less a source of pressure for going beyond an essentially countervalue strategy.
Finally, domestic pressures for military superiority decreased as the decade wore on. For the people of the United States, as for their leaders, the Cuban missile crisis had been a moment of truth. As Schlesinger observed:

... The American people, so many of whom had been in a frenzy about air raid shelters a year before, so many of whom still longed for total solutions, went through the Cuba week without panic or hysteria, with few cries of 'better red than dead' and fewer demands (until the crisis was safely over) for 'total victory.'

Their receptiveness to previous appeals for "nuclear superiority" had stemmed to a great degree from fear of the unknown: from fear of their sudden vulnerability, from uncertainty about their own strength of purpose in such unprecedented circumstances, and from apprehension about how the Soviets would conduct themselves now that they had thermonuclear weapons. Cuba lessened these doubts, if it did not eradicate them entirely. More than any other cold war crisis, it indicated that the United States could protect her vital interests while avoiding a nuclear catastrophe if she mixed firmness with restraint. With each succeeding year, this awareness, coupled with
a belief in the reality of the Soviet-American détente, became more firmly embedded in the national consciousness.

The extent of this evolution was clearly manifest in the 1964 presidential elections. In many ways, Senator Goldwater's candidacy served to crystallize opinion in much the same manner that the Gaither Report had crystallized it in the late 1950's. The consequences wrought by these two catalysts, however, were markedly different. The latter's emphasis on the need for a more maximalist nuclear posture came at a time when the launching of Sputnik, the more aggressive turn taken by Russian diplomacy, and the psychological unpreparedness of the American people had paved the way for a favourable public response. In 1964, however, Goldwater's maximalism was clearly out of joint with the times.

He warned that the United States was relying on missiles, rather than bombers, to a dangerous degree, yet there were no signs that this reliance had decreased the credibility of the American deterrent in Russia's eyes; indeed, her increased caution pointed to precisely the
opposite conclusion. He argued that the United States had acquiesced all too readily in a policy of "stalemate" and that the central reality of the cold war was:

Against the communist strategy as it is being pushed today, there can be no middle alternative between a policy aimed at victory or one that would permit defeat.\(^2\)

In actual fact, most Americans were even more firmly convinced than ever that their country must pursue precisely the middle course which he had rejected. By the very extremity of his arguments, then, he actually reinforced the public's belief in the improbability of thermonuclear war and in the necessity for restraint in the thermonuclear age. This factor in turn heightened President Johnson's appeal for moderation, and contributed to his landslide victory over the Republican challenger.

Moreover, while the nuclear question was apparently resolved, a number of other issues were beginning to take on far more urgency. The conflict in Vietnam, which had seemed to be a relatively minor "brushfire war" at the beginning of the decade, was viewed as the nation's most pressing military, and indeed moral, problem by 1968.
Concern with poverty, racial discrimination, and a general deterioration in the quality of American life expanded rapidly as urban violence and campus unrest dramatized the gravity of these problems. As a result of all this, public interest in the question of nuclear strategy declined markedly and, indeed, a growing number of Americans were actually beginning to argue that the resources devoted to maintaining a large margin of strategic superiority could be better spent in curing the country's domestic ills. 63

Thus, while some vestiges of maximalism still coloured American public opinion in 1968, it did not have the same appeal that it had had eight years earlier. In 1960 John F. Kennedy's charges of a "missile gap" had yielded him a significant political advantage. In 1968 Richard Nixon had sought to repeat this success by attacking the Democrats for supposedly risking a strategic "security gap." His charges attracted little, if any, public attention, and were at most a minor factor in the success of his campaign for the Presidency. 64
CONCLUSION

In summary, American nuclear strategy had progressed from neo-minimalism in the mid-1950's to a more maximalist position by the end of the decade; the concepts of a second-strike capability and a greater than expected threat had been incorporated into the calculus of force planning, and coercive deterrence had been accepted on the level of at least declaratory policy. This development gathered momentum in 1961 and 1962, when the reluctant Eisenhower had been replaced by the more aggressive Kennedy and McNamara. During this period the Americans sought, not merely to preserve their countervalue capability and to contain the expansion of Soviet influence, but to attain a degree of nuclear superiority which would coerce the Russians into acceptance of a more lasting accommodation with the West. In effect, the Kennedy administration sought to defeat Khrushchev at his own game, that is to say at "Sputnik diplomacy." This policy, and indeed the Cold War itself, reached a climax with the onset of the Cuban missile crisis. In the aftermath of this crisis, the need for such a policy became less and less pressing, while the perils of continuing to pursue it became increasingly apparent.
The result was a return by 1968 to a posture reminiscent of that adopted by Eisenhower at the end of the 1950's.

