Director of Central Intelligence

Soviet Capabilities for Strategic Nuclear Conflict, 1983-93

National Intelligence Estimate
Volume I—Key Judgments and Summary

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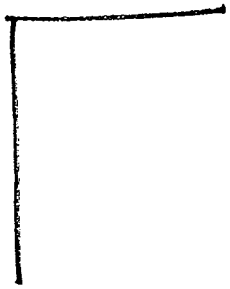

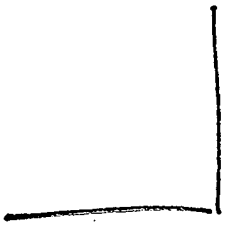

NIE 11-3/8-83

SOVIET CAPABILITIES FOR STRATEGIC NUCLEAR CONFLICT, 1983-93

VOLUME I—KEY JUDGMENTS AND SUMMARY

Information available as of 6 March 1984
was used in the preparation of this Estimate.

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 Defense Intelligence Agency, the National Security Agency, and the intelligence organizations of the Departments of State and Energy.

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 NIE 11-3/8 summarizes the latest developments and projects future trends in Soviet weapons and supporting systems for strategic nuclear conflict. Offensive attack force levels are projected, along with our estimates of the effects of factors influencing future Soviet policies and force developments, including the presence or absence of arms control constraints. The Estimate does not contain comparisons of present and future Soviet and US forces or measures of the destructive potential of the forces remaining to the two sides after a first strike. The war-fighting capabilities of Soviet strategic forces cannot be conveyed by simplified static and dynamic comparisons of Soviet and US offensive forces. A joint net assessment of US and Soviet strategic forces was recently published under the direction of the Secretary of Defense and the Director of Central Intelligence.

In this NIE we are focusing on the USSR's strategy, plans, operations, and capabilities for strategic nuclear conflict as we believe Soviet leaders perceive them. We have emphasized Soviet views on the origin and nature of a US-Soviet nuclear conflict and how the Soviets would plan to operate and employ their forces during the various phases of such a war. There are, of course, major uncertainties about how well the USSR's present or future forces would be able to conduct a nuclear conflict according to Soviet strategy.

In evaluating their capabilities to accomplish strategic missions, the Soviets differ from us in terms of the operational factors they consider, the analytic techniques they use, and their criteria for success. In this Estimate we have assessed trends in Soviet capabilities in terms familiar to US policymakers and analysts, although these assessments do not necessarily correspond to those the Soviets would make. We do not know how the Soviets specifically would evaluate their capabilities, and we have limited information pertaining to how they measure their ability to accomplish strategic missions.

This year we are including a listing of Key Intelligence Gaps (Annex A) and a Bibliography (Annex B). Of particular use in the preparation of this Estimate were NIE 11-1-83, *The Soviet Space Program*, and NIE 11-12-83, *Prospects for Soviet Military Technology and Research and Development*.

This Estimate is in three volumes:

- *Volume I* contains key judgments about and a summary of Soviet programs and capabilities believed to be of greatest interest to policymakers and defense planners.
- *Volume II* contains:
  - Key recent developments.
  - Discussion of the Soviets' strategic doctrine and objectives, including their views on the probable origin and nature of a US-Soviet nuclear conflict.
  - Descriptions of Soviet programs for the development and deployment of strategic offensive and defensive forces and supporting systems.
  - Projections of future Soviet strategic forces.
  - Descriptions of Soviet command, control, and communications capabilities and of indications and warning capabilities, and discussion of the peacetime posture of Soviet strategic forces.
  - Discussion of Soviet concepts and plans for the operations of strategic forces during the several phases of a global conflict.
  - Trends in the USSR's capabilities to carry out some missions of strategic forces in nuclear conflict.
- *Volume III* contains tables with detailed force projections and weapon characteristics.

SIGNIFICANT CHANGES FROM LAST YEAR'S ESTIMATE

We have incorporated new intelligence information and have refined or changed some of our important judgments for this year's NIE 11-3/8:

- Our judgments concerning characteristics and deployment of certain Soviet offensive programs are becoming more firm, largely as a result of new and continued flight-testing and construction of bases and launchers:
  - The Soviets now have flight-tested their SS-X-25 small-size solid-propellant intercontinental ballistic missile (ICBM) from both a silo and a mobile launcher. We expect mobile deployment to begin in late 1985 or 1986 and maybe some silo deployment in 1985. The SS-X-24 medium-size ICBM is continuing flight-testing; we expect deployment to begin in silos in late 1985, and flight-testing of a rail-mobile version to begin in late 1984 or 1985. We have also reevaluated the future of the SS-18 and SS-19 force; while we expect continued deployment of heavy SS-18–type ICBMs throughout the 1990s, we are uncertain about the future of the SS-19–type missile. (Paragraph 3)
  - The Soviets have also begun flight-testing of a new submarine-launched ballistic missile (SLBM), the SS-NX-23, a liquid-propellant missile with multiple independently targetable reentry vehicles (MIRVs)—a follow-on to the MIRVed SS-N-18. We expect it will begin deployment in 1986 on new, significantly modified D-class nuclear-powered ballistic missile submarines (SSBNs)—the first such SSBN was launched in February 1984. (Paragraph 3)
  - The Soviets are preparing to deploy their new long-range cruise missiles: the air-launched AS-X-15 (ALCM) will be deployed in 1984 on new Bear H bombers; some sea-launched SS-NX-21s (SLCMs) will be deployed on submarines in 1984; and the ground-launched SSC-X-4 (GLCM) will probably be deployed in 1985. They are also flight-testing the SS-NX-24, a new, land-attack cruise missile, with deployment expected to begin in 1985 or 1986 on submarines dedicated to carry this SLCM. (Paragraph 4)

- This year we have added in this Estimate a force projection that assumes continued negotiations and adherence to numerical force-level constraints of the SALT I Interim Agreement and the unratified SALT II Treaty through 1990. We continue to include quantitative measures of Soviet forces configured to conform to the US and Soviet arms control proposals, and we compare them with our projections of forces reflecting expansion in the absence of arms control constraints. The Soviets could expand their forces well beyond arms-control-limited forces, with increases in intercontinental attack forces from about 8,500 deployed warheads at present to between 16,000 and 19,000 deployed warheads by the early 1990s. (Paragraphs 14-27)

- We have reevaluated our estimates and there are now differing agency views of the yields and accuracies of the SS-18 Mod 4 and SS-19 Mod 3 ICBMs, which lead to differing agency views of Soviet capabilities for attacking US Minuteman silos. All agencies have agreed to carry out further needed work on this key issue. (Paragraph 78)

- We have expanded our judgments on how the Soviets will operate their strategic forces in the 1990s. The Soviets will continue to rely primarily on silo-based ICBMs for use in initial strikes, while withholding most or all of the mobile ICBMs for subsequent strikes. ALCMs will give Soviet intercontinental bombers a standoff attack capability and SLCMs will add to the Navy's capabilities against theater targets, as well as those in the United States. (Paragraphs 71-72)

- We have reevaluated our judgments about Soviet efforts to develop nonacoustic antisubmarine warfare (ASW) detection capabilities. We do not believe there is a realistic possibility that the Soviets will be able to deploy in the 1990s a system that could reliably monitor US SSBNs operating in the open ocean. There is a low-to-moderate probability that the Soviets could deploy in the mid-1990s an ASW remote detection system that would operate with some effectiveness if enemy nuclear-powered attack submarines (SSNs) approached ASW barriers near Soviet SSBN bastions. (Paragraphs 41-44)

- We have included new judgments on Soviet directed-energy capabilities. There is a good chance the Soviets will test a prototype high-energy space-based laser antisatellite (ASAT) weapon by the early 1990s. Limited deployment of an airborne laser is possible by the early 1990s. (Paragraph 45)

- We continue to include antiballistic missile (ABM) judgments to reflect those in NIE 11-13-82, *Soviet Ballistic Missile Defense.* The Soviets are steadily improving their ability to exercise options for deployment of widespread ballistic missile defenses in the 1980s. (Paragraphs 32-39)
- We have acquired a better understanding of Soviet wartime management concepts and have identified more relocation facilities for the higher levels of Soviet wartime management, including deep underground facilities for the top leadership. (Paragraph 109)

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KEY JUDGMENTS

The Soviets continue their vigorous efforts to enhance their capability for strategic nuclear war. Using their extensive military research, development, and production base, they continue to develop, improve, and deploy offensive and defensive weapons of virtually every type, and to improve their war planning and the command, control, and communications capabilities of their strategic forces. The Soviet strategic force of the early 1990s will have a significantly different character. Its major features will include:

- An improved first-strike capability against hardened targets through continued deployment of ballistic missile systems with increasingly better accuracy.
- Significantly greater survivability, including more warheads on submarine-launched ballistic missiles (SLBMs), and deployment of mobile intercontinental ballistic missiles (ICBMs). The latter will improve the Soviets' capabilities to use reload missiles.[1] The largest element of their force capability, however, will continue to be ICBMs in potentially vulnerable silos.
- Major improvements in the aerodynamic element of the force through deployment of manned bombers with much better capabilities and long-range, land-attack cruise missiles.
- Significantly enhanced capability to maintain command, control, and communications connectivity to all forces.
- Enhanced operational flexibility and force sustainability.
- Enhanced air defense capability against low-altitude targets.

In addition the Soviets could:

- Expand their forces well beyond arms-control-limited forces, with increases in intercontinental attack forces from about 8,500 deployed warheads at present to between 16,000 and 19,000 deployed warheads.
- Deploy a widespread antiballistic missile (ABM) defense and test a directed-energy capability against satellites and possibly against ballistic missiles.

[1] *For an alternate view, see page 15 of Key Judgments and paragraph 71 of Summary.*

We estimate that the Soviets will replace most of the weapons in their strategic offensive forces with new or modernized weapons by the early-to-middle 1990s. ICBMs will continue to be the key element of their intercontinental strike forces. Their future force structure will include:

- An ICBM force composed mostly of: heavy silo-based liquid-propellant SS-18s, which will have been modernized to be more accurate and have more throw weight potential; medium-size solid-propellant SS-X-24s deployed in silos and probably on rail-mobile launchers; and smaller solid-propellant SS-X-25s deployed mostly on road-mobile launchers, but some may be deployed in silos. We have no current evidence for modernized SS-19–class missiles, and we are uncertain as to the future of this system. We believe that it will be replaced by improved SS-X-24s in the 1990s. There is an alternative view that it will be modernized and retained in the force.[2]
- An SLBM force composed mostly of: long-range solid-propellant SS-N-20s in Typhoon-class nuclear-powered ballistic missile submarines (SSBNs); and long-range liquid-propellant SS-NX-23s in modified D-class SSBNs. These missiles will be equipped—to a greater extent than the missiles in the current force—with multiple independently targetable reentry vehicles (MIRVs).
- A bomber force composed of: Blackjacks; Bear H's with air-launched cruise missiles (ALCMs); some older bombers; and some new aircraft types beginning deployment.
- A new long-range, land-attack cruise missile force composed of: SS-NX-21 and SS-NX-24 sea-launched cruise missiles (SLCMs) on submarines; AS-X-15 ALCMs on bombers; and SSC-X-4 and probably [ ] GLCMs on ground launchers.
- An intermediate-range ballistic missile (IRBM) force composed of modernized SS-20s.

We believe that in the early 1990s the Soviets will be deploying or developing improved versions of most of these weapons.

If Soviet strategic force deployments were to expand beyond arms control constraints, we project that the number of warheads on deployed ICBMs and SLBMs would increase by 90 to 120 percent from about 8,000 at the end of 1983, resulting in about 15,000 to 18,000 ballistic missile warheads by the early 1990s. Soviet ICBM and SLBM warheads, if constrained by the Soviet proposal at the strategic arms

[2] *The holder of this view is the Director, Defense Intelligence Agency.*

reduction talks (START), would increase by about one-third over current deployments. Soviet ICBM and SLBM warheads, if constrained by the US START proposal, would decrease by about one-third from current deployments. Although the number of Soviet bombers in our projections increases only slightly, the number of bomber weapons increases substantially in the next 10 years—primarily because of the large payload of bombs and ALCMs on the Blackjack A bomber, and ALCMs on Bear H's. We expect the Soviets to deploy about 1,500 to 2,000 long-range land-attack cruise missiles of all types over the next 10 years. Many of these bomber weapons and cruise missiles—air-, sea-, and ground-launched—would, however, be allocated for theater, and not intercontinental, attack. Soviet ICBM and SLBM forces will continue to be the primary elements of the intercontinental attack forces.

We estimate that the Soviets will significantly improve the capabilities of their strategic defensive forces over the next 10 years. We expect a number of new types of weapons to be introduced and many of the older systems to be retired, but we do not predict the same massive replacement of defensive weapons that we project for the offensive weapons. Potential future developments in strategic defenses could be of great significance to the perceptions, and perhaps the reality, of the strategic balance. We are particularly concerned about the growing Soviet potential for widespread deployment of defenses against ballistic missiles well beyond the limits of the Antiballistic Missile Treaty using ABM systems currently in development. The Soviets' air defenses are undergoing significant changes, and they will have improving capabilities to threaten current types of bombers at low altitude and, to a lesser extent, cruise missiles. There is an alternative view that this Estimate substantially understates the capability of the Soviet air defense system to defend key target areas against low-altitude penetrators. This view is presented in more detail in the Summary and in volume II.[3] According to another alternative view, the Soviet Union will not have the capability in this decade to deploy strategic defenses that would significantly affect the US-Soviet nuclear relationship.[4]

We see under way significant developments for the Soviet strategic defenses of the 1990s:

- When completed, in 1986 or 1987, the improved Moscow ABM system will probably consist of 32 silo-launched Galosh interceptors and 68 silo-launched [ ] interceptors.
- The Soviets continue construction of large phased-array radars that, to varying degrees, could provide ballistic missile early warning, attack assessment, and battle management support. A sixth such radar was detected under construction in 1983 near Krasnoyarsk.

[3] *The holder of this view is the Assistant Chief of Staff for Intelligence, Department of the Army.*
[4] *The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.*

— The Soviets continue to deploy the SA-10—a new all-altitude strategic air defense missile—but at a rate slower than we had previously forecast. They are also developing some new vehicles for use by SA-10 units that will increase their mobility.

— The Soviets are continuing the development of the SA-X-12 system, which can engage conventional aircraft, cruise missiles, and some tactical ballistic missiles. While it is premature to judge its actual capabilities, this system could also have a capability against some strategic ballistic missile reentry vehicles (RVs).

— We expect initial deployment in 1984 of the Fulcrum A and in 1984-85 of the Flanker, probably with enhanced lookdown/shootdown capabilities, and initial deployment in 1984 of the Soviets' Mainstay airborne warning and control system (AWACS) aircraft.

The Soviets are in the process of upgrading and expanding the ballistic missile defenses at Moscow within the limits of the ABM Treaty, and are actively engaged in ABM research and development programs. We have made a projection for the new deployments around Moscow, under the assumption that the current launcher limits of the ABM Treaty continue to be observed for the next 10 years. The available evidence does not indicate with any certainty whether the Soviets are making preparations for deployments beyond the limits of the Treaty—100 ABM launchers at Moscow—but it does show they are steadily improving their ability to exercise options for deployment of widespread ballistic missile defenses in the 1980s. If the Treaty were abrogated by either the United States or the USSR, we believe the Soviets would undertake rapidly paced ABM deployments to strengthen their defenses at Moscow and cover key targets in the western USSR, and to extend protection to key targets east of the Urals. Widespread defenses could be in place by the late 1980s or early 1990s.

We judge that, in evaluating the technical performance of the ABM systems they could deploy in a more widespread defense, the Soviets probably would not have high confidence in how well these systems would perform against a large-scale, undegraded US missile attack, especially in the late 1980s by improved US forces. However, the Soviets would probably view their ballistic missile defenses as having considerable value in reducing the impact of a degraded US retaliatory attack if the USSR succeeded in carrying out a well-coordinated, effective initial strike. Also, widespread Soviet defenses, even if US evaluations indicated they could be overcome by an attacking force, would complicate US attack planning and create major uncertainties

about the potential effectiveness of a US strike. Another view is that the Soviets, in a widespread deployment, would deploy sufficient numbers of ABM systems to enhance their confidence in the survival of high-value targets, even in the event of a full-scale US attack.[5]

The Soviets will continue to pursue vigorously all antisubmarine warfare (ASW) technologies as potential solutions to the vexing problems of countering US SSBNs and defending their own SSBNs against US attack submarines. We are concerned about the energetic Soviet effort to develop a capability to remotely sense submarine-generated effects. In the last year we have improved our understanding of the nature of the overall Soviet effort.[ ]There remain important uncertainties about the full extent and direction of the Soviet program.

The Soviets have developed a strong active sonar technology and deployed a variety of modern systems that support point defense, area denial, and SSBN protection but do not provide open-ocean surveillance capability. They still lack effective means to locate US SSBNs at sea. They lack both a long-range submarine detection capability and a sufficient number of short-range systems to search potential US SSBN patrol areas effectively. They probably are unable, moreover, to track a US SSBN on patrol for more than a few hours even if they detect one.

The Soviets may have the technology in hand to deploy an airborne remote sensor system—and to test a prototype spaceborne system—with limited ASW capabilities before the mid-1990s. We believe that systems that could result from present efforts would have the most impact on protecting Soviet SSBN bastions against encroaching US nuclear-powered attack submarines (SSNs) operating at shallow depths. Even if remote sensors work only in favorable waters, the Soviets may decide to continue sensor development, begin development of a detection system, and eventually deploy such a system in order to defend their SSBNs from Western attack submarines. Soviet nonacoustic ASW detection systems that could be deployed within the next 10 years are unlikely to pose any significant threat to US SSBNs on patrol:

— An operational space-based remote sensing system could not be available in less than 10 years from the start of engineering development. This constraint is imposed by Soviet design practices, as demonstrated by numerous development programs. The wide range of continuing experimentation, however, suggests that the Soviets have not yet selected a sensor for engineering development.

[5] *The holder of this view is the Director, Defense Intelligence Agency.*

— In view of the operational considerations mentioned, the difficulties in exploiting the basic phenomena, and the major advances required in high-speed computing and in sensor and signal-processing technologies, we do not believe there is a realistic possibility that the Soviets will be able to deploy in the 1990s a system that could reliably monitor US SSBNs operating in the open ocean.

— There is a low-to-moderate probability that the Soviets could deploy in the mid-1990s an ASW remote detection system that would operate with some effectiveness if enemy SSNs approached ASW barriers near Soviet SSBN bastions.

Directed-energy weapons potentially could be developed for antisatellite (ASAT) applications, air defense, battlefield use, and, in the longer term, ballistic missile defense (BMD). Of the three types of directed-energy technologies with potential weapon applications—high-energy laser, particle beam, and radiofrequency—evidence is strongest that the Soviets are pursuing development of high-energy laser weapons:

— There are two facilities at a Soviet test center that are assessed to have high-energy lasers and that have the potential to function as ASAT weapons.

— We are concerned about the magnitude of the Soviet effort in ground-based lasers. There are many unknowns concerning the feasibility and practicality of ground-based laser weapons for ballistic missile defense. Nevertheless, during the 1980s we expect the Soviets to test the feasibility of ground-based BMD lasers, using one of their high-energy laser facilities. If a ground-based laser proves feasible and practical in such a role, a prototype could be tested in the 1990s. An initial operational capability, however, would not be achieved until after the year 2000. If the Soviets chose a risky course of action—developing this system without building such a prototype—a few such systems could be operational by the early-to-middle 1990s.

— The Soviets could deploy ground-based high-energy laser weapons for strategic air defense in the mid-to-late 1980s. They probably will deploy tactical battlefield lasers to complement mobile surface-to-air missile (SAM) batteries in the mid-1980s.

— The Soviets continue to develop an airborne laser, with airborne testing likely to begin in a year or two. Its application is unclear to us. Limited deployment is possible by the early 1990s.

