INTENTIONS AND CAPABILITIES: ESTIMATES ON SOVIET STRATEGIC FORCES, 1950-1983

EDITOR
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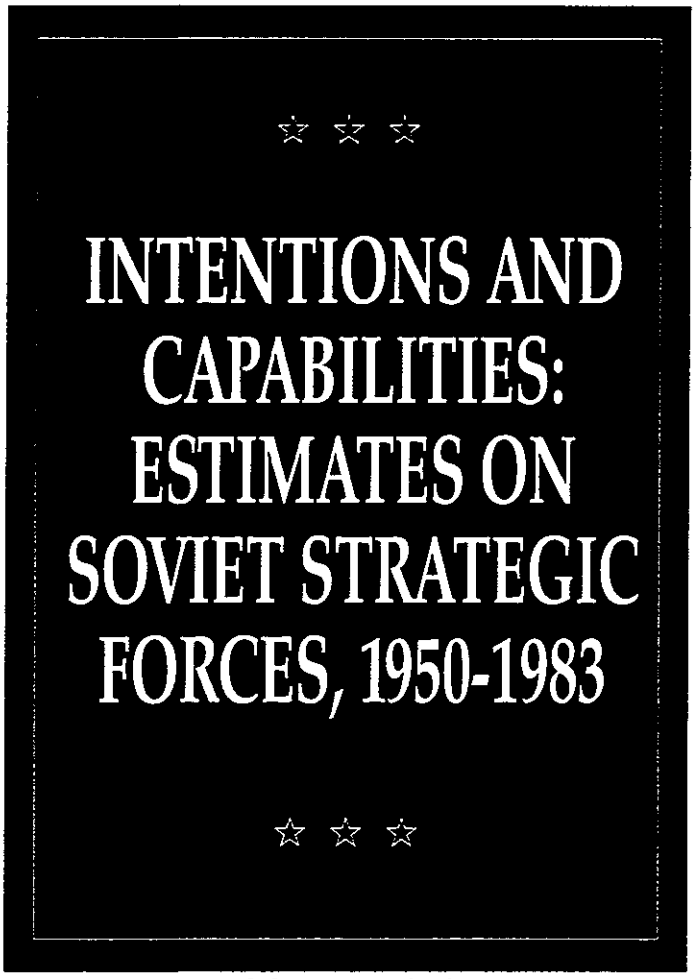

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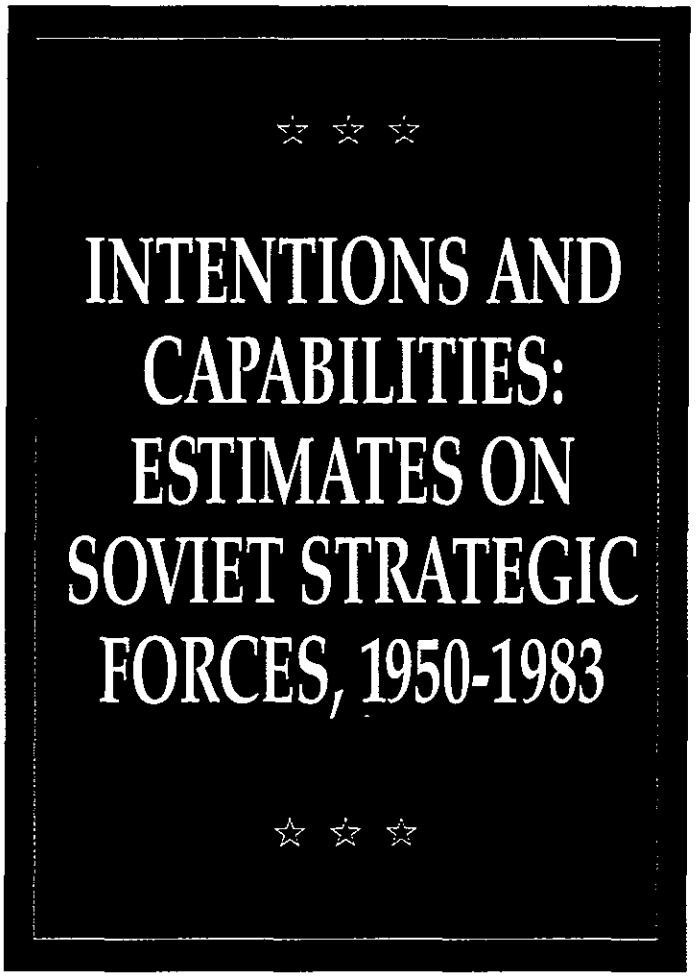

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CENTRAL INTELLIGENCE AGENCY
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Foreword

The documents in this volume—a selection of 41 National Intelligence Estimates[1] on Soviet strategic capabilities and intentions from the 1950s until 1983—pertain to the US Intelligence Community's performance of its most critical mission during the Cold War. Our purpose in producing the volume is simply to make more readily accessible to scholars, and to the public, records that shed light on the history of American intelligence and foreign policy as well as on the history of the USSR and Russia.

The prerequisite for publishing these documents was declassifying them, a process that began when Director of Central Intelligence Robert Gates in February 1992 made a public commitment that CIA would undertake a declassification review of all National Intelligence Estimates on the Soviet Union 10 years old or older. By 1993 CIA had released and transferred to the National Archives several hundred Estimates on the Soviet Union, largely dealing with nonstrategic matters, from which a sample was published that year as *Selected Estimates on the Soviet Union, 1950-1959.*

In November 1994, 80 additional Estimates, on Soviet strategic forces, were declassified (with some excisions). Ten of these Estimates were reproduced and distributed to those attending a conference on estimating Soviet military power that was held at Cambridge, Massachusetts, in December 1994, with CIA's Center for the Study of Intelligence (CSI) and Harvard University's Charles Warren Center for Studies in American History as cosponsors.

The current volume includes a much larger number of NIEs on Soviet strategic forces, but selecting which Estimates to include was nevertheless difficult. For the most part we have included those documents that exemplified intelligence thinking on the various elements of the topic rather than those that were for some reason unusual. To make the volume of manageable scope and size, only the shorter Estimates have been reproduced in their entirety; we have included the "Summaries" and "Key Judgments" of longer Estimates, along with extracts from their other sections. In every case, the Estimate in its declassified version has been transferred in its entirety to the National Archives. Readers interested in the full text of the documents may consult them there.

[1] "National intelligence" and "National Intelligence Estimates" generally are discussed in the "Introduction" and the section on "NIE Designators and Format."

The Center for the Study of Intelligence, directed by Dr. Brian Latell, has managed the process of declassifying and publishing the documents. CSI's Historical Review Group carried out the extensive consultation within the Agency and coordination with other elements of the Intelligence Community necessary to release the documents. Dr. Donald P. Steury of the History Staff, which is also part of CSI, compiled and edited this volume.

Intelligence Estimates on Soviet strategic forces drove the entire strategic analytical process within the American Intelligence Community and played a central role in the great strategic debates affecting US behavior throughout the Cold War. Controversy and analytical closure at the working level influenced debate and decisionmaking at the policy level regarding arms control, force structure, resource allocation, military procurement, and contingency planning for war. Some regarded the Estimates as a battleground, while others used the Estimates as a bible; few of those concerned with Soviet strategic matters ignored the Estimates. They provided a foundation for official US public statements on Soviet military power and indirectly had a significant impact on the American population's understanding of the Soviet strategic threat as well.

Despite many uncertainties regarding many specific issues, by the mid-1960s the intelligence community was rapidly improving its ability to provide in the Estimates a broad description of the Soviet forces at any given time, and a general explanation of how these forces operated and what they would look like a few years hence. Increased knowledge of what the Soviet forces consisted of afforded a markedly improved degree of "crisis stability." Growing confidence that intelligence monitoring—largely through technical means—would detect any major development program that could significantly expand Moscow's strategic capabilities made the arms competition more restrained and cheaper than it might have been. As a corollary, limiting and controlling the arms race became possible.

At the same time, the Estimates had a major impact on the development of US intelligence methodologies and capabilities in collection and analysis. By defining key data gaps and focusing attention on questions that needed to be answered, the Estimates gave impetus to many of the great intelligence breakthroughs of the era—in such areas as remote sensing, imagery, telemetry analysis, radar signature analysis, and sonar analysis.

A major reason for the impact and success of the strategic Estimates was their focus on current and near-term Soviet capabilities—where evidence was more solid—as well as on projections for the future—inherently a taller order. Because of space constraints, the portions of the Estimates excerpted for inclusion here tend to be more oriented toward the future, but

the Estimates in full text aggregated a massive amount of data on current capabilities. These descriptive sections constituted a critical contribution of the Estimates.

Production of the strategic Estimates, usually on an annual basis, culminated an enormous collection, processing, and reporting enterprise that fed material and analysis to planners and policymakers day in and day out throughout the year. The regularity of the production schedule was a major strength of the strategic Estimates. The Estimate defined the problems that intelligence experts knew they would have to deal with over the coming year and influenced analytical and collection strategies.

Not all categories of Estimates enjoyed the reputation or served the function of the Soviet strategic Estimates. In most subject areas Estimates were produced only episodically. With their often long preparation times, Estimates were not always relevant to immediate policymaker concerns in the way that current intelligence publications were. Some consumers of intelligence, believing the community coordination of Estimates could result in "lowest common denominator" assessments, preferred to rely on what they saw as the sharper analysis contained in papers produced by individual intelligence agencies. Thus, the production of the Soviet strategic Estimate was a process without parallel in the work of the Intelligence Community—in terms of clarity and cohesion of mission, continuity of substantive focus, commitment of resources, consensus of priority requirements, and high-level support.

Dr. Steury's introduction and commentary are intended less to evaluate how the judgments of the Estimates look in retrospect than to provide a general context that will assist readers themselves to follow and assess the evolution of intelligence thinking that went into this important body of Estimates over a period of several decades.

Kay Oliver
CIA Chief Historian
Center for the Study of Intelligence

January 1996

Introduction: Producing National Intelligence Estimates

Perhaps the most distinctive characteristic of the Cold War American intelligence community was the degree to which it was organized for the systematic production of national estimative intelligence on topics of vital concern to policymakers.[2] Estimative intelligence may be defined as regular, detailed analyses of diverse aspects of the world situation, which include the policy objectives and likely actions of other nations, and their military capabilities and potential. In general, it was predictive in format. Indeed, what made this kind of intelligence "estimative" was the quality of the unknown. The use of the word "estimate" on or in an intelligence report was a signal that the report's message was in some degree speculative, however well-founded that speculation might be in experience or knowledge. The appellation "national" indicated that the intelligence analysis in question was produced with the concurrence—or at least the informed dissent—of the government organizations that made up the US intelligence community: the Central Intelligence Agency, the National Security Agency, the Defense Intelligence Agency (established in 1961), the military service intelligence organizations, and the intelligence arms of the Department of State and the Department of the Treasury, as well as of the Federal Bureau of Investigation and the Department of Energy (until 1977, the Atomic Energy Commission).

The United States was hardly unique in its recognition of the importance of estimative intelligence, but it was the first nation to institutionalize it in a permanent bureaucracy. The perception of a need for some sort of national capability in this area emerged in the late 1940s, a product of the postwar US effort to create a security establishment that could adapt to the changing global strategic balance. To avoid another strategic surprise of the kind that brought the United States into World War II, a substantial body of government and academic opinion advocated the creation of a single, "national" intelligence agency to coordinate the activities of the traditional "departmental" intelligence organizations and to correlate and evaluate the intelligence analysis that they produced. Beyond the basic question of strategic warning, however, the requirement for national estimative intelligence stemmed from concerns that the strategic complexities of the modern industrial era demanded intelligence analysis with a level of synthesis that was beyond the existing capabilities of the US intelligence establishment.

[2] For a detailed analysis of National Intelligence Estimates and the estimative intelligence process, see Harold P. Ford's *Estimative Intelligence. The Purposes and Problems of National Intelligence Estimating*, 2nd ed. (Lanham, MD: University Press of America, 1993).

The problem was that the interrelated technological, industrial, and economic dimensions of 20th century warfare transcended the traditional avenues of intelligence inquiry. Postwar strategic thinkers were less concerned about a potential opponent's immediate military capabilities and intentions—the traditional purview of service intelligence organizations—than about sound analysis of a foreign power's "actual latent resources" and its ability to organize them.[3] As the recent experience of global war had amply demonstrated, a nation's strategic stature was determined less by the capabilities of its extant military establishment than by the strength of its fully mobilized war economy. This depended, to a large degree, upon quantifiable geopolitical factors—population, raw materials, and industrial plant—but also upon imprecise variables, such as a nation's social and political structure and the qualities of its national leadership. Strategic thinking of any depth and range thus derived as much from psychology, economics, and the social sciences as it did from the more usual considerations of military power and position.

The intelligence analysis that supported these broader strategic judgments attempted to draw political, military, economic, technological, and even psychological factors into some kind of coherent whole. Intelligence of this kind thus depended less on the ability to ferret out important nuggets of information than on understanding the frequently complex interrelationships between the various components of national power. At the same time, many of the topics under consideration—such as Soviet strategic nuclear forces—required a good deal of highly specialized knowledge. Thus, if synthetic in overall conception, intelligence Estimates frequently stood by themselves as comprehensive discussions of highly technical subjects. As such, and most especially in the case of those that dealt with any aspect of the Soviet military, the Estimates took on an encyclopedic function for those not intimately involved in the problem, providing an essential reference that described and evaluated current Soviet capabilities.

Analysis on this level would be a complex task under any circumstances, given the potential vastness of the subject matter, but it was made more so by the paucity of the available evidence—particularly in the case of the Soviet Union. It was in the nature of intelligence to depend upon sources of information that were scanty, inconclusive, or simply misleading, and it was part of the peculiar nature of the intelligence producer's relationship with the policymaking consumer that a dearth of usable evidence gave rise to the greatest demand for comprehensive analysis of the subject at hand. The requirement for estimative intelligence analysis thus dictated that the most far-reaching judgments often had to be made about areas that were not fully

[3] Sherman Kent, *Strategic Intelligence for American World Policy* (Princeton, NJ: Princeton University Press, 1949), pp. 48-50.

understood. Not surprisingly, these were also the areas in which there was the greatest potential for disagreement and in which a conclusion was most likely to be disputed. The "higher combined calculations" that went into this kind of analysis nevertheless supported judgments that might directly influence policy on a national or a regional level.[4] To be credible, Estimates therefore had to be authoritative, not only to policymaking intelligence consumers, but also to the intelligence-producing organizations.

In the convergent demands for synthesis, comprehension, and analytical credibility are to be found the origins of the National Intelligence Estimate (NIE), the genre of intelligence analysis that—at least in theory—served as the capstone of the US intelligence pyramid. NIEs drew fully upon sources and analytical resources available from the many intelligence organizations in the US Government. They thus were truly national documents that reflected the considered judgment of the organizations that made up the intelligence community.

Although the concept of national estimative intelligence was fully developed at the end of World War II, the machinery for NIE production did not really take shape until 1950, as part of a substantial reorganization instigated by the incoming Director of Central Intelligence (DCI), Lt. Gen. Walter Bedell Smith.[5] The Office of National Estimates (ONE) produced its first NIE in 1950 and remained the primary locus of estimative intelligence until the creation of the National Intelligence Officer system in 1973.[6] Originally subordinated directly to the DCI, in 1952 ONE was moved into the analytical arm of the CIA, the Directorate for Intelligence. It remained a national intelligence-producing organization, however, and was returned to the DCI's direct control in 1966.

Supervising the estimative process was the US Intelligence Board (USIB), chaired by the DCI and composed of the Deputy Director of Central Intelligence (DDCI) and the heads of the agencies that made up the intelligence

[4] George S. Pettee. *The Future of American Secret Intelligence* (Washington, DC: 1946): p. 106.

[5] In the Central Intelligence Group (1946) and the early CIA (which succeeded CIG in 1947), estimative intelligence was written by the Office of Reports and Estimates (ORE). Landmark ORE Estimates include: ORE-1 *Soviet Foreign and Military Policy* (23 July 1946), ORE-1/1 *Revised Soviet Tactics in International Affairs* (6 January 1947), ORE 22-48 *Possibility of Direct Soviet Action During 1948* (2 April 1948), ORE 22-48 (Addendum) *Possibility of Direct Soviet Action During 1948-49* (16 September 1949). These and many other ORE intelligence reports have been declassified and transferred to the National Archives.

[6] See pp. xvii.

community.[7] Among other responsibilities external to the actual production of intelligence Estimates, the role of the USIB was to plot out an annual program of Estimates production, to review draft Estimates for quality, to guarantee that the Estimates adequately represented the agreed opinion of the intelligence community, and to identify crisis situations requiring immediate attention. The authority to decide what general topics the Estimates should address was vested in the National Security Council (NSC), which communicated its requirements to the USIB, which consulted with the NSC in drafting the schedule of Estimates. The NIEs themselves were nonetheless written under the authority of the Director of Central Intelligence. By statute, the Estimates were his and he alone was responsible for the judgments that they contained.[8] This purely personal authority derived from his titular position as the head of the US intelligence community and was distinct from the authority he derived from being the head of the Central Intelligence Agency. The extent to which the DCI chose to play an active role in the process varied considerably, but a more interventionist role for the DCI in the Estimates was legitimized by his greater personal responsibility for them than for other CIA analytical products, which in most cases DCIs have not reviewed before publication.[9]

Within the Office of National Estimates, responsibility for drafting and coordinating the final intelligence product lay with the Board of National Estimates.[10] The composition of the Board varied, but it was distinguished as much by members with a broad general knowledge of world affairs as by those with prior accomplishments in intelligence. Generally, there were from 10 to 15 senior officers on the Board. A substantial percentage had academic backgrounds, most notably the founding Director of National Estimates, the Harvard historian William L. Langer, as well as his deputy and successor, Sherman Kent, a Yale historian who had come to intelligence from a career teaching modern European history. Indeed, more than anything else, academic credentials were the hallmark of service on the Board of National Estimates.[11]

The Board's function was principally synthetic: it produced the Estimates from contributions solicited from among the organizations within the

[7] The name of this body changed several times: from 1946 to 1947 the intelligence analysis and production responsibilities of the USIB were vested in an Intelligence Advisory Board (IAB), with the same membership as the USIB. In 1947 this was renamed the Intelligence Advisory Committee (IAC), which became the USIB in 1958.

[8] In the early years of the Estimates process the DCI personally signed each Estimate.

[9] In this regard, probably the most "activist" DCI was Adm. Stansfield Turner, who personally wrote the "Key Judgments" to two major NIEs, 11-3/8-79 and 11-3/8-80, excerpts from which are included in this collection.

[10] "Coordination" was the name given to the process whereby the member agencies of the intelligence community reviewed and commented on NIE drafts.

[11] Both Langer and Kent had prior intelligence experience in the Research and Analysis Branch of the World War II Office of Strategic Services (OSS).

intelligence community, according to their areas of expertise. An assortment of standing interagency committees also contributed to the process, such as the Guided Missile Intelligence Committee (GMIC), which was formed in 1956 and renamed the Guided Missile and Astronautics Intelligence Committee (GMAIC) in 1958, and the Scientific Intelligence Committee (SIC), created in 1949.[12] The Board thought independently, however, and its responsibility was to produce a reasoned judgment on the subject at hand from the available evidence. Not surprisingly, this often led the Board into disagreement with other agencies in the intelligence community—all of whom had access to pretty much the same information as the Board. When disagreements occurred, the Board would attempt to produce a final synthesis that all parties could agree upon. Minor disagreements—and a surprising percentage of major ones—usually could be worked out informally, but frequently conflicts could not be resolved, resulting in one or more of the agencies registering a formal dissent to some or all of an NIE. In this case, the dissenting agency was identified and its objections to the NIE were explained in a footnote or sometimes within the text of the NIE itself.[13] The coordination process occurred in a series of meetings in which the several organizations would be represented by intelligence officers delegated for that purpose. The officially designated representatives generally were field-grade officers (majors and colonels or naval commanders and, occasionally, captains) or their equivalent in civilian ranks, but the representative might in turn ask a subordinate to attend—a specialist whose area was being discussed, for example.

The final draft of an Estimate—with dissents—was subject to approval by the US Intelligence Board, which also was responsible for disseminating the final product to the appropriate recipients. Regardless of the substance of the disagreement, the official judgment of the DCI prevailed in the text. The footnotes to an NIE, however, were as much a part of the final community judgment as the main text and were an important means of informing the policymaker of the full range of opinion on a given topic.

Another independent level of review existed in the President's Board of Consultants on Foreign Intelligence Activities (PBCFIA). Created by President Eisenhower in 1956, the PBCFIA was a part-time civilian watchdog committee that monitored the intelligence process as a whole, reviewed

[12] In addition, because they were producers of specialized kinds of intelligence critical to the assessment of Soviet strategic capabilities, some organizations (such as NSA and the CIA's National Photographic Interpretation Center [NPIC]) played larger roles in the process than might be immediately apparent in the text of the Estimates.

[13] The identity of the dissenting intelligence organization was generally personified as the view of its chief, who assumed personal responsibility for the content of the dissent, just as the DCI assumed personal responsibility for the NIE as a whole. Such a dissent might read: "The Assistant Chief of Staff, Intelligence, USAF, believes." In some Estimates the responsible officer or official was identified by name as well as title.

published Estimates, and made recommendations directly to the President. In 1962, after the Bay of Pigs invasion, President Kennedy reorganized the PBCFIA and renamed it the President's Foreign Intelligence Advisory Board (PFIAB). In the mid-1970s, highly critical of the NIEs' treatment of Soviet strategic objectives, as well as some aspects of Soviet weapons and forces development, the PFIAB recommended the A-Team/B-Team experiment.[14] Although President Carter abolished the PFIAB in 1977, President Reagan revived it in 1982 on the recommendation of his Director of Central Intelligence, William J. Casey.

In theory, the authority to produce National Intelligence Estimates was delegated to the Board of National Estimates as a collectivity; in practice, the responsibility for drafting the Estimates devolved onto individual members, who soon developed their own areas of expertise. Moreover, the Board was supported by a staff in ONE and in the component offices of the CIA's analytical arm, the Directorate for Intelligence (DI). The DI offices were founded to provide specialized intelligence analysis and to produce basic or geographic intelligence and current intelligence reports on a daily basis. Perhaps inevitably, the line that separated ONE's responsibilities from the other Offices in the DI blurred, and they frequently found themselves in competition. ONE nevertheless remained exclusively responsible for the production of national estimative intelligence.[15]

The existence within CIA of a formal structure to produce estimative intelligence, and participation of so much CIA analytical talent in the preparation of the Estimates, usually guaranteed the Agency a kind of hegemony over the process, despite the involvement of other US intelligence organizations. The fact that the main text of an Estimate almost invariably reflected the DCI's (or ONE's) position meant that, in case of disagreement, the other intelligence organizations always were implicitly cast as dissenters from that position. Equally important, it placed a premium upon the adjudicating role played by the Board of National Estimates. Even when qualified by the alternative viewpoints of the other intelligence organizations in the community, it was the Board's judgment that stood highest in the main text of an

[14] See Part III, pp. 335-391.

[15] Apart from ONE, in the 1950s and most of the 1960s the analytical offices in the CIA were primarily the Office of Research and Reports (ORR), which reported on the Soviet military economy, and, initially, the Office of Scientific Intelligence (OSI), which was responsible for analysis of foreign weapons systems. From 1963 to 1973, apart from air and ballistic missile defenses and nuclear concerns, most of OSI's analytical functions were vested in the Office of Weapons Intelligence (OWI). Ballistic missiles and space systems were handled by the Foreign Missile and Space Analysis Center (FMSAC). OSI, OWI, and FMSAC were in the Directorate of Science and Technology (DS&T) in this period. In 1973 the FMSAC and OSI's remaining defensive systems functions were absorbed by OWI. In 1976 the two offices were transferred to the Directorate of Intelligence and in 1980 amalgamated in the Office of Scientific and Weapons Research (OSWR).

Estimate and by which its value and analytical quality generally were measured.

By the mid-1960s the Board's reputation as a producer of authoritative intelligence was slipping. Some high-level policymakers regarded the NIEs as too pontifical, with insufficient supporting argumentation and evidence. Beginning with their failure to predict the Soviet deployment of offensive missiles in Cuba, the Board and the Office of National Estimates found themselves challenged in a series of confrontations with the intelligence community and the foreign policy establishment as a whole. Perhaps the most important of these controversies in the field of Soviet strategic forces was the estimates of Soviet intercontinental ballistic missile (ICBM) deployments and the growing schism in the intelligence community over Soviet strategic objectives.

In 1973, DCI William Colby replaced the Office of National Estimates with the National Intelligence Officer system, made up of intelligence professionals with individual expertise in specific fields, to advise the DCI and serve as a permanent staff for NIE production. Each National Intelligence Officer (NIO) was responsible for intelligence community relations in a specific substantive area, as well as for supervising the production of NIEs and meeting the needs of intelligence consumers in that area. The NIEs themselves were drafted by intelligence community analysts seconded to the NIO for that purpose. Often these were intelligence officers from CIA, but many of them came from other agencies and departments in the intelligence community.

Colby's actions were intended to involve agencies of the intelligence community in the NIE process from the very beginning. Although agencies in the intelligence community had previously been asked to coordinate the draft of an NIE only after it had been written, under the new system they were part of the drafting process itself.

As created, the National Intelligence Officers reported to the DCI through a Deputy to the DCI for National Intelligence. When, in 1977, this deputy became simultaneously the Director of the new National Foreign Assessment Center, or NFAC (which replaced the Directorate for Intelligence), the NIOs were subordinated administratively to that Directorate. In 1979 the NIOs were resubordinated directly to the DCI, this time in the newly created National Intelligence Council. The US Intelligence Board retained its NIE review functions until 1976, when it was subsumed by the new National Foreign Intelligence Board (NFIB).

In general, the NIE process was more noteworthy for its flexibility than its efficiency. Substantial duplication of effort among the various agencies that made up the intelligence community provided a safeguard against serious analytical errors, but made for a cumbersome coordination process. The actual roles played by each of the intelligence organizations evolved considerably over time. Although the CIA had been established as a "national" intelligence organization with the responsibility for synthesizing intelligence from many sources into a broader "policy-relevant" form, in practice, it soon began to challenge many of the conclusions reached by INR and the military intelligence organizations, initially on economic grounds. This tendency grew more pronounced during the 1950s, eventually leading to the creation of a more broadly based independent analytical capability within the DI, especially after the establishment of the Office of Weapons Intelligence (1962) and the Office of Strategic Research (1967), which brought CIA intelligence analysis into direct competition with that produced by the Defense Intelligence Agency and the service intelligence organizations.[16]

At the same time, the place occupied by national intelligence estimating at the pinnacle of the intelligence process virtually guaranteed that the Estimates were prepared in an atmosphere charged with political energy. In retrospect, this seems to have been largely unavoidable. NIEs existed at the intersection of analysis, strategy, politics, and (perhaps, most important) military procurement. At this level a single fact or piece of intelligence could have profound implications for the bureaucratic and resource interests of some institution of the federal polity, an importance quite independent of its substantive significance for American policy as a whole. This basic truth could not but influence the production of estimative intelligence, and it contributed significantly to many of the controversies that dominated ONE's history.

Nowhere was the tension and complexity of the estimative process more pronounced than in strategic forces analysis. Drawing upon economic, scientific, political, and military sources of intelligence, the strategic forces

[16] In 1967 the Office of Strategic Research (OSR) and the Office of Economic Research (OER) were formed out of the old Office of Research and Reports (see p. xvi, ff). OSR was an effort to broaden the CIA's military economic functions into a true strategic synthesis that included analysis of the doctrine and employment of military forces as well as their production and cost. OER took over ORR's purely economic functions. In 1973 the two new offices were joined by a new Office of Political Research (OPR).

This organization persisted until 1981, when the National Foreign Assessment Center (NFAC) was again reorganized, with regional offices replacing the old functional offices. A new Office of Soviet Analysis (SOVA) absorbed the "Soviet" responsibilities of OSR, OER, and the Office of Political Analysis (the former OPR), along with the responsibility for military analysis of the other nations in the Soviet Bloc. Other regional offices were created to cover the rest of the globe. The Office of Science and Weapons Research (organized in 1980) remained a functional component. Early in 1982 NFAC was renamed the Directorate of Intelligence.

NIEs demanded a depth and breadth of analysis beyond the capacity of any single intelligence organization as traditionally conceived. NIEs dealing with strategic forces went beyond the analysis of Soviet *capabilities* (itself no simple task) to attempt to understand the full range of *intentions* that underlie Soviet strategic policy. Moreover, in that they dealt with the specter of nuclear war, the strategic forces NIEs were a subject of sweeping concern, not only to the intelligence community, but to the national security establishment as a whole. Finally, the continuing nuclear arms race meant that the conclusions reached by the strategic forces NIEs were of direct importance to immediate questions of weapons procurement, as well as to substantial issues of long-range research and development.

Because of its pivotal nature, the estimative machinery devoted to Soviet strategic forces quickly acquired an atypical permanency. Generally an annual event, the actual production of a strategic forces NIE usually took only a few months, but it benefited from an intensive research and analysis effort that lasted the entire year. Much of this effort—which included the dedicated use of a significant portion of the collection assets available to the US intelligence community—was driven solely by the requirement to produce the annual Estimate on Soviet strategic forces. The resultant continuity and sheer intellectual concentration contributed significantly to the sophistication, depth, and intensity of the analysis that went into the Estimates. The analytical corpus that emerged from this process is unique in the history of intelligence.[17]

The selections that follow this introduction represent only a portion of the combined output of thousands of analysts over a period of some 33 years. Many of the Estimates were pioneering efforts in their development and use of methodologies and sources. All are the result of a learning process that was under way even as they were being written. None should be taken as definitive; rather, each is a signpost that pointed the way to a broader understanding of the subject at hand.

[17] The Estimates on "Soviet strategic forces" should be considered to include the following for the period under discussion (1950-83): NIE 11-4 (Soviet military policy), 11-3 (strategic defensive forces), 11-8 (strategic offensive forces), and 11-3/8 (11-3 and 11-8 combined). NIEs on other topics were produced periodically rather than annually, generally as needed, and did not require the volume of continuous effort devoted to Soviet strategic forces.

NIE Designators and Format

In general, the intelligence community identified each NIE by a three-part numerical code, indicating, first, the geographic subject area, second, the topic of the Estimate, and third, the year in which the Estimate was produced. Estimates concerning the Soviet Union were given the geographic designation "11."[18] Estimates on broad general topics were not identified by a topic code. Hence, NIE 11-56 may be identified as an Estimate concerning the Soviet Union generally, produced in 1956. Other, more specific subject areas are identified as follows:

11-1 Space.

11-2 Atomic Energy.

11-3 (Strategic) Air Defense.

11-4 Main Trends in Military Policy.

11-5 Economics.

11-6 Peripheral Nuclear Forces (only used briefly).

11-7 Politics.

11-8 Strategic (Intercontinental) Attack.

11-14 General Purpose Forces.

11-15 Naval Forces.

In 1974 the NIE 11-3 series was combined with the 11-8 series to form the 11-3/8 series (NIE 11-3/8-74, *Soviet Forces for Intercontinental Conflict*), which considered Soviet capabilities to wage intercontinental war as an organic whole, comprising both offensive and defensive elements.[19]

[18] This system took some time to evolve. Until 1957 NIEs were identified by their place in the sequence of Estimates produced on a geographic area in a given year with no indication of subject. Thus, 11-4-54 would be the fourth Estimate on the Soviet Union produced in 1954—it might have been on any subject dealing with the Soviet Union—but 11-4-60 could only be an Estimate on Soviet military policy produced in 1960.

[19] The title assigned to an Estimate often varied from year to year. Although, in general, they all conveyed the same information and meaning, occasionally the change in title implied a shift in the intellectual climate in which the Estimates were produced. For example, compare NIE 11-4-77 *Soviet Strategic Objectives* with NIE 11-4-78 *Soviet Goals and Expectations in the Global Power Arena* and NIE 11-4-82 *The Soviet Challenge to US Security Interests.*

Thus, with some exceptions, the Estimates dealing with Soviet strategic forces were the 11-4, 11-3, and 11-8 series (from 1974 the NIE 11-3/8 series). Estimates dealing solely with Soviet strategic *defensive* forces have not been included in this collection, although some discussion of this topic may be found in the 11-3/8 series and 11-4 series Estimates. Other NIE series that are not included in this collection (such as 11-15, the Soviet naval series, or 11-14, mainly on Warsaw Pact ground and air forces) often touched upon matters relating to strategic forces, but that was not their principal topic.

Although there was no formal requirement to produce NIEs on an annual basis, by the mid-1960s some NIEs—including those dealing with Soviet strategic forces—were in practice published every year. By and large, problems in writing or producing strategic forces Estimates caused any delays or omissions in the series. NIEs in such other areas as the Soviet economy were generally produced periodically rather than annually. All NIEs were subject to periodic updates, generally issued as a "Memorandum to Holders" (M/H). These memoranda might be a paragraph, a new table, or even a good-sized paper in themselves. In addition, a Special National Intelligence Estimate (SNIE) might be issued in a crisis, a rapidly developing situation, or on some highly topical subject. Generally shorter than an NIE, SNIEs used the same coding system, although with greater variation because of their highly topical nature.

NIE organization followed a fairly consistent, if general, pattern: a "Summary" (often containing a "Problem Statement"), followed by a more detailed "Discussion," frequently followed by a set of annexes containing technical data and orders of battle. Arguably the most important part of the Estimate, the "Summary" at first was relatively short (11 to 12 pages) and, hence, the part of the Estimate that policymakers were most likely to read.

Many NIEs, and strategic forces NIEs in particular, quickly outgrew this fairly simple format. Beginning in 1973, the "Summary" was replaced by a 10-to-12-page set of "Key Judgments" that distilled the major conclusions of the Estimate without attempting to summarize the text as a whole.[20] The "Key Judgments" were bound together in one volume with a much longer "Summary," the two now often approaching a total of about 100 pages. The highly detailed discussion section was relegated to a second volume, while the annexes, which also had greatly increased in length and complexity, were placed in a third volume. The Estimate as a whole now frequently would total 200 to 300 pages in length.

[20] At first glance, the difference between a 10-to-12-page "Summary" and a set of "Key Judgments" of similar length may not be immediately apparent—often because in practice there was none. This was not always so, however, as is evident by comparing the "Summary Conclusions" attached to NIE 11-8-70 with the "Key Judgments" in NIE 11-3/8-79 (both reproduced in this volume).

PART I

THE RIDDLE INSIDE THE ENIGMA: UNDERSTANDING SOVIET STRATEGIC POLICY IN THE 1950s

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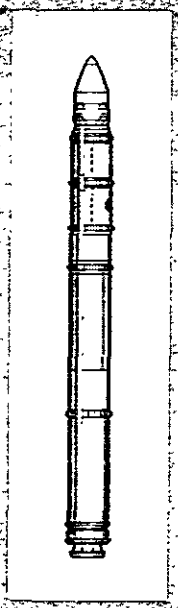

Part I:
The Riddle Inside the Enigma:
Understanding Soviet Strategic Policy in the 1950s

World domination begins at home.

NSC-68

The Soviet Union as a World Power

The process by which the post–World War II Soviet Union emerged as a world power was a gradual one that lasted from the end of hostilities in Europe to the first years of the 1960s. Although the development of nuclear weapons and the intercontinental bombers and missiles needed to deliver them to targets in North America had begun under Stalin, for a long time these new technologies existed only as a kind of veneer laid over a traditional Soviet continentalism rooted deeply in the substrata of Russian and Soviet military traditions. These manifested themselves in an obsessive concern for security in the areas bordering Soviet territory, the perpetuation of a large, redundant ground force structure supported by a predominantly tactical air arm, a stubborn conservatism in the introduction of technological innovations, and a military doctrine emphasizing the rigidly centralized control of military forces. So conservative was the Soviet military mind that, to a substantial degree, these remained the governing principles behind much of Soviet military policy throughout the Cold War.

