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Soviet Capabilities for Strategic Nuclear Conflict, 1982-92

National Intelligence Estimate
Volume I—Key Judgments and Summary

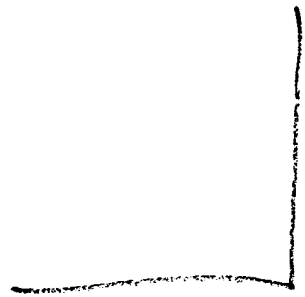
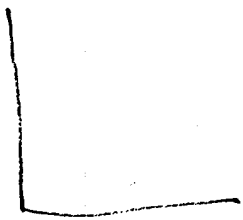
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SOVIET CAPABILITIES
FOR STRATEGIC NUCLEAR
CONFLICT, 1982-92

Volume I—KEY JUDGMENTS AND SUMMARY

Information available as of 15 February 1983
was used in the preparation of this Estimate.

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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 organization of the Department of State.

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
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PREFACE

This year's NIE 11-3/8 is an updated version of last year's. We have incorporated new intelligence information and refined or changed some important judgments:

- Our judgments of certain Soviet offensive programs are more comprehensive, largely as a result of new information. For example, the Soviets now have flight-tested their new medium-size solid-propellant intercontinental ballistic, the SS-X-24, and a small solid-propellant ICBM. We now are projecting that solid-propellant ICBMs will be deployed as mobile systems, as well as in silos, in the mid-to-late 1980s (Summary paragraphs 2 and 11). We also have a more extensive understanding of long-range (3,000 kilometers) land-attack cruise missiles and their launch platforms, and have identified new larger sea- and ground-launched cruise missiles (paragraphs 2 and 11).
- We have expanded our discussion of projected Soviet strategic force deployments. We include quantitative measures of Soviet forces configured to conform to the US and Soviet arms control proposals, and we compare them with forces projected in the absence of arms control constraints (Summary paragraphs 16-21 and accompanying figures).
- For the first time, we estimate, on the basis of recent analysis, the number of nondeployed strategic ballistic missiles that can be stored at identified storage areas (paragraphs 22-24).
- We have updated antiballistic missile (ABM) judgments to reflect those in NIE 11-13-82, "Soviet Ballistic Missile Defense," including issues dealing with deployment of widespread ABM defenses and Soviet capabilities (paragraphs 26-33 and 77-80).
- We are more concerned about Soviet efforts to develop non-acoustic antisubmarine warfare (ASW) detection methods (paragraphs 35-37).
- We now project that laser weapons for air defense will become available later in this decade (paragraph 38).
- We have revised our discussion of the initiation of theater nuclear war, on the basis of how we believe the Soviets perceive

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it and how they relate it to intercontinental nuclear war. We judge that the Soviets see the use of long-range theater nuclear weapons as likely to be closely tied to the use of intercontinental nuclear weapons, and that they would see initial, localized use of battlefield nuclear weapons as probably being the last realistic opportunity to avoid large-scale nuclear war. 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 (paragraphs 47-50)

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SCOPE NOTE

Like previous issuances in the series, 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 assessment of Soviet and US capabilities for nuclear conflict is being prepared under the direction of the Secretary of Defense and the Director of Central Intelligence, for issuance shortly after this Estimate is published.

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 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.
 - 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 envisioned by Soviet concepts and plans for nuclear conflict.
- Volume III contains annexes with detailed force projections and weapon characteristics!

KEY JUDGMENTS

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. The Soviets 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.

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. |

The Soviets are intent on improving all aspects of their strategic forces and supporting elements. We are currently aware of more than 30 new strategic systems that are in various stages of development. Over the longer term, we believe the Soviets have an expanded number of options in deciding on the size, mix, and characteristics of their strategic nuclear forces and supporting systems. |

The most significant new weapon systems projected for deployment in Soviet strategic offensive forces are:

- Solid-propellant intercontinental ballistic missiles (ICBMs) for both silo and mobile basing. The SS-X-24 medium-size solid-propellant ICBM, which they have just started to test, will probably replace silo-based SS-17 and SS-11 ICBMs beginning in about 1985. A small solid-propellant ICBM, which began flight-testing in February 1983, will probably be deployed as a mobile system beginning in 1986, as well as in silos. A solid-propellant ICBM could possibly be deployed in a rail-mobile mode in the late 1980s.
- Improvements in hard-target-capable SS-18 and SS-19 ICBMs, although they will become increasingly vulnerable to US missiles in the late 1980s. We believe the Soviets will begin flight-testing of these improved ICBMs in 1983.
- The Typhoon-class nuclear-powered ballistic missile submarine (SSBN) and its SS-NX-20 missile system to become operational in 1983. The Soviets will probably begin flight-testing of a follow-on to the SS-N-18 submarine-launched ballistic missile (SLBM) in 1983.
- Other new ICBM and SLBM improvements already in development, for deployment by the end of the decade. The Soviets regularly field a major improvement to their key missile systems about every five years.
- New long-range (3,000 kilometers) land-attack cruise missiles for deployment on submarines (SLCMs) as early as 1983 and on ground launchers (GLCMs) and aircraft (ALCMs) as early as 1984.
- Deployment of the new Blackjack A bomber as early as 1986, as well as a new variant of the Bear bomber capable of carrying ALCMs, which could be deployed as early as 1984. These new bombers, together with their cruise missiles, will give the Soviets a modern intercontinental bomber force that could vastly complicate US air defenses.

If Soviet strategic force deployments proceeded without arms control constraints, we project that the number of deployed ICBMs and SLBMs would increase from the present number (more than 2,300 missiles) by 13 to 25 percent over the next 10 years—the increase resulting primarily from mobile ICBM deployments. The number of

deployed ballistic missile warheads would increase by a much larger number—85 to more than 190 percent—from the estimated 7,300 at the end of 1982, resulting in 13,000 to 21,000 ballistic missile warheads by the early 1990s. Soviet deployed ICBMs and SLBMs, if constrained by the US strategic arms reduction talks (START) proposal would decrease by about 65 percent from current deployments, with a 30-percent decrease in ballistic missile warheads. Soviet deployed ICBMs and SLBMs if constrained by the Soviet START proposal would decrease by about 30 percent from current deployments, but the number of ballistic missile warheads would increase slightly. Although the number of Soviet bombers increases only slightly, the number of bomber weapons increases substantially in the next 10 years—primarily because of the large payload of the Blackjack A bomber to be deployed later in the decade. We expect the Soviets to deploy about 1,500 to 2,000 long-range land-attack cruise missiles 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.¹

Despite these impressive offensive force developments, the Soviets' potential future developments in strategic defenses could be of greater significance to the perceptions, and perhaps the reality, of the strategic balance. We are particularly concerned about their growing 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.¹ 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.²

Some key trends for strategic defense include:

- Extensive deployments of new low-altitude-capable fighters and SA-10 surface-to-air missiles (SAMs), and initial deployment of IL-76 Mainstay airborne warning and control system (AWACS) aircraft in late 1983 or early 1984.

¹ The holder of this view is the Assistant Chief of Staff for Intelligence, Department of the Army.

² The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.

- Deployment of the SA-X-12 SAM. It is premature to judge the capabilities of this new advanced SAM system. However, if certain features that we have assumed for this system are realized, its potential contribution to ballistic missile defenses would be of growing concern as the system became widely deployed in the USSR and Eastern Europe in the mid-to-late 1980s.
- The upgrading of ABM deployments at Moscow and active engagement in ABM research and development programs. The available evidence does not indicate with any certainty whether the Soviets are making preparations for deployments beyond the limits of the ABM 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 have major uncertainties about how well a Soviet ABM system would function and about the degree of protection future ABM deployments would afford the USSR. We judge that, in evaluating the technical performance of the ABM systems they could deploy, 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.