— We believe there is a high probability (60- to 90-percent chance) that a prototype high-energy space-based laser ASAT weapon will be tested in low orbit by the early 1990s. The psychological effect of the first test of a space-based laser in a weapon-related mode would be greater than the actual military significance of such a weapon in its initial application.

— Although space-based weapons for ballistic missile defense may prove to be feasible from a technical standpoint, such weapons would require significant technological advances. In view of the technological requirements, we do not expect the Soviets to have a prototype space-based laser BMD system until at least the mid-1990s or an operational system until after the year 2000.

— The Soviets are expending resources on technologies of critical importance to the development of particle beam weapons (PBWs). The technical requirements for such a system, including precise pointing and tracking, are severe, and it is unlikely that the Soviets could test a prototype space-based PBW to destroy hard targets like missile RVs before the end of the century, or any earlier than 1995 for an ASAT weapon.

— There is a moderate likelihood that, by 1990, the USSR will test a ground-based radiofrequency weapon potentially capable of physically damaging satellites.

Training of Soviet forces for a global nuclear conflict is increasingly broad in scope and complex in the operational factors taken into account. The Soviets recognize that numerous complications and degradations would affect planned operations, particularly in the unprecedentedly difficult nuclear environment. The inherent uncertainties of warfare cannot be eliminated by training for fighting under various conditions, but the Soviets believe that their ability to continue to operate effectively in adverse situations would be enhanced[redacted]

The Soviets apparently believe that a major nuclear conflict, if it occurred, would be likely to arise out of a NATO–Warsaw Pact conventional conflict preceded by a political crisis period that could last several weeks or longer. We believe they would anticipate a conventional phase as lasting from a few days to as long as several weeks. The Soviets see little likelihood that the United States would initiate a surprise nuclear attack from a normal peacetime posture; we believe it is unlikely that the Soviets would mount such an attack themselves. Key objectives of the Soviets in the conventional phase would be to weaken the enemy's theater-based and sea-based nuclear capability, while protecting their own nuclear force.

The Soviets, in our judgment, are unlikely to initiate nuclear conflict on a limited scale, with small-scale use confined to the immediate combat zone, because they would probably see it as being to their advantage instead to keep the conflict at the conventional force level. Moreover, they would see the use of nuclear weapons on any scale as substantially increasing the risks of escalation to strategic nuclear war. We believe, however, that the likelihood of Soviet initiation of nuclear strikes would increase if Soviet conventional forces were faced with a major defeat or a NATO counteroffensive into Eastern Europe.

We believe they would see an initial localized use of nuclear weapons as probably being the last realistic opportunity to avoid large-scale nuclear war. Once large-scale use of nuclear weapons in the theater occurred, imminent escalation to intercontinental nuclear war would be likely.

As the likelihood of large-scale nuclear conflict increased, Soviet leaders would face the difficult decision of whether to seize the initiative and strike, as would be consistent with their general military doctrine, or to be more cautious in the hope of averting massive nuclear strikes on the Soviet homeland. There are no easy prescriptions for what the Soviets would actually do under a particular set of circumstances, despite the apparent doctrinal imperative to mount massive preemptive nuclear attacks:

- They would be more likely to seize the initiative by launching intercontinental nuclear strikes if the war had already reached the level of small-scale battlefield nuclear use, than if it was still at the conventional level.
- We believe they would launch a coordinated theater and intercontinental strike if there had been a large-scale theater nuclear strike against the western USSR.
- If they acquired convincing evidence that a US intercontinental strike were imminent, they would try to preempt. While we are unable to judge what information would be sufficiently convincing to cause Soviet leaders to order a massive preemptive attack, we believe that they would be more likely to act on the basis of ambiguous indications and inconclusive evidence of US strike intentions if a battlefield nuclear conflict were under way than during a crisis or a conventional conflict.
- For reasons such as lack of convincing evidence from their strategic warning systems or fear of unnecessarily or mistakenly initiating intercontinental nuclear war, the Soviets might not mount a preemptive strike.

— We believe the Soviets place considerable emphasis on assessing their strategic offensive capabilities under conditions in which the United States launched the initial major strike. These would include scenarios in which they were able to launch varying portions of their forces on tactical warning, as well as the most stressful scenario—in which they failed to launch on tactical warning and had to absorb a well-coordinated US counterforce attack. For the Soviets, these scenarios would be the most critical in an evaluation of their capabilities.

Soviet offensive objectives in carrying out large-scale nuclear strikes—regardless of which side initiated the strikes—would be to neutralize US and Allied military operations and capabilities. In intercontinental strikes the Soviets would seek to destroy US-based nuclear forces and to disrupt and destroy the supporting infrastructure and control systems for these forces as well as the National Command Authority. They would attempt to isolate the United States from the theater campaign by attacking its power projection capabilities. They probably would also attempt to reduce US military power in the long term by attacking other nonnuclear forces, US military-industrial capacity, and governmental control facilities, although the extent of the attack on these targets in the initial strikes could vary, depending on the circumstances. Limiting the initial strikes to only command, control, and communications targets, or to only a portion of US strategic forces such as ICBM silos, would not be consistent with the available evidence.

The Soviets probably have plans to reconstitute some surviving general purpose and strategic forces and to occupy substantial areas of Western Europe, while neutralizing the ability of US and Allied nuclear forces to interfere with these objectives. They prepare for combat operations that could extend weeks beyond the initial nuclear phase. The Soviets would clearly prefer to accomplish their objectives quickly, but recognize that the later phases could be protracted, given the difficulty and complexity of conducting operations following massive nuclear strikes.

We believe the structure and operations of Soviet strategic forces will be markedly different by the 1990s:

— A mixed force of mobile and silo-based systems will enable the Soviet planner of the 1990s to continue to rely primarily on silo-based ICBMs for use in initial strikes, while withholding most or all of the mobile ICBMs for subsequent strikes. The deployment of mobile ICBMs will also lead to improved capabilities for ICBM reload, and we expect reload practices for the SS-X-25 to be similar to those for the SS-20. According to an alternative view, a Soviet requirement for additional warheads would be better met by deployment of additional missiles on launchers; it is by no means clear that reload and refire

operations during nuclear war would be less problematic for mobile launchers than for silos[

]

— The introduction of cruise missiles will enhance Soviet offensive capabilities. ALCMs will give Soviet intercontinental bombers a standoff attack capability. SLCMs will add to the Navy's capabilities against theater targets, as well as those in the United States.

— To improve their capability to defend against attacks by low-altitude bombers and cruise missiles, we believe the Soviets will alter air defense command operations procedures and introduce improved communications equipment and data systems in order to better integrate the operations of their new air defense fighters, Mainstay AWACS aircraft, and SAM systems.

We do not know how the Soviets would assess their prospects for prevailing in a global nuclear conflict. Sizable forces on both sides would survive massive nuclear strikes. The Soviets have enough hard-target-capable ICBM reentry vehicles today to attack all US missile silos and launch control centers in a well-executed first strike. In our projections of the growth and modernization of Soviet ICBM forces, the USSR will have substantially larger numbers of hard-target-capable RVs in the future. The projected improvements in Soviet ICBM accuracy, in conjunction with the expected warhead yields and improvements in weapon system reliabilities, will produce a substantial increase in the destructive potential of future Soviet ICBMs. We note, however, that our preliminary estimate of the yield of the SS-X-24 indicates it will have less hard-target capability than was predicted last year.

This year, alternative estimates of current SS-18 and SS-19 weapons accuracies and yields (described in the Summary and volume II) lead to differing views of Soviet capabilities for attacking US Minuteman silos:

— According to one view, the Soviets currently would plan to launch two (possibly three) SS-18 or SS-19 warheads at each US Minuteman silo. This view holds that the accuracies and yields are such that a two-on-one attack would result in a best estimate damage expectancy of about 80 to 85 percent with today's systems, although with a considerable uncertainty range.[7]

— According to a second view, continuing reanalysis of accuracies and yields of the SS-18 and SS-19 suggests that the Soviets'

[6] *The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.*

[7] *The holders of this view are the Director, Defense Intelligence Agency, and the Assistant Chief of Staff, Intelligence, Department of the Air Force.*

capability to achieve their desired damage expectancy is somewhat lower than previously estimated.[8]

During the next year, we will be carrying out additional needed analysis on this key issue, including, in particular, further analysis of the accuracies and yields of these Soviet ICBMs.

By the early-to-middle 1990s the Soviet ICBM force is projected to have hard-target ICBM RVs in sufficient numbers and with enough capabilities to achieve its targeting goals (a damage expectancy of over 80 percent) by allocating a single RV to each target. We do not know the number of additional weapons the Soviets would allocate to compensate for detectable launch and in-flight failures or losses to enemy counteraction. We believe that they will still be concerned that the US ICBM force would launch at least a portion of its missiles while under attack.

Soviet offensive forces will not be able to reliably target and destroy patrolling US SSBNs, alert aircraft, aircraft in flight, or land-mobile missiles, particularly those beyond the range of tactical reconnaissance systems.

Soviet mobile missiles, SSBNs patrolling in waters near the USSR, and a large part of the silo-based ICBM force would survive a US nuclear attack. We believe the Soviets can launch ICBMs on tactical warning, assuming their warning and control systems are undegraded. However, with the increasing vulnerability of Soviet ICBM silos during the period of this Estimate, as the accuracy of US weapons improves, the Soviets will be faced with more difficult problems in assuring adequate retaliatory capabilities in their critical planning scenario in which they are struck first. We believe the Soviets' efforts to expand the capabilities of their command and control network and SLBM force, and to develop mobile ICBMs, reflect their concerns about maintaining the capability to fulfill the missions of their strategic nuclear forces. Moreover, the Soviets are well aware of their inability to prevent massive damage to the USSR with their strategic defenses even with the improvements taking place in these forces. They also recognize that US strategic defenses cannot prevent massive damage.

During the past few years, we have acquired a better understanding of Soviet wartime management concepts and have identified more relocation facilities for the higher levels of Soviet wartime management—national, military district, and key regional organizations.[

]A recent reassessment of deep

[8] *The holder of this view is the Deputy Director for Intelligence, Central Intelligence Agency.*

underground facilities for the National Command Authority at Sharapovo and Chekhov indicates that they are harder, deeper, and much less vulnerable than previously estimated. For more than a decade the Soviets have been expanding and improving these sites, but have concealed the extent of their activities.[

]The Soviets may believe that deep underground structures such as those near Moscow will assure the survivability of the top leadership—a priority objective of their wartime management plans.

We believe that the Soviets' confidence in their capabilities for global conflict probably will be critically dependent on command and control capabilities, and their prospects for disrupting and destroying the ability of the United States and its Allies to command and to operate their forces. Although US attacks could destroy many known fixed command, control, and communications facilities, many 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. We believe the Soviets would launch continuing attacks on US and Allied strategic command, control, and communications to prevent or impair the coordination of retaliatory strikes, thereby easing the burden on Soviet strategic defenses, and impairing US and Allied abilities to marshal military and civilian resources to reconstitute forces.

The evidence shows clearly that Soviet leaders are attempting to prepare their military forces for the possibility of having to fight a nuclear war and are training to be able to maintain control over increasingly complex conflict situations. They have seriously addressed many of the problems of conducting military operations in a nuclear war, thereby improving their ability to deal with the many contingencies of such a conflict, and raising the probability of outcomes favorable to the USSR. There is an alternative view that wishes to emphasize that the Soviets have not resolved many of the critical problems bearing on the conduct of nuclear war, such as the nature of initiation of conflict, escalation within the theater, and protracted nuclear operations. According to this view, the Soviets recognize that nuclear war is so destructive, and its course so uncertain, that they could not expect an outcome that was "favorable" in any meaningful sense.[9]

The evidence that we have on how the Soviets would plan to conduct a successful military campaign provides insight into how they would seek to end a nuclear war on their terms—by neutralizing the ability of US intercontinental and theater nuclear forces to interfere with Soviet capabilities to prevail in a conflict in Eurasia.

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[9] *The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.*

SUMMARY

1. The Soviets continue their vigorous efforts to enhance their capability for strategic nuclear war. Using their extensive military research, development, and production base, they continue to develop, improve, and deploy offensive and defensive weapons of virtually every type, and to improve their war planning and the command, control, and communications capabilities of their strategic forces. The Soviet strategic forces of the early 1990s will have a significantly different character. Major features will include:

— An improved first-strike capability against hardened targets through continued deployment of ballistic missile systems with increasingly better accuracy.

— Significantly greater survivability, including more warheads on submarine-launched ballistic missiles (SLBMs), and deployment of mobile intercontinental ballistic missiles (ICBMs). The latter will improve the Soviets' capabilities to use reload missiles.[1] The largest element of their force capability, however, will continue to be ICBMs in potentially vulnerable silos.

— Major improvements in the aerodynamic element of the force through deployment of manned bombers with much better capabilities and long-range, land-attack cruise missiles.

— Significantly enhanced capability to maintain command, control, and communications connectivity to all forces.

— Enhanced operational flexibility and force sustainability.

— Enhanced air defense capability against low-altitude targets.

In addition the Soviets could:

— Expand their forces well beyond arms-control-limited forces, with increases in intercontinental attack forces from about 8,500 deployed warheads at present to between 16,000 and 19,000 deployed warheads.

— Deploy a widespread antiballistic missile (ABM) defense and test a directed-energy capability against satellites and possibly against ballistic missiles.

A. Offensive Force Developments

2. We estimate that the Soviets will replace most of the weapons in their strategic offensive forces with new or modernized weapons by the early-to-middle 1990s. These weapons are now being deployed, are in flight-testing, or are in preflight development, and we believe we have identified most of them. In many cases, however, we may not have a good knowledge of their characteristics.

Ballistic Missiles

3. New systems that will compose a major part of the Soviet ballistic missile force of the 1990s are now being tested or deployed:

— The SS-N-20 SLBM became operational in 1983. This solid-propellant missile, armed with multiple independently targetable reentry vehicles (MIRVs), is carried on the Typhoon nuclear-powered ballistic missile submarine (SSBN). Two Typhoon SSBNs have been launched so far.[redacted]

— The Soviets continue the flight-testing of two new solid-propellant ICBMs. The MIRVed SS-X-24, a missile similar in size to Peacekeeper (MX), is going to be deployed in silos, probably beginning in late 1985. The SS-X-25, a smaller missile similar in size to Minuteman and with a single reentry vehicle (RV), is going to be deployed as a road-mobile system beginning in late 1985 or 1986 and may be deployed in some silos beginning in 1985. These missiles are expected eventually to replace and assume the missions of the existing Soviet medium and light ICBMs, with the possible exception of the SS-19.

— The Soviets began flight-testing a new SLBM, the SS-NX-23, in 1983. The SS-NX-23 is a large

[1] *For an alternate view, see paragraph 71.*

MIRVed liquid-propellant SLBM that will begin deployment in 1986 on new, significantly modified D-class SSBNs—the first such SSBN was launched in February 1984.

We also have identified evidence of other development programs for ballistic missiles that could be deployed in the late 1980s and early 1990s:

— A follow-on to the heavy SS-18 ICBM, with improved accuracy and improved range or throw weight capability. It probably will begin flight-testing in about 1985 and replace the current SS-18s beginning in about 1987. An alternative view holds that such a missile would more likely be flight-tested in about 1990 and deployed in 1992, but that a modified SS-18 with improved accuracy will be tested soon and would be deployed beginning in about 1985.[1]

— A rail-mobile version of the SS-X-24 that probably will begin flight-testing in 1984 or 1985.

— A follow-on to the SS-20 intermediate-range ballistic missile (IRBM), probably based on the SS-X-25 booster, with improved accuracy and increased throw weight. It probably will begin flight-testing in 1984.

On the basis of past trends and limited evidence, we project improved versions of the SS-N-20 and SS-NX-23 will be flight-tested in the mid-to-late 1980s, and they potentially will have increased throw weight and improved accuracy. In addition, we project, without specific evidence but on the basis of our knowledge of Soviet weapons development practices, that improved versions of the SS-X-24, SS-X-25, SS-18 follow-on, and SS-20 follow-on will be deployed beginning in the early 1990s. An alternative view holds that improve-

[1] *The holders of this view are the Director, Defense Intelligence Agency, and the Assistant Chief of Staff, Intelligence, Department of the Air Force.*

ments to the SS-19 will probably be developed and deployed during the period of this Estimate. This view [ ] projects an SS-19-class missile to be developed for deployment in the early 1990s.[3]

Bombers and Cruise Missiles

4. By the early-to-middle 1990s the Soviets will have a significantly different bomber force and a long-range, land-attack cruise missile force:

- They will deploy in 1984 their first long-range, land-attack, air-launched cruise missile (ALCM), the AS-X-15. This missile has an estimated range of 3,000 km, flies at low altitude and subsonic speeds, and could have an accuracy of 100 to 150 meters.
- The AS-X-15 is going to be deployed on a new version of the Bear bomber, the Bear H. The Bear H's are being newly manufactured, and we have identified 15 produced through the end of 1983.
- The Soviets continue flight-testing their new supersonic intercontinental bomber, the Blackjack A. The Blackjack, similar in appearance to the US B-1B bomber [ ] will begin deployment in about 1987. It probably will carry bombs and ALCMs. By the 1990s most of the older Bear and Bison bombers will have been retired.
- The Soviets will also deploy in 1984 a sea-launched cruise missile (SLCM), the SS-NX-21, with characteristics similar to those of the AS-X-15. The SS-NX-21 can be deployed on several types of submarines. Likely candidates for SS-NX-21 deployment are the V-III-class nuclear-powered attack submarine (SSN), the new M-class and S-class SSNs, and the Y-class SSN reconfigured from a Y-class SSBN.
- A ground-launched cruise missile (GLCM), the SSC-X-4, similar in characteristics to the AS-X-15 and the SS-NX-21, is probably going to be deployed in 1985. [ ] We believe there is a chance of token deployment of the SSC-X-4 [ ] as a "response" to US intermediate-range nuclear force (INF) deployments.
- The Soviets are flight-testing another type of long-range, land-attack cruise missile, [ ] The SLCM version [ ] the SS-NX-24, will be [ ] first deployed on the 12-tube Y-class nuclear-powered guided-missile submarine (SSGN), reconfigured from a Y-class SSBN [ ] it probably will be deployed later on a new class of SSGN we have not yet identified. Deployment will probably begin in 1985 or 1986. There also probably is a GLCM version [ ] which could begin deployment in 1985 or 1986.
- The Soviets continue to develop a new tanker based on the Candid transport airframe. This tanker will have a multipurpose role supporting tactical, defensive, and naval forces as well as the Soviets' strategic bomber force. They will begin deploying Candid tankers in about 1985.

We project, on the basis of our understanding of the Soviets' developmental process, that they will flight-test and deploy improved versions—possibly more accurate and harder to detect in flight—of their new cruise missiles in the late 1980s and early 1990s, and will continue to improve and modernize their bomber force.

B. Defensive Force Developments

5. We estimate that the Soviets will significantly improve the capabilities of their strategic defensive forces over the next 10 years. We expect a number of new types of weapons to be introduced and many of the older systems to be retired, but we do not predict the same massive replacement of defensive weapons that we project for the offensive weapons. We have detected the deployment or flight-testing of most of these defensive systems.

[3] *The holder of this view is the Director, Defense Intelligence Agency.*

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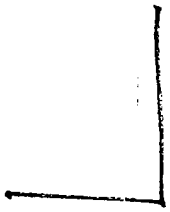

Defensive Missiles and Radars

6. We see under way significant developments for the Soviet defensive missile force of the 1990s:

— The Soviets are completing the improvements to their Moscow ABM system. We expect the first eight of the silo-launched versions of the Galosh ABM to become operational in early 1984. When completed, in 1986 or 1987, the improved Moscow ABM system will probably consist of 32 silo-launched Galosh interceptors, 68 silo-launched [ ]interceptors, the Pushkino ABM engagement radar, and existing acquisition and tracking radars.

— The Soviets continue construction of large phased-array radars that, to varying degrees, could provide ballistic missile early warning, attack assessment, and battle management support. A sixth such radar was detected under construction in 1983 near Krasnoyarsk. (See inset.)

