



Secretary of Defense



Director of Central Intelligence

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The Secretary of Defense
Room 3E880, The Pentagon

US and Soviet Strategic Forces

Joint Net Assessment

Executive Version

Strategic

WARNING: The material in this document is sensitive. Distribution of this Assessment should be strictly limited to those officials who require access to the subject matter for the performance of their duties.

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PREFACE

This first joint net assessment by the Secretary of Defense and the Director of Central Intelligence analyzes factors central to understanding the significance of the Soviet and US strategic postures. Emphasis is on displaying trends and key asymmetries in US and Soviet forces, perspectives, operational concepts, and capabilities. This assessment, although incomplete, is intended to serve as a prototype for future efforts and to identify areas for additional study and intelligence collection.

To a large extent, any net assessment is the result of review and synthesis of many diverse analyses of a broad subject area. In this assessment we discuss the serious deficiencies in our traditional analyses of the strategic balance. These analyses limit our perspective and cause distortions in our views of the strategic balance. If current work on improved methods is successful, future assessments will include more informed judgments. However, that research is not likely to bear fruit for at least several more years, and no amount of modeling and gaming can ever fully substitute for what we hope will continue to be a lack of operational experience in nuclear warfare.

A more detailed assessment is given in a separate supporting volume.

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CONTENTS

	<i>Page</i>
PREFACE	iii
KEY JUDGMENTS	1
I. INTRODUCTION	5
Problems With Traditional US Analyses.....	5
Structure of This Assessment.....	6
II. MAJOR FINDINGS.....	6
The Soviet Assessment of the Balance.....	6
Adverse Trends for the United States in Most Areas.....	8
Some Positive Trends Now and for the Future.....	9
If Deterrence Fails, How Well Do US Forces Do?	11
Crisis.....	11
Conventional Phase of a Global War.....	12
Theater Nuclear War and Limited Nuclear War.....	13
Large-Scale Nuclear Strikes.....	15
Extended Strategic Nuclear Operations.....	17
III. CONCLUSIONS AND JUDGMENTS	20
How Adequate Is the Balance?	21
How Much Do US Programs Help?.....	22
Arms Control Aspects.....	23
What are the Characteristics of Strategies for Competing More Effectively With the Soviets?.....	24
ANNEX: Some Key Trends and Asymmetries.....	29

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KEY JUDGMENTS

The strategic nuclear balance is probably adequate to deter a direct nuclear attack on the United States or a major attack on Europe. The Soviets, in our view, have some clear advantages today, and these advantages are projected to continue, although differences may narrow somewhat in the next 10 years. It is likely, however, that the Soviets do not see their advantage as being as great as we would assess. Moreover, even in our assessments the Soviet advantages, while significant, do not appear to be great enough for us to be concerned that we no longer have the capability to deter large-scale nuclear war. Clearly we still do. The uncertainties in all this still would make it unattractive for the Soviets to escalate to such a level of warfare; they could not expect with high confidence to prevail. We are greatly concerned, however, about the effects of strategic nuclear imbalances on the behavior of the two sides in crises and lesser conflict situations.

The United States structured its major alliances during the period of US superiority in strategic nuclear forces. When our decisions were made in the early and mid-1960s to settle for parity, the concept of parity was seen by some as a good thing of itself. The full consequences of strategic parity for the overall military balance with the Soviets, for our position throughout the world, and for the cohesion of US alliances over the longer run have not yet been fully realized.

One consequence is that the range of Soviet actions we can deter has undoubtedly narrowed. The shift in the strategic balance over the last 15 to 20 years has made the Soviets more willing to try to coerce the Europeans and to try to split them from the United States. This policy is paying off; there has been an edging of many Europeans toward a position of neutrality, coincident with the buildup of Soviet strategic forces and of other Soviet forces focused directly against Europe. The Soviets have also been willing to exploit soft spots in the Third World more aggressively.

There is a heightened possibility that the Soviets might challenge some US interventions in crises, particularly those involving actions against a friendly or client state in the Third World. A major crisis, analogous to the Cuban missile crisis, in which we are forced to back down much as the Soviets did in 1962, would produce a massive shift in the perceptions of US strength relative to that of the Soviet Union in the eyes of the US public and of other nations.

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If deterrence fails to one degree or another, the adequacy of the strategic balance would vary during the possible phases that might precede, constitute, and follow initial large-scale nuclear strikes:

- During a crisis, and in conflict prior to large-scale nuclear strikes, the US relative strategic position would probably improve over the peacetime situation with the generation of the full US bomber and ballistic missile submarine forces, and the deployment of our attack submarines, which are capable of attriting a large part of the Soviet SSBN force.

Although we believe the Soviets are closer to achieving their goals than we are to achieving ours, the Soviets would evaluate their own prospects more pessimistically, and would lack confidence in being able to succeed. They are highly concerned about:

- The capabilities of US antisubmarine warfare (ASW) against their submarines.

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- The effects of new US programs on overall US capabilities.
- Their ability to degrade US command, control, and communications sufficiently to prevent a large-scale, well-coordinated retaliation.
- Their own ability to maintain continuity of command and control throughout key phases of a conflict.

How Much Do US Programs Help?

Renewed US efforts over the past several years will slow the erosion in the relative US position. However, it will take a long time, and a persistent effort, to redress our deficiencies. Although US investment will be substantial over the next decade, Soviet investment will also be considerable, will be more comprehensive, and will build on 20 years of previous investment. Our changes in policy and planning are as important as the increased investments.

The Soviets already show signs of being worried about our turnaround, which signals greater American seriousness about competing in the strategic force arena than has been evident for many years. The Soviets must fear that we will follow with the introduction of new technologies that would render the entire Soviet strategic posture much less effective. The President's speech of 23 March 1983 proposing US defenses against ballistic missiles has probably increased Soviet concerns.

From the Soviet perspective, the best way to avert these dangers is to try to prevent the United States from carrying through with our programs, using domestic opposition in the United States and Western Europe, diplomacy, and the arms control process. Eroding the credibility of US nuclear strength by any and all means, including arms control agreements and the negotiating process, is a central Soviet strategic aim; they made great progress in the 1970s. The Soviets have pursued a dual-track approach to arms control: seeking agreements which halt or slow US strategic force deployments, while continuing an across-the-board buildup and modernization of forces not limited by agreements.

Strategies for Competing More Effectively With the Soviets

The military programs the United States is now pursuing have a more competitive character than any since the mid-1960s. A more effective competitive strategy might include the following elements:

Complicating Soviet Military Problems: Evolving strategic offensive and defensive postures, which are so diversified as to pose

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difficult problems of attack to the Soviets—postures strengthened by more emphasis on survival, wartime endurance, and robust C³I.

Leveraging Our Lead in Technology: Selectively exploiting our lead in technology to introduce qualitatively superior new US weapons systems, which could render obsolete large portions of the capital stock of weapons in the Soviet arsenal and cause them to react in ways costly to them but not to us (for example, air defense). We could also strengthen deterrence by playing on Soviet fears about our technical prowess. It may be better to allow the technological competition in defensive systems to proceed, rather than try to stop it, in the dubious belief (not shared by the Soviets and rejected by the President in his strategic defense initiative) that active defenses are bad per se.

Altering the Thrust of US Arms Control Initiatives: Much more limited agreements, more readily verified, may be more feasible than the comprehensive kind that we have been seeking (for example, more like the atmospheric nuclear test ban rather than SALT or START). In this case, arms control could partially constrain the Soviet Union, but there would be no illusion that an agreement is a panacea for the strategic competition—the illusion that attended SALT I and SALT II. To be successful we would have to change the public perception of arms control as the solution to our strategic force problems, to one of arms control as an adjunct to our strategy for competing with the Soviets

Reassessing the Role of Allies: The largest unsolved problem created by the growth of Soviet nuclear power is a new strategy for the defense of Europe. We have sought a cheap defense based on the threat of nuclear escalation, but the growth in Soviet strength has eroded the basis for such a strategy. There are several alternatives for improving the defense of Europe, including a change in the willingness of the Europeans to invest in their own security, a greater role for the British and French nuclear forces in the defense of Europe, and a conscious exploitation of instabilities in Eastern Europe.

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1. INTRODUCTION

Problems With Traditional US Analyses

1. Among the many weaknesses of traditional major US strategic nuclear force analyses, three illustrate the limitations: the limited scope of scenarios; the simplifying assumptions used in mathematical calculations; and, until recently, the limited consideration of specific Soviet approaches to assessment of the military balance.

2. *Limited Scenarios.* Much effort has been expended in constructing models of intercontinental nuclear force interactions. However, the spectrum of scenarios has been narrow, with concentration primarily on what was perceived to be the most stressful, if least likely, cases (for example, "bolt-from-the-blue" surprise attacks on the homelands). A scenario that is more likely, and that poses a different set of difficult problems, would be a crisis or theater war that led to, or threatened to lead to, strategic nuclear conflict, in which strategic forces could be partially "out of position" and in which some had been diverted from the strategic nuclear mission or attrited during the theater war.

3. The use of strategic nuclear forces in theater warfare, or as a lever for escalation control, has been treated infrequently. Similarly, there has been little examination and planning for reconstitution of remaining forces following major nuclear strikes. Thus, for example, there has been much attention given to Emergency Action Messages for execution of the Single Integrated Operations Plan (SIOP) in the event of surprise attack, but little to command and control of military operations after SIOP execution. After the signing of the Antiballistic Missile (ABM) Treaty, we were no longer concerned about our strategic defenses and we did not make preparations for being able to recover from a major nuclear strike.

4. *Simplifications.* Important operational factors attendant to nuclear conflict were either ignored or handled with assumptions to fit the state of the art in computer simulation and mathematical representation of a single, all-out nuclear engagement. The norm has been to model stylized exchanges that measure destruction (for example, expected blast damage) for

offensive weapons against fixed targets. Even the highly detailed and complex simulations used to measure the strategic balance, while in many cases technically excellent, incorporate almost no considerations of the sequence of actions over time, and few operational factors. For example:

— Only recently are the effects of the loss of command, control, communications and intelligence (C³I) being considered—although warning, attack assessment, and communications connectivity are essential elements of a nuclear war. (For example, we have tended to assume adequate US communications in our depictions of the results of nuclear attacks, although the Soviets are known to emphasize attacks on C³ in order to degrade or prevent US force execution.)

