Director of
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Soviet Capabilities for Strategic Nuclear Conflict Through the Mid-1990s

National Intelligence Estimate
Volume I—Summary

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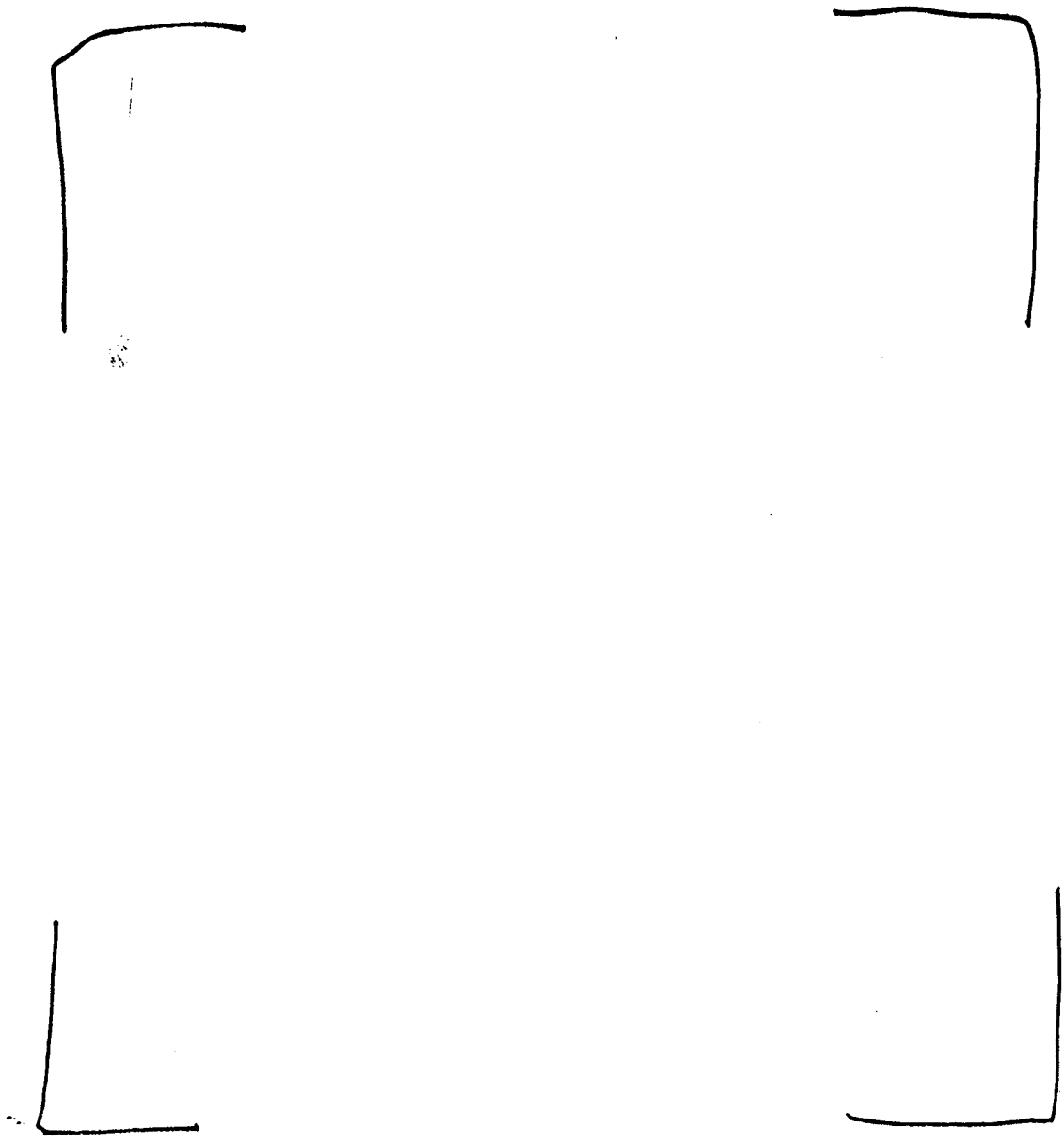


NIE 11-3/8-84/85

SOVIET CAPABILITIES FOR STRATEGIC NUCLEAR CONFLICT THROUGH THE MID-1990s

VOLUME I—SUMMARY

Information available as of 25 April 1985 was used in the preparation of this Estimate, which was approved by the National Foreign Intelligence Board on that date.

THIS ESTIMATE IS ISSUED BY THE DIRECTOR OF CENTRAL INTELLIGENCE.

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

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

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

Also Participating:

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

The Director of Naval Intelligence, Department of the Navy

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

The Director of Intelligence, Headquarters, Marine Corps

CONTENTS

SCOPE NOTE

This NIE 11-3/8 summarizes the latest developments and projects future trends in Soviet weapons and supporting systems for strategic nuclear conflict. The Estimate contains projections of the size and composition of Soviet strategic forces under a variety of circumstances, including the presence or absence of arms control constraints.

We focus 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.

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 generally 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 in addition to separately issued Key Judgments:

— *Volume I* contains:

- Summary of Soviet programs and capabilities believed to be of greatest interest to policymakers and defense planners.
- Key Intelligence Gaps (Annex A).
- Bibliography (Annex B).

— *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.
- Description of Soviet command, control, and communications capabilities and discussion of the peacetime posture of Soviet strategic forces.
- Discussion of Soviet concepts and plans for the operations of strategic forces during the several phases of a global conflict.
- Trends in the USSR's capabilities to carry out some missions of strategic forces in nuclear conflict.

— *Volume III* contains tables with detailed force projections and weapon characteristics.

SUMMARY

1. By the mid-1990s, nearly all of the Soviets' currently deployed intercontinental nuclear attack forces—land- and sea-based ballistic missiles and heavy bombers—will be replaced by new and improved systems. New mobile intercontinental ballistic missiles (ICBMs) and a variety of cruise missiles are about to enter the force. The number of deployed strategic force warheads will increase by a few thousand over the next five years, with the potential for greater expansion in the 1990s. We are concerned about the Soviets' longstanding commitment to strategic defense, including an extensive program to protect their leadership, their potential to deploy widespread defenses against ballistic missiles, and their extensive efforts in directed-energy weapons technologies, particularly high-energy lasers. Their vigorous effort in strategic force research, development, and deployment is not new, but is the result of an unswerving commitment for the past two decades to build up and improve their strategic force capabilities. (s)

2. The major changes in the force will include:

— Significantly better survivability from improvements in the submarine-launched ballistic missile (SLBM) force—through quieter submarines and longer range missiles—and deployment of mobile ICBMs in both rail- and road-mobile modes. Deployment of mobile ICBMs will improve the Soviets' capabilities to use reserve missiles for refire.[1] The largest element of their force capability, however, will continue to be ICBMs in potentially vulnerable silos. (See figure 1.)

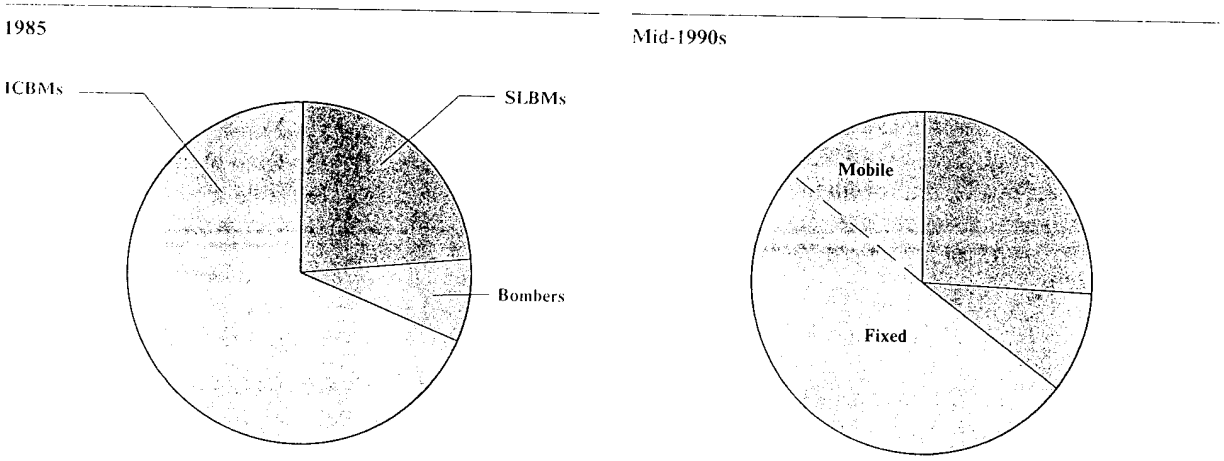
— An improved first-strike capability against hardened targets through continued deployment of ballistic missile systems with increasingly better accuracy, particularly through further improvements to the heavy ICBM force.

— More deployed warheads in the ballistic missile force, as new systems carrying larger numbers of multiple independently targetable reentry vehicles (MIRVs) replace older systems.

— A substantially increased number of deliverable warheads for the bomber force as a result of the deployment of new bombers with long-range, land-attack cruise missiles.

[1] *For an alternative view, see paragraph 100.* (U)

Figure 1
Soviet Intercontinental Attack Forces, Warhead Mix



— The introduction of land-attack sea- and ground-launched cruise missiles.

— Further improvements to the capability to maintain command, control, and communications connectivity to all forces.

— Enhanced operational flexibility and force sustainability.

— Enhanced air defense capability against low-altitude targets.

The Soviets would be able, by the mid-1990s, to:

— Expand their forces well beyond arms-control-limited forces, with increases in intercontinental attack forces from over 9,000 deployed warheads at present to between 16,000 and 21,000 deployed warheads.

— Deploy a widespread ground-based antiballistic missile (ABM) system for terminal defense of key military and industrial targets.

A. Offensive Force Developments

3. The Soviets will replace most of the weapons in their strategic offensive forces with new or modernized weapons by the mid-1990s. Many of these weapons are now being deployed or are in flight-testing, and some are in preflight development (see table). We believe we have identified most of them, but in many cases we do not have a good knowledge of their characteristics.

Ballistic Missiles

4. *ICBMs.* The flight test programs for the new SS-X-24 and SS-X-25 ICBMs are nearly completed, and the Soviets have made major strides in preparing for the deployment of these two ICBMs. The SS-X-24 and SS-X-25 missiles and improvements or follow-ons to them are expected to replace and assume the missions of all the existing Soviet ICBMs except the SS-18 heavy ICBM:

— The SS-X-24 is a MIRVed missile that carries 10 reentry vehicles (RVs). It is similar in size to Peacekeeper (MX), although the warheads are smaller and the accuracy is not as good. Preparations for deploying the SS-X-24 appear to be under way at the two SS-17 complexes. We expect silo deployment of this system will begin in mid-to-late 1986 and deployment on rail-mobile launchers in 1987.

— The SS-X-25 is smaller, similar in size to Minuteman, and is equipped with a single RV. The SS-X-25 will initially be deployed at a combination of newly constructed bases and converted SS-20 bases. Two new bases for the mobile SS-X-25 have been essentially completed, and 10 former SS-20 bases at two complexes in the central USSR have been deactivated for conversion to the SS-X-25 system. The Soviets have started to retire older silo-based single-RV SS-11s in preparation for SS-X-25 deployment. We expect the mobile SS-X-25 to be operational by late 1985; we do not expect it to be deployed in silos.

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

— New information and analysis increase our confidence in our judgment last year that the Soviets are developing and will deploy a new silo-based heavy ICBM to replace the SS-18 ICBM. We expect this system will have improved accuracy and improved range or throw weight capability; [redacted] It probably will begin flight-testing in about 1986 or 1987 and begin replacing the current SS-18s in about 1988 or 1989.

— A follow-on or an improvement to the SS-X-24, or possibly both, will probably be tested for deployment in the late 1980s to early 1990s. An improved SS-X-24 would have somewhat better accuracy but retain the same booster, resulting in no major increase in throw weight. A follow-on, which would use a new booster, could have increased throw weight.

— A follow-on to the road-mobile SS-X-25 that may have a three-RV payload option, as well as a single-RV option, could be available for deployment by about 1990.

5. *SLBMs.* An extensive modernization program now under way will result in substantial improvements to the MIRVed SLBM force by the mid-1990s:

— The MIRVed SS-N-20 SLBM became operational in 1983 on the Typhoon nuclear-powered ballistic missile submarine (SSBN). Three Typhoon SSBNs have been launched so far—two are operational—and at least three, probably four, additional Typhoons are under construction.

— The Soviets began flight-testing the MIRVed SS-NX-23 SLBM from a D-IV-class SSBN in 1984. It appears [redacted] significantly improve its accuracy, although probably not enough to make it hard-target capable. The SS-NX-23 will begin deployment in late 1985 or early 1986 on D-IV-class SSBNs (see figure 2) and will probably also be backfitted into the D-III-class SSBNs that are now equipped with the SS-N-18 SLBM. The second D-IV was launched in March 1985 and one additional D-IV is under construction.

— A follow-on to the MIRVed SS-N-20 SLBM, with improved propulsion, guidance, and payload systems, is expected to begin flight-testing in about late 1985 and be ready for deployment by about 1988 on a modified Typhoon SSBN. An accurate one-RV variant of this system may be deployed in limited numbers in the early 1990s.

Soviet Strategic Offensive Weapon Systems in Development

ICBMs	
Systems in flight-testing	*Estimated initial deployment*
SS-X-24, in silos	1986
Rail-mobile SS-X-24	1987
SS-X-25, road-mobile	1985
Systems in pre-flight-test development	*Estimated first flight test*
SS-18 follow-on	1986-87
SS-X-24–class ICBM, in silos and rail-mobile	1986-90
SS-X-25 follow-on	1987
SLBMs	
Systems in flight-testing	*Estimated initial deployment*
SS-NX-23, D-IV SSBN	1985-86
Systems in pre-flight-test development	*Estimated first flight test*
SS-N-20 follow-on	1985-86
SS-NX-23 follow-on	1987-88
Bombers and cruise missiles	
Systems in flight-testing	*Estimated initial deployment*
Blackjack bomber	1988-89
Candid tanker	1985-86
SS-NX-21 SLCM	1985
SSC-X-4 GLCM	1985-86
Large supersonic SS-NX-24 SLCM	1986
Systems in pre-flight-test development	
Cruise missile upgrades, follow-ons likely	
Bomber upgrades likely	

— The Soviets are probably developing a follow-on to the MIRVed SS-NX-23 SLBM that potentially will have increased throw weight. We estimate that this system will be substantially different from the SS-NX-23 and consequently be deployed not on D-class SSBNs, but rather on a new class of SSBN that we project to enter the force in the early 1990s. There is an alternative view that the system will be merely an improvement to the SS-NX-23 and be deployed on D-IV and possibly D-III SSBNs, and that a new SLBM will be tested and deployed on a new class of SSBN in the early-to-middle 1990s.[1]

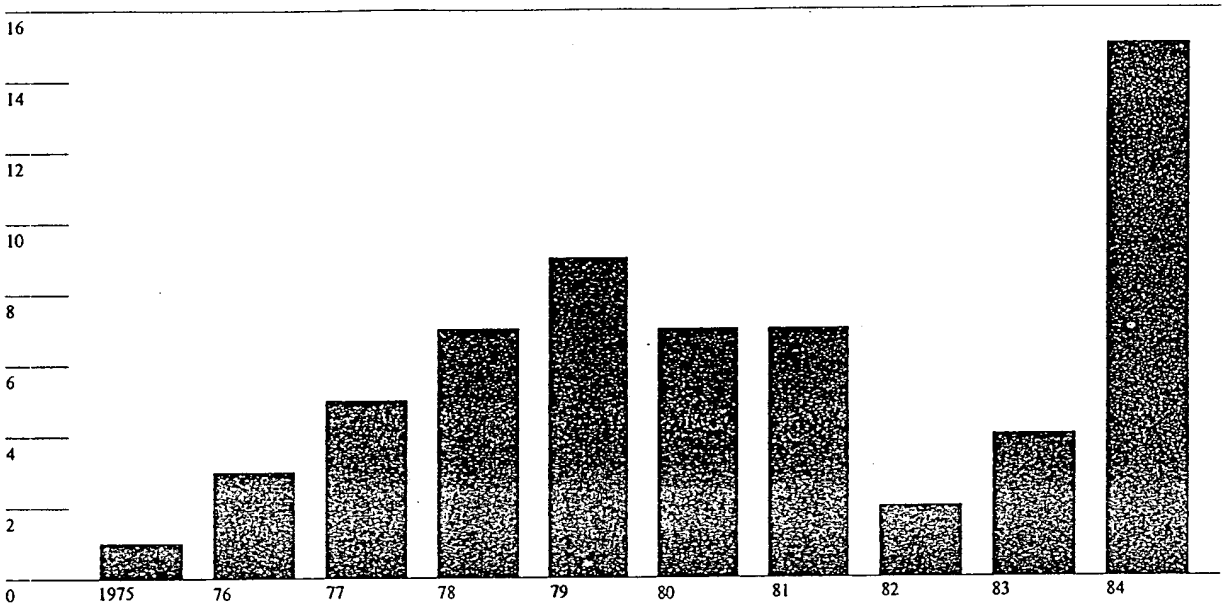
[1] *The holder of this view is the Director of Naval Intelligence, Department of the Navy.*

6. ***IRBMs.*** During 1984 the Soviets embarked on an unprecedented program for constructing new SS-20 bases, starting more new bases than in any previous year. (See figure 3.) They also began flight-testing a follow-on to the SS-20 in 1984. Initial analysis indicates that, compared with the SS-20, the new missile has improved accuracy and increased throw weight capability. Like the SS-20, it has three RVs. We expect it to be deployed beginning in late 1986 or early 1987.

Bombers and Cruise Missiles

7. In 1984 the Soviets deployed the AS-15 air-launched cruise missile (ALCM)—their first long-range, land-attack cruise missile—and others will follow over the next few years. By the mid-1990s the

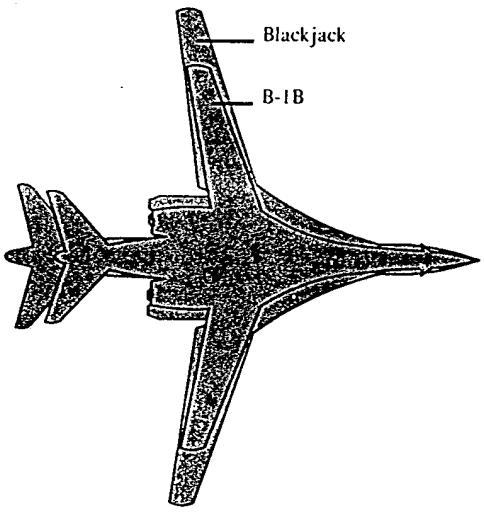
Figure 3
Construction Starts for Soviet SS-20 Bases, 1975-84



Soviets will have a thoroughly modernized long-range bomber force:

- The AS-15 has an estimated range of 3,000 to 3,500 kilometers, flies at low altitude and subsonic speeds, and probably has a guidance update system that could give it an accuracy of 100 to 150 meters.
- The AS-15 is being deployed on the new Bear H, enabling the Soviets to deploy the ALCM at least four years earlier than if they had waited for the Blackjack to be ready. We have identified 33 Bear H aircraft produced through the end of 1984, and they currently are producing 14 per year.
- The Soviets continue flight-testing their new supersonic Blackjack intercontinental bomber. Blackjack, similar in appearance to the US B-1B bomber (see figure 4), will begin deployment in about 1988 or 1989—a year later than we projected last year. It probably will carry ALCMs and bombs.
- We expect the Soviets will deploy in 1985 a sea-launched cruise missile (SLCM), the SS-NX-21, that can be launched from a standard-size Soviet torpedo tube. It could be deployed on several classes of attack submarines; likely candidates are the V-III, and the new Akula-, Y-, S-, and M-class nuclear-powered attack submarines (SSNs). We expect initial deployment on the V-III because the new classes will be available only in small numbers for the next several years.
- A ground-launched cruise missile (GLCM), the SSC-X-4, similar in characteristics to the SS-NX-21, is probably going to be deployed in late 1985 or 1986. [redacted]
- During 1984 the Soviets began flight-testing from a submarine the SS-NX-24 long-range, land-attack SLCM. [redacted] It is substantially larger than the SS-NX-21 and is

Figure 4
Comparison of Soviet Blackjack and US B-1B Bombers



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fired from unique launch tubes. We expect the initial deployment of this system to occur in 1986 on the 12-tube Y-class nuclear-powered guided-missile submarine (SSGN)—reconfigured from a Y-class SSBN—that has been used for at-sea testing. We estimate deployment on a new class of SSGN dedicated to carrying SS-NX-24s will occur in about 1986, although we have not yet identified construction of such a submarine. There may also be a GLCM version of the SS-NX-24.

— The Soviets continue to test a new tanker aircraft based on the Candid transport airframe. This tanker will have a multipurpose role supporting tactical, defensive, and naval forces as well as the strategic bomber force. We expect it to be operational in 1985 or 1986.

B. Defensive Force Developments

8. The Soviets are continuing vigorous research, development, and deployment programs for active and passive strategic defenses. Over the next 10 years we expect them to deploy a number of new types of weapons and retire many older ones, resulting in a significant improvement in their strategic defense capabilities. (See paragraphs 56 to 61 for discussion of directed-energy weapons; paragraphs 50 to 53 for antisubmarine warfare developments.)

Ballistic Missile Defense

9. We see under way significant developments for ground-based Soviet ballistic missile defenses:

— The Soviets are upgrading and expanding the Moscow ABM system, within the limits of the ABM Treaty. When completed by about 1987, the improved system will have 100 silo-based interceptors. We project deployment of 32 of the long-range modified Galosh for intercepts outside the atmosphere, and 68 of the high-acceleration [ ] for intercepts within the atmosphere. Some silos for the modified Galosh will probably be operational in 1985. Some [ ] silos probably will be completed in 1985; however, the Soviets will have no capability to use [ ] with the Moscow system until the engagement radar at Pushkino is operational (in about 1987), or unless they employ Flat Twin as an interim engagement radar.

— Construction and testing continue on the new large phased-array radar network, including the Krasnoyarsk radar. (See figures 5 and 6.) Three of the six new radars will expand the azimuthal coverage of the ballistic missile detection and tracking system. By the end of the decade, when the network is expected to be fully operational, the Soviets will have a much improved capability for ballistic missile early warning, attack assessment, and accurate target tracking. These radars will be technically capable of providing battle management support to a widespread ABM system, but there are uncertainties and differences of view about whether the Soviets would rely on these radars to support a widespread ABM deployment.