Nevertheless, the death of Stalin in 1953 and the subsequent rise of Nikita Khrushchev produced a watershed in Soviet military policy. The new Premier identified himself with modernization and reform and plotted nothing less than a revolutionary transformation that would strike deeply at the roots of traditional Russian and Soviet military thinking to influence virtually every aspect of Soviet national life. Khrushchev's role, as he saw it, was to overturn the ossified structure of the Stalinist dictatorship in furtherance of the revolutionary transformation of the Soviet state. For the military, this meant abandonment of what he regarded as anachronistic institutions in favor of a structure more suited to war in an industrialized bourgeois world. Thus, Khrushchev's Twentieth Party Congress speech denouncing Stalinism in February 1956 was more than an announcement of the end to mass murder and arbitrary rule, it was the harbinger of a time of great change for the Soviet military.

On one level, this metamorphosis could be regarded as a part of the historical dialectic. Marxist-Leninist thinking regarded the structure of war as a

product of the political, social, and economic institutions in conflict. In general, weapons kept pace with the development of society through "quantitative" or evolutionary change, but a "qualitative" or revolutionary transformation occurred when a confluence of technological developments brought change, not only to weapons and warfare but to society as a whole.[1] The development of nuclear weapons, combined with the advent of the ballistic missile and the necessary guidance systems needed to make the weapons system work was this kind of change.[2] The restructuring of the military that Khrushchev began in 1956 thus could be regarded as part of an effort to drag the Soviet Union into the space age—if necessary, against the collective will of the ruling elites.

To the intelligence analyst, or the informed student of Soviet affairs, a transformation of this kind promised a period of dramatic change, in which the reduction and reorientation of Soviet Ground Forces was a necessary prerequisite to an all-out drive to acquire the long-range bombers and missiles necessary to deliver nuclear weapons to targets in the United States. The US intelligence community was ill prepared for a restructuring of this kind. Isolated since the October revolution, the Soviet Union had long been outside the mainstream of international relations and was a mystery to most westerners. The Kremlin kept the USSR a closed book by its pervasive effort to control every aspect of Soviet national life and its deep hostility and suspicion toward anything foreign. For the West, intelligence sources on the USSR were few and far between. Although a few startling successes were recorded, the omnipresence of the Soviet police apparatus made the traditional staples of intelligence collection for centuries—such as human source reporting—mainly problematic for most Soviet targets, including military ones. Soldiers were everywhere in the Soviet Union, but the essential fabric of the military—the basing structure, the deployed weapons, the troop concentrations, and the industrial infrastructure that supported it all—was almost invisible, revealing itself only under circumstances that could be carefully controlled—the annual May Day parade, for example. Such occasions were highly prized, but the Soviets, well aware of their importance, saw to it that they often obscured as much as they illuminated.[3]

In this environment, the development of a Soviet strategic nuclear capability emerged as a topic of vital importance—and one that seemed virtually opaque to Western intelligence. Clearly, the development of long-range

[1] For details of the "military revolution," see Harriet Fast Scott and William F. Scott, eds., *The Soviet Art of War: Doctrine, Strategy and Tactics* (Boulder, CO: Westview, 1982), pp. 73-156.

[2] Scott and Scott, p. 123.

[3] See the importance of this factor to the development of the "Bomber Gap" crisis, pp. 5-7.

nuclear weapons was central to Khrushchev's program of forced modernization. It was, moreover, a primary means of achieving the Soviet goals of global power and influence. On the other hand, it was also true that the structural details of strategic programs were the most closely held in the Soviet Union and thus the least susceptible to coherent analysis. This lack of programmatic evidence made it difficult to understand the new strategic systems in context with broader concepts of Soviet strategy or with the development of the Soviet military economy.

The "Bomber Gap," 1955-58

The limitations to US intelligence collection and analysis became manifest in the "bomber gap" of the mid-1950s. The proximate cause of this analytical crisis was subsequently attributed to a Soviet deception at the 1955 "Aviation Day" display. The M-4 Bison (initially referred to as the Type-37 in NIEs), a Soviet heavy bomber with capabilities apparently approaching those of the American B-52, had first been seen at the 1954 May Day parade and was produced in small numbers in the following year. In the 1955 display, what appear to have been the same 10 aircraft were flown around the reviewing stand in different formations, giving the impression that there were at least 20 operational aircraft, which meant (given standard operating procedures and expected serviceability rates) that up to 40 could be assumed to be in the total inventory.[4] The unexpected appearance of what seemed to be so many new Soviet long-range strategic bombers touched off a series of overestimates of Soviet bomber production rates that led US intelligence analysts to believe the Soviets were ahead of the United States in the development and deployment of this important strategic weapons system. Hence the term "bomber gap."

Traditionally a tactical arm, the Soviet Air Force had demonstrated little interest in heavy bomber production before World War II and had concentrated on fighters, light bombers, and medium bombers during the war. After the war, the Soviets had seemed more interested in developing aircraft for theater-strike roles in Europe and Asia than in building intercontinental-range heavy bombers for strikes against North America. No long-range heavy bomber programs were evident in the early 1950s (by which time the United States had the monster turboprop-driven B-36 intercontinental-range heavy bombers in service), but in 1947 the Soviets had produced the Tu-4 Bull, a copy of the American B-29. In 1954 the jet-powered Tu-16 Badger (at first given the designation Type-39 in NIEs) began its long career with Soviet strategic aviation (one year after the first all-jet American medium bomber, the B-47, was deployed). By 1950s standards, both the Tu-4 and the Tu-16 were nuclear-capable medium bombers that lacked the range to strike most population centers and military targets in North America.[5]

The discovery that the Soviets already had what appeared to be an operational four-engine jet bomber in 1955 soon caused a drastic revision of all

[4] In fact, the Soviets apparently had made a special effort for the occasion: the 10 aircraft seen over Moscow probably comprised the entire production run of Bison at that time. Lawrence Freedman, *US Intelligence and the Soviet Strategic Threat* (2nd Edition). (Princeton NJ: Princeton University Press, 1986), pp. 65-67.

[5] Both types of aircraft could just reach targets in North America on suicidal, one-way missions.

previous estimates. Here, the question was not *whether* the Soviets would develop an intercontinental-range heavy bomber, but *when*, and how long it would take them to do so. In plotting the progress that a Soviet strategic bomber program might take, the intelligence community had assumed that the Soviets would proceed in an orderly fashion from the Tu-4 to a multiple jet-engine bomber similar to the B-52 (presumably via a Soviet equivalent of the B-36). This process was expected to advance to the mass production of jet heavy bombers (Bison or Type-37s) by the end of the decade.[6]

The sudden appearance of significant numbers of Bison at the 1955 May Day air display suggested a Soviet crash effort to produce a long-range jet heavy bomber, with the result that production estimates escalated rapidly. A second shock occurred at the July 1955 Tushino Air Show, where the Soviets displayed the first three samples of the Tu-95 Bear turboprop-powered heavy bomber for the first time.[7] This aircraft, too, appeared to be in series production, leading to the inescapable conclusion that a Soviet buildup—possibly a large-scale one—was under way. In 1957 evidence that the Soviets were developing an in-flight refueling system—a prerequisite to an intercontinental strike capability—buttressed the notion of a strong Soviet bomber force.

Hampered by a dearth of good evidence, the intelligence community significantly overstated Soviet heavy bomber production from 1955 through the end of 1957. However, the inability to fully come to grips with the problem spurred the development of increasingly sophisticated analytical techniques and every year saw Western analysts become more adept at using the evidence that was available to them. In this period, too, new sources of information (including the first U-2 photography) became available. By 1958 further analysis had deflated projections of Soviet heavy bomber production to levels approaching reality.

As it turned out, the Soviets never demonstrated the level of interest in heavy bombers that the West assumed, and by at least the late 1950s had decided to concentrate on ICBMs. They apparently never regarded the Bison as a satisfactory aircraft and built fewer than 100, about half of which were removed from service as bombers by the end of the 1960s. The remainder soldiered on until the mid-1980s. Many were converted to tankers.

[6] Freedman, p. 66. NIE 11-5-54 projected about 100 jet heavy bombers by mid-1959. Scott Koch, ed., *Selected Estimates on the Soviet Union 1950-1959* (Washington, DC: CIA History Staff, 1993), p. 210.

[7] Freedman, p. 66.

The mainstay of the Soviet heavy bomber force turned out to be the Tu-95 Bear. Arguably one of the most successful aircraft ever built, about 100 Bears were maintained in service with Soviet Long-Range Aviation throughout the whole of the Cold War. Additional models (the Tu-95 Bear D and the Tu-142 Bear F) were built for the Soviet Navy and used for long-range reconnaissance and antisubmarine warfare.[8] Bear heavy bomber production actually resumed in the 1980s, the newer variants equipped with long-range cruise missiles.[9] Despite what appeared to be enduring Soviet satisfaction with the Bear, Western intelligence continued to believe that the Soviets would build heavy bombers of more modern design. The Tu-160 Blackjack, which finally appeared in the mid-1980s (after the Bear had been in service for some 30 years), filled this perceived requirement, but only a few were built before the Soviet state itself collapsed.[10]

[8] *Soviet Military Power 1987*, (USGPO, 1987) p. 88.
[9] *Soviet Military Power 1990*, (USGPO, 1990) p. 52.
[10] *Soviet Military Power 1988* (USGPO, 1988), p. 50. *Military Forces in Transition* (Department of Defense, 1991), p. 34.

1. NIE 11-56 *Soviet Gross Capabilities for Attack on the US and Key Overseas Installations and Forces Through Mid-1959*

NIE 11-56
6 March 1956
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NATIONAL INTELLIGENCE ESTIMATE

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(Supersedes NIE 11-7-55)

SOVIET GROSS CAPABILITIES FOR ATTACK ON THE US AND KEY OVERSEAS INSTALLATIONS AND FORCES THROUGH MID-1959

APPROVED FOR RELEASE
CIA HISTORICAL REVIEW PROGRAM

Submitted by the

DIRECTOR OF CENTRAL INTELLIGENCE

The following intelligence organizations participated in the preparation of this estimate: The Central Intelligence Agency and the intelligence organizations of the Departments of State, the Army, the Navy, the Air Force, The Joint Staff, the Atomic Energy Commission, and the Federal Bureau of Investigation.

Concurred in by the

INTELLIGENCE ADVISORY COMMITTEE

on 6 March 1956. Concurring were the Special Assistant, Intelligence, Department of State; the Assistant Chief of Staff, Intelligence, Department of the Army; the Director of Naval Intelligence; the Director of Intelligence, USAF; the Deputy Director for Intelligence, The Joint Staff; the Atomic Energy Commission Representative to the IAC; and the Assistant Director, Federal Bureau of Investigation.

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APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

SOVIET GROSS CAPABILITIES FOR ATTACK ON THE US AND KEY OVERSEAS INSTALLATIONS AND FORCES THROUGH MID-1959

THE PROBLEM

To estimate Soviet gross capabilities to attack the continental United States and certain US installations and forces overseas, as of January 1956 and mid-1959.[1]

SCOPE

This estimate is made as a contribution to the study of Soviet net capabilities to attack the continental United States and is *not* intended to consider all the aspects of a general war. Overseas installations and forces are considered only insofar as they contribute directly to the defense of the continental United States (e.g., as bases for interception of the attack or for counterattacks calculated to reduce Soviet capabilities against the continental United States). The estimate does not take into account competing demands for the allocation of Soviet efforts against the strengths of any nation but the US or against all the strengths of the US that might be involved in the initial stages of a general war. Consequently it does not estimate the degree to which Soviet effort will be allocated to the attack of the continental US or to the attack of US installations and forces overseas or to the attack of any non-US installations and forces overseas.

FOREWORD

The problem of estimating Soviet capabilities three years or more in the future cannot be treated exclusively in terms of present indications of how these capabilities are developing. Current evidence is incomplete and sometimes even fragmentary. Moreover, this estimate is more than usually difficult in that its terminal date approximates the estimated date of emergence of a major Soviet threat in the guided missile field. For these reasons, we are obliged to make our estimate of future capabilities not only on the evidence at hand but also on the basis of judgments of how Soviet leaders may assess their future requirements.

[1] By gross capabilities is meant the probable maximum scale of attack by existing forces, or by the forces estimated to be likely to exist at a future date, taking into account operational factors, but not considering combat attrition.

1. *(Continued)*

The judgments which underlie our estimate of Soviet gross capabilities in 1959 are: (a) that throughout the period of this estimate the Soviet rulers will regard it mandatory to strengthen their capabilities to attack US nuclear retaliatory power wherever located, both in the US and overseas; (b) that the Soviet rulers will consider that, although they will acquire increasing guided missile capabilities throughout the period, they must rely primarily on aircraft carrying nuclear weapons for long range attacks which will have to penetrate an ever-improving defense; and, consequently, (c) that the Soviet rulers will devote a substantial effort to the production of long-range bombers.

These judgments are supported by much current evidence. We believe them the soundest which can be made at this time. There are, however, considerations which require us to regard the Soviet gross capabilities estimated in this paper as subject to revision as the period advances: (a) the USSR may revise the size of its Long-Range Aviation, its bomber production goals, or the future balance between the types and categories of its bomber aircraft; (b) the USSR may judge it advantageous to concentrate its efforts on the rapid development of guided missile weapons systems; and (c) the greatly increasing yield of nuclear weapons, and Soviet estimate of possible changes in the quality of the defenses to be penetrated, will each affect Soviet judgment of its requirements as to the number and types of delivery vehicles.

On these grounds we feel it necessary to emphasize that the gross capabilities described in this paper are those which the USSR *could* acquire, and which we believe it is *likely* to acquire by 1959, but we cannot say with confidence that these are the capabilities which it *will have* at that date.

CONCLUSIONS

1. *Objectives.* In conducting initial attacks against the US and key overseas installations and forces, the USSR would probably through 1959 have the following major military objectives:

a. To destroy or neutralize US capabilities for nuclear warfare;

b. To deliver attacks on US and overseas military installations, forces, and land and sea lines of communication in order to prevent effective operational employment of US military forces; and

c. To deliver attacks on urban, industrial, political, and psychological targets in the US in order to reduce to the maximum extent practicable the mobilization of US military and industrial strengths. *(Para. 49)*

2. *The Surprise Factor.* In order to prevent or reduce nuclear retaliation, the USSR would almost certainly attempt to attack with a minimum of warning and yet at the same time to deliver an attack of sufficient weight to destroy or neutralize US nuclear capabilities. The USSR could not count upon being able to achieve surprise against both the continental US and US overseas bases, but it would almost certainly attempt to do so. *(Paras. 50–53)*

1. *(Continued)*

Methods and Scale of Attack Against the US

3. We believe that in attacks on the US through 1959 the USSR would place chief reliance upon aircraft carrying nuclear weapons. Missiles launched from submarines might be an important supplement to nuclear attacks by aircraft, but the risk of disclosure of intent would probably deter their large-scale use. Clandestine delivery of weapons of mass destruction, as well as BW and CW weapons, would probably be employed only on a highly selective basis in an initial attack. *(Para. 54)*

4. *In 1956.* Present Soviet capabilities for air attack on the continental US are restricted by the small numbers of operational heavy bombers, the limited availability of megaton yield weapons, the limited capacity of forward bases, and the probable lack of an operational inflight refueling capability. We estimate that the USSR could at present launch an initial strike of about 600 bombers against the US, of which as many as 500 could reach target areas. A small number of these could be carrying nuclear weapons with yields up to a few megatons. (For estimated coverage of the US by these aircraft under various conditions, see maps in Annex B.) *(Paras. 12–13, 56, 69)*

5. *In 1959.* We estimate that by mid-1959 the USSR will have some 400 BISON [2] and 300 BEAR aircraft in operational use. Also, by mid-1959 the capacity of the forward staging areas and Leningrad could have been increased to permit the entire Soviet long-range bomber force to be launched simultaneously. Moreover, in 1959, the USSR could have developed a substantial inflight refueling capability, permitting it to launch a number of heavy bombers from interior bases on two-way missions. The Leningrad base area could be used for some of the heavy bombers making initial unrefueled attacks on the US. Under these circumstances, the USSR in mid-1959 could launch about 815 mission aircraft in an initial attack, of which as many as 640 could arrive in target areas. Of these aircraft 415 would be BISON and BEAR heavy bombers on two-way missions and 225 BADGER medium bombers on one-way missions. By this time a substantial number of these bombers could be carrying weapons with yields up to 10 megatons or more. (See maps in Annex B.) *(Paras. 12, 60, 71)*

6. Should the USSR elect to use only heavy bombers in an initial strike against the US in 1959, about 630 could be launched if only home bases were used. About 500 could arrive in target areas. If bombers were staged through forward bases, the number launched and the

[2] Description of Soviet aircraft types:

US designation	Description	Soviet designation	Nearest US equivalent
BISON	4 engine jet heavy bomber	.....	B52
BEAR	4 engine turbo-prop heavy bomber	... .	..
BULL	4 engine piston medium bomber	TU–4	B29
BADGER	twin-engine jet medium bomber	. . ..	B47
BEAGLE	twin-engine jet light bomber	IL–28	.
BOSUN	twin-engine jet light bomber	TU–14	..
CAMEL	twin-engine jet transport	. .....	..

1. *(Continued)*

number arriving in target areas would be about 530 and 420, respectively. *(Para. 72)*

7. Submarine-launched guided missiles might be an important supplement to nuclear attacks by aircraft in any Soviet attack plan. These missiles could reach many important targets up to a distance of 500 n.m. from the launching submarines, though with a decreasing accuracy at ranges in excess of 200 to 250 n.m. The scale of attack would depend upon considerations which suggest the employment of only a small portion of the submarines and missiles which could be available in 1959. *(Paras. 43, 54, 74–75)*

Methods and Scale of Attack Against Overseas Targets

8. The USSR would have a wide range of capabilities for attack on key US installations and forces overseas. At present, principal reliance for initial attacks would probably be placed on Soviet medium, light, and fighter bombers, many of which could be carrying nuclear weapons. By 1959 guided missiles, including those launched from submarines, may be the preferred weapon against many of these targets. The increasing mobility and nuclear capability of the large Soviet ground and supporting air forces make them a threat to many US overseas installations and forces in operations immediately following initial attacks. In all overseas areas, attacks by clandestine means and sabotage would also be employed. *(Paras. 12, 55)*

9. Having launched the attack against the continental US indicated in paragraph 4, the USSR would have available for use in 1956 against overseas targets about 300 mediums (mostly BULLS) and 2,900 jet light bombers. By 1959, assuming the attack against the continental US indicated in paragraph 5, the number of aircraft available for attacking targets overseas would be about 330 jet medium and about 3,100 jet light bombers. Large numbers of these could be carrying nuclear weapons. *(Paras. 12, 83, 85)*

10. At present, a Soviet attack against overseas targets probably could also employ 350 n.m. ballistic missiles. In 1956, missiles with a range of 850–900 n.m. could begin to be available as well. However, the small number of missiles probably available, the low yield of their nuclear warheads, and their performance limitations would seriously limit Soviet operational capabilities in this field during the early part of the period. Some submarine-launched missiles might also be used against selected overseas targets to supplement aircraft and ground-launched missile attacks. By 1959, Soviet missile capabilities will probably have increased markedly as a result of greater numbers of these weapons available, the higher yield of the nuclear warheads, and their improved accuracy and reliability. The USSR could by then also have ready for series production a 1,600 n. m. intermediate-range ballistic missile. Large-yield nuclear warheads for ballistic missiles would probably become available in 1959–1960. (For target coverage, see map 22, Annex B.) *(Paras. 12, 86–88)*

11. The USSR could employ ground, airborne, and amphibious forces against Alaska and certain key US overseas installations and forces simultaneously with, or shortly after, initial bomber and missile strikes. However, the Soviet decision as to how and when to use these capabilities, as well as its clandestine and

1. *(Continued)*

sabotage capabilities, would probably be strongly influenced by the Soviet desire to obtain strategic surprise, a consideration which weighs heavily against their employment prior to the time initial air attacks were detected. *(Paras. 89–91)*

DISCUSSION

MAJOR FACTORS AFFECTING SOVIET CAPABILITIES

I. AVAILABILITY OF MASS DESTRUCTION WEAPONS

12. *Nuclear Weapons.* The Soviet atomic energy program, directed primarily toward the production of nuclear weapons, will continue to receive special emphasis during the period of this estimate. By the end of 1955 the USSR had tested small, medium, and large-yield weapons.[3] We estimate that the USSR could now have nuclear weapons deliverable by aircraft with yields ranging from five KT to a few megatons. It will probably continue to work on large-yield weapons as well as on smaller-yield and small-dimension weapons. By straightforward research and development techniques, substantial progress can be made in increasing the yield and also in reducing the size and weight of the 1.6 megaton weapon tested in 1955. By mid-1959 the USSR could have nuclear weapons deliverable by aircraft with yields ranging from 0.5 KT to 10 megatons or more. By then it might also have high-yield warheads for intermediate range (1,600 n.m.) surface-to-surface ballistic missiles.

13. Within the indicated technological limits, Soviet military requirements will govern the allocation of available fissionable material to various types of weapons. The present number of weapons of greater yield than one MT is considered limited, since it is probable that their production was not begun before late 1955. By mid-1959 the only limitation would be the available supply of U–235. Annex D (Restricted Data) provides the basic information required and the method by which possible variations in the Soviet nuclear weapons stockpile can be calculated. The annex also includes an illustrative stockpile within the estimated availability of fissionable material. It must be emphasized that this illustration is not an estimate of the most probable composition of the Soviet nuclear stockpile — the available evidence is not adequate to justify any specific estimate — but is an example only, based on the assumptions prefacing the stockpile tabulation.

14. *Radiological Warfare.* During the period of this estimate, it is most unlikely that the USSR will be able to stockpile militarily significant quantities of radioactive materials for use in radiological warfare weapons. However, the USSR will possess nuclear weapons capable of producing widespread radioactive fall-out, and these weapons could be used primarily for that purpose.

15. *Biological Warfare.* The USSR possesses all the necessary basic knowledge for the production of most BW agents and devices for their effective dissemination. There is evidence that the USSR is engaged in a BW research and development program with primary emphasis on anthrax, tularemia, plague, and brucellosis as antipersonnel bacterial agents. We believe that foot and mouth disease and rinderpest would be considered as the primary antilivestock agents, although conclusive evidence of such Soviet BW research is lacking. No information is available concerning possible anticrop agents. Since it is not feasible to stockpile large quantities of most BW agents in prolonged storage, most

[3] The 1955 test series included airbursts with yields of about 200 KT and 1.6 MT, an underwater burst of about 20 KT, and two other tests of about 5 KT and 25 KT.

1. *(Continued)*

operational requirements would have to be supplied from production facilities.

16. *Chemical Warfare.* The USSR accumulated large stocks of standard CW agents and munitions during World War II. We believe that it is maintaining stockpiles of these toxic agents adequate for large-scale employment in military operations.

17. In regard to other CW agents, the USSR moved a GA nerve gas producing plant and the GB pilot plant from Germany to the Soviet Union in 1947. In addition to possessing the physical facilities, the USSR has the technical knowledge to produce both GB and GA. We believe that the USSR could have been producing GA since 1949, although we have no firm evidence it has done so. The problems involved in stockpiling GB are greater, but we estimate that the USSR has the ability to produce and stock it, at least in limited quantity. The USSR has also had access to openly published information on psychogenic drugs and other potential CW agents, including the method of synthesis. Minute quantities of psychogenic drugs are capable of making individuals indifferent to their surroundings and of inducing apprehension and confusion. We estimate that the Soviet Union has the technical ability to produce such drugs for use as chemical warfare agents.

18. The USSR had chemical disseminating devices and munitions prior to World War II, some of which were suitable for aerial delivery at speeds up to 300 mph. We estimate the USSR could produce devices and munitions for high speed delivery of many of its toxic agents.

II. WEAPONS DELIVERY SYSTEMS — AIRCRAFT

Soviet Long-Range Aviation

19. Soviet Long-Range Aviation is estimated to have had, as of 1 January 1956, an over-all actual strength in operational units of 1,145 bomber aircraft, including 760 BULL piston medium bombers, 310 BADGER jet medium bombers, about 40 BISON jet heavy bombers, and about 35 BEAR turbo-prop heavy bombers.[1] There is evidence that BISON have been assigned to operational units, but the evidence concerning assignment of BEAR aircraft is tenuous. All Long-Range Aviation units are based in the European USSR except the 3rd Long-Range Air Army, which is in the Soviet Far East and has an estimated actual strength of about 220 BULLS.

20. We lack sufficient intelligence to estimate with a confidence that satisfies us the planned future size of Soviet Long-Range Aviation, or the planned future balance between the types and categories of bomber aircraft. In the absence of any evidence indicating reduction in the number of long-range units, we estimate that the current strength will be carried forward throughout the period, with new types being phased in as they become available. It also seems probable that by 1959 actual will be closer to authorized strengths. We estimate, moreover, that during this period the USSR is unlikely to introduce into operational units any medium or heavy bomber types which have not already appeared. We believe that the USSR will devote a substantial effort to the production of medium and heavy bombers. Based on available intelligence and on our estimate of Soviet capabilities to produce and requirements for a long-range bomber force, we believe that the USSR will produce about 700 BISON and 460 BEARS through mid-1959. Accordingly, actual strengths in mid-1959, as compared with current actual strengths, would be as shown below:

Estimated Operational Strength of Long-Range Aviation

Type	1 January 1956	Mid-1959
BULL	760	0
BADGER	310	700
BISON	40	400
BEAR	35	300

The serviceable BULLS phased out of Long-Range Aviation would be available for a variety of uses, including reconnaissance (particularly naval reconnaissance), augmentation of Satellite and Chinese Communist air forces,

[1] Radii-ranges and other performance data estimated for Soviet bomber types are given in Annex C.

conversion for tanker use or other special purposes, or reserve. The USSR will have no appreciable reserves of other medium or heavy bomber types.

21. *Inflight Refueling.* The USSR would probably require an inflight refueling capability if it intended to employ all of its present or a considerable portion of its prospective bomber force against the continental US without resorting to one-way missions. Evidence does not indicate that in the USSR inflight refueling has gone beyond the experimental stage. Development of a fleet of tanker aircraft, modification of mission aircraft fuel systems, and considerable operational training would be necessary before a significant inflight refueling capability would be achieved. The numerous BULL aircraft being phased out could be converted to tankers, but because of their limited speed, altitude, and fuel capacity their use would probably be restricted to refueling medium bombers. Converted BISON, BEAR, or possibly CAMEL types would be more suitable as tankers. The USSR could also develop a new type specifically for use as a tanker, but we have no evidence thus far that it is doing so. The USSR could have, in 1959, an inflight refueling capability adequate to meet the requirements of Soviet Long-Range Aviation for attacks on the US.

Light Bomber Forces

22. For attacks on targets up to 700 miles from Bloc bases, the USSR has available a substantial jet light bomber force consisting of the types designated as BEAGLE and BOSUN. The BEAGLE is the standard light bomber of both Soviet Tactical Aviation and Naval Aviation. We estimate that all Soviet jet light bombers have the capability of delivering nuclear weapons. Jet light bombers assigned to Soviet Naval Aviation are also capable of carrying out specialized naval missions such as torpedo attacks and minelaying.

Estimated Jet Light Bomber Strength in Operational Units*

	January 1956	Mid-1959
Tactical Aviation	2,230	2,250
Naval Aviation	653	850
Total	2,883	3,100

* See Annex C for estimated performance characteristics of these aircraft.

23. During 1956 the USSR may also begin to have operational an improved jet light bomber, perhaps a twin-jet swept-wing type. In addition, the speed and altitude performance of some BEAGLES has been increased by the installation of higher thrust engines. This, however, has not resulted in a significant change in radius/range. We estimate that by 1958 BOSUN will have been phased out of operational service and replaced by either the BEAGLE or the new light bomber.

Base Areas

24. We estimate that in all there are some 400 operational airfields in the Sino-Soviet Bloc with permanent surfaced runways of 5,000 feet or longer:

	Minimum Runway Lengths (feet)					
	9,000	8,000	7,000	6,000	5,000	Total
USSR	4	28	3	93	41	169
European Satellites	2	49	37	35	1	124
Asiatic Communist Countries	0	2	17	63	25	107
	6	79	57	191	67	400

25. Given standard conditions (normal take-off technique and take-off engine power, no wind, sea level elevation, temperature 59 degrees F., permanent surfaced runway) we estimate take-off distances for Soviet long-range bombers as follows:

Type	Take-off Weight (lbs.)	Ground Run (ft.)	Ground Run to Clear 50-ft. Obstacle (ft.)
BULL	140,000	5,230	7,825
BULL (modified)	135,750	4,800	7,125
BADGER	150,000	4,200	6,300
BADGER (improved)	170,000	4,800	7,100
BISON	365,000	6,400	9,100
BISON (improved)	365,000	5,300	8,200
BEAR	300,000	6,000	9,000

(For the effect of lower temperatures, see paragraph 63.)

1. *(Continued)*

26. There are approximately 25 airfields in the USSR believed to be home bases for operational Long-Range Aviation bomber units, three in the Far East and the remainder in the European USSR. In addition, a number of airfields associated with command and/or training units, factory production and delivery, and testing and development are in effect an integral part of the base structure of Soviet Long-Range Aviation. Moreover, many other airfields in the Sino-Soviet Bloc have runways suitable for medium bomber operations and some have runways suitable for heavy bombers.

27. In areas where airfield development can be easily observed, such as the European Satellites, the Soviet air forces have provided runway lengths in excess of estimated requirements for the assigned aircraft. There is some evidence of runway development at airfields identified as home bases for Long-Range Aviation units. Assuming similar construction practices throughout the USSR, we estimate that concrete runways at BULL home bases have been standardized at lengths between 7,800 and 8,200 feet. Little additional modification of these existing bases would be required for operation of BISON or BEARS. However, if the number of new heavy bombers estimated for 1959 actually appears in operational units, the Soviet long-range home base system will probably require expansion and development in terms of number of fields, runway lengths, and other factors.

28. World War II practices suggest that the USSR probably would depend upon auxiliary airfields to insure maximum aircraft dispersal away from home bases in event of hostilities. The actual existence of such auxiliary fields within the Soviet Long-Range Aviation base structure cannot be verified from available intelligence. In fact, the base structure at present is such that, were Soviet Long-Range Aviation to require airfields for dispersal in European USSR, it would have to utilize airfields outside the current home base operational areas. This would mean moving into either the more vulnerable perimeter areas of the USSR or withdrawing farther into the interior. Physical limitations on dispersal, and probable requirements for limiting ground stay to a minimum, would make dispersal and revetment practices unlikely for long-range bombers at forward staging bases in the Arctic areas.

29. Because of the range limitations of available bombers, the launching of strikes against North America in 1956 probably would be limited to operations staged through one or more of six base areas within Soviet-controlled territory — the Chukotski Peninsula, the Kamchatka Peninsula, the Central Arctic area, the Kola Peninsula, the Leningrad area, and the Baltic-East German area. Even the BEAR turbo-prop heavy bomber would have to be launched from these areas in order to hit any but the most northern US targets, unless refueled in flight or employed on one-way missions. Airfields suitable for long-range bombers exist in each of these six areas, although Long-Range Aviation units are stationed only in the Leningrad area. [5]

30. Airbase development over the past few years in the potential forward staging areas has improved the capability of these bases for supporting long-range bomber staging operations. In the Baltic-East German area, only minor additional construction and development of air facilities at existing bases would be required. In the Kamchatka, Kola, Chukotski, Central Arctic, and Leningrad areas, there are 20 bases believed suitable for staging long-range bombers. Four or five of these may be capable of supporting sustained operations. Runway lengths and surfaces at many of these bases are known, but information is meager concerning load-bearing capacity, aircraft servicing, maintenance, storage, and personnel facilities at almost all of these airfields.

31. There are, however, indications that airfield development in the forward base areas is continuing, and we estimate that it is within Soviet capabilities to develop adequate facilities for sustained long-range bomber operations in any of these areas by 1959. For example, we estimate that by 1959, with the con-

[5] Annex A and Annex E (limited distribution) cover air facilities, weather conditions, and base capacities in these base areas.

1. *(Continued)*

struction facilities and personnel now in the area concerned, three new airfields suitable for long-range bomber staging-operations could be developed in the Kola and Leningrad areas, and two each in Chukotski, Central Arctic, and Kamchatka. Improvement of support facilities at already existing potential staging bases in these areas could be carried out concurrently without major interference with the construction effort.

32. In each of the forward areas there are bases, in addition to those considered suitable for staging long-range bombers, which could be utilized for fighters, light bombers, and transports for which the USSR would also have a requirement in any operation conducted from the forward areas. In certain areas, however, there are only a few of these additional bases.

Other Factors Affecting Soviet Air Operations

33. *Navigation.* The USSR has available through open sources virtually complete target and navigation data on North America and its approach routes. It is even probable that in the event of a surprise attack certain Western electronic navigational aids would be available during at least part of the flight. Similarly, meteorological reports, including profile data at all altitudes, are regularly broadcast in the United States and Canada in simple cipher. It is also possible that clandestinely placed navigational beacons may be used for aircraft homing. We estimate that Soviet blind-bombing and navigational radar equipment is capable of equal or better performance than the US World War II equipment which the USSR acquired. The current Soviet training program points to continuing improvement in air crew proficiency.

34. Soviet Long-Range Aviation is probably receiving training in the use of advanced navigation systems and techniques. Some Soviet crews are almost certainly capable of navigation to the most difficult assigned targets in the US. Most crews are probably capable of navigating with sufficient accuracy to reach major US cities and industrial centers. We estimate that by 1959 Soviet Long-Range Aviation will have considerably increased its overall proficiency in long-range navigation.

35. *Bombing Accuracy*

a. Visual Bombing. We estimate that many BULL crews, and crews which have been fully trained in the newer turbo-jet and turbo-prop bombers, are capable of attaining the following visual bombing accuracies (in the case of the BULL, figures are applicable up to 30,000 feet only):

Altitude (ft.)	CEP (ft.)
50,000	2,900
40,000	2,100
30,000	1,400
20,000	900
10,000	400

Most long-range bomber crews will probably achieve the above level of proficiency by mid-1959.

b. Radar Bombing. BULL units generally are estimated to be capable of the following accuracies in radar bombing:

Altitude (ft.)	CEP (ft.)	
	Well-defined targets	Poorly-defined targets
30,000	4,000	5,500
20,000	2,000	3,500
10,000	1,000	1,750

Because of the limitations of the radar installed in the BULL, no significant improvement in the above accuracies is likely. However, we estimate that the newer aircraft, as well as affording more stable bombing platforms, probably have improved radar. This could result in the radar bombing accuracies listed below. By mid-1959, most crews in newer type bombers will probably be able to achieve these accuracies.

Altitude (ft.)	CEP (ft.)	
	Well-defined targets	Poorly-defined targets
50,000	3,100	5,600
40,000	2,300	4,300
30,000	1,500	3,000
20,000	1,000	2,000
10,000	500	1,000

1. *(Continued)*

36. We estimate that jet light bomber CEPs are the same as those for Long-Range Aviation. If the Soviet SHORAN type navigation system were employed as a bomb control system, bombing accuracies of about plus or minus 100 feet could be achieved at a range of 100 n.m. from the transmitter. Soviet ground fire control radar could be used with appropriate modifications to develop a precise short-range bombing system. This system could have a range of 15–20 nautical miles.

37. *Reconnaissance.* It is possible that during the interval between now and mid-1959 the USSR might build up a pattern of reconnaissance of US and allied early warning lines, not only to determine their location, capabilities, and vulnerabilities, but also to delay recognition of the approach of an actual attack. It is unlikely that the USSR would jeopardize surprise by unusual reconnaissance activity before an actual attack. However, there would be a requirement for the surveillance of sea areas from which US and allied carrier task forces could attack the USSR. Such reconnaissance would probably be the primary responsibility of Naval Aviation, to which BULL or other long-range aircraft could be assigned or made available as required. Even if long-range bomber types were not committed in attacks against carrier task forces, their reconnaissance data would be valuable for the direction of submarine and surface forces and for the planning of attacks by Soviet jet light bomber and torpedo aircraft. Post-strike reconnaissance of US targets would probably be done by mission aircraft.