— Operations-related factors such as mobility and deception have not received enough attention—although this too is being corrected. (For example, we tended to ignore the mobility of Soviet general purpose forces. We implicitly equated destroying the fixed installations with destroying the forces, although acknowledging that this would not be the case once they deployed to the field.)

— Analyses have generally failed to consider the ability to reconstitute forces after a nuclear strike. The impacts of casualties and damage on mission accomplishment over time have not been well considered.

5. *Mirror Imaging the Opposition.* Even though the focus has been on deterrence, there has been limited attention given in our analyses to the factors that the Soviets would regard as most important. An implicit assumption has been that Soviet assessments are similar to our own. Soviet methods of structuring and analyzing the problem have not generally been used.

— Soviet measures of effectiveness and criteria for success are different, stressing specific military operational objectives and the ability to control events so as to achieve objectives within a predetermined time schedule.

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— Soviet concepts of war, the scenarios they envision, and the roles and missions of their forces have not been captured in our analyses, even though we do know some things about them. We have tended to focus on strategic forces in isolation and ignored combined-arms effects, assumed symmetric force employment, not considered strategic consequences of theater nuclear forces, failed to fully consider the asymmetry of defensive forces, and ignored the prospects for Soviet reconstitution.

Structure of This Assessment

6. Because we lacked the ability to analyze the outcomes of crises and nuclear military campaigns in a comprehensive manner, past assessments focused on trends and asymmetries in key static indexes of force postures. In this assessment we address implications of these trends and asymmetries for possible conflict outcomes—whether they are likely to be favorable, adverse, or constant. This approach provides richer insights into the balance than can be obtained from static force comparisons.

7. This net assessment directly addresses (albeit incompletely) for the first time questions that are central to the effectiveness of US deterrence—Soviet assessments of the strategic balance, and relative capabilities of the two sides to deal with the eventualities of failed deterrence. It compares the potential operational effectiveness of the US and Soviet postures, examines the capabilities the Soviets regard as significant, and explores a range of conflict situations.

II. MAJOR FINDINGS

10. This net assessment differs from traditional US analyses of the strategic force balance by considering specifically the Soviet assessment, by comparing the potential operational capabilities of US and Soviet weapons and force postures, and by examining the influence on the balance of a range of conflict situations. The extensive analysis of comparative trends and asymmetries developed for each of these subjects is briefly summarized in the annex and is detailed in a separate supporting volume. In this chapter, we report the principal findings, which provide the basis for the observations presented in chapter III.

The Soviet Assessment of the Balance

11. Whether the US strategic posture is successful in deterring a wide variety of Soviet actions depends on Soviet assessments of the balance

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especially important vis-a-vis Europe, in light of the historical dependence of NATO on the US nuclear guarantee and the threat of nuclear escalation.

12. Most important are the basic differences between Soviet and US strategic thought. Soviet thinking has been more consistently Clausewitzian. It is clear that Soviet leaders strongly want to avoid a large-scale nuclear war because of concern for its destructiveness and because of their special concerns about the potential in such a situation for losing control over their people and client states. But the Soviet view recognizes that such a war might nevertheless happen, perhaps despite the interests of the belligerents themselves. Wars, it is felt, usually do not proceed according to peacetime plans, and there is always the danger of uncontrollable escalation from a crisis or theater conflict.

13. On the one hand, this concern has made Soviet leaders especially wary of direct involvement in regional conflicts, especially if in opposition to the United States. (This wariness may be less evident in the future. See chapter III, page 21.) At the same time, it has led them to invest heavily in capabilities intended to provide the USSR with a comparative advantage were the contingency actually to occur. This approach emphatically extends to massive nuclear war

14. These measures are reinforced by the Soviet outlook on nuclear deterrence, which apparently holds that the possessor of a strong, preferably dominant, nuclear posture can thereby exert an influence on others without having to use it. Adversaries might be deterred from acting in response to Soviet regional moves for fear that, if escalation to nuclear war occurred, the outcome would be very disadvantageous for them and not equally bad for the Soviet Union. Having such a strong nuclear posture is seen to be

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Conversely, the United States, at least since the mid-1960s, has viewed the likelihood of nuclear war as sufficiently low, and the consequences so unthinkable, that a similar degree of comprehensive planning was deemed unnecessary and much less emphasis was placed on being able to prosecute such a war if it actually did occur.

Adverse Trends for the United States in Most Areas

17. These fundamental differences between US and Soviet strategic thought are reflected in the asymmetric force postures of the two sides. Because the Soviets regard nuclear war as a continuing possibility, and have rejected mutual vulnerability as a desirable or permanent basis for the US-Soviet strategic relationship, they seek superior capabilities to fight and win a nuclear war with the United States and have been working to improve their chances of prevailing in such a conflict. Until recently, in US major force structure and budget considerations the United States has measured adequacy in terms of the capability of US strategic forces to survive an initial Soviet strike with enough weapons to be capable of inflicting extensive damage on Soviet society in retaliation.¹ A major factor influencing US strategic programs was the limitation on overall defense spending in the 1970s. Overall, the United States has concentrated its effort on a comprehensive development of offensive forces and, to a lesser extent, C².

¹ It is important that we draw a distinction between US declaratory policy—the policy criteria for procurement in the public debate—and the US targeting policy that is reflected in SIOP plans. In the past, actual targeting plans provided for considerably more emphasis on counterforce and countermilitary strikes than the public debate would indicate was the case. During much of the 1960s and 1970s the criteria used for force planning and programming, as well as the US declaratory policy, emphasized retaliation against urban-industrial targets, but US targeting policy, as reflected in SIOP plans, allocated most weapons to military targets. Present declaratory and targeting policies now more closely correspond and are intended to maximize deterrence by focusing attacks against those targets and functions that the Soviets see as most essential for carrying out their war plans.

18. As a result, trends in the static measures of the balance of forces have been generally adverse to the United States for the past decade, including forces on which the United States focused its attention—strategic offense. The Soviet Union gained rough parity in offensive forces, by most static measures except total deployed warheads, in the mid-1970s. Since then, both sides have steadily increased the number of deployed warheads; we still have a small lead in this measure, but overall Soviet capabilities have improved relatively more than our own.

19. The adverse trends in offensive forces have been aggravated by unfavorable trends in active defenses; this disparity has been reinforced by the developing differences in the targets that each side would attack to implement its nuclear strategy.

On the other hand, improved Soviet offensive capabilities face a set of fixed US targets that remain vulnerable.

20. The Soviet Union has been improving its active defenses, increasing the number of facilities that the United States would target, and improving the hardness of several target classes. There are a large number of movable elements associated with Soviet strategic forces and forces for conventional power projection that would not be in fixed facilities at the time of any US intercontinental nuclear attack. We have developed neither technical capabilities nor operational concepts for attacking such targets. We slowed the development of improved penetration aids for overcoming ballistic missile defenses, and allowed weapons kill potential to grow only modestly.

21. For 10 years it has been US policy not to field viable air and missile defenses, while the Soviet Union steadily improved its air and missile defenses. The investment differential over the past decade has been on the order of 10 to 1 in favor of the Soviets. Building extensive US strategic air defenses to counter what was largely an obsolescent Soviet bomber force did not

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seem worthwhile as long as we refrained from having ABM defenses and the Soviet Union relied primarily on ballistic missiles. We built and then abandoned an ABM system to defend ICBMs. The Soviets are now conducting a major modernization of their ABM system around Moscow, still limited in capability, but putting them in a better position to expand to a nationwide ballistic missile defense. They are also conducting a major modernization of their air defenses, including the introduction of an airborne warning and control system (AWACS) aircraft and new interceptor aircraft and SA-10s, systems with greatly improved technical capabilities against low-altitude penetrators.

22. We have taken some steps to improve the survivability of our offensive forces, including the hardening of ICBM silos when Minuteman III was deployed, and increasing the operating area for nuclear-powered ballistic missile submarines (SSBNs) as long-range C-4 submarine-launched ballistic missiles (SLBMs) were deployed. We are once again trying to establish a viable civil defense by preparing evacuation plans for millions of civilians in high-threat areas, but our passive defenses for military and industrial facilities are insignificant and earlier US population shelter programs have been allowed to decay.

23. US strategic C³ systems were designed primarily to provide tactical warning and to execute the SIOP, essentially a massive retaliation in response to a massive attack. The overall C³ system is not capable of surviving a Soviet nuclear attack to the extent that it would be adequate to support the National Command Authority in an extended nuclear war, and its survivability and connectivity for executing the initial retaliatory strike is problematic. Likewise, protection of the NCA itself is not adequate to provide high assurance of the survival of this function. Steps are being taken to improve C³ and to increase NCA survivability.

25. New US active air and ballistic missile defense initiatives still do not match the Soviet level of effort. We have some technology on the shelf, such as advanced concepts for ABMs, and systems operational in small numbers—AWACS and F-15s—that have technology superior to the best Soviet technology. But the United States, as the result of a conscious policy, is deficient in numbers of deployed systems and lags the USSR in the breadth and pace of active defense R&D programs. The new Soviet bombers and a variety of cruise missiles will present a growing challenge to the thin US air defense network, even as it is modernized with new radars and interceptors.

26. Future trends depend on current US efforts to rebuild, the pace of Soviet investment in all four categories of strategic forces, and the arms control frameworks that may be negotiated. Unless arms control agreements radically alter the existing force structures, the relative trends in static force measures overall will remain adverse throughout the 1980s, and into at least the early 1990s, even if the current US strategic offensive modernization program is fully implemented. There will, however, be movement in specific measures in a direction favorable to the United States.

Some Positive Trends Now and for the Future

27. The trends in static measures we have discussed up to this point do not adequately capture some positive developments in the US posture that might be achieved by the end of this decade.