Soviet efforts in two technology areas—nonacoustic sensors for antisubmarine warfare (ASW), and directed-energy weapons—could, if the Soviets succeed in major breakthroughs, have profound consequences, particularly in areas of strategic defensive capabilities. The Soviets are intensively investigating these technologies and would place

a high priority on deploying any capabilities that might result from their research efforts:

— Over the past several years we have learned that the Soviet research program to detect submarines from space is much more extensive than we had previously believed. We have only limited knowledge of the precise nature of the program and cannot state with confidence that the Soviets have not had some success in their research. [

] We cannot judge whether the Soviets will achieve a technological breakthrough in remote sensing of submarine-generated effects during the next 10 years. Even if such a breakthrough were to occur, we do not believe, in view of the operational considerations and the length of time needed for full system deployment, that a system which could simultaneously track a substantial fraction of the US SSBN force is a realistic possibility during the period of this Estimate. We are more uncertain, and hence more concerned, about the capabilities that could potentially be realized and deployed in the mid-to-late 1990s. An alternative view is that [

] the Soviets have not had significant success in these techniques and are unlikely to achieve a technological breakthrough in remote sensing of submarine-generated effects during the next 10 years.³

— Directed-energy weapons potentially could be developed for antisatellite (ASAT) applications, air defense, and, in the longer term, ballistic missile defense (BMD). There is strong evidence that the Soviets are pursuing development of high-energy laser weapons. We project that lasers for air defense are the only laser weapons for such applications likely to become available for operational use during the period of this Estimate. We believe that within the next 10 years, however, they will test prototype space-based lasers for potential applications to ASAT or BMD weapons. We also expect that during the 1980s the Soviets will test the feasibility of ground-based lasers for BMD applications.

³ The holder of this view is the Director of Naval Intelligence, Department of the Navy.

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 conflict situations would be enhanced as a result of the experience gained []

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 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. However, they appear to be developing a means for dealing with the possibility of NATO's initiation of such limited nuclear use, without the USSR's necessarily having to go to large-scale nuclear war. 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, the Soviets plan for the likely and imminent escalation to intercontinental nuclear war.

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:

- We are unable to judge what information would be sufficiently convincing to cause Soviet leaders to order a massive preemptive attack.
- They would be more likely to seize the initiative by launching intercontinental nuclear strikes if the war had already reached the level of theater nuclear conflict, than if it was still at a conventional level. We believe they would be likely to launch a preemptive intercontinental strike if there had been large-scale theater nuclear strikes against the western USSR.
- If they acquired convincing evidence that a US intercontinental strike were 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 theater 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 where they retaliate after the United States launches a major strike. These would include scenarios where they are able to launch varying portions of their forces on tactical warning (LOTW), as well as the most stressful scenario—retaliation only after absorbing a well-coordinated US counterforce attack. For the Soviets, these retaliation scenarios are the most critical in an evaluation of their capabilities and probably the ones to which they devote most of their training.

The Soviets' offensive objectives in carrying out large-scale nuclear strikes would be to neutralize US and Allied military operations and warmaking capabilities. Their large-scale intercontinental strikes would be conducted primarily with ICBMs and SLBMs. We believe that the Soviets would conduct repeated attacks in an attempt to destroy, degrade, and disrupt the United States' capability to employ nuclear forces, and the reconstitution capabilities of its nuclear forces and their supporting infrastructure. They would also attempt to isolate the United States from the theater campaign by attacking its power projection

capabilities. Depending on the circumstances, they might also attempt to reduce US military power in the long term by attacking US military-industrial capacity. 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.

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 intercontinental nuclear phase. Some Soviet SSBNs in protected areas near the Soviet homeland would be withheld for potentially protracted nuclear operations, others for longer term reserve. 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 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 (RVs) today to attack all US missile silos and launch control centers in a first strike. We project that, over the next 10 years, the USSR will have substantially larger numbers of hard-target-capable RVs and that the effectiveness of individual Soviet ICBMs against hardened targets will increase. In a well-executed strike, Soviet ICBMs would have the potential—using two RVs against a Minuteman silo—to achieve a damage expectancy of about 75 to 80 percent today, and about 90 percent by the mid-1980s, although there are significant uncertainties in these percentages because of our uncertainties about Soviet ICBM characteristics. 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.
- 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 and SSBNs patrolling in waters near the USSR are highly survivable as are most silo-based ICBMs and perhaps dispersed aircraft. 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.

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, 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

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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.⁴

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.\

⁴ The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.

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SUMMARY

A. Recent Developments

1. The Soviets have made impressive gains in their strategic forces since the 1960s, particularly in land- and sea-based ballistic missiles. They maintain a vigorous military research, development, and production base and continue to develop, improve, and deploy offensive and defensive weapons of virtually every type. These efforts are continuing, with no evidence in the past year to indicate any letup.

2. In recent offensive force developments:

— The Soviets continued deployment of accurate, intercontinental and submarine-launched ballistic missiles (ICBMs and SLBMs) armed with multiple independently targetable reentry vehicles (MIRVs), of the mobile SS-20 intermediate-range ballistic missile (IRBM), and of the Backfire bomber. As of 31 December 1982, we estimate the Soviets had about 7,300 reentry vehicles (RVs) on their more than 2,300 ICBMs and SLBMs.

— In December the Soviets conducted a flight test of their new, MIRVed medium-size, solid-propellant ICBM to be deployed in silos.

— In February 1983 the Soviets flight-tested a small solid-propellant ICBM.

— The Soviets also probably have in development other new or improved ICBMs and SLBMs. At least one SLBM and two ICBMs are expected to begin flight-testing later in 1983.

— The USSR maintained a high success rate for flight tests of the SS-NX-20 SLBM; the 1982 tests

included an extended-range launch from the Typhoon nuclear-powered ballistic missile submarine (SSBN). A second Typhoon was launched in 1982, and at least two, probably three, more are under construction.

— The Soviets continued testing of their new intercontinental-range Blackjack A bomber. (S NF WR)

— They began operational testing of newly produced Bear aircraft that will probably carry long-range cruise missiles for land attack.

— They continued flight-testing of ground-, air-, and sea-launched (GLCM, ALCM, and SLCM) versions of a long-range (3,000 kilometers) land-attack cruise missile.

3. In strategic defense programs:

— The Soviets continued work on their ballistic missile defenses around Moscow, including the Pushkino radar and 26 new antiballistic missile (ABM) silo launchers (for a total of 64), evidently as part of a plan to upgrade the performance of their defenses and expand them to the ABM Treaty limit of 100 launchers.

— They started deployment of SA-10 surface-to-air missile (SAM) battalions with 12 launchers each; previously deployed SA-10 units have six launchers.

— They are performing at least feasibility tests on three types of high-energy laser weapons for air defense: lasers for point defense of high-value assets on land, ship-based lasers for point defense at sea, and a tactical, land-based mobile system. This year we project Soviet deployment of high-energy lasers for air defense in the period of this Estimate.

— The Soviets continued deployment of the MIG-31 Foxhound A interceptor, which will provide them with an improved capability against low-altitude penetrating targets.

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4. In supporting systems for strategic forces:

— The Soviets continued efforts to increase the flexibility and survivability of communications available to their national-level commands and to operating elements of their strategic forces.

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┐ an extremely-low-frequency (ELF) system for providing communications support to submarines operating at patrol depth.

B. Soviet Strategic Policies and Doctrine

5. 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 dramatic manifestation is growing Soviet military power and capabilities that form the cutting edge of Moscow'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.

6. 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.

7. Strategic nuclear forces support Soviet foreign policy aims by projecting an image of military strength. Soviet leaders appreciate the political importance of world perceptions of military power and have long stressed the contribution of strategic forces to the USSR's superpower status. They view their current strategic position as supporting the conduct of an assertive foreign policy and the expansion of Soviet power and influence abroad.