38. *Weather Forecasting.* The USSR has for years devoted considerable emphasis to both short-period and long-period meteorological forecasting and has achieved a high degree of success. We believe that it has the forecasting capability to support long-range air operations. This capability plus extensive experience in meteorological research in the extreme northern latitudes, weather reporting facilities in Siberia and on ice floes in the Central Arctic basin, and constant access to current North American weather reports and forecasts should enable the USSR to predict both route and target weather with reasonable accuracy.

39. *Electronic Countermeasures (ECM).* The USSR has had access to several types of World War II US defensive radar and to some US jamming equipment. Since 1950, a number of instances of Soviet use of Chaff have been observed, and recently the use of active airborne jammers has been noted. We estimate that the USSR now has at least limited quantities of both ground and airborne equipment for jamming radar up through the X-Band (10,000 mc/s) and possibly higher. Such equipment would include active, passive, and confusion devices. We have no evidence of Soviet use of decoys, but consider it to be within their capabilities. We also estimate that the USSR has a ground-based jamming capability to interfere seriously with radio communication between the US and its overseas bases and forces. During the period 1956–1959 the USSR will probably continue to improve its jamming capability by the development of equipment covering a wider range of frequencies and by increased effectiveness of jamming operations. [6]

40. *Evasion of US Radar.* The USSR almost certainly knows at least the general capabilities of US early warning radar equipment, coverage provided by the network, and weak and strong points of the system. With such knowledge it might expect that properly planned attacks could reduce the chance of detection by US radar, particularly if the attacking aircraft made penetrations where radar coverage was limited or nonexistent, or if the physical limitations of the radar equipment were exploited. However, the use of some evasion techniques, particularly low altitude penetration, would require acceptance of reduced range or bomb load.

III. WEAPONS DELIVERY SYSTEMS — GUIDED MISSILES [7]

41. We have no evidence that the USSR now has any offensive guided missile available for operational use. During the period of this

[6] For a detailed discussion, see Annex F (limited distribution).

[7] For a detailed study see NIE 11-12-55, "Soviet Guided Missile Capabilities and Probable Programs," 20 December 1955.

1. *(Continued)*

estimate, it will probably rely primarily upon aircraft for the delivery of nuclear weapons, because of the probable lower relative reliability and accuracy of missile systems and the lower nuclear yield obtainable from missile warheads. Based on US experience, we estimate that at present only 40–60 percent of Soviet missiles would reach target areas, but by 1959 their reliabilities will almost certainly be improved. However, we believe that during this period the USSR will devote a high priority to the development of offensive missiles, and that it will begin to stockpile various types as acceptable reliabilities are achieved and as the improvement of warhead yields tends to compensate for relative missile inaccuracies. By 1959 the USSR will probably have in operational use several types of missiles with nuclear warheads suitable for attacks on overseas installations and forces and for submarine, shipborne, or airborne attack on the continental United States. However, an intercontinental ballistic missile (ICBM) will probably not become available before 1960–1961.

Submarine-Launched Guided Missiles

42. Although there is no firm evidence that the USSR has developed a submarine-launched guided missile capability, we estimate that it could now have submarines equipped for this purpose. Any of the long-range submarine types could be equipped to carry one or two guided missiles in topside stowage. We estimate that a submarine the size of the Soviet Z class could be constructed to accommodate 6 V–1 type or 4 turbo-jet Regulus I type missiles internally. A submarine the size of the "W" class could possibly accommodate 3 V–1 types or 2 of the larger missiles.

43. We estimate that both of the above types of nonballistic missiles could currently be available for launching from submarines. The V–1 could be an improved version of the German V–1, having a range up to 200 nautical miles with a 3,000-pound warhead. At this range this missile could have a CEP of roughly 3 n.m., with inertial guidance. Radar track-radio command guidance could be provided to a distance of 100 miles from the launching submarine, or an advanced guidance submarine could be used. Using radar track-radio command guidance, a CEP of about one to two nautical miles could be achieved, depending on how accurately the submarine's position were fixed. With a 3,000-pound warhead, the turbo-jet missile could have a range of 500 n.m. Radar track-radio command guidance could be provided for about 200–250 n.m. from the guidance submarine, with a CEP of about one to two n.m., depending on the accuracy of navigation. Inertial guidance could be used, but at maximum range would result in a CEP of about 10 miles. All missiles which could be launched from submarines could also be launched from surface vessels, including merchant ships.

Ground-Launched Surface-to-Surface Missiles

44. Several additional missile types could now be, or could become, available for launching from land bases. Current information indicates that surface-to-surface ballistic missiles are being given a high priority in the Soviet research and development program. We estimate that, in addition to shorter range ballistic missiles, the USSR could have had since 1954 an operational ballistic missile with a range of 350 n.m. and a CEP of 2 n.m. We believe that in 1956 it could have ready for series production a single-stage ballistic missile with a range of 850–900 n.m. and a CEP of 3–4 n.m. In 1958–1959 the USSR could have ready for series production an intermediate-range ballistic missile (IRBM) with a range of about 1,600 n.m. and a CEP of 3–4 miles. Only a few of these latter could be available for operational use by trained units in mid-1959, but, if the USSR were willing to accept a reduced range of 1,400 n.m., this missile could be ready for series production as early as 1957. Only low-yield nuclear warheads would be available for these medium and intermediate-range missiles until about mid-1959, when large-yield nuclear warheads could begin to become available.

Air-Launched Missiles

45. The USSR is now technically capable of attacking targets with rocket-propelled glide bombs launched from long-range aircraft.

1. *(Continued)*

These bombs could now have low-yield nuclear warheads. However, their use would be limited to well-defined targets, good visibility conditions, and a maximum range of 20 n.m. During 1956–1957, an improved version with a 50 n.m. range could become available. This missile could be equipped with a semiactive homing guidance system for use against ships or other well-defined targets. By 1958, high-yield nuclear warheads could also be available.

IV. WEAPONS DELIVERY SYSTEMS — CONVENTIONAL FORCES

Ground and Tactical Air Forces

46. Any key US installations and forces overseas within range would be subject to attack by Soviet Bloc tactical air forces. These targets would also be threatened by the advance of Bloc ground forces with tactical air support. It is estimated that, at the present time, Bloc ground forces are composed of 175 Soviet and about 230 other Bloc line divisions. We believe that, in general, Soviet line divisions are maintained at 70 percent or less of authorized strengths. It is estimated that, for air support of its ground and naval operations, the USSR currently has an actual strength of approximately 12,000 aircraft in Tactical (Frontal) Aviation and Naval Aviation. Of this total, approximately 9,600 are jet aircraft. For mid-1959, actual aircraft in these operational units is estimated at about 14,600, of which 13,000 will be jets. In addition there are about 3,000 military aircraft in the European Satellites (4,000 by 1959) and about 2,600 in China and North Korea (3,400 in 1959).

Airborne and Amphibious Forces

47. The USSR also has considerable airborne and amphibious forces which could be used to attack certain US overseas installations and Alaska. There are an estimated 10 Soviet airborne divisions, and some ground troops have received training in air transport operations. Although the USSR still has only twin-engine transports, it is estimated that Soviet Aviation or Airborne troops could lift 9,000 troops in an initial parachute attack. The USSR lacks specialized assault landing craft and support ships for other than short-range amphibious operations. It is estimated that the USSR could at present lift up to three divisions for an initial amphibious assault on Japan or Korea.

Naval Forces

48. The intense and rapid naval construction program carried out by the USSR during the last six years has provided it with an increasingly significant offensive capability. The program for construction of major combatant units has been limited to light cruisers, destroyers, and submarines. At present major surface vessels in the Soviet Navy are estimated to number 225, including 6 heavy cruisers, 22 light cruisers, and almost 200 destroyers. By 1959, we estimate that the USSR will have about 300 major surface vessels, including some 35 cruisers, 265 destroyers, and possibly one or two capital ships. We estimate that, in view of the known submarine building facilities, the Soviet submarine force, currently consisting of about 420 submarines of all types, could be strengthened by the addition of about 520 new long and medium range boats by mid-1959. However, we have no intelligence to indicate that the USSR will in fact produce this number of submarines or to indicate the planned future strength of the Soviet submarine force. Considering such factors as the probable phasing out of older types and the possible introduction of new types, including nuclear-powered submarines, we believe that by mid-1959 the Soviet submarine force will consist of about 780 boats of all types, including about 600 postwar design long and medium range submarines. The capabilities of this force will probably be improved by a limited modernization of older classes (including the installation of snorkel). In addition, some submarines may be adapted for missile launching. Intelligence is lacking on a number of factors essential to the development of such a fleet. We lack adequate information on mobile and permanent logistical support. Little is known of the operating efficiency of the submarine force, which is probably still inferior to that of US and German forces of World War II, but performance standards will probably rise during this period.

1. *(Continued)*

PROBABLE SOVIET GROSS CAPABILITIES

V. SOVIET OBJECTIVES AND METHODS OF ATTACK

49. In conducting initial attacks against the US and key overseas installations and forces, the USSR would probably have the following major military objectives:

a. To destroy or neutralize US capabilities for nuclear warfare;

b. To deliver attacks on US and overseas military installations, forces, and land and sea lines of communication in order to prevent effective operational employment of US military forces; and

c. To deliver attacks on urban, industrial, political, and psychological targets in the US in order to reduce to the maximum extent practicable the mobilization of US military and industrial strengths.

We believe that these Soviet objectives will remain the same throughout the period of this estimate.

Implications of Soviet Efforts to Achieve Surprise

50. In order to prevent or reduce nuclear retaliation the USSR would almost certainly attempt to attack with a minimum of warning. A maximum Soviet attack on the continental US and key overseas installations and forces, involving utilization of all or most of the capabilities discussed below, would require such substantial preparations as to almost certainly result in the loss of surprise. If, however, the USSR attempted to attack without warning it would probably be forced to accept the following major restrictions: (a) no large-scale mobilization of additional units; (b) no large-scale redeployment of Soviet air, naval, or ground forces to reinforce peripheral dispositions; and (c) no unusual movement of Soviet air, naval, or ground forces which would be likely to indicate the imminence of attack. The effect of these restrictions would be reduced, however, if redeployment and high readiness were achieved gradually.[8]

51. Thus, the USSR would have to balance the advantages of surprise against the required weight of attack. In planning initial attacks on US and overseas targets, priority of Soviet effort would be largely determined by Soviet recognition of the need for neutralizing the most immediate threat to Soviet security — a nuclear attack by US forces. These Soviet attacks, therefore, would probably be directed primarily toward those areas and against those forces which comprise the US nuclear strike capability. The Soviet timetable would probably call for almost simultaneous assaults on other target systems, subject to the overriding requirement that these assaults not give warning of the initial attacks against US nuclear strike capabilities.

52. Even in planning attacks directed mainly against US nuclear strengths, the USSR will probably continue to be faced with a difficult choice as to the relative priorities to be given to attacks on key targets in the US itself as opposed to key targets overseas. This dilemma stems from the fact that Soviet planning will not only be concerned with the relative nuclear threats presented by continental US forces as compared with US overseas forces, but also with estimating the relative success which could be achieved against continental US as contrasted with overseas targets. The USSR could not count upon being able to achieve surprise against both the continental US and US overseas bases, but it would almost certainly attempt to do so.

53. The continental US will almost certainly be a high priority Soviet target. However, Soviet operational planning for the initial strikes will probably also be strongly influ-

[8] For extended discussion of the problem of achieving surprise, see NIE 11-6-55, "Probable Intelligence Warning of Soviet Attack on the US Through Mid-1958," 1 July 1955.

enced by the threat to Soviet security from US nuclear capabilities overseas, and by the fact that the Soviet attack capability against such targets is relatively high. We have no basis for estimating what the distribution of Soviet effort between US continental and overseas bases would be. We believe that Soviet planning would probably be calculated to achieve an optimum effect, i. e., the maximum *over-all* reduction of US nuclear retaliatory capabilities, wherever located.

Methods of Attack

54. We believe that through 1959 the USSR would place chief reliance in attacks on the continental US upon aircraft carrying nuclear weapons, since this form of delivery would offer the best chance of combining a minimum warning with a significant weight of attack. Missiles launched from submarines might be an important supplement to nuclear attacks by aircraft, but limitations on target coverage and the risk of premature disclosure of intent would probably deter their large-scale use in an initial attack. The clandestine delivery of nuclear and other weapons of mass destruction might also be attempted, but, because of the risk of premature disclosure of intent, these forms of attack would probably be employed only on a highly selective basis in an initial attack. Sabotage of certain key installations might occur concurrent with or immediately following the initial attack.

55. The USSR would have a much wider range of capabilities for attack on key US overseas installations and forces than on the US itself. At present, principal reliance for initial attacks would probably be placed on Soviet medium, light, and fighter bombers. By 1959 guided missiles, including those launched from submarines, may be the preferred weapon against many of these targets. The USSR's possession of very large numbers of submarines would permit their concentration against US naval striking forces. The increasing mobility and the probable growing nuclear capability of the large Soviet ground and supporting air forces make them a threat to many US overseas installations and forces in operations immediately following initial attack. In all overseas areas, clandestine attacks and sabotage would also be an incidental form of Soviet attack, and might in some locations be highly effective.

VI. CAPABILITIES TO ATTACK THE US*

Attacks by Aircraft

56. Present Soviet capabilities for air attack on the continental US are restricted by the small numbers of operational heavy bombers, by the limited capacity of base facilities in forward areas, and probably by the lack of an operational inflight refueling capability. Forward base capacities will continue to limit the total number of aircraft which could be launched against the US at one time, but as the number of BISON and BEARS increases, less reliance will have to be placed on forward bases for launching intercontinental attacks. Improved crew proficiency, development of an operational inflight refueling capability, and extensive improvement of the forward staging areas would result in a substantial increase in Soviet capabilities for attack on the US by mid-1959, even though the increase in the number of BISON and BEAR heavy bombers were less than estimated herein.

57. During the early part of the period of this estimate, the BULL and the BADGER would be the principal aircraft available for intercontinental attacks. We estimate that, however, as increasing numbers of newer types become available, the BULL will be phased out of long-range bomber units. In the latter part of the period the USSR would almost certainly place chief reliance on the BISON and the BEAR for intercontinental attacks on the US, with an improved BADGER playing a significant role primarily in shorter-range missions.

58. Without inflight refueling the BULL (see maps 1–4) would be unable to reach targets in the US on two-way missions even from forward bases unless it were modified,** in which case it could reach the Seattle area.

* For range coverage, see maps, Annex B.

** E. g., stripped and altered for longer range in a manner similar to the US B 29B.

1. *(Continued)*

The modified BULL could, without inflight refueling, reach all of the US on a one-way mission from Chukotski. The current BADGER would require inflight refueling in order to cover most of the important target areas in the US, even on one-way missions from forward bases, but an improved BADGER (see maps 5–8), which we estimate will be available in 1957, will probably have adequate range to carry out these one-way missions without inflight refueling. In order to reach all targets in the US with the BISON (see maps 9–12, 17–18), the USSR would have to employ one-way missions. On two-way missions from forward bases and without inflight refueling, the BISON could reach only the northwestern quarter of the US. However, the BEAR (see maps 13–16, 19–20), if launched from the Chukotski Peninsula, could reach almost all of the US on two-way unrefueled missions; from the Kola area it could reach only the northern half of the US. Other significant range capabilities under varying conditions are as noted on the maps.

59. *Base Areas.* At the beginning of the period the entire Soviet long-range bomber force could be launched against the US only if bases in the Baltic-East German area were used in addition to those within the USSR. This area is not a likely choice for initial strike operations against the US, because direct routes to the US would involve overflight of Western territory with consequent loss of surprise, and because of the greater likelihood that preattack preparations would be detected. Except for heavy bombers, and possibly modified BULLS on one-way missions, bases in the Leningrad area are unlikely to be used for initial strikes because of the problems involved in either overflying or by-passing Scandinavia. If overflight of the Scandinavian area were to be avoided on an attempted strike against the US, a dog-leg over the Kola Peninsula of about 600–750 n.m. would be necessary. Therefore, the bases believed to be likely Soviet choices for mounting initial attacks on the United States at the beginning of the period are those in Kola, Chukotski, and Kamchatka. However, after an initial surprise intercontinental strike, all base areas could be used for reattack. Bases in the Central Arctic area might also be used for initial attacks despite unfavorable weather conditions and difficult logistical problems.

60. By mid-1959, the capacity of the bases in the Kola, Chukotski, Kamchatka, Central Arctic, and Leningrad areas could have been increased so that these bases could be used to launch simultaneously the entire long-range bomber force.

61. *Staging.* About a 10-hour flight would be required to move BULL aircraft from Far East home bases to Chukotski area bases, and about three to five hours from Western USSR bases to the Kola Peninsula. Flying times for BADGER and BISON aircraft would be about half as long. We have almost no evidence on the current status of servicing and fuel storage and transfer facilities at the forward bases. However, the USSR is fully capable of developing these facilities, if they are not already available. For example, we believe the USSR has a fuel truck with a capacity of 6,000 gallons and a pumping rate of 240 gallons per minute. We estimate that, when BISON and BEAR bombers appear in service in large numbers, the USSR will have available refueling equipment more compatible with the requirements of these aircraft. In order to service large numbers of long-range bomber aircraft at staging bases in forward areas, it would probably be necessary to increase present stocks of POL and servicing equipment and to establish or increase weapons stockpiles at these bases.

62. *Weather.* Weather and climatic conditions in the far northern staging areas would have a considerable impact on the timing and magnitude of attacks on the US. During cold weather, requirements for high-speed refueling and heated hangar space are among the critical problems which would be magnified as numbers and size of aircraft increased. Moreover, the coordinated launching of a large-scale attack composed of elements from widely separated base areas would probably be further complicated by varying weather conditions at the different bases. Cold weather problems would, however, be less critical with jet than with piston aircraft.

1. *(Continued)*

63. The USSR has demonstrated that it can effectively operate aircraft under extreme cold weather conditions. In addition, aircraft performance is improved by low ground temperatures in Arctic areas where the higher density of cold air increases engine thrust and increases airfoil lift so that take-off distance may be reduced or maximum gross take-off weights increased. For example, at 0° F. the ground run requirement for take-off of jet bombers would be about 25 percent less than under standard conditions (see paragraph 25). Ground run requirements for the BULL would also be reduced but the difference would not be as great as for jet bombers.

64. The low temperatures of the Arctic region also pose some special problems in the handling of nuclear weapons. However, virtually all of the components of nuclear weapons are better able to resist the effects of cold weather than are the delivery aircraft, and provision of adequate shelters and equipment to overcome the undesirable effects of cold weather on the bombs is a much simpler problem. We estimate that the USSR can successfully store and assemble nuclear weapons for use at Arctic bases under any weather conditions which will permit the operation of bombers. The problem of storage could also be largely eliminated by storing the bombs in rear areas and moving them to the advanced bases as needed, although such an operation would introduce additional timing problems.

65. *Scale of Prestrike Preparations.* At present the preparations necessary for launching a maximum-scale attack from likely staging areas would probably require several months after their initiation. By mid-1959, however, only minimum preparation would be required, provided that during the interim a major effort had been made to improve base facilities and training, logistics, and equipment of the Long-Range Air Force.

66. *Assumptions Underlying Estimated Intercontinental Striking Forces.* Within the limits of base capacity, aircraft performance, and operating conditions, the size of the strike force which the USSR could launch would vary with the employment of different types of aircraft. The variety in methods of employment and attack patterns open to the USSR makes it difficult to estimate which airfields the Soviet Union might employ in an initial surprise attack. Moreover, on many forward airfields, we lack sufficient intelligence to make firm estimates of their capacities to stage bomber aircraft.

67. In order to determine the general order of magnitude of Soviet capabilities for an initial attack against the US, we have considered the available intelligence on runway lengths, POL, maintenance, other base facilities and accessibility for supply purposes, and have arrived at an estimate of a probable maximum capacity of each of the forward bases for staging bomber aircraft. All bases that we have selected for the staging of heavy bombers have runway lengths of at least 7,500 feet and are considered to have an average maximum staging capacity of 30 heavy or 60 medium bombers. Those selected for staging medium bombers only have generally fewer base facilities, but have runways estimated to be at least 5,200 feet in length. Their maximum staging capacities are considered as varying from 20 to 60 medium bombers, depending on the facilities at each base. Although usable on the basis of estimated aircraft performance figures, existing runways at many of these airfields are considerably below the standards normally associated with Soviet long-range bomber bases, and their use in 1956 would require the acceptance of reduced safety margins.

68. The following planning factors, based largely on US experience, have been assumed:

a. 90 percent of aircraft at home base in commission after stand-down;

b. 85 percent of those aircraft departing home bases can be launched from staging bases (includes attrition enroute to and while at staging bases);

c. 80 percent of these bomber aircraft launched on unrefueled missions will arrive in target area (excluding combat attrition);

d. 75 percent of those bomber aircraft launched on missions utilizing inflight refueling will arrive in target areas (excluding combat attrition); and

e. An allowance of 1.2 tanker aircraft provided for each bomber refueled in flight (compatible [11] tanker assumed).

69. *Estimated Strike Forces in 1956.* We estimate the USSR could, from its present forward bases, augmented by the three home bases in the Leningrad area, mount an initial strike of approximately the following size: 700 bombers on base, 600 could be launched, and as many as 500 could arrive in the target area. If tankers were available and used from these bases, the bomber force would have to be reduced accordingly. (See Annexes A and E for an estimate of staging capacities of individual bases in each area.)

70. If the USSR elected to utilize all available bases, including some in the Baltic-East German and Leningrad areas, and thus lessen its chances of achieving surprise, it could initially launch the maximum number of aircraft which would be serviceable (approximately 900) against the US in 1956. Not considering combat losses, approximately 720 might reach target areas.

71. *Estimated Strike Forces in Mid-1959.* By mid-1959, the capacity of the forward staging areas and Leningrad could be increased to permit the entire Soviet long-range bomber force to be launched from these areas in an initial attack. We have also estimated that by mid-1959 the USSR would have some 400 BISON and 300 BEAR aircraft in operational use. Moreover, the USSR could have a substantial inflight refueling capability and a number of heavy bombers could thus be launched from interior bases in initial attacks on two-way missions. In this case the Leningrad base area could be used for some of the heavy bombers making initial unrefueled attacks on the US. Under these circumstances, the mid-1959 Soviet strike capability could be as follows:

	On Base	Launched	Arriving in Target Area
BADGER	330	280	225
BISON	360	310	235
BEAR	270	225	180
Tanker	360	300	...
Totals	1,320	1,115	640

We have assumed the following method of employment:

	2-way Unrefueled	2-way Refueled	1-way Unrefueled	Totals
BADGER	.	..	280	280
BISON	50	260	..	310
BEAR	225	.	.	225
	275	260	280	815

72. Should the USSR elect to use only heavy bombers in an initial strike against the US, about 630 could be launched if home bases were utilized as launching bases. About 500 could arrive in the target area, not considering combat losses. If bombers staged through forward bases, the number launched and the number arriving in the target area would be about 530 and 420, respectively.

73. *Allocation to ECM and Diversionary Tasks.* It is important to note that a significant proportion of the above strike aircraft would probably be used solely for ECM and diversionary tasks.

Naval Attack Capabilities Against the US

74. Although there is no firm evidence that the USSR has developed a submarine-launched guided missile capability, such a capability would constitute a significant threat against US targets and could be used to supplement aircraft strikes. By this means the USSR could attack important US military, economic, and population centers along both seaboards and inland within range.

75. In view of current indications of an extremely active Soviet long-range submarine building program, and the considerable capabilities that submarine-launched missiles would provide for hitting vital US targets, submarine-launched guided missiles might be an important supplement to nuclear attacks

[11] As used in this estimate, "compatible" means having characteristics of speed and altitude suitable to the bomber employed, and a transfer capability sufficient to add 35 percent to the range of the bomber.

1. *(Continued)*

by aircraft in any Soviet attack plan. This would be more likely by 1959, when such missiles could have not only nuclear warhead yields consonant with their CEP's but also increased range and reliability. However, no firm estimate as to the probable magnitude of such submarine-launched guided missile attacks can be made at this time. The actual scale of such attack would depend not only upon the availability of missiles and of specially configured submarines, but also upon the Soviet requirement for submarines in their conventional role. Soviet judgment as to the risk of forfeiting the element of surprise would also be involved. The chances for such forfeiture would mount as the numbers of submarines to be deployed prior to initial attacks was increased. Such considerations suggest that the actual force involved would be only a small portion of the total submarines available now and in 1959.

76. The capabilities of Soviet surface naval forces for attacks on the US are very low. Sporadic raider operations are possible, but the surface fleet in general, lacking aircraft carriers, is unsuitable for transoceanic naval operations on any significant scale.

Clandestine Methods of Attack Against the US

77. *Clandestine Delivery of Nuclear Weapons.* We have no evidence as to any Soviet plans or preparations for clandestine delivery of nuclear weapons against the US. However, during the period of this estimate the USSR will be capable of producing nuclear weapons which could be smuggled into the US either as complete assemblies or as component parts of subassemblies. These could range from small-yield weapons (five kilotons or less), weighing a few hundred pounds and small enough to fit into the luggage compartment of an automobile, up to the highest-yield device the USSR was capable of producing (10 megatons or more). All of these weapons or devices could be designed to break down into a number of relatively simple and readily transportable components. Those designed to give a relatively low yield would not require much labor or technical training for assembly. Somewhat more labor and training would be required to assemble weapons designed to give high yields, and, once assembled, they would be more difficult to transport. The size and weight of any multimegaton device would be such that it could probably be used only as a fixed installation in the hold of a merchant vessel or in secure premises, such as the Soviet embassy.

78. Considering the known limitations of the means of physical detection, the USSR could probably introduce into the US and detonate in place a considerable number of nuclear weapons by clandestine means. A variety of methods of clandestine delivery suggest themselves. Assembled weapons could be dropped by apparently friendly aircraft, detonated in the hold of a merchant ship, or sown as underwater mines by submarines and possibly by merchant ships. Either components or assembled weapons could be brought in under diplomatic immunity, smuggled across land or sea frontiers, introduced through normal import channels, or brought in as bonded merchandise awaiting transshipment.

79. In introducing nuclear weapons clandestinely into the US, the USSR would have to take into account not only the estimated chances of detection, but also the consequences of detection, including the loss of surprise in any intended overt attack and the possible provocation of US military action. As the number of weapons clandestinely introduced was increased, the risk of compromise would grow. This increased risk would be less a function of the physical means of detection (the effectiveness of which is extremely limited) than of the possibility of US penetration of the Communist apparatus, or of the defection of even a trusted agent, or of sheer accident. The USSR could not be confident that none of these mischances would occur. We conclude that, although clandestine attack with nuclear weapons might be made against specially selected targets, as a supplement to overt delivery by air, the use of large numbers of such weapons would probably be precluded by security considerations.

80. *Clandestine Use of BW and CW Weapons.* Most biological warfare (BW) agents are peculiarly adaptable to clandestine utilization,

1. *(Continued)*

since detection of their intended use would be difficult. Even small-scale employment of BW agents against livestock could be highly effective. BW attacks against personnel concentrated in selected buildings could also be effective. Anticrop BW operations could be carried out clandestinely, with possible damaging effects under proper environmental conditions.

81. CW agents are not as suitable to clandestine operations as BW agents. The effects are more readily identifiable and except on a limited scale, a much greater effort would be necessary to deliver quantities required for lethal concentrations. Although it probably would not be feasible to accumulate CW agents or dissemination devices for more than limited attacks against population centers in the US, CW attacks against personnel in buildings could be effective.

82. *Subversion, Espionage, Sabotage.* The USSR is capable of subversion, espionage, and widespread sabotage in the US through the use of existing subversive elements and the placement of foreign agents. Sabotage probably would not be initiated on a large scale prior to an all-out attack on the US since these efforts would nullify the advantage of surprise, if identifiable with the USSR. Attempts to sabotage US transportation, industrial and communications facilities, and military installations could be expected with and immediately following surprise attack by the USSR. Communist party members and adherents are capable of organizing saboteur units of varying sizes equipped with small arms and other suitable material which could strike at especially selected and widely separated targets simultaneously and without warning. Whether these attacks would be timed with a surprise military attack or carried out after attack would be dependent upon the Soviet appraisal of the relative advantages of such action.

VII. CAPABILITIES TO ATTACK US OVERSEAS INSTALLATIONS AND FORCES

Attacks by Aircraft

83. Assuming the USSR launched attacks against the US on the scales indicated in paragraphs 69 and 71, there would remain in its operational establishment about the following numbers of long-range bombers:

	At Present	Mid-1959
BULL	250	0
BADGER	50	330
BISON	0	0
BEAR	0	0
	300	330

These aircraft would be subject to the attrition factors set forth in paragraph 68. In addition, an indeterminate number of reparable planes and salvaged aborts from the aircraft committed to the intercontinental attack would also be available for later employment.

84. From bases in the USSR, the BULL, if modified, and the improved BADGER, on two-way missions carrying a 3,500 lb. bomb load, could reach key US installations in the UK, Western Europe, Iceland, Greenland, the Azores, French North Africa, Libya, the Middle East, Japan, Okinawa, Alaska, Guam, and the Philippines. To reach key installations beyond these areas, they would have to resort to inflight refueling or one-way missions. Jet heavy bombers on two-way missions from bases in the USSR could reach all the above areas and, in addition, Hawaii, Labrador, and Newfoundland. The BEAR, from interior bases, and the BISON, from forward bases, would be able to reach the Panama Canal but only on one-way missions. (See map 21.)

85. The USSR's estimated 2,900 jet light bombers (3,100 in 1959) could also be used for attacks against the many key US installations and forces overseas within their operational radius. There is an adequate number of Bloc fields suitable for jet light bombers within range of key US overseas installations and forces. From bases in East Germany, jet light bombers on two-way missions could reach the entire North Sea area, the UK and its northern and western approaches (including the Faroes), France and its western approaches, and northeastern Spain. From bases in Hungary, Bulgaria, and Rumania these aircraft could reach most of the Mediterranean Sea. From the southern USSR, they

could reach the area north of an arc Crete-Israel-Kuwait. Jet light bombers based in the Vladivostok and Dairen areas could reach all of Japan. To reach Okinawa and Luzon on two-way missions, they would have to stage from bases in Communist China. (See map 21.) However, for maximum effectiveness of attacks by light bombers against the more distant targets, considerable redeployment from present base areas to forward bases would be required.

Attacks by Guided Missiles

86. *Ground-Launched Missiles.* The 350 n.m. ballistic missile which we estimate the USSR could now have, and the 850–900 n.m. missile which could begin to be available in 1955–1956, could be used against US overseas installations and forces. From forward Bloc areas such missiles could reach most US overseas installations, including bases in the UK, Spain, Japan, and Alaska. However, the small number probably available and their performance limitations would seriously limit Soviet operational capabilities in this field during the early part of the period.

87. However, Soviet ground-launched missile capabilities probably will increase markedly as a result both of the greater numbers of these weapons available and their improved performance and reliability. In 1958–1959, the USSR could also have ready for series production an IRBM with a range of about 1,600 n.m. Large-yield nuclear warheads for ballistic missiles would probably be available in 1959–1960. With the IRBM the USSR could attack most of the more distant US overseas targets, while simultaneously using short- and medium-range missiles against less distant targets. (See map 22.) These missiles could therefore constitute in 1959 a significant threat to US overseas installations and forces, largely because of the probable invulnerability of ballistic missiles to countermeasures.

88. *Submarine-Launched Missiles.* Submarine-launched guided missiles might be used against selected targets to supplement aircraft and ground-launched missile attacks. The range estimated for Soviet submarine-launched missiles (see paragraph 43) would permit them to reach many key overseas installations. These missiles could also be used against carrier and other naval forces in port or as weapons of opportunity at sea.

Attacks by Conventional Forces

89. *Ground Attack.* The decision as to how and when to use Bloc ground capabilities would probably be strongly influenced by the desire to obtain strategic surprise, a consideration which weighs heavily against their employment prior to the time initial air attacks were detected. Ground attacks supported by tactical air and naval forces would almost certainly be an integral part of the over-all Soviet campaigns on the Eurasian land mass, and would present a threat to overseas installations and forces in operations immediately following initial attacks.

90. *Airborne Attack.* Soviet airborne and amphibious operations might be conducted in several areas in order to achieve early destruction of US overseas forces and installations. The capability of these forces to seize and destroy key installations and to assist in the destruction of US forces would be substantial in certain areas including Alaska. Soviet airborne capability is limited by the availability of transport aircraft. It is estimated that Soviet Aviation of Airborne Troops can lift 9,000 troops with one drop on D–day, or 14,000 with two drops, to a maximum distance of 500 n.m. For a five-day operation approximately 23,000 to 25,000 troops could be lifted. By 1959, it is estimated the USSR will be able to lift 11,000 troops on D–day and 29,000 over a five-day period. The lift capability in both periods could be increased by about 1,800 troops for every 100 aircraft made available from the 3,000 transport aircraft of the civil air fleet and other components of military aviation. If the USSR converted BULL aircraft for transport purposes, the Soviet capability to transport troops by air could be increased by about 5,000–6,000 troops per 100 aircraft converted

91. *Amphibious Attack.* Because of the lack of aircraft carriers and vessel types suitable for amphibious warfare, large-scale Soviet amphibious attacks would be limited to short-

1. *(Continued)*

range operations in areas where air cover could be provided from Communist-controlled territory. However, amphibious raids by submarine-borne forces to attempt destruction or neutralization of key US overseas installations are possible. Amphibious assault against the continental US (except Alaska) is beyond Soviet capabilities. In assaults against Alaska, certain restrictions would be imposed by: (a) the limited number of landing beaches; (b) climatic conditions; (c) problems of establishing and maintaining lines of communications; (d) the difficulties of maintaining adequate logistic support; (e) the limited amphibious capability of the Far Eastern Fleet; and (f) the difficulties of maintaining adequate air cover. Amphibious attacks against other key US overseas installations, except in the Far East, would probably be limited to amphibious raids by submarine-borne forces. Amphibious operations with an initial assault force of up to three divisions, and a follow-up force of five to six divisions, could be launched against Japan. This lift capability could be employed in other areas of the Far East within range of Soviet land-based support aircraft.

92. *Naval Forces.* We estimate that, in a maximum initial effort, as many as 220 of the long and medium range submarines located in the Baltic-Northern Fleet and Pacific Fleet areas — 160 and 60 respectively — could be made available for attacks against US naval forces and sea communications, and key installations overseas. By mid-1959, these numbers could be increased to about 420 and 100 respectively. A portion of these submarines would almost certainly be employed against US naval forces, and especially to prevent attacks by carrier striking forces with a nuclear delivery capability. In addition, Soviet submarines would almost certainly be employed against US sea communications by attacks on shipping and by mining the approaches to harbors and ports. Many of these could be concentrated, as opportune, against US naval task forces.

93. Soviet surface naval forces have a low capability for contesting control of the high seas. The Soviet surface fleet lacks advanced bases and does not possess a shipborne air arm, but these forces could be effectively employed within the radius of shore-based air cover.

Clandestine Attack Capabilities

94. *Subversion, Espionage, Sabotage.* Soviet capabilities for subversion, espionage, and widespread sabotage attacks against key overseas bases are greater than against the continental US because of the much larger proportion of Communist elements, widespread political discontent, and lack of adequate security measures in certain foreign nations. Communists in some of these countries are experienced in such operations, and sabotage efforts timed with large-scale military attacks could materially reduce the capability of US military forces overseas.