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28. Beginning in the mid-to-late 1970s, a long process began that is having some positive effects. This is partly the result of new US programs and more resources, especially in recent years. But most of all it comes from a new appreciation by US leaders of the Soviet strategic threat and from an evolutionary change in US strategy. These changes led to an alteration in targeting policy with more emphasis on counterforce broadly conceived, more emphasis on attack on Soviet command and control (including both military and civilian leadership), and an increased emphasis on enduring capabilities for US forces and command and control beyond the initial strikes.

29. These efforts reflect, with a considerable lag, a US strategy based on a more accurate appreciation of Soviet military thinking and concerns. In effect, there is some convergence of Soviet and US views as to what is important and which dimensions of strategic power need attention. However, the long period of great asymmetry in the objectives of the two sides and other restraints on US strategic force improvements have left a legacy of an inferior US nuclear posture, inadequate to carry out our present strategy, and it will take a long time to redress US deficiencies.

30. We believe that the following positive developments are of special significance to any consideration of the strategic balance over the next decade:

- We are spending large sums for C³I and NCA survivability, which should soon enhance US command and control survivability for an initial retaliatory salvo and begin to provide endurance past an initial large-scale nuclear strike. These substantial improvements will increase Soviet uncertainties about their capability to disrupt US retaliatory strikes; this should make preemptive strikes less attractive, thus strengthening crisis stability. These improvements, however, will probably still not match previous and ongoing Soviet investments in forces and infrastructure for maintaining continuity of force command and control in nuclear conflict extending beyond initial large-scale intercontinental strikes.

- The numbers of US ballistic missile hard-target-kill-capable warheads will increase in the next decade. Also, the US threat to Soviet silos will grow with the introduction of several thousand air-launched cruise missiles (ALCMs) on US

bombers. This is a worry to the Soviets, who depend so heavily on their silo-based ICBM force for carrying out strategic missions. They are spending considerable effort to field mobile ICBMs. (s)

- The President's advocacy of the desirability of defense, survival, and damage limiting in a nuclear war could lead to radical change in the US strategic posture before the end of the century, and perhaps shift the strategic balance significantly. The President's initiative on defense against Soviet ICBMs is not likely to affect deployments in the 1980s, although some concepts being proposed might be made operational by the early 1990s, if given high priority. But the Soviets are conscious of the impressive US technical achievements of the past, and they must be very concerned for the balance in the 1990s, if we mobilize our formidable technological skills to develop systems such as directed-energy weapons. Recent Soviet overtures to halt antisatellite (ASAT) systems development and testing are indicative of these concerns.

- Despite two decades of massive Soviet investment in homeland air defenses, US bomber forces are judged still able to penetrate Soviet defenses using low-altitude tactics, defense suppression, and defense avoidance; likewise a coordinated US ballistic missile attack could still readily saturate the treaty-limited Moscow ABM system. In this sense, the huge Soviet effort to deploy far-less-than-perfect defenses can be judged a net gain so far for the United States. To the extent that Soviet investment of the 1970s can be converted in the 1980s into a qualitative upgrade of its numerically large air defenses, our older B-52 bombers will suffer in their ability to penetrate. However, the B1-B, ALCM, advanced technology (Stealth) bomber and Stealth ALCM have the potential to render obsolescent billions of rubles of Soviet investment, and to force further Soviet expenditures on defenses rather than on systems that might be more threatening to the United States.

- The Soviets remain particularly sensitive to the US threat to their SSBN force, as evidenced by the large investment they have made to try to defend their submarines in bastions close to the

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Soviet homeland. The Soviets could lose many of their SSBNs during the conventional phase of a conflict, if the United States chose to mount a strategic antisubmarine warfare (ASW) campaign. US ASW programs, part of a Navy effort to combat Soviet submarines in general, have provided the added benefit of threatening Soviet strategic submarines in particular.

The US technical lead is narrowing, but US investments and superior operational capabilities continue to give us a significant advantage at sea. Recent statements by Navy leadership about US ASW programs should play on Soviet sensitivities and increase their uncertainties about the security of their SSBN force; again deterrence should be strengthened.

- Conversely, the US SSBN force today is extremely survivable at sea. No protective forces of consequence are required to provide protection for our SSBNs, which depend on stealth to avoid Soviet ASW sensors.

If Deterrence Fails, How Well Do US Forces Do?

31. There is a range of possible situations for which we need to assess the potential performance of US strategic forces against Soviet forces. For this assessment we consider a possible sequence of stages through which a war might pass. These stages are a period of crisis, the conventional phase of a theater war, a limited theater nuclear war, large-scale nuclear strikes, and continued operations in a succeeding phase of the war. In each circumstance, deterrence to some degree would have failed, although preventing further

escalation would remain a major objective. We have compared US and Soviet forces to see how adequate they would be for each of these phases. Because measures were not generally established by which to judge the adequacy of strategic forces in each of these phases, we attempted to define a few. Major findings from analysis of each of these phases follow:

Crisis

32. When we speak of crisis, we mean a situation as severe as the 1962 Cuban missile crisis. We want the Soviets to avoid such a confrontation and to back down if one occurs. But the circumstances are different now from those in 1962. The Soviets are more likely to challenge us directly in areas favorable to them, and their belief as to whether they will need to back down may be different, given the change in the overall balance of power. This shift in the strategic balance creates an even greater requirement for the United States to be able to achieve timely local conventional military superiority at the focal point of any crisis. Even if we achieve this, there will remain the problem of nuclear escalation. US strategic forces will continue to provide indirect support in crises; their utility will be measured primarily in terms of their potential should crisis escalate to war, and primarily in terms of the perceptions the Soviets would have of that potential.

33. We want our strategic force posture, in a crisis, to be able to keep up with changes occurring in the Soviet force posture, and to be able to sustain higher levels of readiness and survivability at least as well as the Soviets. This serves the two objectives of contributing to the deterrence of Soviet escalation and being postured better for nuclear conflict should it occur. Consequently, we chose these proximate measures for our assessment:

- Changes in readiness and survivability to be expected from a transition to generated alert from the day-to-day posture.
- Time required to generate; time to detect opponent's generation; the impact of these time constraints on decisions to generate.
- Ability to sustain generated alert posture for extended periods.

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34. Our major findings are:

- Generated alert greatly increases the expected numbers of survivable US strategic nuclear weapons because of the increase in bomber and SSBN readiness and dispersal. There would also be an increase in the survivability of general purpose forces if they dispersed. Thus there are incentives for the Soviets to try to strike the United States when our forces are at day-to-day alert, and there are incentives for the United States to generate forces in a crisis. We do not plan or posture for preemptive strike, but the Soviets may not believe this is the case and may be concerned for their vulnerabilities in a day-to-day posture.
- All online US forces, except for some SSBNs in transit, could be at full alert within 42 hours; most would be dispersed within 24 hours.

with respect to strategic defenses. Each side appears likely to detect changes in the other's alert status in timely fashion and is capable of responding appropriately. Two current asymmetries are notable. First, there is no US counterpart to the Soviet civil defense program, elements of which might be used (perhaps for signaling purposes) during a crisis. Second, there is no Soviet capability for global power projection comparable to that of the United States. Depending on the circumstances, these asymmetries may provide either side with a comparative advantage during a crisis. There is an uncertainty, however, in the effects of crisis fatigue on both personnel and systems, and whether these effects would degrade Soviet and American strategic nuclear postures differently. These factors could be a greater problem than the actual forces themselves.

Conventional Phase of a Global War

36. During conventional conflict, strategic forces and their potential for subsequent nuclear operations could be affected in several ways:

- Some strategic forces (primarily bombers and tanker aircraft) could be diverted to support the conventional war effort.
- Strategic forces and C³I might be subjected to nonnuclear attacks.
- Strategic forces would have to be sustainable at higher levels of alert than in peacetime, as was discussed in the crisis section.

- US strategic offensive forces would be able to sustain extremely high alert levels for a month or two, and levels higher than normal peacetime alert over a much longer period. Soviet forces have similar capabilities.

35. Both the US and Soviet postures seem adequate to the stress of a serious crisis. Both sides maintain a sizable force on daily alert, and this force can be increased substantially and quickly under generated alert, which can be sustained for at least several weeks. Overall, a move from normal to generated alert profits the United States relatively more with respect to offensive forces, because of our heavy dependence on bombers and SSBNs, and the Soviets relatively more

37. Our strategic force posture objectives include those already cited for crisis situations, and, in addition, we want to suffer little degradation in strategic force capability as a result of losses or force diversions during conventional conflict. Measures of effectiveness we considered include: the ability of each side to use strategic forces in conventional wars, the effects of such use on potential for strategic nuclear missions, the survivability of strategic forces and supporting systems if attacked by nonnuclear means, the ability to attack strategic forces with nonnuclear means, and the ability to sustain a nuclear alert posture during conventional war.

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38. Our major findings are:

- Both sides would use strategic bombers in conventional campaigns, and we would use many tankers as well. Bombers used by both sides would be subject to attrition, Soviet bombers perhaps more than US bombers. However, the ability of the US bomber force to carry out strategic nuclear missions could be degraded by the diversion of US aerial tankers to support conventional air operations.
- There would be incentives on both sides to attempt to degrade the strategic nuclear posture of the opponent with conventional forces. There is no clear advantage for either the United States or the USSR independent of very sensitive scenario assumptions.
- The USSR appears better prepared than the United States for a campaign of attrition against theater nuclear forces in the conventional phase of a war.
- The Soviets would also probably try to destroy and interfere with some US strategic C³I, particularly forward-based and space-based installations that support theater operations.
- Paramilitary attacks and sabotage are a concern for both sides, but perhaps more of a threat to the United States because of our open society.
- The United States has an important potential advantage because of its capability to mount an ASW campaign that could directly shift the balance of strategic nuclear forces by attrition to the Soviet SSBN force in the conventional phase of a war.
- Often overlooked in US strategic assessments is the problem of mobilizing industry for war in response to the threat that the war could escalate to nuclear attacks on homelands.

39. The US strategic posture seems generally more adequate than the Soviets' to the stresses of conventional war, primarily owing to the greater flexibility in

the US inventory. At the same time, this greater flexibility may impose a price of reduced strategic capability, owing to the mission diversion of weapons systems (bombers, tankers, AWACS) during conventional conflict. Current improvement programs in these areas should substantially ameliorate the problem of diversion by the end of the decade.