— The Soviets are continuing development efforts that give them the potential for widespread ABM deployments beyond the upgraded defenses at Moscow during the period of this Estimate. An ABM system that included Flat Twin engagement radars, Pawn Shop guidance radars, above-ground launchers, and [ ] interceptor could be deployed relatively quickly—a site could be deployed in months rather than years. [

]

— The SA-X-12 system, to be deployed in the Soviet ground forces in 1985-86, can engage conventional aircraft, cruise missiles, and tactical ballistic missiles. We are uncertain about its potential capabilities against strategic missiles. On the basis of a number of assumptions [

] we conclude that it could have capabilities to intercept some types of US strategic ballistic missile RVs. There is the possibility, therefore, that the Soviets could deploy some SA-X-12s in an ABM role, either while staying within ABM Treaty launcher limits or to supplement a widespread ABM deployment. We judge, however, that the needs of the Soviet ground forces for this weapon in a tactical role are such that, for at least the next several years, it would generally be unavailable for strategic defense. Its technical capabilities bring to the forefront the problem that improving technology is blurring the distinction between air defense and ABM systems. As newer, more complex systems are developed, the problem of distinguishing between air defense and ABM systems will be further complicated.

Air Defense

10. The Soviets are developing and deploying new air defense systems designed to improve their early

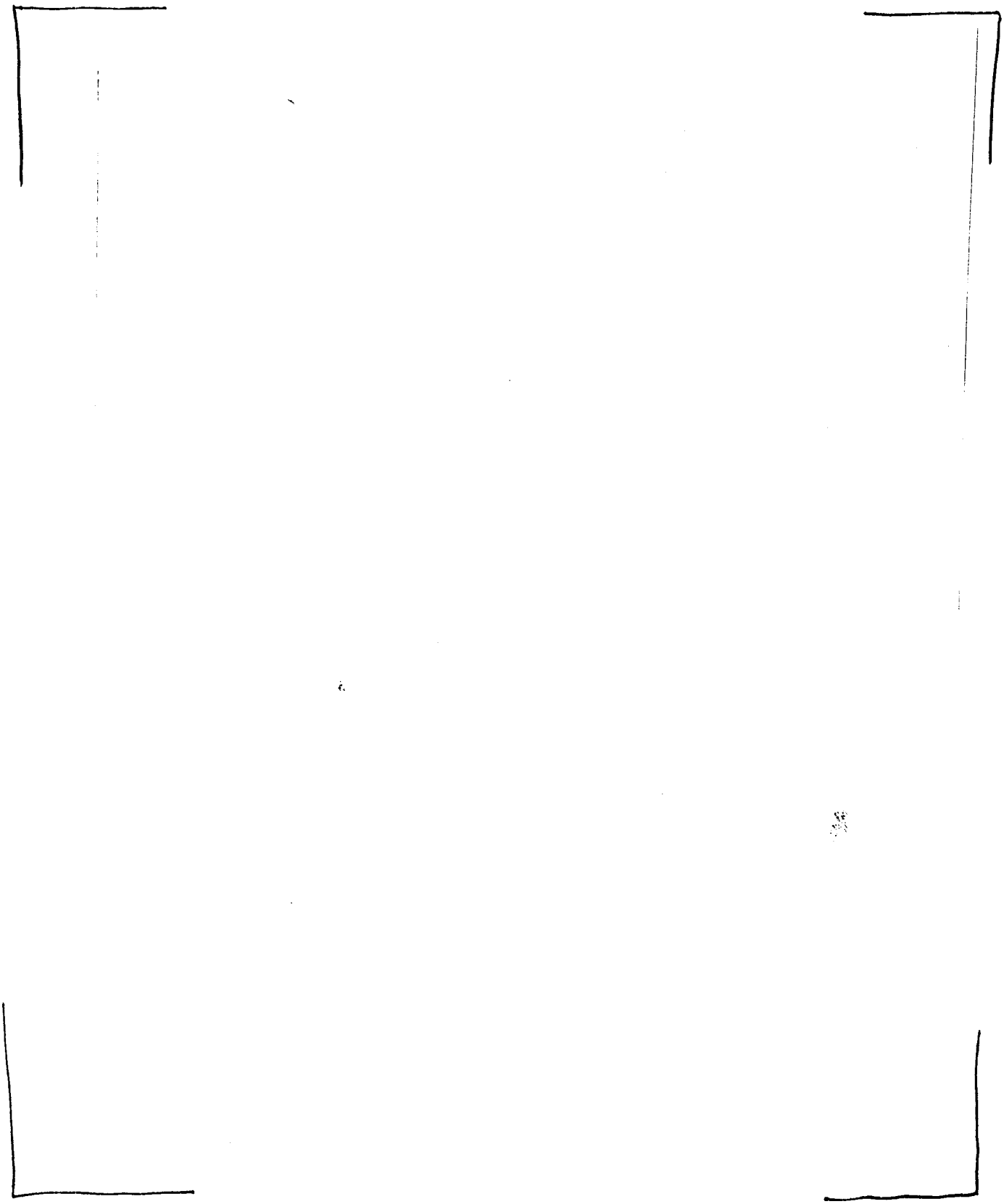
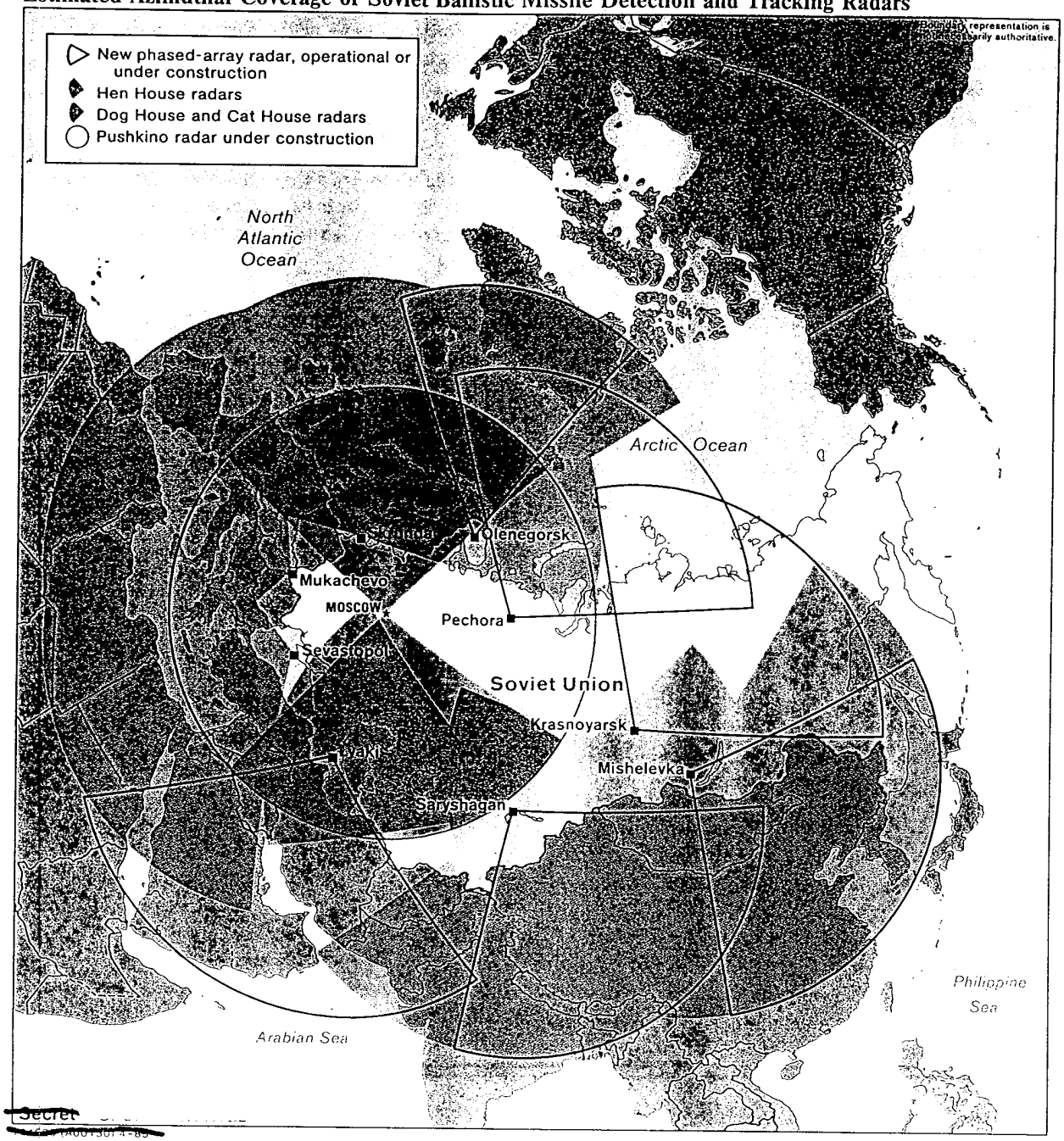


Figure 6
Estimated Azimuthal Coverage of Soviet Ballistic Missile Detection and Tracking Radars



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warning and detection, tracking, command and control, and intercept capabilities against aircraft and cruise missiles. Their efforts are aimed at overcoming problems in detecting and destroying targets with a low radar cross section, using electronic countermeasures, employing air defense saturation tactics, or flying at a low altitude:

— The Soviets are continuing to deploy the SA-10 strategic surface-to-air missile (SAM) system, which has a substantially better capability against low-altitude targets than that of older systems. Other Soviet strategic SAMs have little or no capability against cruise missiles flying at 100 meters or less. Sixty SA-10 sites were operational and another 26 were under construction at the end of 1984; over half of the sites are in the Moscow area. The deployment rate has been slower than we originally forecast, but there is recent evidence indicating the rate will increase. Deployment of a self-propelled road-mobile version will probably begin in 1985.

— The Soviets are continuing to improve the capabilities of their tactical SAMs. The 1980 air defense reorganization facilitates integrated operations between units of strategic and tactical SAMs. Although the tactical SAMs have shorter ranges, many of the systems are more effective against low-altitude targets than are strategic SAMs.

— The Soviets are currently developing more than 15 different types of air defense early warning and ground-controlled intercept (GCI) radars, as well as improving existing ones. The Soviets are seeking to improve clutter rejection, resolution, and low-altitude coverage; increase resistance to jamming; and develop the capability to operate in more diverse frequency bands. They are also developing jammers that could force low-altitude aircraft to fly higher.

— Deployment of the Foxhound A, the first Soviet aircraft with lookdown/shootdown and multiple tracking and engagement capabilities, is continuing, but at a slow rate.

— In 1984 the Soviets began deploying the Fulcrum A, which has an improved lookdown radar and carries the new AA-10 air-to-air missile (AAM). The Fulcrum A was designed for air-to-air combat missions and for defense against bombers; it also could be used against cruise missiles. Deployment of the Flanker, which has capabilities similar to those of the Fulcrum A, will probably begin in late 1985.

— The Mainstay airborne warning and control system (AWACS) aircraft will become operational in 1985. It will substantially improve Soviet capabilities for air combat and control, as well as fill in gaps in ground-based radar coverage and improve low-altitude detection capability.

C. Factors Influencing Soviet Strategic Forces

Political and Military Factors

11. Moscow's concept of its relationship with the United States is fundamentally adversarial. This concept, based on ideological antagonism and geopolitical rivalry, influences Soviet behavior and also shapes Soviet perceptions of US policies toward Moscow. Its most dramatic manifestation is growing Soviet military power that forms the cutting edge of the USSR's persistent efforts to extend its global presence and influence at the expense of the United States and the West. Soviet leaders view strategic arms policy in the context of a persistent, long-term struggle between two world systems of socialism and capitalism, in which socialism—with Moscow in charge—is destined ultimately to triumph.

12. The Soviets apparently 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. Nevertheless, they regard nuclear war as a continuing possibility. 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.

13. Strategic nuclear forces underpin an assertive Soviet foreign policy in peacetime by projecting an image of military strength. Soviet leaders appreciate

the political utility of world perceptions of military power and have long stressed the contribution of strategic forces to the USSR's superpower status. They recognize that military power is their principal foreign policy asset and that continued high levels of defense efforts, both in acquisition of forces and in research and development programs, are necessary to sustain and expand Moscow's global role. They view their current strategic position as supporting the conduct of a foreign policy whose primary goal is the expansion of Soviet power and influence abroad. Soviet leaders today perceive, however, that US actions on a broad front have the potential to undercut their strategic and political expectations by shifting the central strategic and regional power equations against Soviet interests, and they believe the United States is likely to continue the policies and programs of the past several years through the rest of the decade.

14. The Soviet approach to nuclear strategy has been inherently incompatible with Western notions that make a sharp distinction between "deterrence" and "war-fighting" requirements. The Soviets have rejected mutual vulnerability as the basis for the US-Soviet strategic relationship. Moscow has consequently resisted constraints on its deployment of counterforce weapons and its development of various defensive systems designed to limit damage to the Soviet Union.

15. We believe the Soviets are determined to prevent any erosion—as a result of the US strategic modernization efforts or those of their other potential enemies—of the military gains the USSR has made over the past decade. They recognize that new US strategic systems being deployed or under development will increase the threat to the survivability of their silo-based ICBM force, complicate their antisubmarine warfare (ASW) efforts, and present their air defense forces with increasingly complex problems. By their actions and propaganda, the Soviets have demonstrated they are very concerned about the US Strategic Defense Initiative (SDI) and its focus on advanced technology. In their view, it could force them to redirect their offensive ballistic missile development programs to reduce vulnerabilities or could stimulate a costly, open-ended high-technology competition for which they probably are concerned that the United States can outpace their own ongoing efforts. They are probably also concerned that SDI will lead to a sustained US effort in strategic defenses—an area in which the Soviets have enjoyed a virtual monopoly. NATO deployments of the Pershing II missile and the GLCM present the Soviets with new problems and uncertainties, including threats to the survivability of some important strategic assets in the western USSR. Programed changes to French, British, and Chinese nuclear forces also must be considered by the Soviets in establishing requirements for their own peripheral attack forces, and in evaluating the survivability of their intercontinental strategic assets during a period of theater nuclear conflict.

16. Soviet leaders view arms control policy as an important factor in advancing their strategy of achieving strategic advantage. They have been willing to negotiate restraints on force improvements and deployments when it serves their interests. Moscow has long believed that arms control must first and foremost protect the capabilities of Soviet military forces relative to their opponents. The Soviets also seek to limit US force modernization through both the arms control process and any resulting agreements. In the future, this could become a higher priority than it has been in past negotiations, particularly if the Soviets believed the United States was actually going to deploy a strategic defensive system based on the Strategic Defense Initiative.

17. The revival of the arms control process will be used by them to pursue important near-term political goals, with or without agreements. A salient feature of Soviet arms control policy will be its emphasis on trying to limit US ballistic missile defense and space warfare capabilities. The Soviets will try to use arms control discussions as a means of delaying or undercutting the US SDI program, but we do not believe they will offer major concessions to halt the program as long as it remains in the research stage and is strongly susceptible to unilateral US restraint. Moscow will not agree to steps that would significantly detract from the key elements of Soviet nuclear strategy: counterforce strikes against enemy nuclear forces and damage limitation. Thus, deep reductions in the Soviet ICBM force, especially heavy ICBMs, remain unlikely. The Soviets will not accept an agreement that would prevent them from continuing a significant level of force modernization. They will look to arms control to help slow US technological development—particularly in areas where they believe themselves to be at a long-term technological disadvantage—while trying to avoid slowing their own broad-based research and development efforts.

18. The Soviets will face important decisions in the next few years as they proceed with flight-testing for ballistic missiles scheduled for deployment beginning

in the late 1980s and early 1990s. Specifically, they will have to decide whether to test new ICBMs in such a way as to conform, or appear close to conforming, with limitations on characteristics and improvements from the unratified SALT II Treaty. They appear to have technical options for some of their new systems that will allow them to go either way.

They also may be developing a MIRVed payload option for a follow-on to the SS-X-25 ICBM—which would make it a "new type" of ICBM and would almost certainly drive the USSR over the limit on MIRVed ICBM launchers. The Soviets could test such missiles with less than what we estimate to be their maximum potential throw weight and MIRV capability.

Economic Factors

19. Evidence from flight-testing, production facilities, and deployment sites indicates the Soviets will make increased resource commitments over the next decade to their already formidable strategic forces research, development, and deployment programs. There has been a significant expansion in research and production facilities:

- In 1980 the Soviets began a program to expand facilities involved with the final assembly of strategic offensive missiles; since then, floorspace at major missile plants has increased some 60 percent, a rate of growth unmatched since the early 1960s. The added emphasis is on cruise missiles and solid-propellant ICBMs that will enter the force in the mid-to-late 1980s.
- Construction of additional production floorspace for heavy bombers has resumed after a hiatus of nearly three decades.
- Design bureaus and research institutes are being expanded, providing additional facilities for design and development of weapons that would reach the Soviet forces in the 1990s and beyond.

20. These efforts will place increased demands on the troubled Soviet economy; we estimate that, depending on the pace and extent of the effort, strategic forces (both offensive and defensive) will require annual increases in spending ranging from 5 to 7 percent for the next five years (see paragraph 62) at a time when overall growth in the Soviet economy is expected to average only about 2 percent a year. This rate of growth, although substantial, would not be greater than those incurred during the previous strategic modernization efforts of the 1960s and 1970s. During those periods, however, the growth rate of the economy was substantially higher. Since the mid-1970s, growth rates have slowed in nearly every sector of the Soviet economy, as transportation snarls, inadequate supplies of raw materials, and declining labor productivity have all contributed to a steady decline in industrial growth.

21. Despite serious economic problems since the mid-1970s, Soviet military procurement has continued at high annual levels; in particular, the Soviets have continued to deploy large quantities of new strategic weapons and substantially improve both their offensive and defensive capabilities. Since the mid-1970s, they have fielded a MIRVed ICBM force, and then improved it; deployed a MIRVed SLBM force on two new classes of SSBNs; and deployed a mobile SS-20 force.

22. As in the past, Soviet decisions on major military programs and force modernization will continue to be driven primarily by calculations of political-strategic benefits and the dynamism of weapons technology. We do not believe that economic problems will lead the Soviets to abandon major strategic weapon programs or forsake force modernization goals. We believe the Soviets—if they felt it necessary—could and would substantially increase military spending over the levels we have projected, even though a steep increase would have painful consequences for economic growth over the long term and for the well-being of nonmilitary industry and the consumer sector in the shorter term. As a result of the stark economic realities, however, decisions involving the rate of strategic force modernization probably will be influenced by economic factors more now than in the past and some deployment programs could be stretched out. We judge, however, that strategic forces will continue to command the highest resource priorities and therefore would be affected less by economic problems than any other element of the Soviet military. (See inset for arms control considerations.) (See paragraphs 62-67 for specifics on economic implications of projected forces.)

D. Future Strategic Forces

23. Using their extensive military research, development, and production base, the Soviets continue to develop, improve, and deploy offensive and defensive

Economic Considerations and Arms Control

Economic considerations almost certainly have not been a determining factor in Soviet arms control policy, and are unlikely to become so:

- Significant cost savings would not accrue to the Soviets even if Moscow concluded agreements in the strategic arms reduction talks (START) or those on intermediate-range nuclear forces (INF) that considerably reduced their strategic nuclear forces. The USSR's strategic offensive forces (including both intercontinental and intermediate-range systems) at present represent only about 10 percent of their total military costs, with another 10 percent for strategic defense, largely in air defense.
- While their economic problems are severe, we see no signs that the Soviets feel compelled to forgo important strategic programs or that they will make substantial concessions in arms control negotiations in order to relieve economic pressures.
- Soviet force decisions and arms control decisions are likely to continue to be driven by calculations of political-strategic benefits and the dynamism of weapons technology.

Nevertheless, the Soviets probably believe that arms agreements can provide some relief in the economic area by:

- Setting quantitative and qualitative bounds on procurement.
- Increasing the calculability of future military outlays and channeling competition into predictable (and thus limited) areas.
- Helping create a political environment that would contribute to a slowing of the overall US defense effort, particularly in areas using advanced technology, thereby easing military spending demands on the USSR.

Soviet interest in slowing the pace of military competition with the United States through arms control negotiations is likely to increase with the slowdown in economic growth. The Soviets will be particularly sensitive to the prospect of further strain on the technology sector of their economy and additional competing resource demands stemming from a prospective open-ended, high-technology arms competition with the United States that could result from the Strategic Defense Initiative.

weapons of virtually every type, and to improve the war planning and the command, control, and communications capabilities of their strategic forces. Our quantitative projections of Soviet strategic forces in 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, they have an expanded number of options in deciding on the size, mix, and characteristics of their strategic nuclear forces and supporting systems. Our quantitative projections for five to 10 years from now are based on evidence regarding these options, as well as our perceptions of Soviet priorities.

24. Fundamental to the options the Soviets have for the composition of their future forces is their large military research and development (R&D) base and their expanding production capability. Their vigorous and systematic research efforts, aided by technology acquired from the West, have resulted in the development of increasingly sophisticated weapons and supporting systems. The overall quality of the Soviets' future weapon systems will depend to a large degree on their ability to develop and exploit new technologies, including those acquired from the West.

Strategic Offensive Forces

25. Our projections of Soviet strategic offensive forces over the next 10 years should not be considered precise forecasts. Rather, they represent broad trends based on a large body of evidence on Soviet weapon development programs and data on Soviet testing, production, and deployment practices. The five forces we present illustrate possible Soviet force postures under different assumptions. All assume that, at least through 1985, the Soviets do not take detectable actions inconsistent with the terms of the unratified SALT I Interim Agreement and key provisions of the unratified SALT II Treaty. After that the projected forces diverge, reflecting an expanded number of options the Soviets have in deciding the size, mix, and characteristics of their nuclear forces and supporting systems and in tailoring their forces to specific arms control environments. (See paragraphs 28 to 31.)

26. Certain trends are clear:

- The Soviets will continue their steady modernization of strategic offensive forces, replacing most of the weapons in their arsenal with new or modified systems by the mid-1990s. For at least the next several years the number of deployed warheads will grow, as new missiles or aircraft with larger numbers of warheads replace ones carrying fewer warheads.