95. *Clandestine Delivery of Mass Destruction Weapons.* Considerations influencing the use of clandestine methods of delivery of mass destruction weapons by the USSR against overseas targets will in large part be similar to those discussed above in paragraphs 78–80. However, because of generally greater subversion capabilities and of geographic propinquity, Soviet capability for using these methods overseas, while limited, is greater than against the US.

1. *(Continued)*

ANNEX A

BASE AREAS SUITABLE FOR LONG-RANGE BOMBER OPERATIONS

1. *Chukotski Peninsula.* As the result of runway construction believed to have been carried out at several airfields within the past two years, we believe that at least six airfields probably now have runways adequate for staging medium bombers and that at least two of these are suitable for heavy bomber operations. Military air units are based on some of these airfields but none are subordinate to Long-Range Aviation.

2. Air operations in this area are made difficult by several factors. Recent construction of long, surfaced runways indicates that climatic and logistical difficulties of this area are being overcome. However, ice and compacted snow runways are also still in use. The lack of modern navigational aids hampers operations, but there are some indications that the USSR is steadily improving its operational potential through installation of modern radio navigation facilities. In addition, the USSR has an ever-increasing fund of Arctic experience which can be applied to staging operations in this area.

3. Cold, wind, snow, and fog, which are prevalent throughout the area, tend to make operations difficult and hazardous. The most unfavorable weather conditions occur during November through March.[1] The most favorable conditions occur at all stations during the spring and early summer. Weather in the interior is highly favorable during the summer months. Only those areas adjacent to the Chuckchee Sea or which lie along the Bering Sea coast have a relatively high incidence of unfavorable conditions during the midsummer months.

4. The status of base logistical support facilities required to stage long-range strike operations from the Chukotski area is unknown. The area is accessible only by air and by sea during the ice-free season, and supply problems would be difficult. However, the USSR is considered capable of stockpiling the necessary supplies. Moreover, the area's staging potential could be markedly increased by 1959. By using construction elements already available in the area the USSR could build two additional concrete surfaced runways, 6,000 to 8,000 feet in length, by 1959.

5. *Kola Peninsula.* The Kola Peninsula has at least six bases believed adequate for staging operations of medium bombers at maximum gross weights, provided that a reduced safety margin on take-off was accepted for the BULL. One other airfield is considered to be suitable for use on an emergency basis, but its extremely isolated location, plus its apparent lack of recent development or use, argue against its use as a staging base. At least one of these airfields would be adequate for heavy bombers at maximum take-off weights, provided reduced safety margins were accepted. Permanent-surfaced runways can be constructed throughout the area without difficulty as it is relatively free of permafrost.

6. Prevailing climatic conditions, while a restrictive factor on air operations, are relatively more favorable than in other regions of the Soviet Far North. In general, the most favorable conditions occur in the late spring and early summer. In late summer and early autumn, conditions are favorable except at bases adjacent to the cold waters of the White Sea. However, during May through October conditions are favorable at all locations over

[1] In order to estimate the seasonal suitability of average weather conditions in potential staging areas, the percentage frequency of occurrence of those conditions which would handicap the mass movement of aircraft into or out of staging areas was computed. Two conditions were selected as a basis for analysis: (1) ceiling/visibility less than 300 feet/1 mile; (2) temperature below −20° F., although with adequate preparations staging operations could be carried out successfully in temperatures below −20° F.

1. *(Continued)*

90 percent of the time. In winter, conditions are less favorable due to the more frequent occurrence of low ceilings and poor visibilities. Extremely cold temperatures are relatively infrequent, and occur less than 10 percent of the time at any base.

7. The status of base logistical support facilities required to conduct long-range bomber strikes from airfields in this area is unknown, but it is considered that logistics would not be an important limiting factor. Supply routes by rail and road are open to the Kola Peninsula on a year-round basis, although logistical support of large-scale air operations would still pose difficulties under extreme weather conditions. Moreover, the staging potential of the area could be readily increased. No additional construction capability would be required in order to build three additional concrete-surfaced runways 6,000 to 8,000 feet in length by 1959.

8. *Central Arctic.* An airfield construction and development program in this area has been in progress since early 1949. Five airfields are known and others probably exist. The development program was carried out for the Directorate of Polar Aviation of the Northern Sea Route Administration, but at least some of the airfields built probably have runways of sufficient length to handle the staging of medium bombers under conditions of reduced take-off weights and/or reduced safety margins. In addition, there is one field suitable for the staging of heavy bombers. However, logistical support would be difficult, probably requiring heavy stockpiling.

9. This area has by far the most unfavorable weather of all the areas considered. The major handicap to air operations arises from the frequency and persistence of extremely low temperatures. For example, at Tiksi over 50 percent of all observations during January record temperatures lower than −20° F. Jet engines, however, are less adversely affected by low temperatures than piston engines and jet take-off requirements are considerably reduced. Even the summer months are not very favorable due to the high frequency of fog in the coastal belt.

10. *Leningrad.* This area contains at least three home bases of Long-Range Aviation units equipped with BULL aircraft. These bases probably have runways of sufficient length for heavy jet bomber operations under conditions of reduced take-off weights and/or reduced safety margins. The Long-Range Aviation basing potential of the area could be increased without difficulty by employing available airfield construction units to further improve existing airfields. Such development would require only a minimum of additional construction, as there are already 18 airfields within 200 nautical miles of Leningrad with concrete runways at least 6,000 feet in length, and seven other airfields with concrete runways in excess of 5,000 feet in length. None of these additional bases, however, are known to be associated currently with Long-Range Aviation operations. Operations from this area by long-range aircraft would offer the advantage of a temperate climate and good logistical support.

11. The bases in this area have the most favorable weather during the late spring and summer, when about 97 to 99 percent of the time is favorable for operations. Even during autumn and winter 88 to 90 percent of the weather is favorable at all bases. There appears to be little difference between night-time and daytime weather except during September, October, and November. During these months, reduced visibility sometimes occurs during the early morning hours. Temperatures below −20° F. occur less than five percent of the time at all bases.

12. *Kamchatka–Sea of Okhotsk Area.* Four airfields in this area have runways which would permit ground runs of at least 5,000 feet. One of these airfields is considered adequate for medium bombers at maximum gross weights, provided reduced safety margins were accepted for BULLS. The other three could be used by BULLS with considerably reduced take-off weights and by BADGERS at maximum gross weight, provided lower safety margins were accepted. For the above reasons long-range capabilities from this area are estimated to be extremely limited, but facilities could be developed to accommodate medium and heavy bomber operations by 1959.

1. *(Continued)*

13. The weather in this area is relatively favorable for air operations. Throughout the year the weather on the east coast of Kamchatka Peninsula is the most favorable in the entire area. In the Magadan area the best weather occurs during the early spring and autumn.

14. *Baltic-East Germany.* Poland and the Soviet Zone of Germany have a total of at least 60 airfields from which medium and heavy bomber operations could be mounted against the US and US bases in Western Europe. However, a disadvantage of this area as a base for air attacks on North America is that Great Circle routes pass over nations friendly to the US. In addition, it would be more difficult than in other forward base areas to maintain security of preparations for attack. However, climatic conditions are most favorable and there would be relatively few logistical problems. This base complex is served adequately by all types of transportation.

15. The bases located in the Baltic coastal area are most suitable for air operations during April through August, when favorable conditions occur about 97 percent of the time, both day and night. The least favorable period is December through March, when frequency of favorable conditions drops to about 75 percent. However, the unfavorable conditions occur most often during the night and early morning hours. The midday hours are favorable for operations about 85 percent of the time. Very low temperatures are rare in this area.

2. SNIE 11-6-57 *Soviet Gross Capabilities for Attack on the Continental US in Mid-1960*

would require such substantial preparations as almost certainly to result in the loss of surprise. If, however, the USSR attempted to attack without warning it would probably be forced to accept major restrictions with respect to substantial mobilization, redeployment, or unusual movement of Soviet forces.[6] Thus, the USSR would have to consider the advantages of the maximum chance of surprise as against the maximum weight of attack.

3. In planning initial attacks on continental US targets, the timing and strength of the Soviet effort would be determined largely by recognition of the need for neutralizing the most immediate threat to Soviet security — a nuclear attack by US forces and Allied forces, wherever disposed. The Soviet timetable would almost certainly call for virtually simultaneous assaults on other target systems.

4. Since Soviet attacks on the continental US would be tantamount to general war, the USSR would have to prepare at the same time to commit military forces against targets and areas overseas. While Soviet capabilities for attacking overseas bases, forces, and areas are outside the scope of this estimate, it is pertinent that Soviet requirements for such attacks would not only affect the size and weight of the forces the USSR would actually commit against the continental US, but also the degree to which surprise could be achieved in attacking the continental US. In mid-1960, the USSR probably could not count upon being able to achieve surprise against both the continental US and US and Allied bases and forces elsewhere.

MAJOR FACTORS AFFECTING SOVIET CAPABILITIES AGAINST THE CONTINENTAL US

II. AVAILABILITY OF MASS DESTRUCTION WEAPONS

Nuclear Weapons[7]

5. The USSR is continuing to give high priority to the development and production of nuclear weapons. We estimate that the USSR could now have nuclear bombs with yields ranging from 0.5 KT to 10 MT. We also estimate that by 1957–1958, the USSR could increase the yield of its most powerful nuclear bombs to at least 20 MT, and by mid-1960 could further increase the economy of use of nuclear materials in these very large-yield weapons. In addition, warheads with yields [redacted] could be provided for use in submarine-launched surface-to-surface missiles and in air-to-surface missiles by 1957–1958, and for use in ICBMs as they become available. (For the yields of particular warheads, see NIE 11–2–56.)

6. Available evidence is inadequate to justify a calculation of the probable Soviet stockpile of nuclear weapons of various types and yields. Within the limits of nuclear weapons technology and of fissionable materials availability, the actual stockpile developed during the period of this estimate will be determined by Soviet military requirements, as currently visualized by Soviet planners and as revised during the period.[8]

7. *Radiological Warfare.* During the period of this estimate, it is most unlikely that the USSR will be able to stockpile militarily significant quantities of radioactive materials for use in radiological warfare weapons. However, the USSR will possess nuclear weapons

[6] For extended discussion of the problem of achieving surprise, see NIE 11-6-55, "Probable Intelligence Warning of Soviet Attack on the US Through Mid-1958," published 1 July 1955. This paper will be superseded by the forthcoming NIE 11-3-57, covering the period through mid-1960.

[7] For details, see NIE 11-2-56, "The Soviet Atomic Energy Program," published 8 June 1956 (Limited Distribution). This paper will be superseded in early 1957 by NIE 11-2-57.

[8] Arbitrary future stockpiles based on various assumptions are presented in NIE 11-2-56.

2. *(Continued)*

capable of producing widespread radioactive fall-out, and these weapons could be used primarily for that purpose.

Biological Warfare

8. Relatively little is known about the nature and magnitude of the Soviet BW program, particularly its offensive aspects. However, accumulated evidence shows that the USSR almost certainly has an active BW research and development program encompassing antipersonnel, antilivestock, and possibly anticrop agents. The causative organisms of at least four human diseases (anthrax, tularemia, plague, brucellosis) and of two animal diseases (foot-and-mouth disease, rinderpest) are believed to be under consideration as BW agents.

9. Based on a general appreciation of Soviet capabilities in this field, we estimate that in mid-1960 the USSR could be prepared to disseminate BW agents both covertly and overtly. The USSR already has the capability for clandestine BW attack against personnel in buildings or concentrated in relatively small areas, and for such attack against livestock and certain crops. The small amounts of BW agents required could be introduced into the US clandestinely or, in some cases, produced near the sites of their planned employment. They could be employed by saboteurs using a wide variety of disseminating devices, some of which could be procured locally. We believe covert BW attack could be highly effective against livestock and moderately effective against humans and crops. With regard to overt delivery, relatively large quantities of BW agents would probably be required. Soviet capabilities for this means of attack would therefore be limited by the infeasibility of stockpiling large quantities of most BW agents in prolonged storage.

Chemical Warfare

10. The USSR has a well-established CW research and development program, which we believe emphasizes the development of nerve agents. In addition to agents of the tabun and sarin types, the USSR is believed to be working on the more persistent, extremely lethal nerve agents of the "V" series as well as agents having psychogenic effects.

11. The Soviet stockpile of standard CW agents, in bulk and in munitions, is estimated to have been 140,000 metric tons at the end of World War II. Although there is no direct evidence that the USSR is currently engaged in large-scale production of CW agents, a stockpile of a similar magnitude probably represents the minimum which the USSR maintains in peacetime. Losses caused by deterioration and in reloading into newer munitions in the intervening period have probably been made up with nerve gases. By 1960, the Soviet CW stockpile will probably consist mainly of nerve gases, including limited quantities of "V" agents.

12. We have no firm evidence of Soviet CW munitions development since World War II, when the USSR had munitions suitable for delivery by both ground weapons and aircraft flying at speeds up to about 250 knots. The USSR is probably developing spray tanks, bombs, and unfuzed containers for use by higher speed aircraft. We believe the USSR is technically capable of modifying its present bomb and warhead designs to permit the delivery of CW agents by jet aircraft and by certain guided missiles.

III. WEAPONS DELIVERY SYSTEMS — AIRCRAFT

Soviet Long-Range Aviation

13. As of 1 October 1956, Soviet Long-Range Aviation is estimated to have been composed of 61 bomber regiments with an actual strength of 1,405 bomber aircraft in operational units: i. e., 745 BULL piston medium bombers, 585 BADGER jet medium bombers, 40 BISON jet heavy bombers, and 35 BEAR turboprop heavy bombers.[9] We have no evidence

[9] The Assistant Chief of Staff, Intelligence, Department of the Army, does not believe that the available evidence warrants the above estimate of the number of BULL bombers (745), the total number of bombers (1,405), or the number of regiments (61), in Soviet Long-Range Aviation.

2. *(Continued)*

of any tanker aircraft in operational units at present.[10] All Long-Range Aviation units are based in the European USSR except the Third Long-Range Air Army, which is in the Soviet Far East and has an estimated actual strength of 220 BULLS and 25 BADGERS.

14. We estimate that in mid-1960 Soviet Long-Range Aviation will probably comprise 56 bomber regiments and a tanker force possibly equivalent to 15 regiments.[11] [12] The bomber force will probably consist of some 1,500 aircraft, including 700 BADGERS, 500 BISONS, and 300 BEARS.[13] Evidence in support of this estimate is found in: (a) the rapid increase in the number of Long-Range Aviation regiments from 48 in January 1956 to 61 in October 1956; (b) the trend toward replacement of BULLS by more modern aircraft since 1954; (c) the apparent intent to build up a heavy bomber force implicit in the development of BISON and BEAR aircraft and their introduction into operational units, now in an early stage; and (d) current indications of the development of an inflight refueling capability.

15. The foregoing estimate of the size and composition of Soviet Long-Range Aviation is subject to all the uncertainties implicit in any estimate of a situation to be expected three years in the future. However, it is consistent, not only with the considerations enumerated in the preceding paragraph, but also with estimated Soviet strategic requirements for high-performance, long-range bombers in the event of general war, including requirements for nuclear air attack on the continental US. It is also within estimated Soviet aircraft production capabilities, although the proportion of aircraft production facilities assigned to heavy bomber production would have to be increased. We believe it unlikely that the USSR will curtail its heavy bomber force at least until it has achieved a substantial operational capability with an intercontinental ballistic missile. Such a capability almost certainly will not be achieved during the period of this estimate.

16. Soviet Long-Range Aviation will probably continue with its present aircraft types throughout the period. An improved model of the BISON is probably now becoming available, and improved versions of both the BEAR

[10] Discussion of tanker strength will be found in paragraphs 18–21.

[11] The Assistant Chief of Staff, Intelligence, Department of the Army, does not concur in the numbers of regiments shown in this sentence. While some tanker regiments or their equivalent in smaller units will probably be included in Soviet Long-Range Aviation by mid-1960, there is in his opinion no adequate evidence to indicate that the total of bomber and tanker regiments will be in excess of previously estimated bomber regiments. Some or all of the bomber regiments which may have been formed in addition to the 48 held as of 1 January 1956 may be destined to become tanker regiments. In this case, many of the tanker regiments estimated to be in existence in mid-1960 would be included in a 56 regiment level. It would not seem justifiable to estimate an *additional* 15 regiments, over and above recent increases which may represent the initial phases of the formation of tanker regiments.

[12] The Assistant Chief of Staff, Intelligence, Department of the Army, does not concur in the estimate of the mid-1960 heavy bomber strength (500 BISON and 300 BEAR) presented in this sentence. The presently estimated 1 October 1956 force level of 40 BISON would have to be increased at an average rate of more than 10 per month to achieve this level while present evidence indicates that production is continuing at about two to three per month, a rate which has remained roughly constant for some time. Achievement of the above force level would require that additional facilities presently producing other aircraft would have to be devoted to BISON production in the near future and that all factories achieve optimum or near optimum production rates. An increase in the production rate of BEAR aircraft would also have to be achieved since continuation of the present production rate would not achieve this force level. While it is possible that some increase in production may be planned and achieved, a more realistic estimate of the mid-1960 heavy bomber force level should be somewhat lower. To properly reflect the uncertainties inherent in this estimate heavy bomber strength should be stated as a bracket between the force which a continuation of present production would achieve and the optimum force level shown in paragraph 14. Such a bracket would indicate the following mid-1960 heavy bomber force level:

BISON: from 180 to 500
BEAR : from 240 to 300

2. *(Continued)*

and the BADGER will probably appear in 1957.[14] At current rates of introduction into operational units, Long-Range Aviation will have achieved its full estimated complement of BADGERS by mid-1957; continued production at present rates could provide an appreciable reserve of BADGERS by the end of the period. BULLS will probably have been entirely phased out of long-range bomber units by mid-1959; serviceable BULLS surplus to the needs of Long-Range Aviation will be available for some time for a variety of uses.

Inflight Refueling

17. We now have good evidence that the USSR is developing an inflight refueling system, and we believe that during the period of this estimate it will achieve a substantial inflight refueling capability. Soviet planners have almost certainly recognized the potentiality of inflight refueling to overcome to some extent the geographic disadvantage they face in the application of their strategic air power against the continental US. On the basis of comparative speed and altitude capabilities of Soviet long-range aircraft, and of their comparative capabilities to reach US targets on refueled and unrefueled missions from Soviet bases, we believe Soviet planners will seek to provide a refueling capability primarily for BISON aircraft. One refueling by a compatible tanker[15] could approximately double the area of the continental US that could be reached by an improved BISON on a two-way mission from Chukotski. The BEAR's greater combat radius would make refueling less essential to its operations, although its capabilities to reach targets in continental US from interior Soviet bases could be increased substantially by this means. Refueling would increase BADGER capabilities to reach targets in the continental US, but against most targets would still not make two-way BADGER operations possible.[16]

18. We therefore believe that during the period of this estimate the USSR's chief requirement for tanker aircraft would stem from the desirability of refueling a substantial number of its BISONS. To provide reasonably flexible support for a force of 500 BISON bombers, some 350 compatible tankers would be required. To meet this requirement, the USSR could employ one or a combination of the following alternatives: (a) produce BISON tankers; (b) produce BEAR tankers; (c) develop and produce a new heavy aircraft designed specifically as a tanker. BISONS and BEARS could be used as convertible tanker-bombers by employing bomb-bay tanks, but such tankers would not be fully compatible insofar as range extension is concerned.

19. We know of no tanker production or tankers in operational units in the USSR at present. By mid-1960, the USSR could acquire 350 heavy tankers as well as a bomber force of the size estimated in paragraph 14. However, in order to do so, it would in the near future have either to increase production rates at facilities which we estimate will be in the heavy bomber program, or to open additional production facilities. We doubt that the USSR will produce as many as 350 heavy tankers during the period of this estimate, in view of the probability that the bomber program will have priority over the tanker program, and the fact that to produce the estimated number of heavy bombers will itself require an early increase in the facilities allocated to the heavy bomber production program (see paragraph 15).[17]

[14] For estimated performance characteristic of Soviet long-range bombers, see Annex C.

[15] As used in this estimate, "compatible" means having characteristics of speed and altitude suitable to the bomber employed, and a transfer capability sufficient to add 35 percent to the range of the refueled bomber.

[16] For refueled and unrefueled coverage of continental US, see Annex B, Maps and Summary Charts.

[17] The Assistant Chief of Staff, Intelligence, Department of the Army, considers that aircraft production programs in the USSR are probably geared to the achievement of an inflight refueling capability compatible with its bomber force by 1960, and that the requirement for tankers is one of a number of factors which would militate against the production of a bomber force of 500 BISONS and 300 BEARS as forecast in paragraph 14. The size of the tanker force, therefore, is subject to the same elements of uncertainty which attend bomber strength (see his footnote to paragraph 14).

2. *(Continued)*

20. Therefore, we estimate that in mid-1960 the USSR will be building toward, but will probably not have achieved, a force of 350 heavy tankers. We believe that, without interfering with currently estimated Soviet bomber production programs, the USSR could, by mid-1960, have a force of some 150 heavy tankers. This could be accomplished by continuing the production of BEAR type aircraft at existing facilities.[17]
(See footnote, page 7.)

21. The USSR could develop a BADGER tanker force as an interim measure, for the purpose of increasing the range of some BISON bombers for which compatible tankers were not available. Refueling by a BADGER tanker could increase the radius of a BISON by some 500 n.m., and the range by some 1,000 n.m., although the net gain in radius/range in any particular operation would be limited by the route flown and refueling point employed. In addition, BADGER tankers could be employed as compatible tankers for BADGER bombers.

Base Areas

22. We estimate that there are some 525 operational airfields in the Sino-Soviet Bloc with permanent surfaced runways of 5,000 feet or longer. They are distributed as follows:

	(Minimum Runway Length (feet)					
	9,000	8,000	7,000	6,000	5,000	Total
USSR	9	39	19	167	44	278
European Satellites	2	47	45	36	1	131
Asiatic Communist Countries		7	23	54	32	116
	11	93	87	257	77	525

23. Given standard conditions,[18] we estimate take-off distances for Soviet long-range bombers as follows:

Type	Take-off Weight (lbs.)	Ground Run (ft.)	Ground Run to Clear 50-ft. Obstacle (ft.)
BULL	140,000	5,230	7,825
BULL (modified)	135,750	4,800	7,125
BADGER	150,000	4,200	6,300
BADGER (improved)	170,000	4,800	7,100
BISON	365,000	6,400	9,100
BISON (improved)	365,000	5,300	8,200
BEAR	300,000	6,000	9,000
BEAR (improved)		no data available	

24. There are approximately 27 airfields in the USSR believed to be home bases for operational Long-Range Aviation bomber units, three in the Far East, and the remainder in the European USSR. In addition, a number of airfields associated with command and/or training units, factory production and delivery, and testing and development are in effect an integral part of the base structure of Soviet Long-Range Aviation. As indicated by the table in paragraph 22, many other airfields in the Sino-Soviet Bloc have runways suitable for medium bomber operations and some have runways suitable for heavy bombers. These airfields could be used as auxiliary airfields to insure maximum aircraft dispersal away from home bases, but the actual designation of such auxiliary fields within the Soviet Long-Range Aviation base structure cannot be verified. Physical limitations on dispersal, and probable requirements for limiting ground stay to a minimum, would make dispersal and revetment at forward staging bases in the Arctic unlikely.

25. We estimate that Soviet planners are now developing air facilities to meet their anticipated requirements for the next 10 years or more. Progressive extension of runways at Long-Range Aviation home bases from current 8,200-foot lengths to 9,000 feet or more is believed to be under way. In the case of new runway construction at bases, it is estimated that weight-bearing capacities are being made adequate for heavy bombers of all types programmed, and that runway lengths will generally exceed 11,000 feet.

[18] Normal take-off technique and take-off engine power, no wind, sea level elevation, temperature 59 degrees F., permanent surfaced runway. At 0 degrees F., ground run requirements for take-off of jet bombers would be about 25 percent less than under standard conditions. Ground run requirements for propeller-driven bombers would also be reduced, but the difference would not be as great as for jet bombers.

2. *(Continued)*

26. Because of the range limitations of available Soviet bombers, the launching of strikes against the continental US at present would probably involve staging through one or more of five base areas within the USSR — the Chukotski Peninsula, the Kamchatka Peninsula, the Central Arctic area, the Kola Peninsula, and the Leningrad area. (If overflight of Scandinavia were to be avoided in an initial strike from Leningrad, a dog-leg route over the Kola area would be necessary.) For purposes of this estimate, these five potential staging areas are designated "forward" base areas.[19] In each of these areas, airfields suitable for long-range bombers exist, although the Leningrad area is the only one of the five now occupied by units of Long-Range Aviation. Bases in East Germany and Poland could also be used, but because of the likelihood that surprise would be sacrificed by the necessity of overflying West Europe, as well as the lower security of preparations in the Satellites and vulnerability to NATO forces, this area would not be a likely choice for staging initial strikes against the continental US.

27. Air base development over the past few years in the forward base areas has improved the capability of these areas for supporting long-range bomber staging operations. In the Kamchatka, Kola, Chukotski, and Central Arctic areas, there are now 29 airfields with runways long enough to accommodate Soviet long-range bombers.[20] Information is incomplete concerning load-bearing capacity, aircraft servicing, maintenance, storage, and personnel facilities at almost all of these airfields, but we estimate that 10 could stage either medium or heavy bombers, and that 19 others could stage medium bombers. In addition, there are at least 23 airfields in the Leningrad area capable of staging medium bombers, of which three are present home bases of Long-Range Aviation, capable of staging heavy bombers. In summary, we estimate that, for purposes of Long-Range Aviation operations against the continental US, there are available in the five forward base areas 52 airfields capable of staging medium bombers, of which 13 are also capable of staging heavy bombers.

28. There are indications that airfield development in the forward base areas is continuing, and it is within Soviet capabilities to have developed adequate facilities for sustained long-range bomber operations in any of these areas by 1960. We believe that runways are being developed with length, surface, and weight-bearing standards similar to those at Soviet Long-Range Aviation home bases. We estimate that by 1960, with the construction facilities and personnel now in the area concerned, three new airfields suitable for heavy bomber staging operations could be developed in the Kola area, three in the Leningrad area, and two each in the Chukotski, Central Arctic, and Kamchatka areas. Improvement of support facilities at existing potential staging bases in these areas could be carried out concurrently without major interference with the construction effort.

29. In each of the forward areas there are bases, in addition to those considered suitable for staging long-range bombers, which could be utilized for the fighter aircraft which the USSR would also require in any operation conducted from these areas. In certain forward areas there are only a few such additional bases at present. If necessary, by mid-1960 the USSR could provide additional facilities for fighter protection of its long-range bomber staging bases, and for surface-to-air missile defenses.

Other Factors Affecting Soviet Air Operations

30. *Reconnaissance.* The USSR is not known to have developed long-range reconnaissance aircraft as such. It is possible that during the interval between now and mid-1960 the USSR, employing existing long-range bomber types, might build up a pattern of activity along the early warning lines of the North American continent, not only to determine their location, capabilities, and vulnerabilities, but also to increase the problem of recog-

[19] Annex A and D (the latter in limited distribution under separate cover) cover air facilities, weather conditions, and airfield capacities in these base areas.

[20] In addition, there are eight airfields whose runway characteristics indicate a marginal capability for long-range bomber operations.

2. *(Continued)*

nizing the approach of an actual attack. It is unlikely that the USSR would jeopardize surprise by unusual reconnaissance activity immediately preceding an actual attack.

31. *Weather Forecasting.* The USSR has for years devoted considerable effort, with a high degree of success, to both short-period and long-period meteorological forecasting. We believe that it has the forecasting capability to support long-range air operations. This capability plus extensive experience in meteorological research in the extreme northern latitudes, weather reporting facilities in Siberia and on ice floes in the Central Arctic basin, and constant access to regularly broadcast North American weather reports and forecasts should enable the USSR to predict both route and target weather with reasonable accuracy.

32. *Navigation Aids.* The USSR has available through open sources virtually complete target and navigation data on North America and its approach routes. It is probable that in the event of a surprise attack certain Western electronic navigational aids would be available during at least part of the flight. For example, meteorological reports are regularly broadcast in the United States and Canada. It is also possible that clandestinely-placed navigational beacons might be used for aircraft homing. We estimate that Soviet navigational radar equipment is capable of better performance than the US World War II equipment which the USSR acquired.

33. *Electronic Countermeasures (ECM)*

a. Soviet Offensive Capabilities. Soviet ECM development is rapidly approaching, if it has not already reached, the point at which ECM will constitute a major threat to US air defense capabilities. Within the past year or so the USSR has entered actively into developing techniques for the tactical employment of CHAFF. We have evidence that CHAFF has been used in training exercises against Soviet ground-based radars, and we estimate that CHAFF would be widely used in a Soviet air attack. In addition, we estimate that Soviet capabilities for airborne jamming of both communications facilities and radar will materially increase during the period. The USSR has conducted some jamming training exercises against its own airborne radars, and we believe that active airborne jamming would be used against US radar, communications, and navigation facilities in the event of Soviet attacks in mid-1960. However, even in 1960 Soviet active airborne jammers for use against radars at frequencies above the X-band will probably be limited in quantity. We have no evidence of Soviet use of decoys, or of the modification of aircraft specifically for ECM use, although we consider both to be within Soviet capabilities.

b. Vulnerabilities. The concentration of all known Soviet blind-bombing and AI radars in the narrow frequency band 9,250–9,500 Mc/s increases the vulnerability of this equipment to ECM. The circuits of the only Soviet microwave radar studied in detail, the shipborne NEPTUNE, indicate that it is vulnerable to ECM and interference. Although such vulnerability may not extend to all airborne radars, it probably applies to at least some earlier sets, especially the MUSHROOM. Passive ECM receivers and radiation control are probably in use as anti-ECM techniques at present, but we believe the vulnerabilities outlined above will continue to exist for some time. However, Soviet airborne radar will eventually employ greater frequency spreading, and antijamming techniques employing the switch-tuning of magnetrons and klystrons to effect rapid changes in frequency may be under development.

34. *Evasion of US Radar.* The USSR almost certainly knows at least the general capabilities of US early warning radar equipment, coverage provided by the network, and weak and strong points of the system. With such knowledge it might expect that properly planned attacks could reduce the chance of detection by US radar. However, the use of some evasion techniques, particularly low altitude penetration, would require acceptance of reduced range or bomb load.

35. *Crew Training and Proficiency.* Flight training for Long-Range Aviation crews has increased in both intensity and scope during the past five years, especially since 1954, when jet bombers began to be introduced into the

2. *(Continued)*

long-range bomber force. At present, we estimate that long-range bomber crews average at least 15–20 hours of flying time per month. The regular training program emphasizes the attainment of navigational and bombing proficiency during the hours of darkness and in bad weather. A 1955 manual for Soviet navigator-bombardiers indicates that they are required to achieve proficiency in the use of magnetic compass, pilotage, radio, celestial, and radar navigation techniques. They also probably receive extensive training in the utilization of ground-based electronic navigation aids, such as Shoran, direction-finding and distance-measuring equipment, and hyperbolic navigation systems. We estimate that the capabilities of Long-Range Aviation crews for landing and take-off under instrument flight conditions compare favorably with those achieved in the USAF.

36. The current trend in Long-Range Aviation training is believed to be toward larger-scale operations and longer-range flights out of home base areas, including bomber operations into and over the Arctic areas as well as simulated attacks on major Soviet cities. Last summer a large-scale temporary deployment of medium and heavy bombers was apparently conducted into the Satellites, probably to test the capabilities of the units involved to stage into and operate from forward areas. Considerable over-water flying has been undertaken during the past five years.

37. The current state of training in Soviet Long-Range Aviation leads us to estimate that at present the mounting of an initial attack against the continental US utilizing the bulk of the long-range bomber force would require several months of intensive preparatory training. However, a reduced scale of attack, still sufficient to deliver a devastating blow upon the US, could currently be mounted with a minimum of pre-strike preparatory activity. The current training program points to continuing improvement in air crew proficiency. Moreover, past Soviet personnel practices, which insure relatively little turnover in personnel over the years, indicate that improvements in proficiency will be cumulative during the period of this estimate. Therefore, the over-all proficiency of Long-Range Aviation crews will almost certainly be much higher by mid-1960.

38. *Bombing Accuracy.* By mid-1960, most Soviet long-range bomber crews will probably have achieved the following levels of bombing proficiency:

Altitude (ft.)	Visual Bombing CEP (ft.)	Radar Bombing CEP (ft.)	
		Well-defined targets	Poorly-defined targets
50,000	2,900	2,400	3,100
40,000	2,100	2,000	2,700
30,000	1,400	1,700	2,300
20,000	900	1,400	2,100
10,000	400	900	1,600
5,000		800	1,400

IV. WEAPONS DELIVERY SYSTEMS — GUIDED MISSILES [21]

39. We have no firm evidence that the USSR now has any offensive guided missiles available for operational employment against the continental US, although we believe that employment of missiles launched from aircraft or submarines is within present Soviet capabilities. We estimate that for some time after a particular missile system becomes operational, its system reliability [22] will probably be about 40–60 percent. By 1960 the reliabilities of earlier Soviet missile systems will almost certainly have been improved. In mid-1960 the USSR will probably have operational stockpiles of several types of missiles with nuclear warheads suitable for launching from submarines or aircraft in an attack on the continental US.

[21] For a detailed study see the forthcoming NIE 11-5-57, "Soviet Guided Missile Capabilities and Probable Programs."

[22] System reliability refers to the percentage of missiles which will function according to specifications from the launching area to detonation in the target area.

3. SNIE 11-7-58 *Strength and Composition of the Soviet Long Range Bomber Force*

~~TOP SECRET~~

APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

STRENGTH AND COMPOSITION OF THE SOVIET LONG RANGE BOMBER FORCE

THE PROBLEM

To estimate the strength and composition of the Soviet long range bomber force, through mid-1963.

CONCLUSIONS

1. At present, Soviet Long Range Aviation is primarily a medium bomber force, best suited for operations against targets on the Eurasian periphery and capable of large-scale attacks against the continental US through extensive use of one-way missions. Considerable effort has been devoted to the development of heavy bombers, but it appears that within the past year or two Soviet planners decided to forego a rapid buildup with present versions of the BISON and BEAR. *(Para. 12)*

2. In estimating the operational strength and composition of Soviet Long Range Aviation, we have projected heavy bomber and tanker figures for 1959 and 1960 as lying within a range. The low side reflects a Soviet option to forego further buildup of their heavy bomber force through mid-1960. The high side reflects a Soviet option to produce some additional aircraft of BISON and/or BEAR types, and to introduce a new subsonic heavy bomber into operational units before mid-1960. A new medium bomber with supersonic "dash" capability will probably be introduced some time during 1960–1961; the Soviet jet medium bomber force in mid-1960 may include a few such aircraft in addition to BADGERs.

	mid-1958	mid-1959	mid-1960
Jet and Turboprop Heavy Bombers and Tankers	100–125	100–150	100–200
Jet Medium Bombers and Tankers	925	1025	1100
Piston Medium Bombers	425	300	150

(Paras. 24, 25)

3. There is no question that by mid-1963 the Soviets could produce and put into operational units five or six hundred heavy bombers and tankers, should they desire this large a force of such subsonic aircraft, augmented by small numbers of advanced types. It seems to us more likely, however, that the Soviet heavy bomber and tanker force will remain smaller than this — say about two or three hundred — and that by about mid-

3. *(Continued)*

1963 the USSR will be placing major reliance on ICBMs for intercontinental delivery of nuclear weapons. *(Paras. 30, 31)*

4. The number of medium bombers in Soviet Long Range Aviation will probably decrease by mid-1963. Supersonic "dash" medium bombers may become an important element in the force, but BADGERs will probably have continuing utility. *(Para. 32)*

DISCUSSION

CURRENT STATUS OF SOVIET LONG RANGE AVIATION

5. A rapid expansion of Soviet Long Range Aviation occurred with the introduction of the present generation of long range bombers. About 1950 the Soviets began devoting high-priority efforts to developing the BADGER jet medium bomber and the BISON jet and BEAR turboprop heavy bombers, which were placed in series production in 1954–1955, after lead-times which were relatively short by US standards. The greatest expansion in total strength took place from 1954 through 1956; it apparently levelled off around mid-1957. We estimate that as of 1 April 1958, Long Range Aviation included more than 1,450 bombers in about 60 regiments, against an early 1954 strength of about 1,000 in about 40 regiments.