To a great extent, this cyclical process was a vindication of the much maligned Eisenhower. Portrayed by many writers as a bumbling, ineffectual leader who never really understood the problems of the thermonuclear age, he was in fact far from incompetent. His skepticism about warnings of impending bomber and missile "gaps" and his preference for gearing deployments to the actual emergence of the threat was supported by much of the intelligence available at the time and was ultimately justified when neither gap occurred. Moreover, having made adequate provision for the safety of the American countervalue capability, Eisenhower was also able to stem the tide of "Sputnik diplomacy" in Berlin and other areas vital to the United States. Such a record, combined with his inclination to avoid increments in the defense budget unless there was a clear strategic need for them, was highly praiseworthy.

The verdict on Kennedy and McNamara, however, must be more tentative. Kennedy was clearly more aggressive
in his strategic and foreign policies than most of his biographers have been willing to admit. Eisenhower had tended to stress the limits on his ability to influence the world, and also tended to assume that things would eventually work out by themselves. In contrast to this, Kennedy had stressed the possibility of exerting such influence and the dangers of failing to do so. His policies were consequently more activist than those of his predecessor, involving increased risks and expenditures, but also the possibility of increased rewards.

McNamara's character was similar in many ways, though more complex. He was not the weak and self-seeking organization man portrayed by Stone nor was he the vacillating technocrat portrayed by Roherty. At the same time, he was neither a simple-minded minimalist, as Le May argued, nor the near-genius seen by Kaufmann. A strong and dynamic rationalizer, McNamara recognized the crucial role of political, as well as technical analysis. After a somewhat uncertain beginning, and despite some continuing reservations on his part, he was led by this analysis to adopt much of Kennedy's position on negotiation from strength and to make every effort to translate this into policy.
Whether or not this policy was a wise one is unclear, for judgment must depend in the final analysis on speculation about the course of the Cold War had Eisenhower's policies been continued. On the one hand, it may be argued that signs of a détente were evident toward the end of his administration and that the Kennedy-McNamara approach actually impeded its development by heightening the Soviet perception of threat. On the other hand, it may also be argued that evidence of Khrushchev's desire for peace with the West was accompanied by even stronger evidence of his desire for diplomatic victories and by his tendency to exploit any Western weakness to this end. The logical conclusion of this latter contention, of course, is that there could never have been a lasting détente under these conditions. If this interpretation is correct, as on the balance of probabilities it seems to be, the Kennedy - McNamara policies, for all their perils, were an essential first step for a long-term settlement with the U.S.S.R.

Important as the wisdom of the policy preferences of the various decision-makers may be, however, the question of the relative importance of idiosyncratic factors them-
selves is even more significant. Clearly, individual differences between decision-makers had some importance; American nuclear strategy in the early 1960's bore the stamp of Kennedy and McNamara just as strategy in the 1950's bore that of Eisenhower. At the same time, these variables were probably the least influential of the four outlined in the introduction. As was seen in the discussion of the bomber and missile "gaps," Eisenhower was forced to deploy strategic weapons at a faster rate than he himself would have preferred, due to a combination of technological, external, and particularly societal, pressures. Granted that Kennedy and McNamara seemed to exert more influence, it must also be remembered that their personal preferences were in greater harmony with those of the society in which they lived. The role of these preferences as an independent factor was consequently more restricted than it seemed at first sight.