C. Future Strategic Forces and Programs

8. Our projections of Soviet strategic forces¹ for the next three to five 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 projections for five to 10 years from now are based on evidence regarding these options. They also reflect our judgments of the factors that will influence future Soviet forces.

¹ See chapter IV, volume II, for a detailed discussion and rationale for the projections displayed in volume III.

9. Key among these factors are:

- Determination on the part of the Soviets to improve all aspects of their strategic forces and supporting elements.
- Determination to prevent any erosion of the military gains they have made over the past decade.
- The degree of success in Soviet efforts to use arms control negotiations—the strategic arms reduction talks (START) and the talks on intermediate-range nuclear forces (INF)—to protect the USSR's present and planned programs and, probably along with some Soviet concessions, to circumscribe US and NATO modernization options.
- Perceptions of the capabilities of other countries' nuclear forces and key weapon system programs.

Other factors that could potentially influence future Soviet strategic forces are domestic economic difficulties and foreign policy setbacks. In general, however, we do not believe that these latter factors will bear significantly on the size and composition of future Soviet strategic forces because of the high priority the Soviets place on such forces.

10. Fundamental to the options the Soviets have for the composition of their future forces is their vigorous military research and development (R&D) and production base. They continue to develop a number of weapon systems of virtually every type. We currently are aware of more than 30 new major weapon and support systems for potential strategic application—summarized in figure 1 (page 18)—that are in various stages of development. The Soviets' research efforts, coupled with technology acquired from the West, have provided them with sufficient advances in certain military technologies—for example, guidance and navigation, microelectronics and computers, signal processing, and directed energy—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

11. The most significant new weapon systems projected for deployment in Soviet strategic offensive

forces later in this decade (subject to possible negotiated bans or other limits) include:

- Solid-propellant ICBMs for both silo and mobile basing. The SS-X-24 medium-size solid-propellant ICBM, which they have just started to test, will probably replace silo-based SS-17 and SS-11 ICBMs beginning in about 1985. A small solid-propellant ICBM, which began flight-testing in February 1983, will probably be deployed as a mobile system beginning in 1986, as well as in silos. A solid-propellant ICBM could possibly be deployed in a rail-mobile mode in the late 1980s.
- A follow-on to the SS-20 IRBM, first deployed around 1987.
- Two SS-N-18 MIRVed SLBM follow-ons, one deployed around 1985, the other around 1990, with a variant of the later system possibly having a maneuvering reentry vehicle (MaRV) payload option for greater accuracy.
- An improved SS-NX-20 SLBM for the Typhoon SSBN, projected to be deployed in the late 1980s, and also possibly having an accuracy MaRV payload option.
- The Blackjack A long-range bomber, to be deployed as early as 1986.
- New long-range (3,000 kilometers) land-attack cruise missiles for deployment on submarines as early as 1983 and on ground launchers and aircraft as early as 1984.

12. This year we have projected six alternative strategic offensive forces (each projection is a combination of both intercontinental and peripheral attack forces) to take account of uncertainties about the outcome of ongoing arms control negotiations—START and INF. Key assumptions underlying the projections are summarized below.

13. *Forces 1 and 2.* These two force projections represent our estimates of the direction, scope, and pace of future Soviet forces in the absence of arms control constraints. Force 1 represents a continuation of current Soviet trends to upgrade strategic offensive systems. Deployment rates for Force 1 are consistent with available evidence on ongoing and new programs and recent trends in deployment rates and force composition. Force 2 reflects somewhat higher production and deployment levels, and in some cases

Figure 1



more technically advanced systems, than in Force 1, beyond 1985 for some programs. The projections assume the Soviets abide by the terms of the SALT I Interim Agreement and key provisions of the unratified SALT II Treaty until mid-1984 and then begin expanding their forces without such constraints. The difference between these two projections reflects our uncertainties about the technological choices and improvements the Soviets might make, their potential deployment levels for some systems, and the Soviets' own evaluation of their potential offensive force requirements. Force 2 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 1. Both projections should be regarded as plausible and achievable representations of future Soviet force postures.

14. *Forces 3 and 4.* We have examined the effects on Soviet forces of the US negotiating position by assuming that the sides negotiate START and INF treaties based on the US position and that the Soviets adhere to SALT I and SALT II agreements until mid-1984, after which they begin to reduce their forces to meet the US START and INF treaty limits. The US START position limits the number of ballistic missile warheads and deployed ballistic missiles; the INF position requires the destruction of all Soviet ground-based intermediate-range and long-range cruise missiles within one year. Force 3 has some new deployments but emphasizes upgrades to existing systems; Force 4 reflects emphasis on newer and solid-propellant systems over existing liquid-propellant systems, and a greater Soviet effort to compensate for the deactivated force of IRBMs and medium-range ballistic missiles (MRBMs) through deployment of more bombers and cruise missiles.

15. *Forces 5 and 6.* We have examined the effects on Soviet forces of Moscow's negotiating position by assuming forces constrained by the Soviet START and INF positions. These positions require a reduction in ICBM and SLBM launchers and heavy bombers to an aggregate level of 1,800 by 1990, a ceiling of 300 on delivery systems in Europe or intended for use in Europe by the end of 1990, and the banning of all long-range land-attack cruise missiles. Force 5 has some new deployments but emphasizes upgrades to existing systems; Force 6 emphasizes the deployment of newer systems. Both projections emphasize ICBM survivability through deployment of mobile ICBM launchers.

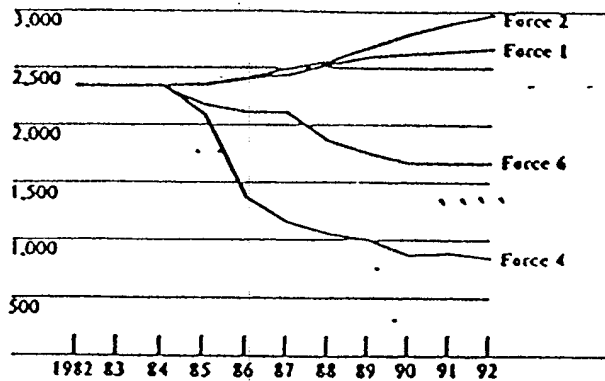
Quantitative Indexes for Soviet Strategic Offensive Forces (Illustrated on pages 20-24)

16. *Deployed Intercontinental-Range Ballistic Missiles (ICBMs and SLBMs).* Figure 2 (page 20) illustrates the trends in the number of deployed Soviet ICBMs and SLBMs that result from our various force projections. Under the assumptions for Forces 1 and 2, that beginning in mid-1984 the Soviets would expand their forces without arms control constraints, the number of deployed missiles is expected to increase by about 13 to 25 percent, mostly as a result of the deployment of mobile ICBMs. The US START proposal would reduce deployed missiles to 850 by 1992—a reduction by 64 percent of the currently deployed force; the Soviet proposal would reduce the number of missiles by 28 percent below the current force.

17. The projected aggregate throw weight of the missile force is shown in figure 3 (page 20). The throw weight by 1992 increases in Forces 1 and 2 by about 40 and 70 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 US START proposal would reduce the throw weight by about 60 percent, because of the decreased number of missiles and the constraints on the number of SS-18- and SS-19-class ICBMs. The Soviet proposal would result in a small increase in throw weight.