Krasnoyarsk Radar

The Soviets are constructing a sixth large phased-array radar in the east-central USSR near Krasnoyarsk. It is very similar to the radars at Pechora and Lyaki that the Soviets have declared to be for ballistic missile early warning, and is identical to the large phased-array radar under construction at Saryshagan. Unlike the radars at Pechora and Lyaki, the one near Krasnoyarsk is not on the periphery of the USSR and is not oriented outward (see figure 4). The Soviets have stated that the radar near Krasnoyarsk is specially designed and intended to track objects in outer space and not for ballistic missile early warning. We conclude, however, that the Krasnoyarsk radar is designed and intended to have capabilities for ballistic missile detection and tracking, similar to the other new, large radars, and is not intended primarily for space tracking.

— The Soviets are continuing development efforts that give them the potential for widespread ABM deployments during the period of this Estimate.

— The Soviets continue to deploy the SA-10—a new all-altitude strategic air defense missile—but at a rate slower than we had previously forecast. We have detected 73 sites deployed or under construction. They are also developing some new vehicles for use by SA-10 units that will increase their mobility.

— The Soviets are continuing the development of a tactical surface-to-air missile (SAM) system, the SA-X-12 system, with two different types of missiles. This system can engage conventional aircraft, cruise missiles, and some tactical ballistic missiles. Deployment will probably begin in the 1984-86 period. While it is premature to judge its actual capabilities, this system could also have a capability against some strategic ballistic missile RVs.

— The Soviets continue to develop about 20 types of air defense early warning and ground-controlled intercept radars, which will have low-altitude capability, resistance to jamming, and capability to operate on diverse frequencies.

Defensive Aircraft

7. We also observe continuing developments to improve the fighter-interceptor capability of Soviet air defenses:

— The Soviets will begin deploying the Fulcrum A in 1984 and the Flanker in 1984 or 1985. These aircraft will have enhanced lookdown/shootdown capabilities over currently deployed aircraft and will be equipped with the AA-X-10 air-to-air missile.

— The Soviets will also begin deployment in 1984 of their Mainstay airborne warning and control system (AWACS) aircraft.

Directed-Energy Systems

8. The Soviets are continuing developments in directed-energy systems that will allow them to deploy some limited capability by the early 1990s and have other systems in testing. This could enhance the Soviet air defense, antisatellite, and ballistic missile defenses in the 1990s and beyond. (See paragraph 45 for details.)

C. Soviet Strategic Policies and Doctrine

9. Moscow's concept of its relationship with the United States is fundamentally adversarial. This concept, based on ideological antagonism and geopolitical rivalry, governs Soviet behavior and also shapes Soviet perceptions of US policies toward Moscow. Its most

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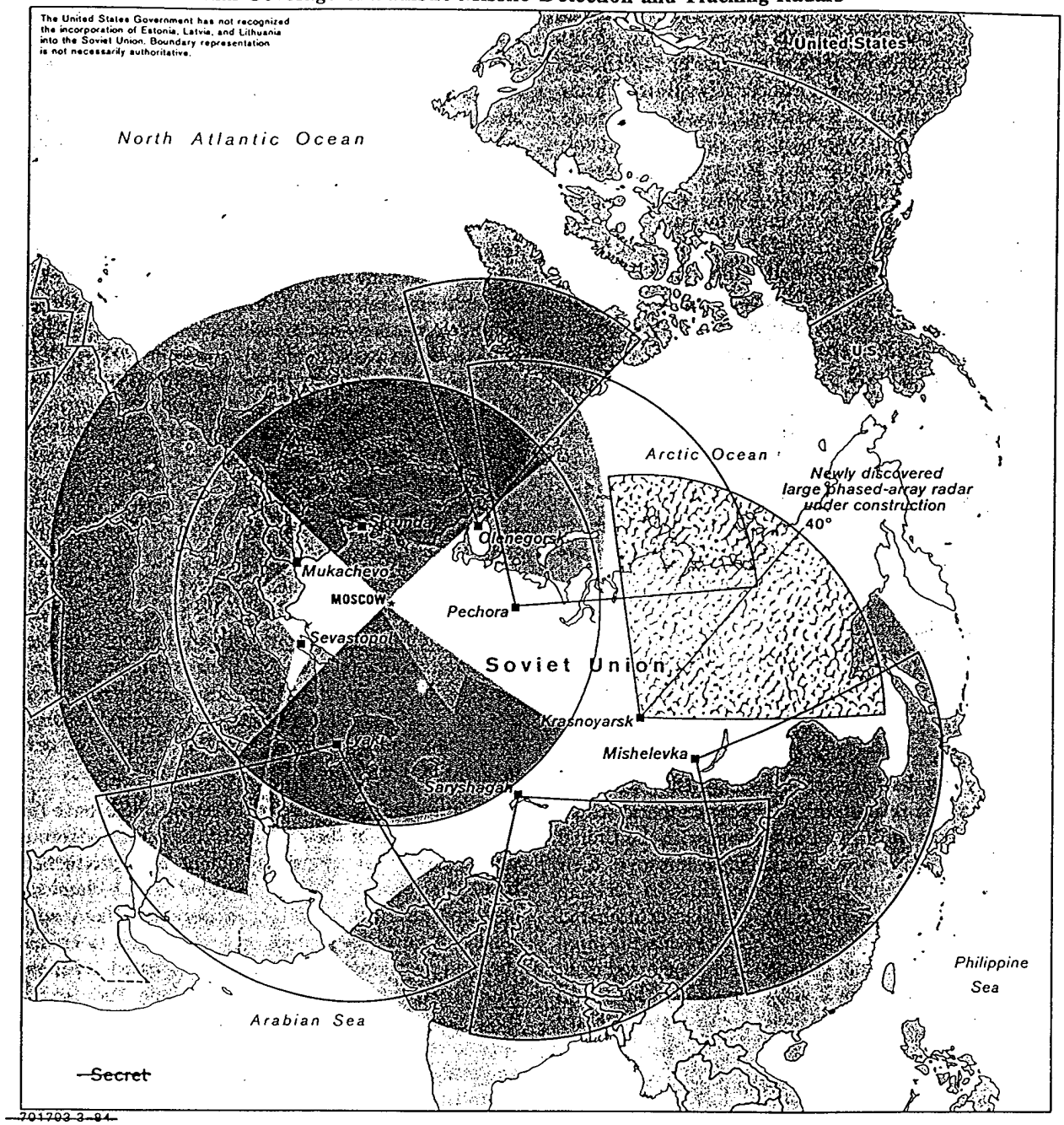
Figure 4
Estimated Azimuthal Coverage of Ballistic Missile Detection and Tracking Radars



New phased-array radars under construction
Hen House radars
Dog House and Cat House radars
Pushkino radar

dramatic manifestation is growing Soviet military power and capabilities. These form the cutting edge of the USSR's persistent efforts to extend its global presence and influence at the expense of the United States and the West. Soviet leaders view strategic arms policy in the context of a persistent, long-term struggle between two world systems of socialism and capitalism, in which socialism—with Moscow in charge—is destined ultimately to triumph. From their viewpoint, progress in this struggle is measured by favorable shifts in the overall "correlation of forces"—political, ideological, economic, social, and military. They seek through strategic and other military programs to continue shifting the military component of the correlation of forces in favor of the USSR and its allies. They recognize that military power is their principal foreign policy asset and that continued high levels of defense investments are necessary to sustain and expand Moscow's global role.

10. The Soviets believe that in the present US-Soviet strategic relationship each side possesses strategic nuclear capabilities that could devastate the other after absorbing an attack. Soviet leaders have stated that nuclear war with the United States would be a catastrophe that must be avoided if possible and that they do not regard such a conflict as inevitable. They have been willing to negotiate restraints on force improvements and deployments when it serves their interests. Nevertheless, they 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. A tenet in their strategic thinking holds that the better prepared the USSR is to fight in various contingencies, the more likely it is that potential enemies will be deterred from initiating attacks on the Soviet Union and its allies and will be hesitant to counter Soviet political and military actions.

11. The changing of the leadership in Moscow is unlikely to have any adverse effect on the improvements in the USSR's strategic forces. Nor do we believe that domestic economic difficulties will bear significantly on the size and composition of future Soviet strategic forces because of the high priority the Soviets place on such forces. Most likely they will deploy most, if not all, of the offensive and defensive weapons we have identified in the previous sections, with the possible exception of some of the directed-energy weapons, in order to increase the overall effectiveness of their strategic forces. They view their current strategic position as supporting the conduct of an assertive foreign policy and the continued expansion of Soviet power and influence abroad. The Soviets understand the political importance of world perceptions of their military power, and Soviet leaders have long stressed the contribution of strategic forces to the USSR's superpower status. We believe they are determined to prevent any erosion—as a result of the US strategic modernization efforts or those of their other potential enemies—of the military gains the USSR has made over the past decade.

D. Future Strategic Forces

12. Our quantitative projections of Soviet strategic forces in the next three years are based largely on evidence of ongoing programs. During this period—primarily because of the Soviets' military planning and acquisition process—it is unlikely that they would significantly alter planned deployments. Over the longer term, however, we believe they have an expanded number of options in deciding on the size, mix, and characteristics of their strategic nuclear forces and supporting systems. Our quantitative projections for five to 10 years from now are based on evidence regarding these options, as well as our perceptions of Soviet priorities, as noted earlier.

13. Fundamental to the options the Soviets have for the composition of their future forces is their vigorous military research and development and production base. Their research efforts, coupled with technology acquired from the West, have provided them with sufficient advances in military technologies to enable them to develop increasingly sophisticated weapons and supporting systems. The pace and the overall quality of the Soviets' future weapons programs will depend to a large degree on their ability to develop and exploit new technologies, including those acquired from the West.

Strategic Offensive Forces

14. Our projections of Soviet strategic attack forces over the next 10 years represent broad trends and should not be considered precise forecasts. Our force projections are drawn from a large body of evidence

on Soviet weapon development programs and data on Soviet testing, production, and deployment practices. This year we have projected five alternative strategic offensive forces. Force 1 represents a force based on the assumption that, while no formal arms control agreements are concluded, negotiations continue, and the Soviets choose not to expand their forces beyond the quantitative limits set by SALT I and SALT II until 1990. Their strategic forces, however, are substantially improved by replacement of older systems with newer ones. The force is modernized at a pace reasonably consistent with that of the last 10 years. Two force options, Forces 2 and 3, show our estimates of the direction, scope, and pace of expansion that Soviet forces could take in the absence of any arms control constraints. The Soviet proposals at the strategic arms reduction talks (START) and at the INF negotiations are represented in Force 4, and the US START and INF proposals in Force 5.

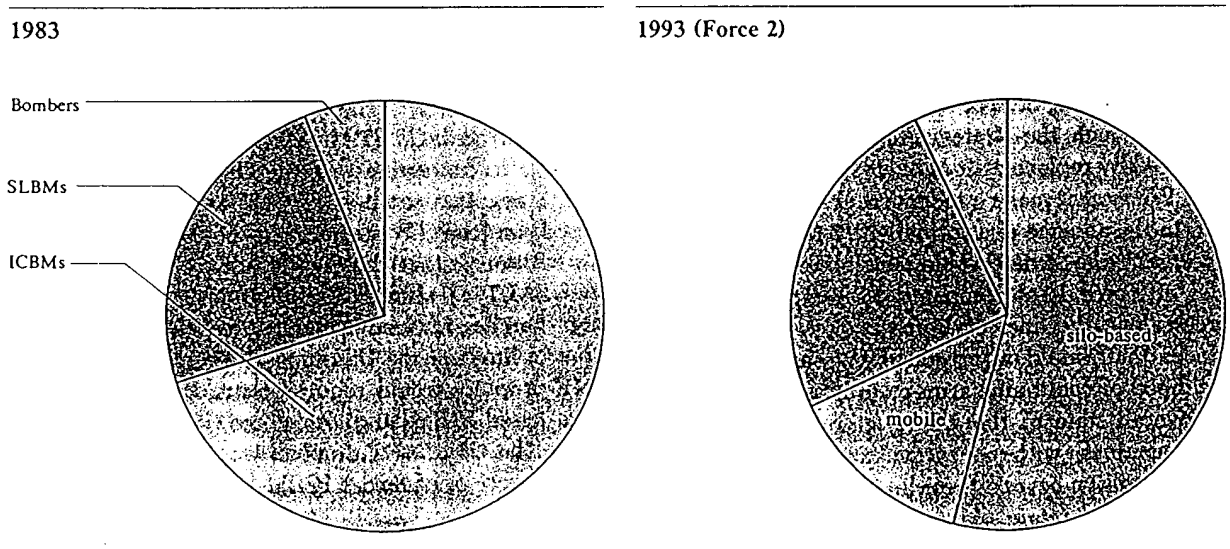
15. Our projections indicate that, throughout the projection period, ICBMs will be the largest element of the Soviet strategic offensive forces for intercontinental attack. Figure 5 shows the mix of warheads in the current Soviet force and, for 1993, in Force 2. We believe the following will be major features of any likely 1993 Soviet force:

- Fewer silo-based ICBMs, but about 500 to 600 road- and rail-mobile ICBMs.
- Probably no significant change in the number of SS-18s deployed (308), but the current missiles will be replaced with ones having increased accuracy and greater potential throw weight.
- There are uncertainties about Soviet plans to improve the SS-19 ICBM and retain it in the force in the 1990s. We believe it likely that the Soviets will begin to phase out SS-19s in the late 1980s and, beginning in the early 1990s, replace them with an SS-X-24 follow-on. There is an alternative view that the Soviets will flight-test modernized SS-19s and retain this system in their forces, rather than replace it with the SS-X-24 follow-on.[4]
- Increased capability to reload and refire with mobile ICBM launchers.[5]

[4] *The holder of this view is the Director, Defense Intelligence Agency.*

[5] *For an alternative view, see paragraph 71.*

Figure 5
Soviet Intercontinental Attack Forces
Mix of Warheads, 1983 and 1993



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— An improved SLBM force consisting largely of SS-N-20s and SS-NX-23s, with substantially more RVs than today and with some possibly having terminal guidance for accuracy to achieve a hard-target capability.

— Deployment of about 75 to 105 Blackjacks and about 40 to 50 Bear H bombers.

— About 1,500 to 2,000 long-range land-attack cruise missiles deployed on aircraft, submarines, and land-based launchers.

In addition, we expect Soviet deployment of 530 to 650 SS-20 IRBM launchers, most of them equipped with the SS-20 follow-on missile.

16. All of the projections assume that the Soviets do not take detectable actions inconsistent with the terms of the SALT I Interim Agreement and key provisions of the unratified SALT II Treaty, at least through mid-1985. All the forces are thus nearly identical through 1985. From 1986 to 1994, however, the projections diverge, reflecting evidence that the Soviets have an expanded number of options in deciding the size, mix, and characteristics of their nuclear forces and supporting systems and in tailoring their forces to specific arms control environments.

17. *Force 1.* This force is based on the assumption that, while no formal arms control agreements are concluded, negotiations continue, and the Soviets choose not to expand their forces beyond the quantitative limits set by SALT I and SALT II—current levels of strategic nuclear delivery vehicles (SNDVs), MIRVed missiles, SSBNs, and SLBM launchers—until 1990, although the strategic forces are substantially improved by replacement of older systems with newer ones. We cannot make a judgment as to the likelihood that, in the absence of a formal offensive arms control agreement, the Soviets would develop forces along the lines of Force 1, as compared with expanding their forces along the lines of Force 2 or 3. The circumstances that would affect these options include the likelihood of continuing arms control negotiations and the overall state of the US-Soviet relationship. This force assumes, with no formal agreement reached, some expansion beyond these limits in the early 1990s, as the Soviets retain older MIRVed missile systems rather than voluntarily retiring them. There is an alternative view that it is unlikely the Soviets would maintain their force growth within these arms control constraints for such an extended period of time without agreements in effect.[6]

18. *Force 2.* This force represents a steady upgrade of the strategic attack forces. SALT numerical limits are not exceeded through mid-1985, after which the Soviets begin to expand beyond arms control constraints. Deployment rates are consistent with available evidence on ongoing and new programs and with recent trends in deployment rates and force composition.

19. *Force 3.* In general, this force represents a higher level of effort than Forces 1 or 2 in the areas of production, deployment, and, in some cases, technological achievement. The differences between this force and Forces 1 and 2 reflect our uncertainties about the technological choices and improvements that the Soviets might make, their potential deployment levels for some new systems, and the Soviets' own evaluation of their potential offensive force requirements. Force 3 is not a maximum effort, and is not the upper bound for either technological or production potential, but would require a substantially greater commitment of resources than Force 2.

20. *Force 4: Soviet START and INF.* This force is based on our understanding of the Soviet START and INF positions. Because there are alternative proposals on several key issues, we have had to be selective in setting the criteria for the forces. We assume the Soviets' proposal would allow the deployment of the ballistic missiles they are now testing and this force shows their deployment.

21. *Force 5: US START and INF.* Our calculations for this force assume that the United States and the USSR negotiate both a START and an INF treaty based on the US negotiating positions. A further assumption is that the Soviets adhere to the SALT I and SALT II numerical limitations until mid-1985, and then begin to reduce their forces to meet the arms control limits of the US proposals. The US zero option INF proposal would require destruction of all Soviet land-based IRBMs and long-range GLCMs within one year. The US START proposal would require substantial reductions of Soviet ICBM and SLBM forces. For

[6] *The holders of this view are the Director, Defense Intelligence Agency, and the Director of Naval Intelligence, Department of the Navy.*

the purposes of these projections we assumed that required reductions would have to be completed by 1993.

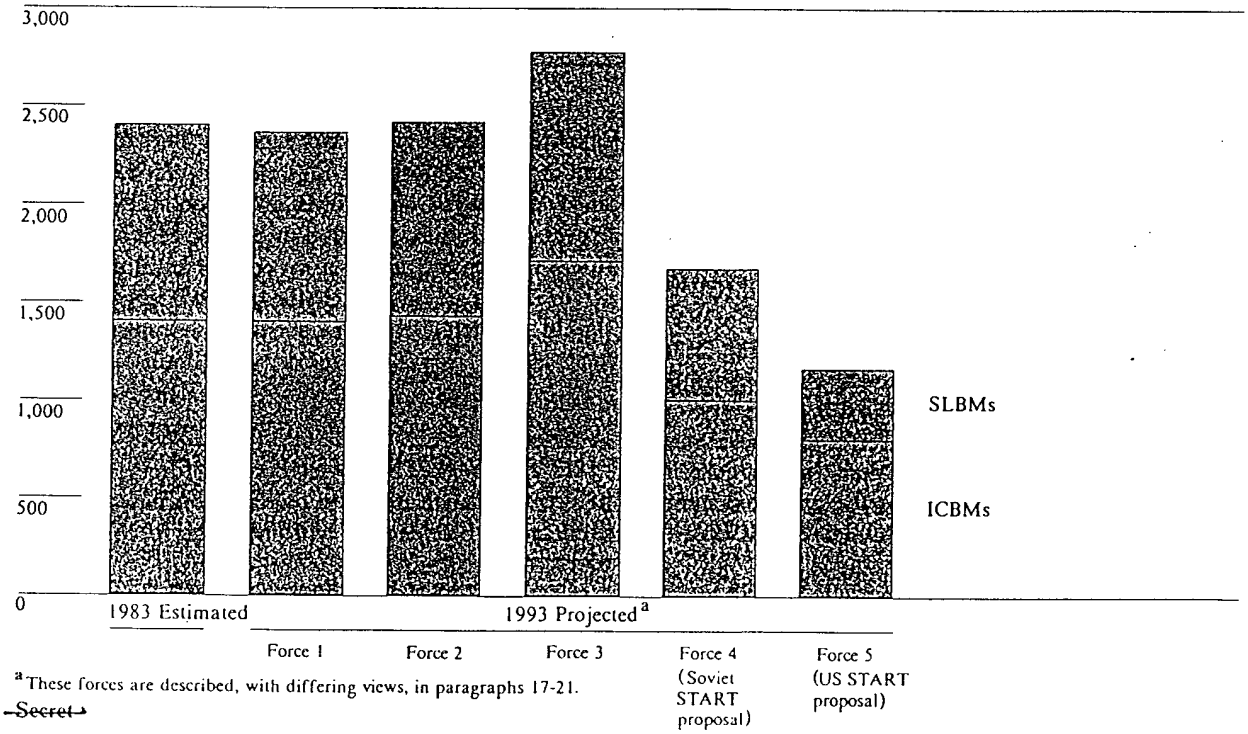
Quantitative Indexes for Soviet Strategic Offensive Forces

22. *Deployed ICBMs and SLBMs.* Figure 6 illustrates the trends in the number of deployed Soviet ICBMs and SLBMs that result from our various force projections. The trends projected do not show significant growth in the numbers of these launchers. Force 3 has the largest growth, about 15 percent, due to a larger number of mobile ICBM launchers and retention of more silo-based ICBMs. The significant change in Forces 1 and 2 is not in launchers but in reentry vehicles. (See paragraph 24.) The Soviet START proposal, reflected in Force 4, reduces these launchers from the current total by about 30 percent, while the US START proposal reduces them by about 50 percent.