Of greater significance than idiosyncratic factors, technological ones had set definite limits on the range of options open to American decision-makers. Thus, given the stakes involved, it was inconceivable that any of them would even have considered unilaterally divesting the United States of her nuclear arsenal; indeed, it appeared virtually
inevitable that a second-strike countervalue capability should be the minimum objective pursued by them. At the other extreme, initiation of nuclear war for any but the most vital purposes was almost equally inconceivable, for it was a technological certainty that both sides would suffer unprecedented, and probably mortal, devastation in a nuclear war. This fact led even counterforce advocates to recognize that deterrence must be the overriding objective of modern strategic forces. When this has been said, however, there were a number of questions which technology could not answer. It could not determine, for example, the level of destruction which the enemy might find unacceptable. Similarly, as was seen in the evolution of coercive deterrence, technology could not determine whether the enormous expenditures involved in attaining a damage limiting capability of sorts were justified. 4

External factors were clearly of vital importance in this regard, for the level of justifiable expenditure seemed largely proportionate to the level of international tension. Thus, during the late 1950's and early 1960's when the Soviets were bent on a dangerous policy of "brink-
manship" and when American vital interests seemed to be in imminent danger, there were heavy pressures for a large second-strike countervalue force, and indeed for a damage limiting capability. Even then, though, the risk did not seem sufficiently great that the United States should exert a maximum effort to secure a strategic advantage over her adversary; war still seemed possible, but not probable. With the decrease in tensions in the mid-1960's, the reasons for seeking such an advantage became less and less compelling, and the dangers of doing so became more obvious.

Finally, societal factors also played a significant, if rarely recognized, role. Although society as a whole may have known little about nuclear strategy, certain general predispositions were crystallized by the analysis of military men, civilian theorists, and politicians. These attitudes were brought to bear in Congress, though the power of that body to shape strategy was extremely limited. More significantly, the decision-makers themselves often shared the convictions of their countrymen. Thus, Kennedy, and to a lesser extent McNamara, joined in the traditional American inclination toward "superiority." In addition to
this, the politician's knowledge that he was ultimately accountable to the electorate also ensured that the public's wishes would be taken into account. Of greatest importance, however, was the fact that the state of public opinion was a vital component of the deterrent. If, as was the case of the "missile gap," the public was uncertain about the adequacy of American strategic power, then the credibility of the threat to launch those forces was impaired. If, on the other hand, the public was more confident, it was possible to accept some alteration in the strategic balance without materially diminishing the strength of the deterrent.

American nuclear strategy between 1954 and 1968, then, consisted essentially of responses to a series of evolving stimuli. Of these stimuli, the personalities of the men presiding over the policy process were least influential, while the technological context within which they operated was far more so. Most crucial of all, however, were the international and domestic environments, for they defined the political interests to be protected and the political threats to be met. As such, they provided the fundamental measures by which strategic options must of necessity be judged.
NOTES TO INTRODUCTION

1. Attempts have been made to distinguish strategic thermonuclear weapons from tactical ones on the basis of range and payload, but neither of these criteria is entirely satisfactory. Strategic thermonuclear weapons may best be defined as those which may be directed against the homeland of either of the superpowers. On this, see Glenn H. Snyder, Deterrence and Defense: Toward a Theory of National Security, Princeton, New Jersey, Princeton University Press, 1961, p. 143.


4. This point is based on Harkabi, op cit, p. 26.

5. Quantitative superiority may be defined as superiority in numbers; qualitative superiority refers to superiority in operational characteristics of weapons systems.
6. This definition is based on Urs Schwarz and Laszlo Hadik, *Strategic Terminology*, Düsseldorf, Econ-Verlag, 1966, p. 93.


8. An excellent exposition on this concept may be found in George W. Rathjens, "The Dynamics of the Arms Race," *Scientific American*, vol. 220, no. 4 (April 1969), pp. 19-20, and *passim*.

9. On this distinction, see Schwarz and Hadik, *op cit*, p. 88.

10. See pp. 4 - 5 of this thesis.


NOTES TO CHAPTER I


2. The development of the atomic bomb has often been viewed as the decisive event in this regard. In actual fact, this weapon was seen as a significant,
but hardly revolutionary, enhancement of existing air-
power. A far-reaching reassessment came about only with
the development of the hydrogen bomb. On this, see Gar
Alperovitz, Atomic Diplomacy: Hiroshima and Potsdam,
New York, Simon and Schuster, 1965, Michael Howard,
"The Classical Strategists," in Problems of Modern
Strategy, Part I, Adelphi Papers, no. 54 (February, 1969),
pp. 19 - 21, Walter Millis, ed., The Forrestal Diaries,
New York, The Viking Press, 1951, pp. 350 - 351,
505, 514; Andre Fontaine, History of the Cold War,
vol. I, From the October Revolution to the Korean War,
Books, 1970 (copyright 1968), p. 286, and Bell, op cit,
pp. 140 - 143, 152 - 154.