— ICBMs will remain the key element of the Soviets' intercontinental strike forces. The trend is toward solid-propellant missiles and more warheads per missile. The SS-11 and SS-13 will be replaced by the SS-X-25, and the medium ICBMs—the SS-17 (with four RVs) and SS-19 (with six RVs)—by SS-X-24–class ICBMs, each with 10 RVs. High survivability for a portion of the force will be achieved by the deployment of some 500 to 700 new mobile ICBMs—road-mobile SS-X-25s and rail-mobile SS-X-24s (see figure 7). Deployment of mobile ICBMs will also increase Soviet capabilities to reload and refire land-based strategic ballistic missiles.[3]

— The Soviets' hard-target potential, however, will continue to reside primarily in their silo-based, heavy ICBMs. That hard-target capability would be improved with the deployment of an SS-18 follow-on system in the late 1980s, probably with improved accuracy and increased throw weight; and further improvements by the mid-1990s. We expect no significant reduction in the number of heavy ICBM launchers (308). The Soviet hard-target capability could also be supplemented by hard-target-capable versions of the SS-X-24–class ICBM in the early-to-middle 1990s. An alternative view holds that the SS-19 is and will continue to be an effective hard-target system.[4]

— The effectiveness of the mobile intermediate-range ballistic missile (IRBM) force will improve with the deployment of the SS-20 follow-on, which we project will have increased lethality over the current SS-20. We expect that the total number of deployed mobile IRBM launchers will grow to 477 to 540 launchers by 1987, a smaller number than we projected last year, because we did not then anticipate the deactivation of some SS-20 bases for conversion to SS-X-25 ICBM bases. By the mid-1990s all of these launchers will be equipped with the SS-20 follow-on.

— Modernization of the sea-based ballistic missile force will involve completion of the building program for the D-IV SSBN, probable backfitting of the SS-NX-23 missile into D-III SSBNs, deployment of additional Typhoon SSBNs, deployment of an SS-N-20 follow-on, and probably the introduction of a new SSBN carrying a new missile in the early 1990s. As a result, the Soviets will have replaced all of their deployed MIRVed SLBMs. (see figure 8). These changes will result in a substantial increase in SLBM RVs, improved operational capabilities, and enhanced survivability. Replacement of the SS-N-18 missiles on the D-III SSBNs with the longer range SS-NX-23 would enable the Soviets to protect these submarines with the Soviet Navy closer to the Soviet shores or to operate under ice, thereby overcoming what we believe the Soviets consider a major operational deficiency resulting from the limited range of the current missiles. The Soviets will also probably retain most of their older single-RV SLBMs on Y, D-I, and D-II SSBNs into at least the mid-1990s.

— The heavy bomber force is undergoing the first major modernization since the early 1960s with the deployment of AS-15 long-range ALCMs on new Bear H's and, probably beginning in 1988 or 1989, on Blackjack aircraft. We project the Soviets will deploy some 60 to 80 Bear H bombers and 60 to 120 Blackjacks. These changes will transform the heavy bomber force from a collection of largely obsolescent aircraft carrying few warheads to a modern force consisting primarily of Bear H and Blackjack aircraft, with a substantial increase in warheads (see figure 9).

— We expect the Soviets to deploy additional types of long-range, land-attack cruise missiles—two different types of SLCMs and at least one type of GLCM. The deployment of these cruise missiles, along with ALCMs, will represent a new strategic strike capability for the Soviets. They will have a multidirectional, low-cross-section, low- and high-altitude capability that will pose increasing problems for the air defense capabilities of the United States and its allies in Europe and Asia.

— Some older Soviet weapon systems are in the process of being retired. In late 1984 the Soviets deactivated 20 SS-11s, destroying 18 of the silos, and apparently deactivated 23 Bison bombers. (Some Bisons may be converted to tankers.) These recent retirements apparently are related to their force modernization efforts—impending deployments of mobile SS-X-25 ICBMs and the deployment in 1984 of the Bear H. They reflect a Soviet decision to modernize—at least in the near term—by replacing older forces rather than adding to their forces. The Soviets have also continued to retire Y-class SSBNs as new SSBNs enter the force.

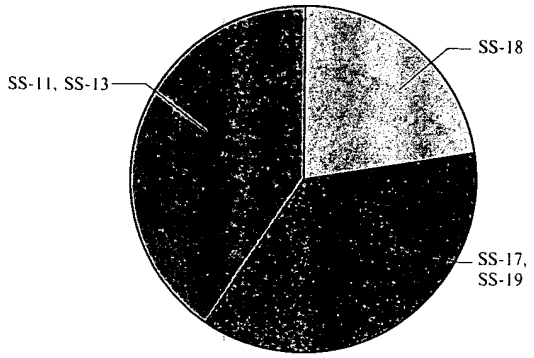
[3] *For an alternative view, see paragraph 100.*

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

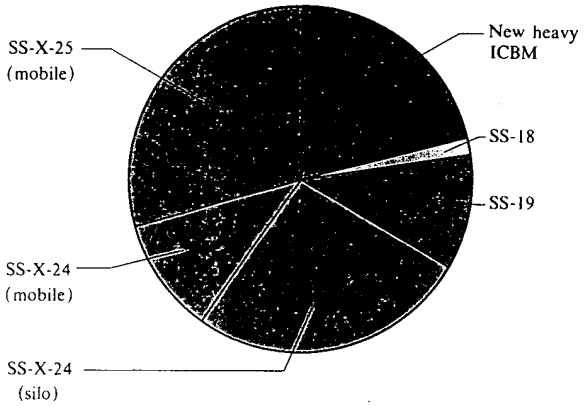
Figure 7
Modernization of Soviet ICBMs

Launchers

1985

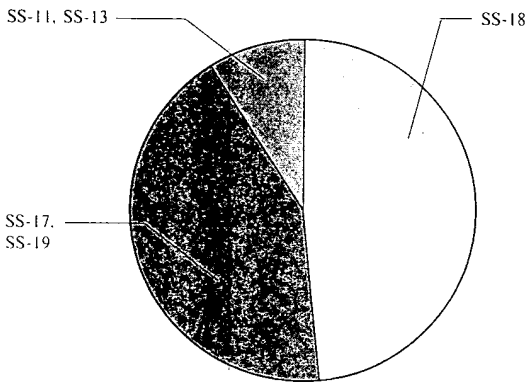


Mid-1990s

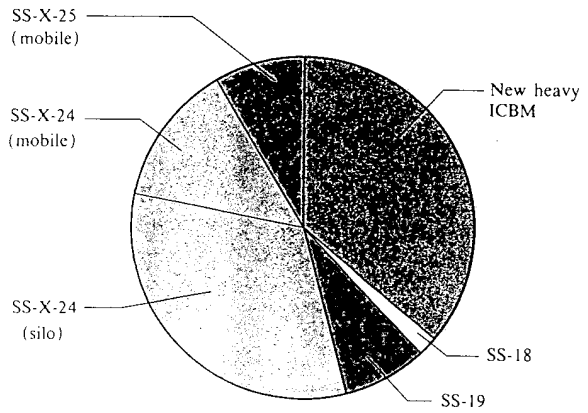


Warheads

1985



Mid-1990s

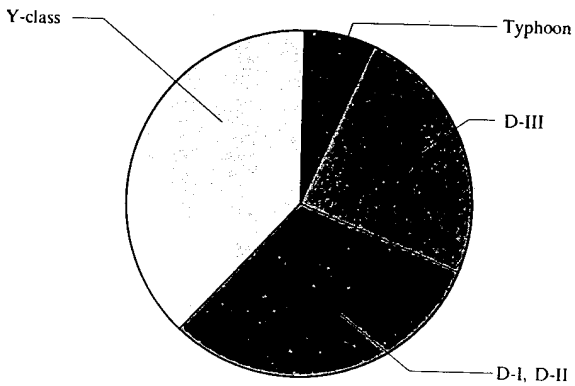


~~Secret~~

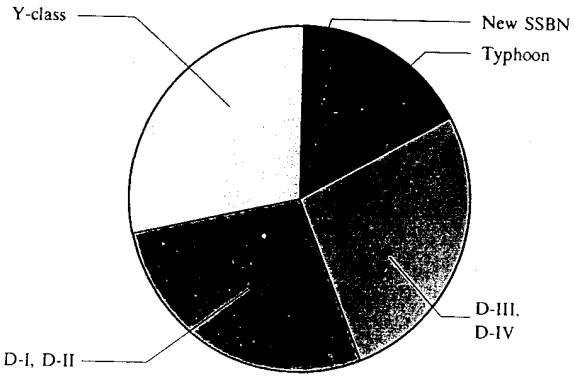
Figure 8
Modernization of Soviet SLBMs

Launchers

1985

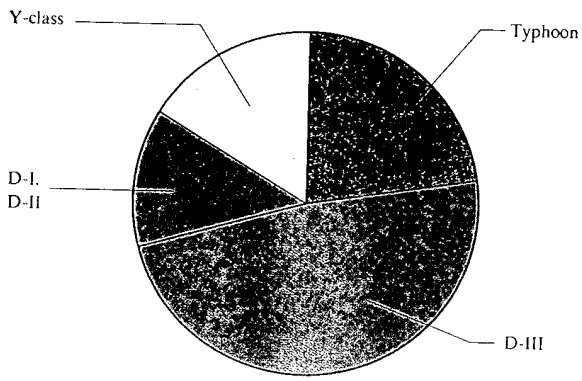


Mid-1990s

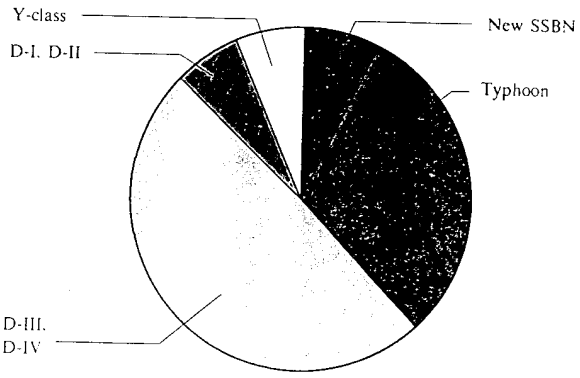


Warheads

1985



Mid-1990s

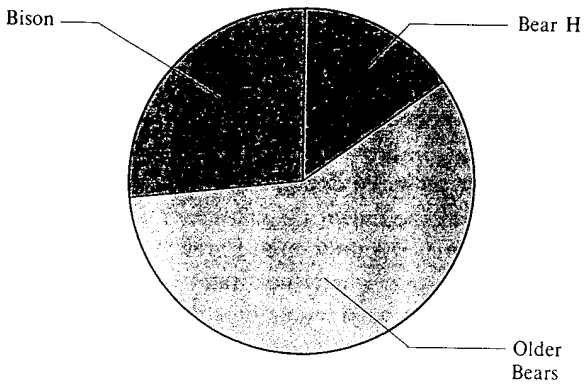


Note: Color changes for D-III and Typhoon in the mid-1990s indicate new missiles deployed in existing submarine classes.

Figure 9
Modernization of Soviet Heavy Bombers

Heavy Bombers

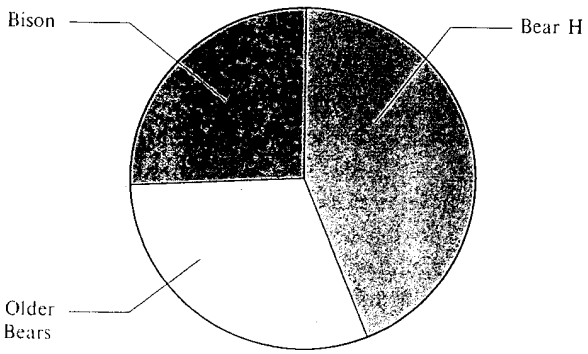
1985



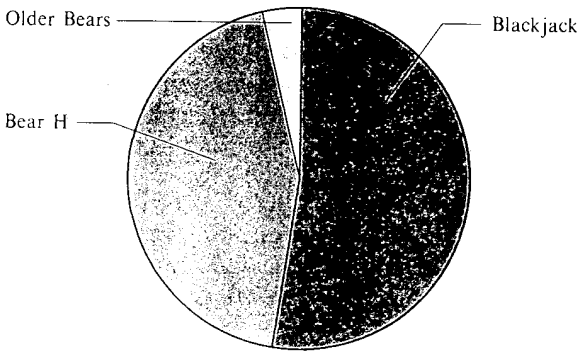
Mid-1990s

Heavy Bomber Weapons

1985



Mid-1990s



27. Estimates of the number of warheads on various Soviet ballistic missiles are becoming more uncertain [redacted] While there are differing views, we judge that the Soviets have deployed, and will continue to deploy, some missiles with more warheads than the maximum number flight-tested—the total of RVs actually released plus those simulated. [redacted] The number of warheads could be significantly underestimated under an arms control agreement that counted deployed warheads by using the maximum number flight-tested on each missile type.

28. *Force 1* of our set of force projections is based on the assumption that, while no formal arms control agreements are concluded, negotiations continue, and the Soviets choose not to expand their forces beyond the quantitative limits set by SALT I and SALT II—current levels of strategic nuclear delivery vehicles (SNDVs), MIRVed missiles, SSBNs, and SLBM launchers—until late 1990, although the strategic forces are substantially improved by replacement of older systems with newer ones, at a pace reasonably consistent with that observed over the last 10 years. We cannot make a judgment as to the likelihood that, in the absence of a formal offensive arms control agreement, the Soviets would develop forces along the lines of Force 1, as compared with expanding their forces along the lines of Force 2 or Force 3. The circumstances that would affect these options include the likelihood of continuing arms control negotiations, the overall state of the US-Soviet relationship, and the extent to which the Soviets seek to ensure, through the augmentation of their strategic forces, that they could penetrate prospective US defenses. This force assumes, with no formal agreement reached, some expansion beyond these limits in the early 1990s, in particular as the Soviets stop adherence to limits on the number of MIRVed missile systems. There is an alternative view that it is unlikely the Soviets would maintain their force growth within these arms control constraints for such an extended period of time without agreements in effect.[5]

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

29. *Forces 2 and 3* show our estimates of the direction, scope, and pace of expansion that Soviet forces could take in the absence of any arms control constraints after 1985. Force 2 represents a steady upgrade of the strategic attack forces. Projected deployment rates for new systems are consistent with available evidence on ongoing and new programs and with recent trends in deployment rates and force composition. Many of the features are similar to those of Force 1. Force 3 represents a higher level of effort than Forces 1 and 2 in the areas of production, deployment, and, in some cases, technological achievement. The differences between this force and Forces 1 and 2 reflect our uncertainties about the technological choices and improvements that the Soviets might make, their potential deployment levels for some new systems, and their own evaluation of their potential offensive force requirements. Force 3 is not a maximum effort, and is not the upper bound for either technological or production potential, but would require a substantially greater commitment of resources than Force 2.

30. ***Force 4: Soviet START and INF.*** This force is based on our understanding of the Soviet proposals at the strategic arms reduction talks (START) and at the negotiations on intermediate-range nuclear forces (INF) as they existed at the time the Soviets broke off those negotiations in late 1983. We assume the Soviets' proposals would have allowed the deployment of the ballistic missiles they are now testing, and this force shows their deployment.

31. ***Force 5: US START and INF.*** Force 5 is not a projection as such. Rather, it is an illustration of the effects on Soviet forces of the 1983 US START and INF negotiating proposals. We note that it is highly unlikely the Soviets would agree to restructure their forces along the lines of these proposals. We judge that the Soviets would not reduce their heavy ICBM force by more than a token number, given the importance they attach to this force, and it is unlikely they would destroy recently deployed systems or those now in the pipeline.

32. ***Intercontinental Attack Forces.*** Figure 10 illustrates the trends in the number of deployed Soviet ICBMs and SLBMs that result from our various force projections. We do not expect significant growth in the numbers of these launchers. Force 3 has the largest growth, about 15 percent, due to a larger number of mobile ICBM launchers and retention of more silo-based missiles. The 1983 Soviet START proposal,

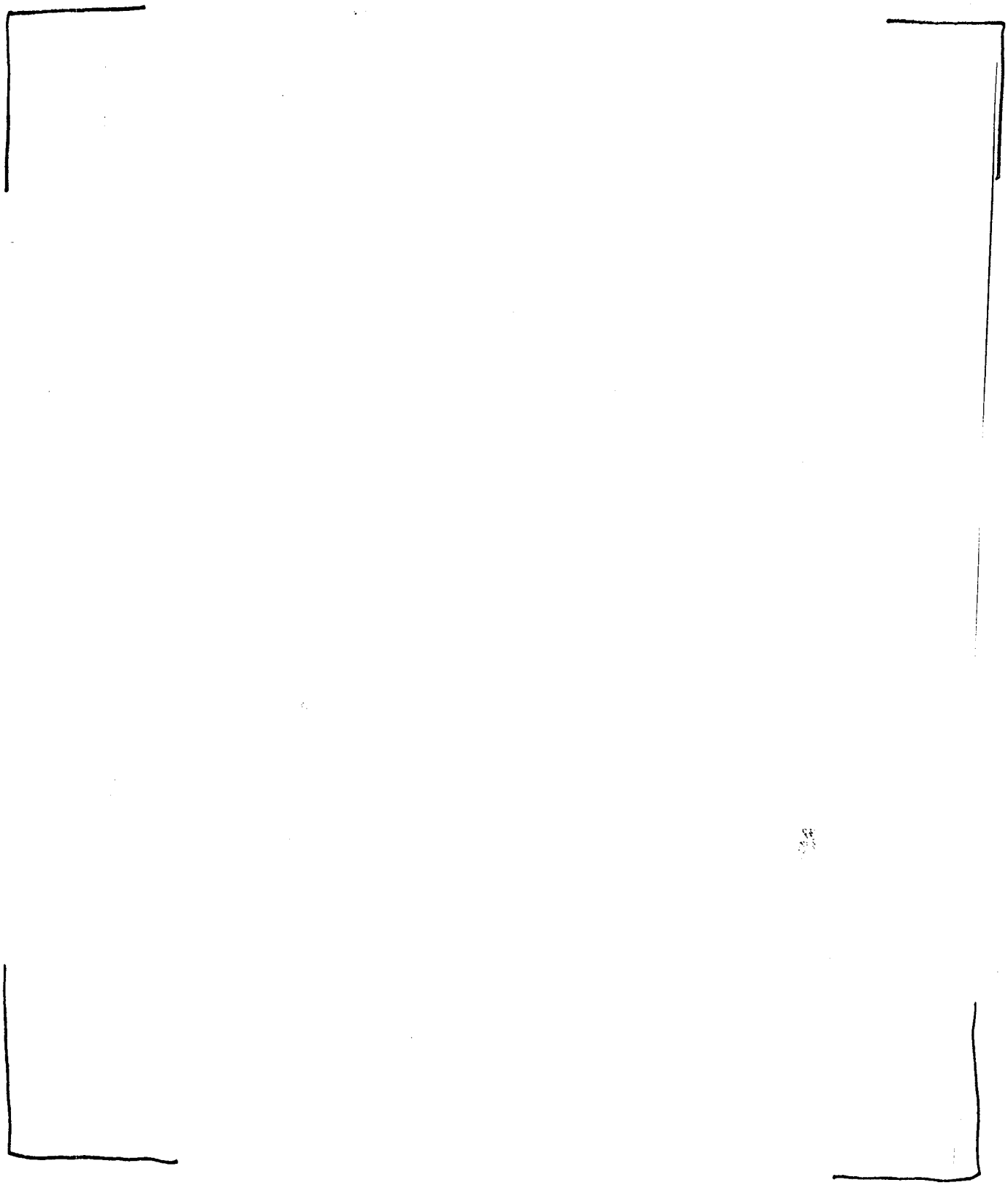
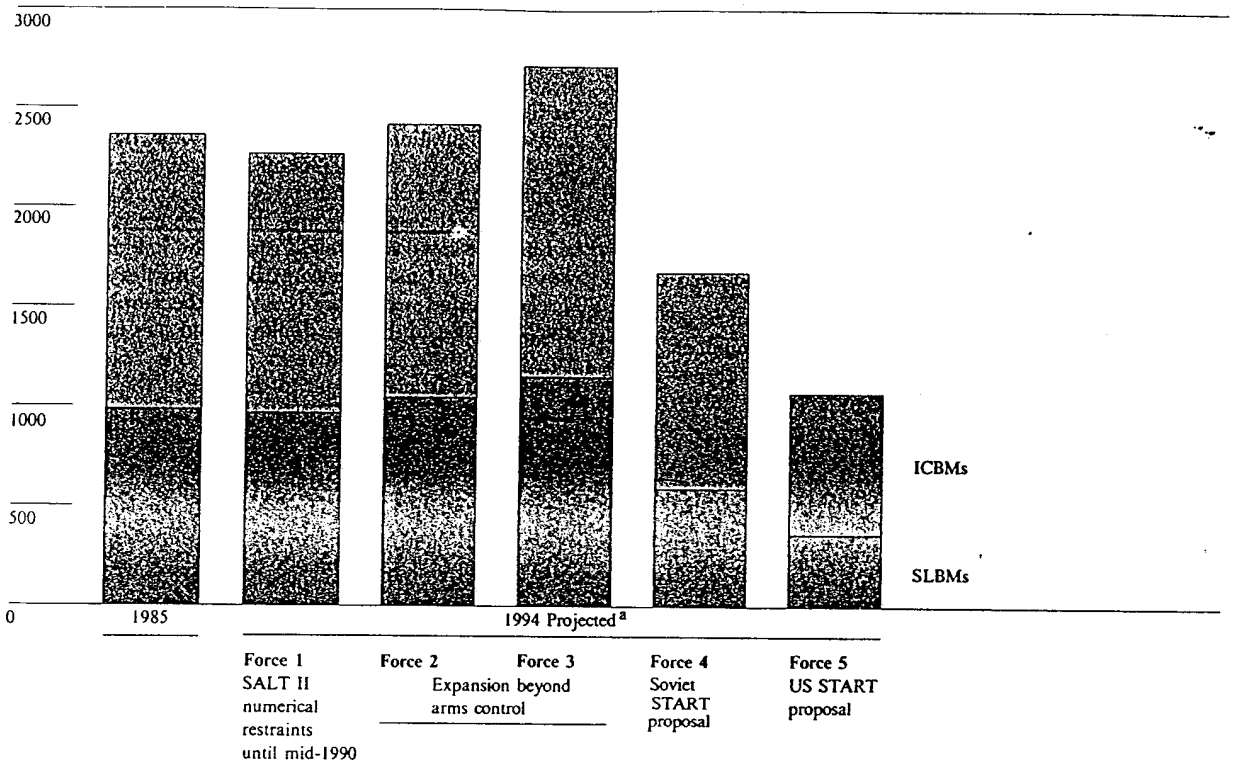


Figure 10
Deployed Soviet ICBMs and SLBMs, 1985 and 1994



[a] These forces are described, with differing views, in the text.