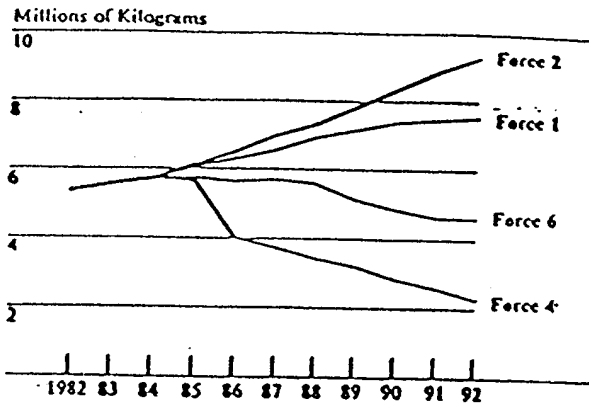
18. As shown in figure 4 (page 21), the numbers of reentry vehicles on deployed ICBMs and SLBMs is projected to increase by 85 percent (Force 1), or more than 190 percent (Force 2), by 1992, if the Soviets expand their forces without regard to arms control constraints. These increases—much greater in 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 US START proposal (Force 4) would reduce the number of such warheads to 5,000—a one-third reduction from the current force. The Soviet proposal (Force 6) would result in a one-third increase over the current force. Also shown in figure 4 are the projected numbers of ballistic missile RVs—almost all on ICBMs—capable of destroying hard targets. The trends are similar to those for total RVs. The number of highly survivable RVs—on SLBMs and mobile ICBMs—is expected to increase

Figure 2
Projected Number of Deployed Soviet ICBMs and SLBMs



Force 1-Not constrained by arms control
 Force 2-Not constrained by arms control
 Force 4-US START/INF proposal
 Force 6-Soviet START/INF proposal

Figure 3
Projected Throw Weight of Deployed Soviet ICBMs and SLBMs



Force 1-Not constrained by arms control
 Force 2-Not constrained by arms control
 Force 4-US START/INF proposal
 Force 6-Soviet START/INF proposal

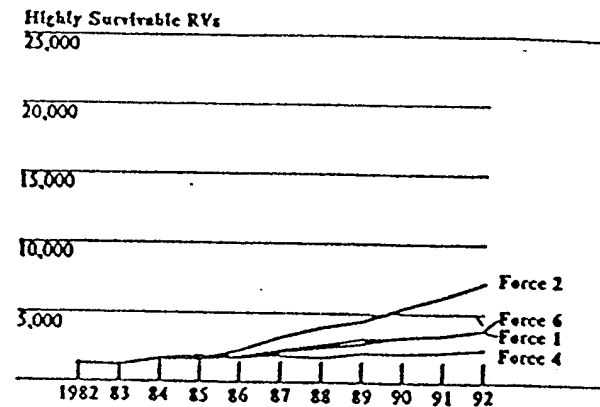
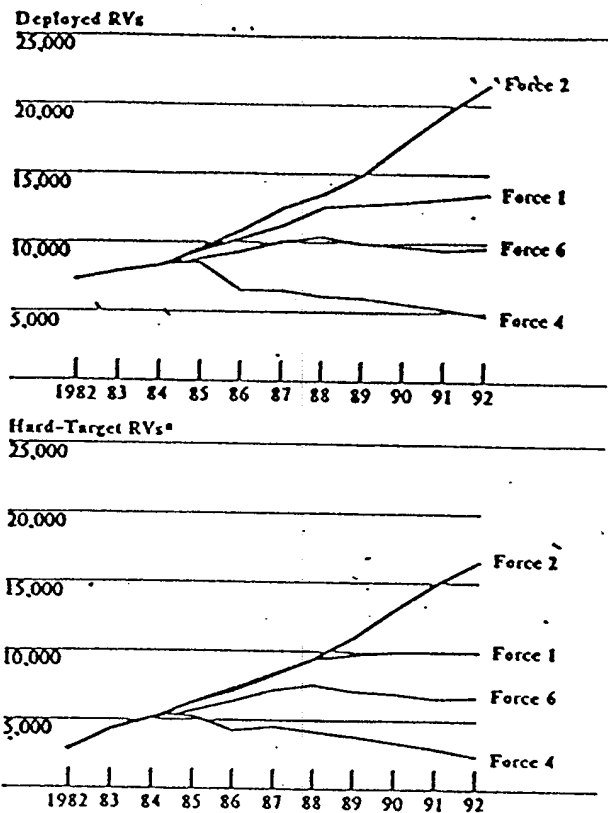
substantially over the next 10 years. This increase would be by a factor of 3 to 5 for Soviet forces not constrained by arms control, and a factor of 2 under the START proposals. It should be noted that Soviet silo-based missiles will continue to carry the majority of ballistic missile warheads, except under the US START proposal.]

19. *Bombers.* Soviet bomber forces are not expected to change much in overall size; new bombers such as the Blackjack A will enter the force as older bombers such as the Bison are phased out. As shown in figure 5 (page 22), however, there will be a substantial increase in the number of weapons carried by the new Blackjack A and the Backfire. (Other strategic bombers, of lesser range, are not shown.) The payload of the Blackjack A will be much greater than that for the other aircraft; also many of these aircraft will carry ALCMs. It is 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.

20. *Cruise Missiles.* The Soviets are projected to begin deploying long-range (3,000 km) land-attack cruise missiles on submarines as early as 1983, and on aircraft and ground launchers as early as 1984. As shown in figure 6 (page 23), we project that, without arms control constraints (Forces 1 and 2), cruise missile deployments would reach levels of at least 1,500-2,000 (mostly ALCMs) by the early 1990s; under the US START and INF proposals (Forces 3 and 4), with only GLCMs limited, the numbers would be nearly as high. The Soviet proposals ban these weapons entirely.

21. *SS-20s and GLCMs.* Figure 7 (page 24) shows our projections for the total number of Soviet land-based INF missiles deployed in the Soviet Union—in the European area as well as the Far East. Without arms control constraints the number of SS-20 launchers is projected to increase to 450-540, with the phasing out of older SS-4s and SS-5s. A comparable number of GLCMs would be expected. The number of missiles, those deployed on launchers as well as those for refire, is expected to increase significantly, with two SS-20 refires per launcher by the early 1990s.

Figure 4
Projected Number of Deployed Soviet ICBM
and SLBM Reentry Vehicles



Force 1—Not constrained by arms control
 Force 2—Not constrained by arms control
 Force 4—US START/INF proposal
 Force 6—Soviet START/INF proposal

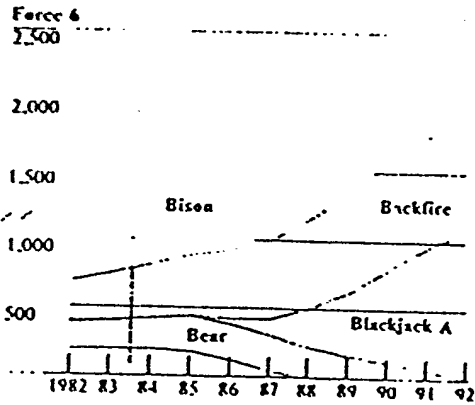
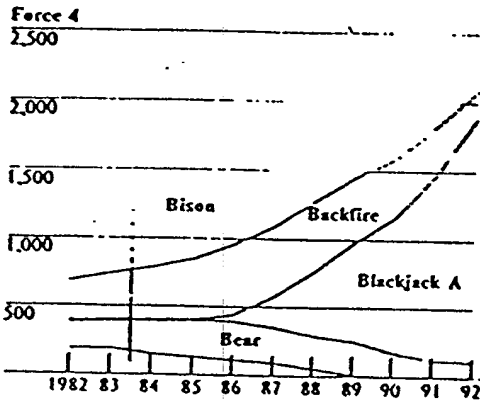
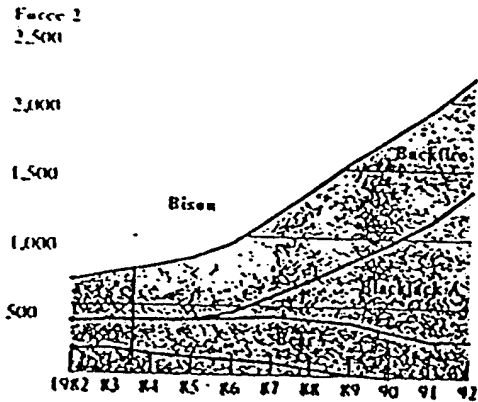
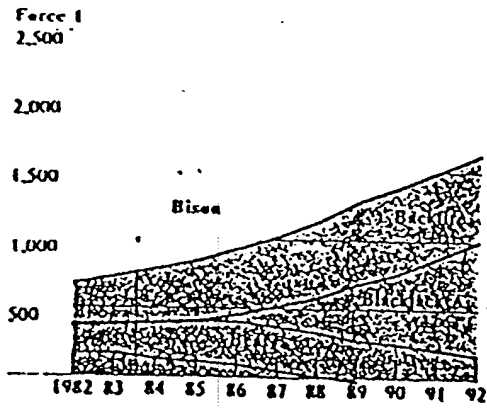
* For the purpose of this Estimate, hard-target missile RVs are defined as those that have a 50-percent or greater probability of destroying a target hardened to withstand an overpressure of 14 megapascals (2,000 pounds per square inch).