3. On this, see William W. Kaufmann, "The Requirements of
Deterrence," in William W. Kaufmann, ed., Military
Policy and National Security, Princeton, New Jersey,
Princeton University Press, 1956, pp. 12 - 13, and

4. John Foster Dulles, "Challenge and Response in United
States Policy," Foreign Affairs, vol. 36, no. 1
(October, 1957), pp. 25 - 43.

5. T. F. Walkowicz, "Strategic Concepts for the Nuclear
Age," The Annals of the American Academy of Political
and Social Science: Air Power and National Security,
vol. 299 (May, 1955), p. 118, and Richard Leghorn,
"No Need to Bomb Cities to Win War," U. S. News and

6. Leghorn, op cit, p. 80

7. Roger Hilsman, "Strategic Doctrines for Nuclear War," in Kaufman, Military Policy and National Security,
pp. 48 - 49.

8. J. David Singer, Deterrence, Arms Control, and Disarma-


28. Naturally, the precise leadtime will vary from weapons system to weapons system. The average time for a strategic weapon is seven or eight years.


44. York, op cit, p. 94.

45. A concise discussion of the implications of this problem may be found in House Appropriations: Hearings for F. Y. 1961, pp. 385-387.


62. Erskine, op cit, p. 484.


NOTES TO CHAPTER II


8. Le May, *op cit*, p. 133. Admittedly, this passage was written in 1968, but White's allusion to a "Fortress America" concept and Le May's membership in the counterforce school make it reasonable to conclude that such an argument was being advanced at this time.


10. The counterforce school envisaged the possibility of tactical nuclear war, it is true, but its emphasis on the need for strategic power indicated its recognition, both of the need for a counterforce capability to discourage further escalation, and to provide for the eminent probability that it would be necessary to go beyond this level of violence.


13. Although White, Le May, and Twining indicated that a counterforce strategy involved a pre-emptive attack, explicit public admissions to this effect were generally made briefly and in passing. *Ibid*, pp. 281-282, Twining, *op cit*, pp. 91-92, and Le May, *op cit*, p. 83. Pre-emption, however, was inherent in their strategy; Soviet strategic forces obviously could not be destroyed once they had become airborne.


33. A more optimistic view of the problem may be found in Kahn, *op cit*, pp. 21-23, 84-93, 110-113. A critique of some of Kahn's views may be found in Melman, *op cit*, pp. 34-37.


40. This was the conclusion of Dr. Herbert York, a member of the P. S. A. C. at the time. Dr. Kistiakowski apparently shared this belief. *A.B.M. Hearings for F. Y. 1969*, pp. 76, 82.


42. Twining, *op cit*, pp. 91-93, 139, 244.


44. *Ibid*, pp. 423, 468, 481.


47. Ibid, pp. 89, 91, 97, 368-369.


49. Ibid, pp. 217, 225, 268-269, 336, 622. The U-2 incident heightened Eisenhower's perception of threat from the U.S.S.R., it was true; he noted that after May, 1960 the attitude of the Kremlin was "reminiscent of the days of Stalin," and his last State of the Union Message reflected increased apprehension over the possibility of a surprise attack now that the main source of information on Soviet strategic forces had disappeared. Ibid, pp. 547, 551, 558, 560, "President Warns of Missile Threat," New York Times, January 17, 1961, p. 14, and "President's Budget Message Reproduced Photographically from Official Document," New York Times, January 17, 1961, p. 16. At the same time, he pointed out that work on the successor for the U-2, the Samos reconnaissance satellite, was going well and that there were no new political provocations such as another Berlin crisis. Eisenhower, op cit, vol. II, pp. 552, 557. Consequently, his convictions on nuclear strategy remained unchanged.


58. An outstanding exception in this regard was Senator Stuart Symington, an ex-Secretary of the Air Force who subsequently studied, and approved of, the arguments for a damage limiting posture put forward by Herman Kahn. United States. Congress. Senate. Committee on Armed Services, *Military Procurement Authorization, Fiscal Year 1962*, Hearings before the Committee on Armed Services, United States Senate, on Department of Defense Programs and Authorization of Appropriations for Procurement of Aircraft, Missiles, and Naval Vessels by the Armed Forces, 87th Congress, 1st Session, p. 391. Cited hereafter as *Senate Posture Hearings for F. Y. 1962*.