40. Conventional war could reduce the strategic forces of both sides. Whether such attrition would be of a magnitude to alter severely the strategic balance is scenario dependent and conjectural. Therefore our assessment of possible changes in the balance is mixed. The United States is probably in a stronger position with respect to survivability of submarine forces, owing to our across-the-board advantage in submarine operations. We are, however, more vulnerable to the loss of critical space support systems, and we have greater vulnerability to unconventional disruption and sabotage.

Theater Nuclear War and Limited Nuclear War

41. Our concern here is with the capabilities of each side to undertake nuclear warfare at levels less than large-scale strikes on homelands. In such circumstances, strategic weapons might be used to support general purpose forces, deny military advances to the adversary, and coerce third countries. And strategic nuclear forces located outside any sanctuaries would have to survive nuclear attacks as well as conventional war attacks. We are also concerned in this section with escalation to "limited" attacks on selected homeland targets.

42. The term "limited" has historically been used to define a wide range of attacks, from theater nuclear attacks against discrete target sets to counterforce attacks on homeland-based strategic nuclear forces.² In this section we consider two types of limited nuclear warfare: (1) nuclear warfare with superpower homelands as sanctuaries (theater nuclear war); and (2) nuclear war involving strikes against superpower

² Although in the past counterforce attacks on nuclear forces have also been considered as "limited" attacks, such attacks are considered large scale in this assessment and are not covered in this discussion.

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homelands with relatively few (tens) weapons, detonated in areas other than large population centers, against military forces or isolated, critical war-supporting installations.

43. The US view has been that theater nuclear strikes could be limited in size and used to demonstrate resolve or fulfill a specific critical military objective that could not be accomplished with available conventional forces. Limited nuclear strikes could continue for some time at about the same level of intensity and scope, or might result in a rapid escalation process culminating in large-scale strikes. Theater nuclear strikes might also be large scale but limited to areas other than superpower homelands—either third countries or limited exclusively to the sea or outer space.

44. Our major findings are:

— Both sides appear to be able to conduct selective strikes against opponent's homeland-based forces and infrastructure. The material destructive effects that they would achieve might be quite high; however, the functional effects in many cases could be quite modest or the damage could have only delayed military effect. Both sides, unless their warning systems were to be degraded, would have the operational capability to discriminate small-scale attacks and probably to predict the general impact areas.

— US strategic nuclear forces are targeted against fixed installations, and most, if not all, Soviet forces are also so targeted. However, targets for limited nuclear strikes within theaters of conflict, particularly follow-on strikes, in large part would probably be mobile and would require near-real-time target acquisition, a capability which does not exist within the US or Soviet strategic forces

today, except potentially in bomber forces. The use of strategic forces for area barrage against troops is another possibility, but one for which we have inadequate C³I. We can estimate physical damage to forces in the field.

— Of course, any US decision to launch a limited theater nuclear strike would be tempered by the reality that a similar or larger Soviet preemptive or responsive strike, including an intercontinental strike, might offset any transitory advantage to be gained by the US attack. The 400 SLBM RVs committed to SACEUR are already planned for theater use. Additional long-range nuclear forces might be required if our forward-based nuclear assets were attrited. In contrast to US dependency on some strategic nuclear forces for theater nuclear warfare, the Soviets are becoming less dependent. They are closer to most potential theaters of conflict, which permits their use of a wide variety of intermediate-range nuclear systems

— The Soviets could strike US at-sea reinforcement and resupply shipping with nuclear ballistic or cruise missiles. In contrast, it would be more difficult for the United States to interdict Soviet resupply lines through Eastern Europe.

— We are uncertain as to what, if any, net alteration in the strategic balance might result from escalation to use of nuclear weapons against strategic nuclear assets in areas outside superpower homelands. US SSNs might be able to execute more damaging attacks against Soviet SSBNs using tactical nuclear weapons instead of conventional torpedoes, but could in turn also be subjected to nuclear ASW weapons by Soviet counterattacks. Both US and Soviet space-based assets are now quite vulnerable to nuclear weapons; however, both sides might be constrained from using nuclear weapons in space because of the risk of damage to one's own space-based assets.

45. Overall, the current mix of capabilities and vulnerabilities provides no general advantage to either side in limited strikes on each other's homeland.

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Depending on the circumstances of particular strikes, each side could find itself without the capability to respond in kind to limited use of nuclear weapons by its adversary and therefore have to choose whether to back down or escalate. At present, however, the Soviet Union enjoys some advantage in conducting nuclear strikes against geographically proximate theater targets because of the large number of highly capable SS-20s. The United States could conceivably redress this competitive advantage by deploying matching INF capabilities, or by developing improved operational capabilities, including reloads, for using intercontinental systems in theater missions; the former possibility is heavily influenced by NATO's reluctance to accept larger INF deployments.

Large-Scale Nuclear Strikes

46. Three generic types of large-scale nuclear strikes are:

- Counterforce strikes, which are directed at opposing nuclear forces.
- Countermilitary strikes, which are directed at opposing nuclear forces, conventional power projection forces, and their command and control and supporting infrastructures.
- Countervalue strikes, which are directed at opposing industrial capacity.

Pure counterforce or countervalue strikes might not be practical or easily distinguishable in the actual event; our classification is strictly for purposes of analysis.

47. The literature of strategic nuclear warfare is rich with discussions of these types of attacks; US strategic thinking has been focused on them for several decades. US analysis of strategic warfare to a great extent has been focused on the hypothetical effects of large nuclear strikes against counterforce and industrial targets, and, to a much lesser degree, on the results of countermilitary strikes. Results have usually been expressed in terms of blast damage expectancies against sets of targets, and in residual weapons remaining after large strikes by one or both sides. There was a time in the mid-1970s when US strategy called for targeting Soviet industrial and economic targets so as to prevent the Soviets from recovering economically as fast as the United States could.

Even less attention has been paid to the effects of large nuclear strikes on the subsequent relative abilities of the two sides to project military power outside of the homelands. Our past neglect of capabilities for military operations after an initial massive strike stemmed from our commitment to a strategy of mutual assured destruction and our reluctance to think seriously and in detail about how to conduct military operations should deterrence fail.

48. For many years we considered the strategic posture as essentially adequate if it provided us a high-confidence ability to withstand a massive Soviet first strike and retaliate with forces capable of inflicting severe damage on the Soviet population and industry. Insofar as both the United States and Soviet Union had little difficulty in developing such a capability against inherently fixed, soft targets, the requirements of mutual assured destruction were considered (by high-level policymakers and the Congress) to have been met, and we paid relatively little programmatic attention to developing capabilities to serve political and military goals after the initial strikes against homelands.

49. Indicators of the strategic balance with respect to large-scale nuclear warfare include:

- The extent to which strategic forces and supporting systems can destroy preplanned targets.
- The extent to which strategic forces and supporting systems can survive a nuclear attack against them.
- The extent to which strategic offensive and defensive forces can limit damage.

50. Our major findings are:

- US strategic system survivability is highly scenario dependent. The two most critical variables are the alert posture—either generated or day to day—and the launch timing—for ICBMs, initial strike, launch-on-warning, or rideout.
- The Soviet Union could not destroy most of the US nuclear forces, if we were in a generated alert posture, because most of our SLBM and bomber forces would survive. The US leadership and C³ is vulnerable to a surprise Soviet strike and is probably fairly vulnerable under generated alert

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as well. The Soviets, however, could not be sure of decapitating US leadership or of disconnecting the command and control of military forces to prevent timely US retaliation, especially with the United States in a generated alert posture after days or weeks of prior conflict.

- The Soviets have a clear preference for preemption if they believe the conflict is going to escalate, but we do not know what would convince them that a US strike was imminent. Even if we struck first, the Soviets could almost certainly retaliate with a major strike, although there could be some serious degradations and delays.
- US forces cannot adequately destroy Soviet nuclear forces, leadership, C³I, and power projection forces. The United States cannot effectively target the mobile or movable Soviet forces and supporting systems.

US targeting might be adequate only to damage, but not destroy, many specific Soviet military capabilities. Some Soviet systems, if only moderately damaged, might be repairable enough so that significant operational capability could be restored relatively quickly.

Our inherent capability to destroy much of their critical war-supporting industry is high, although current targeting priorities would limit the actual damage achieved.

- As a matter of policy, the United States has chosen not to develop and field any significant level of strategic defense, and thus will continue to remain relatively weak in the ability to ensure the survival and operability of effective US military forces and command functions in the event of a massive Soviet nuclear strike. This policy may change as a result of the President's initiative for improving strategic defense.
- US power projection capabilities, war-supporting industry, critical energy systems, and population are extremely vulnerable to a massive Soviet

nuclear strike, no matter what the alert posture, because of our lack of passive defenses.

51. Therefore we can summarize our assessment of the large-scale nuclear strike phase of a conflict as follows:

- Soviet ability to limit damage is relatively greater, and the United States would suffer heavier damage than would the Soviet Union in any large nuclear exchanges.
- The Soviet Union would in most scenarios retain a larger number of nuclear weapons after any series of large-scale strikes, but the difference is not likely to be so significant as to be the dominant factor in the outcome of the conflict.
- The effects of such strikes on the will of either party to continue a global war is conjectural; such effects may be much more important than the material damage to military power projection capabilities, which probably would be asymmetrically less for the Soviets than for us.

52. Tables 1 and 2 summarize our assessments of large-scale nuclear warfare capabilities of the two sides for the years 1983 and 1993, from the perspectives of both a US planner and a Soviet planner. The tables assume that future Soviet programs and capabilities actually eventuate along the lines of current national intelligence projections, and US programs proceed as currently planned.

53. The Soviets, in our view, have some clear advantages today, and these advantages are projected to continue, although the differences may narrow somewhat in the next 10 years. We believe, however, as shown in table 2, that the Soviets would not see their advantages as being as great as we would assess. Moreover, even in our assessments the Soviet advantages, while significant, would not appear to be great enough for us to be concerned that we no longer have the capability to deter large-scale nuclear war. Clearly we still do. The uncertainties in all of this still would make it unattractive for the Soviets to escalate to such a level of warfare; they could not expect with high confidence to prevail. As noted in chapter III, we are greatly concerned, however, for the effects of these imbalances on the behavior of the two sides in crises and conflict situations.