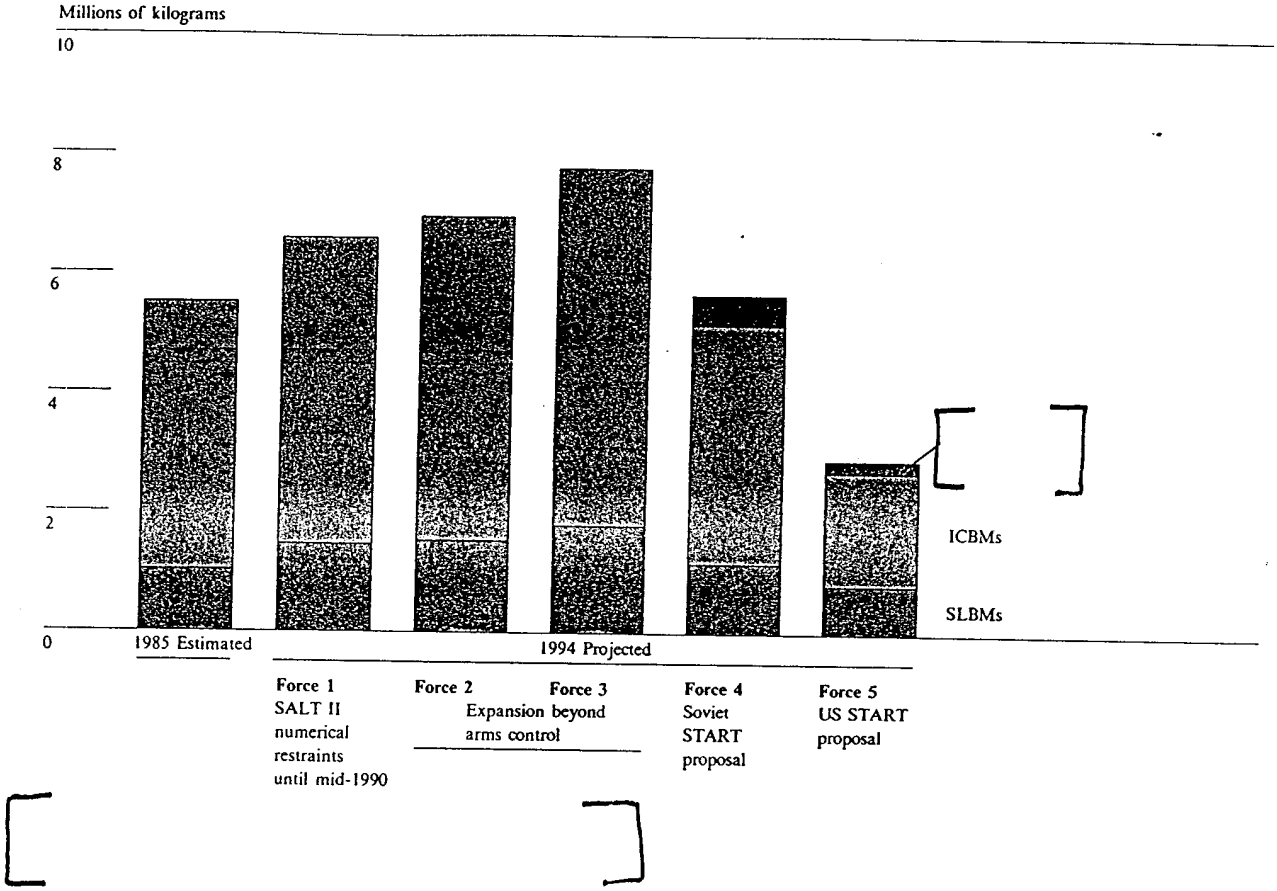
reflected in Force 4, reduces these launchers from the current total by about 30 percent, while the effect of the 1983 US START proposal, reflected in Force 5, would be to reduce them by about 50 percent.

33. The projected aggregate throw weight of the missile force is shown in figure 11. The throw weight increases in Forces 1, 2, and 3 are due to the increased number of missiles and the improved technological performance we expect in the various Soviet missile development programs. The 1983 Soviet START proposal, as represented by Force 4, would result in a small decrease in throw weight. The effect of the US START proposal, as represented by Force 5, would be to reduce the throw weight by about half, because of the decreased number of missiles and the constraints on the number of medium and heavy ICBMs.

34. Figure 12 shows the projected numbers of RVs on deployed ICBMs and SLBMs in 1994.[6] [redacted] Forces 1, 2, and 3 show large increases in the number of missile RVs. These increases—much greater in percentage than the increase in missiles—result from the deployment of larger numbers of MIRVed ICBMs and SLBMs and from the increased numbers of RVs on some of these missiles. The Soviet START proposal, as

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

Figure 11
Throw Weight of Deployed Soviet ICBMs and SLBMs, 1985 and 1994



in Force 4, would result in an increase of about one-fourth over the current force. The 1983 US START proposal would reduce the Soviets to 5,000 accountable RVs, but the number of RVs potentially deployed would be greater. (See figure 13 for discussion and illustration of the problem of differences between the accountable and deployed numbers and for alternative views.)

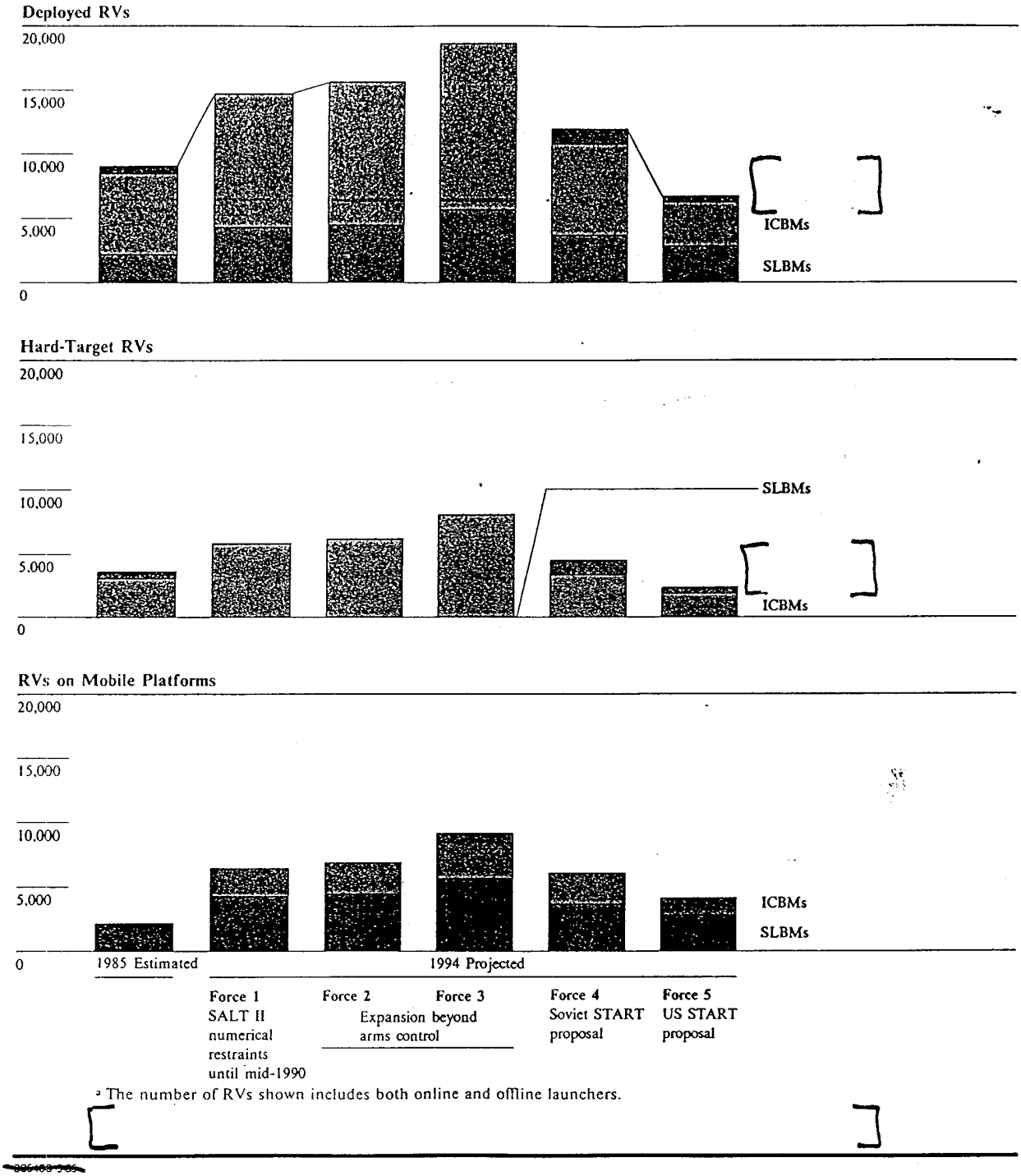
35. Also shown in figure 12 are the projected numbers of ballistic missile RVs—almost all on ICBMs—capable of destroying hard targets and of RVs on mobile platforms. The number of hard-target RVs for Forces 1, 2, and 3 in 1994 would be substantially greater than the current force of about 3,000 to 3,600 such RVs.

The number of RVs on mobile platforms—SLBMs and mobile ICBMs—is expected to increase substantially, but Soviet silo-based missiles will continue to carry the majority of ballistic missile warheads.

36. The Soviet heavy bomber force is not expected to change much in overall size; new bombers such as the Blackjack will enter the force as older bombers such as the Bison are phased out. As shown in figure 14, page 26, however, there will be a substantial increase in the number of weapons carried by the heavy bomber force due to the deployment of new Blackjack and Bear H aircraft.

37. The projected growth in the number of deployed warheads on Soviet intercontinental attack

Figure 12
Deployed Soviet ICBM and SLBM Reentry Vehicles, 1985 and 1994 [a]



[a] The number of RVs shown includes both online and offline launchers.

forces (ICBMs, SLBMs, and heavy bombers) that results under the various scenarios of our force projections is shown in figure 15. The number of deployed warheads is growing as a result of the deployment of new systems carrying more warheads than those they replace. Thus, with the exception of the illustrative force based on the US START proposal that requires deep cuts in ballistic missile RVs, all of the force projections reflect a substantial growth in the number of warheads beyond the current level of over 9,000:

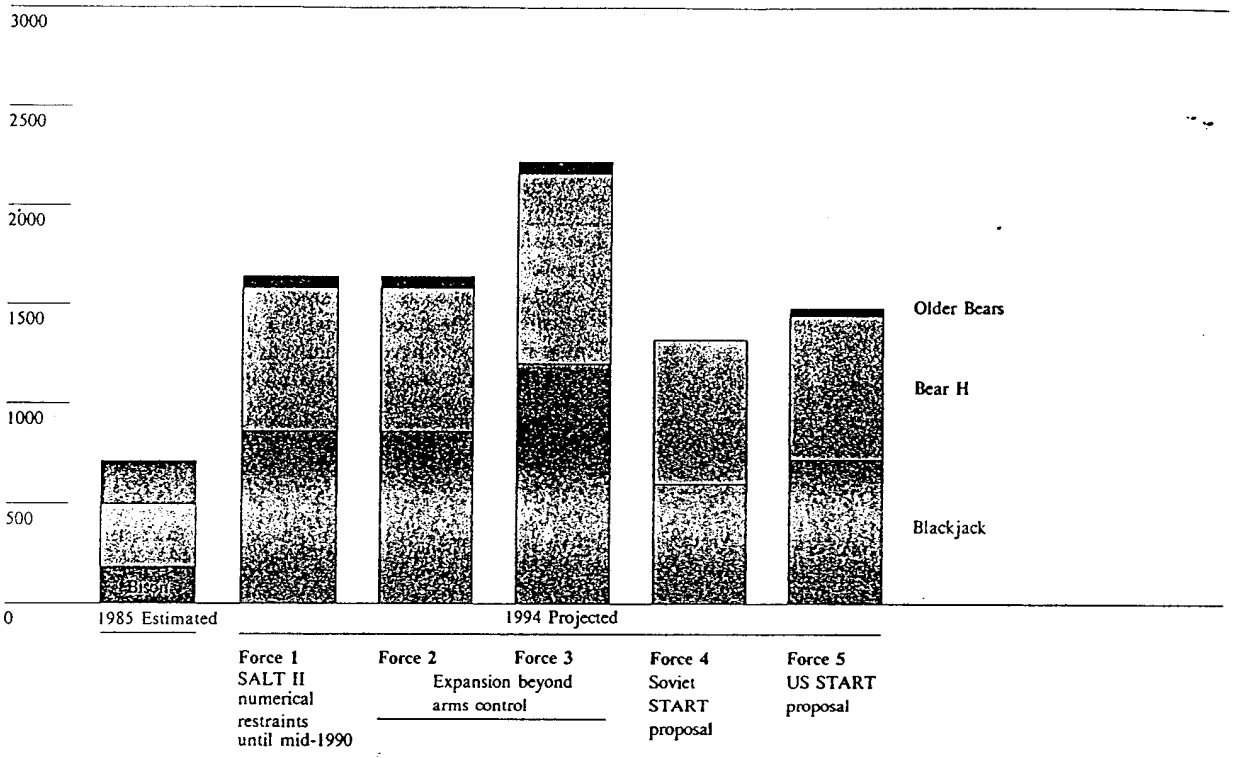
— If the Soviets maintain about the current level of deployed ICBM and SLBM launchers and heavy bombers and remain within the quantitative sublimits of SALT II, we estimate the number of deployed warheads will grow—through the process of modernization—to over 12,000 by 1990.

— The 1983 Soviet START proposal would also result in an expansion in warheads, although about 1,000 fewer by 1990 than under SALT II limits.

— While, in the absence of arms control constraints, the Soviets would not necessarily expand their intercontinental attack forces beyond the approximately 12,000 to 13,000 warheads they could deploy by merely modernizing their current forces, they clearly have the capability to do so. We estimate the Soviets could significantly expand their forces to between 16,000 and 21,000 warheads by the mid-1990s.

38. ***Cruise Missiles.*** The Soviets began ALCM deployments in 1984 and are projected to begin deploying long-range land-attack cruise missiles on submarines in 1985 and on ground launchers in late 1985 or 1986. Although our estimates are highly uncertain, we project that, in Forces 1, 2, and 3, cruise

Figure 14
Deployed Warheads on Soviet Heavy Bombers, 1985 and 1994 [a]



[a] These warhead totals assume the force carries a representative mix of ASMs, ALCMs, and bombs.

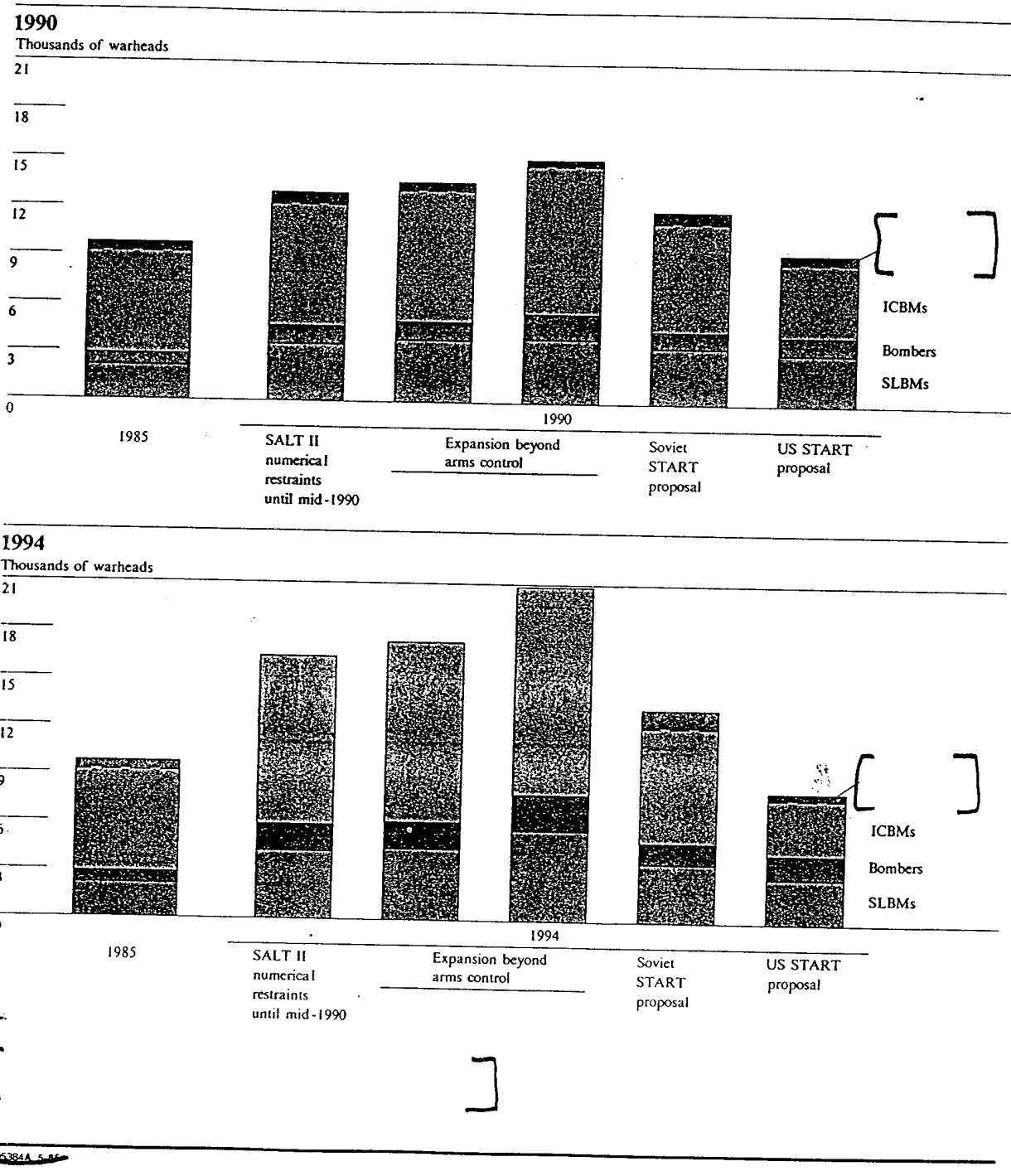
missile deployments would reach levels of about 2,000 to 3,000 (mostly ALCMs) by the mid-1990s. (See figure 16.)

39. *SS-20s and GLCMs.* Figure 17 shows our projections for the total number of Soviet land-based INF missiles and warheads deployed in the Soviet Union—in the European area as well as the Far East. The number of deployed SS-20 launchers is projected to increase to a level of 477 to 540, similar to the number of SS-4 and SS-20 launchers currently deployed. We expect some 500 to 650 GLCMs would be deployed. We project sufficient reserve missiles available for refire from SS-20 and GLCM launchers to amount to about one additional missile for each launcher. The number of warheads, those on deployed missiles as well as those on missiles available for refire, is expected to increase significantly over today's warhead totals by the early 1990s. An alternative view [ ] no [ ] refire from GLCM launchers.[1] (See paragraph 43 for an alternative view on SS-20 refire.)