NOTES TO CHAPTER III

1. On these concepts, see Bell, op cit, pp. 5-7, 22-25, 68, 69, 210-211, 222, 226.

2. Hilsman, op cit, pp. 55.


5. Kennedy, op cit, p. 34.

7. Ibid, p. 36.


10. Ibid, p. 41.


12. Ibid, p. 35.


17. Schlesinger, op cit, pp. 210-212.


22. Sorensen, op cit, pp. 228.


27. Ibid, p. 282. Schlesinger does not give a specific account of Kennedy's reaction to this incident. The President's failure to take exception to Rostow's reply and his assumptions about Soviet intentions, however, indicate that the views of his assistant coincided in large measure with his own views.


30. Loc cit.


NOTES TO CHAPTER IV


2. Sorensen has contended that Kennedy was never adequately briefed on the "missile gap" during the 1960 presidential election, and that he would not have been so vociferous in his criticism had he known the truth. Sorensen, *op cit*, pp. 612-613. This account, however, is not entirely accurate; as Trewhitt pointed out, he was in fact fully briefed on the National Intelligence Estimates (N.I.E.) by an intelligence officer during the campaign. Trewhitt, *op cit*, p. 6. As was seen above, his desire to exploit this issue prevented him from fully accepting this reassurance. More important, however, was the fact that the Air Force publicly disagreed with the N.I.E., and a lingering suspicion that the administration had made only a partial disclosure of all the relevant data. *House Appropriations for F. Y. 1961*, pp. 134, 235, and Sorensen, *op cit*, p. 612.


4. Schlesinger, *op cit*, p. 296. Schlesinger did not specify these "methods and sources." One possibility was Colonel


23. Ibid, pp. 1095, 1158.


26. This discussion is based on House Posture Hearings for F. Y. 1962, p. 1245, and Budget Message of March 28, 1961, p. 11.


34. *Ibid*, pp. 8-11, 16.


41. Loc cit. See also Schlesinger, op cit, pp. 297-298.


43. Ibid, p. 1283.

44. Senate Posture Hearings for F. Y. 1962, p. 93.


46. Ibid, pp. 2, 4.

47. Schlesinger, op cit, p. 286.


49. Ibid, p. 4.

NOTES TO CHAPTER V

1. This paragraph is based on Sorensen, op cit, p. 613.


18. Schlesinger, op cit, pp. 461-462. McNamara was to put forward such analysis publicly the following year. United States, Congress, House of Representatives. Committee Armed Services, Hearings on Military Posture and H. R. 2440, To Authorize Appropriations Fiscal Year 1964 for Procurement, Research, Development, Test, and Evaluation Aircraft, Missiles, and Naval Vessels Armed Forces, and Other


27. Sorensen, op cit. p. 609.


34. House Posture Hearings for F. Y. 1963, p. 1185, and


37. "'Obsolete' Bombers Found Necessary in Missile Age," p. 2


42. Salinger, op cit, p. 186.


49. Salinger, op cit, pp. 198-199.

50. Schlesinger, op cit, p. 373.


52. Ibid, p. 516

53. Senate Posture Hearings for F. Y. 1963, p. 64.


55. Sorensen, op cit, pp. 567, 570, 573.

56. Schlesinger, op cit, p. 782.


59. Admittedly, Kennedy administration officials did not explain their policy in precisely this manner, but their emphasis on the role of conventional forces in reinforcing the American deterrent conforms to this line of reasoning. On this, see Schlesinger, *op cit.*, pp. 329, 379, Kaufmann, *The McNamara Strategy*, pp. 12, 67,72.


68. See p. 112.

69. Senate Posture Hearings for F. Y. 1964, p. 79.


71. Sorensen, op cit, p. 416.


75. For an exposition on the role of the "military-industrial complex," see Stone, op cit, pp.6-8.


77. The following exchange, which took place in the Senate in early 1963, was a particularly clear illustration of
the administration's attitude toward this problem:

Senator Smith. Never before in the memories of Americans have we considered ourselves less than superior, or at least potentially superior, to any other power in the world. The stalemate concept (apparently the thesis that both sides would be destroyed in a thermonuclear war) negates this.