23. The projected aggregate throw weight of the missile force is shown in figure 7 (page 30). The throw weight by 1993 increases in Forces 1, 2, and 3 by about 20, 25, and 50 percent over that of the current force. This increase is due to the number of missiles and the improved technological performance we expect in the various Soviet missile development programs. The Soviet proposal, as represented by Force 4, would result in a 15-percent decrease in throw weight. The US START proposal, as represented by Force 5, would reduce the throw weight by about 55 percent, because of the decreased number of missiles and the constraints on the number of medium and heavy ICBMs.

24. Figure 8 (page 31) shows the numbers of RVs on deployed ICBMs and SLBMs (including online and

Figure 6
Deployed Soviet ICBMs and SLBMs
1983 and 1993



[a] These forces are described, with differing views, in paragraphs 17-21.

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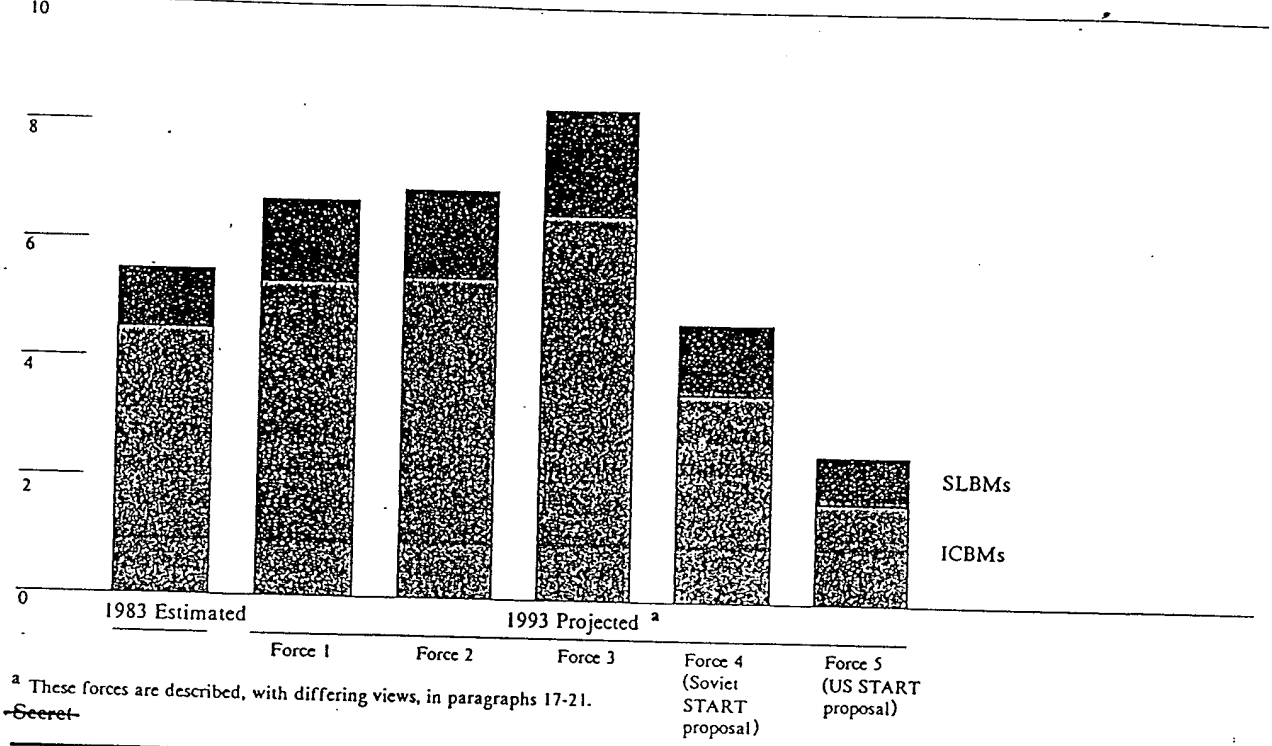
Figure 7
Throw Weight of Deployed
Soviet ICBMs and SLBMs, 1983 and 1993



[a] These forces are described, with differing views, in paragraphs 17-21.

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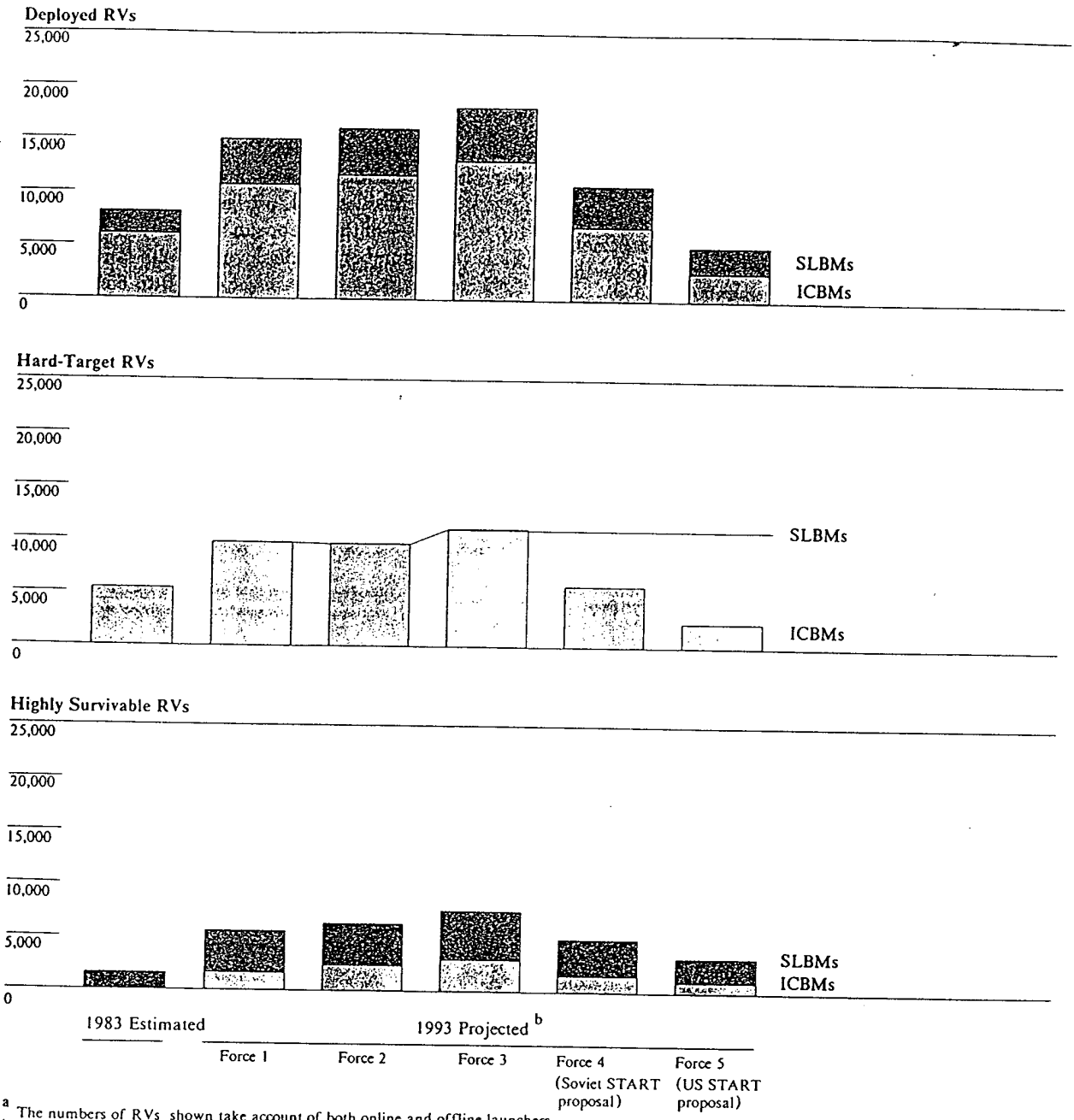
offline launchers) in 1993.[7] Forces 1, 2, and 3 show large increases in the number of RVs over the about 8,000 at the end of 1983, from as low as 90 to as high as 120 percent. These increases—much greater in percentage than the increase in missiles—result from the deployment of larger numbers of MIRVed ICBMs and SLBMs and from the increased numbers of RVs on some of these missiles. The Soviet proposal, as in Force 4, would result in an increase of about one-third over the current force. The US START proposal, as in Force 5, would reduce the number of such warheads to 5,000—about one-third less than in the current force. Also shown in figure 8 are the projected numbers of ballistic missile RVs—almost all on ICBMs—capable of destroying hard targets.[8] The trends are similar to those for total RVs. The number of highly survivable RVs—on SLBMs and mobile ICBMs—is expected to increase by 200 to 300 percent for Soviet forces not constrained by arms control and increase by 60 to 160 percent under the START proposals. It should be noted that Soviet silo-based missiles will continue to carry the majority of ballistic missile warheads, except under the US START proposal.

25. *Bombers.* The Soviet bomber force is not expected to change much in overall size; new bombers such as the Blackjack A will enter the force as older

[7] These totals include both online and offline weapons. Offline weapons are those on launchers or platforms that are being converted or overhauled. For ICBMs the difference is usually small, but for SLBMs the number can be significant. Typically, some 25 percent of the SLBM force is off line and hence unavailable. See volume III for listings of online and offline weapons.

[8] For the purpose of this Estimate, hard-target missile RVs are defined as those that have a 50-percent or greater probability of destroying a target hardened to withstand an overpressure of 14 megapascals (MPa), or 2,000 pounds per square inch (psi). Weapon system reliability and the effects of enemy active defenses are not considered in the calculation.

Figure 8
Deployed Soviet ICBM and SLBM Reentry Vehicles, 1983 and 1993 [a]



[a] The numbers of RVs shown take account of both online and offline launchers.
[b] These forces are described, with differing views, in paragraphs 17-21.

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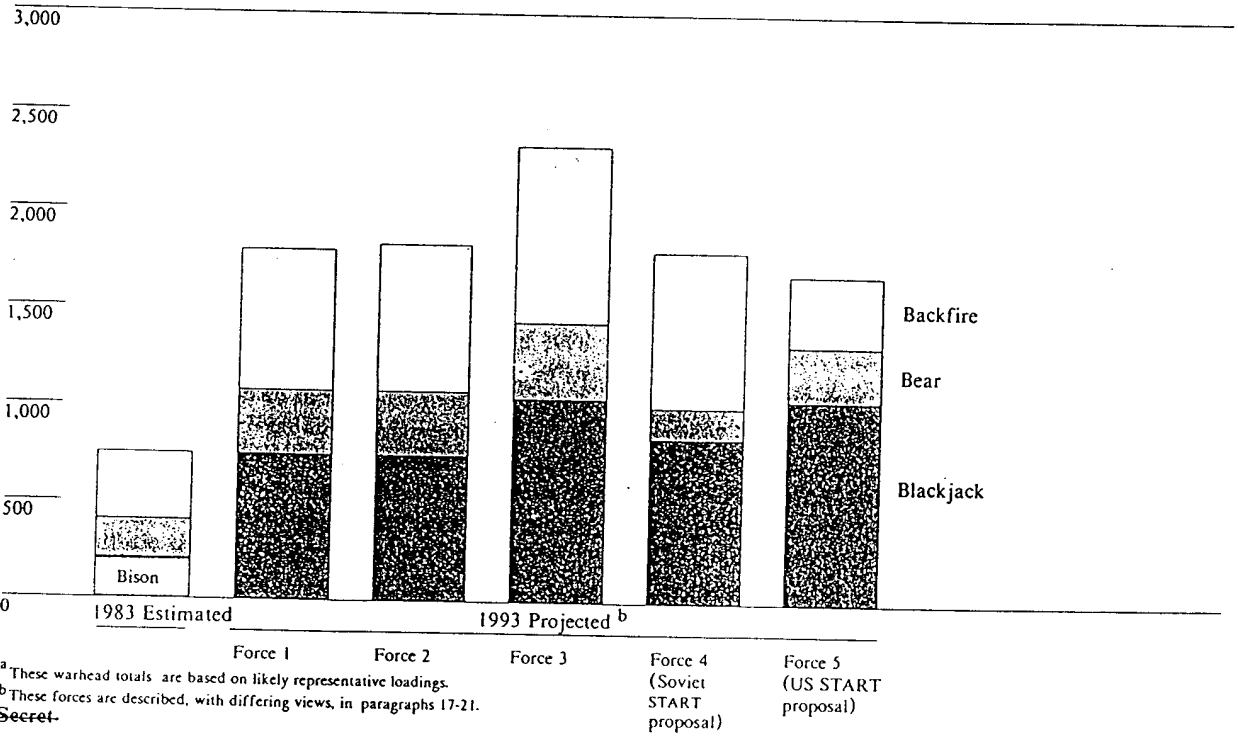
bombers such as the Bison are phased out. As shown in figure 9, however, there will be a substantial increase in the number of weapons carried by the new Blackjack A, the Bear H, and the Backfire. (Other strategic bombers, of lesser range, are not shown.) The largest increase, about 210 percent, is in Force 3. The increases are due mostly to the ALCM-carrying capabilities of the Blackjack A and Bear H. Both START forces show increases of over 100 percent in these weapons. It is also important to note that, because some aircraft of the strategic bomber force have a major theater attack role, many of these weapons would be allocated for theater, and not intercontinental, attack. ICBMs and SLBMs will continue to be the primary elements of the intercontinental attack forces.

26. *Cruise Missiles.* The Soviets are projected to begin deploying long-range land-attack cruise missiles on aircraft and submarines in 1984 and on ground launchers in 1985. As shown in figure 10, we project that, in Forces 1, 2, and 3, cruise missile deployments would reach levels of about 1,500 to 2,000 (mostly ALCMs) by the early 1990s. The Soviet proposals ban GLCMs and SLCMs entirely, while under the US START and INF proposals, with only GLCMs limited, the numbers in our projection would be about 1,300.

27. *SS-20s and GLCMs.* Figure 11 (page 34) shows our projections for the total number of Soviet land-based INF missiles and warheads deployed in the Soviet Union—in the European area as well as the Far East. The number of deployed SS-20 launchers is projected to increase to a level of 530 to 650, similar to, or somewhat higher than, the number of SS-4, SS-5, and SS-20 launchers currently deployed. We expect some 500 to 650 GLCMs would be deployed. The number of warheads, those on deployed missiles as well as those on refire missiles, is expected to increase

Figure 9
Deployed Warheads on Selected Soviet Bombers, 1983 and 1993 [a]



[a] These warhead totals are based on likely representative loadings.
[b] These forces are described, with differing views, in paragraphs 17-21.
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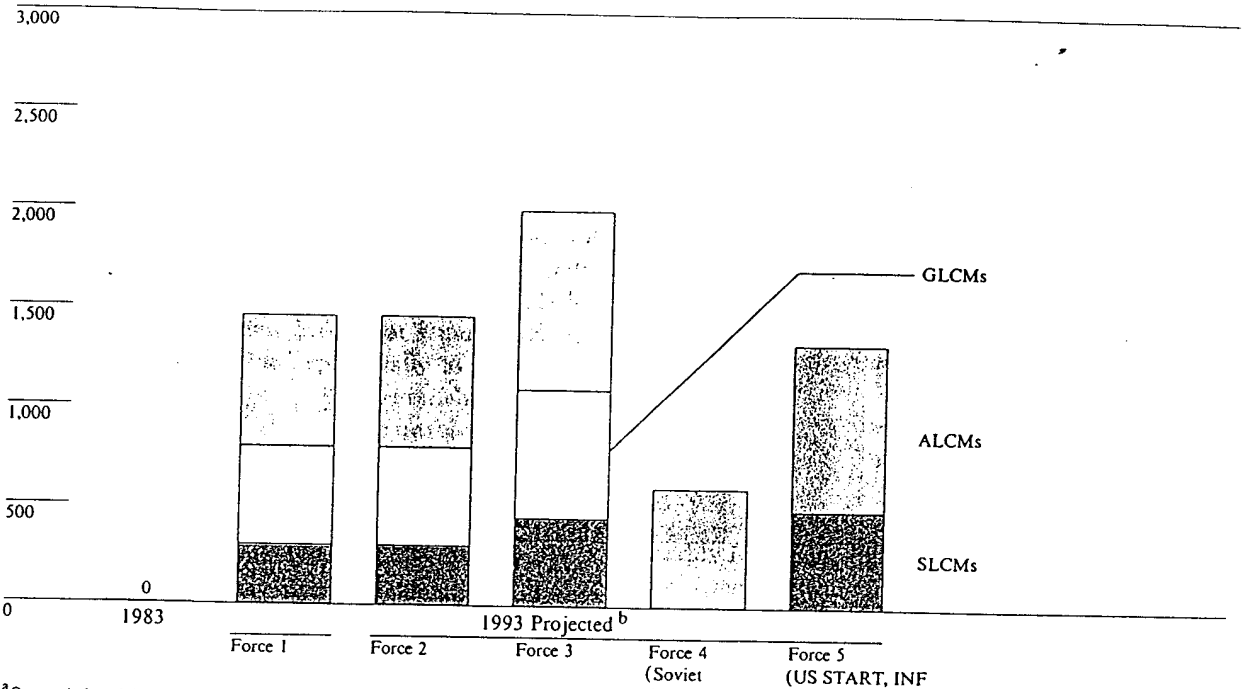
Figure 10
Deployed Soviet Long-Range Land-Attack Cruise Missiles, 1993[a]



[a] Our totals for ALCMs are based on likely representative bomber loadings.
[b] These forces are described, with differing views, in paragraphs 17-21.

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significantly over today's warhead totals, by the early 1990s.