6. *Medium Bomber Force.* Most of the recent expansion has occurred in medium bomber strength, which comprised about 900 BADGERs and about 450 obsolete BULL piston medium bombers as of 1 April 1958. The production of BADGERs, and their introduction into operational units, has proceeded at a fairly high and steady rate since 1954. This rate is now tapering off somewhat, but production is still estimated to be in excess of 30 per month, and deliveries to Long Range Aviation units continue. BADGERs are also being supplied to some Soviet air components other than Long Range Aviation. BULLs began phasing out of the force with the introduction of the BADGER, but the present rate of retirement is slow.

7. About four-fifths of these medium bombers are based in the area west of Moscow between Leningrad and the Black Sea; most of the remainder are in the southern portion of the Soviet Far East; a few are in the Caucasus. Their base locations and normal patterns of activity would facilitate bombing missions launched directly from home bases to targets in Eurasia and its periphery. The majority of land targets of strategic importance to the US outside the Americas — including overseas air bases, potential IRBM sites, allied ports, and industrial, military, governmental and communications centers — fall within the combat radii of Soviet medium bombers operating directly from home bases. Many important naval operating areas are also within their combat radii.

8. The Soviets have also taken measures to prepare medium bomber elements for the type of operations necessary for attack on North American targets. Training activities over the past several years have included more realistic, larger-scale exercises and long-range flights. More recently, there have almost certainly been an increasing number of flights to potential staging bases in the Soviet Arctic, though far fewer than would be expected for a fully combat-ready capability against the US. Inflight refueling techniques have been developed for BADGERs, apparently using a convertible tanker-bomber version of the aircraft, although at present only a limited operational capability exists. Moreover, certain BADGER units have been trained and equipped to employ air-to-surface missiles of about 55 nautical miles range, probably designed primarily for anti-ship use but also suitable for attacking well-defined radar targets on land. By staging through Arctic bases, BADGERs could reach: Alaska, Greenland, and part of Canada on unrefueled two-way missions; more of Canada and a small portion of the US on refueled two-way missions; all of Canada and much of the US on

3. *(Continued)*

unrefueled one-way missions; all US targets on refueled one-way missions.

9. *Heavy Bomber Force.* In strong contrast to the apparent rapidity with which the BISON and BEAR were developed, their production and introduction into units has been at very low and uneven rates. The BISON program was characterized by repeated modifications to the aircraft until about mid-1956, when an improved version appeared. Production rates at the one identified BISON factory (Moscow/Fili) rose to a maximum of three to four per month in the summer of 1957, and then began to decrease in a manner suggesting the phase-out of production of this model. Aircraft design work and/or retooling were apparently instituted at Moscow/Fili in the fall of 1957, and we are reasonably confident that no other factory is producing BISON. We therefore believe that production of the present version has virtually stopped, and that as of 1 April 1958, total cumulative BISON production amounted to about 85 aircraft.

10. Considerably less evidence is available on BEAR production, but at no time does more than a fraction of the capacity of one aircraft factory (at Kuibyshev) appear to have been allocated to the program. BEAR production has probably averaged no more than about two per month. A continuing absence of good indications of BEAR production since late 1956, together with the subsequent development at Kuibyshev of the TU-114 transport version of the BEAR, leads us to believe that the BEAR program was probably terminated, at least temporarily, by early 1957, although it is possible that production continues at a low rate. Total cumulative BEAR production as of 1 April 1958 may have been between 50 and 60 aircraft.

11. The activity of Long Range Aviation units has likewise failed to demonstrate a recent enlargement of the heavy bomber force, although unit structure could readily accommodate expansion. We estimate total operational strength in BISON and BEAR as probably between 100 and 125 aircraft as of 1 April 1958; the bulk are based in Southwestern USSR, with a small number in the Far East. During 1957, operational BISON units conducted only a small amount of training in Arctic staging and inflight refueling, both of which would be essential for two-way operations against most US targets. Moreover, discernible BISON activity has virtually ceased during the past six months, while BEAR activity has continued at modest rates.

12. In sum, Soviet Long Range Aviation remains primarily a medium bomber force, best suited for operations against targets on the Eurasian periphery and capable of large-scale attacks against the continental US through extensive use of one-way missions. Considerable effort has been devoted to the development of heavy bombers, but it appears that within the past year or two Soviet planners decided to forego a rapid buildup with present versions of the BISON and BEAR.

FACTORS AFFECTING SOVIET POLICY

13. Dissatisfaction with the BISON and BEAR probably affected the Soviet decision. Unexpected technical difficulties apparently delayed the BISON program in its early stages and may still be plaguing the Soviets. Moreover, the combat radius of the current BISON, even with inflight refueling, appears to be insufficient to ensure flexibility in two-way operations against the continental US. The BEAR's combat radius is adequate, but its speed and altitude are somewhat inferior to those of the BISON and its turboprop propulsion system probably has less growth potential than a turbojet system. Furthermore, existing heavy bomber models have become progressively less effective in relation to US defensive capabilities. While the Soviet program lagged, the West continued counter preparations which included improved active air defense, early warning, and other measures calculated to reduce the USSR's chances of successfully neutralizing US retaliatory forces.

14. Progress in developing more advanced intercontinental weapon systems probably also played an important role in the Soviet decision. Evidence in technical fields leads to the conclusion that the Soviets have active and well-advanced programs in those primary

3. *(Continued)*

areas which support new long range bomber development; they have probably made good progress toward a successor to BISON and BEAR. Moreover, in the past two years the Soviet leaders have probably become increasingly confident of their ability to acquire an early operational ICBM capability, in view of the impressive results achieved to date in missile testing and earth satellites. Soviet plans for submarine-launched missiles may also have contributed to the decision.

15. But the curtailment of BISON and BEAR production before acquiring even an initial operational capability with either an ICBM or a follow-on bomber involved Soviet acceptance of at least some calculated risk. The Soviet leaders almost certainly appreciate that at present the USSR could not launch an all-out nuclear attack against the US and its allies without receiving unacceptable damage in return, but at the same time, they are probably confident that their existing capabilities are a powerful deterrent to Western initiation of general war. Moreover, the risk involved is reduced by the existence of a still-growing BADGER force. In the face of known US power, Soviet planners have lived with a one-way medium bomber capability against the US for some ten years, and may think they can live with it at least a little longer. Thus the USSR may consider its medium bomber force, together with a small heavy bomber capability, at least temporarily acceptable for supporting Soviet foreign policy objectives and for use against the US if general war should occur.

16. Meanwhile, the USSR is almost certainly continuing to strive for technological superiority over the US in intercontinental weapon systems. It is clear that Soviet planners are laying great store by the ICBM as posing an entirely new type of threat. However, they probably also take into account that a mixed strike capability including both manned bombers and missiles would further complicate Western defensive problems, and that the accuracy and payload of the ICBM will for some time be inferior to those of manned bombers. In this connection, last year's derogatory remarks about bombers by Khrushchev and others have been considerably mitigated by subsequent statements. We believe that manned bombers, especially advanced types, will almost certainly continue to play a considerable role, with emphasis on those functions for which they are particularly well-suited, such as attacks on small, hardened targets, damage assessment, and reconnaissance.

BOMBER DEVELOPMENT AND PRODUCTION CAPABILITIES

17. We estimated in SNIE 11-58 that over the next few years the USSR could: (a) improve the BISON and BADGER by modifying them between now and 1960 to increase their range and altitude capabilities; (b) develop a new subsonic heavy bomber having performance somewhat better than that of an improved BISON, especially in range, introducing it into operational units in 1959–60; (c) develop a new medium bomber with supersonic "dash" capabilities and a range roughly equivalent to that of an improved BADGER, introducing it into operational units in 1960–61. We also noted, however, that none of the above types would add substantially to Soviet intercontinental attack capabilities, and that the USSR may be proceeding directly toward considerably more advanced aircraft for operational use. It was estimated that a nuclear reactor suitable for propulsion of subsonic aircraft could probably be available by 1962. Soviet achievement of two-way operational capabilities against all targets in the continental US with manned delivery systems capable of supersonic speed was estimated to require longer periods, i.e., probably until after about 1962 for a chemical-powered aircraft and well beyond 1962 for either nuclear-powered aircraft or hypersonic boost-glide vehicles.[1]

18. Evidence received since publication of SNIE 11-58 does not justify any change in the above estimate of Soviet bomber development capabilities, but it strengthens the likelihood that the USSR now has one or more types of

[1] See SNIE 11-58: Possible Soviet Long Range Bomber Development, 1958–1962, 4 March 1958 (Secret). Refer, however, to the footnote to the following paragraph by the Assistant Chief of Staff, Intelligence, USAF.

3. *(Continued)*

large bomber aircraft in flight-test status.[2] Considering the available information on research, development, flight-testing and aircraft plant activities, we believe that a prototype of at least one new or improved type of large bomber has probably been completed, possibly early in 1957. Khrushchev recently stated that the USSR would soon unveil a "new and very interesting bomber." Although we are still unable to determine what specific type or types of aircraft may have reached flight-test status, we expect to see a prototype at any time, possibly on Soviet Aviation Day this summer. In the interim, we do not exclude the further possibility that the USSR is developing a very advanced intercontinental bomber at a faster pace than we estimated in SNIE 11–58.

19. Meanwhile, Soviet capacity to produce long range bombers and other large aircraft has continued to expand. Major new construction has been reported at most Soviet airframe plants over the past four years; construction at bomber plants has been characterized by high-bay buildings well suited to the assembly of large aircraft. Expansion amounting to some 20 to 30 percent additional floor space has already occurred at some bomber plants, and it is probable that comparable increases will have been completed at others by 1959. Much of this added capacity is believed to be for the production of large transport aircraft. Nevertheless, fulfillment of the USSR's announced transport production goals would still leave sufficient plant capacity to build bombers at more rapid rates than those of the past few years. In recent years the USSR has also expanded or constructed a number of airfields, including some in potential Arctic staging areas, which are identified with or suitable for heavy bombers of current or advanced types. This program is still under way.

20. Considerable lead-time is required prior to achieving an operational capability with large, complex military aircraft. Analysis of past Soviet experience indicates that reasonable times to be expected are: (a) about two years or a minimum of eighteen months, between completion of a prototype and completion of the first series produced aircraft; (b) about an additional year until the introduction of aircraft into operational units. Assuming that a new prototype was completed early in 1957 (see para. 18 above), and that a priority program was undertaken without delay, the first series produced aircraft could probably be completed in late 1958 or early 1959, and such a new type could probably be introduced into operational units in late 1959 or early 1960. Because of deficiencies in our information, we recognize that the USSR could already have instituted series production of a new long range bomber type entirely without our knowledge, but consideration of all the factors involved leads us to believe that no *new* bomber type will appear in Long Range Aviation units until some time after mid-1959. On the other hand, if the recent cut-back in heavy bomber production merely marked the modification or redesign of existing types, production of an improved model could begin at any time.

SHORT-TERM ESTIMATE, TO MID-1960

21. We believe that during the five-year period of this estimate the USSR will continue to maintain a heavy bomber force. It follows from what has been said in previous paragraphs that the Soviets may either begin at an early date to produce improved versions of the BISON and perhaps additional BEARs, or may forego any buildup at least until a new subsonic heavy bomber can be made available, some time after mid-1959. Even in the first case, the numbers produced would probably not be very large, because Soviet planners probably do not feel compelled, in the interim before the advent of more advanced weapon systems, to acquire a heavy bomber force of much larger size but with aircraft of only marginally better performance.

22. The 1959–60 subsonic heavy bomber mentioned in SNIE 11–58 would help the USSR overcome the geographic disadvantage it faces in the application of strategic nuclear

[2] The Assistant Chief of Staff, Intelligence, USAF, believes the evidence does, in fact, change the estimate of Soviet bomber development capabilities. In this respect, he believes an aircraft nuclear propulsion system could now be undergoing flight tests in a prototype airframe.

3. *(Continued)*

power against the US, but its capabilities to penetrate North American defenses would be little better than those of an improved BISON. The Soviets might nevertheless produce such an aircraft during the early years of ICBM availability and prior to the advent of more advanced intercontinental bombers — partly as a "hedge" against slippage in either of the latter programs. A few might be introduced into operational units by mid-1960.

23. The BADGER force will probably be strengthened somewhat over the next year or more. Soviet planners will continue to view a large medium bomber force as a necessity, not only for potential employment against targets in and near Eurasia, but also for maintaining a one-way intercontinental strike capability. However, the rate of introduction of new BADGERs will probably continue to decline, and a peak strength of about 1,100 (including convertible tanker-bombers) will probably be reached in 1960. A program of modification and improvement of BADGERs may be undertaken during the next two years. The BULL will continue to be useful for some purposes; its phase-out will probably be gradual, reducing the piston medium bomber strength of Long Range Aviation to about 150 in mid-1960.

24. The new supersonic "dash" medium bomber mentioned in SNIE 11–58 would be a useful successor to the BADGER, particularly if equipped with advanced air-to-surface missiles. We believe that a new medium bomber will probably be introduced some time during 1960–61; a few might have reached operational units by mid-1960.

25. In estimating the operational strength and composition of Soviet Long Range Aviation, we have projected heavy bomber and tanker figures for 1959 and 1960 as lying within a range. The low side reflects a Soviet option to forego further buildup of their heavy bomber force through mid-1960. The high side reflects a Soviet option to produce some additional aircraft of BISON and/or BEAR types, and to introduce a new subsonic heavy bomber into operational units before mid-1960.

	mid-1958	mid-1959	mid-1960
Jet and Turboprop Heavy Bombers and Tankers	100–125	100–150	100–200
Jet Medium Bombers and Tankers	925	1025	1100
Piston Medium Bombers	425	300	150

26. The Soviets will continue their efforts to optimize the capabilities of their long range bomber force. Over the next two years, they will probably improve inflight refueling techniques and make them more generally available. The weight of present evidence points to continued employment of convertible tanker-bombers, but one or more of the new Soviet transport types could be modified to perform a tanker role. Improved electronic countermeasures, navigation and bombing techniques, and other supporting equipment will probably be provided. Air-to-surface missile launching capabilities will probably be augmented. Operations into and from potential Arctic staging areas will probably be intensified, and base facilities in these areas will continue to be improved.

LONGER TERM TRENDS, TO MID-1963

27. Our estimates of trends in Soviet long range bomber strength beyond 1960 are tinged with more uncertainty, especially with respect to heavy bombers. If our estimates of Soviet guided missile capabilities are correct, 1960–63 could see the advent of a substantial Soviet ICBM capability, increased submarine-launched missile capabilities, and a considerable buildup of ballistic missiles with short and medium ranges. The same period could bring the introduction of very advanced intercontinental bombers, of new medium bombers, and of improved air-to-surface missiles. The range of options open to the Soviet planners is wide and the number of variables great. Indeed we question whether decisions which the Soviets may have made along these lines will remain firm.

28. A key factor influencing Soviet decisions as to military force levels is of course the Soviet estimate of the likelihood of all-out nuclear war with the US. We believe that the Soviet leaders do not intend during the period

3. *(Continued).*

of this estimate to initiate general war themselves as a deliberate act of policy, and that they judge that the US is likewise indisposed to do so. It is true that the Soviets, like ourselves, are well aware that general war may arise out of accident or miscalculation. Their armed forces must be reasonably prepared for such a contingency. Yet it is obvious from Soviet policies, both military and non-military, that the Soviet leaders do not believe the likelihood of general war in itself to be so great as to require a rapid buildup in force levels.

29. Regardless of the immediate political situation, however, the Soviet leaders would probably build up their force levels very greatly if they believed that by doing so they could acquire the capability to attack the US and at the same time to prevent an unacceptable return blow. The achievement of such a capability would be tantamount to the achievement of military superiority over the US. From a military and technological point of view, then, a main factor determining Soviet decisions as to force levels will be their judgment as to whether the attainment of this capability is practicable. Their judgment will be influenced to a great extent by programmed improvements in US air defenses, the dispersal and alert status of retaliatory forces, and the dispersal and hardening of IRBM and ICBM launching sites. The structure of the forces would be influenced by the Soviet assessment of the effectiveness of missiles and bombers in various employments, and of their own capabilities in using these weapon systems.

30. Soviet military planners would probably feel that even though they had available substantial numbers of ICBMs and some submarine-launched missiles, it would still be desirable to introduce advanced intercontinental bombers into operational units. Late in the period of this estimate these could include chemical-powered aircraft capable of supersonic speed at high altitude or possibly subsonic nuclear-powered aircraft with long endurance at various altitudes, including very low altitude. They are likely to be equipped to launch improved air-to-surface missiles as well as bombs, and to be fitted with considerably improved defensive and other equipment. Some aircraft of either or both these types could probably be in operational units by mid-1963.

31. There is no question that by mid-1963 the Soviets could produce and put into operational units five or six hundred heavy bombers and tankers, should they desire this large a force of such subsonic aircraft, augmented by the advanced types mentioned in the previous paragraph. It seems to us more likely, however, that the Soviet heavy bomber and tanker force will remain smaller than this — say about two or three hundred — and that by about mid-1963 the USSR will be placing major reliance on ICBMs for intercontinental delivery of nuclear weapons.

32. We believe that the number of medium bombers in Soviet Long Range Aviation will probably decrease in the later years of the period. BULLs will probably have phased out entirely shortly after mid-1960. Supersonic "dash" medium bombers may become an important element in the force by mid-1963, but BADGERs will probably have continuing utility.

The "Missile Gap," 1957-61

Although, by the late 1950s, Western analysts were beginning to perceive patterns in Soviet strategic thinking, they still lacked enough information to plot Soviet actions with any degree of confidence. Thus, the bomber gap of the mid-1950s was followed almost immediately by a second, similar, analytical crisis, the "missile gap."

The first overt sign of a major Soviet ICBM program was a public statement by Soviet Premier Nikita Khrushchev on 23 April 1956, to the effect that the USSR was about to be the first country to develop an ICBM. Just over a year later this prophesy seemed to come true: on 26 August 1957 the Soviet news agency, TASS, announced the successful test of a "super long-distance, intercontinental, multistage, ballistic rocket."[11] On 4 October, shortly after testing of the US Atlas ICBM had begun, the Soviets managed to orbit their first satellite, Sputnik I, followed almost exactly one month later by Sputnik II.

The Soviet ICBM program did not, of course, appear overnight, but had been under way since the late 1940s. Western intelligence was aware that the Soviets had picked up some 400 scientists who had been involved in the German V-2 ballistic missile program at the end of World War II, although they missed the head of the program, Wernher von Braun, and the hard core of experts associated with German missile development. Little more was known, however. When German scientists were released to the West beginning in 1951, they could provide only limited information about the extent or success of Soviet missile programs.[12] Once again, lack of information was plaguing Western efforts to track Soviet progress in an area crucial to US national security. However, the first Estimate to treat the subject, NIE 11-6-54, contended that there was "conclusive evidence of a great postwar Soviet interest in guided missiles and indications that the USSR has a large and active research and development program," although there was little data on individual Soviet missiles under development or in production. It nonetheless concluded that a Soviet ICBM might be operational as early as 1960, but most probably not before 1963.[13] Concern over the lack of information and the possible consequences of a strategic surprise mounted over the next two years. By the end of 1955, DCI Allen Dulles was prepared to declare Soviet ICBMs a topic "of the highest priority, probably of even greater ultimate importance to our national security than atomic energy intelligence."[14]

[11] Wayne G. Jackson, *Allen Welsh Dulles as Director of Central Intelligence, 26 February 1953–29 November 1961*, V, p. 44, National Archives and Records Agency, RG-263.

[12] Freedman, p. 68.

[13] NARA RG-263 NIE 11-6-54 *Soviet Capabilities and Probable Programs in the Guided Missile Field*, 5 October 1954; pp. 1, 4. This Estimate, which deals with guided missiles of all kinds, was a major effort to exploit data available in the West—along with what intelligence there was on Soviet programs—to define the scope of Soviet efforts in this area.

[14] Jackson, p. 44.

Contributing to an atmosphere of crisis were continuing difficulties in the US test program (the first Titan ICBM blew up on its launcher in December 1958), contrasted to continuing Soviet bombast concerning their own successes. With deployment of US Atlas ICBMs only just getting under way (18 were operational in 1960) and Titan not due for deployment until 1962, the notion that the Soviets could achieve a decisive lead in the nuclear arms race was a particularly chilling one that the Soviets did their best to encourage. Late in 1958 a Soviet official had claimed that Soviet ICBMs were in series production; five days later, Khrushchev announced that Soviet ICBMs were capable of delivering a 5-megaton warhead to a range of 7,560 nautical miles. In February 1959 the Soviet leader warned that the Soviet Union had "organized the mass production of ballistic missiles" that would give it the ability to "deliver a blow to aggressors in any part of the world." The following November he repeated that malediction, noting that one Soviet factory had produced more than 250 ICBMs over the previous year.[15]

In the absence of concrete information to the contrary, Soviet statements (however hyperbolic) were difficult to dismiss entirely. Collection efforts were stepped up, while U-2 flights over the Soviet Union were now routinely targeted against suspected and known ICBM installations.

The situation improved somewhat beginning with the discovery of the Tyuratam ICBM test site, but not sufficiently for Western analysts to come to grips with the nature of the program. Although the events of the summer and fall of 1957 confirmed the existence of a continuing Soviet ICBM program, they had revealed nothing about the size or operational viability of the system. These proved to be the critical dimensions of the problem: the SS-6, the Soviet ICBM in question, was an enormous missile for its time, fully twice the size of its contemporaries, the US Atlas and Titan ICBMs. It used cryogenic fuel that could not be stored on board the missile and created nightmarish logistic problems for operational deployment. This made it so awkward to handle in the field that, despite its fundamental reliability and impressive record of successful launches, the Soviets opted to skip deployment of this first-generation missile in favor of developing its successor, the SS-7. Only four SS-6 launchers became operational. In consequence, the Soviet ICBM development program was delayed and extended, with fewer missiles deployed initially and at a much slower rate than might have been the case had they gone ahead with the SS-6. As a result, concrete evidence of the operational deployment of Soviet ICBMs (as distinct from the existence of an active test program) proved very difficult to come by.

Hopes of immediately obtaining such evidence were dashed on 1 May 1960, when Francis Gary Powers' U-2 was shot down over the Soviet Union, putting an end to plans for reconnaissance flights in the near future.

[15] Prados, p. 111.

Ironically, one of Powers' targets was a suspected ICBM base at Plesetsk; had he completed that mission, it is likely that he would have produced photographs of what was then the only operational ICBM launch facility in the Soviet Union.

Over the winter of 1960/61, collection breakthroughs—including the advent of the first photoreconnaissance satellites—occurred that compensated for the loss of U-2 coverage and provided the critical data that were needed to "close the missile gap."[16] For the first time, "good intelligence coverage" was possible "of . . . more than 50 percent of those portions of the USSR within which ICBM deployment [was] most likely." This "substantially augmented" coverage made it possible to identify operational deployments at five "confirmed or possible ICBM complexes."[17]

Second, in the spring of 1961 the West's agent in the Soviet General Staff, Lt. Col. Oleg Penkovskiy, was able to provide Western intelligence services with information revealing the true extent of the Kremlin's bluffing in the ICBM field. Asked to comment on Khrushchev's statements regarding Soviet ICBM tests, production, and deployment, Penkovskiy replied that it was all bluff. The purpose of these statements, Penkovskiy said, was "to force Western military government leaders and military people to do their planning on the assumption that the Soviet Union already had a tremendous military potential. . ."

> In reality it is only being developed. . . . The USSR does not have the capability of firing (even) one or two (ICBMs) . . . there are not hundreds even in a testing status. There may be only tens in that category. . . . Even now it may be possible that somewhere in the Far East or at Kapustin Yar there may be some missiles which could reach other continents and detonate with an atomic, even hydrogen explosion, but such launchings would be completely unplanned, uncontrolled, and certainly not of a mass variety. Of this I am entirely sure.[18]

The Soviets did not achieve initial operational capability with their four SS-6 launchers until mid-1960; by 1962, 36 launchers (mainly SS-7s) had been deployed.

[16] See Kevin C. Ruffner, ed.: *Corona America's First Satellite Program* (Washington, D.C: CIA Cold War Records Series, 1995).

[17] NIE 11-8/1-61 *Strength and Deployment of Soviet Long Range Ballistic Missile Forces*, 21 September 1961: pp. 11-12.

[18] Jackson, V. p. 130. Ominously, Penkovskiy added, "but in two or three years there will be a different picture."

4. NIE 11-5-57 *Soviet Capabilities and Probable Programs in the Guided Missile Field*

~~TOP SECRET~~

APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

SOVIET CAPABILITIES AND PROBABLE PROGRAMS IN THE GUIDED MISSILE FIELD

THE PROBLEM

To estimate Soviet capabilities and probable programs in the field of guided missiles, including earth satellites, through 1966. [1]

FOREWORD

This estimate supersedes NIE 11-6-54, Soviet Capabilities and Probable Programs in the Guided Missile Field, 5 October 1954, and its supplement, NIE 11-12-55, Soviet Guided Missile Capabilities and Probable Programs, 20 December 1955. Although some new intelligence has strengthened our previous estimate that the USSR has an extensive guided missile program, intelligence on specific guided missile systems continues to be deficient. In making this estimate in a field where positive intelligence is minimal, we have employed three interdependent approaches: military requirements, scientific and technical capabilities, and economic capabilities. Throughout the entire estimative process, the fullest consideration has been taken of the available evidence of Soviet missile activity, US guided missile experience, and known and estimated Soviet capabilities in related fields.

This estimate is based on previous judgments that the USSR does not now intend to initiate general war deliberately and is not now preparing for general war as of any particular future date.

Except where noted otherwise, the operational capability dates given in this estimate are the earliest probable years during which one or more missiles could have been serially produced and placed in the hands of trained personnel of one operational unit, thus constituting a limited capability for operational employment. These dates are based on our estimate that a concerted and continuous native Soviet research and development program began in 1948.

Although considerable effort has been devoted to estimating a Soviet production and operational program for guided missile systems through 1966, the production quantities and time-phasing presented in Annex A represent only a possible Soviet program, but one which is considered both feasible and reasonable. [2]

[1] Unguided rockets are not included in this estimate.

[2] See the Director of Intelligence, USAF, footnote to Annex A, paragraph 1.

4. *(Continued)*

CONCLUSIONS

GENERAL CONCLUSIONS

1. We estimate that the Soviet guided missile program is extensive and enjoys a very high priority. *(Paras. 17, 27, 29–30, 50)*

2. We believe that the USSR has the native scientific resources and capabilities to develop during this period advanced types of guided missile systems, in all categories for which it has military requirements. *(Paras. 29–38)*

3. We estimate that the USSR has the industrial base and related industrial experience to series produce the missile systems it will develop during this period. However, in view of competing demands, the limited availabliity of electronic equipment will seriously restrict the extent and variety of Soviet guided missile production until about 1958. Thereafter, expanding electronics production will probably make this restriction much less severe. *(Paras. 45–48)*

4. We estimate that the USSR has requirements for various sizes of nuclear, high explosive (HE), and chemical (CW) warheads, and has the capability to develop them on time scales consistent with the missiles in which they would be employed. In view of competing demands, the availability of fissionable materials will impose limitations on the extent of Soviet nuclear warhead production during the period of this estimate. *(Paras. 39–42, 54, Annex A)*

SPECIFIC SOVIET CAPABILITIES AND PROGRAMS

Surface-to-Air Missiles

5. We estimate that surface-to-air missile systems have one of the highest priorities among current Soviet military programs. At Moscow, an extensive system of surface-to-air missile sites has been constructed, and all sites are probably now operational. This system can probably direct a very high rate of fire against multiple targets at maximum altitudes of about 60,000 feet and maximum horizontal ranges of about 25 n.m. *(Paras. 27–28, 32, 56–60)*

6. During the period 1958–1961, surface-to-air systems with increased range and altitude capabilities for static defense of critical areas, and with low and high altitude capabilities for defense of static targets, field forces, and naval vessels, could probably become available for operational employment. Sometime between 1963 and 1966, the USSR could probably have in operation a surface-to-air system of some capability against the ICBM. *(Paras. 61–67)*

7. We estimate that series production of surface-to-air guided missiles is now under way in the USSR, and that it will probably produce such missiles in large quantities. Nuclear warheads could now be incorporated into a limited number of surface-to-air missiles. We estimate that some percentage of surface-to-air mis-

4. *(Continued)*

siles will be so equipped during the period of this estimate. *(Paras. 19, 59–60, Annex A)*

Air-to-Air Missiles

8. Despite a lack of significant intelligence, we estimate that the USSR has pursued the development of air-to-air missiles, and that it could now have in operational use a 2–3 n.m. range missile capable of tail-cone attacks in good weather. It is probable that the USSR could have a 5 n.m. all-weather missile operational in 1958 and a 15–20 n.m. all-weather missile, capable of employing a nuclear warhead, in 1960. *(Paras. 68–70)*

Air-to-Surface Missiles

9. In 1955 the USSR could probably have had a 20 n.m. subsonic air-to-surface missile available for operational use. In 1956–1957 a 55 n.m. subsonic missile could probably be available, and there is some evidence that such a missile has reached at least final flight test stage. A 55 n.m. supersonic missile could probably be available in 1958. These missiles, designed primarily as antiship weapons, could also be employed against isolated and well-defined radar targets on land. In 1961, a 100 n.m. supersonic missile could probably be available for employment by heavy bombers. Each of these missile types could employ nuclear warheads. *(Paras. 71–74)*

Surface-to-Surface Ballistic Missiles (up to 350 n.m. range)

10. There is considerable evidence of Soviet development of short-range surface-to-surface missiles, and we estimate that the USSR could probably have had available for operational use in 1954 ballistic missiles with the following maximum ranges: 75 n.m., 175–200 n.m., and 350 n.m. These types could be equipped with nuclear warheads. However, the USSR would probably consider CW warheads desirable for certain specific purposes, and might employ HE in the two shorter-range types. *(Paras. 75–79, 81, Annex A)*

Surface-to-Surface Ballistic Missiles (700 n.m. and 1,600 n.m. ranges)

11. Evidence on Soviet development programs leads us to estimate that the USSR could probably have had a 700 n.m. maximum range ballistic missile available for operational use in 1956. We have firm evidence that in 1949 the USSR was interested in a 1,600 n.m. intermediate range ballistic missile (IRBM), and we believe it is a logical step in the Soviet development program. We estimate that the USSR is developing an IRBM, and that it could probably have such a missile in operation in 1959. Both these missile types would require nuclear warheads, although we do not exclude the possibility of CW use with the 700 n.m. missile for occasional special missions. We believe the USSR would rapidly acquire a considerable number of both the 700 n.m. and the 1,600 n.m. missiles. *(Paras. 80, 82, Annex A)*

Intercontinental Ballistic Missiles (ICBM: 5,500 n.m. range)

12. We have no direct evidence that the USSR is developing an ICBM, but we believe its development has probably been a high priority goal of the Soviet ballistic missile program. We estimate that the USSR could probably have a 5,500 n.m. ICBM ready for operational use in 1960–1961.[3] We believe that the

[3] Date predicated on first operational unit being equipped with prototype missiles.

4. *(Continued)*

USSR will seek to acquire a considerable number of ICBM's with nuclear warheads as rapidly as possible. *(Para. 84, Annex A)*

Submarine-Launched Surface-to-Surface Missiles

13. We believe the USSR would probably have developed cruise-type missiles initially, and there is some evidence pointing to the existence of Soviet submarines equipped to carry such missiles. The USSR could probably have had in operation in 1955 a subsonic turbojet missile capable of a maximum range of 500 n.m., and a supersonic missile capable of this range could probably be in operation in 1957. A supersonic cruise-type missile capable of ranges up to 1,000 n.m. could probably be operational in 1962. These missile types would require nuclear warheads. With a vigorous program, the USSR might achieve an operational submarine-launched IRBM system sometime during the period 1964–1966. *(Paras. 83, 85–89, Annex A)*

Earth Satellite

14. The USSR will probably make a major effort to be the first country to orbit an earth satellite. We believe that the USSR has the capability of orbiting, in 1957, a satellite vehicle which could acquire scientific information and data of limited military value. A satellite vehicle possessing substantial reconnaissance capabilities of military value could probably be orbited in the period 1963–1965. *(Paras. 90–91)*

DISCUSSION

I. SOVIET MILITARY REQUIREMENTS FOR GUIDED MISSILES

15. The Soviet guided missile program necessarily operates within the framework of current and future military requirements laid down by Soviet defense planners. While we have no direct evidence on the elements of this framework as it applies to missiles, we believe it would logically have been based on: (a) an appreciation of the USSR's present and probable future strategic and tactical situations; (b) an estimate of the types of attack that could be launched against the USSR in the foreseeable future; (c) operational requirements for which missile systems could be employed to replace or augment other weapons systems; and, finally, (d) an evaluation of the probable effectiveness of missiles *versus* other weapons systems to perform required missions.

16. The USSR has almost certainly been assisted in determining the scope and priorities of its missile programs by information on Western, including US, military programs. This information is probably complete enough to enable the USSR to judge approximately the time phases in the develoment, effectiveness, size, and composition of US and Allied offensive and defensive forces. Specifically, the Soviet leaders can probably judge such factors as the general size of nuclear stockpiles, the weapons systems into which nuclear warheads have been incorporated, the general progress of air defense programs, and the general characteristics and availability dates of offensive and defensive missiles.

Strategic and Tactical Considerations

17. Certain considerations which have played a role in Soviet military thinking in recent years make it plausible that the USSR should have given a high priority to the development of missiles. The Soviet leaders have heavily emphasized the development of their nuclear capability, and probably also believe that mis-

5. SNIE 11-10-57 *The Soviet ICBM Program*

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THE SOVIET ICBM PROGRAM

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THE PROBLEM

To estimate the probable development timetable and characteristics of the Soviet intercontinental ballistic missile (ICBM), including the probable date of first operational capability, and to examine the factors likely to affect Soviet acquisition of a substantial nuclear delivery capability with the ICBM weapon system.[1]

CONCLUSIONS

1. ICBM development has an extremely high priority in the USSR, if indeed it is not presently on a "crash" basis. We believe that the USSR will seek to acquire a substantial ICBM capability as rapidly as possible.

2. We believe the USSR is concentrating on the development of an ICBM which, when operational, will probably be capable of carrying a high-yield nuclear warhead to a maximum range of about 5,500 nautical miles, with a CEP of five nautical miles or less at maximum range, and a system reliability of about 50 percent. The Assistant Chief of Staff, Intelligence, Department of the Army, believes that the USSR will adopt initially an operational ICBM of at least 3,800–4,500 nautical miles maximum range, and that it will further develop this weapon to the longer-range system indicated above.

3. The date at which the USSR will have a first operational capability with the ICBM will depend on many factors, apart from the over-all urgency of the program. These factors include the extent of technical success in missile testing and the availability of launching facilities, supporting equipment, and trained personnel to operate the system. We estimate that some time during the period mid-1958 to mid-1959, the USSR will probably have a first operational capability with up to 10 prototype ICBMs, with characteristics approximating those estimated in the first sentence of Conclusion 2.[2]

[1] For purposes of this estimate, a "first operational capability" is arbitrarily defined as a total of 10 prototype ICBMs in the hands of trained units at completed launching sites; a "substantial operational capability" is arbitrarily defined as a total of 500 ICBMs in the hands of trained units at completed launching sites.

[2] In the belief of the Assistant Chief of Staff, Intelligence, Department of the Army, this initial operational capability will be with an ICBM of at least 3,800–4,500 nautical miles maximum range.