40. *Reserve ICBMs.* We have evidence that the Soviets intend to reload some silo-based ICBM launchers for refire operations. We expect the deployment of mobile ICBMs will lead to improved capabilities for ICBM reload. (See paragraph 100 for a discussion of mobile ICBMs, including an alternative view.) According to an alternative view [ ] cannot

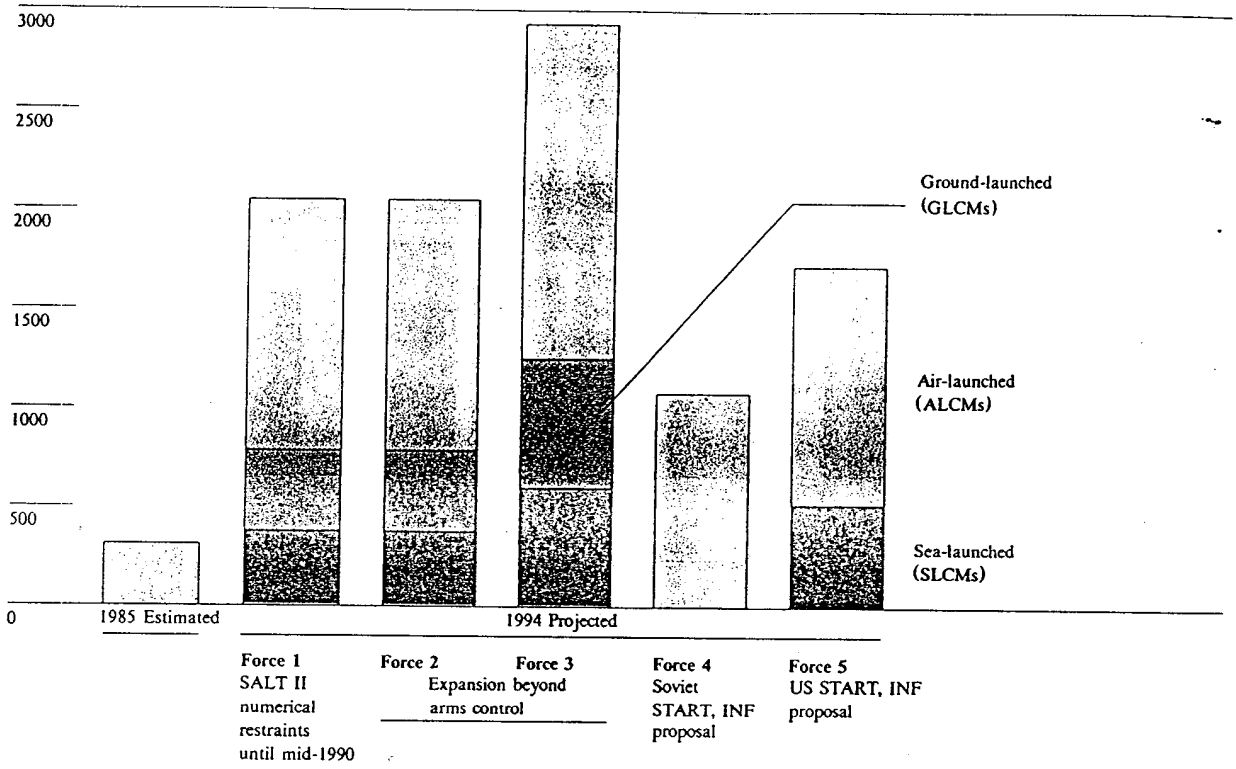
[1] *The holder of this view is the Director, Bureau of Intelligence and Research, Department of State.*

Figure 15
Growth in Number of Deployed Warheads on Soviet Strategic Intercontinental Attack Forces



[redacted]

Figure 16
Deployed Soviet Long-Range Land-Attack Cruise Missiles, 1985 and 1994

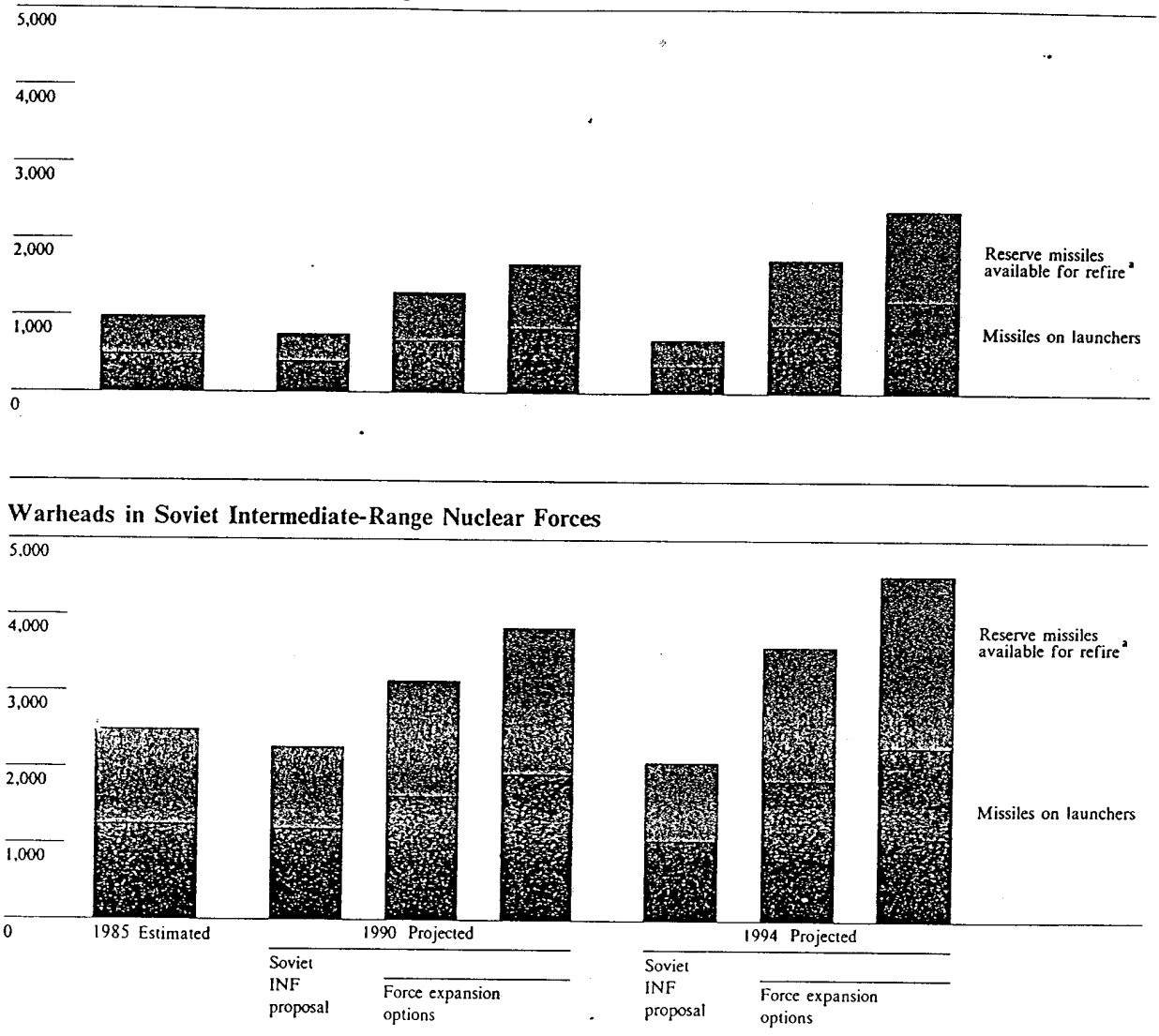


be taken as evidence that ICBM refire figures in Soviet war plans. However, the Soviets probably would, in this view, attempt to reload a few launchers on a contingency basis, if any reserve missiles not required to maintain the online force were available.[6]

41. We know that missiles are produced for use in crew-training launches and as maintenance spares, and some of these reserve missiles could be available for refire. Soviet missile production capacity appears large enough to handle more than deployment, testing, training, and spare requirements, [ ] we cannot estimate [ ] whether the Soviets have produced additional missiles specifically for refire. [ ] An alternative view [ ]

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

Figure 17
Soviet Land-Based, Long-Range INF Missiles and Warheads



[a] See text for discussion and an alternative view.

assess that the SS-20 IRBM has missiles specifically for refire, and that it would be consistent for the Soviets to have such missiles for the ICBM force.

[9]

42. *Reserve IRBMs.* Evidence indicates the Soviets plan to use reserve missiles for refire from SS-20 launchers.

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

43. An alternative view

holds that the Soviets do not plan to engage in large-scale SS-20 refire. However, the Soviets probably would, in this view, attempt to reload a few launchers on a contingency basis, if any reserve missiles not required to maintain the online force were available.

[10]

Strategic Defensive Forces

44. The Soviets will significantly improve the capabilities of their active and passive strategic defenses over the next 10 years, as a number of new types of weapons are introduced and many of the older systems retired.

45. ***Ballistic Missile Defense.*** The Soviets are in the process of upgrading and expanding the ABM defenses at Moscow within the limits of the ABM Treaty, and are actively engaged in ABM research and development programs. We have described, in volume II, three ABM deployment options that represent different paths the Soviets could follow, beyond the limits of the ABM Treaty. The available evidence indicates the Soviets are steadily improving their ability to exercise options for deployment of widespread ballistic missile defenses in the 1980s. We judge that the Soviets could 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. Significant ABM forces could be deployed by the late 1980s or early 1990s, as shown in figure 18, assuming the Soviets have already begun making some of the necessary preparations.

46. In evaluating the technical performance of the ABM systems they could deploy in a widespread defense, the Soviets probably would not have high confidence in how well these systems would perform against a large-scale, undegraded US missile attack, especially in the late 1980s by improved US forces. However, the Soviets would probably view their ballistic missile defenses as having considerable value in reducing the impact of a degraded US retaliatory attack if the USSR succeeded in carrying out a well-coordinated, effective initial strike. Also, widespread Soviet defenses, even if US evaluations indicated they could be overcome by an attacking force, would complicate US attack planning and create major uncertainties about the potential effectiveness of a US strike. An alternative 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.[11]

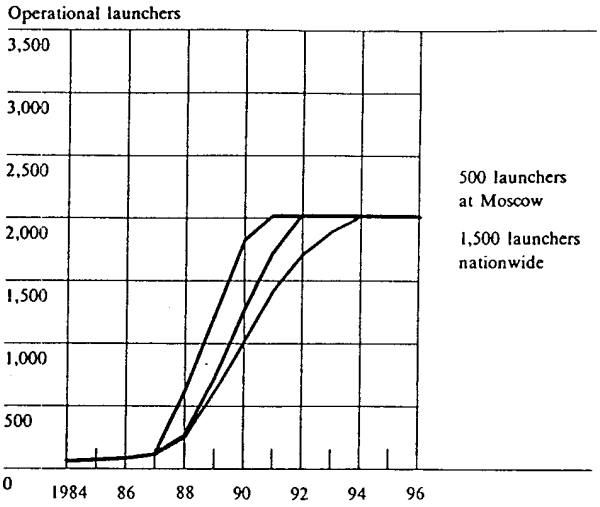
47. Our views on the likelihood that the Soviets would abrogate the ABM Treaty have not changed for several years. On balance, we estimate there is a fairly low, but nevertheless significant, chance (about 10 to 30 percent) that the Soviets will abrogate the Treaty and deploy ABMs in excess of its limits in the 1980s. We continue to judge that the military advantages of the defenses they could deploy would be outweighed

[9] *The holders of this view are the Director, Defense Intelligence Agency, and the Director, National Security Agency.*

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

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

Figure 18
Potential Soviet ABM Deployment: Nationwide Defense of Key Target Areas*



* Assumes Soviets began preparations for deployment of ABMs in 1984; no launcher deployments beyond ABM Treaty limits until 1987. Does not represent judgments about the likelihood of the deployments shown.

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

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

——— Force C
Paced only by rate of launchsite construction.

virtually no reason to abandon the benefits of existing treaties unless conditions change substantially. In this view, however, there is a higher probability of the Soviets' abrogation and deployment to fill the serious gap in their defenses in the 1990s.[12]

— In the other of these two views, the conditions that led to Soviet acceptance of the ABM Treaty—including US technical and manufacturing potential to outstrip the USSR—will pertain through the 1980s; the potential costs of abrogation, particularly in Western Europe, will be a further restraining factor; moreover, the holder of this view believes it unlikely that the USSR could deploy in this decade ABM defenses that would significantly alter the strategic balance.[13]

— A third alternative view holds that it is not possible to quantify the probability of Soviet abrogation, but 10 to 30 percent may understate the chances. According to this view, Soviet doctrinal requirements for damage-limiting capability have always provided a motivation to deploy ABMs both at Moscow and elsewhere and, as a result of advances by the USSR in ABM technology, its 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.[14]

(For a fuller discussion of this issue, see volume II, chapter IV.)

48. [redacted]

by the disadvantages of such a move, especially that of energizing the United States and perhaps its Allies into a more rapid, sustained growth of military capabilities. There are three alternative views on the possibility the Soviets would unilaterally abrogate the ABM Treaty:

— According to two alternative views, there is less than a 10-percent chance that the Soviets would abrogate on their own initiative during the 1980s. In one of these two views, the Soviets have so effectively combined force improvement with arms control under SALT I and II that they have

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. The Soviets could perceive such deployments as giving the

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

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

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

USSR a major near-term advantage over the United States, but would be likely to consider it a certainty that such an action would solidify US and Allied support for SDI, as well as offensive force improvements designed to counter Soviet terminal defenses.

49. ***Soviet Forces for Air Defense.*** Our two projections for Soviet air defense forces—Forces A and B—reflect our uncertainties about the choices the Soviets might make in force composition and in production and deployment rates for newer systems (see figure 19). The Soviets are proceeding with the deployment of systems with low-altitude air defense capabilities, including the SA-10 and SA-X-12 SAMs, the Foxhound, Fulcrum, and Flanker aircraft, and the Mainstay AWACS aircraft. In 1985 the Soviets will begin deploying a more mobile version of the SA-10. By the mid-1990s, most of their strategic air defenses will consist of these newer systems. Deployment of small numbers of ground-based high-energy lasers for air defense is projected to begin in the mid-to-late 1980s. We see the possibility of additional developments in air defense by the early-to-middle 1990s, including deployment of a new long-range interceptor, and improved SA-10 capabilities against small-radar-cross-section vehicles such as cruise missiles. There is an alternative view that it is unlikely the Soviets could deploy, by the early-to-middle 1990s, a new long-range interceptor with the characteristics assumed in this Estimate.[15]

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

51. The ASW program was reportedly accorded the number-one priority in the Soviet scientific community in the late 1970s. The Soviets will continue to pursue vigorously all ASW technologies as potential solutions to the problems of countering US SSBNs and defending their own SSBNs against US attack submarines. We are concerned about the energetic Soviet effort to develop a capability to remotely sense submarine-generated effects from aircraft or spacecraft. Although we continue to improve our understanding of the nature of the Soviets' overall effort[ ] there remain important uncertainties about the full extent and direction of their program.

[redacted]

53. Soviet nonacoustic ASW detection systems that could be deployed within the next 10 years are unlikely to pose any significant threat to US SSBNs on patrol, but could possibly be applicable to protection of Soviet SSBNs in bastion areas:

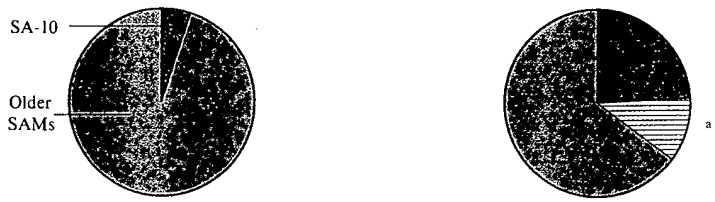
- An operational space-based remote sensing system could not be available in less than 10 years from the start of engineering development. (This constraint is imposed by Soviet design practices, as demonstrated by numerous development programs.) The wide range of continuing experimentation, however, suggests that the Soviets have not yet selected a sensor for engineering development.
- In view of operational considerations, the difficulties in exploiting the basic phenomena, and the major advances required in high-speed computing and in sensor and signal-processing technologies, we do not believe there is a realistic possibility that the Soviets will be able to deploy in the 1990s a system that could reliably monitor US SSBNs operating in the open ocean.

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

Figure 19
Modernization of Soviet Strategic Air Defense Forces

Strategic SAMs

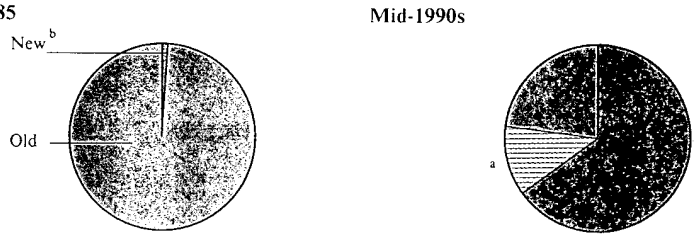
Launchsites



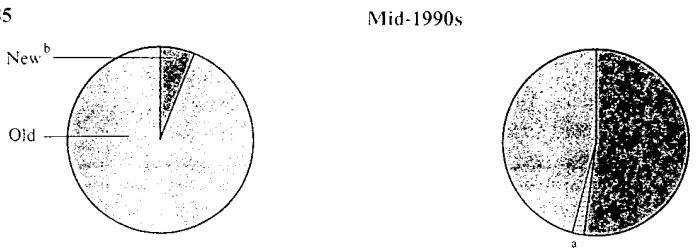
Launch Rails

Air Defense Interceptors

Military District Aviation



Air Defense District Aviation



[a] Represents uncertainty in our projections of modernization.

[b] New interceptors are: Foxhound, Fulcrum, Flanker, long-range interceptor.

— There is a low-to-moderate (10- to 60-percent) probability that the Soviets could deploy in the mid-1990s an ASW remote detection system that would operate with some effectiveness if enemy SSNs approached ASW barriers near Soviet SSBN bastions.

54. ***Antisatellite Programs.*** Current Soviet systems with potential antisatellite (ASAT) capabilities include: [16]

— A nonnuclear orbital interceptor that has been operational since the early 1970s.

— Galosh ABM interceptors that may have an ASAT mission.

suggests that some Galosh ABM interceptors deployed around Moscow had an ASAT mission in the late 1960s and the 1970s. We doubt that the Soviets currently plan to use any Galosh launchers at Moscow in an ASAT role

— Two ground-based high-energy lasers at a test range with potential ASAT capabilities.

— The technological capability, using active electronic warfare (EW), to attempt to interfere with enemy space systems.

The nonnuclear orbital interceptor, the nuclear Galosh ABM interceptor, and two ground-based high-energy lasers have the potential to destroy or interfere with some satellites in near-Earth orbit. Electronic warfare currently represents the only potential threat to satellites in higher orbits.

[16] See paragraphs 113 and 114 for a discussion of capabilities and limitations.

55. ICBMs and space boosters have the theoretical capability to be used against low-altitude satellites, but we doubt the Soviets would use them in such a role. Various modifications to space boosters or ICBMs would be required to achieve a capability against high-altitude satellites

we estimate the likelihood of such developments is low. Although there is no evidence of a program to develop a new nonnuclear direct-ascent interceptor for use against low-altitude targets, with improvements to overcome the deficiencies of existing ASAT systems, we believe the Soviets may pursue this approach. If they do, an operational system could be available by the early-to-middle 1990s.

56. ***Directed-Energy and Hypervelocity Kinetic-Energy Weapons.*** Directed-energy and kinetic-energy weapons potentially could be developed for several weapons applications—ASAT, air defense, battlefield use, and, in the longer term, ballistic missile defense (BMD). Three types of directed-energy technologies—high-energy laser, particle beam, and radiofrequency—have potential strategic weapon applications. Research into these applications is, in most cases, at an early stage, however, and major uncertainties remain over the feasibility and practicality of such weapons. Because of the limited available evidence, there are large uncertainties about the size and scope of the Soviets' research efforts in key technologies required for directed-energy weapons, as well as about the status and goals of their weapon development programs. Moreover, directed-energy technologies have a broad range of both weapon and nonweapon applications (for example, laser radars and space object identification systems).

We judge, however, that the Soviets have the expertise, manpower, resources, and commitment to pursue the development of those directed-energy weapon and military support systems that prove feasible. We also expect them to deploy some of these types of systems, even if the systems' capabilities were limited under some conditions; this would be consistent with the Soviets' philosophy and past practices.

57. The strongest evidence of Soviet efforts in directed-energy weapons is in the area of high-energy lasers. The Soviets have a program to develop high-energy laser weapons. They have a sound technological base and there is substantial evidence of a large military R&D effort:

— About 50 academic and industrial organizations, including several central design bureaus, and at

least a dozen test facilities are directly involved in the high-energy laser effort. We estimate from open literature that in the 1970s the number of Soviet scientists and engineers involved in laser research, development, or testing—some of which would be applicable to high-energy laser weapons—more than doubled to about 10,000 individuals. Since the late 1960s, the Soviets have more than quadrupled the floorspace at high-energy laser weapon research, development, testing, and evaluation facilities. The amount of floorspace dedicated to laser work is now roughly equivalent to that of a major Soviet missile design bureau. A laser weapon program of this magnitude would cost roughly $1 billion per year if carried out in the United States.

— There are two facilities at the Saryshagan test range that we assess to have high-energy lasers with the potential to function as ASAT weapons. Our assessment, based on available Soviet technology, is that one of the facilities could have the capability to damage or degrade an unprotected satellite overhead, in clear weather, to a range of [ ]. The other test facility is probably a laser weapon facility for either ASAT or BMD applications.

— We are concerned about a large Soviet program to develop ground-based laser weapons for terminal defense against reentry vehicles. [

] We expect the Soviets to test the feasibility of such a system during the 1980s, probably using one of the high-energy laser facilities at Saryshagan. If such a system proves feasible and practical, we expect that a prototype ground-based weapon probably would be tested in the early 1990s. An initial operational capability probably would not be achieved until after the year 2000—unless the Soviets chose to develop the system without building a prototype. If they chose this risky course of action, a few such systems could be operational by the early-to-middle 1990s.

— The Soviets appear to be developing two high-energy laser weapons with potential strategic air defense applications—ground-based and naval point defense. [

] We estimate that, with high priority and program successes, deployment of such weapons could occur within the next 10 years.

— The Soviets are continuing to develop an airborne laser. [

] We expect testing and development to continue for several years. Missions for such a system are difficult to determine, but could include low-altitude ASAT, protection of high-value aircraft (such as AWACS aircraft), and cruise missile defense. Deployment of a few units developed from this program is possible by the early 1990s.

— Soviet research includes a project to develop high-energy laser weapons for use in space, which would offer advantages over ground- and air-based deployment. Such systems would be unaffected by cloud cover or other atmospheric conditions. We expect the initial application of a space-based system would be for ASAT, but other applications could include BMD, antiaircraft, and ground target attack missions. As an ASAT system, a space-based laser ASAT system would have significant advantages over the conventional Soviet orbital ASAT, in that it would have multishot capabilities and, depending on orbit, more frequent coverage of targets. Moreover, it would have a greater capacity to overcome a target's defensive measures, such as maneuvering and decoy deployment. We estimate there is a moderate (40- to 60-percent) probability—somewhat lower than estimated last year—that a prototype high-energy, space-based laser ASAT weapon will be tested in low orbit in the early 1990s; such an event is less likely in the late 1980s. Even if testing were successful, such a system could probably not be operational before the mid-1990s. For attacking satellites in higher orbits, the Soviets could couple a space-based laser system with the heavy-lift launch vehicle currently under development. If the Soviets successfully test a high-energy laser ASAT weapon in low orbit in the early 1990s, we estimate there is a moderate probability that they will test a laser weapon in geosynchronous orbit by the mid-to-late 1990s. We ascribe a low probability to operational deployment before the year 2000.

We note that the psychological impact of the first test of a space-based laser weapon would outweigh its actual military significance.

— An alternative view holds that, given the prerequisites for testing a prototype high-energy, space-based laser ASAT weapon—major advances in laser technology, laser pointing, and target tracking; a substantial heavy-lift launch capability; and extensive testing of laser components in space—such testing has only a low probability of occurring in the early 1990s and a very low probability in the late 1980s. This view further holds that, because of the even more demanding requirements, there is a very low probability the Soviets will test such a system in geosynchronous orbit before the year 2000. Finally, the holder of this view notes that for a number of years the Intelligence Community has projected that the Soviets could test space-based lasers much sooner than subsequent developments indicated.[18]

— To develop a space-based laser with BMD capabilities, the Soviets would have to achieve significant technological advances in large-aperture mirrors, multimegawatt power generation, short-wavelength lasers, and pointing and tracking subsystems. Moreover, system integration would be a complex undertaking and battle management would present a formidable technical and operational challenge. In view of the technological requirements, we estimate the Soviets could not have a prototype space-based laser BMD system until at least the mid-1990s, or an operational system until after the year 2000. Even if deployed, such a system would probably have limited capability against current US ballistic missiles unless deployed on a large scale.