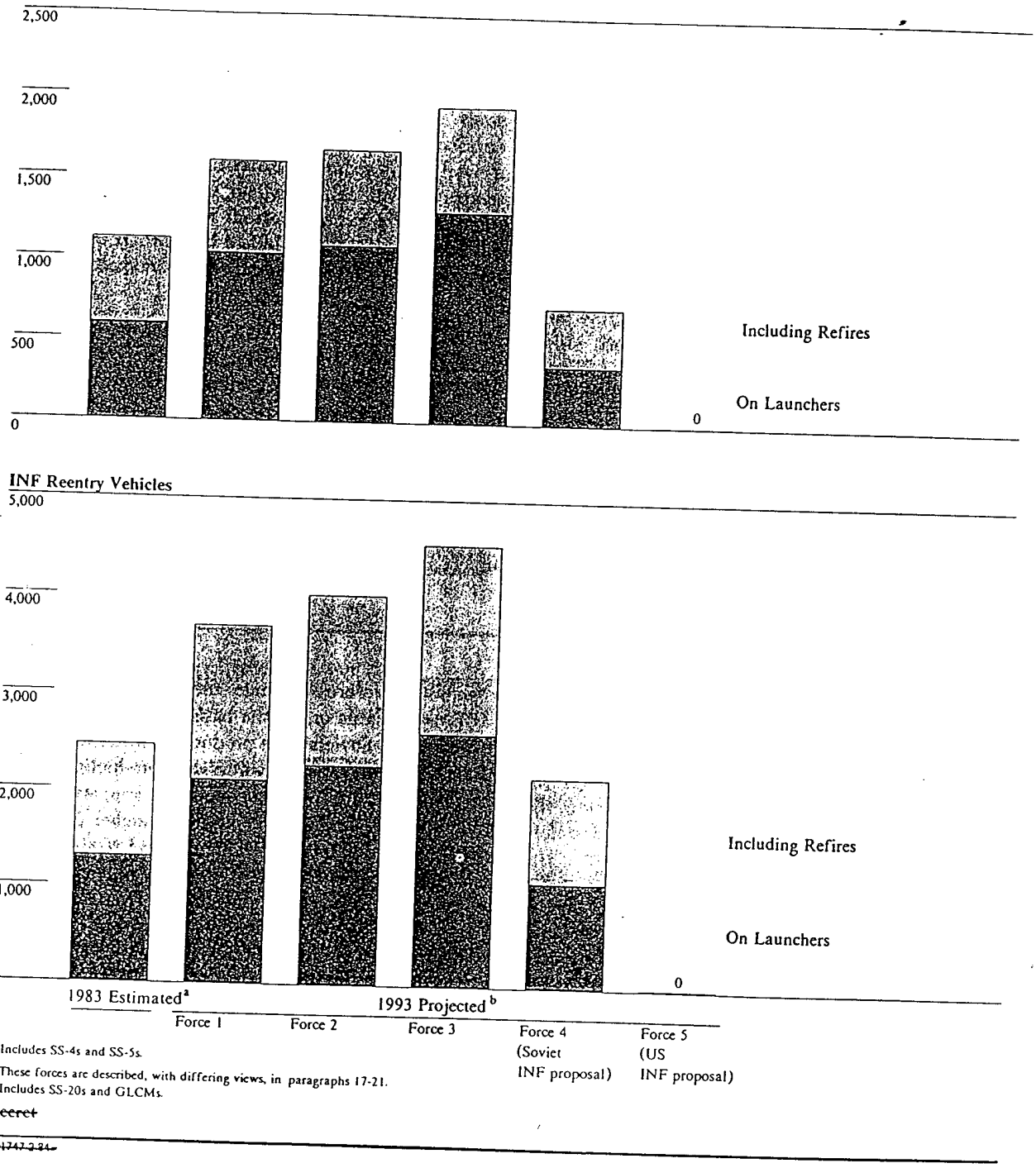
28. *Reserve ICBMs.* [redacted] the Soviets intend to reload some ICBM launchers for refire operations. According to an alternative view, [redacted] not the inclusion of ICBM refire in Soviet war plans.[9] We know that the USSR produces more ICBMs than needed for deployment in operational launchers. In the course of deployment, additional ICBMs are manufactured for use in crew-training launches and as maintenance spares. Some of these reserve missiles could be available for refire [redacted] We cannot, [redacted] estimate the number of reserve ICBMs available. [redacted] Soviet missile production capacity, however, appears large enough to support production levels beyond one missile per launcher plus those for testing, maintenance spares, and training. An alternative view holds that there is no evidence to support a change in the judgment from last year's Estimate, that the Soviets have a reserve force that includes ICBMs produced as maintenance spares and as training missiles and that also contains additional ICBMs produced as refire missiles.[10]

29. [redacted]

[9] *The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.*

[10] *The holder of this view is the Director, Defense Intelligence Agency.*

Figure 11
Soviet Land-Based, Long-Range INF Missiles and Reentry Vehicles, 1983 and 1993



[a] Includes SS-4s and SS-5s.

[b] These forces are described, with differing views, in paragraphs 17-21. Includes SS-20s and GLCMs.

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~~301747 2-84~~

countering low-altitude penetrating aerodynamic systems and standoff weapon carriers and to defenses against ballistic missile systems.

32. *Ballistic Missile Defense.* The Soviets are in the process of upgrading and expanding the ballistic missile defenses at Moscow within the launcher limits of the ABM Treaty, and are actively engaged in ABM research and development programs. We have made a projection for the new deployments around Moscow, under the assumption that the current launcher limits of the ABM Treaty continue to be observed for the next 10 years. We have also described, in volume II, four deployment options for ballistic missile defenses that represent different paths the Soviets could follow, beyond the current limits of the ABM Treaty. The available evidence does not indicate with any certainty whether the Soviets are making preparations for deployments beyond the limits of the Treaty—100 ABM launchers at Moscow—but it does show they are steadily improving their ability to exercise options for deployment of widespread ballistic missile defenses in the 1980s. If the Treaty were abrogated by either the United States or the USSR, we believe the Soviets would undertake rapidly paced ABM deployments to strengthen their defenses at Moscow and cover key targets in the western USSR, and to extend protection to key targets east of the Urals. Widespread defenses could be in place by the late 1980s or early 1990s, as shown in figure 12 (page 36).

33. We judge that, in evaluating the technical performance of the ABM systems they could deploy in a more widespread defense, the Soviets probably would not have high confidence in how well these systems would perform against a large-scale, undegraded US missile attack, especially in the late 1980s by improved US forces. However, the Soviets would probably view their ballistic missile defenses as having considerable value in reducing the impact of a degraded US retaliatory attack if the USSR succeeded in carrying out a well-coordinated, effective initial strike. Also, widespread Soviet defenses, even if US evaluations indicated they could be overcome by an attacking force, would complicate US attack planning and create major uncertainties about the potential effectiveness of a US strike. Another view is that the Soviets, in a widespread deployment, would deploy sufficient numbers of ABM systems to enhance their

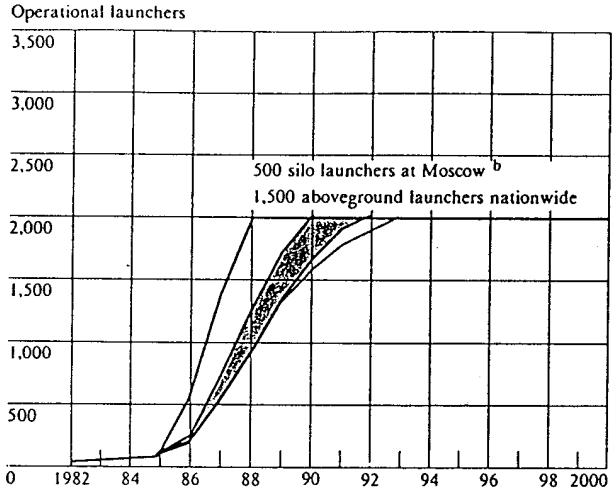
30. Evidence indicates the Soviets plan to use reserve missiles for refire from SS-20 launchers.

we believe the number of reserve missiles available for refire today probably amounts to about 100 percent of the number of SS-20s deployed.

Strategic Defensive Forces

31. The Soviets will continue to modernize and expand their strategic defensive forces during the coming decade. Much of the effort will be devoted to

Figure 12
Potential Soviet ABM Deployment: Nationwide Defense of Key Target Areas[a]



[a] Assumes Soviets began preparations for deployment in 1982; no launcher deployments beyond Treaty limits until 1985. Does not represent judgments about the likelihood of the deployments shown.

[b] A 500-launcher defense at Moscow could be completed several years sooner if aboveground launchers were used.

—— Force A
Paced by rate of engagement radar production and of launchsite and large radar construction

—— Force B
Paced by rate of engagement radar production and launchsite construction

—— Force C
Paced by rate of launchsite construction; assumes mix of silo and aboveground launchers at Moscow

confidence in the survival of high-value targets, even in the event of a full-scale US attack.[13]

34. There are a number of situations involving ABM Treaty revisions, abrogation, or withdrawal—initiated by the United States or the USSR—that could result in Soviet deployment of ABMs beyond current Treaty limits. At present, the Soviets apparently value the ABM Treaty for both political and military reasons; they are probably concerned about a major US commitment to ballistic missile defense. We do not foresee a Soviet initiative to revise, abrogate, or withdraw from the ABM Treaty within the next several years. A decision by the Soviets on whether to deploy a widespread ABM system would be based primarily on the answer to a crucial question: Will the USSR face a sufficiently threatening strategic situation in the late 1980s and beyond against which an expanded ABM defense based on Soviet systems now in testing and development would make a significant difference? If the answer is yes, the Soviets would probably make the commitments necessary to deploy such defenses despite the economic and political costs. But, because their answer probably would not be clear-cut, other important factors could influence their decision toward nondeployment:

— The USSR's two-track approach—arms control and a military buildup—to further its strategic goals has achieved limits on US delivery vehicles and constrained US defense, while permitting expansion of Soviet offensive forces.

— Under the Treaty the USSR has ABM defenses to protect critical targets in the Moscow area while the United States has chosen not to deploy ABMs.

— The Soviets apparently see the Treaty as having slowed US ABM research and development, while they moved ahead with their own.

35. On balance, we believe there is a fairly low, but nevertheless significant, chance (about 10 to 30 percent) that the Soviets will abrogate the Treaty and deploy ABMs in excess of Treaty limits in the 1980s. We believe they would see the military advantages of the defenses they could deploy as being outweighed by the disadvantages cited above, especially of energizing the United States and perhaps its Allies into a rapid and sustained growth in overall military capabilities, both conventional and nuclear, that could lead to an erosion in the 1990s of Soviet gains achieved in the 1970s and 1980s.

36. An alternative view notes that Soviet benefits from the Treaty, under current and projected conditions, far outweigh the potential gains from abrogation. As a result, the likelihood of abrogation is considered in this view to be very low (10 percent or

[13] *The holder of this view is the Director, Defense Intelligence Agency.*

less) in the 1980s unless current conditions change substantially. The holder of this view cautions, however, that the Soviets have a motivation to deploy a widespread ABM system to fill the serious gap in their defenses, and there is a higher probability of such a deployment in the 1990s. Moreover, they have the capability to complete such a deployment in only a few years, as illustrated in figure 12.[14]

37. Another alternative view holds that the Soviets are unlikely to abrogate the ABM Treaty during the 1980s, because the conditions that led to Soviet acceptance of the Treaty—including the perception of the potential for US technological and manufacturing capabilities to outstrip those of the USSR—still pertain; the political costs of abrogation, particularly in Western Europe, would be a further restraining factor; and, finally, the Soviets will not have the capability to deploy during this decade ABM defenses that could significantly alter the US-Soviet strategic nuclear relationship.[15]

38. Another view holds that the crucial question for Soviet leaders is whether deployment of ABMs is required to attain Soviet strategic objectives. According to this view, the following factors should be given greater weight in judging Soviet motivations for deployment of a widespread ABM defense. Soviet doctrinal requirements for damage-limiting capability have always provided the motivation to deploy ABMs both at Moscow and elsewhere. Now, as a result of advances by the USSR in ABM technology, the USSR's counterforce advantage over the United States, and US plans to deploy survivable and hard-target-capable ballistic missiles, the Soviets may no longer deem it necessary to restrain themselves from further ABM deployment. They have taken essentially all the steps necessary to prepare for a decision to deploy and have demonstrated confidence in their current ABM technology by deploying the new ABM system at Moscow. The Soviets may be expected to accompany any widespread ABM deployments with an active-measures campaign to manipulate Western attitudes and actions and to inhibit energizing the United States and its Allies into sustaining a rapid growth in military capabilities. The holder of this view believes it is not possible with current intelligence data to evaluate and quantify with confidence the extent to which various factors would influence the Soviets to abandon or retain the ABM Treaty. However, in view of the preparations the Soviets have made and the fact that the motivations discussed above strongly influence Soviet decisionmaking, the main text may have understated the prospect for widespread ABM deployment.[16]

39. [

] A widespread Soviet ABM deployment by the late 1980s or early 1990s would give the USSR an important initial advantage over the United States in this area. We have major uncertainties about how well a Soviet ABM system would function, and the degree of protection that future ABM deployments would afford the USSR. Despite our uncertainties about its potential effectiveness, such a deployment would have an important effect on the perceptions, and perhaps the reality, of the US-Soviet strategic nuclear relationship. According to an alternative view, the Soviet Union will not have the capability in this decade to deploy ABM defenses that would significantly affect the US-Soviet strategic nuclear relationship.[17]

40. ***Soviet Forces for Air Defense.*** Our projections for Soviet air defense forces are contained in volume III and described in volume II, chapter IV. Although these projections contain differing views of the quantity of some specific weapon systems, the thrust of the projections is that the Soviets will have deployed significant numbers of weapons with low-altitude air defense capabilities. These weapons include the SA-10 and SA-X-12 SAMs, the Foxhound, Fulcrum, and Flanker aircraft, and the Mainstay AWACS aircraft. Deployment of small numbers of ground-based high-energy lasers for strategic air defense is projected to begin in the mid-to-late 1980s.

[14] *The holder of this view is the Assistant Chief of Staff for Intelligence, Department of the Army.*

[15] *The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.*

[16] *The holder of this view is the Director, Defense Intelligence Agency.*

[17] *The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.*

We see the possibility of additional developments by the early-to-middle 1990s, including a new airframe for AWACS, deployment of a new long-range interceptor, and improved SA-10 capabilities against small-radar-cross-section vehicles such as cruise missiles.

41. *Antisubmarine Warfare.* The Soviets have been faced with the threat from US SSBNs and SSNs for almost 25 years. The need to counter Western SSBNs and protect their own SSBNs has motivated the Soviets' vigorous pursuit of R&D in acoustic and nonacoustic ASW. They have developed a strong active sonar technology and deployed a variety of modern systems that support point defense, area denial, and SSBN protection but do not provide open-ocean surveillance capability. They still lack effective means to locate US SSBNs at sea. They lack both a long-range submarine detection capability and a sufficient number of short-range systems to search potential US SSBN patrol areas effectively. They probably are unable, moreover, to track a US SSBN on patrol for more than a few hours even if they detect one.

42. The Soviets will continue to pursue vigorously all ASW technologies as potential solutions to the vexing problems of countering US SSBNs and defending their own SSBNs against US attack submarines. We are concerned about the energetic Soviet effort to develop a capability to remotely sense submarine-generated effects from aircraft or spacecraft. In the last year we have improved our understanding of the nature of the overall Soviet effort[ ]There remain important uncertainties about the full extent and direction of the Soviet program:

— The Soviets have been conducting ASW research with airborne nonacoustic sensors since the 1960s[ ]Some of this effort is directed toward future space-based ASW detection systems. Since 1979, Soviet tests have increasingly emphasized space-based sensor development, and both airborne and spaceborne data collection support the development of basic phenomenological models and submarine detectability assessments. The evidence indicates the Soviets are still in the applied research phase, including the development and testing of subsystems technologies, and have not yet begun development of a remote detection system for ASW.

—[ ]the Soviets have conducted large-scale experiments involving airborne and spaceborne remote sensors, surface combatants, oceanographic research ships, and target submarines.[ ]

43.[ ]Most of this activity has occurred near the Soviet Pacific coast in an area that favors signal generation and detection. Even if airborne or spaceborne remote sensors work only in favorable waters, the Soviets may decide to continue sensor development, begin development of a detection system, and eventually deploy such a system in order to defend their SSBNs from Western attack submarines. At this stage in their development, Soviet remote sensors would be susceptible to high false-alarm rates under the best of conditions and probably would not work when ocean conditions deteriorate in these areas. It will be difficult for the Soviets to achieve sensor and signal-processing technologies necessary to overcome the unfavorable signal-to-noise ratio and high false-alarm rates. In any case, US SSBNs as they operate today are not endangered by the remote sensors currently being tested by the Soviets. The Soviets may have the technology in hand to deploy an airborne remote sensor system—and to test a prototype spaceborne system—with limited ASW capabilities before the mid-1990s. We believe that systems that could result from present efforts would have the most impact on protecting Soviet SSBN bastions against encroaching US SSNs operating at shallow depths.

44. Soviet nonacoustic ASW detection systems that could be deployed within the next 10 years are unlikely to pose any significant threat to US SSBNs on patrol:

— An operational space-based remote sensing system could not be available in less than 10 years

from the start of engineering development. This constraint is imposed by Soviet design practices, as demonstrated by numerous development programs. The wide range of continuing experimentation, however, suggests that the Soviets have not yet selected a sensor for engineering development.

— In view of the operational considerations mentioned, the difficulties in exploiting the basic phenomena, and the major advances required in high-speed computing and in sensor and signal-processing technologies, we do not believe there is a realistic possibility that the Soviets will be able to deploy in the 1990s a system that could reliably monitor US SSBNs operating in the open ocean.

— There is a low-to-moderate probability that the Soviets could deploy in the mid-1990s an ASW remote detection system that would operate with some effectiveness if enemy SSNs approached ASW barriers near Soviet SSBN bastions.

45. *Directed-Energy Weapons.* Directed-energy weapons potentially could be developed for antisatellite (ASAT) applications, air defense, battlefield use, and, in the longer term, ballistic missile defense (BMD). Of the three types of directed-energy technologies with potential weapon applications—high-energy laser, particle beam, and radiofrequency—evidence is strongest that the Soviets are pursuing development of high-energy laser weapons. We believe they have a program to develop laser weapons, although the full scope, concepts of weapon operations, and status are not clear. The Soviets have the expertise, manpower, and resources to develop those directed-energy weapon and military support systems that prove to be feasible:

— There are two facilities at Saryshagan that are assessed to have high-energy lasers and that have the potential to function as ASAT weapons.

— There are many unknowns concerning the feasibility and practicality of ground-based laser weapons, however, for ballistic missile defense. We do not know, for example, how the Soviets would handle the problems of heavy cloud cover prevalent in many areas of the USSR containing facilities the Soviets want to protect. Nevertheless, we are concerned about the magnitude of the Soviet effort in ground-based lasers. It would be consistent with Soviet philosophy and practices to deploy a weapon system even if its capability were limited under some conditions. There are large uncertainties in any estimate of when such a Soviet laser weapon could be available. We expect the Soviets to test during the 1980s the feasibility of ground-based lasers for ballistic missile defense, using one of their high-energy laser facilities at Saryshagan. If a ground-based laser proves feasible and practical in such a role, a prototype could be tested in the 1990s. An initial operational capability, however, would not be achieved until after the year 2000. If the Soviets chose a risky course of action—developing this system without building a prototype—a few such systems could be operational by the early-to-middle 1990s.

— The Soviets are developing a high-energy laser weapon for strategic air defense that could be deployed in a ground-based version in the mid-to-late 1980s and possibly in a naval version in the early 1990s. The Soviets will probably deploy tactical battlefield lasers to complement mobile SAM batteries in the mid-1980s; these systems will be of low power and probably primarily intended to cause electro-optical damage.

— The Soviets continue to develop an airborne laser, with airborne testing likely to begin in a year or two. Limited deployment is possible by the early 1990s. The missions are difficult to determine, but could include ASAT, protection of high-value airborne facilities, and cruise missile defense.

— Soviet research includes a project to develop laser weapons for use in space. A space-based, high-energy laser weapon offers options not available with ground- or air-based systems. Space-based laser weapons might be employed for a variety of missions, potentially including ASAT, BMD, anti-aircraft, and ground target engagements. As an ASAT system, a space-based laser would have significant advantages over the conventional orbital ASAT interceptor in that it would have

multishot and long-range capabilities. It would also be likely to have a greater capacity to overcome a satellite's defensive measures, such as maneuvering and decoy deployment. We expect to see laser weapon components tested on manned spacecraft; however, unmanned satellites seem better suited as platforms for operational directed-energy weapons.

— We believe there is a high probability (60- to 90-percent chance) that a prototype high-energy space-based laser ASAT weapon will be tested in low orbit by the early 1990s. The psychological effect of the first test of a space-based laser in a weapon-related mode would be greater than the actual military significance of such a weapon in its initial application. Development of a space-based laser for antisatellite application is technically difficult, and we are uncertain as to the approach the Soviets would take. One candidate for a prototype for which there is some supporting evidence would be a megawatt-class laser.

