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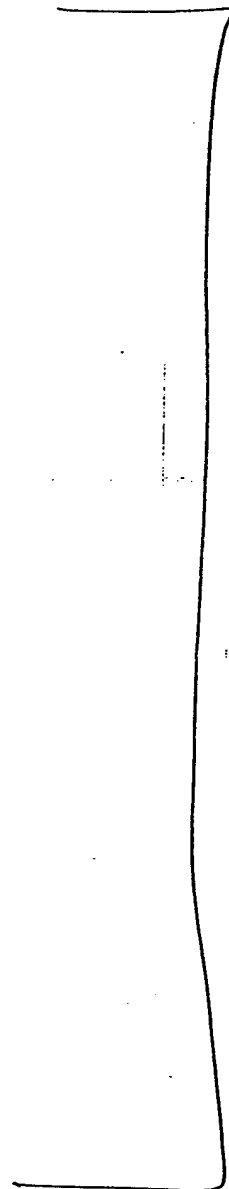
Soviet Capabilities for Strategic Nuclear Conflict Through the 1980s

National Intelligence Estimate
Volume I—Summary

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SOVIET CAPABILITIES FOR
STRATEGIC NUCLEAR CONFLICT
THROUGH THE 1980s

Volume I—SUMMARY

~~TCS 3112-80/1~~

~~Top Secret~~

THIS ESTIMATE IS ISSUED BY THE DIRECTOR OF CENTRAL INTELLIGENCE.

THE NATIONAL FOREIGN INTELLIGENCE BOARD CONCURS, EXCEPT AS NOTED IN THE TEXT.

The following intelligence organizations participated in the preparation of the Estimate:

The Central Intelligence Agency, the Department of State, the Defense Intelligence Agency, and the National Security Agency.

Also Participating:

The Assistant Chief of Staff for Intelligence, Department of the Army

The Director of Naval Intelligence, Department of the Navy

The Assistant Chief of Staff, Intelligence, Department of the Air Force

The Director of Intelligence, Headquarters, Marine Corps

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SCOPE NOTE

This National Intelligence Estimate assesses present and future Soviet capabilities for strategic nuclear conflict. It examines the policies underlying Soviet strategic nuclear programs. It estimates the numbers, types, and characteristics of Soviet strategic forces over the next 10 years, assuming, alternatively, that SALT II limitations are in effect through the period, that they lapse in 1985, or that SALT is abandoned this year. It examines the USSR's capabilities to integrate and operate its strategic forces during peace and war. Finally, it assesses key capabilities and vulnerabilities of Soviet forces for intercontinental conflict, now and in the future. For this purpose, the Estimate includes, among other things, comparative analysis of US and Soviet forces, the validity, propriety, and inclusion of which are not fully agreed upon in the Intelligence Community.¹

The Estimate treats the following elements of Soviet military forces:

- Intercontinental attack: intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), intercontinental bombers, and long-range cruise missiles.
- Peripheral attack: intermediate-range bombers, medium- and intermediate-range ballistic missiles (MRBMs and IRBMs), and certain older SLBMs.
- Strategic defense: ballistic missile early warning (BMEW) systems, antiballistic missile (ABM) and antisatellite (ASAT) systems; surface-to-air missiles (SAMs), fighter interceptors, and supporting systems for defending Soviet territory against aircraft and cruise missiles; systems with antisubmarine warfare (ASW) capabilities for use against nuclear-powered ballistic missile submarines (SSBNs); and the Soviet civil defense program.
- Operational considerations: activities, organizations, and operational factors which support and integrate Soviet strategic nuclear forces. Notable among these are the Soviet command, control, and communications system; the readiness procedures and alert status of forces; and intelligence and warning systems.

¹ See the alternative views of the Director, Defense Intelligence Agency, and the Senior Intelligence Officers of the military services in footnote 2 on the first page of the Summary, in paragraph 47, and on figures 4 and 5.

— Research and development: R&D programs and methods of developing and procuring strategic forces.

The Estimate is published in three volumes. The first of these (Summary) provides an overview of important judgments and analyses drawn from the more comprehensive second volume. The second volume (The Estimate) contains our broad estimates of: policies underlying Soviet strategic nuclear programs; the main developments in Soviet strategic offensive and defensive forces; the control and employment of these forces through 1989; and the current and future capabilities of these forces. The length of this volume has been reduced from last year, but the number of chapters has been expanded from five to six. The new chapter provides a more comprehensive discussion of the rationale underlying our projections of offensive and defensive forces. The third volume (Annexes) provides detailed tabular data on Soviet strategic offensive and defensive forces. The cutoff date for information and analysis in this Estimate was 1 January 1980.

SUMMARY ²

1. During the next few years, Soviet strategic capabilities will continue to grow relative to those of the United States and NATO. The Soviets have pursued steady, persistent strategic programs for many years, while new Western programs remain largely in planning and development phases. We believe that important aims underlying these Soviet programs are to strengthen the USSR's deterrent, to support its foreign policy, and to foster strategic stability through Soviet advantage. In these efforts, however, the Soviets would face less favorable strategic trends over the longer term if additional and more formidable weapons now in prospect are deployed by the United States and NATO in the middle and late 1980s.

2. Throughout the 1980s, with or without SALT limitations, the retaliatory capabilities of US and Soviet forces surviving even a surprise attack would be very large. In the early 1980s, when Soviet forces would have greater capabilities than today to reduce US surviving weapons in a surprise attack, the Soviets would still have to expect the United States to retain the potential to destroy a large percentage of the USSR's economic and military assets. Similarly, despite the improvements planned for US forces in the late 1980s, the Soviets could expect to retain the potential for massive retaliation against US economic and military facilities, even under circumstances of a US surprise attack. This Soviet potential, however, would be less than in the early and middle 1980s, and such a prospective decline is cause for Soviet concern.

3. In seeking to meet the challenges posed by prospective US and NATO force improvements, we believe that the Soviets would hope to avoid substan-

tial further increases in the costs of their strategic programs. We believe that principal Soviet aims will be to slow or halt the Western programs through a combination of threats, inducements, and arms negotiations and, at the same time, to continue to develop force deployment options that could counter these programs. The Soviets would have more latitude to develop and deploy such counters if they were not bound by the limits of SALT II or if those limits were to lapse in 1985. If Western strategic programs proceed as planned and SALT II limits are not changed, the Soviets could find it increasingly difficult to reconcile their strategic force objectives with their desire to continue the SALT process.

4. We do not expect immediate, irreversible responses by the USSR to US deferral of the SALT Treaty. We believe the Soviets will wish, at least initially, to avoid visible changes in strategic programs that could seriously jeopardize the chances of eventual US ratification. They could, however, take measures designed to pressure the United States, with the idea of reversing them later if the Treaty were eventually ratified. A US rejection of the Treaty, particularly in light of prospective US and NATO force improvements, would probably result in a combination of actions by the Soviets that would increase their forces and capabilities beyond those they could have under the SALT II agreement.

A. Soviet Strategic Planning for the 1980s

5. The Soviet leaders view their strategic requirements in the context of persistent long-term struggle between social systems, continuing rivalry with the

² The Director, Defense Intelligence Agency, the Assistant Chief of Staff for Intelligence, Department of the Army, the Director of Naval Intelligence, Department of the Navy, the Assistant Chief of Staff, Intelligence, Department of the Air Force, and the Director of Intelligence, Headquarters, Marine Corps, disassociate themselves from this volume and its characterization as a Summary of the Estimate. In general, they believe the Summary is not representative of the intelligence analyses developed in the Estimate. In their judgment, it concentrates on quantitative information at the expense of intelligence concerning Soviet doctrine, policy, capabilities, future programs, and possible initiatives. In their view, the extensive use of comparative force analysis in the Estimate drives and distorts the Estimate's judgments, especially in this Summary volume.

The holders of this view also consider the judgments outlined in the Summary as unduly shaped by US perceptions and strategic thinking and not properly reflective of Soviet strategic objectives. The Summary should emphasize that the Soviets are pursuing strategic nuclear capabilities for motives quite different from those of the United States. Because of this misplaced emphasis, the Summary fails to explain satisfactorily the comprehensive nature of Soviet strategic planning involving both offensive and defensive systems. The very great political and conventional military consequences of the asymmetries in strategic forces and doctrine are not adequately addressed.

United States for global power and influence, and concern for the policies and forces of countries on the Eurasian periphery, especially NATO and China. Within this framework, the Soviets seek strong and growing strategic capabilities to provide:

- A powerful deterrent against nuclear attack by any adversary.
- Along with other military forces, the prospect of greater freedom of action in the world arena while minimizing the risk of nuclear war.
- An improvement in the chances that, if nuclear war should occur, the USSR could survive and emerge in a better position than its adversaries.

6. The Soviets have made substantial progress toward these goals over the past 15 years. Their strategic forces are generally acknowledged to be equal to those of the United States, and are superior to those of all their other adversaries combined. Despite Soviet progress, however, powerful US retaliatory capabilities would survive even successful Soviet initial strikes, and active and passive Soviet defenses could not prevent the devastation of the USSR. From their statements and writings, it is clear that the Soviet leaders perceive the present US-Soviet strategic relationship as one in which each side could inflict massive damage on the other side under any circumstances. The Soviets would prefer a relationship in which deterrence and strategic stability were assured by Soviet possession of superior capabilities to fight and survive a nuclear war with the United States.