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Table 1
Large-Scale Nuclear Warfare Capabilities^a
A US Planner's Assessment

Capabilities	1983	1983	Relative Advantage	
	Perceived Adequate for US?	Perceived Adequate for USSR?	1983	1993
Ability, with large initial strike, substantially to destroy opponent's:				
Nuclear forces	No	No	Soviets	Soviets
Leadership	No	Perhaps	Soviets	Soviets
C ³ I	No	No/perhaps	Soviets	Soviets
Power projection to Europe	No	Yes/probably	Soviets	Soviets
War industry	Yes ^b	Yes	Soviets	Soviets
Critical energy	Yes ^b	Yes	Even	Even
Survivability of own nuclear systems against large-scale attack				
ICBMs	No	Probably/yes	Soviets	Soviets
SLBMs	Yes	Yes ^c	Even	Even
Bombers	Yes	Perhaps	United States	United States/even
C ³ I	No	Probably	Soviets	Soviets
Ability of own defenses to limit damage				
Active systems	No	No	Soviets	Soviets
Passive systems	No	No/perhaps	Soviets	Soviets

^a For purposes of this table, the assumed alert posture is generated alert for both sides prior to the strikes.

^b We have the inherent capability, but current targeting priorities would limit the actual damage to such targets and consequently they might not be substantially destroyed.

^c Soviet SLBMs at sea in generated alert are largely survivable against a sudden strategic nuclear attack, as depicted here, but are still vulnerable to attrition over a period of days or weeks from US ASW.

Extended Strategic Nuclear Operations

54. The use of strategic nuclear weapons during general conflict could extend beyond one or two major strikes.

If we had military capabilities that caused the Soviets to lower the odds that they could prevail in an extended conflict, we would have much greater confidence in our ability to deter Soviet actions that could lead to such a conflict.

55. US objectives in a period of extended conflict would be to preserve our power and influence and to terminate the hostilities on as favorable terms as

possible. Two Soviet goals would be to isolate the theater of ground warfare from further US resupply and reinforcement, and to limit further damage to the Soviet homeland.

56. Our major findings are:

- While neither side can be confident of its capabilities to prosecute extended nuclear operations after major strikes on homelands have occurred, the Soviets currently are better postured with respect to survivability and endurance.
- The Soviets would probably have a larger force available after a series of nuclear strikes, and

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Table 2
 Large Scale Nuclear Warfare Capabilities^a
 A Possible Soviet Planner's Assessment

Capabilities	1983	1983	Relative Advantage	
	Perceived Adequate for US?	Perceived Adequate for USSR?	1983	1993
Ability, with large initial strike, substantially to destroy opponent's:				
Nuclear forces	No	No	Even	Even
Leadership	No	Perhaps	Soviets	Soviets/even
C ³ I	No/perhaps	No/perhaps	Soviets	Soviets/even
Power projection to Europe	No	Yes/probably	Soviets	Soviets
War industry	Yes	Yes	Even	Even
Critical energy	Yes	Yes	Even	Even
Survivability of own nuclear systems against large-scale attack				
ICBMs	Probably	Probably	Soviets	Soviets
SLBMs	Yes	Perhaps ^b	United States	United States/even
Bombers	Yes	Perhaps	United States	United States/even
C ³ I	Perhaps	Perhaps	Soviets	Even
Ability of own defenses to limit damage				
Active systems	No	No	Soviets	Soviets
Passive systems	No	Perhaps	Soviets	Soviets

^a For purposes of this table, the assumed alert posture is generated alert for both sides prior to the strikes.

^b The Soviets could be worried that the United States has the ability, with its superior ASW forces, to preempt Soviet SSBN forces with a sudden attack. Soviet submarines are probably considered vulnerable to attrition over a period of days or weeks from US conventional or tactical nuclear ASW attacks.

they currently have substantially more potential overall capability for reconstitution of strategic missile forces;

— As little as 10 percent of the online US strategic force, either withheld or having failed to launch, might be available following the initial large-scale strikes. Estimates of surviving and reconstitutable US bombers after execution of the SIOP range from 50 percent to as low as 10 percent—bombers that might be interned in neutral nations being the major uncertainty. Very few ICBMs would remain. SSBNs, some empty and

some loaded, would survive. Endurance problems could reduce the numbers of available forces within a few days to weeks.

— Communications would have to be reconstituted for controlling the SSBNs, bombers, and any surviving ICBMs, using dedicated reserve C³ capabilities, which are fairly minimal, or assets normally not dedicated to strategic forces, such as general purpose military equipment or commercial radios.

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These problems, coupled with a reduced inventory of available nuclear weapons, might force us to consider entirely different operations in any conflict stage following homeland attacks.

done. Although the SSBN force is inherently the most survivable and enduring delivery system, little has been done to provide enduring weapon-reload capability.

57. The most important recent development is that US military planners are beginning to think seriously about protracted, or extended, warfare. This could lead to innovation over the next decade in tactics and operational plans for employing our forces. The emergency targeting team of the Strategic Air Command and the Joint Strategic Target Planning Staff is one example of such actions; work on continuity of government should also enhance the likelihood that both centralized US governmental control and at least some military commands would survive through a protracted war, making more effective command and control of US strategic forces likely.

58. Our new strategic forces over the next few years should permit increasing the size of the strategic reserve forces. Other US efforts on C³I survivability should also improve our extended war-fighting capability. The critical US C³I deficiency is likely to continue to be a lack of enduring ability to locate and target movable Soviet assets. Some important efforts to increase our ability to reconstitute the bomber force have been initiated recently, but much more could be

62. The trends do not appear to be significantly reversing this situation. Although US investment will be substantial over the next decade, Soviet investment will also be considerable, will be more comprehensive, and will build on 20 years of previous investment. The United States has not funded any significant level of

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Table 3
 US Perception of the Ability of Either Side to
 Accomplish Its Objectives in the Event of Global Nuclear War

US Objectives	1983	1993
	Can We Achieve?	Will We Be Able To Achieve?
War termination on relatively favorable terms	No	Probably not. If Soviets can maintain political control they would be in more favorable position after large strikes. They would retain advantages in major theater war.
Isolate theaters from opponent	No	No. US policy in this direction, but no significant mobile targeting capabilities.
Limit damage to homeland	No	No. US passive defense program not significant; active defenses still marginal.

Soviet Objectives	1983	1993
	Can They Achieve?	Will They Be Able to Achieve?
Prosecute global war to favorable outcome	Perhaps yes, but not confident	Depends heavily on US C ³ I improvements. May sense gain from improved passive and active defenses. Much depends on the extent of US offensive improvements in hard target kill and mobile targeting capabilities. Depends on uncertain ability to sustain control despite damage.
Isolate Eurasian theater of war from US power projection	Probably	Probably
Limit damage to homeland	Not enough; somewhat, for war-fighting capabilities	Somewhat better than now; still not acceptable. Improved if active defenses are deployed and prove effective against new US penetrators.

strategic defense and thus in 1993 will still remain highly vulnerable to a Soviet massive nuclear strike. We will remain incapable of achieving our currently declared objectives unless survivability of all military forces, C³I, and the civil sector is markedly improved in the 1980s. The result is the prospect of perhaps a narrowing but continuing relative advantage for the Soviet Union should nuclear war escalate to this level.

63. The Soviets would evaluate their own prospects for achieving their objectives as being worse than we credit them in our evaluations. They are highly concerned, and, in our view, apt to be overly pessimistic about:

- The capabilities of US ASW against their submarines.
- The effects of new US programs on overall US capabilities.

- Their ability to degrade US command, control, and communications sufficiently to prevent a large-scale, well-coordinated retaliation.
- Their own ability to maintain continuity of command and control throughout key phases of a conflict.

III. CONCLUSIONS AND JUDGMENTS

64. Assessment of the strategic balance is the most difficult and complex of all the military balances. This contradicts the view held in most circles for many years that this subject is analytically more tractable than the admittedly complex operations of combined arms in theater warfare. The strategic balance cannot be measured in isolation from theater balances because nuclear forces must be assessed in the context of conflict situations in which all forces are being used.

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65. Computer simulations of warfare cannot provide reasonable predictions of actual outcomes for any kind of conflict; in the end, all assessments of military balances depend on experience and judgment. For most kinds of warfare we have relevant historical experience and, in particular, we have military men who have experience in warfare similar to the kind whose outcome we try to assess in analyzing the military balance. No one has ever experienced large-scale nuclear war, however, and thus strategic balance assessments are correspondingly more difficult.

66. We hope never to have that experience. The fundamental purpose of our strategic forces is the influence they exert on Soviet assessments and through them on Soviet behavior. They are also important for the role they play in support of our allies and in the cohesion of our alliances, a matter which we only touch on in this assessment because we have not directly examined the perspectives of our allies.

How Adequate Is the Balance?

67. Is the balance adequate to deter a direct nuclear attack on the United States or a major attack on Europe? Probably yes. Soviet assessments of the outcome of a large-scale conflict that is likely to include direct attacks on the United States and its major allies, and attacks on the Soviet Union, are probably sufficiently unfavorable or risky to deter them. But we should ask a different question: has the shift in the strategic balance that has taken place over the last 15 to 20 years made the Soviets more hopeful, more willing to try to coerce the Europeans, and to try to split them from the United States? The answer in this case is yes. The shift in the balance—not only the strategic balance, but the growth in overall Soviet military power unmatched by the West—not only gives them an increased incentive to pursue such policies but provides a background of power from which direct threats, active measures, and cultivation of the Europeans can proceed more effectively. This strategy is paying off; many Europeans have been edging toward a position of neutrality between the great powers, a shift which has coincided with the buildup of Soviet strategic forces and of other Soviet forces focused directly against Europe.

68. The United States assumed its current role in the world and structured its major alliances during the period of US superiority in strategic nuclear forces.

When the decisions were made in the early and mid-1960s to settle for parity, parity itself was seen by some as a good thing in itself. The full consequences of strategic parity for the overall military balance with the Soviets, for our position throughout the world, and for the cohesion of our alliances over the longer run have not yet been fully realized.