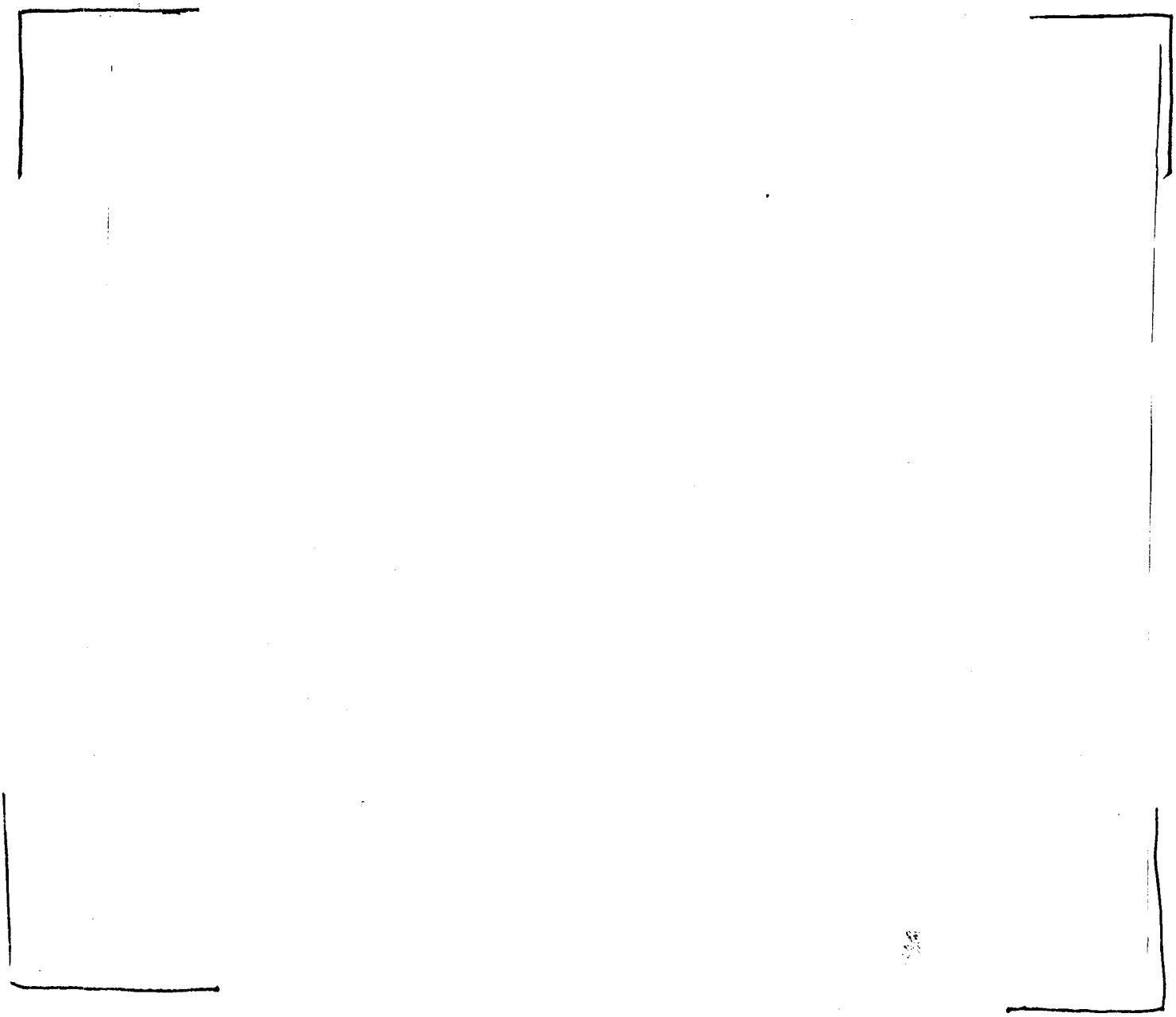
58. The Soviets are also conducting research under military sponsorship for the purpose of acquiring the ability to develop particle beam weapons (PBWs). [redacted] Because of questions of feasibility and severe requirements on technology, we judge that the Soviets are at least 10 to 15 years away from testing any long-range, ground-based PBW prototype for terminal ballistic missile defense. A space-based neutral PBW would not be subject to the atmospheric propagation effects that represent a fundamental issue of feasibility for ground-based charged PBWs. Since the early 1970s the Soviets have had a research effort to explore the technical feasibility of neutral PBWs in space and have developed some technically advanced components, but we judge they have not assembled a complete test system. Technical requirements for such a system are so severe—particularly ensuring precise pointing and tracking—that, although we believe the Soviets will eventually attempt to build a space-based PBW, we estimate there is a low probability they will test a prototype before the year 2000. Even if the Soviets pursue development of such a weapon, we estimate they could not begin testing a prototype space-based device for interfering with the electronics of satellites before the mid-to-late 1990s. Testing a device for more demanding missions, such as electronics damage or physical destruction of satellites or harder targets like missile boosters and RVs, could not take place until later.

59. [redacted] radiofrequency (RF) weapons to destroy the electronics of a target. If a program exists, it is probably small compared with the Soviet laser weapon effort. The Soviets are strong in the appropriate technologies, however, and we judge that they are capable of developing a prototype RF weapon system. By the early 1990s, we estimate there is a moderate (40- to 60-percent) probability that the Soviets will test a ground-based RF ASAT weapon potentially capable of damaging satellites. We estimate it is highly unlikely that a space-based RF weapon for damaging satellites will be tested before the year 2000.

60. In 1981 the Soviets began constructing a large facility that may be a directed-energy weapon on top of a mountain near Dushanbe in the southernmost area of the USSR (see figure 20).

61. [redacted] hypervelocity kinetic-energy weapons [redacted] Currently they appear to be concentrating their research efforts on technologies applicable to short-range, ground-based systems. They probably now have the technology to test a prototype short-range, ground-based or space-based system within several years of a decision to do so. A short-range, ground-based system could have potential applications for air defense and possibly for defense against tactical ballistic missiles; in space, such a system would proba-

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



bly be limited to close-in self-defense against antisatellite attacks. We estimate there is a very low probability that the Soviets will orbit a prototype long-range kinetic-energy weapon within the next 10 years.

E. Economic Implications of Strategic Force Projections

62. We estimate that total investment and operating expenditures for our projected offensive and defensive forces (assuming no widespread ABM deployments) will result in a growth in total Soviet strategic expenditures of between 5 and 7 percent a year through 1989.[19] (See figure 21.) The minimum growth rate we can anticipate as a result of ongoing deployment and flight test programs—a 5-percent annual increase—reflects Soviet modernization along the lines projected in strategic offensive (intercontinental and intermediate-range) Forces 1 or 2 (see section on strategic offensive forces beginning at paragraph 25) and the lower level of strategic air defense modernization, as projected in Force A (see paragraph 49). Growth at 7 percent reflects modernization along the lines of offensive Force 3, and the level of air defense modernization of Force B.

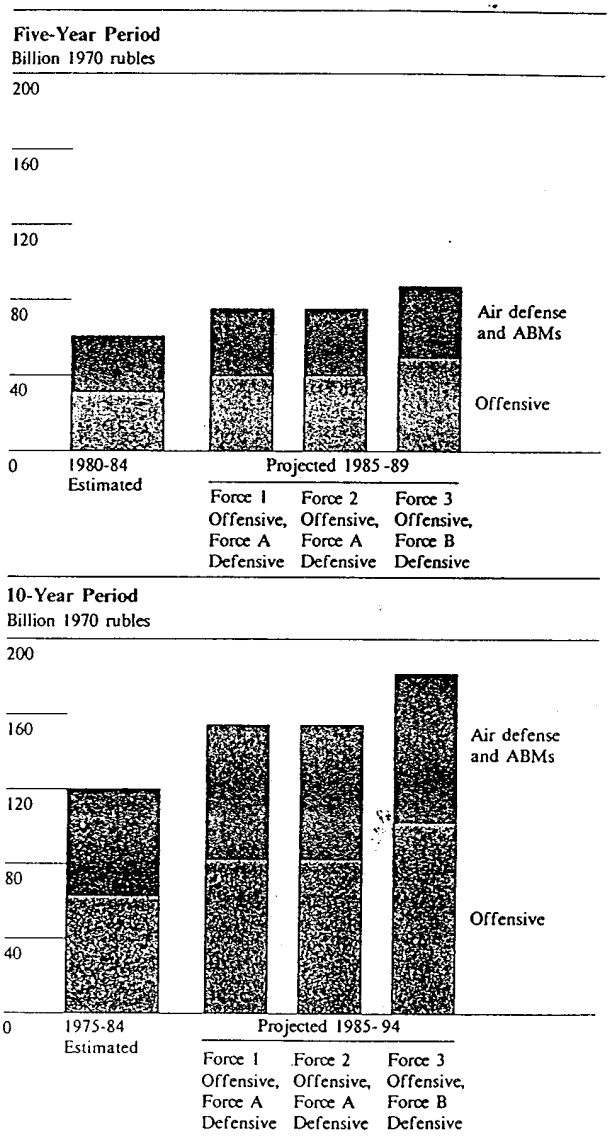
63. We estimate that, to deploy and operate the projected offensive and defensive forces over the next 10 years, it would cost the Soviets some 30 to 50 percent more than was expended in the previous 10-year period (see figure 21). (As noted in paragraph 21, these previous expenditures were at an already high level and have resulted in major improvements in Soviet strategic forces.) Cumulative expenditures on strategic offensive forces would increase by between 30 and 60 percent over comparable costs between 1975 and 1984, and, for strategic defensive forces, between 25 and 40 percent. The main elements driving these estimated expenditures upward during the next 10 years are all under way:

- In offensive forces, deployment of mobile ICBMs, which are more costly to operate and maintain than silo-based ICBMs; cruise missiles; Blackjack bombers; and the replacement of nearly all MIRVed ICBMs, SLBMs, and IRBMs.
- In defensive forces, the widespread deployment of three new types of advanced aircraft and the new SA-10 SAM.

[19] Our estimates include operating and investment costs, but exclude the cost of research, development, testing, and evaluation. They also exclude outlays for ASW, civil defense, and leadership protection, which are considerable.

64. Strategic offensive and defensive forces account for about one-fifth of total defense spending—about one-tenth each. A growth rate of 5 to 7 percent a

Figure 21
Estimated Cumulative Soviet Expenditures for Strategic Programs[a]



[a] Our estimates include operating and investment costs, but exclude the cost of research, development, testing, and evaluation. They also exclude outlays for ASW, civil defense, and leadership protection, which are considerable. These figures, moreover, do not include the cost of strategic command and control and nuclear materials production, which would add some 15 billion rubles to cumulative Soviet costs during the 1985-94 period.

year in strategic force spending, combined with the projected growth rate for nonstrategic programs of about 3 percent, would lead to a growth in total defense spending of between 3 and 4 percent per year—1 to 2 points greater than the projected growth of 2 percent for the gross national product. Increasing the share of the GNP devoted to defense will confront the Soviets with the difficult choice of reducing the growth in investment, which is critical to modernizing the industrial base, or curtailing growth in consumption, which is an important factor in the Soviet drive to improve labor productivity.

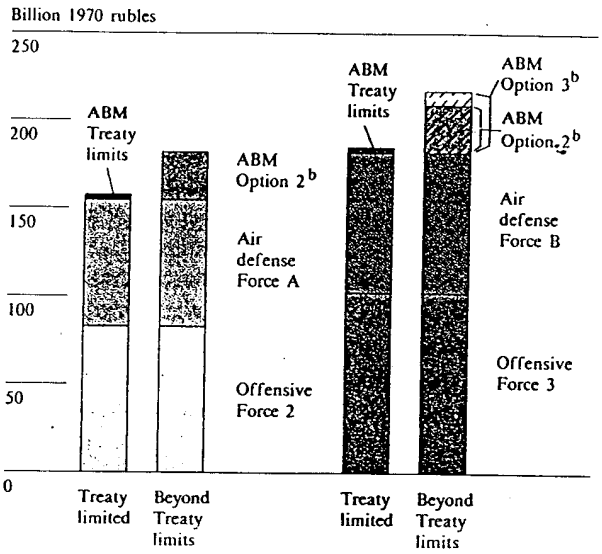
65. We estimate that the deployment of ABM defenses far beyond the 100-launcher Treaty limit between 1985 and 1994, when added to the cost of other projected strategic programs, would result in yearly spending growth for strategic forces of between 7 and 10 percent—as compared with the estimated 5- to 7-percent annual increase without such an expansion. (See figure 22.) Growth in strategic spending at about 9 to 10 percent a year, reflecting the higher levels of projected strategic force growth and a large-scale ABM deployment, would match or exceed the high rates of the mid-to-late 1960s and would result in a rate of growth in total defense spending in excess of the historical rate of 4 percent a year. In addition, this would occur during a period when the Soviet economy is expected to continue to perform more poorly than it did in the 1960s and 1970s.

66. Such major new initiatives would involve difficult trade-offs; the Soviets might feel compelled to alter some of their other nonstrategic military modernization efforts or to stretch out the ABM deployments somewhat. Rapid deployment of an extensive nationwide ABM system would be problematic, particularly if the Soviets were also faced with the prospect of having to deal with substantial progress and potential deployments in the US SDI program. We judge, however, that strategic forces will continue to command the highest resource priorities and therefore would be affected less by economic problems than any other element of the Soviet military.

67. There is an alternative view that Soviet willingness to pay the price required for rapid deployment of an extensive nationwide ABM system will depend on the military and political context. The holder of this view believes historical evidence of the Soviets' ability to make large sacrifices indicates that they would make the necessary resource commitments to accomplish rapid deployments if deemed necessary.[20]

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

Figure 22
The Effect on Expenditures of Soviet Deployments Beyond ABM Treaty Limits, 1985-94[a]



[a] Our estimates include operating and investment costs, but exclude the cost of research, development, testing, and evaluation. They also exclude outlays for ASW, civil defense, and leadership protection, which are considerable. These figures, moreover, do not include the cost of strategic command and control and nuclear materials production, which would add some 15 billion rubles to cumulative Soviet costs during the 1985-94 period.

[b] ABM Option 2 has 2,000 launchers; Option 3, 3,500 launchers.

F. Operations of Soviet Strategic Forces in a Conflict

Preparations and Training of Nuclear Forces for Conflict

69. Soviet military planning is guided by fundamental wartime objectives: to decisively defeat enemy conventional and nuclear forces, occupy enemy territory in the theater, and defend the homeland against enemy attack. To meet these objectives, the Soviets train their forces for a global nuclear conflict. This training has diversified in scope and become increasingly complex in the operational factors with which it deals. 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, combined with the effects of enemy action, would affect planned operations, including the actual transitions to various levels of conflict but particularly in the wholly unprecedented environment of nuclear warfare.

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

70. The Soviets perceive modern warfare as potentially involving a great number of antagonists in various combinations and circumstances. A conventional war could be fought in a single or multitheater setting, could be conducted in a self-contained area or in concert with global operations, and could involve varying degrees of combat intensity over indeterminate lengths of time. Soviet perceptions of the growing complexity of warfare have led to greater efforts to plan forces and operations against a backdrop of increasingly varied contingencies and to achieve greater realism in combat training.

71. During the last 10 years the Soviets have implemented both incremental and major changes affecting the operation, control, and structure of their strategic nuclear forces. The principal aim has been to enhance their operational flexibility and force sustainability while maintaining overall political and military control of these forces in combat. In doing so, they have improved their capability to execute directly from Moscow an integrated strategic strike. To achieve this aim, the Soviets have:

— Established a permanent theater high command in the Far East in late 1978 and are now establishing three others—two opposite NATO and one opposite South Asia.

— Made changes in some of the operational modes of their strategic forces, such as the creation of SSBN bastions and the mobility of their SS-20 force.

—

— Implemented a reorganization of the Air Defense and Air Forces.

— Steadily increased the complexity of their training

— Gradually increased the stress placed on their personnel in combat training,

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

72. These changes, together with the introduction of new command and control systems, create a peacetime military establishment more in step with the likely wartime structure of the Soviet military. Soviet employment strategies also are being modified to increase the options available to political leaders for using and controlling their intercontinental forces. Soviet military planners have sought to develop force responses applicable to various stages of theater or global conflict. These include a launch-on-tactical-warning (LOTW) capability for Strategic Rocket Forces (SRF) weapons,

Scenario for Operation of Soviet Strategic Forces in a Conflict

73. We have structured a composite scenario, summarized below[ ] we believe this composite picture essentially captures the views of the Soviet military on the operation of their strategic forces and on the nature of a major US-Soviet confrontation that proceeds through intercontinental warfare.

74. 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 Soviets could seek political solutions at any stage, or could vary their military actions in response to unforseen circumstances. 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. (For an alternative view, see paragraph 150.)

75. *Crisis Period.* The Soviets see little likelihood that the United States would initiate a surprise attack from a normal peacetime posture; we judge it unlikely that the Soviets would mount such an attack themselves.[ ] indicate that they expect to have sufficient warning of a US attack to carry out the deployment and dispersal of their forces. (In their military writings, however, the Soviets continue to warn of the possibility of a sudden attack by NATO during a period of crisis, an initiative given credibility in the Soviet view by the high combat readiness of the West.) They evidently believe that, if a general war occurred, it most likely would 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, including launching additional satellites, 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.
- Seek to confuse Western intelligence and deny it information on the status of Soviet forces and preparations, as the crisis intensified. The Soviets would increase the use of concealment, deception, and disinformation for military, diplomatic, and propaganda purposes in attempting to achieve their objectives.

76. *Conventional Phase.* 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 this phase the Soviets would be attempting to protect their own nuclear forces, while weakening NATO's theater-based and sea-based nuclear forces with attacks by conventional weapons:

- At the outset of hostilities, the Soviets would try to implement a theaterwide air offensive in which thousands of Pact aircraft, employing conventional weapons, would attack NATO with the objective of achieving air superiority and destroying NATO's nuclear assets, command and control facilities, and other high-value military theater and sea-based targets.
- Most, if not all, of the mobile SS-20 force would be deployed to the field by this time. We believe Soviet ground forces, particularly air defenses, would provide protection against conventional or special forces attacks.
- All available Soviet SSBNs would be ordered to deploy from bases, primarily to positions near the USSR where they could be protected by Soviet general purpose naval forces or be under the Arctic icepack. In addition to protecting their own SSBNs, some Soviet naval forces would attempt to destroy enemy sea-based nuclear strike forces, principally SSBNs and aircraft carriers.
- We estimate that there is a high likelihood that, during this conventional phase, the Soviets would attempt to interfere with selected US space systems that provide important wartime support, using both destructive and nondestructive means. The decision to launch orbital ASAT interceptors against such systems during the early part of a conventional phase of such a conflict would be affected by Soviet uncertainties with regard to US responses, including the likelihood of attacks on Soviet space launchsites.

77. The Soviets believe elements of their strategic forces would suffer losses during conventional conflict. They expect they would lose many of their SSBNs in

their forward patrol areas and in transit, and some in the protected havens; some SRF assets might be damaged or destroyed[ ] Naval bases and command, control, and communications facilities in the USSR could be damaged, and losses of strategic bombers, heavily engaged in conventional operations, probably would be considerable.

78. ***Initial Nuclear Phase.*** We believe the Soviets envisage that it would be to their advantage to conduct a rapid conventional campaign to accomplish their theater objectives in NATO. In this campaign they would employ nonnuclear means, including some elements of strategic aviation to attempt to destroy NATO nuclear forces and associated command, control, and communications facilities, with Soviet theater and strategic nuclear forces standing ready to preempt.

79. The Soviets are unlikely to initiate nuclear use in a theater conflict unless they perceived that NATO was about to use nuclear weapons, because they would probably see it as being to their advantage instead to keep the conflict at the conventional level. Moreover, 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 see the use of nuclear weapons on any scale as substantially increasing the risks of escalation to strategic nuclear war. We believe, however, that the likelihood of Soviet initiation of nuclear strikes would increase if Soviet conventional forces were faced with a major defeat or a NATO counteroffensive into Eastern Europe.

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

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

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

83. If they perceived that NATO intended to use nuclear weapons only on a limited scale that would not result in a major defeat for the Pact, it is possible the Soviets might decide against initiating a large-scale preemptive strike. We should note, however, that we do not know how the Soviets would be able to determine and be convinced that an imminent NATO strike would be limited, rather than large-scale. Thus, warning of a NATO nuclear strike might well prompt a large-scale Soviet preemptive strike.

84. While the Soviets' overriding goal is combat success, not control of escalation, we cannot predict how they would react when actually faced with the prospect of a global nuclear war. A motivation for restraint would be a desire on their part to avoid

unnecessary escalation to theaterwide or even global nuclear war. Their decision would be based on several factors, including a desire to avoid damage to the USSR, and their assessment of the likelihood they could still achieve their objectives.

85. If nuclear weapons were used in a theater conflict, with attacks confined to the theater area, the Soviets would have strong incentives to try to keep the nuclear conflict from spreading to involve the Soviet and US homelands. Thus, the Soviets might adopt a pragmatic approach and attempt to:

— Accomplish their theater objectives without carrying out intercontinental strikes.

— Create conditions that deter the United States from attacking the Soviet homeland.

— Prevent the United States from providing further support to the theater campaign.

We cannot judge the likelihood that the Soviets would actually attempt such a strategy. They have acknowledged that a limited nuclear phase, confined to Europe, is possible, and they have experimented with various selective use options [ ] suggest, however, that the Soviets are highly skeptical that such a strategy would succeed, and that, moreover, if successful, it could pose additional danger to the USSR. The Soviets would probably see an initial localized use of nuclear weapons as still leaving an opportunity to avoid large-scale nuclear war. However, once large-scale use of nuclear weapons in the theater occurred, imminent Soviet escalation to intercontinental nuclear war would be likely.

86. 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 large-scale 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 large-scale preemptive nuclear attacks:

— We believe they would launch a coordinated theater and intercontinental strike in response to a large-scale theater nuclear strike against the western USSR.

— If they acquired convincing evidence that a US intercontinental strike was imminent, they would try to preempt. While we are unable to judge what information would be sufficiently convincing to cause Soviet leaders to order a large-scale preemptive attack, we believe they would be more likely to act on the basis of ambiguous indications and inconclusive evidence of US strike intentions if a battlefield nuclear conflict were under way than during a crisis or a conventional conflict.