7. The Soviets probably view their improved strategic position as providing a more favorable backdrop than before to the conduct of an assertive foreign policy and to the projection of Soviet power abroad. They probably do not see the present situation of approximate strategic nuclear parity as providing them with the latitude to safely confront the United States directly in areas where they perceive US vital interests to be involved. However, in areas that they believe the United States regards as less central to its interests, particularly in regions where the USSR enjoys a preponderance of conventional forces and the advantage of proximity, such as Afghanistan, the current strategic relationship probably enhances Soviet confidence that the risk of a US local or escalatory military response would be negligible.

8. There is an alternative view which holds that the increasing aggressiveness of Soviet foreign policy will expand as the Soviet Union's advantages in strategic

nuclear forces become more pronounced. The Soviets may now perceive that they have nuclear superiority. As they see this superiority increase during the next three to five years, they will probably attempt to secure maximum political advantages from their military arsenal in anticipation of US force modernization programs. Moreover, the holders of this view sense that the Soviet leadership remains uncertain about the bounding of US national interests and American resolve to meet challenges to these interests. If such uncertainties continue, there is the distinct danger that the USSR may grossly miscalculate US reactions during a regional crisis and thus set the stage for a serious military confrontation between the superpowers.³

9. This year the Soviets find themselves at what they may well regard as a critical juncture in their planning for future strategic forces. They are nearing the end of large ICBM and SLBM deployment programs and the beginning of a new five-year economic plan. They confront growing internal economic problems, which could be complicated by a transition in leadership some time soon. External problems include deteriorating relations with the United States and China, uncertainty about US ratification of the SALT II Treaty, and a growing Western determination to counter improvements in Soviet military forces. Further, the Soviet invasion of Afghanistan and the international condemnation that it incurred probably indicate that, in their present planning, the Soviets are not counting on much benefit from detente.

10. The Soviets must now plan for the middle and late 1980s, a period that they almost certainly perceive as posing major challenges. US Trident submarines and air-launched cruise missiles will make it even harder for them to overcome their insufficiencies in antisubmarine warfare and in air defense. Planned new NATO long-range theater nuclear forces could reduce the large Soviet advantage in forces for peripheral attack; long-range cruise missiles in the European theater would be of particular concern to the Soviets. Finally, the Soviets would see deployment of an MX/MPS system as giving the United States the potential in the late 1980s to destroy the bulk of their ICBM silos and as restoring a measure of survivability for the US ICBM force. The Soviets interpret these Western programs as attempts to regain a strategic

³ The holders of this view are the Director, Defense Intelligence Agency; the Assistant Chief of Staff for Intelligence, Department of the Army; the Assistant Chief of Staff, Intelligence, Department of the Air Force; and the Director of Intelligence, Headquarters, Marine Corps.

advantage rather than as countervailing responses to Soviet initiatives.

11. SALT considerations will figure heavily in Soviet decisions about how to deal with these challenges. As would be expected, the Soviets negotiated the SALT II Treaty so as to protect program options they considered crucial to their strategic needs during the period of the Treaty. The Soviets do not appear to have strategic requirements so pressing as to cause them to make major visible alterations in their strategic programs in the coming months, while US ratification of the Treaty is deferred. They have indicated their willingness, if the Treaty is ratified, to proceed promptly to negotiate further reductions and limitations, but their aims would be complicated by the new Western programs. Moreover, the Soviets might find it difficult to accept continuation beyond 1985 of the SALT II limitations on new ICBMs, ICBM fractionation, and perhaps total numbers of launchers. These provisions would limit their options for increasing the counterforce capabilities and survivability of their land-based missile forces in response to the US MX/MPS and other programs. We are, therefore, uncertain whether the Soviets would be willing to extend such limits beyond 1985.

12. Economic considerations are also a factor in Soviet planning for strategic forces in the 1980s. Energy, demographic, and productivity problems are adding to Soviet economic difficulties. To help ease these difficulties, the Soviets might consider reducing the rate of growth of military spending. However, the evidence available to us on current and planned Soviet programs leads us to conclude that growth in total defense spending and in spending for strategic programs over the next few years will be at or near the historic long-term rate of 4 to 5 percent a year. If the Soviet leaders should perceive economic pressure so severe that they had to consider a moderation of the rate of growth in their defense spending, we believe they would not single out strategic programs for a major reduction in growth.

13. Several major factors lead us to believe that the Soviets are not likely to alter significantly their commitment to long-term strategic force improvements. These factors include the following:

- Continued progress toward the achievement of Soviet objectives for strategic nuclear forces remains a priority element in leadership planning.

- A cutback in Soviet strategic forces would have only a limited effect on the USSR's most serious economic problems.
- The momentum of Soviet strategic programs would be hard to arrest, particularly in a period of leadership transition.
- New signs of Western determination and the deterioration of detente probably will contribute to continued Soviet determination to seek to shift the correlation of forces in the USSR's favor.
- The possibility, however remote, of large-scale nuclear war will continue to support efforts to improve Soviet war-fighting capabilities.

Thus we believe that, while seeking to slow or halt US and NATO weapon programs, the Soviets will at the same time initiate and continue programs designed to overcome current weaknesses, especially in their strategic defenses, and to give themselves options to counter the prospective Western programs.

B. Main Current Trends in Soviet Programs

14. Much evidence on past and present Soviet strategic programs leads us to believe that the Soviets have been striving to acquire and maintain strategic forces and supporting elements that, in the event of nuclear war, could:

- Launch crippling counterforce strikes.
- Survive large-scale nuclear attack.
- Be employed flexibly against a wide range of targets.
- Substantially limit damage to the USSR.

15. The number of Soviet weapons with good counterforce capabilities is increasing rapidly:

- Conversion of 820 older silos to make them capable of launching ICBMs with multiple independently targetable reentry vehicles (MIRVs) will be completed in 1981.
- The latest MIRVed versions of the SS-18 and SS-19, now being deployed, are considerably more accurate than earlier versions of these missiles and have substantial hard-target capabilities.
- Available evidence still points to Soviet programs for five new or modified ICBMs. The characteristics of at least some of them will probably

include improved reliability and even better accuracies.

- Flight-testing of follow-ons to the SS-17, SS-18, and SS-19, however, is not likely to occur for a few years. The Soviets have already incorporated into their current systems major [] modifications that we had expected to appear on the follow-on systems, and they are still working on other modifications.

16. The Soviets are steadily improving the *survivability* of their strategic forces and supporting elements. Recent developments include:

- The much greater hardening of silos as they are converted to accommodate MIRVed ICBMs, and research and testing to make the silos even harder.
- The continued deployment of MIRVed, mobile IRBMs and [] development of two solid-propellant ICBMs, at least one of which could be deployed on mobile launchers.
- The further deployment of MIRVed SLBMs and an increase in the number of SSBNs on patrol or in transit. Additional increases are likely in the 1980s, especially with deployment of the new, large Typhoon submarine and missile.
- The continued expansion and protection of capabilities for command, control, and communications by a combination of hardening, redundancy, and mobility.

17. The Soviets are adding to their capabilities for *flexible employment* of strategic nuclear forces under a variety of circumstances:

- The deployment of MIRVed missiles and the improvement of command and control systems are adding to Soviet targeting flexibility.
- Aerodynamic systems are being retained as part of both intercontinental and peripheral attack forces. Backfires continue to be deployed. A new bomber and cruise missile carrier are under development, but we now doubt that they could be operational until after 1985. The development of a long-range air-launched cruise missile (ALCM) continues.
- The SS-20 IRBM is adding to Soviet striking power and flexibility for attacking targets in Europe, the Middle East, and Asia. A variant of the SS-20 is being flight-tested. Some older

MRBM and IRBM sites have been deactivated, but some of the launch-related equipment and missiles are apparently being transferred to remaining active sites.

- The Soviets are increasing the proficiency of their command and control system []

- The Soviets are improving their ability to launch their missiles on receipt of tactical warning. They are completing large new radars that will improve ballistic missile early warning. Their launch detection satellite program is still in difficulty, however.

18. The capability of Soviet strategic defenses to contribute to *limiting damage* to the USSR remains low despite large, continuing Soviet investments. Weapon systems now being tested should bring some improvement, notably in strategic air defenses.