— Although space-based weapons for ballistic missile defense may prove to be feasible from a technical standpoint, such weapons would require significant technological advances in large-aperture mirrors, multimegawatt power generation, short-wavelength lasers, and pointing and tracking accuracies. Also, system integration would be a complex undertaking, and the battle management aspects would be a formidable technical and operational challenge. They would also require very large space boosters having perhaps 10 times the capacity of those now in use. We expect the Soviets to have such boosters in the late 1980s. In view of the technological requirements, we do not expect them to have a prototype space-based laser BMD system until at least the mid-1990s or an operational system until after the year 2000.

— The Soviets are expending resources on technologies of critical importance to the development of particle beam weapons (PBWs). We have little evidence, however, of Soviet achievement in this area. Since the early 1970s the Soviets have had a research effort to explore the technical feasibility of a neutral particle beam weapon in space, an approach currently under investigation in the United States. In this effort, the Soviets have developed some technically advanced components but have not assembled a complete test system. The technical requirements for such a system, including precise pointing and tracking, are severe, and it is unlikely that the Soviets could test a prototype space-based PBW to destroy hard targets like missile RVs before the end of the century and no earlier than 1995 for an ASAT weapon. Lower power systems intended to disrupt electronics systems could possibly be developed and deployed several years earlier. (S NF)

— [ ] we believe the basic technology for a radiofrequency (RF) weapon already is available, [ ] There is a moderate likelihood that by 1990 the USSR will test a ground-based RF weapon potentially capable of physically damaging satellites.

E. Operations of Soviet Strategic Forces in a Conflict

Preparations and Training of Nuclear Forces for Conflict

46. [ ]

47. We believe that a fundamental Soviet objective in acquiring and operating strategic forces is to assure a high probability of prevailing in a nuclear conflict, even if many important aspects of the conflict turn out worse than expected. To this end, training of Soviet forces for a global nuclear conflict is increasingly broad in scope and complex in the operational factors taken into account. In their military writings, the Soviets note that wars usually do not proceed according to prior expectations and planning. They almost certainly anticipate wide variations in circumstances and events. They recognize that numerous complications and degradations would affect planned operations, particularly in the unprecedentedly difficult nuclear environment,

The inherent uncertainties of warfare cannot be eliminated through such practice, but the Soviets believe that their ability to continue to operate effectively in adverse conflict situations would be enhanced

48. With respect to the first sentence of the preceding paragraph, there is an alternative view that Soviet force acquisitions and operations are guided by the counterforce and damage limitation precepts of military doctrine, and are constrained by technological, bureaucratic, and budgetary influences. The Soviets recognize that the concept of prevailing in nuclear war is far too imprecise to guide force acquisitions and operations, and are fully aware of the great uncertainties and catastrophic losses that would be incurred by all parties in a nuclear war.[18]

49. Soviet perceptions of the growing complexity of warfare have led to greater efforts to plan forces and operations against a backdrop of more varied contingencies and to achieve greater realism in combat training. The Soviets' principal aims have been to enhance their operational flexibility and force sustainability and to increase the probability of maintaining continuity of control in a nuclear conflict. In line with this approach, they have:

- Adjusted their force employment strategies to respond to more varied contingencies.
- Made changes to enhance the survivability and endurance of some of their strategic forces, such as the creation of bastions where SSBNs can be more effectively controlled and can be protected by ASW forces, the operation of SSBNs in the Arctic near or under the polar icecap, and the deployment of the highly mobile SS-20 force.
- Gradually increased the stress placed on their personnel in combat training,

- Consistently worked to increase the survivability and redundancy of their command, control, and communications system and, thus, to increase their assurance of retaining control during the complex circumstances of extended operations in a nuclear environment.

50. Soviet employment strategies also are being modified to increase the options available to political leaders for using and controlling their intercontinental forces. Soviet military planners have sought to develop force responses applicable to various stages of theater or global conflict. These include a launch-on-tactical-warning (LOTW) capability for Strategic Rocket Forces (SRF) weapons as well as increased preparations for extended operations.

Scenario for Operation of Soviet Strategic Forces in a Conflict

51. We have structured a composite scenario, summarized briefly below,

we believe this composite picture captures

[18] *The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.*

essential Soviet military views on the operation of Soviet strategic forces and on the nature of a major US-Soviet confrontation that proceeds through large-scale nuclear conflict.

52. The flow of events in an actual conflict would be likely to vary considerably from that presented here. Our presentation, therefore, should not be regarded as a Soviet prescription for nuclear conflict. The presentation does not preclude efforts by the Soviets to achieve political solutions at any stage, or to vary their military actions in response to circumstances. On the contrary, the Soviets evidently intend to prepare the military establishment to meet the contingencies of a long global conflict, to increase the options available to the political leadership at any point in such a conflict, and thus to increase their chances of controlling events and securing favorable conflict outcomes.

53. *Crisis Period.* The Soviets see little likelihood that the United States would initiate a surprise attack from a normal peacetime posture; we believe it is unlikely that the Soviets would mount such an attack themselves.

they expect to have sufficient warning of a US attack to carry out the deployment and dispersal of their forces. They evidently believe that, if a general war occurred, it would most likely result from the expansion of a major theater conflict, preceded by a political crisis period that could last several weeks or longer. During this crisis period the Soviets would:

- Heighten their surveillance of enemy activity, to acquire detailed information on a wide range of US strategic force capabilities and readiness.
- Shift from a peacetime to a wartime posture, while avoiding implementing readiness measures that they thought were unduly provocative.
- As the crisis intensified, seek to confuse Western intelligence and deny it information on the status of Soviet forces and preparations. The Soviets would increase the use of concealment, deception, and disinformation for military, diplomatic, and propaganda purposes in attempting to achieve their objectives.

54. *Conventional Phase.* The Soviets apparently believe that a major nuclear conflict, if it occurred, would be likely to arise out of a conventional conflict and could involve several theaters. The Soviets perceive the conventional phase of a NATO–Warsaw Pact conflict as lasting from a few days to as long as several weeks. Key objectives would be to weaken the enemy's theater-based and sea-based nuclear capability, while protecting their own nuclear force:

- At the outset of hostilities, the Soviets would try to implement a theaterwide air offensive in which hundreds of Pact aircraft, employing conventional weapons, would be massed, with the objective of achieving air superiority and destroying NATO's nuclear assets, command and control facilities, and other high-value military targets.
- We believe that most, if not all, of the mobile SS-20 IRBM force would be deployed to the field by this time.
- All available Soviet SSBNs would be ordered to deploy from bases. Soviet general purpose naval forces would protect those SSBNs in areas near the USSR. In addition to the protection of their own SSBNs, Soviet naval forces would attempt to destroy enemy sea-based nuclear strike forces, principally SSBNs and aircraft carriers.
- We believe that there is a high likelihood that, during this conventional phase, the Soviets would attempt to interfere with selected US space systems that provide important wartime support, using both destructive and nondestructive means. The decision to launch ASAT interceptors against such systems during the early part of a conventional phase of such a conflict would be affected by Soviet uncertainties with regard to US responses, including the likelihood of attacks on Soviet space launchsites.
- We believe the Soviets currently have the technological capability, using active electronic warfare (EW), to attempt to interfere with enemy space systems.

We believe, however, that the Soviets intend to use active EW to attempt to interfere with such space systems. Potential Soviet active EW platforms include many fixed, transportable, and mobile transmitters;

An alternative view contends that there is insufficient evidence at this time to support the judgment of Soviet intent to use active EW against satellites. Moreover, the holder of this view concludes that, if a Soviet active EW capability against satellites does exist, brute force jamming would be the most likely EW technique.[19]

55. *Initial Nuclear Phase.* We believe the Soviets envisage that it would be to their advantage to conduct a rapid conventional campaign to accomplish their theater objectives in NATO. In this campaign they would employ nonnuclear means, including some elements of strategic aviation to attempt to destroy NATO nuclear forces, with Soviet theater and strategic nuclear forces standing ready to preempt. The Soviets, in our judgment, are unlikely to initiate nuclear conflict on a limited scale, with small-scale use confined to the immediate combat zone, because they would probably see it as being to their advantage instead to keep the conflict at the conventional force level. Moreover, they would see the use of nuclear weapons on any scale as substantially increasing the risks of escalation to strategic nuclear war. We believe, however, that the likelihood of Soviet initiation of nuclear strikes would increase if Soviet conventional forces were faced with a major defeat or a NATO counteroffensive into Eastern Europe.

56. Soviet depict the transition from conventional to nuclear war in Europe occurring as Soviet forces attempt to preempt what they perceive to be an imminent NATO massed nuclear strike by launching their own initial massed nuclear strike. assert that a successful preemptive strike could provide one side with a decisive advantage and therefore stress the importance of a timely Pact strike—either a preemptive one or one at least nearly simultaneous with the launch of NATO's massed strike.

57. The available evidence implies that, concurrent with the initial massed strike by nuclear forces in the theater, an initial strategic strike would take place—presumably including intercontinental forces. Soviet doctrine up to the early 1970s generally held that use of nuclear weapons on any scale constituted the initiation of nuclear war, with escalation to large-scale or "massed" nuclear strikes inevitable. Soviet writings thus declared that any NATO use of nuclear weapons would be met with a massive response, drawing on the USSR's full arsenal of strategic weapons. if it became apparent NATO was about to use nuclear weapons, the Pact should preempt with a massed strike even if it were not apparent that the NATO strike would be a large one. Later Soviet doctrinal material asserts that the circumstances under which nuclear weapons first would be employed cannot be predicted with certainty, and that preparations must be made to cover contingencies. the need to develop a wider array of nuclear options, including capabilities for using only those nuclear weapons deployed with tactical forces. Nevertheless rejected the feasibility of limiting escalation once nuclear weapons have been used.

58. the Soviets continue to emphasize the use of massive strikes to accomplish their strategic objectives. Since the early 1970s, in a few cases, the initial use of nuclear weapons—mostly small-scale—confined to the battlefield. Development of this concept—which is described in their doctrine as "limited" or "selective" use—suggests that the Soviets believe that there may be situations where at least small-scale use of nuclear weapons could be confined to the battlefield. the Soviets remain highly skeptical of the chances for controlling escalation.

59. If they perceived that NATO intended to use nuclear weapons only on a limited scale that would not result in a major defeat for the Pact, it is possible the Soviets might decide against initiating a large-scale preemptive strike. We should note, however, that we

[19] *The holder of this view is the Director, National Security Agency.*

do not know how the Soviets would be able to determine and be convinced that an imminent NATO strike will be limited, rather than large-scale; warning of a NATO nuclear strike is likely to prompt a massive Soviet preemptive strike. While the Soviets' overriding goal is combat success, not control of escalation, we cannot predict how the Soviets would react when actually faced with the prospect of a global nuclear war. A motivation for restraint would be a desire on their part to avoid unnecessary escalation to theater-wide or even global nuclear war. Their decision would be based on several factors, including a desire to avoid damage to the USSR, and their assessment of the likelihood they could still achieve their objectives.

60. As the likelihood of large-scale nuclear conflict increased, Soviet leaders would face the difficult decision of whether to seize the initiative and strike, as would be consistent with their general military doctrine, or to be more cautious in the hope of averting massive nuclear strikes on the Soviet homeland. There are no easy prescriptions for what the Soviets would actually do under a particular set of circumstances, despite the apparent doctrinal imperative to mount massive preemptive nuclear attacks:

- The Soviets would be attempting, as in earlier stages, to acquire strategic warning of strikes from enemy forward-based nuclear forces against the Soviet homeland, as well as from intercontinental nuclear forces. We are unable to judge what information would be sufficiently convincing to cause Soviet leaders to order a massive preemptive attack. Should the Soviets acquire warning of US missile launches, they probably would await confirmation from ballistic missile early warning (BMEW) radars before deciding whether to order a responsive strike.
- They would be more likely to seize the initiative by launching intercontinental nuclear strikes if the war had already reached the level of small-scale battlefield nuclear use, than if it was still at the conventional level. By taking the initiative, they would expect to reduce the capability of US strike forces and to disrupt to some extent the coordination of a US response. Evidence indicates that they would not expect to be able to prevent a US nuclear retaliatory strike. They also probably consider it likely that the United States would attempt to launch its forces on tactical warning.
- We believe they would launch a coordinated theater and intercontinental strike if there had been a large-scale theater nuclear strike against the western USSR. Should the Soviets choose to launch a massive preemptive theater strike against NATO forces in Europe, we believe they would also launch a preemptive strike against the United States at the same time, as available evidence suggests. It is possible, however, they could choose to delay the intercontinental strike, in the possible hope that the United States would not retaliate against the Soviet homeland. An alternative view holds that—even though decoupling is a long-term Soviet goal—the available evidence suggests that it is highly unlikely that the intercontinental strike would be delayed.[10]
- If they acquired convincing evidence that a US intercontinental strike was imminent, they would try to preempt. We believe that they would be more likely to act on the basis of ambiguous indications and inconclusive evidence of US strike intentions if a battlefield nuclear conflict were under way than during a crisis or a conventional conflict.
- For reasons such as lack of convincing evidence from their strategic warning systems or fear of unnecessarily or mistakenly initiating intercontinental nuclear war, the Soviets might not mount a preemptive strike. Their LOTW capability would permit a larger and more coordinated counterattack than retaliation, while reducing the risk of escalation based on insufficient or faulty information.
- We believe the Soviets recognize the possibility that they might fail to get reliable tactical warning of an enemy intercontinental nuclear strike. They prepare for the possibility that they would be unable to act quickly enough to successfully launch a large number of missiles on tactical warning, and could retaliate only after absorbing an attack. For example, their tactical warning

[10] *The holder of this view is the Director, Defense Intelligence Agency.*

sensors might have been damaged or destroyed in the prior phases of conflict. They would attempt to maintain control of the force and launch large-scale strikes with surviving forces.

— We believe the Soviets place considerable emphasis on assessing their strategic offensive capabilities under conditions in which the United States were to launch the initial major strike. These include scenarios where they are able to launch varying portions of their forces on tactical warning, as well as the most stressful scenario—where they fail to launch on tactical warning and must absorb a well-coordinated US counterforce attack. The Soviets strongly believe warfare rarely goes as planned and that being prepared for adversity and unplanned occurrences is of paramount importance. For the Soviets these scenarios are the most critical in an evaluation of their capabilities.

61. Elements of Soviet strategic forces would probably have suffered some losses during the previous phases of the conflict. The Soviets expect they would have lost some SSBNs in their forward patrol areas, in transit, and in the protected havens. Some SRF assets might have been damaged or destroyed[ ]Naval bases and command, control, and communications facilities in the USSR could have been damaged, and losses of strategic bombers in conventional operations probably would have been considerable.

62. Soviet offensive objectives in carrying out large-scale nuclear strikes—regardless of which side initiated the strikes—would be to neutralize US and Allied military operations and capabilities. In intercontinental strikes the Soviets would seek to destroy US-based nuclear forces and to disrupt and destroy the supporting infrastructure and control systems for these forces as well as the National Command Authority. They would attempt to isolate the United States from the theater campaign by attacking its power projection capabilities. They probably would also attempt to reduce US military power in the long term by attacking other nonnuclear forces, US military-industrial capacity, and governmental control facilities, although the extent of the attack on these targets in the initial strikes could vary, depending on the circumstances. Limiting the initial strikes only to command, control, and communications targets, or only to a portion of US strategic forces such as ICBM silos, is not consistent with the available evidence.

63. In large-scale massed theater nuclear strikes, which they would be likely to coordinate with intercontinental nuclear strikes, the Soviets probably would employ hundreds of tactical nuclear weapons as well as a large share of those strategic forces that have missions against theater targets. Adjustments in weapon allocations would have to be made for weapons destroyed in the conventional phase. Strategic systems would be used to support front operations and to strike targets beyond the area of front nuclear targeting responsibility. The Soviet Navy would continue strikes, using both nuclear and conventional weapons, against Western naval strike forces. Soviet strategic aviation would conduct nuclear and conventional strikes against high-value military targets.

64. Soviet large-scale intercontinental nuclear attacks would involve primarily ICBMs and SLBMs. Massive strikes probably would be delivered against worldwide US and Allied military targets, as well as a more comprehensive set of political and industrial-economic facilities. We believe that the Soviets would conduct continuing attacks in an attempt to destroy, degrade, and disrupt the US capability to employ nuclear forces, and the reconstitution capabilities of US nuclear forces and their command and control: (s)

— The Soviets have considerable flexibility in their employment of ICBMs for intercontinental attack. We believe they would not launch their ICBMs in a single massive strike.[ ]

— It is less clear how the Soviets intend to use their SSBNs during intercontinental nuclear conflict. Some SSBNs in protected areas near the Soviet homeland probably would be employed in an initial attack against targets in the United States and Eurasia, while others probably would be withheld for potentially protracted nuclear operations. We have no direct evidence of Soviet

plans to launch forward-deployed SS-N-6 SLBMs against critical US command, control, and communications targets and bomber bases. Simultaneous launch of such SLBMs with ICBMs, however, would mean SLBM impact 10 to 15 minutes ahead of ICBMs, and would minimize the reaction time available to the US National Command Authority and bomber bases. We have reevaluated the use of forward-based SLBMs. We believe it is highly unlikely that the Soviets would make the execution of their overall intercontinental strike plan dependent on the success of forward-based SLBM strikes. The Soviets could not be confident of the survivability of these SSBNs, there are operational difficulties, they have not improved the Y-class SSBNs in many years, and they are withdrawing some of them from the forward patrol areas. Although the Soviets would use their ICBM, and probably long-range SLBM, force to strike critical command, control, and communications facilities and bomber bases, it is also possible they would target forward-based SS-N-6 SLBMs against these targets because such an attack, if successful, could offer the possibility of substantially degrading a US retaliatory attack.

— Some strategic bombers would probably have a role in initial intercontinental nuclear strike operations, within hours after the initial missile strike. We believe it is likely that other bombers would be used later, for postattack reconnaissance and strikes against surviving targets in the continental United States. Deployment of the new Blackjack A and Bear H bombers, both capable of carrying ALCMs, will increase the Soviets' flexibility in conducting bomber strikes at intercontinental ranges as well as against theater targets, and the intercontinental attack capabilities of the bomber force will expand as these bombers, armed with ALCMs, become available in substantial numbers in the late 1980s.

65. Soviet strategic defensive operations in the initial nuclear phase of a conflict would include:

— Ballistic missile defense operations to protect key targets in the Moscow area, by engaging enemy missiles until key elements in the ABM system were destroyed or all available interceptors had been expended.

— Air defense in depth, to impose successive barriers to enemy penetration. The Soviets probably would have relocated some surface-to-air missiles to thwart defense suppression and avoidance tactics. They evidently plan to use nuclear-armed SAMs against penetrators[ ]the rapid restoration of damaged SAM sites, airfields, and command, control, and communications facilities.

— ASW operations to attempt to destroy enemy SSBNs and SSNs.

— Full implementation of civil defense plans, initiated earlier. Most of the Soviet leaders at both the national and regional levels would be in protective facilities from which they would direct emergency rescue and recovery operations by civilian units and civil defense military troop units. With a few days for preparations, essential workers either would be in shelters at their place of work or, if off duty, would be dispersed to zones outside the cities. The Soviets have shelters for about 18 million people in urban areas. Their plans for protection of the general urban population are based on mass evacuation of about 100 million people and require adequate warning time.

66. *Later Phases of a Nuclear Conflict.* The Soviets plan for later exploitation phases following major intercontinental nuclear strikes. This exploitation would be conducted primarily by remaining general purpose forces, but our knowledge of Soviet views concerning these phases is sketchy. The Soviets plan to reconstitute some surviving general purpose and strategic forces and to secure their theater objectives[ ]the occupation of substantial areas of Western Europe. The implication[ ]seems to be that the strategic nuclear forces of both sides are largely expended or neutralized, but that withheld and reconstituted Soviet strategic nuclear forces play a small, but important, role in achieving Soviet objectives during the later phases.