It seems to me that the stalemate doctrine can have serious long-term effects on our national will, our courage and our determination to resist attacks on our way of life. Do you have any concern on this potential aspect and how would you propose to prevent such deteriorating results?

Secretary McNamara. The question you pose goes straight to the fabric of U.S. national will and determination. We shall strive to maintain, under all circumstances, the military capability to reinforce the traditional confidence of American citizen to which you refer . . .

Senate Posture Hearings for F. Y. 1964, p. 89.

NOTES TO CHAPTER VI


2. Walkowicz, op cit, and Leghorn, op cit.


4. Loc cit.


7. One outstanding exception, of course, was Kahn, whose basic premise was that "if proper preparations have been made, it would be possible for us or the Soviets to cope with all the effects of a thermonuclear war, in the sense of saving most people and restoring something close to the prewar standard of living in a relatively short time." Kahn, *op cit*, p. 71.

8. Hitch became Comptroller in the Department of Defense, while Enthoven became Deputy Assistant Secretary for Systems Analysis.


10. See p. 123.


16. Loc cit.

17. Loc cit.


21. Cf. Thomas C. Schelling's statement that "deterrence often depends on relinquishing the initiative to the other side . . . ." Schelling, Arms and Influence, p.45.

22. See p. 120.

23. McNamara, "Defense Arrangements of the North Atlantic Community," p. 67. See also ibid, p. 68.


27. See pp. 129-132.


31. Sorensen, op cit, p. 615.


34. Sorensen, op cit, p. 685.


36. Robert Kennedy, op cit, p. 136. Leonard Beaton has explained the contradiction between the strategic philosophy underlying this statement and that outlined
at Ann Arbor by arguing that whereas the latter might be perfectly appropriate for wartime, the latter was far better suited for deterrence. Leonard Beaton, "The Western Alliance and the McNamara Doctrine," Adelphi Papers, no. 11, August 1964, p. 2. Such an explanation, however, ignores the previous tendency to link deterrence and the hostage city strategy, while it also fails to account for the failure of the Americans to consider this strategy even as a contingency measure.

37. Schlesinger, op cit, p. 463.


40. Loc cit.


42. Hilsman, op cit, pp. 195, 201.


45. "McNamara Warns Soviet to Beware of Limited Wars," p. 46. See also Hilsman, op cit, pp. 135, 140, 420-424.
46. Admittedly, there is evidence in support of a different interpretation. According to Trewhitt, a former aide of McNamara said:

The Ann Arbor speech was an aberration. Bob still wasn't thinking for himself. He was listening to his Whiz Kids and accepting too much what they said at face value. In any case, he should have known there could be no such thing as primary retaliation against military targets after an enemy attack. If you're going to shoot at missiles, you're talking about first strike.

Trewhitt, op cit, p. 115. For Trewhitt, and apparently for the aide, whoever he may have been, this ambiguity was evidence of McNamara's intellectual confusion. Such a conclusion, however, ignores the crucial difference between actual and declaratory policy. Moreover, it also neglects the vital role which a degree of ambiguity may play in enhancing the deterrent. An enemy need not always be certain of retaliation; it may only be necessary that he not be certain that he can escape such retaliation.


49. Schlesinger, op cit, pp. 776-782.


52. McNamara, "Defense Arrangements of the North Atlantic Community," p. 66.

53. Ibid, pp. 67-68.

54. Senate Posture Hearings for F. Y. 1963, p. 36.

55. Trewhitt, op cit. pp. 170-171, Kaufmann, The McNamara


60. Sorensen, op cit, pp. 347-348.

NOTES TO CHAPTER VII


4. United States. Congress. Senate, Committee on Armed Services and Subcommittee on Department of Defense of the Committee on Appropriations, Military Procurement Authorizations for Fiscal Year 1968, Hearings before the Committee on Armed Services and the Subcommittee on Department of Defense of the Committee on Appropriations, United States Senate, 90th Congress, 1st Session, on S. 666, A Bill to Authorize Appropriations During Fiscal Year 1968 for Procurement of Aircraft, Missiles, Naval Vessels, and Tracked Combat Vehicles and Research, Development, Test, and Evaluation for the Armed Forces, and for Other Purposes, 90th Congress 1st Session, p. 236. Cited hereafter as Senate Posture Hearings for F. Y. 1968.