22. *Reserve Missiles.* The Soviets have a reserve force that includes ICBMs produced as maintenance spares and as training missiles and, we believe, also contains additional ICBMs produced as refire missiles.

Soviet missile production capacity is large enough to support production levels beyond one missile per launcher plus maintenance and training spares. We can, however, make an estimate of the number of reserve ICBMs that can be stored at the identified support bases for this force.

23. According to an alternative view, the intelligence suggests that, while the Soviets produce more missiles than they deploy, for use in testing, training, and maintenance rotation, no portion of this additional production is designated specifically for use as refire.

Figure 5
Projected Number of Deployed Warheads on
Selected Soviet Bombers*



* Does not include aircraft in Soviet Naval Aviation.

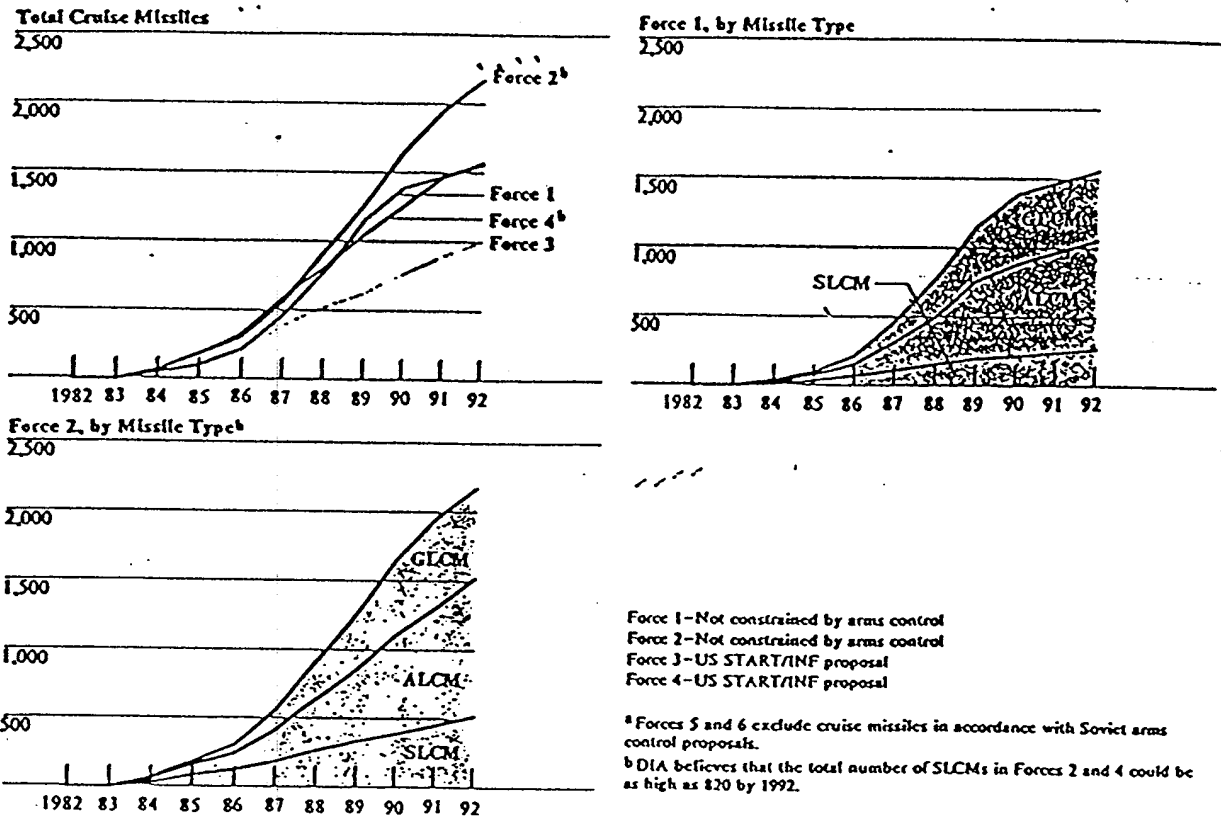
Force 1 - Not constrained by arms control
 Force 2 - Not constrained by arms control
 Force 4 - US START/INF proposal
 Force 6 - Soviet START/INF proposal

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

We believe that enough missiles will have been produced so that each launcher could have one refire missile in 1985. The Soviets will probably continue SS-20 production and build toward two refires per launcher.

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

Figure 6
Projected Number of Deployed Soviet Long-Range Land-Attack Cruise Missiles*



Strategic Defensive Forces

25. Trends in Soviet forces for strategic defense include:

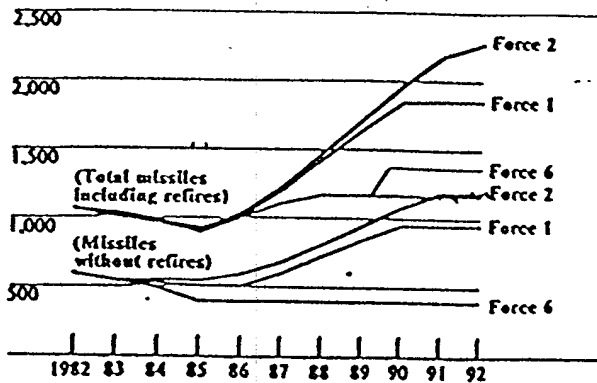
- Upgrading and expansion of the ballistic missile defenses at Moscow within the ABM Treaty limits with potential for subsequent widespread deployment beyond these limits.
- Extensive deployments of new low-altitude-capable fighters and SA-10 SAMs, and initial deployment of Mainstay airborne warning and control system (AWACS) aircraft in late 1983 or early 1984.

- Advances in acoustic antisubmarine warfare (ASW) technology, and continuation of an energetic and growing program to develop a capability to remotely sense submarine-generated effects from aircraft and spacecraft.
- Advances in technologies applicable to ground-, air-, and space-based directed-energy weapons.

We also include in our defensive force projections:

- Tactical air defense units based in the USSR that potentially could be used against US strategic bombers and cruise missiles.

Figure 7
Projected Number of Soviet Land-Based,
Long-Range INF Missiles*



Force 1—Not constrained by arms control
Force 2—Not constrained by arms control
Force 6—Soviet START/INF proposal

* US INF proposal bans all such missiles.