67. The Soviets are working to improve the survivability of the assets required to reconstitute strategic forces, although we are highly uncertain about Soviet reconstitution capabilities. Overall, we believe the Soviets could maintain the combat effectiveness of

many of the surviving withheld weapons and would be able to reconstitute strategic forces at least to some extent with surviving reserve weapons and materiel, although damage to the logistic system and requirements for decontamination would stretch out the time required for reconstitution. Combat effectiveness would be contingent on many factors, including the restoration of command and control communications.

68. The Soviets prepare for combat operations that could extend weeks beyond the initial nuclear phase. They would clearly prefer to accomplish their objectives quickly, but recognize that the later phases could be protracted, given the difficulty and complexity of conducting operations following massive nuclear strikes. The duration would depend on such factors as the capabilities of remaining theater forces, the status of surviving political leaders, the viability of command and control, and the conditions in the US and Soviet homelands. A key objective for the Soviets in this period would be to prevent the United States from reconstituting its command and control system. In addition:

— We believe the Soviets would withhold [ ] of their initial ICBM force, and a small portion of the peripheral attack forces, for protracted operations. They plan to reload and refire from some of their ICBM silos and SS-20 launchers using reserve missiles and equipment. We believe these forces would be used against residual enemy conventional and nuclear forces and command and control, and perhaps key surviving elements of the economy supporting military operations. According to an alternative view, [ ] not the inclusion of refire in Soviet war plans.[21]

— We have few details of Soviet planning for SSBN operations in a protracted conflict. Some submarines probably would be withheld, under naval force protection, for a reserve force role. The Soviets also probably plan to reload some SSBNs. We judge that their capability is limited, however, and that any reload operation could include only a few SSBNs. According to an alternative view, the assertion that the Soviets probably plan to reload SSBNs during a nuclear war is not supported by the minimal available evidence or by any meaningful Soviet capability. Any SLBM reload operation would face a host of difficulties, and the contribution to Soviet striking power of any reloading that could reasonably be achieved would be so small as to make it unlikely that SLBM reload figures in Soviet war plans.[22]

— We have little evidence on how the Soviets would employ their strategic bomber force during this period. Evidence suggests they do not expect most aircraft to survive the earlier phases of nuclear conflict. We believe that any remaining bombers would conduct reconnaissance and strike operations against key surviving targets.

— Soviet air defense units plan to restore airfields for defensive operations. Fighters and SAM units would operate from alternate sites if necessary. Civil defense units would continue rescue and recovery operations and aid with the distribution of reserve supplies to the civilian population. The Soviets evidently expect that some economic restoration would be possible—even after absorbing multiple nuclear strikes.

69. The evidence that we have [ ] on the later stages of general nuclear war deals with the conduct of a successful military campaign. [ ] with the USSR's forces reconstituting after heavy losses and physically occupying much of continental Western Europe. [ ] the Soviets would seek to end a nuclear war on their terms—by neutralizing the ability of US intercontinental and theater nuclear forces to interfere with Soviet capabilities to prevail in a conflict in Eurasia.

70. We have no specific evidence on whether the Soviets would attempt to end such a war by negotiation, or on initiatives they might undertake if they

[21] *The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.*

[22] *The holders of this view are the Director, National Security Agency, and the Director, Bureau of Intelligence and Research, Department of State.*

perceived they could not achieve their military objectives.[

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Impact of Future Systems on Soviet Operations

71. We believe the structure and operations of Soviet strategic forces will be markedly different by the 1990s, as new weapons and military support systems are deployed and future systems become operational. Expansion of the offensive forces weapons inventory to include mobile ICBMs, cruise missiles, and new bombers will require that the Soviets make major changes in their offensive operations plans—as well as in readiness and command and control procedures—to accommodate these new weapon system capabilities:

— A mixed force of mobile and silo-based systems will enable the Soviet planner of the 1990s to continue to rely primarily on silo-based ICBMs for use in initial strikes, while withholding most or all of the mobile ICBMs for subsequent strikes. Mobile ICBMs provide a highly survivable force element. We believe the Soviets will apply extensive camouflage, concealment, and deception measures to make the probability of accounting for or detecting their mobile ICBM units on a timely basis more difficult.

— The deployment of mobile ICBMs will also lead to improved capabilities for ICBM reload. Although mobile ICBMs would have many of the logistic and operational problems associated with silo refire, they would have major advantages over silo-based systems for reconstitution and refire. The use of solid propellants would ease handling procedures and shorten reaction time. Mobility would improve ICBM survivability, thereby increasing the Soviets' capability to reconstitute a larger fraction of their ICBM force. Reloading could be concealed and carried out in remote locations. Mobile launchers dispersed from a central support base could avoid the damage and contamination that might be present for reload of fixed-point silos. In addition, a mobile system probably would be less vulnerable to enemy follow-on strikes. The SS-X-25 is apparently going to be deployed in a manner similar to that for the SS-20, and we expect its reload practices to be similar to those for the SS-20. An alternative view holds that, while mobile ICBMs theoretically offer advantages for reload, operational considerations suggest that requirements for additional deliverable warheads can be satisfied with greater assurance by deployment of missiles on launchers. The holder of this view notes that unwieldy and vulnerable logistics, as well as damage and contamination from US nuclear strikes, could make refire as problematic as for silo-based ICBMs.[

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— The Soviets almost certainly will apply their experience with the mobile SS-20 IRBM in establishing command and control readiness procedures for these units. We believe they will greatly expand their present mobile command and control system of fixed-wing and helicopter airborne command posts and field-mobile command, control, and communications van units at all echelons.

— The Soviets' new extremely-low-frequency (ELF) communications system will potentially increase the survivability of their SSBN force by allowing SSBNs to operate deeper or under polar ice and still be able to monitor communications. Also, an ELF system is capable of operating in an electronic warfare environment, and its signal is relatively unaffected by nuclear bursts and atmospheric disruptions, but its transmitters are subject to direct attack.

— The introduction of long-range cruise missiles into the strategic bomber force probably will not alter the fundamental relationship between bombers and ballistic missiles in Soviet planning. The employment of bombers in intercontinental strikes would be likely to follow massive strikes by land- and sea-based Soviet missile systems. Deployment of the AS-X-15 ALCM will give the Soviets the long-range standoff strike capability

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[23] *The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.*

they currently lack; aircraft will be able to launch AS-X-15s from Canadian airspace or from points several hundred kilometers off either US coast and still strike most target areas in the continental United States.

— The Blackjack bomber probably will be operated with a mixed load of ALCMs and bombs; some may carry only ALCMs. We believe this bomber will be employed for both theater and intercontinental missions, with emphasis on the latter. The Soviets will also probably use some of their new Candid tankers to refuel bombers for both theater and intercontinental missions.

— The Soviets' new SLCMs will enhance their offensive capabilities. Although we estimate that the SS-NX-21 is probably intended for theater targets in Europe and Asia, we believe the Soviets may deploy a few SS-NX-21–equipped submarines near the United States in 1984. Such deployments would be consistent with Soviet statements concerning a "response" to US INF deployments. Deployment of SS-NX-21s on submarines would require a trade-off in mission capability since they could then carry fewer ASW and antiship weapons. The SS-NX-24, [redacted] will be deployed on dedicated SSGNs. We have no direct evidence, but we believe the mission of the SS-NX-24 will probably include coverage of both US and theater targets. [redacted]

Launching submarines would be subject to detection by ASW systems.

72. To improve their capability to defend against attacks by low-altitude bombers and cruise missiles, we believe the Soviets will alter air defense command operations procedures and introduce improved communications equipment and data systems in order to better integrate the operations of their new air defense fighters, Mainstay AWACS aircraft, and SAM systems:

— They probably will concentrate their available AWACS aircraft in the most critical approaches from which they perceive attacks by low-altitude penetrating bombers and cruise missiles would be likely to come.

— The introduction of the new Candid tanker forces could enhance their air defense capabilities by providing greater on-station time for the Mainstay AWACS and interceptor aircraft. This could enable the Soviets to extend their air defense coverage farther from their borders in an effort to engage US cruise-missile-carrying aircraft before they could launch their ALCMs. The some 100 projected tankers by the early 1990s seem insufficient, however, to fully support the needs for both strategic air defense missions and strategic bomber missions, and we are uncertain how the Soviets will allocate tankers among these missions.

— If the Soviets are to maximize the potential of an integrated air defense system against low-altitude targets, they would have to change their present procedures to enable air defense pilots to use more initiative in engaging targets within their area and to be more independent of centralized control. It is possible, however, that the Soviets will not be willing to give up centralized control to take advantage of the increased flexibility a fully integrated air defense system would provide.

F. Trends in Soviet Capabilities To Perform Strategic Missions

73. During the next 10 years the primary wartime missions of Soviet strategic offensive and defensive forces will continue to be to:

— Destroy enemy nuclear delivery means.

— Neutralize enemy command, control, and communications, warning capabilities, and other support systems.

— Destroy other military and nonmilitary targets.

— Assure the survivability of sufficient offensive forces and command and control capabilities to perform the missions envisioned by Soviet strategy.

— Defend the Soviet homeland against attacks by ballistic missiles, bombers, and cruise missiles.

— Protect the Soviet leadership, economy, and population through civil defense.

Destroying Enemy Nuclear Delivery Means

74. Soviet military doctrine emphasizes the critical importance of destroying enemy nuclear capabilities early in a strategic nuclear war. At a minimum, the initial strategic nuclear strikes by the USSR would be targeted against the enemy's nuclear forces and bases, associated support systems and command and control, strategic defense capabilities, and national command authorities.

75. During the next 10 years the Soviets will increase both the capabilities of their nuclear systems to achieve higher damage probabilities and the total number of weapons available for such missions. The modernization of the nuclear forces of the United States and other countries, however, could increase Soviet strategic weapon requirements and complicate Soviet targeting plans.

76. ***Minuteman Silos.*** The Soviets have enough hard-target-capable ICBM RVs today to attack all US missile silos and launch control centers in a well-executed first strike. In our projections of the growth and modernization of Soviet ICBM forces, the USSR will have substantially larger numbers of hard-target-capable RVs in the future (as shown in figure 8). The projected improvements in Soviet ICBM accuracy, in conjunction with the expected warhead yields and improvements in weapon system reliabilities, will produce a substantial increase in the destructive potential of future Soviet ICBMs.

77. Figure 13 depicts our estimates of the capability of the Soviets' most accurate ICBMs to inflict severe damage against a Minuteman silo—assuming one-on-one and two-on-one targeting in a well-executed strike. As illustrated in the figure, uncertainties in our estimates of the accuracy, reliability, and yield of Soviet strategic offensive systems, when statistically combined, produce substantial uncertainties in the probability that a Minuteman silo would be destroyed.

78. This year alternative estimates of the accuracies and yields of the SS-18 and SS-19 (see inset) lead to differing views of Soviet capabilities for attacking US Minuteman silos:

— According to one view, the Soviets currently would plan to launch two (possibly three) SS-18

Accuracies and Yields of the SS-18 Mod 4 and SS-19 Mod 3

Figure 13
Trends in Potential Effectiveness of Soviet MIRVed ICBMs Against a Minuteman Silo

or SS-19 warheads at each US Minuteman silo. This view holds that the accuracies and yields are such that a two-on-one attack would result in a best estimate damage expectancy, as shown in figure 13, of about 80 to 85 percent with today's systems, with the uncertainties as shown.[24]

— According to a second view, continuing reanalysis of accuracies and yields of the SS-18 and SS-19 suggests that the Soviets' capability to achieve their desired damage expectancy is somewhat lower than previously estimated.[25]

During the next year, we will be carrying out additional needed analysis on this key issue, including, in particular, further analysis of the accuracies and yields of these Soviet ICBMs.

79. Figure 13 shows that the projected uncertainties in our estimates of future weapon system characteristics have much less significance for damage expectancy as the Soviets further improve accuracy. The trend of growing countersilo capability for Soviet ICBMs is apparent. By the early-to-middle 1990s the Soviet ICBM force is projected to have hard-target ICBM RVs in sufficient numbers and with enough capabilities to achieve Soviet targeting goals (a damage expectancy of over 80 percent) by allocating a single RV to each target. We do not know the number of additional weapons the Soviets would allocate to compensate for detectable launch and in-flight failures or losses to enemy counteraction. Although the Soviets' hard-target capabilities will increase substantially, we believe that they will still be concerned that at least a portion of the US ICBM force would be launched while under attack. We note that Soviet capabilities against a Minuteman silo in the mid-to-late 1980s are somewhat less than was shown in last year's Estimate. Whereas in last year's Estimate we projected a more capable follow-on to both the SS-18 and SS-19 in this period, we now project only an SS-18, with deployment beginning in 1987 rather than 1985.[26] Moreover, the SS-X-24, although still projected to be deployed beginning in 1985 or 1986, is projected to be less capable than previously projected, because the RV and yield are assessed to be smaller than we had expected.

80. *Strategic Aircraft.* The Soviets almost certainly would try to attack US strategic aircraft on the ground. Those aircraft not on alert and unable to become airborne in a matter of minutes would be highly vulnerable. For alert aircraft the critical issue is their ability to take off and escape safely in the few minutes before enemy missiles arrive. Our analysis of the problems the Soviets would face in structuring and carrying out such an attack leads us to judge—

[redacted]—that it is unlikely a Soviet attack would be able to destroy most of the US alert strategic aircraft. We do not believe the Soviets will be able to develop the capability during the next 10 years to target and destroy, with strategic offensive weapons, US aircraft in flight.

81. *SSBNs.* The Soviets do not now have the capability to detect US SSBNs operating in open ocean areas except by chance, or to maintain contact with or trail them if a chance detection occurs. Even though overt trail by modern Soviet SSNs using active sonar is feasible for short periods of time, a combination of factors (see volume II, chapter III) makes active acoustic trail of more than a few SSBNs operationally impractical today. Projected improvements in Soviet passive acoustic sensors, plus deployment of more ASW platforms, probably will enhance the Soviets' capabilities to detect and destroy US submarines operating in confined areas or close to the USSR but will not give them an effective broad-ocean detection capability or improve significantly their capability to trail US SSBNs. We expect Soviet ASW capability to increase over the next 10 years. We judge, however, that without a major advance in nonacoustic ASW which we believe is unlikely (see paragraphs 41-44) the Soviets' ability to systematically detect and track US SSBNs in the open ocean will continue to be poor through the 1990s.

82. *Nuclear Forces in Eurasia.* We believe current and projected Soviet strategic offensive forces would be more than adequate in numbers and capabilities to attack nuclear forces in Europe and Asia in hardened and soft fixed facilities. To counter mobile missiles the Soviets plan to make extensive use of all

[24] *The holders of this view are the Director, Defense Intelligence Agency, and the Assistant Chief of Staff, Intelligence, Department of the Air Force.*

[25] *The holder of this view is the Deputy Director for Intelligence, Central Intelligence Agency.*

[26] *For an alternative view about future SS-18 and SS-19 systems, see paragraph 3.*

available reconnaissance means—including signals intelligence (SIGINT), aircraft and satellite photography, and human collectors—to locate and track the mobile systems, and a combination of conventional and nuclear weapons, to destroy them. Soviet special-purpose forces *(Spetsnaz)* have specifically been tasked to perform behind-the-lines reconnaissance to locate enemy nuclear-capable missile systems, for the purpose of initial strike targeting. They are also tasked with carrying out sabotage and commando operations against NATO nuclear forces. Missiles deployed in West Germany, Belgium, and the Netherlands would be within range of tactical reconnaissance. GLCMs deployed in the United Kingdom and southern Italy would be beyond the range of Soviet tactical reconnaissance and would become the responsibility of Soviet strategic reconnaissance. Whether the Soviets could successfully locate mobile missile units, and then target and destroy them during conventional or nuclear war, would depend heavily on the conflict circumstances, such as the length of the conventional phase, the extent to which missile units could remain hidden or move frequently, and the ability of Soviet staffs to obtain, correlate, and distribute reconnaissance data in a timely fashion.

Neutralizing Enemy Command, Control, and Communications, Warning Capabilities, and Other Support Systems

83. Throughout the next 10 years the Soviets will have weapons of sufficient numbers and capabilities to give them high confidence in their ability to destroy most fixed, land-based nuclear support facilities in the United States, Europe, and elsewhere, such as depots, nuclear storage sites, maintenance bases, airfields, and ports. While attacks against these support facilities would degrade the endurance and reconstitution of US and Allied nuclear forces, their destruction would not necessarily affect initial strategic force operations.

84. The Soviets have the capability to destroy or interfere with most major elements of the US tactical warning and attack assessment system, shortly before or during a large-scale nuclear strike. Although the Soviets probably could substantially degrade US tactical warning systems, we do not believe they would be confident that such interference alone would prevent the launch of substantial numbers of US weapons.

85. The effectiveness of a Soviet attack on the US command, control, and communications system, intended to delay or prevent issuance, receipt, and verification of US launch orders, would depend in part on the US alert posture. We cannot assess the effects of such an attack. The Soviets' military doctrine, their emphasis on radioelectronic combat, and their theater warfare exercise scenarios and targeting strategy, as well as their preoccupation with the survivability of their own command, control, and communications systems, lead us to believe that they would devote substantial efforts to:

- Disconnecting and destroying the US National Command Authority, operating alternates, and critical intermediate nuclear force control points in the United States and Europe, through direct nuclear strikes by multiple means. Fired from the forward edge of their normal patrol areas, SS-N-6 SLBMs deployed on Y-class SSBNs would take about 10 minutes to reach US coastal installations. (See paragraph 64.) SS-20s fired from bases in the western USSR could strike targets in Western Europe in about 15 minutes. The flight times of Soviet cruise missiles would be much longer, but they are much more difficult to detect.
- Delaying or preventing transmission of launch orders by disrupting the various communications paths with direct attacks, jamming, and electromagnetic interference and by a well-coordinated, minimum warning attack on many control points and communications facilities.

They might also attempt to disable electronics equipment unhardened to the effects of electromagnetic pulse (EMP) by detonation of a small number of nuclear weapons at high altitude over the continental United States at the start of a strategic nuclear attack. Moreover, the Soviets probably would seek to prevent reconstitution of residual command, control, and communications capabilities through continuing attacks.

86. There are a number of factors which suggest the Soviets would not be confident of their chances of severely degrading critical US command and control of nuclear forces:

- The Soviets might not have confidence in their ability to use forward-deployed SLBMs to strike US command, control, and communications or successfully coordinate the timing of ICBM and

SLBM strikes. (For a discussion on such timing see paragraph 64.)

- Prior to a Soviet nuclear strike, most elements of US strategic command and control would probably be on alert and mobile assets would probably be dispersed, and thereby less vulnerable to attack.
- We believe the Soviets will not develop the capability over the period of this Estimate to use ballistic missiles to destroy US airborne command posts and other supporting aircraft in flight.
- Improvements to US command, control, and communications systems—such as greater mobility and redundancy—would complicate Soviet attack plans.
- We believe the Soviets have major uncertainties regarding the effects of EMP on the wide variety of electronic equipment associated with US command, control, and communications.
- The Soviets may not have identified all the important fixed or mobile command, control, and communications facilities for US nuclear forces.

Capabilities for Comprehensive Strategic Attacks

87. We believe that the primary objective of a Soviet nuclear attack would be to destroy enemy strategic nuclear capabilities, but that an attack probably would take place as part of a larger comprehensive strategic attack. Soviet strategic missions are planned in the context of integrated operations within designated Theaters of Military Operations.

88. The number and priority of targets associated with various theaters worldwide would vary substantially depending on the circumstances, the threats they pose to the Soviet homeland, their importance to enemy military operations, and their postwar military value. The Soviets would be especially concerned about destroying those installations that could support US power projection, thus preventing the United States from reinforcing its military operations worldwide.