— 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.

— For reasons such as lack of convincing evidence from their strategic warning systems or fear of unnecessarily or mistakenly initiating intercontinental nuclear war, the Soviets might not mount a preemptive strike. Their LOTW capability would permit a larger and more coordinated counterattack than retaliation, while reducing the risk of escalation based on insufficient or faulty information.

— We believe the Soviets recognize the possibility that they might fail to get reliable tactical warning of an enemy intercontinental nuclear strike. They prepare for the possibility that they would be unable to act quickly enough to successfully launch a large number of missiles on tactical warning, and could retaliate only after absorbing an attack. For example, their tactical warning sensors might have been damaged or destroyed in the prior phases of conflict. They would attempt to maintain control and launch large-scale strikes with surviving forces.

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

in an evaluation of their force requirements and capabilities.

87. Soviet offensive objectives in carrying out large-scale nuclear strikes—regardless of which side initiated the strikes—would be to neutralize US and Allied military operations and capabilities. In intercontinental strikes the Soviets would seek to destroy US-based nuclear forces and to disrupt and destroy the supporting infrastructure and control systems for these forces as well as the National Command Authority. They would attempt to isolate the United States from the theater campaign by attacking its power projection capabilities. They probably would also attempt to reduce US military power in the long term by attacking other nonnuclear forces, US military-industrial capacity, and governmental control facilities, although the extent of the attack on these targets in the initial strikes could vary, depending on the circumstances. Limiting the initial strikes only to command, control, and communications targets, or only to a portion of US strategic forces such as ICBM silos, is highly unlikely.[21]

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

89. Soviet large-scale strikes probably would be delivered against US and Allied military targets worldwide, as well as against a comprehensive set of political and industrial-economic facilities. We believe that the Soviets would conduct continuing attacks in an attempt to destroy, degrade, and disrupt the US capability to employ nuclear forces, the reconstitution capabilities of US nuclear forces and their command and control, and the US capability to provide support to the theater from which the nuclear conflict arose:

— The Soviets have considerable flexibility in their employment of ICBMs for intercontinental attack. In our judgment, 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. Most SLBMs probably would be targeted against soft military and industrial targets, elements of the command and control communications network, and administrative centers; they do not now have the combination of accuracy and yield to destroy hardened military targets. Some SSBNs probably would participate in initial strikes against the continental United States[

]It is likely that many SLBMs[

] would be withheld for subsequent strikes or as a strategic reserve force.

— Intercontinental bomber operations would probably be launched in coordination with the SRF and SSBN strikes. Bombers probably would become airborne shortly before or at the time of the initial launch of missiles, either for survival or to participate in the attack, or both. We estimate that Soviet heavy bombers would be used in strikes and followup reconnaissance missions against a wide variety of military and industrial targets following (by several hours) a large-scale ballistic missile attack.

90. During the initial nuclear phase of a conflict, Soviet air defense in depth would impose successive barriers to enemy penetration. The Soviets probably would have relocated some surface-to-air missiles to thwart defense suppression and avoidance tactics. They evidently plan to use nuclear-armed SAMs against penetrators at higher altitudes and might also use them at lower altitudes in defense of key targets. They plan for the rapid restoration of damaged SAM sites, airfields, and command, control, and communications facilities.

91. Civil defense plans, initiated earlier, would be fully implemented. 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. With a few days for preparations, essential workers either would be in

[21] For further discussion on the nature of Soviet strikes against US targets, see volume II, chapter VI.

shelters at their place of work or, if off duty, would be dispersed to zones outside the cities.

92. *Later Phases of a Nuclear Conflict.* The Soviets plan for combat operations that could extend weeks beyond the initial nuclear phase. They would clearly prefer to accomplish their objectives quickly, but recognize that the later phases could be protracted, given the difficulty and complexity of conducting operations following large-scale nuclear strikes. We have little evidence of the details of Soviet planning for nuclear conflict in the period following major intercontinental strikes. The Soviets believe combat will continue in this period, with the focus on theater-level military operations, including the use of nuclear weapons. The implication [ ] seems to be that the strategic nuclear forces of both sides are largely expended or neutralized, and their theater forces would have sustained considerable—probably even massive—damage. However, the Soviets would attempt, to the extent possible, to reconstitute and reinforce their forces and continue to pursue their military and political objectives.

93. There is evidence that the Soviets have plans to use their ICBM force in the later phases of nuclear conflict for protracted intercontinental operations. We estimate the Soviets would withhold [ ] of their initial ICBM force for protracted operations. Following initial large-scale strikes, the Soviets would employ follow-on strikes in an effort to inhibit US nuclear force employment and reconstitution efforts. A key objective for the Soviets in the later phases of the nuclear conflict would be to prevent the United States from reconstituting its command and control system and nuclear forces.

94. In addition:

— We judge that the Soviets would attempt to reload and refire some ICBMs and to restore the combat effectiveness of as much of their ICBM force as possible after nuclear strikes, although we believe the Soviets do not make achievement of their primary missions contingent on carrying out major ICBM force reconstitution. The possession of even a small reserve of ICBMs that could be employed after major nuclear strikes could prove significant in conjunction with other nuclear forces in final military operations, in negotiations to end the war, or in the postwar world. According to an alternative view, [ ] cannot be taken as evidence that ICBM refire figures in Soviet war plans.[22]

[ ] Overall, we judge 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. Taking into account the problems the Soviets are likely to face in a postattack environment and the apparently limited extent of preparations they have undertaken to cope with these difficulties, we estimate they probably would be able to reload and refire from ICBM silos over a period of weeks or months only a small portion of the reserve ICBMs they maintain in peacetime. There is an alternative view that the main text overstates the difficulties the Soviets would have in reconstituting their current silo-based ICBM force in nuclear conflict, given the extensive preparations this view holds they have made, and that consequently they would be able to refire a large portion of their reserve ICBMs.[23]

— Many SSBNs probably would be withheld, under naval force protection, for a reserve force role. Limited evidence suggests that the Soviets probably intend to reload some of their SSBNs that have participated in the initial nuclear strikes for follow-on operations. We judge that their capability is limited, however, and that any reload operation could include only a few SSBNs. Any SLBM reload operation would face a number of operational difficulties. According to an alternative view, it is likely that the Soviet SLBM reload capability is even less than the limited one assumed above and, therefore, it is unlikely that reload figures in Soviet war plans even in a small way.[24]

— Evidence suggests the Soviets expect most of their strategic bombers would not survive the earlier phases of nuclear conflict. The importance of any remaining bombers could increase

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

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

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

significantly if nuclear operations lasted beyond several days and space-based reconnaissance systems were no longer operational. Bombers would then be expected to 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.

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

Impact of Future Systems on Soviet Operations

96. The structure and operations of Soviet strategic forces will be markedly different by the 1990s, as new weapons and military support systems are deployed and future systems become operational. The strategic environment will be substantially different from the one in which current Soviet strategic forces operate, with a variety of new US strategic offensive forces and command and control capabilities. In the European theater, they will face new land-mobile nuclear systems with longer ranges, and an increased number of sea-based strike systems; Chinese forces will also be improved.

97. Deployment of a near-real-time imagery and data-relay satellite system in the late 1980s is likely to improve the Soviet intelligence and warning system, making it more timely and more capable of monitoring in a crisis period, as well as able to provide current targeting updates if required.

98. The expansion and integration of mobile and bunkered command and control systems have increased the scope and capability of the Soviet military command and control network to maintain centralized control during the various phases of war. Future operational developments are likely to focus on ensuring survivability of command and control systems as well as improving communications flexibility so as to attempt to ensure continuity of operational control of strategic and theater forces through all phases of conflict. [redacted]

[redacted]

100. Expansion of the offensive forces weapons inventory to include mobile ICBMs, cruise missiles, and new bombers will require that the Soviets make major changes in their offensive operations plans as well as in readiness and command and control procedures:

— The Soviets will continue to rely primarily on silo-based ICBMs for use in initial strikes, while withholding many of their SLBMs and presumably most of their dispersed mobile ICBMs for subsequent strikes during later phases of nuclear conflict. They will use concealment measures extensively to inhibit timely detection of mobile ICBMs in the field.

— The deployment of mobile ICBMs will also lead to improved capabilities for ICBM reload. Although mobile ICBMs would have many of the logistic and operational problems associated with silo refire, they would have major advantages over silo-based systems for reconstitution and refire. Mobility would improve ICBM survivability, thereby increasing the Soviets' capability to reconstitute a larger fraction of their ICBM force. [redacted] Mobile launchers dispersed from a central support base could avoid the damage and contamination that might be present for reload of fixed-point silos. In addition, a mobile system would be less vulnerable to enemy follow-on strikes. The SS-X-25 is apparently going to be deployed and operated in a manner similar to that for the SS-20; we expect it to have a similar reload capability. Because we have not yet identified the basing mode for the rail-mobile SS-X-24, we cannot anticipate how reload operations would be carried out for this system.

— An alternative view holds that, while mobile ICBMs offer theoretical advantages for reload, operational considerations suggest that requirements for additional deliverable warheads can be satisfied with greater assurance by deploying additional missiles on launchers. The holder of this view notes that unwieldy and vulnerable logistics, as well as damage and contamination from US nuclear strikes, could make refire as problematic for mobile missiles as for silo-based ICBMs. [redacted] this view holds that the Soviets do not plan to rely on reload and refire of SS-20s to meet their strategic objectives, and do not intend to engage in large-scale SS-20 refire. Thus, in this view, there is no basis for attributing to the Soviets an intention to reload the SS-X-25.[25]

— The Soviets almost certainly will apply their experience with the mobile SS-20 in establishing command and control readiness procedures for these units. We estimate [redacted] mobile command and control system of airborne command posts and field-mobile command, control, and communications van units at all echelons.

[redacted]

— The strategy of operating most of their SSBNs with long-range SLBMs in Arctic bastions and under the polar ice improves the Soviets' ability to withhold some submarines as a strategic reserve. Under-ice operations are likely to increase as Typhoons and D-IVs enter the force. A number of design features make the Typhoon particularly well suited for under-ice operations and indicate that it was probably built especially for such wartime operations. The replacement of SS-N-18s on D-IIIs by the much longer range SS-NX-23 would permit D-IIIs to operate from deep within the bastions or under ice, rather than at the forward edge of the bastions. We believe the Soviets currently consider D-IIIs vulnerable to US ASW attack while on patrol.

— SLCMs will add diversity and flexibility to Soviet strategic strike capabilities. Although the primary

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

application of the SS-NX-21 SLCM will probably be for nuclear strikes against theater targets, it would also probably be used for strikes against targets in the continental United States. We expect the Soviets to begin deployments of SS-NX-21–equipped V-III SSNs off the US coasts in 1985. Some of the dedicated SS-NX-24 SSGNs also will probably be deployed near the US coasts in the late 1980s. We have no evidence concerning the intended employment of these new SLCMs, but Soviet planners could not be sure of using them in a preemptive strike against the United States without losing the advantage of surprise and giving warning of the attack. The long flight time of the subsonic SS-NX-21 makes it particularly unlikely that the Soviets would launch it against US targets in a preemptive strike before ballistic missile launches. SLCMs are especially suitable, however, for follow-on strikes against industrial concentrations, command and control sites, and other military targets.

— The employment of bombers in intercontinental strikes would be likely to follow large-scale attacks by land- and sea-based Soviet ballistic missile systems. Deployment of the 3,000- to 3,500-km AS-15 ALCM has given the Soviets a long-range standoff strike capability. Bear H aircraft are able to launch AS-15s from Canadian airspace or from points several hundred kilometers off either US coast and still strike most target areas in the continental United States. We expect the bomber force to play a greater role in intercontinental strike operations as the new ALCM-carrying aircraft enter the force.

101. The introduction of new air defense systems designed to improve Soviet early warning and detection, tracking, command and control, and intercept capabilities against low-altitude bombers and cruise missiles will require major operational changes:

— The Soviets appear most concerned, in the northern and northwestern approaches to their country, about low-altitude bombers and cruise missiles—air threats that traditionally have been countered by national air defense forces. The Soviets will probably rely heavily on a mixture of Foxhounds and Flankers for overwater operations, and on Flankers, Fulcrums, and Floggers for operations over land.

— The Soviets anticipate that operations would be more complex opposite their western military districts than in the northern and northwestern approaches. We estimate, therefore, that in these military districts they would rely heavily on a mixture of Flogger and more maneuverable Flanker and Fulcrum aircraft that are well suited for theater operations.

— The Soviets will probably continue to emphasize integration of their air defense capabilities through the development of more compatible data transmission systems and new communications networks. In the areas where new surveillance data systems are deployed, fighters with enhanced lookdown/shootdown capabilities will be more effectively vectored to engage low-altitude targets. The Soviets probably will integrate the capabilities of Mainstay AWACS aircraft and interceptors, such as the Foxhound. The Mainstay could then be used in forward air defense operations as an early warning system or to direct groups of interceptors toward the vicinity of incoming targets. With the Mainstay the Soviets will attempt to extend their air defense zone outward several hundred kilometers and attempt to engage cruise missiles in flight and cruise missile carriers approaching the Soviet border in order to strike targets far inland. They probably will concentrate their available Mainstay aircraft in the most critical approaches from which they perceive attacks by low-altitude penetrating bombers and cruise missiles would be likely to come.

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

G. Trends in Soviet Capabilities To Perform Strategic Missions

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

— Destroy enemy nuclear delivery means.

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

— Destroy other military and nonmilitary targets.

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

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

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

Destroying Enemy Nuclear Delivery Means

103. ***Minuteman Silos.*** The Soviets have enough hard-target-capable ICBM RVs today to attack all US missile silos and launch control centers and will have larger numbers of hard-target-capable RVs in the future (as shown in figure 12). 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.

104. Figure 23 depicts our estimates of the capability of the Soviets' current and projected MIRVed ICBMs to inflict severe damage against a Minuteman silo in a well-executed strike. As illustrated in the figure, uncertainties in our estimates of the accuracy, reliability, and yield of Soviet ICBMs, when statistically combined, produce substantial uncertainties in the probability that a Minuteman silo would be destroyed. [redacted] The projected uncertainties in our estimates of future weapon system characteristics have less significance for damage expectancy as the Soviets further improve accuracy. The trend of growing countersilo capability for Soviet ICBMs is apparent.

105. Recent analysis of the accuracies of the SS-18 and the SS-19 [redacted] has led us to reassess current Soviet capabilities for attacking US Minuteman silos [redacted] We previously estimated that the SS-18 and the SS-19 had similar hard-target capabilities. Although there are differing views, we now assess the SS-19 to be substantially less accurate than we previously estimated, and that the Soviets currently rely exclusively on the SS-18 for the countersilo mission:

— According to one view, which agrees with this conclusion, two SS-18 Mod 4 warheads allocated to a Minuteman silo would result in a best estimate damage expectancy, as shown in figure 23, of about 70 percent, with the uncertainties as shown. The holder of this view assesses that, because the SS-19's accuracy is much worse than that of the SS-18, a similar attack with SS-19 warheads would result in a damage expectancy of less than 40 percent.[26]

— The holders of a second view disagree with the conclusion that the Soviets rely exclusively on the SS-18 to attack Minuteman silos. In this view, the SS-18 and SS-19 have very similar yield and accuracy, and both missiles have a capability to effectively attack US silos. The holders of this view assess a two-on-one attack on a Minuteman silo by either the SS-18 or the SS-19 as resulting in damage expectancies of about 80 to 85 percent, with the uncertainties as shown.[27]

106. The projected accuracy improvements for the SS-18 follow-ons will produce a substantial increase in the countersilo potential of the future Soviet heavy ICBM force. Although there is some disagreement on the amount of that improvement, as noted in figure 23, we judge that heavy ICBMs will continue to be the primary and most effective weapons against US missile silos during the next 10 years.

107. The capability of SS-X-24 ICBMs against Minuteman silos is considerably less than we assessed in last year's Estimate [redacted] The Soviets seem to have emphasized ruggedness, mobility, and quick-launch characteristics in the guidance system, rather than accuracy. [redacted] has led us to judge that the SS-X-24 is unlikely to be used against US silos. We are uncertain as to the types of improvements that will take place in the program for SS-X-24–class ICBMs over the next 10 years. Figure 23 shows the improvements that could occur in hard-target capability. An improved SS-X-24 in the late 1980s would have a small increase in capability, but, if a follow-on is deployed in the early 1990s, the hard-target capability could improve to the point that the SS-X-24 follow-on would achieve a damage expectancy comparable to that of the current SS-18 Mod 4. We estimate that an improved follow-on

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

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

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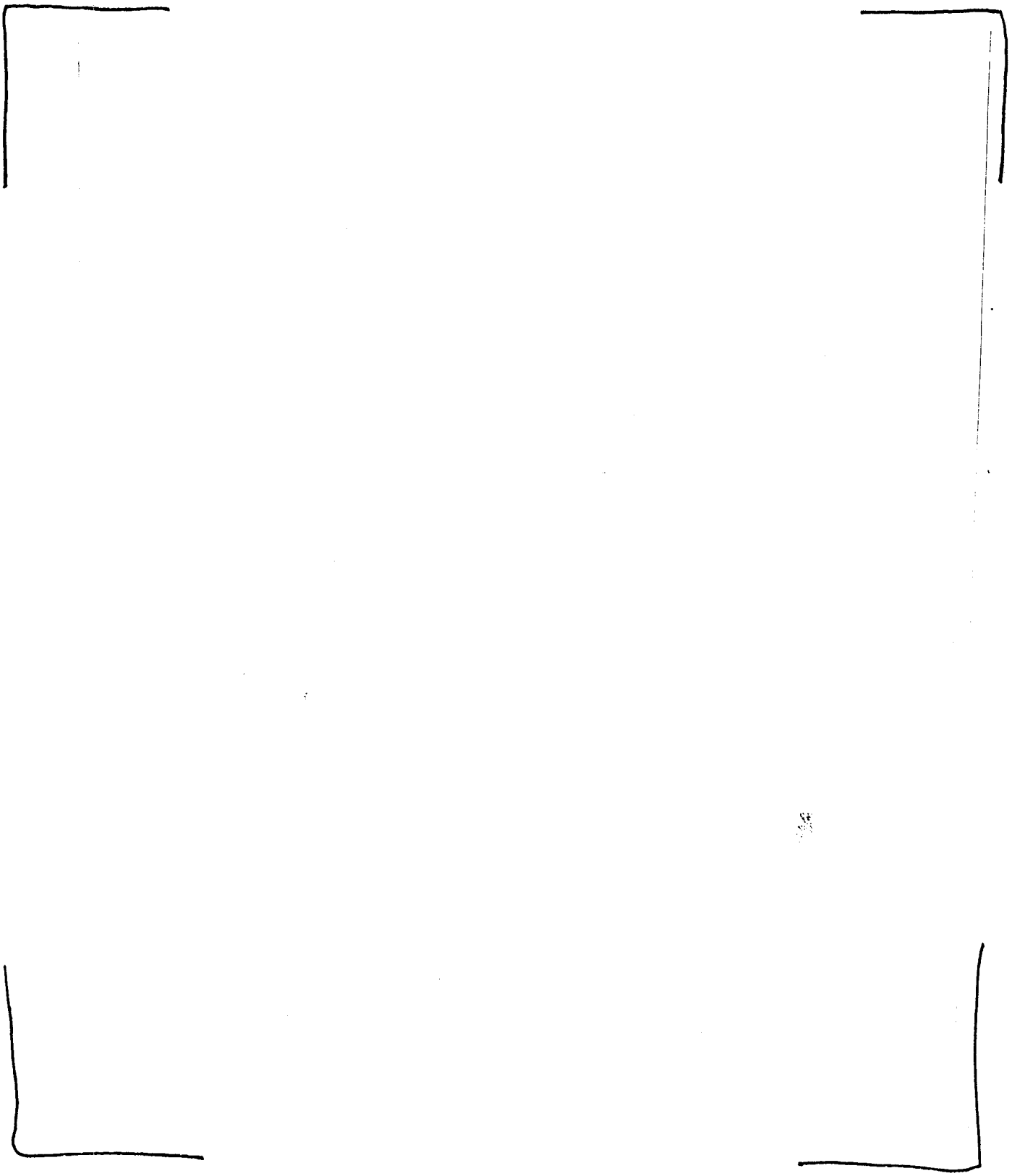

to the SS-X-24 projected for initial deployment in the mid-1990s would have a significant hard-target capability.

108. *Strategic Aircraft.* The Soviets would attack bomber bases as part of their initial strike. Those aircraft not on alert and unable to become airborne in a matter of minutes would be highly vulnerable. The Soviets would anticipate, however, that many bombers would survive such a strike. 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 a Soviet attack would be able to destroy most of the US alert strategic aircraft. We judge the Soviets will not be able to develop a reliable capability during the next 10 years to employ strategic offensive weapons for efficient targeting and destruction of US aircraft in flight.

109. *SSBNs.* The Soviets do not now have an effective capability against US SSBNs operating in open-ocean areas. Although the ASW capabilities of Soviet submarines will improve over the next decade, their overall ASW effectiveness against US SSBNs on patrol is unlikely to improve because:

[redacted]

110. *Mobile Missiles.* We judge that 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. Mobile missiles present a greater problem—NATO INF systems and, in the 1990s, a US mobile ICBM. The Soviets believe the critical factor in attacking dispersed mobile missiles is the availability of adequate reconnaissance information. To counter mobile missiles the Soviets plan to make extensive use of all available reconnaissance means—including signals intelligence (SIGINT), aircraft and satellite imagery, and human collectors—to locate and track the mobile systems, and a combination of conventional and nuclear weapons to destroy them. Soviet special-purpose forces (Spetsnaz) have specifically been tasked to perform behind-the-lines reconnaissance in Europe to locate enemy nuclear-capable missile systems for the purpose of initial strike targeting. They are also tasked with carrying out sabotage and commando operations against NATO nuclear forces.

111. Whether the Soviets could successfully locate mobile missile units in Europe and then target and destroy them would depend heavily on the conflict circumstances of the conventional phase—the extent to which missile units could remain hidden or move frequently and the effect of NATO air defenses on Soviet air operations—and the ability of Soviet forces to react quickly to changes in those circumstances. The Soviets probably would employ land-based strategic ballistic missiles to strike most located NATO mobile missile targets and would use strategic bombers against others, although Pershing units deployed within Soviet front targeting areas might be attacked by Soviet tactical systems.