- In strategic air defense, the Soviets are starting to deploy new versions of existing interceptors, but their low-altitude capabilities will be limited. Modified and new interceptors with lookdown/shutdown capabilities are being flight-tested, and deployment of a new low-altitude surface-to-air missile system is imminent. An airborne warning and control system (AWACS) that is being tested probably will have capabilities over land as well as over water. These systems will have better capabilities against low-altitude bombers, but they probably will have only limited capabilities against cruise missiles. There is as yet no evidence of active development of systems designed specifically to intercept cruise missiles at low altitudes.
- In ballistic missile defense, the Soviets are continuing to develop an ABM system that could be deployed more rapidly than the Moscow system. The R&D program for antiballistic missiles could give them options in the 1980s for upgrading their present ABM system at Moscow or for deploying ABM defenses more widely.
- In antisubmarine warfare (ASW), intensive efforts are under way to improve both acoustic and nonacoustic sensors. However, Soviet towed-array sonar development is not as far along as we had thought. []

- In directed-energy technology, the Soviets are conducting a broadly based research program to investigate applications for strategic defense. They are continuing to develop laser weapon prototypes for testing against aerodynamic vehicles, satellites, and ballistic missile reentry vehicles.
- In civil defense, new evidence and analysis show that the proportion of urban residents that could be accommodated in blast shelters is toward the low side of our previous estimate of 10 to 20 percent. This reinforces our belief that the Soviets would have to rely on city evacuation as their principal means of protecting the urban population. The Soviets, however, could shelter a large proportion of their political leadership and many key industrial workers.
- The Soviets have operational systems capable of attacking or degrading some US satellites and are probably working to improve their capabilities.

C. Future Soviet Forces for Strategic Attack

Possible Soviet Reactions to MX/MPS

19. *Under SALT II.* While the Soviets will try to halt or severely limit the MX/MPS system, they can also be expected to use the time between now and the middle 1980s to develop counters to both the hard-target capabilities and the survivability features of the US system. One of the first indicators of the Soviets' response is likely to be the missile they choose to flight-test as the one new type of ICBM permitted them under SALT II restrictions. They could select either of two new solid-propellant ICBMs [] a small system that could be deployed on offroad mobile launchers but could carry no more than a few MIRVs, and a medium system that could be fitted with a large single reentry vehicle or with up to 10 MIRVs but, if deployed in a mobile configuration, probably would be restricted to improved roads or special deployment areas. Alternatively, the Soviets could develop a medium-size liquid-propellant ICBM to carry 10 RVs, but such a system could not easily be deployed in a mobile mode and we have no evidence that it is under development.

20. At present, the Soviets are keeping their options open. We assume that, under SALT II limitations, they

would choose as their new ICBM a single-RV medium solid system to replace the SS-11, and would deploy it in silos and perhaps on mobile launchers. We think they would also develop—but not flight-test—a MIRV version of this system and a more highly fractionated version of the SS-18. By these actions they could minimize disruptions to their present ICBM programs and be ready to flight-test and deploy ICBMs with greater numbers of RVs if the SALT II limitations expired at the end of 1985. We do not have high confidence that the Soviets will follow this course of action. A 10-RV replacement for SS-17s or SS-19s, or both, seems only a little less likely than a single-RV replacement for SS-11s, especially if the Soviets expected SALT II limitations to be extended beyond 1985 and wanted to maximize their counterforce RVs within these limitations.

21. *Under No-SALT Conditions.* If the SALT limitations on offensive arms were abandoned this year and the Soviets embarked on a major program of force improvement and expansion, they would have more options to respond to the prospect of MX/MPS deployment. They could take full advantage of their large ICBM throw weight and their ongoing R&D programs. Anticipatory actions could be taken gradually, without disrupting near-term Soviet programs. For example, we would expect the Soviets to deploy 14 RVs on SS-18s after a brief flight test program, and to deploy another version with still more RVs in about 1985. A MIRVed medium solid ICBM could be deployed without having to replace existing SS-17s and SS-19s, which themselves could be upgraded to carry more MIRVs. The smaller solid-propellant ICBM could also be flight-tested and deployed. Mobile ICBM launchers as well as additional SLBM launchers could be deployed without compensatory dismantling. We believe that, through such means, the Soviets would seek to counter the US MX/MPS and other programs as they emerged.

Soviet Intercontinental Striking Forces

22. Our projections of Soviet intercontinental striking forces reflect our judgment that the USSR will continue its historical heavy reliance on ICBMs, secondary reliance on SLBMs, and maintenance of a relatively small force of aerodynamic systems for intercontinental attack. The four projections we display illustrate alternative future Soviet force levels under various assumptions about SALT. The projections are based on observed recent trends and our best estimates of Soviet technological progress, and are

made in the light of Soviet objectives for strategic forces as well as US strategic program options. They are not confident estimates of what the Soviets will actually do over a period as long as 10 years ahead, especially in this period of transition in Soviet and US programs.

23. We project two moderate SALT-limited (Mod SAL) Soviet forces, in which we assume that the SALT II Treaty enters into force this year and remains unchanged through mid-1989. In the first force we assume that the Soviets elect as their permitted one new type of ICBM a medium solid-propellant missile with a large single RV, and deploy it in upgraded SS-11 silos and on mobile launchers. The second Mod SAL force illustrates the effects of a Soviet decision to maximize the number of ICBM RVs within SALT II limits, by replacing all SS-17s and SS-19s with a medium solid-propellant system having 10 RVs, deployed in silos and on mobile launchers.

24. We project a third force (termed SAL/No-SAL) which illustrates the Soviet potential to develop and deploy additional forces and to respond to the MX/MPS system if SALT II limitations are in force through 1985, but expire at the end of that year. This projection assumes that the USSR prepares in advance for rapid, subsequent improvements in the counterforce capability and survivability of its offensive forces.

25. A fourth force (Mod No-SAL) illustrates Soviet development and deployment options under circumstances in which the SALT II Treaty is abandoned this year, the SALT process breaks down, and US-Soviet relations deteriorate still further. In this environment, we believe the Soviets would be motivated to compete more vigorously with the United States by deploying additional improved systems. Further, without SALT II constraints they probably would retain many of the older systems that would have been deactivated under the provisions of the Treaty. The projection assumes that the Soviets would field a large force of highly fractionated ICBMs to increase their striking capabilities, and that they would seek still further to improve the survivability of their forces by deploying larger numbers of mobile ICBMs and MIRVed SLBMs.

Static Comparisons of US and Soviet Intercontinental Striking Forces

26. Figure 1 illustrates projected trends in the number of weapons in future Soviet forces and in their

explosive power, with and without SALT II limitations. The top two charts compare the moderate SALT-limited Soviet forces, and the SAL/No-SAL force, with a US SALT-limited force that is based on Department of Defense projections. The charts show that the projected Soviet SALT-limited forces would improve relative to the projected US force in the early and middle 1980s, but that the trends would become less favorable to the Soviets in the second half of the decade if SALT II limits remained in effect throughout the period. The charts also show that Soviet forces could match or exceed those of the United States in the late 1980s if SALT II limitations expired in 1985, the Soviets expanded their forces, and the United States continued to develop its forces as currently programmed:

- In online missile RVs and bomber weapons, the present US lead becomes very small by the early 1980s. The United States would regain the lead in the late 1980s under SALT-limited conditions, unless the Soviets deployed 10 RVs on all their MIRVed ICBMs. However, the Soviets could achieve an advantage in the late 1980s if the SALT II Treaty expired in 1985 and the United States did not change its programmed force.

- In online equivalent megatons, the Soviet forces maintain their current lead in each of these assumed circumstances.

27. The bottom two charts in figure 1 illustrate the prospects for Soviet force improvement and expansion under conditions in which SALT II is abandoned and the Soviets begin a buildup this year. In these circumstances, we project that Soviet forces would achieve qualitative and quantitative characteristics that would substantially exceed those that they would be likely to have under SALT II:

- In numbers of online missile RVs and bomber weapons, the Soviets would be able to deploy more highly fractionated ICBMs and SLBMs (for example, a 20-RV SS-18 in 1985) than they could under SALT II. Owing to this greater flexibility, the number of Soviet missile RVs and bomber weapons grows more rapidly and by 1989 exceeds that of the SALT-limited forces by a substantial margin.

- In online equivalent megatons, the Soviet No-SALT force grows to a level greater than that of the SALT-limited forces. The rate of increase,

Indexes of Soviet and US Forces for Intercontinental Attack

Figure 1

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however, is more gradual than that shown for missile RVs and bomber weapons. This is because highly fractionated payloads tend to have less explosive power than payloads with fewer RVs.

For comparison, the SAL/No-SAL projection is also reproduced on the bottom two charts. It illustrates that by preparing themselves to break out of SALT limitations rapidly upon expiration of a SALT II Treaty in 1985, the Soviets could by 1989 acquire forces which, in these indexes, approach the forces we would expect them to acquire through a more gradual No-SALT buildup beginning this year. If the Soviets were to delay the start of a buildup because of uncertainty over the outcome of SALT II but began it in 1982, for example, the Soviet curves on these graphs would probably be between the SAL/No-SAL and the No-SAL curves.

28. A variety of possibilities exist for more threatening Soviet intercontinental offensive forces. Even under SALT II limitations, the performance characteristics of Soviet weapons might be better, or might be improved faster than our best estimates indicate. If there were no SALT limitations, the Soviets could deploy even more MIRVs and relatively survivable launchers than in our Mod No-SAL projection. It is highly unlikely, however, that the Soviets could substantially exceed our best estimates of deployment and technological achievement in all components of their forces. This would strain Soviet development and production capacity and incur the costs and risks of very fast replacement rates. Projections illustrating the upper bounds of our uncertainties about Soviet technological progress and deployment rates can be found in chapter V in the main text of this Estimate.