28. It should be remembered that the point being made at this stage is not that the Soviets would take such action, but that they possessed the physical capacity to do so.

29. On the implications of this, see pp. 44-45, and Frank

30. Indeed, even counterforce advocates were forced to take the increased difficulties involved in "winning" the arms race into account, a fact manifest in a marked decrease in their enthusiasm. See in particular *Status of U. S. Strategic Power*, pp. 32-33, 218-223, 365, 376.


35. The phrase is Schlesinger's. Schlesinger, *op cit*, p. 749.


40. Ibid, p. 4.


43. Loc cit.


46. See, pp. 145-146.


56. It must be remembered, however, that even in the mid-1960's the Americans were still bent on maintaining some degree of superiority, a fact which was obscured at times by the shift from quantitative to qualitative competition in delivery vehicles.

decision-maker, that a full system should not be deployed.


60. Schlesinger, op cit, p. 768.


62. One of the most striking examples of this trend was the hearings held in 1969 by the Subcommittee on International Organization and Disarmament Affairs of the Senate Foreign Relations Committee on the problems involved in B.M.D.


NOTES TO CONCLUSION

1. See, for example, Schlesinger, op cit, pp. 286-296; and Kaufmann, The McNamara Strategy, pp. 39-40.


4. This, it may be suggested, is one of the most fundamental weaknesses in Ralph Lapp's contention that:

   Somewhere along this road to destruction (the accelerating arms race), man lost his way and let his steps he guided by the compass of technology. Whenever a new weapon possibility beckoned, society meekly moved in this direction, without questioning the consequences.

BIBLIOGRAPHY

I. PRIMARY SOURCES

A. GOVERNMENT DOCUMENTS


United States. Congress. House of Representatives. Committee on Armed Services, Military Posture Briefings, Hearings before the Committee on Armed Services, House of Representatives, 87th Congress, 1st Session

United States. Congress. House of Representatives, Committee on Armed Services, H.R.6151, To Authorize Appropriations for Aircraft, Missiles, and Naval Vessels for the Armed Forces, and for Other Purposes, 87th Congress, 1st Session.

United States. Congress. Senate. Committee on Armed Services, Hearings before the Committee on Armed Services, United States Senate, 87th Congress, 1st Session, on Department of Defense Programs and Authorization of Appropriations for Procurement of Aircraft, Missiles, and Naval Vessels by the Armed Forces, 87th Congress, 1st Session.

United States. Congress. House of Representatives, Hearings on Military Posture and H.R.9751, To Authorize Appropriations During Fiscal Year 1963 for Aircraft, Missiles, and Naval Vessels for the Armed Forces, and
United States. Congress. Senate. Committee on Armed Services, Military Procurement Authorization, Fiscal Year 1963, Hearings before the Committee on Armed Services, United States Senate, 87th Congress, 2nd Session, on Department of Defense Programs and Authorization of Appropriations for Procurement of Aircraft, Missiles, and Naval Vessels by the Armed Forces, 87th Congress, 2nd Session.


United States. Congress. Senate. Committee on Armed Services, Department of Defense Appropriations, 1965, Hearings before the Subcommittee on Department of Defense of the Committee on Armed Services, United States Senate, 88th Congress, 2nd Session, on H.R.10939 Making Appropriations for the Department of Defense
for the Fiscal Year Ending June 30, 1965, and for Other Purposes, 88th Congress, 2nd Session.


United States. Congress. Senate. Committee on Armed Services and Subcommittee on Department of Defense of the Committee on Appropriations, Military Procurement Authorization, Fiscal Year 1966, Hearings before the Committee on Armed Services and the Subcommittee on Department of Defense of the Committee on Appropriations, United States Senate, 87th Congress, 1st Session, on S. 800, Department of Defense Programs and Authorization of Appropriations During Fiscal Year 1966 for Procurement, Research, Development, Test, and Evaluation of Aircraft, Missiles, and Naval Vessels for the Armed Forces, 87th Congress, 1st Session.