69. One such consequence is that the range of Soviet actions we can deter has undoubtedly narrowed, especially in areas of the global competition less critical than Europe. The Soviets have been exploiting soft spots in the Third World more aggressively and they almost certainly feel freer to assert themselves in a range of lesser contingencies. This is a fundamental change from the relative caution they exhibited until around 1970 (with the important exception of moving missiles to Cuba in 1962). Greater Soviet assertiveness in the Third World was almost certainly encouraged by the paralyzing effect of the Vietnam war on our ability to counter these Soviet moves, but Soviet confidence in acting was probably increased by their knowledge of their greater strategic power.

70. It is difficult to judge the adequacy of the strategic balance when one poses the issue in terms of the likely behavior of the Soviets, our allies, or—for that matter—ourselves, in periods of increased tension. We will only know when a test occurs. And there is a heightened possibility that the Soviets may in the future challenge some US interventions in crises, particularly those involving actions against a friendly or client state. They might do so not because of a greater propensity to take risks (although they may now feel more confident about risk taking) but mainly because they now expect us to be more inclined to play it safe and avoid risks. It seems prudent for us to pay more serious attention than we have to Soviet counteractions in possible crises, especially in parts of the Third World where the Soviets have interests and where their capacity to project military power is strong. (Southwest Asia is an especially important case in point.)

71. More specifically, it would seem imprudent to slight the importance of real capabilities in shaping the course of crises and conflicts. The people in our military forces, government, and population at large must have faith in our forces, weaponry, and plans; if not, there is a risk of loss of nerve in a crunch. A major crisis, analogous to the 1962 Cuban missile crisis, in

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which the United States had to back down as the Soviets did then, would produce a massive shift in the perceptions of US strength relative to that of the Soviet Union in the eyes of the US public and of other nations.

States is probably in an even less favorable situation. The Soviets currently are postured better with respect to survivability, endurance, and force reconstitution.

74. The relative weaknesses are the results of past asymmetries in US and Soviet policies, missions, and investments. As US programs come to fruition, the situation in these different phases will improve somewhat over the next decade or more, and there will be some movement in a direction favorable to the United States. The changes in policy and planning are as important as the increased investments. As our military planners actively think and plan for wars as integrated conventional and nuclear operations, we will develop more effective tactics and operational concepts that will permit us to pursue counterforce operations from the conventional phase through the extended nuclear phase of a possible war.

How Much Do US Programs Help?

75. Renewed US efforts over the past several years will slow the erosion in the relative US position. However, we should not be overoptimistic and assume the effects will be immediate. It will take a long time, and a persistent effort, to redress the deficiencies in our currently inferior nuclear posture. Nevertheless, the Soviets show signs already of being concerned about our turnaround and the possibility that their gains of the past two decades may be eroded in the future.

73. If deterrence fails to one degree or another, the issue of the adequacy of the balance divides into the adequacy during the various possible phases that precede, constitute, and follow initial large-scale nuclear strikes. During a crisis, and in conflict prior to large-scale nuclear strikes, the US relative strategic position would probably improve over the peacetime situation with the generation of the full US bomber and ballistic missile submarine forces and the deployment of our attack submarines, which are capable of attriting a large part of the Soviet SSBN force. In the early phases of large-scale nuclear war the situation would be unfavorable because of the comparative vulnerability of US command and control, which we are now trying to correct, and the asymmetries in counterforce capabilities against hard targets. For the phase of extended strategic operations, the United

This achievement will ameliorate a critical US vulnerability and, even more important to the Soviets, the effort signals greater American seriousness about competing in the strategic force arena than has been evident for many years.

76. Other US programs that appear to have major impacts on the Soviets are missile accuracy improvements, which move us toward having a prompt hard-target kill capability, manned bomber modernization programs (after several decades of aborted modernization attempts), and our several cruise missile programs. From the Soviet perspective, the problem is not that these programs promise to tip the balance right away. Years of high Soviet investment in strategic programs, paralleled by years of low US investment, have given the Soviets an inventory of weapons and an R&D and

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production base that will take us years to offset. But the US programs do make a difference to the Soviets, both technically and as a demonstration of greater US willingness to compete, and the Soviets must fear that we will follow with the introduction of new technologies that would render the entire Soviet strategic posture much less effective. Three technical possibilities that must worry them greatly are: stealth technologies that promise to render obsolete much of their vast air defense network; continued ASW advances that threaten their SSBNs; and the possibility that we will make a breakthrough in ABM technology that could greatly reduce the effectiveness of their ballistic missiles.

77. From the Soviet perspective, the best way to avert these dangers is to try to prevent the United States from carrying through with these programs. They hope that domestic opposition in the United States and Western Europe to the MX, INF deployments, and investments in "nuclear war-fighting" programs will slow or stop the US momentum; they also try to help such opposition through active measures, diplomacy, and the arms control process.

Arms Control Aspects

78. The aims of arms control should not be separate from those of our overall security strategy: to diminish the likelihood of nuclear war, limit the spread of nuclear weapons, make arsenals less costly and destructive, channel forces into stabilizing paths, and contribute to support of our international political goals.

79. In reality, we have tended to regard arms control goals as distinct from those of our military strategy. We have assumed that we and the Soviets had *mutual* arms controls interests which overrode whatever *opposed* interests we had in the military arena. While we have attempted to promote this distinction and hierarchy, it is striking how different is the Soviet perspective. It has become evident in the past decade that the Soviets see little symmetric or mutual benefit from arms agreements. Some of the main points of difference in perspective are:

- Their world view is dominated by conflict, and arms control is, for the most part, an instrument in the struggle.

- We depend disproportionately on our nuclear forces, as the result of our original superior nuclear position, to block them—mainly in Europe, but also elsewhere. Therefore, eroding the credibility of our nuclear strength by any and all means has been and is a central Soviet strategic aim. Arms control agreements on nuclear weapons are a key element in their strategy, one on which they made great progress in the 1970s. A principal Soviet aim has been to drive a wedge between the United States and its allies and shift Europe toward neutralism. This objective is their principal aim today in the START and INF negotiations.

- There are some areas in which the Soviets do perceive mutual interest (for example, keeping radioactivity out of the atmosphere, avoiding incidents at sea, and nonproliferation).

80. The Soviets have pursued a dual-track approach to arms control. They seek agreements which will halt or slow US strategic force deployments, while continuing an across-the-board buildup and modernization of forces not limited by agreements. In negotiations they try to tailor any agreement to conform to their narrowly defined goals:

- They have no interest in the "spirit" of the agreement. In the 1970s, while learning to play back to us American-style rhetoric about the destabilizing character of the "nuclear arms race" and the dangers of war through inadvertence, their expenditures on nuclear systems and new systems developments proceeded on course.

- They have specific weapon systems of their own they want to protect (for example, SS-18s) and US weapons they want to eliminate (MX and Pershing II). Up to now they have not been willing to forgo any of their major programs in order to get us to drop our own programs.

- The Soviets' preferred way to gain advantage is to have their adversaries' populaces put enough pressure on their own governments for these governments to make unilateral reductions or denials (for example, ABM, MX, Pershing II, GLCM). This requires the Soviets to concede nothing.

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- They will cooperate in, or insist on, leaving out of an agreement weapons categories that they especially value (for example, in SALT, they argued to exclude Soviet systems threatening Europe while including US "Forward-Based Systems" capable of hitting the USSR; they also protect reloads for strategic missiles by arguing that nobody would have such things, hence there is no need to cover reloads in an agreement).
- For those weapons systems that are included in agreements, they closely define parameters to be protected. (For example, in SALT I they refused to agree on a definition of heavy ICBMs that would have prohibited deployment of new SS-19 missiles much larger than those SS-11s they were to replace.)

81. Similarly, when an agreement has been reached the Soviets interpret its provisions in ways that offer maximum latitude for them to achieve an advantage:

- They pay close attention to wording and tend to prefer exploitable ambiguity in language (for example, their exploitation of ambiguity in the language in SALT II limiting encryption of telemetry, and the criteria for determining new type of ICBMs).
- They exploit limitations in monitoring (for example, the use of mycotoxins in Southeast Asia and Afghanistan; the release of biological agents in Sverdlovsk; the presence of SS-16s at Plesetsk; concurrent testing of ABM and air defense at Saryshagan).

What are the Characteristics of Strategies for Competing More Effectively With the Soviets?

82. The strategic programs the United States is now pursuing have a more competitive character than has been typical since the mid-1960s. Continued development and refinement of strategies for competing more

effectively for the rest of this century seem desirable. In any case, we need to be efficient competitors so as to limit the resources required.

83. Our strengths lie in military sectors in which our forces remain superior (such as submarine operations); a much larger, more dynamic, and more balanced economy; more advanced technical strengths in many areas; a culture which encourages innovation, flexibility, and adaptability; a resilient political system; and a set of alliances based on voluntary association, which possesses many actual and potential strengths. The Soviet strengths are the existence of a larger capital stock of weapons in many important categories; an ability to sustain policies and programs over decades relatively unencumbered by pertinent political opposition; a growing technology base; an arms control approach designed to restrain the competitive will of its adversaries; and an ability to act swiftly if necessary.

84. If we pursued a more competitive strategy that builds on these observations, we would be adopting a geopolitical and military strategy which sees competition with the Soviets as a continuum and does not conceptually isolate theaters of conflict or modes of conflict. Such a strategy might include the following elements. We could:

- Have evolving strategic offensive and defensive postures that are so diversified and complex as to pose difficult problems of attack to the Soviets, postures strengthened by more emphasis on survival, wartime endurance, and robust C³I.
- Impose new costs on the Soviets by exploiting our advantage in high technology to introduce qualitatively superior new US weapon systems in selected areas, which could render obsolete large Soviet investments and cause them to react in ways costly to them but not to us (for example, air defense).
- Change the perception of arms control as a solution to our strategic force problems to a perception of it as an adjunct to our strategy for competing with the Soviets. Arms control does not obviate the need for aggressive pursuit of strategic modernization—a lesson we have learned from SALT.
- Give more thought to the roles of US allies and China, including possibilities of selectively bolstering their nuclear capabilities.