Soviet Strategic Forces for Peripheral Attack

29. Soviet medium- and intermediate-range forces for strategic attack on the Eurasian periphery have long been superior in numbers and capabilities to comparable Western and Chinese forces. The asymmetry is increasing with the deployment of the mobile SS-20 IRBM and the Backfire bomber. On the basis of limited evidence of Soviet planning in the mid-1970s, and trends in production and deployment since then, we have projected a continued, moderately paced Soviet program to modernize peripheral strategic striking forces. The main features of this projection are:

- Deployment of about 300 launchers for MIRVed, mobile IRBMs by about 1985, and the replacement of the SS-20 with a follow-on missile.

- Deployment of some 200 Backfires to Long Range Aviation by 1989, assuming that Backfire production is limited to 30 per year and that output continues to be shared about equally between LRA and Soviet Naval Aviation.

- Basing of the new weapon systems to ensure coverage of all areas on the Eurasian periphery, with mobile IRBMs divided in about equal thirds among the western, eastern, and central USSR and Backfires oriented primarily to penetrate European air defenses. There is an alternative view that the Backfire has good intercontinental capabilities, and that some portion of the Backfire force would be employed against targets in the United States.*

- Some continued deactivations of older MR/IRBM launchers, and retirements of older medium bombers. We are uncertain, however, about whether these aging systems will gradually decline or be retained, in part because the Soviets are probably hedging against NATO force modernization.

30. We have no present basis for estimating how improvements in NATO long-range theater nuclear forces would affect Soviet peripheral attack programs, or what specific arms control proposals the USSR may put forward. The Soviets would have the option of expanding their peripheral attack forces with a higher level of effort, and could take further steps to improve tactical nuclear forces.

D. Counterforce Capabilities and Prelaunch Survivability of Soviet Intercontinental Striking Forces

31. The Soviets expect that intercontinental nuclear conflict would most likely arise out of an intense US-Soviet crisis or confrontation, probably involving a conventional theater war that had escalated. The Soviets generally envisage strategic nuclear operations as complex engagements, rather than as a single, all-out exchange []

[] the Soviets stress employment flexibility and endurance in the

* The holders of this view are the Director, Defense Intelligence Agency; the Assistant Chief of Staff for Intelligence, Department of the Army; and the Assistant Chief of Staff, Intelligence, Department of the Air Force.

development of their strategic weapons and supporting elements. A longstanding aim of the Soviets is to improve the survivability of their command and control system so that it could function even under circumstances in which it had suffered direct, large-scale nuclear attacks.

32. Recent Soviet programs for intercontinental attack forces and supporting elements include features reflecting the stress on flexibility and endurance.

Over the years the Soviets have acquired capabilities to employ their intercontinental nuclear forces in initial, preemptive, or retaliatory strikes, and in recent years they have been developing capabilities to launch their forces upon receipt of tactical warning that an enemy attack had been launched. We believe that the Soviet command and control system could support any of these employment options. We also believe the system would have good capabilities for sustained battle management following an initial nuclear strike, but would be severely degraded if national-level command bunkers and communication centers were destroyed.

Counterforce Capabilities

33. If the Soviets were to launch a strike on the United States, their objective of highest priority would be to reduce the retaliatory capability of opposing offensive forces. The Soviets would target US bomber and SSBN bases, of which there are only a few, as well as US ICBM silos, of which there are about 1,000. In addition, the Soviets will be faced with a large number of MX shelters in the late 1980s.

34. Judging by present trends in the number and capabilities of Soviet ICBM RVs, we believe that from now on the Soviet ICBM force will be capable of destroying most US ICBM silos and still have many warheads remaining for other purposes. An MPS system, however, would tax Soviet counterforce capabilities in the late 1980s. The Soviet choice of which new ICBM to deploy under SALT limitations would influence the number of ICBM RVs available to attack MX shelters, but the more important factor affecting the number is whether or not SALT limitations were in effect. The table below shows our alternative projections of total online Soviet ICBM RVs in 1989, those with hard-target capabilities, and the number on ready missiles in excess of those required to attack silos. While all such excess RVs would theoretically be available to attack MX shelters, it should be noted that the Soviets would also have requirements to attack other kinds of targets and to withhold ICBMs for other purposes. These requirements would reduce the number of ICBM RVs actually available for attacking MX shelters.

35. There is a divergent view that, because of the other Soviet targeting and withhold requirements for ICBM RVs, the number of Soviet hard-target ICBM RVs available for use against the planned US MX/MPS system would be far fewer than the "excess" shown in the table. As a result, the holders of this view believe the table and figure 2 overstate the threat to the planned US MX/MPS system.⁵

36. Figure 2 illustrates the number of ICBM RVs remaining on each side if the ICBMs of the Soviet SALT-limited forces were used to attack all US ICBMs

⁵ The holders of this view are the Director, Defense Intelligence Agency, and the Senior Intelligence Officers of the military services.

Soviet Hard-Target ICBM Reentry Vehicles in 1989

Moderate Force Projections	Total Online ICBM RVs	Hard-Target-Capable ICBM RVs	Hard-Target RVs in Excess of Those Required To Attack Minuteman Silos
SALT limitations through 1989 New ICBM with single RV	6,200	6,200	4,600
SALT limitations through 1989 New ICBM with 10 RVs	8,600	8,200	6,500
SALT limitations through 1985 Buildup begins in 1986	11,700	11,700	9,900
No SALT limitations Buildup begins in 1980	13,800	13,800	11,400

and MX shelters. For this purpose, we assume that the Soviets target two ICBM RVs against each US silo and one RV against each MX shelter, and that US ICBMs ride out the attack. The figure shows:

- In the top two charts, if the Soviets elected to deploy a new ICBM with a single RV, a Soviet attack on all US silos and the 4,600 MX shelters currently programmed would leave the US ICBM force with few surviving RVs but, by 1989, the USSR would also be left with few ICBM RVs for other missions.
- In the bottom two charts, if the Soviets elected to deploy a new MIRVed ICBM with 10 RVs, the Soviet attack would leave the USSR with about 2,000 ICBM RVs available for other missions in 1989.

37. If the SALT II limits were to expire in 1985 or if SALT II were abandoned this year, the Soviets would have the flexibility to increase their inventory of ICBM warheads far beyond what would be required to attack all US silos and the 4,600 MX shelters currently programmed. With this US shelter program, the Soviets could have 5,000 to 6,000 ICBM RVs remaining after an attack on US ICBMs in the late 1980s under these No-SALT circumstances. However, the Soviets probably would expect the United States to increase the number of MX shelters substantially. In this case, Soviet RVs remaining after a Soviet silo/shelter attack would be significantly reduced.

38. We believe the Soviets are now considering some form of advanced guidance system for their future SLBMs, but it is unlikely that MIRVed SLBMs with hard-target capabilities could be deployed before the 1990s. To acquire such capabilities, the Soviets would have to develop guidance techniques employing global positioning satellites or terminal RV homing. This would involve more technical risk and vulnerability to countermeasures than the Soviets have been willing to accept in their SLBM systems to date. We cannot, however, exclude the possibility that the MX/MPS system might motivate the Soviets to develop such techniques and that, with a high level of effort, they might be able to start deploying SLBMs capable of attacking MX shelters in the late 1980s.

39. The Soviets have ample capabilities to destroy all US SSBN bases as well as the bases of the US bomber force. We have no present evidence that the Soviets are trying to minimize the flight time of SLBMs in order to pose a greater threat to US alert

bombers. In view of the dispersal and other measures the United States could exercise, it is unlikely that the Soviets would be able to destroy more than a few of the bombers the United States keeps on alert.