- Ground-based laser weapons for air defense.
- An advanced tactical SAM, the SA-X-12, which we believe will have an anti-tactical-ballistic-missile (ATBM) capability, and which could also have some capability against some strategic reentry vehicles.
- Soviet capabilities to expand ABM defenses beyond 100 launchers at Moscow in the absence of the current ABM Treaty restrictions.

26. *Ballistic Missile Defense.* This year the Intelligence Community completed a comprehensive study of Soviet present and future capabilities for ballistic missile defenses. The key findings of that effort are summarized below and treated in greater detail in volume II of this Estimate.

27. The Soviets are upgrading their antiballistic missile deployments at Moscow and are actively engaged in ABM research and development programs. The available evidence does not indicate with any

* See also NIE 11-13-82, *Soviet Ballistic Missile Defense*, 13 October 1982.

certainly 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.

28. We judge that in evaluating the technical performance of the ABM systems they could deploy, 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.⁴

29. 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

⁴ The holder of this doc is the Director, Defense Intelligence Agency.

goals has achieved limits on US delivery vehicles and constrained US defense, while permitting expansion of Soviet offensive forces. There are no indications that the USSR is becoming dissatisfied with this approach.

— Under the Treaty the USSR has ABM defenses to protect critical targets in the Moscow area while the United States has no similar capability.

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

30. 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.

31. 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 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.

32. 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

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

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.*

33. [

└ 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.†

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

† The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.

34. *Potential Technology Breakthroughs.* Soviet efforts in two technology areas—nonacoustic sensors for ASW, and directed-energy weapons—could, if the Soviets succeed in major breakthroughs, have profound consequences, particularly in areas of strategic defensive capabilities. The Soviets are intensively investigating these technologies and would place a high priority on deploying any capabilities that might result from their research efforts.

35. Over the past two decades, the Soviets have devoted much effort to development of nonacoustic submarine detection systems. Some devices mounted on ships and submarines have reached limited deployment status. Even if these ship- and submarine-mounted systems are capable of detecting submarine-generated effects, we believe that they will not present a threat to SSBNs in the open ocean because of the low search rates imposed by the slow speeds of the platforms carrying the limited-range sensors. They may have limited utility in initiating tracking near submarine bases and other choke points. At least some of this nonacoustic R&D is related to the protection of their own SSBN force. Of more concern is the Soviets' energetic and growing program to develop a capability to remotely sense submarine-generated effects from aircraft or spacecraft. Over the past several years we have learned that the Soviet research program to detect submarines from space is much more extensive than we had previously believed.

36. We have limited knowledge of the precise nature and degree of success of the Soviet program. We have seen no instance in which a submarine operating at SSBN patrol depths and speeds was detected by a Soviet remote sensor.

we cannot state with confidence that they have not had some success in their research. We cannot judge whether the Soviets will achieve a technological breakthrough in remote sensing of submarine-generated effects during the next 10 years. Even if such a breakthrough were to occur, we do not believe, in view of the operational considerations and the length of time needed for full

system deployment, that a system which could simultaneously track a substantial fraction of the US SSBN force is a realistic possibility during the period of this Estimate. We are more uncertain, and hence more concerned, about the capabilities that could potentially be realized and deployed in the mid-to-late 1990s.

37. An alternative view is that

the Soviets have not had significant success in these techniques and are unlikely to achieve a technological breakthrough in remote sensing of submarine-generated effects during the next 10 years. The holder of this view believes

that an effective broad area search detection capability will not emerge from Soviet R&D activity during the next decade. For many years the US Navy has had an intensive R&D program in submarine detection.

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

* The holder of this view is the Director of Naval Intelligence, Department of the Navy.

develop those directed-energy weapon and military support systems that prove to be feasible:

- There is evidence that the Soviets are working on a project to develop a megawatt-class space-based laser weapon. Testing of a megawatt-class prototype, for ASAT application, could begin in the late 1980s at the earliest, more likely not until the early 1990s. If testing were successful, an initial operational system—a few satellites, each having a megawatt-class laser weapon with an ASAT range of hundreds of kilometers—could be available by the early 1990s, more likely in the mid-1990s. If they were developing a prototype with much lower power, it could be tested somewhat earlier than the megawatt-class prototype.
- While space-based weapons for ballistic missile defense are probably feasible from a technical standpoint, such weapons require significant technological advances. In view of the technological requirements, we do not expect them to have a prototype space-based laser ballistic missile defense (BMD) system until after 1990 or an operational system until after the year 2000.
- Soviet particle beam weapon (PBW) research might eventually have some ASAT or BMD applications, but the achievement of a prototype system for such uses would be at least 10 to 15 years in the future. An alternative view holds that a space-based PBW system, intended to disrupt the electronics of ballistic missiles and requiring significantly less power, could probably be developed and deployed in the 1990s.*
- Currently there are two facilities at Saryshagan that are assessed to have high-energy lasers and associated optical equipment with the potential to function as ground-based ASAT weapons.
- We expect that a high-energy laser facility at the test range will be used during the 1980s for testing the feasibility of BMD applications. If feasibility is demonstrated, our judgment is that a prototype ground-based laser weapon for BMD would then have to be built and would not begin testing until the early 1990s. An initial operational capability (IOC) probably would not be

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

achieved until after the year 2000. An alternative view holds that, if tests from this facility proved successful in engaging ballistic missile RVs, the Soviets would not have to construct a new prototype weapon, and therefore that a deployed ground-based laser weapon system for BMD could reach IOC by the early-to-middle 1990s.¹⁰

- The Soviets have at least three projects for the development of lasers for air defense, including a naval system for ship defense. If the Soviets continue to advance at the level of the past few years, laser air defense weapons could become available for operational use in the mid-to-late 1980s. Initial ground-based air defense laser weapon systems will probably have engagement ranges of 1 to 10 kilometers, and fixed, transportable or mobile platforms. Because of their limited range and their ineffectiveness against aircraft in or above the clouds, they will probably be used along with SAMs for point defense of high-value targets. These early weapons probably will rely on destroying critical subsystems of aircraft and cruise missiles, such as fuel tanks, avionics, or electro-optics.†

D. Operations of Soviet Strategic Forces in a Conflict

Preparations and Training of Nuclear Forces for Conflict

39. As in last year's Estimate we emphasize Soviet views on the probable nature and origins of a US-Soviet nuclear conflict and how the Soviets plan to operate and employ their forces during the various phases of a global war. †

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

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:

40. 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 as a result of the experience gained.

41. 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.¹¹

42. 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

¹¹ The holder of this clew is the Director, Bureau of Intelligence and Research, Department of State.

- Refined their force employment strategies in preparation for more varied contingencies, through measures such as development of a launch-on-tactical-warning (LOTW) capability for land-based missiles, and planning for conducting theater and intercontinental nuclear warfare operations over an extended period and for reconstituting a portion of their forces after an initial massive nuclear strike.
- Made changes in some of the operational modes of their strategic forces, such as the creation of SSBN bastions where SSBNs can be more effectively controlled and protected by ASW forces, the operation of SSBNs in the Arctic near or under the polar icecap, and the deployment of the mobile SS-20 forces.
- Gradually increased the stress placed on their personnel in combat training.

- Consistently worked to increase the survivability and flexibility 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.

Scenario for Operation of Soviet Strategic Forces in a Conflict

43. As in last year's Estimate, we have structured a composite scenario, summarized briefly below.

we believe this composite picture captures 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.

44. 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.

45. *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 their forces and preparations. They would increase the use of concealment, deception, and disinformation for military, diplomatic, and propaganda purposes in attempting to achieve their objectives.

46. *Conventional Phase.* The Soviets apparently believe that a major nuclear conflict, if it occurs, would be likely to arise out of a conventional conflict. The Soviets perceive the conventional phase of a NATO-Warsaw Pact conflict as lasting from a few days to as long as several weeks, during which the Warsaw Pact would contain a NATO attack and then launch a counteroffensive deep into Western Europe. 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 command and control facilities, nuclear assets, 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 contiguous to the USSR. In addition to the protection of their own SSBNs, a primary goal of Soviet naval forces would be to weaken as much as possible 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 nondestructive interference with selected US space systems that provide important wartime support.