112. Deployment of small, mobile ICBMs based in the continental United States would pose a serious problem for Soviet targeters. Current and projected reconnaissance platforms capable of monitoring targets in the United States probably could not provide target location data quickly enough or with sufficient precision to offer high confidence of destruction of individual mobile launchers after they have deployed to the field. While Soviet planners might choose to barrage mobile ICBM deployment areas, as we judge they would do against Pershings, because of competing targeting requirements they would face serious problems in allocating the large number of weapons need-

ed against a mobile ICBM force, even if their intercontinental attack forces had expanded in the 1990s to twice the current force.

Attacks on US Space Systems

113. We estimate it is likely that the Soviets would attempt to destroy or interfere with US satellites during an intense conventional conflict. The Soviets would presumably base a decision to conduct ASAT operations against US space systems on a variety of factors, including their perception of the military value of the various US systems, US ASAT capabilities, their perception of the capabilities of their antisatellite systems, and ultimately their view of the potential net military advantages. If the Soviets decided to use ASAT weapons, in conventional war they probably would rely on their nonnuclear orbital interceptor, electronic warfare, and ground-based lasers to attempt to negate US space systems. Although it is possible that nuclear-armed Galosh ABM interceptors would be used in an intense conventional conflict, because of the risk of escalation they probably would not be used until nuclear conflict appeared imminent or in the initial stages of nuclear war. The control and launch facilities for the Soviets' orbital interceptor, the control and aboveground launch facilities for the Galosh ABM interceptors at Saryshagan, and the two ground-based high-energy lasers at Saryshagan are not hardened against nuclear attack, suggesting the Soviets would have to use these weapons prior to and at the onset of their initial nuclear strikes. We judge that the Soviets do not currently have the capability to reconstitute any of these antisatellite capabilities after absorbing nuclear strikes.

114. Current Soviet antisatellite capabilities are limited and fall short of meeting the apparent Soviet requirement to be able to deny enemy use of space in time of war:

— The nonnuclear orbital interceptor is capable of destroying some satellites in near-Earth orbit, and because it is nonnuclear it would be used at lower levels of conflict than a nuclear ASAT weapon.[redacted]

— The nuclear-armed Galosh ABM interceptor used as an ASAT weapon would offset several deficiencies of the orbital interceptor. The Galosh would be less susceptible to countermeasures because its direct-ascent flight profile allows it to attack targets within several minutes from launch; therefore, it could be used against high-priority low-altitude satellites that the orbital interceptor was unable to successfully engage. An alternative view holds that an ASAT role for the Galosh is unlikely.[28]

— There are operational limitations that could affect Soviet planners' views of the military utility of the test lasers at Saryshagan. Because such lasers could be used only on relatively cloud-free days, and when target satellites are nearly overhead, there could be a considerable delay between the time a decision is made to attack a particular satellite and the first opportunity to actually be able to carry out the attack.

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

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

116. The Soviets have the capability to destroy or interfere with 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 significant numbers of US weapons.

117. The effectiveness of a Soviet attack on the US command, control, and communications system, which would be intended to delay or prevent issuance, receipt, and verification of US launch orders, would depend in part on the US alert posture. We cannot assess the effects of such an attack. The Soviets' military doctrine, their emphasis on radioelectronic combat,[redacted] as well as their preoccupation

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

with the survivability of their own command, control, and communications systems, lead us to judge that they would devote substantial efforts to:

- Disconnecting and destroying the US National Command Authority, operating alternates, and critical intermediate nuclear force control points in the United States and Europe, through direct nuclear strikes by multiple means.
- Delaying or preventing transmission of launch orders by disrupting the various communications paths with direct attacks, jamming, and electromagnetic interference, including attacks on some US space systems, and by a well-coordinated attack on many control points and communications facilities.

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

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

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

Capabilities for Comprehensive Strategic Attacks

119. We judge that a Soviet nuclear attack against enemy strategic nuclear capabilities would take place as part of a larger comprehensive strategic attack. Soviet strategic missions are planned in the context of integrated operations within designated theaters of military operations.

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

121. Our analysis of potential targets in the North American Theater of Military Operations suggests the Soviets might identify about 2,100 targets associated with US nuclear forces, their support, and their command and control; and over 3,000 other fixed military, government, and economic installations, about one-half of which support US or NATO nonnuclear military forces that present a threat or potential threat to Soviet operations in Eurasia and at sea, including potential military transportation facilities. The remainder includes installations critical for supporting US civilian Federal Government operations and economic facilities related to the production and supply of military capabilities. In addition, the Soviets probably plan to attack some of the energy production plant network that supports the North American military and civilian economy. Many of these installations are clustered geographically, and only about 25 percent are hardened.

122. An initial Soviet strike against such a comprehensive set of targets in North America probably would currently include about half the Soviets' deployed warheads, leaving their remaining warheads, plus any weapon systems that could be reloaded, to fulfill other strategic requirements. (These numbers assume that the Soviets fully generate their strategic forces before a nuclear strike and do not reflect potential force degradation from losses during conventional conflict or endurance limitations.)

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

— About 11,000 online warheads, if Soviet forces generally remain within SALT I and SALT II numerical constraints through 1990 (Force 1).

— About 12,000 or 15,000 online warheads, if Soviet forces are expanded beyond arms control limitations beginning in 1986 (Forces 2 and 3).

— About 7,000 online warheads, if Soviet forces are constrained by the Soviet START proposal (Force 4).

In addition, the Soviets would have some reserve weapons that potentially would be available for refire. (See paragraph 94 for an alternative view.)

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

125. In a retaliatory attack the situation is much more complex. The command and control over forces would be degraded, with great unknowns for the Soviets in the degree of control remaining initially, and in the ability to reestablish control, where it had 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.

126. With the vulnerability of Soviet ICBM silos increasing during the period of this Estimate, if more accurate US missiles are deployed, the Soviets will be faced with more difficult problems in assuring adequate retaliatory capabilities in the event they are struck first. Their efforts to expand the capabilities of their command and control network, improve the capabilities and survivability of their SLBM force, and field two new mobile ICBMs reflect their concern for this problem.

Survivability of Soviet Strategic Offensive Forces

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

SS-17 and SS-19 silos have nearly the same structural hardness as that for the SS-18; SS-11 and SS-13 silos are considerably softer.

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

Figure 24 depicts a trend of growing Soviet ICBM silo vulnerability; US ICBMs and SLBMs in development would pose a considerably greater threat, due mainly to accuracy improvements. US bombers and land-attack cruise missiles could cause similar high damage to Soviet silos, depending on the extent to which they could penetrate Soviet air defenses. (The figure should not be taken to represent the potential effectiveness of a forcewide attack by US weapons on Soviet ICBM silos, however, because not all technical and operational uncertainties that would be associated with such an attack were considered.)

128. We expect the Soviets may further modify their latest silos and launch control centers and further

harden the missile systems, on the basis of experience they have gained in tests that simulate nuclear weapon effects, attempting to gain slight increases in hardness. We have seen no evidence the Soviets will significantly harden ICBM silo structures in the future.

129. We judge that Soviet planners are unlikely to see much advantage in superhardening missile silos to withstand extremely high overpressures. This judgment is based on the Soviet belief that surface bursts maximize destruction of buried structures such as ICBM systems and the evidence we have on Soviet perceptions of how nuclear weapons would affect such structures. They apparently perceive nuclear effects from surface bursts other than blast overpressure would become the dominant destruction mechanism. Soviet and Warsaw Pact nuclear weapons effects writings imply that cratering, ground motion, neutron radiation, and EMP effects all would play a critical role in assessing the overall vulnerability of Soviet ICBMs. Classified Soviet writings through the late 1970s state that surface or subsurface bursts maximize the destruction of buried structures; the writings explicitly discount ground shock from airbursts as a major damage mechanism that should be used against buried structures. It is likely that they assume the United States would target each Soviet ICBM silo with at least one weapon set for groundburst.

130. We expect that Soviet road-mobile SS-X-25 ICBMs would have many basic operational features in common with the SS-20 IRBM—housed in unhardened buildings at support bases with a portion of the force in the field at all times. Once dispersed into field sites, the launchers would become more survivable because they would be difficult to locate. The areas to which these missiles could be deployed are quite large. Unless their locations were determined, the field-deployed missiles would be potentially vulnerable only to a barrage missile attack designed to saturate likely deployment or operating areas.

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

- We judge that Soviet strategic forces probably would suffer attrition during conventional conflict, but the overall capability of these forces would not be seriously degraded.
- The Soviets believe they will lose SSBNs during conventional conflict, particularly those with shorter range SLBMs that must be forward deployed to attack US targets. Soviet SSBNs that disperse to sea would not be vulnerable to an enemy nuclear attack, although they would be subject to attrition from enemy ASW attacks. SSBNs with long-range SLBMs can remain in range of targets in the United States while operating in waters close to the USSR, exploiting ice cover and shallow ocean areas, avoiding Western sound surveillance system (SOSUS) arrays, and under the protection of a significant portion of their general purpose naval forces. These practices probably would increase the number of Soviet SSBNs that 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.
- We cannot evaluate the survivability and operability of the USSR's strategic bomber force during the nuclear phases of a conflict. Important factors include the extent of bomber losses during the preceding phases of conflict, capabilities to disperse and maintain aircraft at untargeted locations, and capabilities to reconstitute the bomber force. Soviet strategic bombers on alert at dispersal bases, or in flight during an enemy attack, however, would have an increased likelihood of survival.

Protecting the USSR With Strategic Defense

132. Although we provide an assessment of strategic defense elements individually, we have not assessed the degree of overall protection, now or in the future, that would be afforded by the combination of active and passive defenses.

133. ***Ballistic Missile Defense.*** The current Moscow ABM system of 16 launchers provides only a limited, single-layer defense—it is capable of intercepting RVs only before they reenter the atmosphere. These defenses probably could counter a small attack

not accompanied by penetration aids such as chaff and decoys. Attempting to counter a larger number of attacking RVs, however, would rapidly exhaust the available interceptors. When completed, the ongoing upgrade of the defenses at Moscow will provide the Soviets with a much more reliable, two-layer capability to defend critical targets at Moscow against an attack by some tens of current types of US RVs and against increasingly sophisticated third-country missiles. In a large-scale attack, the projected 100 ABM 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.

134. The upgrade to the defenses at Moscow, and the completion of the six new large phased-array radars, would provide the Soviets with a foundation for expanding their defenses. With about 500 interceptors the Soviets could make hardened targets around Moscow, especially command bunkers, less vulnerable to a substantial US force of attacking RVs, although 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 facilities as well. The effectiveness of such a defense against a Chinese attack could be considerable.

135. 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, the potential effect on the US strategic missile force would be substantial. A US preemptive strike in the face of such a heavy defense would be degraded, perhaps to a significant degree. A US retaliatory strike could be degraded even more, because the lower number and rate of RV arrivals in most areas probably would result in lower leakage rates for the defense.

136. The actual effectiveness of such a defense would depend, not only on the performance of the deployed ABM systems, but also on the vulnerabilities of key elements of the network and the potential of an attacking force to exploit them. We have not quantitatively assessed, and are uncertain about, the potential ability of a widespread ABM system to reduce overall damage and to protect key military functions. It would probably be more effective against SLBMs than against ICBMs, if adequate coverage of SLBM approaches were provided by battle management support radars. US countermeasures such as decoys, chaff, and maneuvering RVs could reduce its effectiveness.

In any case, widespread Soviet deployment of an ABM system, even if US evaluations indicated it could be overcome by an attacking force, would complicate US attack planning and create major uncertainties for US planners about the potential effectiveness of a US strike. It is premature to judge the capabilities of the new advanced SA-X-12 surface-to-air missile system. However, if our assumptions about certain features of this system are correct, its potential contribution to ballistic missile defenses will be of growing concern as it is deployed in increasing numbers. In addition, according to one view, the potential ABM capabilities of the SA-5 and SA-10 systems could further complicate US attack planning.[29]

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

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

138. From the mid-to-late 1980s on, the Soviet air defense system will be qualitatively different from the current system. The Soviets will have deployed in large number a variety of new systems 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

139. 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 would not be capable of inflicting sufficient losses to prevent large-scale damage to the USSR. We judge, 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.

140. 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. The holder of this view believes that the effectiveness in such areas would be significantly higher against a combined attack of penetrating bombers, SRAMs, and cruise missiles than the Estimate suggests.[50]

141. *Civil Defense.* We estimate that, with as little as a few hours' warning, a large percentage of Soviet civilian leaders—party, government, and economic—making up the wartime management structure would survive a large-scale US nuclear strike. Although the Soviets could not prevent massive damage to their economy from such an attack, timely implementation of sheltering, dispersal, and relocation plans would provide effective protection for a large percentage of the essential work force from the initial effects of a large-scale nuclear strike. Soviet population casualties would vary greatly, depending on the extent to which civil defense measures had been implemented.

142. *Protection of the Leadership and Command and Control Continuity.* The Soviets have a large program to provide protection for their leadership.

we estimate there are possibly as many as 1,500 relocation facilities for leaders at the national and regional levels; many of these are for leaders at lower levels, the republics and oblasts. The deep underground facilities at Sharapovo and Chekhov, near Moscow, for the National Command Authority would present a difficult targeting problem. Evidence acquired in the last several years indicates these sites are harder, deeper, and much less vulnerable than had been estimated in the early 1980s.

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

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

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

144. We believe the Soviet command and control system for nuclear forces, even if directly attacked, could ensure transmission of launch instructions; however, retaliatory strikes could be delayed and not fully coordinated. Although US attacks could destroy many known fixed command, control, and communications facilities, many elements of the political leadership and military commands probably would survive, and redundancy in Soviet strategic communications would prevent loss of any one channel from disabling the overall system.

145. It seems highly likely that the Soviets could maintain overall continuity of command and control, although it would probably be degraded. The Soviets could experience difficulty 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 unclear, moreover, how effectively the Soviets could retarget and employ surviving or reconstituted weapons. We believe the Soviets might expect to lose most satellite reconnaissance capability and would thus rely primarily on long-range strike aircraft, signal intercept capabilities, and agents.

146. Although some Soviet reconnaissance collection assets would probably survive a comprehensive nuclear attack, many of the installations and facilities that control these assets or receive and evaluate their information would probably be destroyed, including satellite ground stations, major communications facilities, intelligence coordination centers, and airfields servicing reconnaissance aircraft. The expected shortfalls of the Soviet reconnaissance system in the post-strike environment would probably limit missile retargeting, at least through the 1980s, to compensating for known launch failures. Strikes against new targets or targets previously struck probably would be most effectively carried out by aircraft.

147. The Soviets perceive the Pershing II's accuracy, range, and short flight time (and, possibly in the 1990s, those of Trident D-5 SLBMs) as providing the capability to threaten key elements of their command, control, communications, and warning systems, a threat they do not now face to the same degree from less accurate SLBMs. In making pessimistic threat assessments, the Soviets probably assume that some key targets in the Moscow area are threatened by the Pershing II, because they apparently assume its range can easily be increased to 2,500 kilometers. An alternative view holds that sufficient information is available to the Soviets on the range capability of the Pershing II; therefore, it is unlikely the Soviets would plan for the range to be any greater than 1,800 km.[31] Pershing II weapons have the capability to destroy hardened Soviet facilities; because of the short flight time of the Pershing II, the Soviets probably would not have time to launch on tactical warning of a Pershing II attack. However, the overall degradation that could occur to the Soviet command, control, and communications network, the early warning network, and strategic missile installations as a result of a Pershing II attack alone would not significantly degrade the Soviets' capability to execute a large-scale retaliatory strike. The Soviets may believe, in their pessimistic threat assessments, that their capabilities for LOTW against a US ICBM attack could be affected. The holder of an alternative view believes the degradation to the Soviets' command, control, communications, and warning systems that would result from a Pershing II attack would not significantly degrade the Soviets' capability to execute an LOTW.[32]

Concluding Observations

148. 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 large-scale nuclear strikes:

- Soviet offensive forces will not be able to reliably target and destroy patrolling US SSBNs, alert aircraft, aircraft in flight, or dispersed 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.
- Dispersed Soviet mobile missiles, many SSBNs patrolling in waters near the USSR, and a large part of the silo-based ICBM force would currently survive US nuclear attack. We assess the Soviets can launch ICBMs on tactical warning, assuming their warning and command and control systems were undegraded.

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

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

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.

149. We believe that the Soviets' confidence in their capabilities for global conflict probably will be critically dependent on command and control considerations—the need for continuity in their own 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. The Soviets continue to make extensive efforts to improve all aspects of their command, control, and communications capabilities. We believe they would launch continuing attacks on US and Allied strategic command, control, and communications to prevent or impair the coordination of retaliatory strikes, thereby easing the burden on Soviet strategic defenses and impairing US and Allied abilities to marshal military and civilian resources to reconstitute forces. Planned US and NATO improvements in command, control, and communications will probably increase the Soviets' uncertainties about their capabilities to disrupt enemy force operations.

150. The evidence shows clearly that Soviet leaders are attempting to prepare their military forces for the possibility that they will actually have 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. An alternative view notes that it should, at the same time, be recognized 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, while they will try to do the best they can, 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.[33]

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

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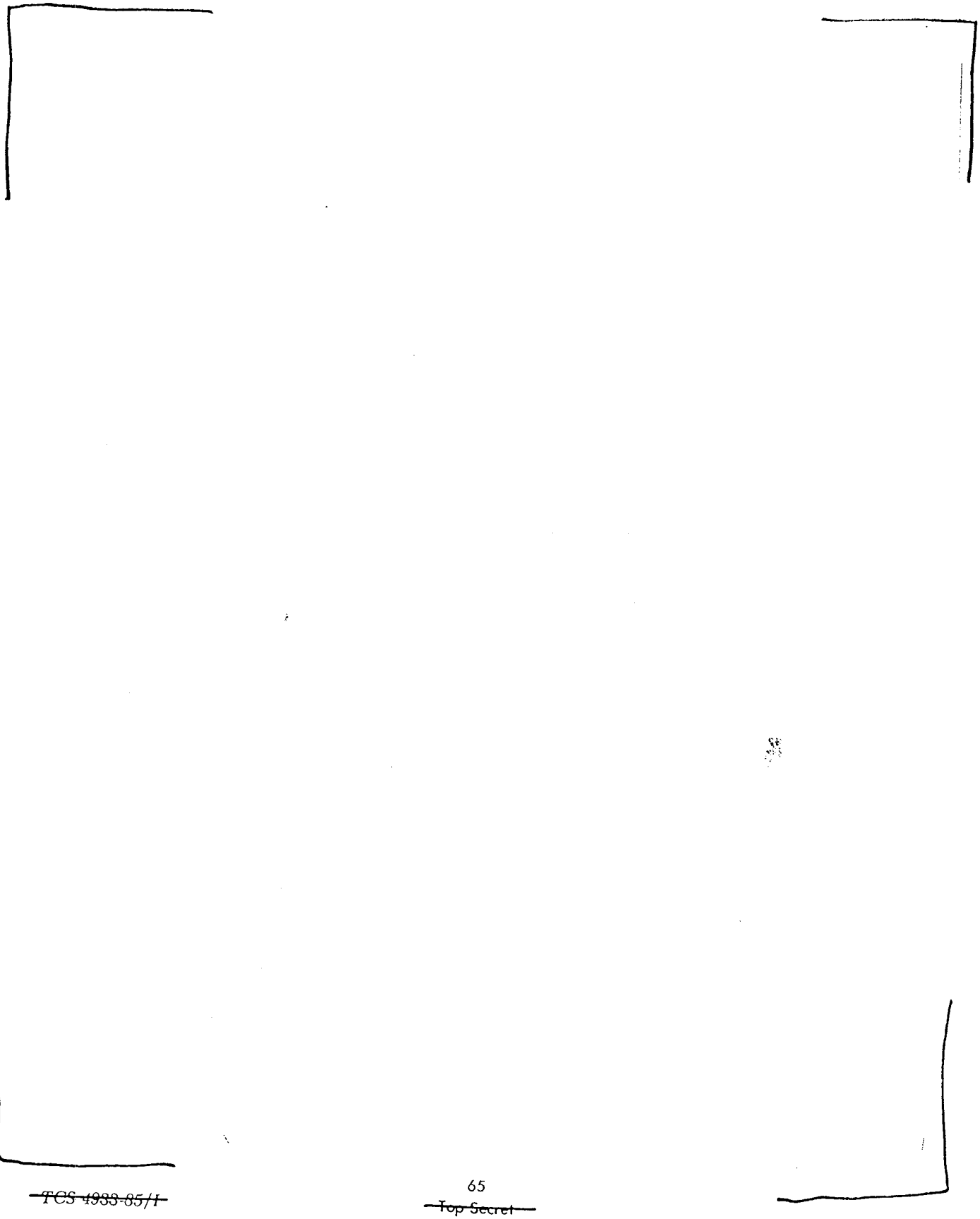

ANNEX B

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NIE 11-3/8-84/85 is a comprehensive survey of Soviet strategic forces and capabilities. Judgments have been drawn from other National Intelligence Estimates and from Interagency Intelligence Assessments and Memorandums that contain more in-depth discussions on specific subject areas. These include:

- NIE 11-13-82, *Soviet Ballistic Missile Defense*, 13 October 1982. Describes Soviet capabilities for ballistic missile defense.
- NIE 11-1-83, *The Soviet Space Program*, 19 July 1983. Describes current Soviet space capabilities, identifies elements of the space program in development, and estimates how these will affect future Soviet capabilities. (NIE 11-1-85 is currently in draft.)
- NIE 13-3/8-83, *Chinese Capabilities for Nuclear Conflict*, 29 July 1983. Describes China's capabilities for strategic and tactical nuclear conflict at present and during the next 10 years. (An update is currently being prepared.)
- IIA, NIC M 83-10017, *Possible Soviet Responses to the US Strategic Defense Initiative*, 12 September 1983. Examines general principles and constraints in the areas of politics, military doctrine, and research and development practices that will influence the Soviets' response to a US ballistic missile defense. (An update is currently being prepared.)
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- NI IIA 84-10006, *The Soviet Approach to Nuclear Winter*, December 1984. Examines Soviet research on Nuclear Winter to determine what the Soviet leaders think of the hypothesis, the extent to which they are exploiting the subject for propaganda purposes, and the most likely implications from Moscow's perspective.
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