Prelaunch Survivability

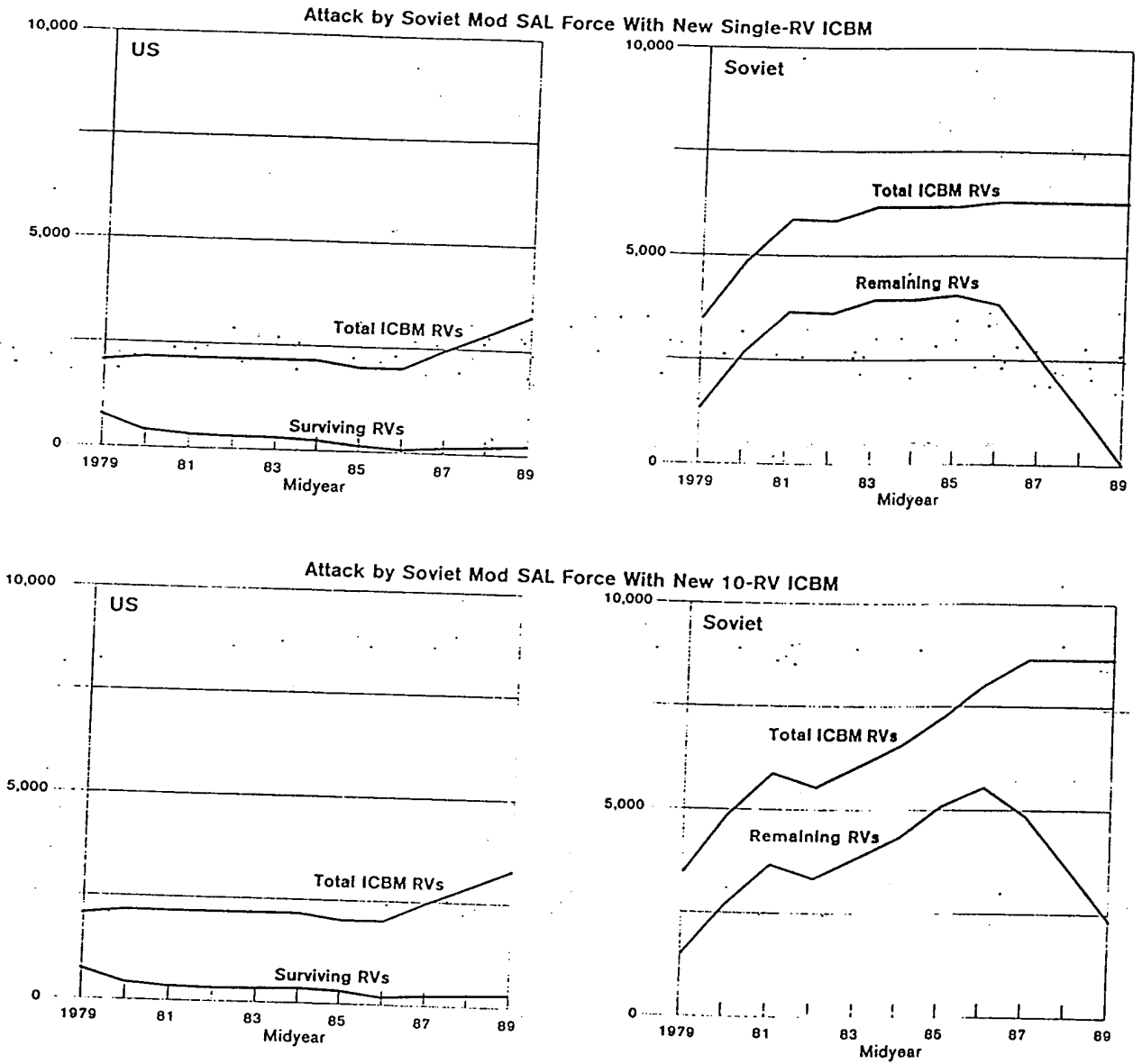
40. The overall survivability of Soviet intercontinental offensive forces in the 1980s will remain heavily dependent on the survivability of their fixed ICBMs. Deployment of more SLBM RVs and mobile ICBMs would increase the relatively survivable portion of Soviet forces, but present trends do not suggest a radical shift away from silo-based ICBMs. Figure 3 depicts the threat to Soviet ICBMs posed by current and programmed US SALT-limited forces, assuming that the United States targeted two ICBM RVs against each Soviet silo and that Soviet silo-based ICBMs rode out an attack. The figure shows:

- In the top two charts, if the Soviets elected to deploy a new ICBM with a single RV, some 3,000 Soviet RVs on silo-based ICBMs could be expected to survive an attack by US ICBMs through the middle 1980s. In the late 1980s, however, the number of silo-based RVs expected to survive would be reduced to about 500 because of the increased counterforce capability of the MX.
- In the bottom two charts, if the Soviets elected to deploy a 10-RV new ICBM, the number of silo-based RVs expected to survive in the late 1980s would be only slightly higher.
- In both cases, a two-on-one attack on all Soviet silos would leave the United States with virtually no ICBM RVs remaining until the late 1980s, at which time, it would have unused ICBM RVs available for other purposes.
- Soviet mobile ICBMs would be vulnerable to a US ICBM attack if deployed at fixed support bases like those used for the SS-20 IRBM. Their survivability could be increased if, as we think likely, the Soviets dispersed them in a crisis. The charts show that with dispersed mobile launchers, the Soviets could have as many as 1,500 additional surviving ICBM RVs if the USSR elected a 10-RV missile as its new ICBM and deployed a number of them on mobile launchers. A single-RV new ICBM would not offer this advantage because even a large force of mobiles would carry relatively few RVs.

Capability of Soviet ICBMs To Attack US ICBMs in Silos and Shelters

Soviet ICBMs Attack Minuteman Two-on-One, MX One-on-One; US ICBMs Ride Out Attack

Figure 2



There is a divergent view which holds that this figure improperly portrays the threat to the planned US MX/MPS system. See paragraph 35 for details of this view, held by the Director, Defense Intelligence Agency, and the Senior Intelligence Officers of the military services.

41. The foregoing charts indicate that in SALT-limited circumstances the Soviets could expect a substantial number of their silo-based ICBM RVs to survive in the early and middle 1980s even if they rode out an attack. Under No-SALT circumstances, the Soviets could MIRV virtually all of their ICBMs, and therefore could expect a somewhat greater number of ICBM RVs to survive a US attack in the early and middle 1980s. In the late 1980s, however, the number of expected Soviet ICBM RV survivors probably would still decline to relatively low levels, unless the Soviets were to change their force mix more dramatically than we believe likely even under No-SALT circumstances.

42. It should also be noted that the highly accurate US bomber and ALCM weapons would pose an additional threat to Soviet silo-based ICBMs. The Soviets would be concerned about this additional capability but would be aware that the US aerodynamic systems would be subject to attrition by Soviet air defenses and that their long flight times would give the USSR more time to decide whether to launch its silo-based ICBMs.

43. With regard to the survivability of the other elements of Soviet intercontinental striking forces, roughly 75 percent of the Soviet SSBN force is normally in port and no bombers are kept on alert. Therefore, both elements are vulnerable to surprise attack. [

[With [warning, the Soviets could put [of their modern SSBNs to sea in combat-ready status. At full combat readiness, the survivability of bombers would be increased because they probably would be dispersed and placed on alert.

E. Quasi-Dynamic Analysis of Soviet and US Intercontinental Striking Forces ⁶

44. Comparisons of the aggregate size of strategic forces provide important insights into significant trends in US and Soviet intercontinental striking power. Because such comparisons are essentially static in nature, however, they cannot fully reflect differences between the two forces and their capabilities that arise from qualitative asymmetries. These differ-

⁶ For the view of the Director, Defense Intelligence Agency, and the Senior Intelligence Officers of the military services on the validity and propriety of this analysis, see paragraph 47.

ences can be better illuminated by using an analytical technique—quasi-dynamic analysis—that has been an integral part of this Estimate for the past several years. This analysis addresses the potential of one side's ICBMs to attack the retaliatory forces of the other side and then compares the residual destructive potentials. The respective arsenals are reduced by subtracting those ICBMs needed for the attack and those retaliatory forces destroyed in the attack; the ICBMs of the side attacked are assumed to ride out the attack without being launched. The residuals are on-pad potentials, calculated without considering such factors as specific targeting doctrines, command and control degradation, attrition by air defenses, and other operational variables.

45. The calculations in the analysis do not attempt to simulate actual conflict outcomes. Rather, they seek to display comparative capabilities and limitations in a manner most relevant to nuclear deterrence in its most elementary form—that is, assured destruction. The analysis illustrates the retaliatory destructive potential that a side contemplating an attack would have to expect to survive on the side attacked. It also compares this surviving destructive potential with the destructive potential remaining to the attacking side, a consideration important to both sides.

46. The measures employed in the analysis—lethal area potential and hard-target potential—describe the remaining and surviving potentials of each side to apply a prescribed overpressure over a wide area or to attack representative hardened silos on the other side.⁷ The analysis makes no estimate of which of these or other capabilities, or what mix of them, national leaders would elect in retaliatory or second strikes. But the comparison of the US and Soviet potentials does give some feel for the options that would be available to national leaders, and the composition of the residual potentials provides insights about the suitability of the forces for rapid or delayed response.