89. Our preliminary analysis of potential targets in the North American Theater of Military Operations suggests the Soviets might identify over 3,000 fixed military, government, and economic installations in addition to those targets associated with US nuclear forces. About one-half of these installations support US or NATO nonnuclear military forces that present a threat or potential threat to Soviet operations in Eurasia and at sea, including potential military transportation facilities. The remainder includes installations critical for supporting US federal civilian government operations and economic facilities related to the production and supply of military capabilities. In addition, the Soviets probably plan to attack the energy production plant network that supports the North American military and civilian economy.

90. An initial comprehensive Soviet strike against all targets in North America probably would currently include about 4,000 Soviet ICBM and SLBM warheads. The Soviets then would have about 4,000 other online intercontinental bomber and missile warheads, plus any reserve weapon systems that could be reloaded, to fulfill other strategic requirements.

91. Over the next decade, the Soviets will introduce more modern and accurate missile systems that we project will reduce the number of warheads required to strike current North American targets to achieve Soviet damage goals. This could be offset to some extent by the addition of new targets—for example, more redundant strategic command, control, and communications facilities or, in the 1990s, a mobile US ICBM force—or by US defensive efforts such as deployment of an ABM system or a hardening program for military installations. In the absence of such new targeting requirements, however, the Soviets in 1993 could have, in addition to the about 4,000 warheads needed for an initial comprehensive strike against North America, additional online warheads to fulfill other strategic requirements:

- About 11,500 online warheads, if their forces generally remain within SALT I and SALT II numerical constraints through 1990 (Force 1).
- About 12,000 or 15,000 online warheads, if their forces are expanded beyond arms control limitations (Forces 2 and 3).
- About 7,000 online warheads, if constrained by the Soviet START proposal (Force 4).

In addition, the Soviets would have reload weapons for some of their systems.

92. Preliminary analysis of potential targets in European theaters of military operations suggests the Soviets currently would target up to several thousand fixed military, government, and economic installations in addition to those targets associated with NATO nuclear forces. The most important of these are some 1,500 to 2,000 installations related to NATO nonnuclear military capabilities. In a comprehensive strategic attack against NATO, the Soviets might also target several hundred civilian government facilities to disrupt political control and up to several thousand military-economic facilities that produce or store military end-products, energy and petroleum. The extent of such a Soviet attack would depend on the course the conventional war had taken. Some fixed targets, however, within the area of front responsibility would be attacked by tactical nuclear weapons. The Soviets probably would also use strategic weapons to attack detected mobile targets beyond the area of front responsibility.

93. In a retaliatory attack the situation is much more complex. The command and control over forces would be degraded, with great unknowns for the Soviets in degree of control remaining initially, and in the ability to reestablish control, where it has been lost, and to maintain control over time. Thus, numbers of surviving weapons and the capability to employ them in a coordinated fashion are both critical.

94. With the vulnerability of Soviet ICBM silos increasing during the period of this Estimate, as more accurate US weapons are deployed, the Soviets will be faced with more difficult problems in assuring adequate retaliatory capabilities in the event they are struck first. We believe the Soviets' efforts to expand the capabilities of their command and control network and SLBM force, and to develop mobile ICBMs, reflect their concern that, even after being attacked, they must maintain sufficient strategic nuclear forces to accomplish their missions.

Survivability of Soviet Strategic Offensive Forces

95. *ICBMs.* We expect that silo-based ICBMs will continue to be the largest element of Soviet strategic offensive forces through at least the next 10 years.

SS-17 and SS-19 silos have nearly the same hardness as that for the SS-18; the SS-11 silo is considerably softer.

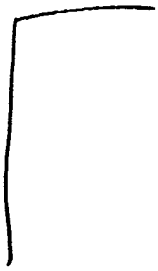
Our analysis indicates that Soviet silos for the latest ICBMs, and their associated launch control facilities, would have a high probability of surviving an attack by current US ICBMs and SLBMs.

Figure 14 depicts a trend of growing Soviet ICBM silo vulnerability; US ICBMs and SLBMs in development would pose a considerably greater threat, due mainly to accuracy improvements. US bombers and land-attack cruise missiles could cause similar damage to Soviet silos, depending on the extent to which they could penetrate Soviet air defenses. The figure should not be taken to represent the potential effectiveness of a forcewide attack by US weapons on Soviet ICBM silos, however, because not all technical and operational uncertainties that would be associated with such an attack were considered. (s)

96. We expect the Soviets may further modify their latest silos and launch control centers and further harden the missile systems, on the basis of experience they have gained in tests that simulate nuclear weapon effects, attempting to gain slight increases in hardness. We have seen no evidence the Soviets will significantly harden ICBM silos in the future.

97. We expect that Soviet road-mobile ICBMs would have many basic operational features in common with the SS-20 IRBM. Any road-mobile ICBM probably would be housed in unhardened, sliding-roof buildings at support bases with a small portion of the force in the field for operations. Once dispersed into field sites, the launchers would become more survivable because they would be difficult to locate. The areas to which these missiles could be deployed is quite large. Without target localization the mobile missiles would be potentially vulnerable only to a barrage missile attack designed to saturate likely deployment or operating areas.

Figure 14
Trends in Vulnerability of an SS-18 Silo to an Attack by US Missiles [a]



98. *Bombers and SSBNs.* The survivability of Soviet strategic bombers and SSBNs is largely dependent on Soviet preparations during a crisis or theater war, and upon receiving warnings of possible enemy attacks:

- All Soviet SSBNs that disperse to sea would not be vulnerable to an enemy nuclear attack, although they would be subject to attrition from enemy ASW attacks. SSBNs with long-range SLBMs can remain in range of targets in the United States while operating in waters close to the USSR, exploiting ice cover and shallow ocean depths, and avoiding Western sound surveillance system (SOSUS) arrays. The Soviets have committed a significant portion of their general purpose naval forces to protect their SSBNs in waters contiguous to the USSR. These practices increase the chances that Soviet SSBNs would survive a period of conventional conflict.
- We cannot evaluate the survivability and operability of the USSR's strategic bomber force during the nuclear phases of a conflict. Important factors include the extent of bomber losses during the preceding phases of conflict, capabilities to disperse and maintain aircraft at untargeted locations, and capabilities to reconstitute the bomber force. Soviet strategic bombers on alert at dispersal bases, or in flight during an enemy attack, however, would have increased likelihood of survival.

Protecting the USSR With Strategic Defense

99. The Soviets would employ their ballistic missile and air defense forces to destroy enemy nuclear weapons and bombers before they reached their targets. Civil defense efforts would be employed to protect leadership elements, economic activity, and the population. Although we provide an assessment of these elements individually, we have not assessed the degree of overall protection, now or in the future, that would be afforded by the combination of active and passive defenses.

100. *Ballistic Missile Defense.* The current Moscow ABM system provides only a limited, single-layer defense—that is, it could intercept RVs before they reenter the atmosphere. These defenses probably could counter a small attack not accompanied by penetration aids such as chaff and decoys. Attempting to counter a larger number of attacking RVs, however, would rapidly exhaust the available interceptors. When completed, the ongoing upgrade of the defenses at Moscow will provide the Soviets with a much more reliable, two-layer capability to defend critical targets at Moscow against an attack by some tens of current types of US RVs and against increasingly sophisticated third-country missiles. In a large-scale attack, the projected 100 interceptors would quickly be exhausted, but they might be effective in preferentially defending selected targets in the Moscow area, such as national command and control facilities.

101. The upgrade to the defenses at Moscow is expected to provide the Soviets with a foundation for expanding their defenses. With about 500 interceptors the Soviets could make hardened targets around Moscow, especially command bunkers, less vulnerable to a substantial US force of attacking RVs. The leakage likely to result from such an attack would cause severe damage to most of the aboveground, unhardened facilities and to some of the hardened target facilities as well. Against a smaller scale attack, such a defense would allow the Soviets to spread their interceptor coverage to a larger number of targets over a larger area. The effectiveness of such a defense against attack by third countries, such as China, would be considerable.

102. If the Soviets were to deploy an ABM defense involving as many as 1,400 to 3,500 launchers, as in the expansion options addressed in volume II, and assuming the deployed systems were reasonably effective, the potential effect on the US strategic missile force would be substantial. A US preemptive strike in the face of such a heavy defense would be degraded, perhaps to a significant degree. A US retaliatory strike could be degraded even more, because the lower number and rate of RV arrivals in most areas may result in lower leakage rates for the defense.

103. The actual effectiveness of such a defense would depend, not only on the performance of the deployed ABM systems, but also on the vulnerabilities of key elements of the network and the potential of an attacking force to exploit them. We have not quantitatively assessed, and are uncertain about, the potential ability of a widespread ABM system to reduce overall damage and to protect key military functions. It would probably be more effective against SLBMs than

against ICBMs, if adequate coverage of SLBM approaches were provided by battle management support radars. US countermeasures such as decoys, chaff, and maneuvering RVs could reduce its effectiveness,

In any case, widespread Soviet deployment of an ABM system, even if US evaluations indicated it could be overcome by an attacking force, would complicate US attack planning and create major uncertainties for US planners about the potential effectiveness of a US strike. It is premature to judge the capabilities of a new advanced surface-to-air missile system, the SA-X-12. However, if our assumptions about certain features of this system are correct, its potential contribution to ballistic missile defenses would be of growing concern as it became widely deployed in the USSR and Eastern Europe in the mid-to-late 1980s. Additionally, according to one view, any evaluation of the effects of a widespread ABM defense to reduce damage should consider the potential ABM capabilities of the SA-5 and SA-10 systems, which could further complicate US attack planning.[27]

104. ***Strategic Air Defense.*** Our conclusions about the overall effectiveness of the Soviet air defense system are based on our assessments of Soviet potential to perform the essential air defense functions—early warning, detection and tracking, control of intercepts, and target destruction. They are not based on computer simulations of the air battle to calculate the attrition the Soviets could inflict on an attacking force. We conclude that the present Soviet air defense system, undegraded by a large-scale ballistic missile attack or effective electronic countermeasures (ECM), probably would perform well against current aircraft at altitudes above about 500 meters, although it does not have the capability to conduct intercepts much beyond the Soviet borders from bases within the USSR. We have not assessed the extent to which its performance would be degraded by defense suppression, such as ballistic missile strikes likely to precede bomber and cruise missile penetration. The current Soviet air defense system would be relatively ineffective against a low-altitude attack. It could, however, have a higher probablity of intercepting low-altitude aircraft in areas where radar coverage is dense and there is a high concentration of ground-based terminal defenses, unless the attacker used standoff missiles or effective countermeasures and tactics.

105. From the mid-to-late 1980s on, the Soviet air defense system will be qualitatively different from the current system. The Soviets will have deployed a variety of new systems in large numbers that possess the technical capabilities to defend against current types of bombers and cruise missiles at low altitude. We cannot assess with confidence the overall capabilities of these defenses

106. Any judgment about the overall effectiveness of the future Soviet air defense system against an attack by bombers and cruise missiles is thus subject to considerable uncertainty. Penetration of improved Soviet air defenses by currently deployed bombers will be more difficult. These defenses, however, would be considerably less effective against US cruise missiles. Our judgment is that against a combined attack of penetrating bombers, short-range attack missiles (SRAMs), and cruise missiles, Soviet air defenses during the next 10 years probably will not be capable of inflicting sufficient losses to prevent large-scale damage to the USSR. We believe, however, that the Soviets will be able to provide an increasingly capable air defense for many key leadership, control, and military and industrial installations essential to wartime operations.

[27] *The holder of this view is the Director, Defense Intelligence Agency.*

107. There is an alternative view that this Estimate substantially understates the capability of the Soviet air defense system to defend key target areas against low-altitude penetrators. According to this view, defense effectiveness in these areas could be high today against bombers. The holder of this view believes that by 1985 the effectiveness in such areas would be significantly higher against a combined attack of penetrating bombers, SRAMs, and cruise missiles than the Estimate suggests.[29]

108. *Civil Defense.* We believe that, with as little as a few hours' warning, a large percentage of Soviet civilian leaders—party, government, and economic—would probably survive a large-scale US nuclear strike. Although the Soviets could not prevent massive damage to their economy from such an attack, timely implementation of sheltering, dispersal, and relocation plans would provide effective protection for a large percentage of the essential work force. Soviet population casualties would vary greatly, depending on the extent to which civil defense measures had been implemented. Improvements in Soviet civil defense preparations during the next 10 years would increase the likelihood that a large percentage of the leadership and essential work force would be able to survive a large-scale attack, but casualties among the general population would remain high.

109. During the past few years, we have acquired a better understanding of Soviet wartime management concepts and have identified more relocation facilities for the higher levels of Soviet wartime management—national, military district, and key regional organizations.

Achievement of a high probability of severe structural damage to almost all types of Soviet hardened underground exurban leadership facilities we have located would require multiple high-yield, accurate weapons. Deep underground facilities like those at Sharapovo and Chekhov near Moscow for the National Command Authority would present a difficult targeting problem. A recent reassessment of these sites indicates that they are harder, deeper, and much less vulnerable than previously estimated. For more than a decade the Soviets have been expanding and improving these sites, but have concealed the extent of their activities.

The Soviets may believe that deep underground structures such as those near Moscow will assure the survivability of the top leadership—a priority objective of their wartime management plans. We have not yet assessed the implications of such a perception by Soviet leaders. Nonetheless, their confidence in the effectiveness of their overall wartime management structure is almost certainly tempered by the belief that civilian as well as military leadership facilities would be high on the list of US targeting priorities in a nuclear conflict.

110. The Soviets have taken additional measures that we believe would contribute significantly to the continued functioning of the wartime management system. They include providing redundant and hardened communications for the leadership and making provisions for poststrike restoration of communications service. These measures would improve the survivability and dependability of the systems that are critical to continuity of command and control.

111. We believe the Soviet command and control system for nuclear forces, even if directly attacked, can ensure transmission of launch instructions; however, retaliatory strikes could be delayed and not fully coordinated. Although US attacks could destroy many known fixed command, control, and communications facilities, many 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.

112. The Soviets could experience difficulty, however, in maintaining the endurance and effectiveness of strategic command, control, and communications for weeks of continuing operations, particularly if subjected to US strikes. They would be relying on fewer—primarily mobile—command posts. The cumulative impact of residual nuclear effects could

[29] *The holder of this view is the Assistant Chief of Staff for Intelligence, Department of the Army.*

endanger command personnel and degrade communications systems. It is also unclear how effectively the Soviets could retarget and employ surviving or reconstituted weapons. We believe the Soviets might expect to lose most satellite reconnaissance and would thus rely primarily on long-range reconnaissance aircraft and signal intercept capabilities.

113. The Soviets perceive the Pershing II's accuracy, range, and short flight time (and possibly in the 1990s, Trident D-5 SLBMs) as providing the capability to threaten elements of their command, control, communications, and warning systems, a threat they do not now face to the same degree from less accurate SLBMs. In making pessimistic threat assessments, the Soviets probably assume that some key targets in the Moscow area will be threatened by the Pershing II, because they apparently believe its range is closer to 2,500 kilometers than to the 1,800-km range cited by the United States. Pershing II weapons, not detectable by the current Soviet launch detection satellite systems, will have the capability to destroy hardened Soviet facilities, and improved capabilities to destroy "soft" Soviet installations, only five to 15 minutes after Soviet radars detect the attack. A preemptive attack by Pershing II weapons could disrupt and delay Soviet warning and missile launch procedures, and the Soviets may believe, in their pessimistic threat assessments, that their LOTW capabilities could be affected.

Concluding Observations

114. We do not know how the Soviets would assess their prospects for prevailing in a global nuclear conflict. Sizable forces on both sides would survive massive nuclear strikes:

- Soviet offensive forces will not be able to reliably target and destroy patrolling US SSBNs, alert aircraft, aircraft in flight, or land-mobile missiles, particularly those beyond the range of tactical reconnaissance systems. We believe that, in a crisis or conflict, the Soviets would credit undegraded US warning and control systems with the ability to launch ICBMs on tactical warning.
- Soviet mobile missiles, SSBNs patrolling in waters near the USSR, and a large part of the silo-based ICBM force would survive US nuclear attack. We believe the Soviets can launch ICBMs on tactical warning, assuming their warning and control systems are undegraded.

Moreover, the Soviets are well aware of their inability to prevent massive damage to the USSR with their strategic defenses even with the improvements taking place in these forces. They also recognize that US strategic defenses cannot prevent massive damage.

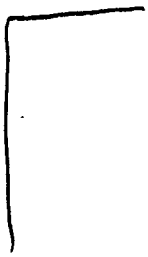
115. We believe that the Soviets' confidence in their capabilities for global conflict probably will be critically dependent on command and control capabilities, and on their prospects for disrupting and destroying the ability of the United States and its Allies to command and to operate their forces. The Soviets continue to make extensive efforts to improve all aspects of their command, control, and communications capabilities. We believe they would launch continuing attacks on US and Allied strategic command, control, and communications to prevent or impair the coordination of retaliatory strikes, thereby easing the burden on Soviet strategic defenses and impairing US and Allied abilities to marshal military and civilian resources to reconstitute forces. We believe that planned US and NATO improvements in command, control, and communications will increase the Soviets' uncertainties about their capability to disrupt enemy force operations.

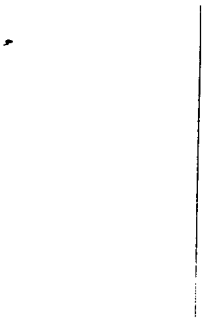
116. The evidence shows clearly that Soviet leaders are attempting to prepare their military forces for the possibility of having to fight a nuclear war and are training to be able to maintain control over increasingly complex conflict situations. They have seriously addressed many of the problems of conducting military operations in a nuclear war, thereby improving their ability to deal with the many contingencies of such a conflict, and raising the probability of outcomes favorable to the USSR. There is an alternative view that wishes to emphasize that the Soviets have not resolved many of the critical problems bearing on the conduct of nuclear war, such as the nature of the initiation of conflict, escalation within the theater, and protracted nuclear operations. According to this view, the Soviets recognize that nuclear war is so destructive, and its course so uncertain, that they could not expect an outcome that was "favorable" in any meaningful sense.[30]

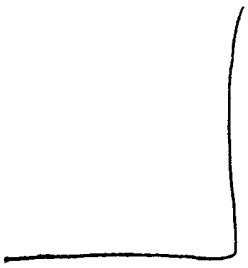
[30] *The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.*

ANNEX A

KEY INTELLIGENCE GAPS







ANNEX B

BIBLIOGRAPHY

NIE 11-3/8-83 is a comprehensive survey of Soviet strategic forces and capabilities. Judgments have been drawn from other National Intelligence Estimates and from Interagency Intelligence Assessments and Memorandums that contain more in-depth discussions on specific subject areas. These include:

- NIE 11-13-82, *Soviet Ballistic Missile Defense*, 13 October 1982. Describes Soviet capabilities for ballistic missile defense.
- NIE 11-1-83, *The Soviet Space Program*, 19 July 1983. Describes current Soviet space capabilities, identifies elements of the space program in development and estimates how these will affect future Soviet capabilities.
- NIE 13-3/8-83, *Chinese Capabilities for Nuclear Conflict*, 29 July 1983. Describes China's capabilities for strategic and tactical nuclear conflict at present and during the next 10 years.
- IIA, NIC M 83-10017, *Possible Soviet Responses to the US Strategic Defense Initiative*, 12 September 1983. Examines general principles and constraints in the areas of politics, military doctrine, and research and development practices that will influence the Soviets' response to a US ballistic missile defense.
- NIE 11-12-83, *Prospects for Soviet Military Technology and Research and Development*, 14 December 1983. Identifies technologies that are key to future Soviet military capabilities and assesses the likely impact of those technologies on Soviet military systems of the 1990s.
- NI IIM 83-10005 JX, *Soviet Wartime Management: The Role of Civil Defense in Leadership Continuity*, December 1983. Assesses the Soviet civil defense infrastructure and measures for leadership protection and relocation as an integral part of a broader national command and control system.

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