47. *Initial Nuclear Phases.* 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 if NATO were detected beginning nuclear release procedures. 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. However, they appear to be developing a means for dealing with the possibility of NATO's initiation of such limited nuclear use, without the Soviets' necessarily having to go to large-scale nuclear war.

48. Soviet ^{a war} with NATO as including a brief transitional period, with nuclear use in the NATO theater, where conventional conflict has been taking place, before the onset of intercontinental nuclear war. This phase can begin with small-scale use of nuclear weapons confined to the immediate combat zone. We believe the Soviets would see this initial localized use of nuclear weapons as probably being the last realistic opportunity to avoid large-scale nuclear war. We believe, however, that the Soviets, if faced with or hit by a NATO nuclear attack that seriously threatened their theater objectives, probably would launch massed strikes, rather than a limited strike.

49. Soviet ^a widening conflict that evolves from the initially localized nuclear operations into theaterwide use of operational-tactical nuclear weapons.

an expectation on the part of the Soviets, once such large-scale use of nuclear weapons in the theater occurred, of a likely and imminent escalation to intercontinental nuclear war, although they probably would still prefer, even at this stage if possible, to confine nuclear war to Europe and avoid strikes against US and Soviet territory.

50. 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.
- They would be more likely to seize the initiative by launching intercontinental nuclear strikes if the war had already reached the level of theater nuclear conflict, 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 be likely to launch a preemptive intercontinental strike if there had been large-scale theater nuclear strikes against the western USSR. It is more difficult to judge whether the Soviets would feel similarly inclined if they had launched a large-scale preemptive strike against theater targets but had suffered little or no retaliation from NATO theater strikes.
- 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 theater nuclear conflict were under way than during a crisis or a conventional conflict.
- In a situation in which nuclear war in Europe was still limited to a battlefield stage, the Soviets' recognition of the consequences of intercontinental nuclear conflict could give them incentives to wait.

- 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 strategic 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.
- We believe the Soviets place considerable emphasis on assessing their strategic offensive capabilities under conditions where they retaliate after the United States launches a 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—retaliation only after absorbing a well-coordinated US counterforce attack. The Soviets strongly believe warfare rarely goes as planned and being prepared for adversity and unplanned occurrences is of paramount importance. For the Soviets these retaliation scenarios are the most critical in an evaluation of their capabilities and probably the ones to which they devote most of their training.]

51. 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.]

52. Soviet offensive objectives in carrying out large-scale nuclear strikes would be to neutralize US and Allied military operations and warmaking 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. They would attempt to isolate the United States from the theater campaign by attacking its power projection capabilities. Depending on the circumstances, they might also attempt to reduce US military power in the long term by attacking US military-industrial capacity. 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 evidence

53. In large-scale theater nuclear strikes, which are likely to be conducted shortly before, concurrently with, or within hours of intercontinental nuclear strikes, the Soviets probably would employ hundreds of tactical nuclear weapons as well as a large share of their strategic forces that have strike missions against theater targets. 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.]

54. 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 perhaps a more comprehensive set of political and industrial-economic facilities. We believe that the Soviets would conduct repeated 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.

- 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 forward-deployed Y-class SSBNs would probably be used in an initial strike against time-urgent US command, control, and communications targets and bomber bases. Other submarines also might be employed in an initial attack, against targets in the United States and Eurasia. Some SSBNs in protected areas near the Soviet homeland probably would be withheld for potentially protracted nuclear operations, others for longer term reserve.

— Some strategic bombers may have a role in initial intercontinental nuclear strike operations, within hours after the initial missile strike. We believe it is likely that bombers would be used later, for postattack reconnaissance and strikes against surviving targets in the continental United States. Deployment of the new Blackjack A long-range bomber and of the new variant of the Bear bomber capable of carrying ALCMs, however, will increase the Soviets' flexibility in conducting bomber strikes at intercontinental ranges as well as against theater targets. There is an alternative view that Soviet long-range strategic bombers would, as currently constituted, have a definite role in initial intercontinental nuclear strike operations, within hours after the initial missile strike. The holder of this view believes this role will expand as the new Bear and Blackjack A bombers armed with ALCMs become available in substantial numbers in the late 1980s.⁴¹

55. 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

⁴¹ The holder of this view is the Assistant Chief of Staff, Intelligence, Department of the Air Force.

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.]

— Attempts to interfere with and destroy US satellites. These actions probably would be effected just before this phase of conflict, at the latest.

— 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, the essential workers either would be in shelters at their place of work or, if off duty, would be dispersed to zones outside the cities. We believe the Soviets would attempt to evacuate most of the urban population.]

56. *Later Phases of a Nuclear Conflict.* The Soviets plan for later exploitation phases following major intercontinental nuclear strikes conducted primarily by remaining general purpose forces, but our knowledge of Soviet views concerning these phases is sketchy. In the later stages of conflict, the intensity of theater and intercontinental nuclear strikes would diminish. 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 in theater combat during the later phases.]

57. We are highly uncertain about their actual capabilities to reconstitute strategic forces. 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. The restoration of combat effectiveness would be contingent on restoring command and control communications.

58. The Soviets prepare for combat operations that could extend weeks beyond the intercontinental 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. We believe they would reconstitute ICBM and SS-20 forces using reserve missiles and equipment; we believe they maintain reserve missiles for their ICBM and SS-20 forces, beyond those required for maintenance and training. 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, Soviet ICBM reconstitution efforts to date have []

[] not the inclusion of refire in Soviet war plans. Moreover, the holder of this view believes that []

[] estimated missile storage capacity []

[] is consistent with maintenance and training requirements.¹³

[] Soviet planning for SSBN operations in a protracted conflict. Some submarines probably would be withheld, under naval force protection, for a reserve force role.

¹³ The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.

— []

[] 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.

59. 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.

60. 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 perceived they could not achieve their military objectives. []

E. Trends in Soviet Capabilities To Perform Strategic Missions

61. 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.

Figure 8

Destroying Enemy Nuclear Delivery Means

62. *ICBMs.* The latest types of Soviet ICBMs have the potential to achieve a high probability of destroying a US ICBM silo. 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. We project that, over the next 10 years, the USSR will have substantially larger numbers of hard-target-capable RVs and that the effectiveness of individual Soviet ICBMs against hardened targets will increase. As shown in figure 8, in a well-executed strike, Soviet ICBMs would have the potential—using two RVs against a Minuteman silo—to achieve a damage expectancy of about 75 to 80 percent today, and about 90 percent by the mid-1980s, although there are significant uncertainties in these percentages as shown, because of our uncertainties about Soviet ICBM characteristics. (With one RV, the damage expectancy would be 50 to 60 percent today, and about 75 percent by the mid-1980s.) Improvements in the accuracy of Soviet ICBMs projected for the mid-to-late 1980s will give them a high probability of damaging silos hardened [

] 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. Also, the Soviets could not optimize the timing of a coordinated attack by ICBMs against US missile silos and by forward-deployed SLBMs against US bomber bases and other time-urgent targets because of the difference in flight times of these Soviet weapons.

63. *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 that it is unlikely that a Soviet attack would be able to destroy most of the US alert strategic aircraft, assuming Department of Defense planning factors for alert bomber escape times. 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.

64. *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. Overt trail by modern Soviet nuclear-powered attack submarines (SSNs) using active sonar is technically feasible if they establish contact, but it has the potential of alerting the target submarine almost immediately. Moreover, overt trail could potentially be thwarted by US countermeasures. [

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; however, barring any technical breakthrough in non-acoustic ASW (see paragraphs 35-37), we believe that the overall effectiveness of Soviet ASW against the US SSBN force will be more than offset by planned US improvements.]