47. There is a view in the Intelligence Community that the quasi-dynamic residual analysis in this Estimate produces misleading results with respect to trends in the strategic balance, sheds little light on the question of deterrence, and comprises a net assessment from the US perspective which is not a proper func-

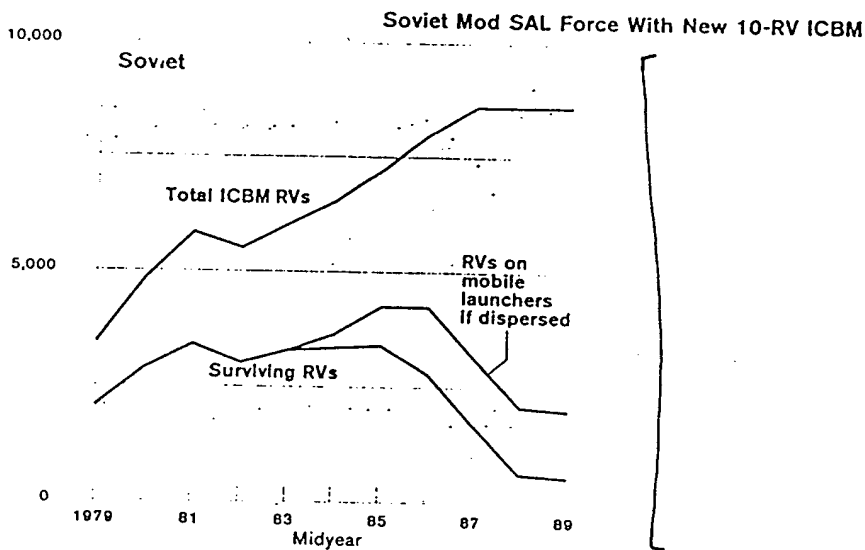
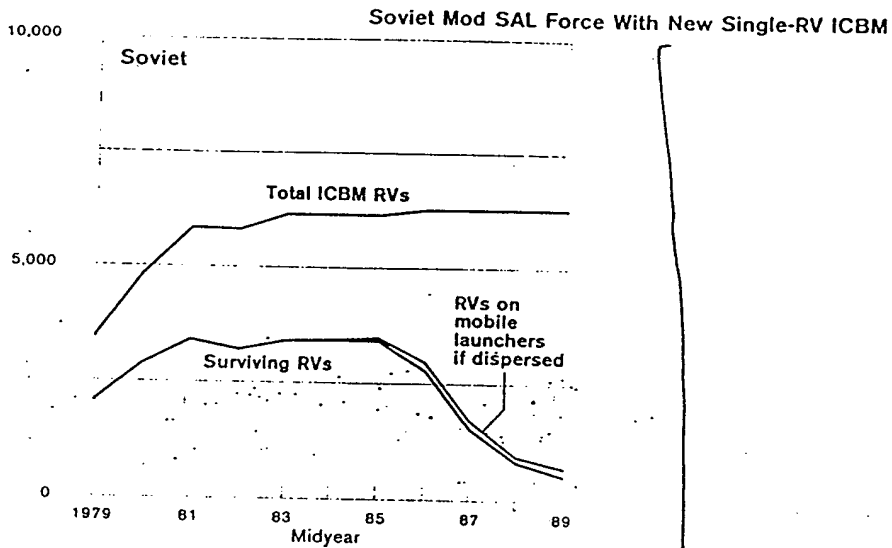
⁷ The Soviet hard-target potential is gauged against representative US silos hardened to [

[The US potential is gauged against representative Soviet silos of hardnesses [

Survivability of Soviet ICBMs If Attacked by US ICBMs

Figure 3

US ICBMs Attack Soviet Silos Two-on-One, Soviet Mobile Support Bases One-on-One;
Soviet ICBMs Ride Out Attack



tion of intelligence. According to this view, only analysis of comprehensive two-sided exchanges can convey valid and useful impressions about relative US and Soviet strategic nuclear capabilities. In this view, such analysis from the US perspective should be accomplished within the Department of Defense with intelligence as a full partner, and should not be included in a National Intelligence Estimate. Consequently, the holders of this view believe that the analysis of residual forces in this Estimate (as summarized in figures 4 and 5) should be removed. Further, the holders of this view believe that the Intelligence Community should focus its efforts on understanding and, if possible, duplicating Soviet analytical techniques for net assessment.^a

48. The Director of Central Intelligence believes that it would be a disservice to national decision-makers to produce this Estimate without any interpretation of relative US and Soviet strategic nuclear capabilities beyond that shown by static indicators. In his view, the inclusion of quasi-dynamic analysis, despite its limitations, allows the Estimate to reach more comprehensive conclusions about relative strategic capabilities and deterrent potentials and about perceptions of them. He believes that the quasi-dynamic analysis is important to those who see the key ingredient of deterrence as the capability of one side to absorb a first strike and retain enough absolute destructive potential to destroy a broad mix of targets on the other side.

Soviet and US Residual Potentials

49. Figure 4 displays the results of our analysis of residual potentials under a worst case circumstance for the side attacked—that is, a surprise attack when forces are on day-to-day alert. The SALT-limited forces of each side are used. In the US force, 200 MX missiles with 4,600 shelters are deployed between 1986 and 1989. The forked lines on these charts indicate our uncertainty about whether the Soviets will deploy a single-RV or a 10-RV missile as their one new ICBM, and show that the trends would not be very different in either case.

50. The charts illustrate that, under SALT II limits, the potentials of residual Soviet forces—measured either in terms of lethal area potential or in terms of hard-target potential—will improve over the next few

^a The holders of this view are the Director, Defense Intelligence Agency, and the Senior Intelligence Officers of the military services.

years regardless of which side struck first. The Soviets will have a sizable advantage in these potentials in the early and middle 1980s, but US force improvements will erode and even reverse the Soviet gains if SALT II limits extend beyond 1985. By 1989, Soviet residual potentials would revert to levels equal to or less than those the Soviets would have today, while US residuals would grow to levels substantially larger than those available to the USSR. The Soviets could alter these adverse trends if they deployed even larger numbers of mobile ICBMs and SLBMs or established high alert rates for such systems. It would be difficult, however, for the Soviets between now and the late 1980s to change their force mix sufficiently to reverse these trends.

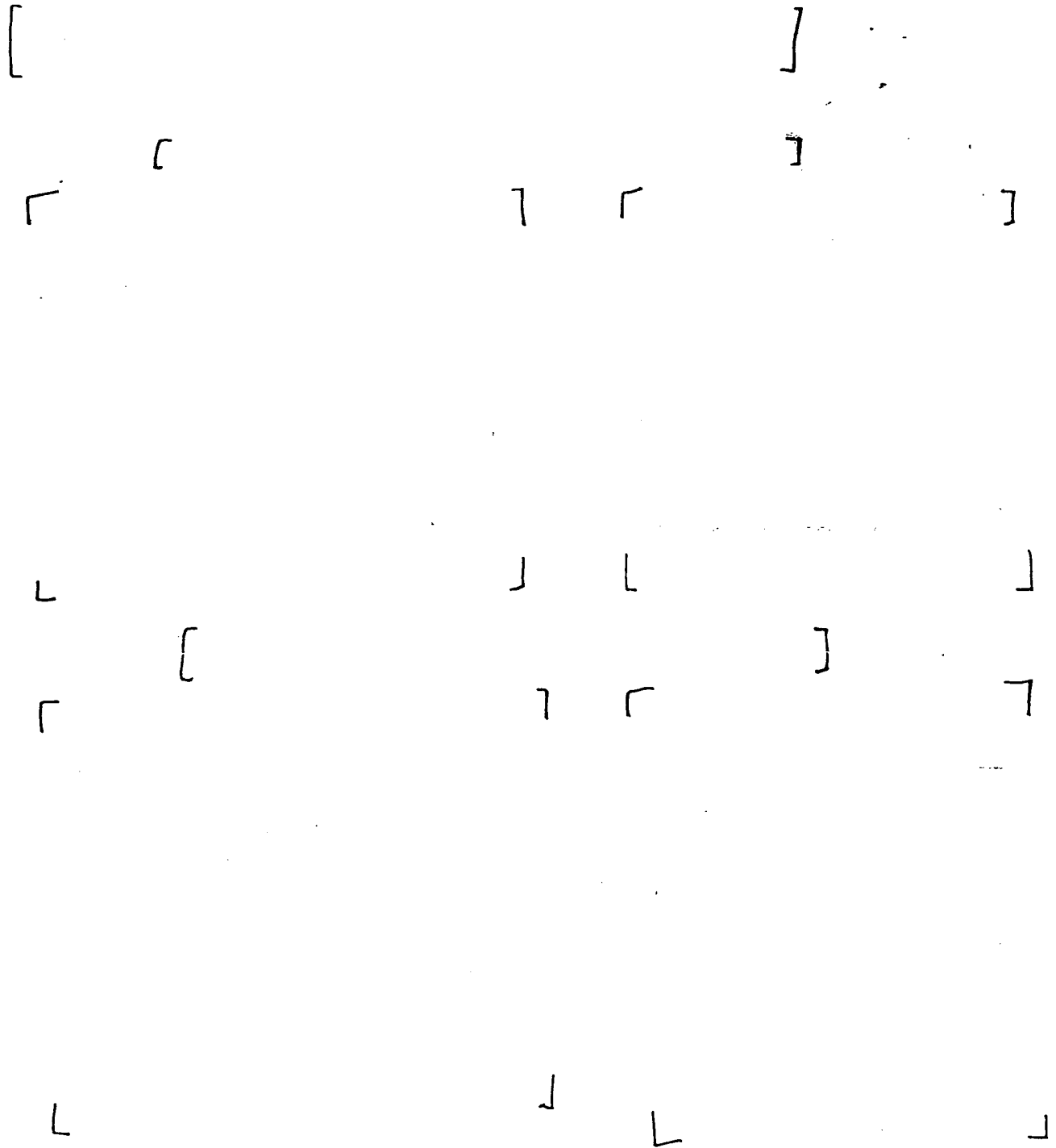
51. Figure 5 compares the composition by major force element of the residual lethal area potentials and hard-target potentials of US and Soviet SALT-limited forces after a surprise attack by the other side:

- The composition of the surviving Soviet potentials reinforces the impression that it is the continued heavy Soviet reliance on silo-based ICBMs that causes the adverse effects on Soviet residuals in the late 1980s if the United States deploys the MX.
- The composition of surviving US forces shows that, despite increasing US ICBM silo vulnerability, US residuals decline only slightly in the early 1980s because ICBMs make up a relatively small portion of US prestrike potentials. Deployment of MX with 4,600 shelters would not significantly increase the surviving US potentials if, as assumed in this analysis, the Soviets were willing to expend large numbers of their ICBMs to attack all MX shelters. The charts show that bombers and ALCM carriers, which must be launched to survive attack and are subject to air defense attrition, would account for a large and increasing fraction of the surviving US potentials.