5. *(Continued)*

4. ICBMs could probably be produced, launching facilities completed, and operational units trained at a rate sufficient to give the USSR an operational capability with 100 ICBMs about one year after its first operational capability date, and with 500 ICBMs about two or at most three years after first operational capability date.

6. NIE 11-5-58 *Soviet Capabilities in Guided Missiles and Space Vehicles*

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CIA HISTORICAL-REVIEW PROGRAM

SOVIET CAPABILITIES IN GUIDED MISSILES AND SPACE VEHICLES[1]

THE PROBLEM

To estimate Soviet capabilities and probable programs for the development of guided missiles and space vehicles, including earth satellites, through 1966,[2] and to analyze factors affecting Soviet operational capabilities in these fields.

FOREWORD

This estimate supersedes NIE 11-5-57, SOVIET CAPABILITIES AND PROBABLE PROGRAMS IN THE GUIDED MISSILE FIELD, 12 March 1957, and SNIE 11-10-57, THE SOVIET ICBM PROGRAM, 10 December 1957, as well as those paragraphs dealing with guided missiles (paras. 108 through 114) in NIE 11-4-57, MAIN TRENDS IN SOVIET CAPABILITIES AND POLICIES, 1957-1962, 12 November 1957. The new estimate, like its predecessors, is made in the light of our previous judgments that the USSR does not now intend to initiate general war deliberately and is not now preparing for general war as of any particular future date. It also assumes that through 1966 there will be no international agreements on the control of armaments or of outer space.

The estimate is intended primarily to reassess and update our estimates of probable Soviet missile development programs, missile characteristics, and first operational capability dates. Some discussion is provided on factors likely to affect Soviet acquisition of substantial operational capabilities with missile systems, and Soviet capabilities to place various arbitrarily-selected quantities of ICBMs in operational use are estimated. The reader is cautioned that Annex A of NIE 11-5-57 is no longer applicable.

For the most part, changes in estimated missile characteristics and first operational capability dates result from the accumulation over the past year of a considerable body of new evidence. Of the 13 missile systems estimated as probably available for operational use in 1958 or earlier, we now have direct evidence on the existence of nine; we also have direct evidence on Soviet development of an ICBM.

[1] ~~The title of this estimate, when used separately from the text, is classified CONFIDENTIAL.~~

[2] For comparability with earlier estimates on this subject, the terminal date chosen for this estimate is the same as that of its predecessor, NIE 11-5-57, SOVIET CAPABILITIES AND PROBABLE PROGRAMS IN THE GUIDED MISSILE FIELD, 12 March 1957.

6. *(Continued)*

For some of these systems the evidence is extensive, while for others we have only limited information relative to characteristics and components. Serious intelligence gaps remain, particularly with respect to the operational status of various systems. Furthermore, we do not have sufficient evidence available on which to base an estimate of the vulnerability of Soviet systems to specific electronic countermeasures.

In making this estimate in a field where positive intelligence remains limited, we have considered the available evidence in the light of estimated Soviet military requirements, known and estimated Soviet capabilities in related fields, and US guided missile experience. The entire study rests upon our belief, now well-supported by evidence, that a concerted and continuous Soviet research and development effort in guided missiles was underway by 1948.

For guided missiles, except where noted otherwise, the operational capability dates given are the earliest years during which we believe missiles could probably have been placed in the hands of trained personnel in one operational unit, thus constituting a limited capability for operational employment. We estimate that when they first become operational, the missile systems discussed herein will have a system reliability of 40–60 percent, and that improvement will occur thereafter.[3] For space flight activities, the dates given are the earliest *possible* time periods by which we believe each specific accomplishment could be achieved.

SUMMARY AND CONCLUSIONS

1. The USSR has continued to press ahead with its extensive guided missile research and development, generally along the lines indicated in our previous estimates. As a result of this effort, the USSR now has available for operational use a variety of missile systems. Soviet achievements in ballistic missiles have been especially impressive and have contributed to early successes in the USSR's space flight program. Substantial success in developing surface-to-air missile systems has also been achieved. Available evidence is not sufficient to indicate equal emphasis and similar success in other Soviet missile programs.

2. By itself, each of the guided missile or space programs estimated as a future development appears feasible both as to technical achievability and date attainable. However, some programs may be slowed or even halted by the competition of other missile or non-missile delivery systems, unforeseen development or production difficulties, rapidity of obsolescence, changing military requirements, and/or broad considerations of Soviet national policy. On the other hand, a significant advance in one or more of the programs might be possible if a scientific breakthrough is achieved.

3. *Surface-to-surface missiles.* We believe that the Soviet ballistic missile development program has emphasized reliability and simplicity, rather than minia-

[3] The term "system reliability" is here defined as the percentage of missiles which function according to specifications from missile launching to detonation in the target area, excluding malfunctions prior to launching.

6. *(Continued)*

turization or extreme refinement of design. System mobility appears to have been a basic consideration since the early developmental stages. In developing longer-range systems, maximum use has been made of proven components.

4. Since 1954 the USSR has probably had available for operational use ballistic missiles with maximum ranges of about 100 nautical miles (n.m.), 200 n.m. and 350 n.m. We believe that, depending upon various operational factors, nuclear, high explosive (HE) or chemical (CW) warheads would be used with these missiles.[4] In addition, the USSR probably now has operational a very short range anti-tank missile equipped with shaped-charge HE warhead.

5. An extensive Soviet program to develop a 700 n.m. ballistic missile is indicated by a long series of test firings, averaging about two per month since 1955. We estimate that this missile probably became operational in 1956. On the basis of about a dozen test firings over the past year, we estimate that the USSR will also probably have operational in 1958 a modification of the 700 n.m. missile, capable of an 1,100 n.m. range. Nuclear warheads would almost certainly be used in both these missiles, although we do not exclude the possibility of CW use in the 700 n.m. missile.

6. *Intercontinental ballistic missile (ICBM).* Since August 1957, the USSR has test fired at least four and possibly six missiles to a distance of approximately 3,500 nautical miles. We believe this represents the development of an ICBM system which, when first operational, will probably be capable of delivering a nuclear payload to a maximum range of about 5,500 n.m., with an accuracy (CEP) of 5 n.m. and a system reliability of about 50 percent. By the early 1960's reliability will probably be considerably improved. At the beginning of the period 1962–1966, the CEP could be about 3 n.m., and could be reduced to about 2 n.m. later in the period.

7. Available evidence is inconclusive as to the designed payload-carrying capacity of the Soviet ICBM, which we have previously estimated as about 2,000 pounds. Recent evidence and re-analysis may indicate that the USSR is developing an ICBM with a 5,000 pound payload. Serious logistical and operational problems are associated with missiles of the sizes necessary to deliver 2,000 or 5,000 pounds to a range of 5,500 n.m.; these problems would be greater in the case of the heavier payload. In the light of this consideration, we estimate that the Soviet ICBM is designed to carry a nuclear payload of about 2,000 pounds, although there is a possibility that it is designed to carry about 5,000 pounds.

8. The USSR will probably have a first operational capability with ten prototype ICBMs at some time during calendar 1959; the possibility should not be disregarded, however, that in the latter part of 1958 the USSR may establish an ICBM capability with missiles comparatively unproven as to accuracy and reliability.

9. We believe that Soviet planners intend to achieve a sizeable ICBM operational capability at the earliest practicable date, although we have no direct evidence on

[4] Estimated nuclear warhead capabilities for these and other missiles discussed in this estimate are given in Annex C (limited distribution under separate cover).

6. *(Continued)*

Soviet preparations for ICBM production and deployment. We estimate that the USSR has the technical and industrial capability to produce ICBMs, complete launching facilities, establish logistic lines and train troops at a rate sufficient to have an operational capability with 100 ICBMs [5] about one year after its first operational capability date (i.e. some time in 1960), and with 500 ICBMs [5] two or at most three years after first operational capability date (i.e. some time in 1961, or at the latest in 1962). This implies that the USSR could achieve an operational capability with ten or more, but less than 100 ICBMs by the end of 1959, depending upon when during the calendar year the first operational capability is achieved.

10. *Surface-to-air-missiles.* For several years the USSR has had in operational use a fixed surface-to-air system which we believe is now capable of employment against aircraft at ranges up to 20–30 n.m., with greatest effectiveness at altitudes of 30,000 to 60,000 feet. This system is known to be employed in a dense and costly complex of 56 sites around Moscow; targets of lesser importance will probably be provided with considerably less elaborate surface-to-air missile defenses. We believe the Soviets also have available for operational use a surface-to-air missile with similar characteristics, except for improved capability to intercept small, supersonic targets. It is probably suitable for employment either with the Moscow system or with a semi-mobile system.

[5] These numbers are selected arbitrarily in order to provide some measure of the Soviet capacity to produce and deploy ICBMs; they do *not* represent an estimate of probable Soviet requirements or stockpiles.

11. Neither of the above systems is likely to be effective against very low altitude attack. We therefore estimate that the USSR is developing and will probably have in operation in 1959–1960 a surface-to-air system with a maximum range of about 15 n.m., effective at altitudes from 50 feet to at least 40,000 feet. We estimate that for improved defense of critical areas, the USSR will probably have available in 1960–1961 a surface-to-air system with effectiveness at altitudes up to 90,000 feet and a maximum range of 75–100 n.m.

12. We estimate that in 1963–1966 the Soviets will probably achieve a first operational capability with a surface-to-air system of limited effectiveness against ICBMs. Such a system could possibly have some effectiveness against IRBMs. A surface-to-air system with limited capability to counter reconnaissance satellites could and possibly will be developed for use in 1960–1964; a more sophisticated system could be integrated with an anti-ballistic missile system at a later date.

13. *Air-to-air missiles.* Three short-range systems which employ HE warheads are now estimated as operational. Two are believed to have radar guidance with ranges of 5–6 n.m.; the other, with a range of up to 2½ n.m., is believed to use infrared guidance. Most currently operational Soviet fighter aircraft types could be modified to employ these missiles. In 1960 the USSR will probably have available a 15–20 n.m. air-to-air missile.

14. *Air-to-surface missiles.* The present operational system is capable of carrying a nuclear or HE warhead at subsonic speed to a range of about 55 n.m. against well-defined targets, such as ships. With dif-

6. *(Continued)*

ferent guidance, the system could be employed against land targets. We estimate that the USSR is probably developing and may now have operational an air-launched decoy to simulate medium or heavy bombers. We believe that the USSR will probably develop and have operational in 1960–1961 a supersonic missile with improved guidance and a range of at least 100 n.m., suitable for employment against a wide variety of targets.

15. *Naval-launched missiles.* The Soviet navy probably now has the capability to launch subsonic cruise-type missiles from a few converted submarines of conventional design, although there is little direct evidence of submarine-launched missile development in the USSR. We estimate that the current system could deliver nuclear warheads against land targets within about 200 n.m. of the launching submarine. These cruise-type missiles could be launched by a submarine only after surfacing. We believe, however, that in 1961–1963 the USSR will probably have a submarine-launched ballistic missile system available for first operational use in a prototype submarine of new design. This system will probably be capable of delivering a nuclear warhead from a submerged submarine to a range of about 1,000 n.m.

16. We estimate that during 1959–1960 the USSR will begin equipping its surface fleet with surface-to-air missiles having a maximum range of 20 n.m., with effectiveness at altitudes from 50 feet to at least 40,000 feet. A Soviet shipborne surface-to-air system for use against targets at higher altitudes and longer ranges will probably become available in 1960–1961. These systems, while primarily for air defense, could be modified for employment against surface targets. Late in the period of this estimate, the USSR will probably also have available a missile system for use in anti-submarine warfare.

17. *Soviet space programs.* We believe that the ultimate foreseeable objective of the Soviet space program is the attainment of manned interplanetary travel. The program is supported by extensive Soviet research efforts in a number of related fields, including rocket propulsion, electronics, space medicine, astrobiology, astrophysics and geophysics. Present activities appear to be directed toward the collection of scientific data and experience applicable to future space accomplishments, the ICBM program, and basic scientific research. Soviet requirements for space vehicles have probably been established for fairly specific scientific and/or military purposes in accordance with a planned step-by-step progression.

18. Soviet success in ballistic missile development and earth satellite launchings to date leads us to estimate a considerable Soviet capability for early accomplishments in space including: surveillance satellites, recoverable aeromedical satellites, lunar probes and impacts, lunar satellites and planetary probes to Mars and Venus (1958–1959); "soft landings" by lunar rockets and recoverable manned earth satellites (1959–1960); a manned glide-type high altitude research vehicle (1960–1961); heavy earth satellites and manned circumlunar flights (1961–1962); and manned lunar landings (after 1965). While each individual achievement appears feasible as to technical capability and earliest date attainable, we doubt that the USSR can accomplish all of these space flight activities within the time periods specified.

6. *(Continued)*

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SIMPLIFIED TABULAR SUMMARY [1]

Probable Soviet Guided Missile Development Program

Arbitrary Designation	Operational Date	Maximum Range	Payload Weight and Type	Design Altitude
Ground-Launched Ballistic Missiles				
SS–1 *	1954	100 n.m.	1,500 lbs. Nuclear, HE, CW	———
SS–2 *	1954	200 n.m.	2,000 lbs. Nuclear, HE, CW	———
SS–3 *	1954	350 n.m.	Up to 5,000–6,000 lbs. Nuclear, HE, CW	———
SS–4 *	1956	700 n.m.	Up to 5,000–6,000 lbs. Nuclear, poss. CW	———
SS–5 *	1958	1,100 n.m.	Up to 3,000 lbs. Nuclear	———
SS–6 ICBM *	1959	5,500 n.m.	2,000 lbs., poss. 5,000 lbs. Nuclear	———
Ground-Launched Anti-Tank Missile				
SS–a. t.	prior to 1958	6,000 yards	20–40 lbs. HE	———
Submarine-Launched Missiles				
SS–7 cruise-type	1955–56	200 n.m.	2,000 lbs. Nuclear	———
SS–8 ballistic	1961–63	1,000 n.m.	1,000 lbs. Nuclear	———
Ground-Launched Surface-to-Air Missiles				
SA–1 *	1954	20–30 n.m.	500–800 lbs.[2]	30,000–60,000 ft.
SA–2 *	1957	15–30 n.m.	500–700 lbs.[2]	20,000–60,000 ft.
SA–3	1959–60	15 n.m.	150–250 lbs.[2]	50 ft.–40,000 ft.
SA–4	1960–61	75–100 n.m.	500 lbs.[2]	Up to 90,000 ft.
SA–5	1963–66	limited effectiveness against ICBMs		
Shipborne Surface-to-Air Missiles				
SA–6	1959–60	20 n.m.	150–250 lbs.[2]	50 ft.–40,000 ft.
SA–7	1960–61	75–100 n.m.	500 lbs.[2]	Up to 90,000 ft.
Air-to-Air Missiles				
AA–1 *	1955–56	5 n.m.	70 lbs. HE	———
AA–2	1955–56	2½ n.m.	25 lbs. HE	———
AA–3	1958	6 n.m.	50 lbs. HE	———
AA–4	1960	15–20 n.m.	150 lbs.[2]	———
Air-to-Surface Missiles				
AS–1 *	1956–57	55 n.m.	3,000 lbs. Nuclear, HE	———
AS–2	1960–61	100 n.m.	3,000 lbs. Nuclear	———

[1] Detailed summaries of each missile category, including all estimated characteristics and other pertinent data, are presented in Tables 1–5 in Annex A. A summary of estimated Soviet capabilities in space flight is presented in Table 6.

[2] Nuclear warheads would increase the kill probabilities achievable with these missiles and will be required for effective use of the missiles under some conditions. However, HE warheads will be effective in most applications.

* Those missile types for which our estimates are supported by significant current intelligence are indicated by an asterisk following the missile designation.

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7. NIE 11-8-59 *Soviet Capabilities for Strategic Attack Through Mid-1964*

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SOVIET CAPABILITIES FOR STRATEGIC ATTACK THROUGH MID-1964

THE PROBLEM

To estimate probable trends in the strength and deployment of Soviet long-range air and missile weapons systems suitable for strategic attack, through mid-1964.[1]

FOREWORD

The critical feature of this estimate is our judgment with respect to the force goals of the existing Soviet ICBM program. This judgment is based in part on calculations regarding Soviet ICBM requirements for various defined strategic purposes. These calculations are especially sensitive to possible differences between our assumptions and those actually made by Soviet planners with respect to two important factors:

a. The probable future performance characteristics of the improving Soviet ICBM.

b. The probable future development of the US nuclear retaliatory force.

We have assumed for the Soviet ICBM the performance characteristics estimated for it at various dates in NIE 11–5–59, "Soviet Capabilities in Guided Missiles and Space Vehicles," dated 3 November 1959, and in the USIB "Memorandum to Holders of NIE 11–5–59" dated 19 January 1960. Soviet planners may expect a better performance, in which case their estimates of the numbers required would be lower than ours. However, we would expect them to use conservative assumptions in making so vital a calculation.

With respect to Soviet targeting, we have assumed that existing approved US military programs will be carried out. Explicit information on these programs is presumably not available to Soviet planners, but we believe that they have

[1] "Strategic attack" as used herein is defined as nuclear attack against retaliatory forces and key war-making strengths in North America, as well as US and Allied retaliatory forces at sea and in overseas areas. The weapons systems primarily considered are heavy and medium bombers assigned to Long Range Aviation, related air-to-surface missiles, ground-launched missiles with maximum ranges of 700 nautical miles or more, and submarine-launched missiles. It is recognized that other delivery systems are available for use against targets at sea and overseas.

7. *(Continued)*

enough general information from open sources to be able to estimate them with fair accuracy. These US programs are, of course, subject to change—as is the Soviet ICBM program also. The present Soviet ICBM program, however, must be based on the present Soviet estimate of the probable future development of the target system.

It is beyond the scope of this estimate to consider what political or military courses of action the USSR might adopt if the development of its strategic attack capabilities were to be as estimated herein. Such matters will be considered in the forthcoming NIE 11-4-59, "Main Trends in Soviet Capabilities and Policies, 1959–1964."

CONCLUSIONS

1. The Soviet rulers probably regard their present strategic attack forces as capable of devastating US and Allied concentrations of population and industry, but incapable of preventing, by military action, the nuclear devastation of the USSR. (Para. 36)

2. The ICBM presents the best prospects of being able to deliver a heavy weight of attack within the least time after a decision to attack, and thereby to prevent the launching or reduce the weight of a US strategic attack on the USSR. Hence, we believe that the future development of Soviet intercontinental attack capabilities will be primarily a function of the development, production, and deployment of ICBMs. Soviet ICBM capabilities will be supplemented by the development of a submarine-launched missile capability and by the maintenance of a substantial long range bomber capability. (Paras. 40–43)

3. Our analysis leads us to believe that, if the US military posture develops as presently planned, the USSR will in 1961 have its most favorable opportunity to gain a decided military, political, and psychological advantage over the US by the rapid deployment of operational ICBMs. Even at that time, however, the proportion of US retaliatory forces which the Soviets could expect to destroy in a missile attack would depend not only on the number of missiles employed and their performance characteristics, but also, and critically, upon the degree of surprise attainable and upon the precision with which the initial salvo could be timed. Even if surprise were complete and timing perfect the USSR would have to expect retaliation from such US bombers as might be on airborne alert at the time of attack, from at least some of the US aircraft carriers and missile-launching submarines then at sea, and from any other US retaliatory forces that survived the initial salvo. After 1961 the numbers of semihardened and hardened US ICBM sites programmed to become operational would require a steep increase in the number of Soviet ICBMs to achieve comparable objectives against US retaliatory forces. (Paras. 45–52)

4. From an economic point of view the main determinant of the Soviet ICBM program is not so much the availability of resources, as the physical difficulty of rapidly building up production of missiles and particularly of launching facilities during the first year or two after IOC, and of training in a comparatively short time the personnel required to maintain and operate a large number of missiles. These difficulties set practical limits to the Soviet ICBM program. (Paras. 56–58)

5. Every present indication suggests that the Soviet ICBM program, while not a crash program, is designed to provide a substantial ICBM capability at an early date. The goal of the program is probably an ICBM force as large as Soviet planners deem necessary to provide a substantial deterrent and preemptive attack capability. In our view, this

7. *(Continued)*

would be consistent with the present deliberate and orderly tempo of the Soviet ICBM test-firing program, with current Soviet military doctrine, and with the USSR's observed policy of maintaining a balance among military capabilities designed to accomplish various missions.[2] (Para. 55)

6. We conclude that the probable Soviet ICBM program would provide on the order of 140–200 ICBMs on launcher in mid-1961. Within this range, the Assistant Chief for Intelligence, Department of the Army, and the Assistant Chief of Naval Operations for Intelligence, Department of the Navy, estimate that the Soviet program is likely to be toward the low side. The Director of Intelligence and Research, Department of State, the Assistant Chief of Staff, Intelligence, USAF, and the Director for Intelligence, The Joint Staff, believing that Soviet planners would regard the advantages to be gained as justifying additional effort, estimate that the number of Soviet ICBMs on launcher is likely to be towards the high side of the 140–200 range. (Para. 61)

7. The military capabilities which the Soviets would acquire with this missile force would depend to a great degree upon the performance characteristics of the missile. By the end of 1960, however, the estimated Soviet ICBM force will constitute a grave threat to the principal US metropolitan areas, and will thus represent a powerful political and psychological weapon in international relationships. By 1961 it will present an extremely dangerous threat to SAC bomber bases, unhardened ICBM sites and command installations, although the degree of assurance the Soviets would have of being able to destroy US retaliatory forces would vary considerably depending on the performance characteristics of their ICBMs, and in any case would be subject to the qualifications in paragraph 3. (Para. 62)

8. The development of the Soviet ICBM force beyond 1961 would be likely to be affected by such considerations as the actual development of the target system to be attacked, the prospects for a greatly improved Soviet ICBM, and the prospects (on both sides) for an effective anti-ICBM, as well as by the general development of the world situation and of relations between the US and the USSR. Any figures for future years should be reviewed in the light of such considerations and of evidence on the actual progress of the Soviet ICBM program. Projecting our estimates of the present ICBM program (and assuming that if the USSR has approximately 200 ICBMs on launcher in mid-1961 production would substantially level off in the sub-

[2] The Assistant Chief of Staff, Intelligence, USAF, does not concur in the second sentence of paragraph 5. He does not believe that Soviet behavior, as we have observed it, warrants the judgment that their objectives would be satisfied by attainment of only substantial deterrence and pre-emptive attack capability. Rather, he believes that the Soviet rulers are endeavoring to attain at the earliest practicable date a military superiority over the United States which they would consider to be so decisive as to enable them either to force their will on the United States through threat of destruction, or to launch such devastating attacks against the United States that, at the cost of acceptable levels of damage to themselves, the United States as a world power would cease to exist. He further believes that such an objective could be attained by the development of their overall military capabilities which would include an operational ICBM force of about 250 (185 on launcher) by mid-1961, 500 (385 on launcher) by mid-1962, and 800 (640 on launcher) by mid-1963. It is generally agreed that the Soviets have both the technical and industrial capability to produce such a force; the physical difficulties thereby entailed will almost certainly not be the limiting factor.

It is the view of the Assistant Chief of Staff, Intelligence, USAF, that, while Soviet planners will undoubtedly feel that they will have attained a capacity for substantial deterrence and pre-emptive attack by mid-1962 or earlier, the real objective of the Soviet ICBM program is "decisive military superiority." He believes that the Soviets would not be content with conceptual levels of deterrence; they would realize the possibility of error in their own calculations and acknowledge the possibility of Western preemption of their deterrent capabilities. This latter contingency would weigh the more heavily if the Soviet leaders intended, as he believes likely, to exploit their capabilities in political offensives. In this event, their estimate of the likelihood of Western "desperate" acts would induce them to attempt attainment of total deterrence, i.e., "decisive military superiority."

7. *(Continued)*

sequent two years) the most likely number of Soviet ICBMs on launcher in mid-1962 would be 250–350 and in mid-1963 would be 350–450.[3] (Para. 63)

9. The USSR will have no serious difficulty in meeting its estimated requirements for 700 n.m. and 1,100 n.m. ballistic missiles. (Paras. 64–67)

10. On the basis of the foregoing conclusions, our numerical estimates of Soviet medium and heavy bombers in Long Range Aviation units, long and medium-range ballistic missiles, and missile-launching submarines are as shown in the following table: [4] [5]

	Mid-1960	*Mid-1961*	*Mid-1962*	*Mid-1963*	*Mid-1964*
Bombers					
Heavy	135	150	140	130	120
Medium	1,100	1,050	1,000	900	800
Missiles					
700 n.m.					
In Inventory	250	350	450	450	450
On Launcher	110	150	150	150	150
1,100 n.m.					
In Inventory	80	160	240	300	300
On Launcher	50	100	100	100	100
ICBM					
In Inventory	50	175–270	325–450	450–560	[a]
On Launcher	35	140–200	250–350	350–450	[b]

[3] The Assistant Chief of Staff, Intelligence, USAF, does not concur in this sentence. See his footnote to paragraph 5, above.

	Mid-1960	*Mid-1961*	*Mid-1962*	*Mid-1963*	*Mid-1964*
Submarines					
"Z" class [c]	4	4	4	4	4
"G" class [d]	9	15	18	18	18
Nuclear [e]	..	2	6	10	14

[a] Not estimated beyond 1963.

[b] Not estimated beyond 1963.

[c] Each "Z" class submarine would probably carry two missiles.

[d] Each "G" class submarine would probably carry about five missiles.

[e] The associated missile may not become available until 1963, in which case the missile used in the "G" class might be used in this submarine. Each submarine would probably carry 6–12.

DISSENTING VIEWS

[4] The Assistant Chief of Staff, Intelligence, USAF, does not concur in the numbers of heavy bombers and ICBMs estimated, believing they should be:

	Mid-1960	*Mid-1961*	*Mid-1962*	*Mid-1963*	*Mid-1964*
Heavy bombers	135	150	175	200	200
ICBM					
In Inventory	50	250	500	800	
On Launcher	35	185	385	640	

[5] The Assistant Chief of Staff for Intelligence, Department of the Army, does not concur in the numbers of heavy bombers estimated. In his view, future Soviet heavy bomber strength will approximate the following:

	Mid-1960	*Mid-1961*	*Mid-1962*	*Mid-1963*	*Mid-1964*
Heavy bombers	125	115	100	75	75

7. *(Continued)*

DISCUSSION

I. INTRODUCTION

11. Soviet decisions regarding the development of strategic attack capabilities are taken in the context of Soviet (not US) political and strategic concepts. Although we lack direct intelligence of Soviet intentions and programs for the future development of strategic attack forces, the conceptual context in which such plans are formed is generally well known.

12. Ruling circles in the USSR regard the world situation as one of constant, unremitting struggle between Communist and anti-Communist forces. Their faith requires them to prosecute the struggle by every expedient means. They believe that the courses of action which may be appropriate at any given time can be determined with scientific accuracy by Marxist calculation of the everchanging "relation of forces." They recognize, of course, the possibility of error through un-Marxist analysis of the situation. "Left deviation," or "adventurism," is the underestimation of opposing forces (or overestimation of Communist forces) which leads to the incurrence of unwarranted risks. "Right deviation," or "opportunism," is the reverse, which results in failure to take maximum practicable advantage of enemy vulnerabilities. Either deviation is not only a mistake, but a sin.

13. Military force is only one factor in the complex "relation of forces" to be calculated. Marxist analysis does not admit of the sharp distinction between military and political affairs which has been characteristic of much Western civil and military thought. Its central concept is power, and power includes, in addition to the military factor, political, psychological and economic elements, which are understood to be mutually reinforcing. Thus military forces are valued for psychological and political as well as strictly military potentialities.

14. The calculation of their military requirements in the context of the total relation of forces has led the Soviet rulers to maintain, at considerable economic cost, large and diversified forces. Strategic attack forces are only one element in this total military requirement, and, up to the present at least, have been allocated a comparatively small proportion of total Soviet military expenditures.

15. In the present world relation of forces, the Soviet rulers almost certainly calculate that the only military contingency they have to fear would be a massive US nuclear attack on the USSR. They would regard the provocation of such an attack as wildly "adventuristic." Consequently, they are deterred from pursuing courses of action which, in their estimation, involve serious risk of producing that result. But they evidently consider that the US is in large measure deterred from delivering such an attack. They attribute this deterrence to psychological and political as well as military factors in the total relation of forces. Moreover, from the Soviet point of view, mutual deterrence from nuclear strategic attack is not a stalemate, but an opportunity to press more vigorously psychological, economic, and political forms of attack, and possibly even to engage in some limited forms of military action.

16. The Soviet rulers, however, are not content to maintain the present relation of Soviet to US military power. They are bound to endeavor to change this relationship to their advantage. In their estimation, the greater their relative military strength, the greater will be their political opportunities, without actual recourse to general war. They would consider themselves guilty of "right deviationism" if, with the advent of intercontinental ballistic missiles, they did not attempt to achieve a military advantage over the US. From their point of view, it would be desirable to attain a superiority so decisive as to enable them either to dictate terms to the US or, if necessary, to attack the US without receiving unacceptable damage in return. At the same time, however, they must exercise care to avoid provoking a US preventive attack.

7. *(Continued)*

17. Even if a "decisive military superiority" should prove unattainable, Soviet conceptions of security requirements call for provision against the contingency of nuclear war resulting from accident, or miscalculation, or US desperation. In the Soviet view, the more successful the USSR may be in pressing its political and psychological attack, the more acute the danger of a desperate US military reaction may become. Consequently, the security of the Soviet state and society requires a capability to destroy the US nuclear attack forces prior to launch—or at least the capability to reduce the weight of such an attack to the maximum feasible extent by a combination of offensive and defensive measures. In this connection, Soviet military literature has developed a concept of pre-emptive attack—that is, an attack with immediately available forces designed to seize the strategic initiative from an enemy who is himself preparing imminently to attack.[6]

II. THE DEVELOPMENT OF SOVIET STRATEGIC ATTACK CAPABILITIES TO DATE

18. During World War II the USSR did not develop an effective long range attack capability. Nevertheless, the USSR was quick to perceive the strategic significance of nuclear weapons, long range bombers (the B–29), and ballistic missiles (the V–2), toward the close of the war. It immediately launched urgent programs to achieve for itself capabilities in these fields. Of necessity, its initial efforts were directed toward the achievement of strategic dominance in Eurasia. As the only feasible military counter to US strategic attack capabilities at that time, it also devoted a major effort to the development of air defense. From the first, however, the USSR almost certainly had the objective of developing an effective strategic attack capability against the continental US.

Long Range Aviation

19. In 1946 the USSR established Long Range Aviation as an independent operational command directly subordinate to the Ministry of Defense. The BULL piston medium bomber, a copy of the US B–29, was produced for the equipment of this force. The BULL, however, can have been regarded only as a convenient means of meeting an urgent interim requirement. Even while the buildup of BULL strength was in progress, the BADGER jet medium bomber was under urgent development. It went into large-scale production in 1954. The transition from BULLs to BADGERs in operational units proceeded steadily thereafter, in accordance with a smooth and orderly program. BULL strength was substantially maintained for several years, however, while the BADGER buildup was in progress. This overlap appears to reflect a desire to retain an established capability until an improved capability designed to supersede it had also become well established. As a result, Long Range Aviation reached a peak strength of nearly 1,400 BULL and BADGER medium bombers in 1957–1958. Since then BULLs have been phased out more rapidly: the mid-1959 medium bomber strength of Long Range Aviation is estimated to have been 225 BULLs and 1,050 BADGERs. The production of BADGERs has now ceased. Thus, when the last BULL has been phased out of Long Range Aviation in 1960, the net result will be the replacement of BULLs by BADGERs on virtually a one-for-one basis.

20. These medium bombers are best suited for operations in and near Eurasia. They are capable of reaching targets in the US if need be, but with few exceptions only on one-way missions.[7] For a more satisfactory capability against the US, the USSR required a heavy bomber. To meet this requirement, the BEAR turboprop and BISON jet heavy bombers were developed concurrently with each other and with the BADGER. There are indications that large-scale production of heavy bombers

[6] This concept is distinguished from preventive attack—that is, an attack deliberately planned, prepared, and initiated for the purpose of destroying an enemy's attack capabilities before they have been fully developed.

[7] For a graphic presentation of possible target coverage by particular bomber types from forward staging bases, with and without refueling, see Annex E.

7. *(Continued)*

was intended. However, BEAR production ceased after the completion of about 60 aircraft. Cumulative BISON production reached about 115 in mid-1959. It has been marked by numerous modifications of the aircraft and by low and fluctuating production rates. During the fall of 1959, the rate of production appears to have been one or two a month.

21. Some of the delays in BISON production were manifestly due to deficiencies discovered in the aircraft, but we believe that there has also been a Soviet change of mind about the heavy bomber program. Disappointment in the performance of the BEAR and BISON, consideration of concurrent and prospective improvements in the air defense of North America, and growing confidence in the development of an effective Soviet ICBM appear to have resulted in a Soviet decision to forego the rapid buildup of a heavy bomber force. Soviet heavy bomber strength is now about 80 BISONs and 40 BEARs in operational units.

22. The deployment of Soviet Long Range Aviation and the locations of forward staging areas in the Soviet Arctic are shown in Annex E. The estimated optimum performance characteristics of the BULL, BADGER, BISON, and BEAR are shown in Annex D.

23. The USSR has not developed a specific tanker aircraft to meet its inflight refueling requirement, but has developed such a capability through the conversion of BISON and BADGER bombers for use as tankers. All of the BISON regiments and about half of the BADGER regiments probably have this capability. The use of bombers as tankers would, of course, reduce the number available for use as bombers in any single attack.

24. Within the limitations of its bomber aircraft, Soviet Long Range Aviation is now a proficient force, although its training, basing and maintenance standards fall below those of the US Strategic Air Command. Its deployment and home base structure are adequate to support large-scale operations launched directly from these bases against Eurasian and peripheral targets. Its capabilities against the US are limited by the difficulty of staging through Arctic bases. In recent years, somewhat more realistic and larger scale training exercises have been conducted, and the scope and magnitude of Arctic operational training has increased. Electronic equipment for navigation, bombing, and ECM has been improved. Storage and loading facilities for nuclear weapons are probably now available at all home bases and some Arctic staging bases; we believe that crews have been trained in the handling, loading, and delivery of these weapons.

Naval and Tactical Aviation

25. In addition to those in Long Range Aviation, some 290 BADGERs have been assigned to Soviet Naval Aviation. These naval BADGER units are specially trained and equipped to attack naval targets: e.g., carrier task forces at sea. There are also some 120 BADGERs assigned to Soviet Tactical Aviation. In addition to medium bombers, Tactical and Naval Aviation are equipped with numerous light bombers whose range permits them to attack many targets in Eurasia and its periphery.

Air-to-Surface Missiles

26. The only Soviet air-to-surface missile now operational (AS–1) is a subsonic type with a range of 55 n.m. This missile was designed to deliver a 3,000 pound warhead against ships at sea. We estimate that about six BADGER regiments, two of them in Long Range Aviation and the remainder in Naval Aviation, are now equipped with these missiles and trained in their use. Assuming that unit holdings now average two AS–1 missiles per assigned aircraft, the present allocation to operational units would be some 350 missiles.

Ground-Launched Ballistic Missiles [8]

27. Through a well conceived program conducted with high priority since shortly after World War II, the USSR has developed

[8] For a more extensive discussion of missile characteristics and of our bases for estimation, see NIE 11–5–59, "Soviet Capabilities in Guided Missiles and Space Vehicles," dated 3 November 1959.

7. *(Continued)*

a family of short, medium, and long range surface-to-surface ballistic missiles. We estimate that a Soviet ballistic missile (SS–4) capable of delivering a 3,000 pound warhead to a maximum range of 700 n.m. with a CEP of 1–2 n.m. has been available for operational use since 1956. On the basis of available intelligence, we cannot judge the present scale of production. We have not identified any units equipped with such missiles, although there are indications that the USSR is deploying this type of weapons to East Germany. Considering the length of time available for their production and deployment in conjunction with Soviet requirements (see Section V, below), we believe that in mid-1959 the USSR probably had an operational inventory of some 150 SS–4 missiles and about 75 launchers.