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— Explicitly recognize and prepare for a possible confrontation with the Soviet Union in the 1980s that could come out badly, thereby producing pressures for a rapid, large expansion in the defense budget.

85. *Strategic Posture.* On the whole, we are essentially on the right track. Rebuilding our strategic forces and greatly strengthening our wartime C³I systems are essentials for dealing with the Soviets in the years ahead. The changes the Soviets have brought about in the balance, however, make it evident that it will be a difficult task, even if the necessary domestic support is sustained.

86. We could do more to impress the Soviets with the consequences of our modernization. Their "correlation of forces" approach to assessing the balance incorporates a wide range of military, technological, economic, and political factors. We could build on our programs—which have created some uncertainty in their minds about how well they will be doing in the future—by doing additional things to convey to the Soviet leadership a renewed sense of American strength and confidence. For example, we could do much in our military exercises to convey our intention to prosecute any war, including a large conflict in which nuclear weapons are used, so as to convince the Soviets that they would end up in an inferior position. We could show in a variety of ways that we judge that we have enduring C³I systems and robust delivery systems. We could show how in a major conflict we intend to improve the situation on the ground in Europe or elsewhere, a US aim to which the Soviets would be particularly sensitive. We might demonstrate qualitatively new capabilities, such as the launch of a communications satellite from a submerged submarine in simulation of a postnuclear attack rebuilding of C³I capabilities.

87. Over time, we may find it necessary to exploit the inherent advantages of having diverse types of nuclear forces—the principle of today's Triad—by developing a more varied posture that will impose on the Soviets a requirement to counter a larger, and more rapidly changing, set of unique problems. The case for a small, mobile, highly accurate ICBM is a good one. We might want to introduce still other offensive delivery options that would complicate Soviet attack planning problems. We will have a variety of

sea-basing options for cruise missiles. On the basis of our new emphasis on strategic defense, we might find it desirable to shift our investment more toward ballistic missile and air defenses, and passive defenses.

88. *High-Technology and Cost-Imposing Tactics.* A major area of continuing competition should be in new technologies. The advent of truly significant technologies may make the 1980s and 1990s more like the 1950s in this respect than the technologically more stable 1960s and 1970s. These may offer the prospect of rendering obsolete parts of the large capital stock of weapons in the Soviet arsenal. Missile accuracies can be improved by both sides to the point where errors are essentially zero. The Soviets depend much more than we do on vulnerable silo-based ICBMs and thus they have more to lose from the development of highly accurate missiles. Partly as a result of improved accuracy, it is likely that a progressively larger proportion of the strategic forces of both sides will become mobile for survivability. We need to strive to maintain the survivability of our sea-based ballistic missile force and the vulnerability of the Soviet one. The Department of Defense is proposing to explore vigorously a variety of potential ABM technologies. Stealth technologies continue to offer a very promising prospect. Space will become a more intense region of military use and competition; in space, we need to pay more attention to having usable wartime capabilities that account for the possibility of Soviet attack on our space assets.

89. We could also profit from playing on Soviet fears about our technical prowess. The President's speech of 23 March 1983 proposing defenses against ballistic missiles has probably had such an effect. While we do not want to reveal specific capabilities that should remain secret, we might identify critical areas in which we want the Soviets to be impressed by our capabilities, or make them think we are more advanced in such areas (or are coming along more quickly) than in fact we are, or heighten their uncertainty about what we have. Examples include the ability to deliver missiles with high accuracy from submarines, the high efficacy of Stealth, and the extraordinary power of our ASW capabilities.

90. *Arms Control.* The United States has long been willing to wind down important aspects of the nuclear competition. In fact, we did so unilaterally after

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deploying the Triad. The Soviet leadership continued their strategic force modernization programs and, in effect, took advantage of our unilateral restraint. They show no sign of easing off on their strategic investments. But we should persist in proposing to limit and contain this competition. At some point, a change in Soviet perception, perhaps influenced by internal economic needs, may produce a greater willingness to scale back. However, the probability of this happening is very dependent on our willingness to compete vigorously with them in the interim. In any case, there is little reason to believe that any likely future Soviet leadership will want to seriously risk involvement in a nuclear war. They (like we) will almost certainly see this class of weapons as relevant mainly in influencing power relations around the world. They will also persist, however, in taking out insurance for the possibility that a nuclear war might happen. []

91. One important implication of the record of arms control experiences with the USSR is that in the long run, much more limited agreements, more readily verified, may be more feasible than the comprehensive kind that we have been seeking (for example, more like the atmospheric nuclear test ban rather than SALT or START). In this case, arms control could partially constrain the Soviet Union, but there would be no illusion that an agreement is a panacea for the strategic competition—the illusion that attended SALT I and SALT II. []

92. Technology is eroding the basis for some existing agreements. For example, Soviet nonnuclear, as well as nuclear, tactical ballistic missiles of short and medium range are emerging as a significant threat to Europe, and the potential upgrade of our Patriot air defense missile system to enable it to intercept Soviet short- and medium-range missiles will have to be evaluated by the Department of Defense. The Soviets have been testing, and soon will deploy, the SA-X-12, an advanced air defense missile capable of intercepting tactical, and perhaps strategic, ballistic missiles. On balance, it may be better to allow the technological competition to proceed here rather than try to stop it in the dubious belief (not shared by the Soviets and rejected by the President in his strategic defense initiative) that active defenses are bad per se. []

93. *US Allies and China.* The largest unsolved problem created by the growth of Soviet nuclear power concerns the strategy for the defense of Europe.

The United States and its allies have sought a cheap defense based on the threat of nuclear escalation, but the growth in Soviet strength has eroded the basis for such a strategy. No adequate alternative has emerged: the Europeans have not been willing to spend the money for a strong nonnuclear defense, nor does there exist a cohesive political community able to create a European nuclear deterrent force. Meanwhile, the pressures grow on the United States to do more to cope with challenges outside of Europe; there is no adequate substitute for the United States dealing with many of these Third World challenges. []

94. There are several possibilities for the future defense of Europe, including a change in the willingness of the Europeans to invest in their own security, a greater "European" defense role for the British and French nuclear forces, and a conscious exploitation of instabilities in Eastern Europe. It is conceivable that at some point we may be forced by pressures elsewhere to leave much of Europe's defense to the Europeans. At that stage, it might be necessary to consider transferring much more—or all—of the responsibility for nuclear defense to the Europeans. This could entail a large-scale transfer of strategic technology to the Europeans. Even so, left to themselves the Europeans would probably be militarily dominated by the Soviets; but their prospects probably would not be as desperate if there were continuing technical and other types of help from the United States. []

95. Events might also at some stage make it feasible and desirable for us to provide great help to China in improving its military posture, including possibly its nuclear forces. The uncertainties in China's political stability and its foreign policy orientation are such that substantial risks would be involved in providing such assistance. We would presumably have to be in a very difficult situation vis-a-vis the Soviet Union for this to be an acceptable course of action. []

96. *Contingency Preparation.* What might happen if war occurred? It is folly to try to predict the course of such a conflict in any but the broadest outlines. However, we certainly would have to be prepared to suffer great damage to our population, industry, and military forces, as would the Soviets. They have, however, taken more precautions than we to try to survive. In particular, they have done much more to try to preserve political control, a priority which is essential for the leadership of a totalitarian

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system. The Soviets would also be particularly concerned at assuring the preservation of their control over Eastern Europe.

97. In considering escalation to the use of nuclear weapons, and especially large-scale use, we need to pay much more attention than we have to those cases in which there is a gradual escalation of warfare up to a large-scale nuclear strike, and in which there is a major theater conflict.

98. Escalation to a highly destructive intercontinental level is by no means inevitable once theater nuclear strikes occur, but in fact we have little confidence in predicting what would happen. In such a conflict the Soviets would of course prefer to avoid attacks on their homeland, which would be highly destructive and which could shake their political control of their people. Faced with a prospect of US escalation to the intercontinental level, there is a chance that the Soviets would back down. They have a strong preference, however, for preemption and decisive strokes. If they thought they could accomplish their theater objectives—the original purpose of their aggression—while limiting damage from a retaliation against their homeland, they might undertake a preemptive strike against the United States. The chances that they would try to preempt would be increased by a combination of a fear of loss of their empire and of political control at home, if they backed down, coupled with a perception that the United States might not have the resolve or capacity to launch a large retaliatory strike.

99. The Soviets would stand a good chance of succeeding in controlling events in Europe and much of Asia after a war of this magnitude. The United States would be at a profound disadvantage in the postwar period in exerting influence on the Eastern Hemisphere.

100. If we were to pursue a more competitive strategy, it would conflict with the ethos in a sizable portion of US political leadership and the media—although perhaps not as much in the general public. Ironically, it would be objected to by many in allied countries even though they are the main beneficiaries of a stronger US posture. The Soviets would become more upset if they perceived that a profound change

was occurring in the US commitment, and their possible countermoves would be seen as highly threatening by many in this country and in Europe. An essential component of a more competitive strategy would be continuing public exposure of Soviet actions which clearly show their commitment to superiority in military power as their principal asset in the competition with the United States, their use of arms control in their pursuit of competitive advantage, and the growing evidence of noncompliance with arms control provisions as an indicator of their disdain for our concept of the purpose of arms control.

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ANNEX

SOME KEY TRENDS AND ASYMMETRIES

Strategic Offensive Forces

1. **Delivery Vehicles:** Since 1970 the number of US delivery vehicles has gradually declined by about 20 percent. The Soviets leveled off later, in the mid-1970s, and have not reduced their numbers, thereby gaining a lead of about 600 delivery vehicles; they now have almost 2,500 vehicles (not including Backfire bombers). The Soviet advantage in delivery vehicles could grow to over 1,000 by the early 1990s, primarily because of mobile ICBM deployments, unless there is a START agreement, continuing Soviet restraint to SALT II-sized forces, or a US strategic program greater than now proposed by the administration.