52. To provide an indication of the urban and industrial destruction that could be achieved by the surviving lethal area potentials of these SALT-limited forces, we have compared them with US and Soviet urban areas. We find that:

- Throughout the 1980s, the area over which surviving US forces could theoretically create overpressures sufficient to destroy reinforced concrete buildings would be equivalent to the [] square kilo-

Figure 4



meters. Even the relatively few surviving US ICBM RVs would have the potential to destroy a large share of Soviet economic value.

- In the early and middle 1980s, the Soviet surviving lethal area potential would be equivalent to [kilometers. By the late 1980s, the surviving Soviet potential would have been reduced to less than one-half of this amount. Even then, however, the Soviet potential would exceed that required to destroy most of the US economic value.

53. We have also examined the surviving hard-target potential of each of these forces in relationship to the missile silos, shelters, and hardened command and control bunkers of the other. We find that:

- Surviving US ICBM warheads would have the potential to destroy only a small number of Soviet ICBM silos, but a large proportion of the Soviet national- and intermediate-level command and control bunkers. Surviving US bomber weapons would have the potential to destroy a substantial portion of Soviet ICBM silos, although they have relatively long flight times and would be subject to air defense attrition.
- Surviving Soviet ICBM warheads, on the other hand, could destroy a substantial number of US silos, as well as US hardened command and control facilities in quick-reaction retaliatory strikes. They could destroy only a small fraction of the US MX shelters available in 1989, however.

54. Finally we have examined the surviving potentials of the SALT-limited forces of each side to destroy nonsilo military targets, which vary widely in area and hardness. Throughout the 1980s under SALT circumstances, each side would have the surviving potential to destroy a large percentage of these targets on the other side. For the United States, the bulk of this potential would reside in either its surviving SLBM warheads or its bomber weapons. For the USSR, the potential would reside in either its surviving ICBM or SLBM warheads.

Implications

55. With regard to absolute residual capabilities the quasi-dynamic analysis indicates that, throughout the period of the Estimate, the SALT-limited forces of

each side could devastate the other side in retaliation after absorbing a first strike.

56. With regard to relative residual capabilities:

- The analysis shows that, if they struck first with SALT-constrained forces, the Soviets could have a substantial advantage in residual potentials through the middle 1980s. The United States would begin to narrow the gap thereafter and, in the late 1980s, would achieve residual potentials about equal to those of the USSR. Thus, the United States is at a disadvantage through the middle 1980s and the situation then improves.

- From the point of view of Soviet concern about the possibility of a US first strike, again with SALT-constrained forces, the analysis indicates that Soviet residuals would be the greater in the middle 1980s, but would fall well below those of the United States by the late 1980s.

57. With regard to the very broad trends under SALT II conditions:

- The analysis shows a substantial Soviet improvement in the next few years, reaching a plateau in the early and middle 1980s or peaking in the middle 1980s. It shows a slight US decline in the early 1980s and a sharp improvement in the US position in the late 1980s.
- These trends are caused by the combined effects of heavy Soviet reliance on fixed land-based ICBMs, US force diversity and planned modernization, and SALT II limitations if extended through the decade.

F. Capabilities of Soviet Strategic Defenses

58. In light of the improving Soviet intercontinental offensive capabilities, the extent to which Soviet strategic defenses—air and missile defenses, antisubmarine warfare forces, and civil defense—could reduce the damage to the USSR from US retaliatory strikes is becoming even more important. Currently, Soviet strategic defenses would be unable to reduce significantly the weight of a large-scale US nuclear attack on the USSR.

Air Defense

59. At present the massive Soviet air defense forces, if undegraded, would probably perform well against aircraft at medium and high altitude, but they have

Figure 5

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little capability to intercept targets at low altitudes. The graphs in figure 6 reflect our projections that:

- New interceptors, the majority of them equipped with modern lockdown/shutdown capabilities, and a new low-altitude surface-to-air missile system will be deployed in substantial numbers during the 1980s.
- The percentage of the area of the western USSR covered by air defense warning and control systems capable of vectoring lockdown/shootdown fighters will grow gradually. Significant gaps in coverage will remain, however.
- With the deployment of AWACS aircraft in conjunction with longer range interceptors, the Soviets in the middle and late 1980s would be able, for relatively brief periods (during a crisis, for example), to mount forward defenses along the approach routes to the western USSR. Such defenses would be designed to intercept US bombers and to force ALCM carriers to launch their missiles at considerable distances from Soviet borders.

60. We are unable to quantify the attrition that Soviet air defenses would be able to inflict on US low-altitude aircraft and cruise missiles, in part because of uncertainties about key technical characteristics of future Soviet systems, and in part because we cannot quantify the effects of important operational factors and interactions that would bear heavily on actual air defense performance. Accordingly, there is a view in the Intelligence Community which holds that graphs showing the gross area of theoretical coverage of air defense systems, particularly when standing alone, can be misleading as measures of Soviet air defense potential. Because such graphs cannot incorporate important deployment and operational considerations, this view concludes that the graphs are not useful.*

61. The estimates that follow represent our best judgments about the capabilities of Soviet air defenses against programed US aerodynamic forces over the next decade:

- In the early 1980s, improved Soviet air defense systems will not be available in numbers large enough to markedly improve defense against bombers and cruise missiles at low altitudes.

* The holders of this view are the Director, Defense Intelligence Agency, and the Senior Intelligence Officers of the military services.

- In the middle and late 1980s, Soviet air defenses will probably have reduced the USSR's vulnerability to US defense avoidance tactics and, if undegraded, will have the potential to inflict considerably higher attrition against US bombers of current types. They will probably have little or no effective capability against in-flight US short-range attack missiles (SRAMs) carried by bombers.
- The Soviets will gradually develop the capability to defend some key areas against currently programed US cruise missiles. Because of technical and numerical deficiencies, however, their capability to defend against a large force of US cruise missiles will probably remain low.
- In addition, precursor missile attacks, defense saturation and suppression, and electronic warfare would degrade the overall effectiveness of Soviet air defenses.
- Thus, the actual performance of the defenses against combined attacks involving large numbers of US bombers, SRAMs, and cruise missiles will probably remain low during the period of this Estimate.

ABM Defense

62. Soviet R&D activities in ballistic missile defense continue. In our view, these efforts represent hedging against an uncertain future and are aimed at deterring the United States from abrogating the ABM Treaty and developing options for ABM system deployment in the 1980s. There continues to be no evidence to suggest that the Soviets have decided to deploy ABM defenses beyond Moscow.

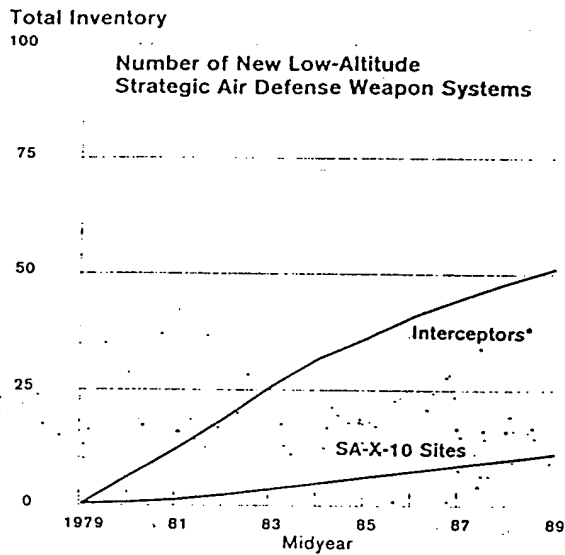
63. Within the provisions of the ABM Treaty, the Soviets could use the systems they have under development to improve their limited ABM defenses at Moscow. Such improvements could provide better capabilities to defend a few selected targets in the Moscow area, such as command and control facilities, but could not provide more than minimal defense against a large US missile attack.