28. We estimate that another ballistic missile (SS–5) capable of delivering a 3,000 pound warhead to a maximum range of 1,100 n.m. with a CEP of two n.m. became available for operational use in late 1958 or early 1959. A small number of such missiles were probably deployed by mid-1959.

29. The SS–4 is road mobile; the SS–5 may be road or rail mobile. Annex B shows the ranges of these missiles from positions near the borders of the USSR itself and of the Soviet Bloc.

30. The USSR is currently test firing an ICBM which we believe is capable of delivering a 6,000 pound warhead to a maximum range of 5,500 n.m. if employed with a heatsink nosecone.[9] Available evidence is believed adequate to gauge the general progress but not the precise timing of the Soviet program to develop an operational ICBM system. We believe, however, that for planning purposes it should be considered that Soviet achievement of an initial operational capability (IOC) with a few—say, 10—series produced ICBMs will have occurred by 1 January 1960.

[9] A reduction in warhead weight would permit an increase in range; use of an ablative nosecone would permit a heavier warhead or extended range.

31. We have no direct evidence of Soviet ICBM deployment concepts or of the intended nature of operational launching sites. In other Soviet ballistic missile systems, mobility has been stressed as a basic design consideration. The Soviet ICBM could be rail mobile, with multiple prepared launching positions consisting of little more than a concrete slab on a special spur track. Such a system would reduce vulnerability by making launching sites difficult to find and identify, and by rendering uncertain the location of the launching unit at any given time. In any case, whether the Soviet ICBM force employs fixed sites, or rail-mobility, or a combination of the two, it will be essentially dependent on the Soviet rail net.

32. In recent years there have been increasing indications of Soviet interest in developing a capability to launch guided missiles from submarines. We estimate that in a first effort, about two "W" class submarines were modified to launch, while surfaced, two subsonic cruise-type missiles (SS–7) capable of delivering a 2,000 pound warhead to a range of 150–200 n.m. with a 2–4 n.m. CEP. In a later effort, about four "Z" class submarines have been modified (by enlarging the sail) probably to launch two ballistic missiles each. These probably could not be launched while the submarine is submerged but it has not yet been determined whether the submarine would have to be fully surfaced, or only partially surfaced. We have no specific information to permit identification of missiles for this purpose, but we believe that compatible missiles may be capable of delivering a 2,000 pound warhead to a range of 200 n.m. (or less likely of 350 n.m.) with an operational CEP of 1 to 3 n.m. The most recent development is the appearance of a new class of conventionally-powered submarine—designated "G" class by US Intelligence—six of which are probably now in operation with the Fleet. Although the evidence in this case is not so convincing as in the case of the modified "Z" class, we evaluate the "G" class as probably having ballistic missile launching capabilities. Their very large sail, considerably higher and longer than that of the modified "Z" class, suggests

7. *(Continued)*

that they could each carry about five 350 n.m. missiles, although shorter or even longer range ballistic missiles are less likely possibilities. The warhead weight could be 2,000 pounds and the CEP under operational conditions 1 to 3 n.m.

Nuclear Weapons [10]

33. By an extensive series of tests begun in August 1949, the USSR has demonstrated its ability to provide high-yield nuclear weapons suited to the various delivery systems discussed in this estimate. On the basis of accuracy and payload, the ballistic and submarine-launched missiles considered will require nuclear warheads for effective employment under all but limited and special circumstances. We believe that in general the USSR will equip its ICBMs and submarine-launched missiles with warheads of the maximum yield attainable within the limits of its nuclear and missile technology. Warheads for 700 and 1,100 n.m. ballistic missiles, however, will probably be produced in a range of yields in order to provide operational flexibility, i.e., to permit selection of yield in accordance with the weapon effects desired at the time of attack.

34. We believe that nuclear bombs of high and medium yields are now the primary armament of Soviet Long Range Aviation, and that they have been provided to BADGERs of Naval and Tactical Aviation as well. Air-to-surface missiles employed against ships at sea could employ either HE or nuclear warheads of medium or low yields.

35. Considering the estimated availability of fissionable materials and the level of Soviet nuclear weapons technology, we believe that at present the USSR has sufficient nuclear weapons for a major attack by long range air and missile weapons systems, including sufficient nuclear warheads for its operational submarine launched missiles and ground-launched ballistic missiles of 700 n.m. range and greater.

[10] For a complete discussion of this subject including the yields to be expected from the bombs and warheads associated with particular delivery systems, as well as the estimated availability of fissionable materials in the USSR, see NIE 11-2-59, "The Soviet Atomic Energy Program," dated 16 June 1959 (Limited Distribution).

Soviet Evaluation of Current Capabilities

36. The Soviet rulers probably regard their current strategic attack forces as:

a. Adequate to deliver a devastating attack on US and Allied concentrations of population and industry;

b. Incapable of preventing, by military action, the nuclear devastation of the USSR.

37. From the political point of view, however, the Soviet rulers evidently consider that they have recently achieved a substantially increased deterrent against nuclear attack, and that this achievement marks a very important shift in the global "relation of forces." In their own minds (and in general world opinion) this shift is attributed primarily to their emerging capability with long range missiles, the effectiveness of which is assumed to have been demonstrated by the Sputnik and Lunik shots. Whatever their military values, the Soviets evidently regard ICBMs and medium range missiles as psychological and political weapons of first importance.

III. BROAD CONSIDERATIONS AFFECTING THE FUTURE COMPOSITION OF SOVIET STRATEGIC ATTACK FORCES

38. It is evident that the Soviet authorities do not regard increased numbers of their present bombers as the means of meeting their strategic attack requirements. The production of BEARs and BADGERs has stopped; the production of BISONs is minimal. The problem, then, is to estimate the relative extent to which the Soviets are seeking to meet these requirements through the development and production of improved bombers, of missile launching submarines, and of long range ballistic missiles.

39. As Western air defense continues to improve, time and vulnerability factors are rendering manned bombers progressively less adequate for most Soviet strategic attack missions. The improvements in Soviet bomber

7. *(Continued)*

weapons systems estimated for the next several years are not likely to alter this basic trend. An attacking bomber force could inflict appalling damage upon US concentrations of population and industry, paying to air defense the price of admission. However, because of US early warning capabilities and alert procedures, Soviet planners could not expect attacking bombers to reach US strategic attack force bases in time to prevent the launching of a large-scale nuclear retaliatory attack upon the USSR.

40. The missile-launching submarine could provide an effective means of attack on selected targets in the US. We believe that the USSR is developing such a capability and would use it in any strategic attack. The number of Soviet submarines that could be deployed in launching position off US coasts without undue risk of forfeiting strategic surprise would depend on the established pattern of their operations. At present, the number that could be so deployed is very small. It could be increased over the coming years. Soviet planning, however, does not appear to contemplate delivery of the main weight of an attack by this means.

41. Because the ICBM presents the best prospect of being able to deliver a heavy weight of attack within the least time after a decision to attack, we believe that the future development of Soviet intercontinental attack capabilities will be primarily a function of the development, production, and operational deployment of ICBMs. The initial limitations of the Soviet ICBM, in terms of reliability, accuracy, and numbers, will diminish as the weapon system is improved and as production and deployment proceed. Soviet programming of forces for strategic attack will be calculated in terms of an improving ICBM system.

42. Nevertheless, we expect the bomber strength of Long Range Aviation to remain fairly constant during the next year or two, although it will probably decline toward the end of the period. The USSR has a substantial investment in the aircraft, skilled personnel, and base structure of its present bomber force. These assets are not likely to be discarded. Observed Soviet military practice suggests that Long Range Aviation will be maintained as an effective force in being at least until an ICBM capability has become well established.

43. Even after a formidable ICBM capability has been established, the USSR will have a continuing requirement for manned bombers, though in lesser numbers. For some time to come, the bomber will be capable of delivering heavier payloads with greater accuracy than can the ICBM. It will continue to be indispensable in certain types of missions: e.g., against targets of uncertain location.

IV. INTERCONTINENTAL BALLISTIC MISSILES

44. Soviet planners would consider that any substantial Soviet ICBM capability would have important psychological and political effects, including a major deterrent effect on the US, and that these effects would increase with the size of the Soviet ICBM force. The crux of our problem is to estimate how much effort and sacrifice the USSR will make, and how rapidly, to build up its ICBM force in order to: (a) achieve a calculated military capability to destroy US nuclear retaliatory forces prior to launch, and (b) exploit its ICBM capability through political and other nonmilitary methods.

45. As an approach to this problem, we have calculated the approximate numbers of Soviet ICBMs that would be required on launcher in the USSR to give Soviet planners high assurance of being able to inflict severe damage on the bases and fixed installations associated with US nuclear retaliatory forces: SAC operational air bases, ICBM sites, naval bases, and command installations beyond the range of Soviet 1,100 n.m. missiles.[11] We have confined our analysis to the period 1960–1963, beyond which projections of Soviet ICBM characteristics and US target systems become much more uncertain.

[11] For a detailed analysis see Annex A. The estimated characteristics of the Soviet ICBM are given in Table B of that Annex.

7. *(Continued)*

46. Our analysis leads us to believe that in 1961 the USSR would have its most favorable opportunity, through a rapid deployment of operational ICBMs, to gain a decided military, political, and psychological advantage over the US. On the basis of an initial Soviet operational capability on 1 January 1960, it is highly unlikely that the USSR could deploy during 1960 a sufficient number of ICBMs to provide high assurance of being able to destroy a strategically significant proportion of the US nuclear retaliatory forces prior to launch. On the other hand, after 1961 the number of semihardened and hardened US ICBM sites programmed to become operational would result in a steep increase in Soviet requirements, despite the estimated improvement in the performance characteristics of the Soviet ICBM. Moreover, as the period advanced the US nuclear retaliatory force structure would presumably include airborne alert, increasing numbers of missile-launching submarines and possibly also some mobile intercontinental missiles, systems generally untargetable for ICBM attack. In these circumstances, a crucial question for this estimate is whether the Soviet rulers would consider it feasible to establish in 1961 an operational ICBM force which, in conjunction with other Soviet forces, would give the USSR such a military advantage as would enable it to impose its will on the US.

47. In this connection, Soviet planners would recognize that the ICBM weapon system is inherently limited to employment against targets whose precise locations are known in advance. In evaluating the strategic effect of an ICBM attack on such fixed installations, they would have to take into account the mobility of the forces based thereon and their reaction times. They would recognize that Soviet achievement of a capability to destroy air and naval bases could be considerably offset by US maintenance of sizable air and naval forces, airborne and at sea.

48. The planned fast reaction times of US nuclear retaliatory forces would require a high initial salvo capability in any ICBM force designed to be able to attack them prior to launch. For this reason, we assume that the USSR would provide launchers to accommodate approximately 75 percent of the ICBMs in its operational inventory, that is, the percentage of missiles expected to be serviceable at any given time. We also assume that Soviet ICBMs rated as reliable on launcher will actually leave the launcher within minutes of the scheduled time. The improbability of so precise a performance in so complex an operation is a factor which would tend to increase the number of ICBMs required on launcher, or conversely, to reduce Soviet assurance of being able to accomplish the desired effect with a given number of ICBMs.

49. Since the accuracy, reliability, and warhead yield of the Soviet ICBM are not precisely known, we have used as a basis for calculation two sets of performance characteristics, one the "best" and one the "worst" that can be derived from our estimate on this subject.[12] Calculations made on this basis are set forth in some detail in Annex A. It is emphasized that our estimate of the characteristics for the Soviet ICBM does not correspond directly with either the "best" or the "worst" characteristics used for these calculations. (For a summary of our actual estimate, see footnote (a) to Table B in Annex A.) Accordingly, the illustrative calculations that follow cannot be directly correlated with the

[12] "Best" Missile

	1 January 1960	*Mid-1963*
CEP (n.m.)	3	1.5
In Flight Reliability (percent)	75	85

"Worst" Missile

	1 January 1960	*Mid-1963*
CEP (n.m.)	5	2.5
In Flight Reliability (percent)	55	70

(See USIB Memorandum to Holders of NIE 11-5-59, dated 19 January 1960. For the CEP of the best missile for 1963 we are using 1.5 n.m. In the Memorandum for Holders, it is stated that "probably not later than during 1963, the operational CEP for an all-inertial system could be reduced to about 2 n.m., and the operational CEP of the radio-inertial system would be somewhat better.")

7. *(Continued)*

capabilities of the probable Soviet ICBM program which appears in paragraph 61.

50. On the basis of the "best" missile characteristics of the 1961 Soviet ICBM a program to provide 225 ICBMs on launcher in mid-1961 would give the USSR a very high assurance of being able to inflict severe damage on SAC operational air bases, unhardened command and control installations, and unhardened ICBM sites beyond the range of 1,100 n.m. missiles. On the basis of the "worst" missile characteristics of the 1961 Soviet ICBM, a program to provide 470 ICBMs on launcher would give the same levels of assurance of these results.

51. If the USSR were to exercise this attack capability, however, it would still have to expect retaliation from bombers then on airborne alert, from all or some of the few semihardened and hardened ICBM sites then operational, and from aircraft carriers and missile-launching submarines then at sea. Moreover, even at high levels of statistical assurance, a small proportion of the targeted US retaliatory capabilities would remain after the original salvo.

52. If the Soviets were to raise their sights higher and seek to provide a very high degree of assurance of severe damage on hardened and semihardened as well as on unhardened ICBM sites and air and naval bases, the requirements in mid-1961, still assuming complete surprise, would be 480 "best" ICBMs on launcher or 1,340 "worst" ICBMs on launcher. It can be seen that the needs rise steeply with the number of hardened and semihardened sites considered for attack, and that the amount of assurance gained per additional missile falls off sharply.

53. Any force goal of the magnitude of 480 ICBMs on launcher by mid-1951 could be realized only through a crash program requiring diversion of resources from other programs to which the Soviet rulers have attached great importance, and a high level of activity that would tend to stimulate US countermeasures. There is no indication that such a Soviet effort is now underway. The Soviet leaders would probably take into account that the US might, by adopting such measures as a continuous airborne alert, or a marked acceleration of the construction of hardened ICBM sites, nullify a large part of the advantage they had expected from their numbers of missiles.

54. Finally, the assumption of complete strategic and tactical surprise underlying the above calculations must be subject to some degree of discount by the Soviet rulers. They would have to expect that any tentative warning, even any suspicion, that they intended to attack the US, would lead to an augmentation of US capabilities for deriving further warning, as well as to a heightened alert of SAC and other US retaliatory forces. For as long as the alert posture could be maintained, a substantial proportion of these forces could be placed in a position which would enable them to avoid missile attack. Thus the Soviet rulers would have to consider that in any period of unusual tension between the US and USSR the vulnerability of US forces to attack would almost certainly be diminished. With all these factors in mind, we conclude that the Soviet leaders would be unlikely to take the measures necessary to achieve a force goal of the magnitude of 480 ICBMs on launcher by mid-1961.

55. Every present indication suggests that the Soviet ICBM program, while not a crash program, is designed to provide a substantial ICBM capability at an early date. The goal of the program is probably an ICBM force as large as Soviet planners deem necessary to provide a substantial deterrent and pre-emptive attack capability. In our view, this would be consistent with the present deliberate and orderly tempo of the Soviet ICBM test-firing program, with current Soviet military doctrine, and with the USSR's observed policy of maintaining a balance among military capabilities designed to accomplish various missions.[13]

56. Regarding the scope of a program of even this more limited sort, the many uncertainties in available knowledge require that we allow for a wide range of possibilities. For

[13] The Assistant Chief of Staff, Intelligence, USAF, does not concur in this paragraph. See his footnote to paragraph 5 of the Conclusions.

7. *(Continued)*

example, calculations could allow for the existence and operation of one or more plants. On the assumption that one large final assembly plant is already in operation and building up to a peak production rate of 15 ICBMs per month, with a program for the construction of launchers and associated equipment and facilities already begun, and building up to a peak completion rate of nine launchers per month, the following would result:

ICBMs	*Mid-1960*	*Mid-1961*	*Mid-1962*	*Mid-1963*
Produced	60	230	410	560
In Inventory	50	175	325	450
On Launcher	35	140	250	350

57. This would be a vigorous program, but one which, in conjunction with other major military programs, could be carried out without appreciable hindrance to presently planned Soviet industrial and construction programs.[14] Its accomplishment would require highly effective planning, operations, and coordination in order to produce ICBMs and ground equipment, to construct launching facilities, and to train operating personnel in relatively short periods of time. We have made no allowance for serious breakdowns, bottlenecks, or other interruptions, although we recognize that such delays are usual in programs of this nature. If such difficulties occurred, the number of missiles and launchers would lag behind the schedule set forth.

58. To expand this ICBM program appreciably in the early years would introduce considerably greater, though not insurmountable, difficulties. A larger number of missiles could be provided by bringing a second large final assembly plant into production. Deliveries from this plant to operational units would probably begin 6 to 9 months after initial operational deliveries from the first plant. This interval would be the minimum lag consistent with obtaining satisfactory production from the second plant. Assuming a reasonably rapid production buildup, use of the two plants could increase the number of ICBMs about as follows:

ICBMs	*Mid-1960*	*Mid-1961*	*Mid-1962*	*Mid-1963*
Produced	60	350	550	700
In Inventory	50	270	450	560
On Launcher	35	200	350	450

The production of these missiles, however, would have little significance without a corresponding launcher construction program, including production of related ground support, launching, and guidance equipment. Even if the sites were unhardened, to provide the required launching facilities by mid-1961 up to 100 should be under construction simultaneously by the last half of 1960, presumably at widely dispersed sites. Furthermore, the task of training operating and maintenance personnel would be difficult to accomplish on this scale so soon after attaining an initial operational capability.

59. The military capabilities represented by these two ICBM programs depend greatly upon the operational characteristics of the ICBM which is produced. By way of illustration, the following table shows the statistical level of assurance of inflicting severe damage on SAC operational air bases which would be given by the programs in mid-1961:

	"Best" Missile	*"Worst" Missile*
200 missiles on launcher in mid-1961	95 percent	70 percent
140 missiles on launcher in mid-1961	85 percent	55 percent

It should be emphasized that this is merely an example; we do not attempt to estimate what the Soviet strategic concept for the employment of ICBMs would be, or what degree of assurance Soviet planners would consider necessary. Moreover, as noted earlier, the proportion of US retaliatory forces destroyed (as distinguished from the number of SAC bases hit) would depend on the degree of surprise achieved, and the precision with which the attack was timed.

60. In deciding on the magnitude and pace of its ICBM program, Soviet planners would take into account their other weapons systems

[14] For a detailed treatment of the economic aspects of this ICBM program, together with the other Soviet programs for strategic attack forces estimated in this paper, see Annex C.

7. *(Continued)*

for strategic attack—notably, long range bombers and missile-launching submarines. They would recognize that, in addition to the damage which could be inflicted in specific target areas, there would be millions of casualties and widespread denials from fallout. We believe that they would regard the capabilities represented by either ICBM program as constituting a substantial deterrent and preemptive attack capability.

61. We conclude that the probable Soviet ICBM program would provide on the order of 140–200 ICBMs on launcher in mid-1961. Within this range, the Assistant Chief of Staff for Intelligence, Department of the Army, and the Assistant Chief of Naval Operations for Intelligence, Department of the Navy, estimate that the Soviet program is likely to be toward the low side. The Director of Intelligence and Research, Department of State, the Assistant Chief of Staff, Intelligence, USAF, and the Director for Intelligence, The Joint Staff, believing that Soviet planners would regard the advantages to be gained as justifying additional effort, estimate that the number of Soviet ICBMs on launcher is likely to be towards the high side of the 140–200 range.

62. As stated above, the military capabilities which the Soviets would acquire with this ICBM program would depend greatly upon the performance characteristics of the missile. However, by the end of 1960, the Soviets could with no more than 50 ICBMs on launcher—whether with the best or worst performance characteristics—have a high assurance of detonating an ICBM over each of the 25 principal US metropolitan areas. Thus they will possess a political and psychological weapon of great consequence in every international relationship. By 1961, the estimated Soviet program will present an extremely dangerous threat to SAC air bases.

63. The development of the Soviet ICBM force beyond 1961 would be likely to be affected by such considerations as the actual development of the target system to be attacked, the prospects for a greatly improved Soviet ICBM, and the prospects (on both sides) for an effective anti-ICBM, as well as by the general development of the world situation and of relations between the US and the USSR. Any figures for future years should be reviewed in the light of such considerations and of evidence on the actual progress of the Soviet ICBM program. Projecting our estimates of the present ICBM program (and assuming that if the USSR has approximately 200 ICBMs on launcher in mid-1961 production would substantially level off in the subsequent two years) the most likely number of Soviet ICBMs on launcher in mid-1962 would be 250–350 and in mid-1963 would be 350–450.[15]

V. MEDIUM RANGE BALLISTIC MISSILES

64. Within the range of the Soviet 700 n.m. (SS–4) and 1,100 n.m. (SS–5) ballistic missiles, the distinction between strategic and tactical targets is slight. During the next five years, existing Western strategic and tactical air and missile bases in areas peripheral to the Bloc will be augmented by additional deployment of ground launched surface-to-surface missiles, a few of which may be in hardened sites by the end of the period. Factors of timing and security, as well as the programmed improvement in Western air defenses, will make it increasingly desirable that an initial Soviet attack against these peripheral retaliatory capabilities be delivered primarily with medium range ballistic missiles. Numerous bombers, as well as shorter range missiles, will be available throughout the period for use in initial or follow-on attacks as needed and for other related missions.

65. We believe the Soviets will seek to deploy SS–4 and SS–5 missiles and launchers in sufficient quantities so that, in an initial salvo, they would have 70–90 percent assurance of inflicting severe damage on Western retaliatory air bases and unhardened missile sites within range. Considering the potential target coverage of these missiles when launched from Soviet territory (see Annex E), we calculate that for this purpose the USSR would need to have on launcher in 1960 about 110 SS–4 missiles plus an equal number of SS–5

[15] The Assistant Chief of Staff, Intelligence, USAF, does not concur in the last sentence of this paragraph. See his footnote to paragraph 5 of the Conclusions.

7. *(Continued)*

missiles, all equipped with high-yield warheads. As both missile characteristics and the target system changed, the required number of SS–4 missiles on launcher would increase to about 150 in 1962 and after, while the SS–5 requirement would decrease to 100 or less from 1961 on.[16]

66. As in the case of the ICBM system, the major problems in building operational capabilities with medium range ballistic missiles lie in the preparation of launching facilities, establishment of logistic support, and activation and training of units, rather than in the production of the missiles themselves. We estimate that with relatively modest SS–4 and SS–5 programs, the Soviets could meet the calculated requirement for an initial attack against land-based retaliatory targets within 700 n.m. of the USSR from about 1960 on, and against such targets within 1,100 n.m. from about 1961 on. The following numbers of missiles on launcher are therefore estimated as comprising a Soviet initial salvo capability over the next five years:

	Mid-1960	*Mid-1961*	*Mid-1962*	*Mid-1963*	*Mid-1964*
SS–4 (700 n.m.)	110	150	150	150	150
SS–5 (1,100 n.m.) ...	50	100	100	100	100

67. The initial salvo capability estimated above represents only part of a larger Soviet need for medium range ballistic missiles. It is probable that the USSR is also producing such missiles for subsequent use in the initial phase of a general war and for employment in later phases of a sustained conflict. (They would probably allocate warheads of less than maximum yield to these purposes.) Assuming that to meet these needs as well as those of an initial salvo the USSR produces and deploys three SS–4 and SS–5 missiles per launcher, we estimate that a reasonable buildup in medium range ballistic missiles from present strengths would result in total operational inventories as shown in the table below. Should changing circumstances require somewhat greater numbers of missiles or even launchers, their production and deployment by 1964 would not present serious difficulties to the USSR.

	Mid-1960	*Mid-1961*	*Mid-1962*	*Mid-1963*	*Mid-1964*
SS–4 inventory[17] ...	250	350	450	450	450
SS–5 inventory[17] ...	80	160	240	300	300

VI. LONG RANGE AVIATION

Medium Bombers

68. The history of the BULL and BADGER suggests that hitherto the Soviets have estimated their standing requirement for medium bombers in Long Range Aviation at about 1,100 aircraft. As medium and long range ballistic missile units become an increasingly effective operational force, this requirement will tend to diminish. We estimate that the medium bomber strength of Long Range Aviation will gradually decline to about 800 in mid-1964.

69. Following a rapid buildup in 1958, the number of BADGERs in Naval and Tactical Aviation has recently tended to level off. We estimate that in mid-1960 the BADGER strength of these components will be about 350 and 120, respectively. It will probably not decline during the period, and there is a possibility that it will be increased through reassignment of BADGERs from Long Range Aviation. The medium bombers of Tactical and Naval Aviation, together with their light bombers, will contribute to Soviet capabilities for attack on naval task forces and Eurasian targets, rather than on targets in the US.

70. We consider it possible that the USSR will develop a medium bomber capable of supersonic dash. On the basis of present indications, such a bomber would be unlikely to be-

[16] Calculations were made in a manner comparable to that employed to derive ICBM requirements, using characteristics estimated for the Soviet missile systems in NIE 11–5–59, and planned and programmed Western retaliatory forces. The considerations set forth in paragraph 48 would apply here also.

[17] Operational inventories include missiles on launcher given in paragraph 66, plus additional missiles per launcher for purposes other than initial salvo. Total production of these missiles would be larger to provide for training, replacement, test firing, etc.

come available for operational use until 1962 or later. Its performance characteristics might be as shown in Annex D. If it is introduced into operational units, a total of 100 or so might be provided for highly specialized uses.[18]

Heavy Bombers

71. We estimate that Soviet heavy bomber strength will increase to about 150 in 1961, but that it will gradually decline thereafter, to about 120 in mid-1964. This estimate is based on the belief that no more than two BISONs per month will be produced over the next year or so, and that their production will then cease.[19] [20]

[18] The Assistant Chief of Staff, Intelligence, USAF, believes that the Soviets have a positive requirement for a bomber with supersonic dash capability for employment by Long Range Aviation, primarily in the advance wave(s) of strategic bomber strikes. Considering recent reports and sighting of new bomber types, and historical and continuing Soviet interest in the bomber as a strategic weapon delivery system, and the accepted technical capability of the USSR to develop and produce a supersonic dash bomber, the Assistant Chief of Staff, Intelligence, USAF, believes that the introduction of a supersonic dash bomber into operational units is likely by 1962.

[19] The Assistant Chief of Staff, Intelligence, USAF, believes that the Soviets will have a requirement for a larger heavy bomber force during the period of this estimate than that estimated above. He believes that the level and type of activity of the present Soviet heavy bomber force as well as the continued production of BISON bombers indicate a further buildup. He further believes that BISON-type bombers will be produced at the rate of two or more per month over the next few years.

[20] The Assistant Chief of Staff for Intelligence, Department of the Army, cannot concur in this estimate of an increase in operational heavy bomber strength, which would reflect an increase of 25 percent within the next year and a half over the current estimated strength of about 120 (paragraph 21.) This nonconcurrence is based on the following factors:

a. The trend in annual BISON production has been downward since the peak production year of 1957; the increase to 150 implies a general reversal of this trend.

b. The total of 150 presumably would include the same 40 BEARs now estimated to be in operational units, an aircraft which will then have been out of production for over four years. Thus, the increase estimated has either to assume a still greater BISON production rate or to assume that no BEARs are withdrawn or otherwise go out of service in the next year and a half. The former assumption would suggest an even sharper reversal of observed trends, while the latter assumption is hardly reasonable.

c. The apparent conflict with production trends referred to above could presumably be overcome and the force increased by adding bombers which have been produced but are not now in operational status. However, such action would also reverse a longstanding practice for no apparent reason, unless, contrary to our estimates, the Soviets associate special significance with the date, mid-1961.

d. The apparent emphasis on a buildup of Long Range Aviation heavy bomber strength, implied by a 25 percent increase, conflicts with judgments elsewhere in this NIE (paragraph 38) that the Soviets do not regard increased numbers of their present bombers as the means of meeting their strategic attack requirements and that they will commence a substantial buildup with ICBM's during the same period.

Based on analysis of the foregoing factors, the Assistant Chief of Staff for Intelligence, Department of the Army, concludes that Soviet heavy bomber strength probably will remain relatively unchanged over the next year and a half, and then, with the probable cessation of BISON production and increasing age of the BEAR, will decline rather rapidly. In his view, future heavy bomber strength will approximate the following:

Mid-1960	*Mid-1961*	*Mid-1962*	*Mid-1963*	*Mid-1964*
125	115	100	75	75

72. A better than marginal improvement over present Soviet heavy bombers could be achieved by the development of a nuclear powered aircraft. Such a bomber could derive tactical advantages from its virtually unlimited range and its concomitant ability to make very low altitude penetrations. Although there are indications of Soviet interest in nuclear-powered aircraft, no specific Soviet program directed toward the development of such an aircraft has yet been identified. We believe that the Soviets have such a program underway, but believe it unlikely

7. *(Continued)*

that they will have any nuclear-powered bombers in operational status within the period of this estimate.[21]

73. In sum, we estimate the operational strength of Soviet Long Range Aviation, including BISON and BADGER tanker-bombers, will be about as shown over the next five years:

	Mid-1960	*Mid-1961*	*Mid-1962*	*Mid-1963*	*Mid-1964*
Heavy Bombers[22][23]					
BISON and BEAR	135	150	140	130	120
Medium Bombers[a]					
BADGER ..	1,100	1,050	1,000	900	800
Total	1,235	1,200	1,140	1,030	920

[a] There might be a few supersonic "dash" medium bombers in 1962, perhaps increasing to 100 or so in 1964, in which case we would expect a corresponding decrease in the number of BADGERs.

Air-to-Surface Missiles

74. There may be some further increase in the number of BADGER regiments equipped with the currently available subsonic air-to-surface missile (AS–1), but its limited range and utility argues against its production and deployment in large numbers. On this basis, we estimate that an operational inventory of some 500 will be maintained during the early 1960's. A portion of these missiles will probably be equipped with nuclear warheads of low and medium yields, the remainder employing HE.

75. The USSR has need of an improved air-to-surface missile, for use against well-defended targets on land as well as against ships at sea. We believe that such a missile (AS–2) is now under active development, and that it will probably become operationally available in 1961. It will probably be capable of delivering a 3,000 lb. warhead to a range of at least 350 n.m. at supersonic speed (Mach 1.5–2). This missile would presumably be designed to be carried by any medium or heavy bomber operational during the period 1961–1964. Assuming the replacement of AS–1 and an allocation to heavy bombers, we estimate that by mid-1964 some 600 or more AS–2 missiles will have been supplied to operational units. High yield nuclear warheads will probably be provided for those missiles intended for use against land targets. Medium and low yield nuclear warheads, and possibly HE warheads, are likely to be allocated for antiship use.

76. In the absence of evidence, but on the basis of operational desirability and technical feasibility, we estimate that the USSR may now have available air-launched decoys to simulate medium or heavy bombers. Such decoys could be carried along with a bomb load.

VII. SUBMARINE-LAUNCHED MISSILES

77. We believe that the USSR is proceeding with the development of submarines expressly designed to launch missiles and of improved missiles for them to employ. In view of operational considerations, the most desirable new system would be a nuclear-powered submarine capable of launching, while submerged, ballistic missiles of at least 500 n.m. range. On the basis of Soviet technical capabilities, we estimate that in 1961–1963 the USSR could have available for operational use a submarine-launched ballistic missile (SS–9) capable of delivering a 1,000 lb. warhead to a range of 500–1,000 n.m. with a CEP of 2–4 n.m. Present indications are that the Soviet nuclear-powered submarine program is sufficiently far

[22] The Assistant Chief of Staff, Intelligence, USAF, believes that in view of the tactical and psychological advantages of a nuclear-powered bomber, the state of Soviet aviation and nuclear technology and the evident Soviet interest in the development of such an aircraft that a small number of nuclear bombers may appear in operational status by the end of the period of this estimate.

[23] The Assistant Chief of Staff, Intelligence, USAF, believes that this table should read:

	Mid-1960	*Mid-1961*	*Mid-1962*	*Mid-1963*	*Mid-1964*
Heavy Bombers ..	135	150	175	200	200

[24] For the view of the Assistant Chief of Staff for Intelligence, Department of the Army, see his footnote to paragraph 71.

7. *(Continued)*

advanced so that the SS–9 missile could be incorporated as soon as the missile becomes available. A nuclear-powered submarine could probably carry 6–12 such missiles.

78. In the absence of direct evidence, but considering the potential value of the weapon system, we have assumed an active current development program which would make a nuclear submarine/ballistic missile system ready for operational use in 1961. Thereafter, in a reasonable construction program, the Soviets could probably introduce a few such submarines into operational units annually, while continuing the construction of nuclear submarines equipped with torpedoes.[24] On this basis, we estimate that about 14 nuclear-powered submarines equipped with 500–1,000 n.m. missiles will be operational in 1964. With proper operating procedures and alternate crews, a considerable portion of this number—perhaps half—could be deployed off US coasts at all times, should the Soviets so desire.

79. The foregoing weapon system is complicated and expensive, and will probably increase in number relatively slowly. In the next few years, the USSR will therefore probably build a limited number of new, conventionally powered submarines designed to launch ballistic missiles. The capability acquired through such an interim program would probably be retained to supplement Soviet strength in nuclear-powered missile submarines. The USSR would probably also retain converted missile submarines during a buildup in new submarines. We believe a reasonable allocation of missiles (excluding those for training and other noncombat purposes) would provide a number sufficient for about two combat patrols per submarine.

80. On the basis of the preceding discussion (see also paragraph 32) we project as follows the numbers of ballistic missile-launching submarines and their missiles, in Soviet operational units, through mid-1964:

Missile subs Missiles allocated	*Mid-1960*	*Mid-1961*	*Mid-1962*	*Mid-1963*	*Mid-1964*
Nuclear-powered	..	2	6	10	14
500–1,000 n.m.[25]	..	24–48	72–144	120–240	168–336
Conventional ("G")	9	15	18	18	18
350 n.m.	90	150	180	180	180
Converted ("Z")	4	4	4	4	4
200 n.m.	16	16	16	16	16

[24] For a fuller discussion of estimated Soviet capabilities and programs for nuclear-powered submarines, see the forthcoming NIE 11–4–59, "Main Trends in Soviet Capabilities and Policies, 1959–1964."

[25] This missile system (SS–9) may not be available until as late as 1963, in which case the missile used in the "G" class might be used in this submarine.

7. *(Continued)*

~~TOP SECRET~~

ANNEX A

CALCULATIONS OF SOVIET ICBM REQUIREMENTS

~~TOP SECRET~~

7. *(Continued)*

~~TOP SECRET~~

ANNEX A

CALCULATIONS OF SOVIET ICBM REQUIREMENTS

1. As an aid toward the estimation of the force goal of the present Soviet ICBM program, we have made calculations of the numbers of Soviet ICBMs that would be required, in each of the years covered by this estimate, to provide high assurance of being able to accomplish certain specific strategic purposes. We have considered three illustrative cases, as follows:

Case A: The number of ICBMs required to provide at least 90 percent assurance of being able to inflict severe damage on SAC operational air bases, unhardened US ICBM sites, and unhardened command installations beyond the range of 1,100 n.m. missiles. This concept would leave other targets (e.g., naval bases and semihardened and hardened targets) to attack by missile-launching submarines and bombers.

Case B: To provide at least 90 percent assurance of being able to inflict severe damage on semihardened and hardened as well as unhardened US nuclear retaliatory force targets, including naval bases.

Case C: To provide at least 50 percent assurance of being able to inflict severe damage on hardened US retaliatory force targets and a 70 percent assurance with respect to others, leaving naval bases to attack by other means.