2. **Ballistic Missile Throw Weight:** The Soviets have emphasized large land-based ballistic missiles, while we have placed greater emphasis on bombers and SLBMs. These differences have resulted in the Soviets' increasing their lead in ballistic missile throw weight since 1968; the gap is now over 3:1.

Improved technology and more missiles could increase aggregate Soviet ballistic missile throw weight 40 to 70 percent by the early 1990s. Programmed US missile deployments would not significantly close the gap. US START proposals would reduce Soviet throw weight by about 50 to 60 percent from its current level; the Soviet proposal would result in a small decrease.

3. **Deployed Weapons:** In 1965 the US strategic weapons advantage over the USSR was 6,000 to 600. The US count has grown but the Soviets have considerably narrowed our lead. These weapons are distributed quite differently, as shown in the table.

Deployed Weapons, October 1983^a

	US	USSR
ICBM	2,100	6,100
SLBM	4,100	1,300
Bomber	2,700	400
Total	8,900	7,800

^a Does not include weapons for SSBNs in overhaul, or ICBM silos under modification.

Depending on their level of effort over the next decade, with a decision to expand beyond any arms control constraints, the USSR could have between 14,500 and 23,000 by 1992. If MX and ALCM programs are not reduced, the US count would be about 15,000 by 1992, in the absence of arms control constraints.

4. **Hard-Target Kill:** Before the Soviet deployment of their current generation of ICBMs, neither side had enough ballistic missile warheads with yield and accuracy combinations sufficient to threaten the opponent's silo-based missile force. The Soviets now have 4,300 such ICBM weapons, enough to destroy 75 to 80 percent of the 1,140 US ICBM silos and launch control centers (LCCs) in a well-executed attack; they will have 6,000 by 1985. Minuteman III is not nearly so effective against the more hardened Soviet silos and LCCs. US ALCMs have better hard-target kill capabilities, and soon will be sufficient in number to threaten much of the Soviet ICBM force and LCCs, but bomber weapons would take hours to reach the USSR, are needed for strikes on other target classes, and would have to penetrate extensive air defenses. One hundred US MX will carry 1,000 hard-target weapons. Unless more than 100 MX are deployed, the US will not have enough time-urgent hard-target weapons to threaten promptly the entire Soviet silo-based ICBM force until

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the early 1990s, when Trident D-5 will be deployed in quantity. By the early 1990s, we expect the Soviets to have deployed significant numbers of mobile ICBMs and MIRVed SLBMs which we cannot target. However, the combination of 100 MX and several thousand ALCMs would provide the overall capability to severely damage most of the silo-based Soviet ICBM force.

Active Defenses

5. **ABM:** The United States began deployment of an ABM system to defend ICBMs in the early 1970s, and then, deciding that this system was not effective given treaty limitations, dismantled it. A broad based R&D effort continues on US advanced ABM concepts, but it would take at least seven to 10 years for initial deployment of any new US ABM system.

6. In a large-scale US ballistic missile attack, the ABM system at Moscow, even when its upgrade is completed, would quickly be defeated. The current upgrade of the Moscow ABM defenses could provide the Soviets with a foundation for further expanding their system. The Soviets are developing a rapidly deployable ABM system for which individual above-ground ABM sites could be deployed in months rather than years. If the ABM Treaty were abrogated, the USSR would undertake rapidly paced ABM deployments to strengthen their defenses at Moscow, deploy widespread defenses in the western USSR, and cover key targets east of the Urals. With a Soviet decision made now, widespread defenses could be in place by the late 1980s or early 1990s.

7. **ATBM:** The Soviet SA-X-12 mobile SAM in development has been tested against tactical ballistic missile systems. It could also have some capabilities against some US strategic reentry vehicles (all current RVs except Minuteman III). Many hundreds of SA-X-12 launchers are expected to be deployed with Soviet Union and Warsaw Pact ground forces by the late 1980s. The United States has no equivalent system; our Patriot SAM was not given an ATBM capability.

8. **Air Defenses:** US homeland air defenses declined from over 2,000 modern interceptors and 200 SAM sites in the early 1960s, to about 300 aircraft, mostly old, in 1982. This path was taken because of the small Soviet bomber force and a lack of defense against the much larger Soviet ballistic missile force.

NORAD has 20 new F-15s; over 120 more are programmed through 1987. Meanwhile, facing a large and improving US bomber force, the Soviets built a force of 2,400 interceptors and 9,500 SAM launchers, although much of this force would be ineffective against low-altitude bombers. The Soviets will modernize these defenses with over 1,000 new interceptors and over 2,000 SA-10 launchers deployed by the late 1980s, systems with greatly improved technical capabilities against low-altitude penetrators.

9. **ASW:** US investment in forces for ASW in general has provided the added benefit of a significant threat to Soviet strategic submarines in particular. The US technical lead is narrowing, but the past two decades of US investment and the superior operational capabilities of US ASW forces continue to give us clear ASW dominance against any Soviet submarines deployed in the Pacific and Atlantic basins. The Soviets, recognizing our ASW capabilities, have deployed the Delta-class and the new Typhoon-class SSBNs with long-range SLBMs, which permit them to patrol in home waters or to launch their missiles from port. They have also invested heavily in general purpose ASW ships, aircraft, and submarines, and adopted a bastion concept of operations to protect their SSBNs from US ASW systems, including attack submarines.

10. The US SSBN force today is considered extremely survivable at sea. No US protective forces of consequence are required to provide protection for our SSBNs. Once they clear their ports, US submarines depend on stealth to avoid Soviet ASW sensors.

Passive Defenses

11. The new US countermilitary strategy requires the destroying of over 7,000 fixed targets in the USSR, 4,000 of which are hardened to at least 100 psi. Conversely, the Soviets are faced with about 4,000 US military targets, of which less than 1,400 are hardened to at least 100 psi.

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12. About 40 percent of the nonhardened Soviet facilities that are associated with general purpose and nuclear forces, and that we now consider should be attacked in a countermilitary strike, are either mobile or movable. Much of the forces or equipment normally based at these facilities would be likely to survive a US retaliatory strike and be available for theater operations and support of strategic operations if, as we anticipate, they were to be moved to unknown dispersal locations during the period of mobilization likely to precede strategic nuclear warfare. The US power projection forces based in the CONUS present an asymmetrically easier targeting problem for the Soviets, because these US forces must funnel through a few key ports and airbases to reach Eurasian theaters of conflict.

13. The Soviet civil defense program has been under Ministry of Defense control since 1971; about 150,000 personnel are engaged full time. The US civil defense organization numbers less than 7,000. Soviet civil defense plans, if implemented, theoretically could prevent up to 100 million civilian casualties. By the late 1980s we hope to have comprehensive evacuation plans for over 140 million people in high-risk areas, but at the moment we have only preliminary plans that identify potential evacuation areas for about 40 percent of the at-risk population. Provision has not been made for fallout protection, emergency support equipment, and sustenance in evacuation areas

Command, Control, Communications and Intelligence

14. *Satellite Warning:* Until 1982 the United States had a great advantage in satellite warning. Now both sides, assuming undegraded satellites and ground terminals, can provide satellites warning of ICBM launch within a few minutes. The US system covers Soviet ICBM and some SLBM launch areas. The Soviet system covers only the US ICBM fields; a system capable of covering US SLBM launch areas is expected by 1990.

15. *Ballistic Missile Attack Characterization:* The United States was first to deploy radars in the early 1960s to detect ICBMs and characterize attacks by size and intended impact points. The Soviets built such sites and are now building more capable radars, including four new radars still under construction and two with some operational capability. Both sides are

potentially limited by computer capacity; the United States may lead in this area. Both would be vulnerable to blackout, EMP, or direct attack. The US satellite system, if undegraded, would also provide some characterization data; the Soviet satellites provide only minimal data. The trend will be to more capable data processing by both sides, but both will still be limited to the 35 minutes or less time-of-flight of the missiles in which to decide to ride out or launch on tactical warning.

16. *Launch on Tactical Warning (LOTW):* We believe the Soviets are capable of successfully launching their ICBMs on tactical warning before incoming US ICBMs could detonate on Soviet silos, assuming their warning and control systems are undegraded. The United States is also technically capable of LOTW.

17. *Air Surveillance:* The Soviets' 1,200-site (6,300 total radars) surveillance network is still porous at low altitudes. New US B-1B, ALCMs, ECM, and Stealth bombers will tend to offset Soviet low-altitude detection improvements, which will include at least 12 new Mainstay AWACS aircraft and over 600 new ground-based radars by 1987. Likewise new Soviet air- and sea-launched cruise missiles would give the thin 77-site NORAD radar network major problems in detecting low-level attacks. The United States will add additional AWACS aircraft to the eight now designated for NORAD use; new OTH radars and DEW line ground-based radar improvements are also programed for the late 1980s.

18. *Communications:* The US peacetime communications are far superior, because of a century of US investment in landlines, augmented by many times more satellite channel capacity than the USSR, but this advantage does not lead to any advantage in wartime. US facilities are soft, but numerous and well interconnected. Soviet military facilities include hundreds of command and communications bunkers and even more buried antennas. Both sides use aircraft to supplement ground-based communications; some US aircraft are continuously airborne. The Soviets also use ground-mobile systems; they do not keep aircraft on alert.

Although US attacks could destroy many known fixed C³ facilities,

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elements of the political leadership and military commands probably would survive, and redundancy in Soviet strategic communications would prevent loss of any one channel from disabling the overall system. Likewise the Soviets may not be completely sure of the US network, although they must be aware of some of its key vulnerabilities, such as the President himself and the few entry points into the system. Both sides are upgrading the survivability of their C³.

19. **Reconnaissance:** Poststrike reconnaissance is an area of weakness for both sides. Space-based assets are vulnerable to attacks on their ground terminals. Neither side is yet credited with space-based systems that could endure in nuclear war. Both sides possess long-range bomber forces that could be utilized for poststrike reconnaissance. Both sides would probably need to

depend on staging aircraft forward in order to conduct reconnaissance deep in the other side's homeland. The Soviets may have an advantage because of weak US air defenses, but the United States has a much larger number of reconnaissance-capable aircraft. Neither side would have anything approaching the reconnaissance capabilities they had prior to conflict; we cannot determine which side would have an advantage.

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