64. The Soviet ABM R&D program could give the USSR options to deploy additional ABM defenses beginning in the early or middle 1980s. If the ABM Treaty is abrogated, these options would include: further expansion of the Moscow ABM defenses; relatively rapid deployment of an ABM system with aboveground launchers to protect other key area tar-

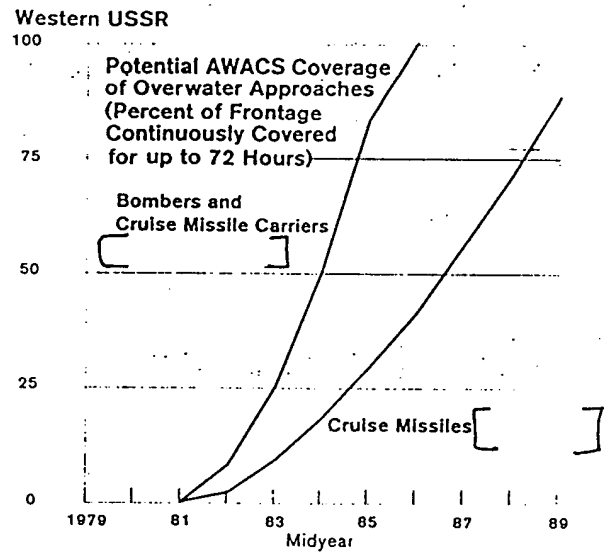
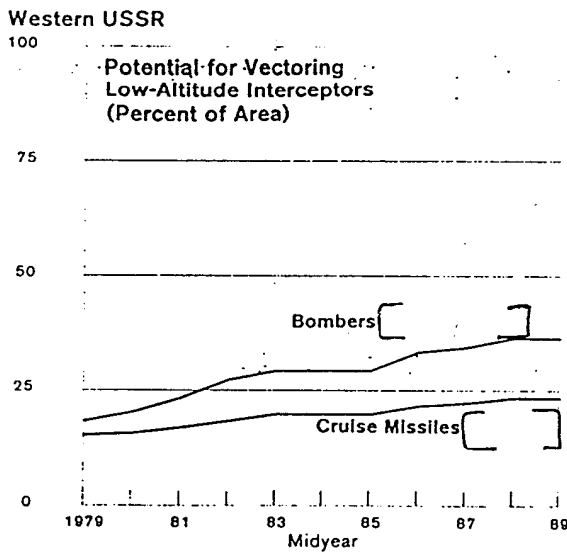
Soviet Strategic Air Defense Forces

Figure 6

Measures of Low-Altitude Defense Potential



*Includes deployment of interceptors with modern lookdown/shutdown capabilities beginning in 1981.



There is a divergent view which holds that these graphs are not useful because they do not incorporate important deployment and operational considerations. See paragraph 60 for details of this view, held by the Director, Defense Intelligence Agency, and the Senior Intelligence Officers of the military services.

gets; and slower paced deployment of a system with silo launchers for defense of key area targets or for hard point defense of selected military targets. The ABM system available for such deployment in the middle or late 1980s would be able to intercept US missile RVs of all current types, including those accompanied by chaff. The effectiveness of these defenses would depend most importantly on US reactions, such as the deployment of penetration aids and the adaptation of tactics.

65. For the past several years, we have expressed concern that, in addition to ballistic missile early warning (BMEW), the four large radars that are being built along the periphery of the USSR could also have or be given the capability to perform ABM battle management. With such a capability, these radars could constitute long-leadtime preparations for future ABM deployment. In terms of size and power, they have the inherent potential for ABM battle management.

66. Recent analysis [

] leads us to conclude that they have been designed and are intended for BMEW and space surveillance alone.

67. There is a divergent view in the Intelligence Community that the available evidence is subject to alternative interpretation as to the capabilities and intended use of the new radars, and is insufficient to conclude that they are only for BMEW and space surveillance. According to this view, the fact remains that these long-leadtime items possess a significant potential for future ABM battle management and could provide data accurate enough for such employment.¹⁰

Antisubmarine Warfare

68. Soviet forces with ASW capabilities are not now an effective counter to US SSBNs. The critical problems confronting the USSR are limitations in sensors and signal data processing. Major R&D programs are

¹⁰ The holders of this view are the Director, Defense Intelligence Agency; the Assistant Chief of Staff for Intelligence, Department of the Army; and the Assistant Chief of Staff, Intelligence, Department of the Air Force.

under way to develop improved sensors for submarine detection. The number of nuclear-powered attack submarines (SSNs) with improved but still limited ASW capabilities will probably increase from about 25 at present to about 85 in the late 1980s, or to as many as 100 if a number of Y-class SSBNs are converted to SSNs. We believe new classes of Soviet SSNs will incorporate more effective noise reduction methods than those in existing submarine classes. New types of surface ships and long-range patrol aircraft with somewhat improved capabilities for ASW are likely. As a result:

- During the period of the Estimate, the USSR is likely to acquire somewhat better capabilities to detect, track, and attack SSBNs that are operating near the USSR or in confined waters, are leaving ports, or are transiting choke points.
- Despite increasing numbers of ASW-capable forces and improved ASW sensors, we believe the Soviets have little prospect over the next 10 years of being able to detect and track US submarines in broad ocean areas.
- Moreover, longer range US SLBMs are significantly increasing the ocean area within which US SSBNs will be able to operate and remain within missile range of targets in the USSR.
- We therefore believe that, throughout the period of this Estimate, the Soviets would be unable to prevent US SSBNs on patrol in broad ocean areas from launching their missiles.

Directed-Energy Weapons

69. As part of a long-term developmental effort in technologies applicable to air, missile, and space defense, the Soviets are conducting extensive research in the advanced technologies of lasers, particle beams, and nonnuclear electromagnetic pulse generation. The magnitude, scope, and variety of these programs suggest that the Soviets are actively exploring ways by which they might use directed-energy technology to overcome or alleviate major weaknesses in their strategic defenses.

- The Soviets may now have a ground-based laser capable of damaging some satellite sensors and may have a space-based antisatellite weapon under development. With a successful high-priority effort, the Soviets might be able to have ground-based laser air defense weapons ready for operational deployment to strategic air defense

forces in the middle-to-late 1980s. The Soviets evidently are also investigating the feasibility of a laser weapon for ballistic missile defense. We believe that such a weapon, if feasible, could not be ready for operational deployment before 1990.

- The Soviets probably have the capability to develop, by the middle 1980s, a ground-based nonnuclear electromagnetic pulse weapon designed to disrupt or destroy the electronic circuitry of enemy delivery systems.
- Soviet research programs applicable to particle beam weapons (PBW) may permit the USSR to determine the feasibility of such weapons several years before the United States. If feasibility is proved, the Soviets probably could begin testing a prototype short-range (about 3 km) PBW system for air defense by about 1990. There is an alternative view that Soviet research in technologies applicable to PBW could be sufficiently advanced to allow the USSR to begin prototype testing by the middle 1980s, if feasibility is proved.¹¹ All agree that development of long-range PBW weapons would take much longer.

Civil Defense

70. We have reassessed the ability of Soviet civil defenses to reduce casualties from a US retaliatory attack following a Soviet first strike. Casualties and fatalities would vary greatly depending on the extent of civil defense preparations. Our findings indicate that, at present:

- Prompt Soviet casualties would be about 120 million (including 85 million fatalities) in the case of little or no preparation, about 100 million (60 million fatalities) if urban shelters were fully occupied, and about 40 million (15 million fatalities) if both sheltering and evacuation plans had been fully implemented.
- With a few hours' warning, a large percentage of the Soviet leadership at all levels of government probably would survive. With several additional hours for preparation, about one-fourth of the work force in key Soviet industries probably would also survive.

¹¹ The holder of this view is the Assistant Chief of Staff, Intelligence, Department of the Air Force.

— Civil defense could not prevent massive damage to the Soviet economy.

71. In the late 1980s, prompt casualties and fatalities among the general Soviet population would be somewhat greater than in 1979. At present rates of shelter construction, the projected increase in shelter capacity would be more than offset by increases in Soviet urban population and by improvements in US forces. Mass evacuation of cities would still be necessary to save a substantial portion of the urban population. An even larger percentage of the leadership and essential personnel will probably have shelter protection, but the Soviet economy will remain about as vulnerable as at present.

72. Given their belief that all aspects of society contribute to a nation's military capabilities, the Soviet leaders probably view civil defense as contributing to their strength in the US-Soviet strategic balance. They almost certainly believe their present civil defenses would improve their ability to conduct military operations and would enhance the USSR's chances of surviving a nuclear war. Our latest analyses of the effects of civil defense, however, provide additional support to our previous judgment that present and projected Soviet civil defense programs would not embolden the Soviet leaders to take actions during a crisis that would involve deliberately accepting a high risk of nuclear war.

73. There is an alternative view that the Soviet Union's capability to protect its extensive leadership infrastructure at all levels, even under conditions of limited warning, enhances its ability to conduct military operations, improves its crisis management, and promotes postwar recovery. The continuing Soviet investment of major resources in the civil defense program clearly demonstrates the confidence the Soviet leaders have in its value. This confidence could contribute to Soviet resolve in a future crisis environment. According to this view, the Soviet civil defense program—through its potential for influencing political perceptions, providing leverage for coercion during a crisis, affecting nuclear exchange outcomes, and contributing to postwar recovery—impacts on both the reality of the strategic balance and on perceptions of the balance in the USSR and elsewhere.¹²

¹² The holders of this view are the Director, Defense Intelligence Agency, and the Senior Intelligence Officers of the military services.

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