United States. Congress. Senate. Committee on Armed Services and Subcommittee on Department of Defense of the Committee on Appropriations, Military Procurement Authorizations for Fiscal Year 1967, Hearings before the Committee on Armed Services and the Subcommittee on Department of Defense of the Committee on Appropriations, United States Senate, 89th Congress, 2nd Session, on S. 2950, Department of Defense Programs and

United States. Congress. House of Representatives. Committee on Armed Services, Hearings on Military Posture and a Bill (H.R.9240) to Authorize Appropriations During the Fiscal Year 1968 for Procurement of Aircraft, Missiles, Naval Vessels, and Tracked Combat Vehicles, and Research, Development, Test, and Evaluation for the Armed Forces, and for Other Purposes before the Committee on Armed Services, House of Representatives, 90th Congress, 1st Session.

United States. Congress. Senate. Committee on Armed Services and Subcommittee on Department of Defense of the Committee on Appropriations, Military Procurement Authorizations for Fiscal Year 1968, Hearings before the Committee on Armed Services and the Subcommittee on Department of Defense of the Committee on Appropriations, United States Senate, 90th Congress, 1st Session, on S.666, A Bill to Authorize Appropriations During the Fiscal Year 1968 for Procurement of Aircraft, Missiles, Naval Vessels, and Tracked Combat Vehicles and Research, Development, Test, and Evaluation for the Armed Forces, and for Other Purposes, 90th Congress, 1st Session.


United States. Congress. House of Representatives. Committee on Armed Services, Hearings on Military Posture and an Act (S.3293), To Authorize Appropriations during the Fiscal Year 1969 for Procurement of Aircraft, Missiles, Naval Vessels, and Tracked Combat Vehicles, Research, Development, Test, and Evaluation for the Armed Forces and to Prescribe the Authorized Personnel
Strength of the Selected Reserve of Each Reserve Component of the Armed Forces, and for Other Purposes before the Committee on Armed Services, House of Representatives, 90th Congress, 2nd Session.

United States. Congress. Senate, Committee on Armed Services, Authorization for Military Procurement, Research, and Development, Fiscal Year 1969, and Reserve Strength, Hearings before the Committee on Armed Services, United States Senate, 90th Congress, 2nd Session, on S.3293, A Bill to Authorize Appropriations During the Fiscal Year 1969 for Procurement of Aircraft, Missiles, Naval Vessels, and Tracked Combat Vehicles, Research, Development, Test and Evaluation for the Armed Forces, and to Prescribe the Authorized Personnel Strength of the Selected Reserve of Each Reserve Component of the Armed Forces, and for Other Purposes, 90th Congress, 2nd Session.

United States. Congress. Senate. Preparedness Investigating Subcommittee of the Committee on Armed Services, Status of U. S. Strategic Power, Hearings before the Preparedness Investigating Subcommittee of the Committee on Armed Services, United States Senate, 90th Congress, 2nd Session.


B. BOOKS


C. ARTICLES


D. **NEW YORK TIMES REPORTS**

For the sake of brevity, only the most significant reports will be cited.


"Le May Disputes Quarles Theory," September 1, 1956, p. 7.


"Excerpts from Khrushchev's Address on Arms Policy" July 9, 1961, p. 2.


"McNamara Warns Soviet to Beware of Limited Wars, February 18, 1962, p. 46.

"Excerpts from Premier Khrushchev's Address at Peace Congress in Moscow," July 11, 1962, p. 4.


"Nixon Links Rival to 'Security Gap'," November 2, 1968.

II. SECONDARY SOURCES

A. BOOKS


Schwarz, Urs, American Strategy: A New Perspective, Garden City, New York, Doubleday and Company Inc., 1966,

------------------------- and Laszlo Hadik, Strategic Terminology, Dusseldorf, Econ-Verlag, 1966.

Singer, J. David, Deterrence, Arms Control and Disarmament, Ohio State University Press, 1962.


B. ARTICLES AND PAMPHLETS


Schelling, Thomas C., "Controlled Response and Strategic Warfare," Adelphi Papers, no. 19 (June 1965).


C. **NEW YORK TIMES REPORTS**

"Samos Satellite Fails First Test," October 16, 1960, p. 27.


"Photo Vehicle Shot into Orbit," February 1, 1961, p. 17.

"Chronology of Two-Year Dispute on 'Missile Gap'," February 9, 1961, p. 4.


"Shelter Program," August 6, 1961, section IV, p. 5.


"Huge Bombs Limit Shelters' Value," November 1, 1961, p. 16.