65. *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. We are not able to assess the Soviets' capability to locate and strike mobile missile launchers that have left their fixed bases. Soviet targeting problems would be compounded severely by planned Western deployments of additional mobile systems—GLCM, Pershing II, and SLCMs on SSNs—particularly those deployed beyond the range of Soviet tactical reconnaissance systems.]

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

66. Throughout the next 10 years, the Soviets will have weapons of sufficient numbers and capabilities to give them high confidence, under any circumstances, in their ability to destroy most fixed, land-based nuclear support facilities in the United States, such as depots, nuclear storage sites, maintenance bases, airfields, and ports. They 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.

67. We cannot assess the likely effects of a Soviet attack on the US command, control, and communications system. However, the Soviets' military doctrine, their emphasis on radioelectronic combat, and their 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, some operating alternates, and critical intermediate military control points.]
- Delaying or preventing transmission of launch orders by disrupting the various communications paths with direct attacks, jamming, and electromagnetic interference, and by undertaking a well-coordinated, minimum warning attack on many control points and communications facilities.]
- Preventing reconstitution of residual command, control, and communications capabilities through repeated attacks.]

68. There are a number of factors that could reduce the Soviets' belief in their chances of severely degrading critical US command and control of nuclear forces:

- The Soviets' inability to use ballistic missiles to destroy US airborne command posts and other supporting aircraft in flight.

- The reduced vulnerability of US strategic command and control in a period of crisis or theater conflict, as a result of increased readiness and dispersal.
- Improvements to US command, control, and communications systems—such as greater mobility and redundancy.
- Major uncertainties about the effects of electromagnetic pulse on electronic equipment.
- Uncertainties about whether they have identified all the important fixed or mobile command, control, and communications facilities.

Destroying Other Military and Nonmilitary Targets

69. Today, following a Soviet attack using about 3,000 warheads against US-based strategic nuclear forces and supporting facilities, more than 4,000 Soviet strategic intercontinental warheads could still be available for attacking other targets worldwide, if Soviet forces were fully generated and not degraded by enemy strikes. In addition, the Soviets would have thousands of warheads on shorter range systems for attacking ground targets adjacent to the Soviet Union. The relationship between the number of Soviet warheads available and their capability to attack targets with the estimated required damage levels is easier to deal with analytically for a preemptive attack than for a retaliatory attack. The Soviets would be likely to retain good control over their nuclear forces, and most of their missile forces would still be surviving.

70. The retaliation 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.

71. In the six forces projected in chapter IV, for 1992 the number of strategic intercontinental nuclear warheads remaining for these other worldwide strike missions following an attack against US-based strategic nuclear forces and supporting facilities, could be up to:

- 9,500 to 11,000 (Force 1) or 16,500 to 19,000 (Force 2) if unconstrained by arms limitations.

- 1,500 to 3,000 if constrained by the US START proposals.
- 5,000 to 7,000 if constrained by the Soviet START proposals.

This assumes the United States does not deploy ICBMs in a new basing mode, or defend them with ABMs. The numbers in these forces, moreover, do not include potential reloads.

72. 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 the event of being 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 in maintaining the capability to fulfill the missions of their strategic nuclear forces after being struck.

Assuring the Survivability of Soviet Strategic Offensive Forces

73. ICBMs. We expect that silo-based ICBMs will continue to be the largest and most capable element of Soviet strategic offensive forces through the decade. As illustrated in figure 9, silos for the latest Soviet ICBMs, and their associated launch control facilities, would have a high probability of surviving an attack by current US offensive weapons, but US weapon systems in development would pose a considerably greater threat. Further silo hardening would result in only modest improvements to Soviet ICBM survivability. We expect the Soviets to:

- Continue to improve their capabilities to launch ICBMs on tactical warning. [

- Deploy a mobile MIRVed ICBM by the mid-1980s in a mode similar to that used with the]

Figure 9



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SS-20 mobile IRBM, and perhaps a larger, more capable MIRVed ICBM in a rail-mobile mode by the late 1980s.

- Be capable of deploying a ballistic missile defense for selected ICBM complexes in the late 1980s.

74. *Bombers.* 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 for bomber force reconstitution.

75. *SSBNs.*

Soviet SSBNs at sea would be potentially vulnerable to ASW forces, primarily because of their relatively high noise levels. Typhoon-class submarines are expected to be quieter than the currently deployed SSBN classes, thereby increasing their ability to avoid detection by acoustic means. 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, be able to participate in an initial Soviet nuclear strike, and be available for use in protracted nuclear war.

Protecting the USSR With Strategic Defense

76. The USSR deploys massive air defense forces, is improving its ballistic missile defenses at Moscow, and has an extensive civil defense program. Although we provide an assessment of the capabilities of these elements individually, we have not assessed the degree of overall protection, now or in the future, that would be afforded the USSR by the combination of its active and passive defenses.

77. *Capabilities of Soviet Ballistic Missile Defenses.* The projected upgrade of the defenses at Moscow with 100 ABM launchers will provide the Soviets with a much more reliable, two-layer capabil-

ity 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.

78. The upgrade to the defenses at Moscow is expected to provide the Soviets with a foundation for expanding their defenses. With a firepower level of 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.

79. 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 if the deployed systems were reasonably effective, the potential effect on the US strategic missile force would be substantial. A US first strike in the face of such a heavy defense would be degraded, perhaps to a significant degree. A US second strike would be degraded even more, because the lower number and rate of RV arrivals in most areas would result in lower leakage rates for the defense.

80. 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 analyzed these problems in detail. Moreover, 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, [

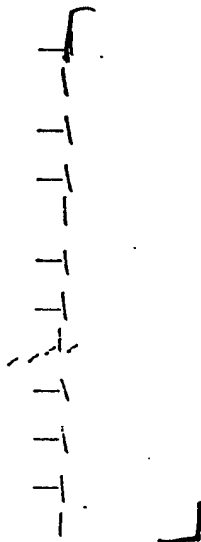
In any case, widespread Soviet deployment of an ABM system, even if US evaluations indicated it could be overcome by an attacking force, would complicate US attack planning and create major uncertainties for US planners about the potential effectiveness of a US strike. It is premature to judge the capabilities of a new advanced surface-to-air missile system, the SA-X-12. However, if certain features that we have assumed for this system are realized, 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.¹⁴

81. Air Defense. The present Soviet air defense system, undegraded by a ballistic missile attack or effective electronic countermeasures (ECM), probably would perform well against aircraft at altitudes above about 500 meters, although it does not have the capability to conduct intercepts much beyond the Soviet borders. 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 probability 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. [

82. The Soviet air defense system from the mid-to-late 1980s on will be qualitatively different from the

¹⁴ The holder of this view is the Director, Defense Intelligence Agency.

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:



83. 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.

84. 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.¹⁶

85. *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. A large-scale retaliatory nuclear attack directed against Soviet economic installations would cause severe damage to the plant and equipment at the vast majority of these facilities. Timely implementation of sheltering and dispersal plans would provide effective protection for a large percentage of the essential work force at key facilities. 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.

Survivability of Soviet Command and Control

86. 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, 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.

87. 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 endanger command personnel and degrade communications systems. It is also unclear how effectively the Soviets

¹⁶ The holder of this view is the Assistant Chief of Staff for Intelligence, Department of the Army.

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.

F. Concluding Observations

88. 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 and SSBNs patrolling in waters near the USSR are highly survivable, as are most silo-based ICBMs and perhaps dispersed aircraft. 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.

89. 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

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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.

90. 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.¹⁷

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

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