2. Since the accuracy, reliability, and warhead yield of the Soviet ICBM are not precisely known, we have used as a basis for calculation two sets of performance characteristics, one the "best" and one the "worst" that can be derived from the USIB "Memorandum to Holders of NIE 11-5-59," dated 22 January 1960. It is emphasized that our estimate of the characteristics for the Soviet ICBM does not correspond directly with either the "best" or the "worst" characteristics used for these calculations. (For a summary of our actual estimate, see footnote (a) to Table B in this Annex.) Accordingly, the illustrative calculations that follow cannot be directly correlated with the capabilities of the probable Soviet ICBM program which appears in paragraph 61.

3. In introducing the numbers derived from these calculations, we must draw particular attention to the essential distinction between the effect of the detonation of a single Soviet ICBM on a target and the number of ICBMs required to give Soviet planners a desired level of *assurance* of being able to achieve that effect. It is with the latter order of numbers that Soviet planners would be concerned in establishing Soviet ICBM force goals.

4. As noted in the Foreword, our calculations are especially sensitive to possible differences between our assumptions and those actually made by Soviet planners with respect to the future performance characteristics of the Soviet ICBM and to the future development of US retaliatory forces. In any case, we must emphasize that the numbers resulting from our calculations are to be regarded only as approximations. Soviet planners, if they have made similar calculations, have undoubtedly arrived at somewhat different numbers. On the whole, however, we believe that their orders of magnitude would be the same as ours.

5. The target systems against which we have calculated Soviet ICBM requirements consist exclusively of fixed installations: SAC operational air bases, ICBM sites, naval bases, command installations. An inherent limitation of the ICBM is that it can be employed only against targets the precise locations of which are known in advance. In evaluating the

7. *(Continued)*

strategic effect of an ICBM attack on such fixed installations, Soviet planners would have to take into account the mobility of the forces based thereon and their reaction times. For example, the primary object of an ICBM attack on a SAC base would be the destruction of bombers prior to take off, but only such bombers as were present on the ground at the time of the attack could be destroyed. Similarly, an attack on naval bases could have no immediate effect on aircraft carriers and missile-launching submarines at sea. Soviet planners would have to consider that Soviet achievement of an ICBM capability to destroy air and naval bases could be considerably offset by US maintenance of sizable air and naval forces airborne and at sea.

6. In any case, the planned fast reaction times of US nuclear retaliatory forces would require that a Soviet ICBM attack be delivered in an initial salvo. For this reason, we have assumed that the USSR would provide sufficient launchers to accommodate all the ICBMs expected to be in commission at any given time. Our calculations have also assumed that Soviet ICBMs rated as reliable on launcher will actually leave the launcher within minutes of the scheduled time.[26] We are unable to quantify any allowance which should be made for the improbability—for technical or other reasons—of so precise a performance in so complex an operation. It is a factor which would tend to increase the number of ICBMs on launcher required, or conversely, to reduce the Soviet assurance of being able to accomplish the desired effect with the numbers of ICBMs indicated.

[26] This assumption presupposes advance preparations to maximize readiness.

7. With respect to US ICBMs, our calculations take into account only the Atlas and Titan programs. Soviet requirements are likely to be increased, beginning in about 1963, by the growing but as yet uncertain number of hardened Minuteman sites becoming operational. To this extent, the Soviet ICBM requirements which we show for mid-1963 are low.

8. With these cautionary observations, we present in Table A the numbers of Soviet ICBMs which we calculate would be required in each of the cases specified in paragraph 1, through mid-1963.

9. As indicated above, Case A leaves naval bases, hardened and semihardened installations to attack by means other than ICBMs. The greatest portion of the Case A requirement therefore comprises the ICBMs needed on launcher to achieve at least 90 percent assurance of inflicting severe damage on SAC operational air bases alone. The on launcher requirement against these bases would be as follows:

	Mid-1960	*Mid-1961*	*Mid-1962*	*Mid-1963*
"Best" Missile	[			]
"Worst" Missile	[			]

10. It is clear that as the Soviet ICBM is improved, the number required to achieve a stipulated effect against a relatively static target system will decline, as in Case A. At the same time, however, the overall US nuclear retaliatory force base structure will be growing, dispersing, and hardening, with a resultant steep increase in overall Soviet ICBM requirements, as in Case B.

7. *(Continued)*

METHODOLOGY

11. There follows a detailed explanation of the method whereby the numbers given in paragraph 9 and Table A were calculated.

Basic Data

12. Three types of data were used to calculate Soviet requirements for ICBMs in operational inventory through the period of this estimate. These are:

a. the characteristics and performance of the Soviet ICBM weapon system under operational conditions;

b. the target systems which we believe the Soviets would consider appropriate to particular strategic purposes, as set forth in paragraph 1;

c. the appropriate degree of assurance of attaining a given level of damage on these target systems, as set forth in paragraph 1.

13. The characteristics of the weapon system which bear most heavily on the number of Soviet ICBMs needed to accomplish certain military objectives are accuracy, warhead size, reliability, and in-commission rate. Values for these characteristics used in the calculations are shown in Table B.

14. The improving weapon characteristics thus described have in both cases the effect of decreasing the number of ICBMs required to inflict a given level of damage on a given target. During the time period under consideration, the increase in accuracy reduces the number of weapons required to fall in the area of certain targets. The growth of the on launcher and in-flight reliabilities decreases the number of missiles on launcher required per missile arriving in the target area. Improvement in the in-commission rate reduces the number of spare missiles in operational inventory per launcher.

Requirements Against US Retaliatory Bases

15. One basic military target system was used in calculating ICBM requirements, although some types of targets were omitted for certain variations of strategic attack, as indicated in para. 1. The basic military target system includes all installations, beyond the range of Soviet 1,100 n.m. missiles, which possess an immediate retaliatory capability against the USSR. According to present US plans and programs, these targets will increase rapidly in number and change markedly in character throughout the period of this estimate. By 1962, US ICBM launching sites will begin to constitute a major element of the target system. Moreover, since most such sites becoming operational in 1961 and after will be hardened and dispersed, they will be increasingly difficult to destroy. The following summary of the basic military target system for ICBM attack illustrates its changing character:

Type of Target	*Number of Aiming Points*			
	1960	*1961*	*1962*	*1963*
Unhardened ICBM Sites ..	3	9	9	9
Semihardened ICBM Sites .	0	9	36	36
Hardened ICBM Sites	0	3	33	90
SAC Operational Bases	55	63	63	63
Naval Bases	10	10	10	10
Command and Control Installations	4	4	4	4

The foregoing list does not include improved ICBMs now in relatively early stages of research and development, which may begin to be deployed in hardened sites and possibly mobile units as well in the 1962–1963 period. Soviet planners would have to take into account the possibility that these would cause a further sharp increase in requirements.

16. The number of weapons required is also a function of the desired degree of advance assurance that a given level of damage will be inflicted on a specific target. The degree of assurance, say 90 percent, of inflicting a given level of damage on a single target expresses the likelihood that in a large number of such attacks, at least 90 percent of the time the target will receive such damage. In any given attack the target might be subjected to a lesser level of damage or might receive far more damage than intended. The effect of reducing the degree of assurance is to reduce the number of missiles necessary to accomplish the objective. For example, if the degree of assurance against the targets con-

7. *(Continued)*

sidered in Case B were reduced from 90 to 70 percent, the number of missiles required on launcher would be cut in half; if assurance were reduced from 90 to 50 percent, the number of missiles required on launcher would be cut to a third.

17. The criterion of severe damage was used in the calculations of requirements for the target systems discussed. This criterion, as used by US military planners, calls for the following damage on various types of targets:

Type of Target	
Unhardened ICBM Site	Overturning erected missiles, causing severe damage to nearby above ground facilities.
Semihardened ICBM Site	[ ]
Hardened ICBM Site	[ ]
Airbases	Damage to parked aircraft so as to require depot repair and moderate to severe damage to above ground facilities.

18. The following procedure was used to calculate the numbers of ICBMs and launchers required in each year from 1960 to 1963:

a. using the estimated accuracy, yield, and reliability of the Soviet ICBM, calculate the numbers of ICBMs required on launcher to attain the stipulated degree of assurance that severe damage will be inflicted on a single target of each type;

b. multiply each of these numbers by the number of targets of each type in a given target system;

c. total these products to obtain the numbers of ICBMs required on launcher for the entire target system;

d. using the estimated in-commission rate, calculate the size of the operational inventory needed to meet the on launcher requirement at any given time;

e. allowing a minimal additional quantity of missiles (15–20 percent) for testing, training and quality control, and to account for major maintenance and normal attrition, calculate the required total production of ICBMs.

19. It should be emphasized that the numbers of missiles required for a given year, as calculated below, are for an operational weapon system with the characteristics estimated for the particular year. In any given year, some of the missiles in operational inventory will have been produced in earlier years. If all operational missiles were not modernized to attain the characteristics estimated for the year under consideration, a greater number would be required to accomplish the objective under consideration. Moreover, to the extent that the training and proficiency of the operating crews had not reached the standards implied in the estimated characteristics of the weapon system, a greater number of missiles would be required.

Requirements Against US Metropolitan Areas

20. We have also considered the number of ICBMs which would be required to give Soviet planners high assurance of being able to deliver a devastating ICBM attack on US concentrations of population, industry, communications, and government facilities. We find that about 35 percent of the total US population and about 60 percent of US defense manufacturing facilities are concentrated in 25 urban-industrial areas. Beyond this number of metropolitan areas, the concentration of population and industry falls off rather sharply. These 25 principal urban-industrial areas are:

New York	Baltimore
Chicago	Washington
Los Angeles	Buffalo
San Francisco	Milwaukee
Philadelphia	Cincinnati
Detroit	Hartford
Cleveland	Akron
Pittsburgh	Flint
Boston	Dayton
St. Louis	Youngstown
Minneapolis	Toledo
Indianapolis	Houston
Providence	

If the Soviets desired at least 70 percent assurance of detonating one ICBM over each of these metropolitan areas, the on launcher requirement for a single salvo would be no more than 50 from 1960 on.

7. *(Continued)*

TABLE A

	"BEST" MISSILE [a]				"WORST" MISSILE [a]			
	Mid-1960	*Mid-1961*	*Mid-1962*	*Mid-1963*	*Mid-1960*	*Mid-1961*	*Mid-1962*	*Mid-1963*
CASE A [b]								
On Launcher	[							]
In Inventory [c]								
Produced								
CASE B [b]								
On Launcher	[							]
In Inventory								
Produced								
CASE C [b]								
On Launcher	[							]
In Inventory								
Produced								

[a] See paragraphs 1 and 12 of this Annex.

[b] For definitions, see paragraph 1 of this Annex.

[c] In this table, the numbers of ICBMs "in inventory" are those which would need to be assigned to operational units in order to have the required numbers on launcher at any given time. The relationship between missiles in inventory and on launcher reflects the in-commission rate, estimated in NIE 11-5-59 to increase from 70 percent at IOC to about 80 percent in 1963. The total number of ICBMs produced would include the additional missiles required for testing, training, and quality control, and to allow for major maintenance and normal attrition. We have assumed a minimal additional quantity for these purposes (15-20 percent).

7. *(Continued)*

TABLE B *

Characteristic	"BEST" MISSILE IOC	Mid-1960	Mid-1961	Mid-1962	Mid-1963	"WORST" MISSILE IOC	Mid-1960	Mid-1961	Mid-1962	Mid-1963
CEP (n.m.)	3	2.7	2.2	1.8	1.5	5	4.5	3.7	3	2.5
Warhead (lb) ▸	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
In Commission (percent)	70	72	75	78	80	70	72	75	78	80
Reliability On Launcher (percent)	80	82	85	88	90	80	82	85	88	90
In Flight (percent)	75	77	80	83	85	55	58	62	66	70

* Values for the "best" and "worst" characteristics are derived from NIE 11-5-59 and the USIB "Memorandum to Holders of NIE 11-5-59," dated 19 January 1960; the figures for mid-1960, mid-1961, and mid-1962 have been interpolated. The actual estimate of accuracy and inflight reliability, as contained in the above mentioned Memorandum, may be summarized as follows:

Accuracy

a. Radio-inertial guidance—3 n.m. CEP at IOC; somewhat better than 2 n.m. in 1963.

b. All-inertial guidance—5 n.m. CEP at IOC; about 2 n.m. in 1963. All-inertial guidance will probably be incorporated in 1960-1962, after which the probable Soviet ICBM force is likely to include both radio-inertial and all-inertial guidance systems, with an increasing proportion of the latter system.

(footnote) The Assistant Chief of Staff for Intelligence, Department of the Army, continues to perceive no justification in presently available intelligence for the changes reflected in the above characteristics and believes the accuracy for the radio-inertial system at IOC should be 3-5 n.m. CEP; for the all-inertial system in 1963, 2.5 n.m. CEP.

Inflight Reliability

Estimated to be 55-75 percent at IOC; 70-85 percent in 1963. The Assistant Chief of Staff for Intelligence, Department of the Army, and the Assistant Chief of Naval Operations, Department of the Navy, believe the reliabilities lie at the lower end of the ranges in both years. The Assistant Chief of Staff, Intelligence, USAF, believes the reliabilities lie at the upper ends.

▸ Warhead yields as estimated for this weight in NIE 11-2-59, assuming no further nuclear testing, were used in calculating ICBM requirements.

7. *(Continued)*

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ANNEX B

SCALE OF ECONOMIC EFFORT FOR CERTAIN ICBM PROGRAMS

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7. *(Continued)*

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ANNEX B

SCALE OF ECONOMIC EFFORT FOR CERTAIN ICBM PROGRAMS

1. This Annex analyzes ICBM programs which would meet the requirements identified in the main text as Case B (at least 90 percent assurance against all retaliatory force targets) and Case C (at least 50 percent assurance against hardened targets and at least 70 percent assurance against others). It considers the economic impact of production and deployment programs which would meet these requirements in mid-1961 and in mid-1963, and compares them with the ICBM program estimated as probable in Section IV of the main text.

2. An assessment of the economic impact of the several ICBM programs considered in this estimate requires the consideration of more than one dimension of the problem. Table A of this Annex summarizes four economic aspects of each program:

a. production of missiles;
b. provision of launching facilities;
c. provision of military personnel on site;
d. monetary costs.

Missile Production

3. As indicated in NIE 11-5-59, we estimate that series production of ICBMs and other system equipment is already underway in the USSR. For purposes of these calculations, we have in all cases assumed that the first series produced missile was delivered early in the final quarter of 1959. Missile production for these programs is based upon an ICBM final assembly facility which had been engaged in prior production of ICBM vehicles for development and test purposes. Thus, in the probable program this facility is assumed to have begun its missile buildup from a going rate of three per month and to reach a peak delivery rate of 15 per month 12 months later, providing about 100 missiles in the first year and 180 per year thereafter.

4. In other programs, where larger outputs were required, a peak rate of 25 missiles per month was assumed under the same conditions and reached in the second year.[27] Most of the larger programs required more than one of these plants, and it is assumed for the purposes of Table A below that all of these plants started production at the same time.

5. In actual practice, however, the Soviets would almost certainly not begin series production of ICBMs (or any other weapons) at more than one plant simultaneously. A second plant might lag the first by 6-12 months. Since only one facility could gain from being the producer of development and test hardware, the follow-on facilities would not start production until the problems of series output had been solved by the lead plant. The postulated multiplant programs would merely lead to a duplication of the initial production engineering problems. Therefore even more plants would probably be required to meet these larger programs. Soviet practice in multifacility programs can be

[27] The 25 missile per month peak rate was considered as maximum for a single facility. This assumption was based upon industrial requirements in the production of a multistaged vehicle with a mass ratio at least as great as the US Titan.

Table A SCALE OF ECONOMIC EFFORT FOR CERTAIN ICBM PROGRAMS

	M-1961						M-1963					
	Case B		Case C		Probable		Case B		Case C		Probable	
	Best	*Worst*	*Best*	*Worst*	*Upper*	*Lower*	*Best*	*Worst*	*Best*	*Worst*	*Upper*	*Lower*
Cumulative Number of ICBMs in Operational Inventory	640	1800	300	670	270	175	2040	5360	680	1820	560	450
Number of Missile Plants												
Peak rate of 10–15 per month	...	...	...	...	2	1	...	...	...	...	2	1
Peak rate of 20–25 per month	3	8	1–2	3	...	...	3	8	1	3	...	...
Peak Missile Production	58	160	28	60	25	15	70	180	23	62	25	15
Cumulative Number of Launchers	480	1340	230	500	200	140	1630	4300	550	1450	450	350
Peak Monthly Launcher Completion	38	110	18	39	13	9	50	130	17	45	13	9
Military Personnel (thousands)	27	75	13	28	11	8	91	240	31	82	25	20
Cumulative ICBM System Cost[a] (billion dollars)	6.7	19	3.2	7	3.3	2.4	25	66	8.3	22	9	7
Cumulative ICBM System Cost[a] (billion rubles)	30	84	14	31	16.	11	110	280	36	97	39	31
Annual Strategic Attack Expenditures[b] (billion rubles)	40	81	28	41	29	25	51	120	23	46	19	19

[a] Excludes cost of nuclear warheads and cost of modernization of previously produced ICBMs.

[b] Expenditures for fiscal year, assuring other elements of Soviet strategic attack capabilities are as estimated in main text.

7. *(Continued)*

illustrated by the following source-time relationships in the BADGER program:

Production Source BADGER PROGRAM	*Production Date Initiated*	*Peak Rate (per month)*	*Months to Reach Peak*
Plant #22, Kazan	Aug 1953	20	8
Plant #1, Kuybyshev	Jun 1954	15	14
Plant #64, Voronezh	Jan 1955	10	12

6. In estimating a production program, a change in estimated IOC date could result in substantial changes. For example, in the probable program about 25–50 additional missiles could be available on launcher by mid-1961 if the IOC date were estimated to occur three months earlier. However, when applied to the probable program such a change could be offset by logistic pipeline lag as well as the assumption that no major problems occur at any point in the production program resulting in schedule slippage.

7. For each of the final assembly plants in the program there would have to be a large number of subsidiary plants to supply specialized components and subassemblies. Furthermore, a large number of other plants would be required to supply the ground support and ground guidance equipment necessary for the operation of the weapon system. In many respects the supply of this ground equipment is more of an economic burden than the missiles themselves; missiles represent only about 10–15 percent of the initial cost of establishing an operational capability with ICBMs.

Launching Facilities

8. The number of launching facilities is a good measure of the amount of activity involved in a given ICBM program. This is not so much because the launcher as such is so expensive, but more because this is a simple way of representing all the facilities, other than the missiles themselves, which are necessary to an operational weapon system. The other facilities which are subsumed under this measure are the ground guidance facilities, test, checkout and maintenance equipment, fueling and storage facilities, housing and general purpose equipment.

9. These facilities, including launchers, comprise the major initial costs of establishing an operational ICBM system and are the pacesetting factor in a deployment program. In the case of fixed installations, hard or soft, the orderly activation of launching facilities would require the efficient scheduling and completion of large-scale construction projects in widespread locations. In the case of a rail mobile system the primary problems would lie in the scheduled construction of special cars, installation of the necessary equipment, and orderly activation of complete missile trains; the construction of fixed facilities would be a lesser part of the effort but would still have to be scheduled into the entire program.

10. Since we do not know the Soviet deployment concept, the present analysis includes two extremes which we believe are likely to encompass the actual cost and effort involved in activating Soviet launching facilities. Launching facilities for the probable program are assumed to be fixed and hardened, costing $11 to $12 million per launcher and requiring a total construction time of 15 to 18 months each. Facilities for the other programs are assumed to be fixed and unhardened, costing $8 to $9 million per launcher and requiring a total construction time of 6 to 9 months each. Guidance facilities are assumed to be radio-inertial, and the net cost of a missile system using radio-inertial guidance is somewhat more than if all-inertial were employed. Costs are based on US plans and limited US experience, adjusting where possible for differences between Soviet and US prices, procurement methods, pay scales, etc.

11. The preliminary US studies available on rail mobile systems are inadequate to form a basis for economic analysis. We believe the cost and effort involved in activating such systems would fall somewhere between that required for soft and hard fixed systems, probably closer to the hard than the soft. However, the major impact would be on the railroad equipment industry rather than the construction sector of the economy. Semi-

7. *(Continued)*

hardened fixed systems would likewise fall between the two systems we have analyzed. Thus we believe that the total cost and implied effort shown in the table may be somewhat overstated in the case of the probable program, and may be somewhat understated in the case of the other programs.

Personnel

12. The number of military personnel required to operate, service, and guard ICBM sites is not large when compared with the total strength of the Soviet armed forces. However, a large portion of the operating and support personnel would have to be specially trained. This would require individual and unit training on a schedule consistent with the completion of launching facilities. Soviet experience with shorter range ballistic missiles should facilitate this training.

Total Cost

13. The total cost for establishing and operating the probable ICBM program through mid-1963 would amount to between 30 and 40 billion rubles, exclusive of the cost of nuclear warheads and research and development. This implies an average annual expenditure of 8–10 billion rubles: less than one percent of Soviet GNP. While this percentage appears negligible, economic aggregates of this type are too broad to reflect the physical effort and difficulties involved in implementing large programs for a single weapon system.

14. To appreciate the impact of the probable program on the Soviet economy, a comparison with some nonmilitary programs is useful. In the past seven years the USSR invested some 40 billion rubles in its ferrous metallurgical industry (iron mining and steel making); it plans to increase its crude steel output by 65 percent by investing about 100 billion rubles in this industry in the Seven-Year Plan Period, 1959 through 1965. Thus the average annual investment in this major industry was about 6 billion rubles in the past and is planned to be about 14 billion rubles in the future. Investment in the machine building, chemical and railroad industries are planned for the future at annual rates of 14 to 17 billion rubles per year each. The probable ICBM program in this estimate would imply average annual expenditures of about 8–10 billion rubles on the ICBM system alone, more than half the planned rate for investment in the entire ferrous metallurgical industry of the USSR.

15. The last line in the table illustrates the effect of the three ICBM programs on expenditures for strategic attack in FY–1961 and FY–1963, assuming that other elements of the Soviet strategic attack capability are as estimated in the main text. As a point of reference, these expenditures are estimated to be about 14 billion rubles in 1959. The probable program implies that these expenditures would be about 25–30 billion rubles in FY–1961 and about 19 billion in FY–1963.

16. In summary, the probable program is sizable in terms of the economic effort implied in activating and equipping the launching units especially during the first two years after IOC. The economic strain implicit in larger programs is not so much a matter of their financial cost as of the magnitude and pace of the physical activities required to produce missiles and ground equipment, to construct launching facilities, and to train operating personnel in a relatively short period of time. Even the accomplishment of the probable ICBM program through 1961 will require highly effective planning, operations, and coordination among selected subsectors of the Soviet economy. Although it is likely that a multitude of unforeseen, minor bottlenecks will appear, the probable program assumes that no major delays will be encountered.

7. *(Continued)*

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ANNEX C

ECONOMIC ASPECTS OF PROBABLE STRATEGIC ATTACK PROGRAMS

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7. *(Continued)*

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ANNEX C

ECONOMIC ASPECTS OF PROBABLE STRATEGIC ATTACK PROGRAMS

Expenditures for Strategic Attack Programs

1. This Annex sets forth the expenditures we believe the USSR has incurred in recent years in providing forces for strategic attack, and the future expenditures implied by the programs estimated as probable in this paper.[25] We estimate that during 1955–1959, average annual Soviet expenditures for programs directly related to strategic attack were about 15 billion rubles. The probable programs estimated in this paper will result in increased outlays for strategic attack, with an average annual expenditure of about 20–22 billion rubles during 1960–1964 (see Table A).

TABLE A

AVERAGE ANNUAL EXPENDITURES FOR SOVIET STRATEGIC ATTACK PROGRAMS, 1955–1964 [a]

(Billion 1955 rubles)

	1955–1959	1960–1964
Total Strategic Attack	15.5	20.4
Personnel	1.3	1.6
Operations and Maintenance	2.5	5.3
Procurement	7.2	6.2
Aircraft and A–S Missiles [b]	6.3	0.8
Submarine-launched Missiles [c]	0.4	2.1
Long range S–S Missiles [d]	0.5	3.3
Construction	0.9	2.6
Nuclear Weapons [e]	3.6	4.9

[a] Figures are rounded. Totals are derived from unrounded data and do not always agree with those based on rounded components.

[b] Includes cost of continued procurement of BISON and air-to-surface missiles and support equipment.

[c] Includes cost of submarine-launched missiles, conversion of existing submarines and procurement of new missile-launching submarines.

[d] Includes cost of SS–4, SS–5, and SS–6 (ICBM) missiles, guidance and support equipment. Costs reflect the lower limit of the probable Soviet ICBM program. In addition, the 1960–1964 entry for construction includes 2.2 billion rubles for constructing on-site facilities for these missile systems.

[e] Expenditures for nuclear weapons for strategic purposes are derived from the illustrative allocations of nuclear materials in NIE 11–2–59. The caveats appearing on pages 63–65 of that estimate apply.

Shifts in Composition

2. Important shifts in the composition of expenditures for strategic attack programs will probably take place. Expenditures related to long range aircraft were responsible for nearly all strategic attack expenditures during the historical period, but will decline sharply in relative weight in the projection period. Procurement of these aircraft including air-to-surface missiles, which represented about 40 percent of cumulative strategic attack expenditures in the historical period, is projected to drop to about four percent of the total. Expenditures for personnel, operations and maintenance, and construction related to aircraft will take diminishing proportions of expenditures for these categories.

3. Procurement and installation of ground-launched missile systems will increase as a share of strategic attack expenditures from 5 percent in the historical period to about 30 percent in the projection period. At the same

[25] Programs which are estimated only as possible have not been included in this Annex. Note also that the analysis in this Annex reflects the lower limit of the ICBM program estimated as probable in Section IV of the main text.

7. *(Continued)*

time, the share for submarine systems will increase from about 3 percent to about 10 percent. Operating and maintaining missile systems are relatively costly, and ground-launched and submarine systems are responsible for nearly all of the absolute increase in the operations and maintenance category shown in Table A.

The General Scope of the Major Categories

4. The expenditures for strategic attack forces in this Annex include only direct expenditures made for the following: (a) personnel of Long Range Aviation, long range surface-to-surface missile units and missile launching submarines; (b) operations and maintenance costs for units; (c) procurement of major weapons and of supporting equipment for units using the weapons; (d) construction and maintenance of airfields and missile installations; and (e) nuclear weapons. BADGERs subordinate to Tactical and Naval Aviation have been included with aircraft of Long Range Aviation for costing purposes only.

Ground-Launched Missiles

5. The basis for scheduling the production and deployment of Soviet ICBMs resulted from an analysis of actual and planned US practices modified by what is known and assumed concerning Soviet practice. In light of the estimate that by 1 January 1960 a few series produced ICBMs will probably be operational, and of the discussion in the main text of this estimate, a reasonable production program was postulated which would provide 350–450 ICBMs on launcher in 1963 together with a reasonable additional quantity of missiles (25 percent)[a] to account for maintenance, training, production testing and normal attrition. The production program involves a buildup to a peak rate of about 25 ICBMs per month by the end of 1960.

6. The production buildup employed in this analysis and reflected in the main text is somewhat different from that employed in previous estimates, in which we considered that an IOC would be established with prototype ICBMs and that series production would begin at IOC date. The present analysis takes into account the estimate, in NIE 11–5–59, that series production would have begun prior to IOC date. Assuming the concurrent scheduling of launching facilities, crews, and logistic support, this change results in a more rapid buildup of operational capabilities in the months following IOC date than was indicated in previous estimates.

7. For purposes of costing the probable ICBM program, hardened fixed sites were assumed; if the Soviet system is rail mobile, the total cost of the program would be about the same or somewhat less, but much of the initial cost now allocated to construction would shift to rail mobile equipment and operational costs would be higher. Construction of launching facilities was scheduled for that portion of the operational inventory expected to be in commission at any given time. It should be noted that these launching, guidance and support facilities would average $11 to $12 million per launcher and account for about 75 percent of the initial costs in the estimated ICBM program. The initial costs of this entire program average about $14 million per missile on launcher.

8. Production of SS–4 and SS–5 missiles was scheduled on a basis similar to that for the ICBM, at peak rates of nine and seven missiles per month respectively. The costing of the SS–4 was based on a road mobile system; that for the SS–5 on rail mobility. About 80 percent of the total estimated ruble cost of these weapon systems is incurred by the ICBM program.

[a] A 15 percent margin between operational inventory and production for operational purposes was used in the requirements examined in Annex A. Such a margin is minimal; the 25 percent margin applied to the probable program is more reasonable, although still on the low side.

7. *(Continued)*

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ANNEX D

PERFORMANCE CHARACTERISTICS OF SOVIET LONG RANGE BOMBERS

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ESTIMATED SOVIET LONG RANGE AIRCRAFT PERFORMANCE UNDER AN OPTIMUM MISSION PROFILE[a]

(Calculated in accordance with US MIL-C-5011A Spec except that fuel reserves are reduced to permit a maximum of 30 minutes loiter at Sea Level and aircraft operate at altitudes permitting maximum radius/range)

	CURRENT MODELS					POSSIBLE FUTURE DEVELOPMENTS[d]	
	BULL	BADGER	BADGER[b] 1959	BISON 1958	BEAR	BISON[b] 1960	MU 1962–1964[c]
Combat Radius/Range (n.m.)							
a. 25,000 lb bombload	....	....	....	2,750/5,200	4,450/8,450	2,950/5,600	....
one refuel[e]	....	....	....	3,700/7,000	....	3,950/7,500	....
b. 10,000 lb bombload	1,850/3,350	1,600/3,100	1,800/3,400	3,000/5,800	4,850/9,500	3,200/6,300	1,770/3,500[h]
one refuel[e]	....	2,300/4,200	2,400/4,600	4,000/7,800	....	4,300/8,500	2,400/4,700[h]
c. 3,300 lb bombload	2,050/3,700	1,800/3,600	2,000/3,900	3,100/6,100	5,050/10,000	3,300/6,600	1,950/4,050[i]
one refuel[e]	....	2,500/4,800	2,650/5,200	4,150/8,200	....	4,450/8,900	2,900/6,000[i]
Speed Altitude (kts/ft)							
a. Maximum Speed at optimum altitude (kts/ft)[f]	350/30,000	550/13,200	555/14,200	535/18,800	500/25,000	535/18,800	1,150/35,000[j]
b. Target Speed/Target Altitude (kts/ft)[f]	310/30,000	475/40,800	475/42,300	460/43,400	425/43,200	460/43,400	1,150/55,000[j]
Combat Ceiling (ft)[f]	36,500	45,400	46,600	46,500	42,000	46,500	50,000[j]
Terminal Target Altitude (ft)[g]							
a. 25,000 lb bombload	....	....	....	54,200	48,400	54,200	....
b. 10,000 lb bombload	41,500	50,000	52,500	55,800	49,700	55,800	59,500
c. 3,300 lb bombload	42,000	51,500	54,300	56,500	50,300	56,500	60,500

[a] It should be noted that these estimates are computed from aircraft dimensions as determined by photographic analysis and estimated airplane, engine, and other basic flight parameters. Because of the limitations of this method, the results are occasionally susceptible to significant errors. There are, for example, reliable indications that BISON altitude capabilities may be considerably less than those estimated above.

[b] Improvements of BISON and BADGER aircraft are based on normal expected improvements in the engines through the 1960 period.

[c] The Assistant Chief of Staff, Intelligence, USAF, believes that the introduction of a supersonic dash bomber into operational units is likely by 1962.

[d] The Assistant Chief of Staff, Intelligence, USAF, believes that by 1964 the USSR may have a few subsonic nuclear powered bombers in operational status.

[e] Refueling estimates based upon use of compatible tankers which provide approximately 35 percent increase in radius/range.

[f] For 10,000 lb bombload unless otherwise indicated.

[g] Service ceiling at maximum power with one hour fuel reserve plus bombload aboard. No range figure is associated with this altitude.

[h] Capable of carrying 350 n.m. air-to-surface missile (AS-2) with approximately 10 percent degradation in radius/range capability.

[i] Includes 500 n.m. "dash" at Mach 2.0.

[j] For 3,300 lb bombload.

8. NIE 11-8-60 *Soviet Capabilities for Long Range Attack Through Mid-1965*

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APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

SOVIET CAPABILITIES FOR LONG RANGE ATTACK THROUGH MID-1965

THE PROBLEM

To estimate probable trends in the strength and deployment of Soviet air and missile weapon systems suitable for long range attack, through mid-1965. The weapon systems considered are heavy and medium bombers, related air-to-surface missiles, ground-launched missiles with ranges of 700 nautical miles or more, and submarine-launched missiles.

CONCLUSIONS

1. Since the adoption of NIE 11–8–59, "Soviet Capabilities for Strategic Attack Through Mid-1964," dated 9 February 1960, we have made an extensive re-examination of all available evidence bearing on Soviet production and deployment of ICBMs. The conclusions resulting from this re-examination are, in brief (*Paras. 13–14*):

a. Soviet series production of ICBMs probably began in early 1959, but we have no direct evidence of the present or planned future rate of production.[1] [2]

b. As yet, we can identify no ICBM-related troop training activities, nor can we positively identify any operational launching site, as distinguished from the known test range facilities.

c. We still estimate a Soviet initial ICBM operational capability with a few—say 10—series produced missiles as of 1 January 1960.[3] [4]

2. Since there is insufficient direct evidence to establish the scale and pace of

[1] Series production means production of missiles of like type in accordance with a planned buildup rate. The date of commencement of series production is defined as the date of completion of the first missile in the series.

[2] The Assistant Chief of Staff for Intelligence, Department of the Army, believes that there is no evidence to indicate that ICBMs have been produced in the Soviet Union in numbers larger than are required by the continuing R & D activities. He therefore believes that this conclusion is misleading in that it may be interpreted to imply that ICBMs for operational deployment or inventory started to become available in 1959. See his footnote to paragraph 13 a.

[3] The Assistant Chief of Staff for Intelligence, Department of the Army, believes that as of 1 January 1960 the Soviets had only an emergency capability to launch a few ICBMs against North America. These ICBMs probably would have had to have been launched from R & D facilities. However, he believes that, for planning purposes, it is prudent to assume that the IOC had occurred by 1 January 1960.

[4] The Assistant Chief of Naval Operations for Intelligence, Department of the Navy, believes that there is insufficient information to judge that, as of 1 January 1960, the conditions for IOC (that is, the date at which a few—say 10—series produced ICBMs could have been placed in the hands of one or more trained units at existing launching facilities) had been met.

8. *(Continued)*

the present Soviet ICBM production and deployment program,[5] we have based our estimate in part on various indirect forms of evidence and on argument and analysis deduced from more general considerations. These latter include such things as the strategic ideas which appear to govern Soviet military policy, our appreciation of the strategic capabilities which Soviet military planners might expect to derive from given numbers of ICBMs, our general knowledge of Soviet military production practices, and our sense of the tempo at which the present program is being conducted. *(Para. 15)*

3. The Soviets have strong incentives to build a substantial ICBM force. The ICBM provides them for the first time with an efficient means of delivering a heavy weight of attack on the US. What we know of Soviet strategic ideas suggests that the ICBM is thought of primarily in terms of deterrence, and of preemptive or retaliatory attack should deterrence fail, rather than primarily in terms of the deliberate initiation of general war. These terms, however, provide no quantitative definition of Soviet ICBM force goals.[6] *(Paras. 16–23, 29)*

4. As an approach to an appreciation of Soviet ICBM requirements, we have computed the numbers of Soviet ICBMs on launchers theoretically required for an initial salvo designed to inflict severe damage on SAC bomber bases and other installations directly related to immediate US nuclear retaliatory capabilities. Uncertainty regarding the inputs, and the sensitivity of the computations to variations in the assumptions made with respect to them, render the numerical results too various to provide a reliable basis for estimating Soviet ICBM force goals. Moreover, regardless of the results of any corresponding Soviet calculations, there are operational factors (such as Soviet problems in achieving simultaneity of salvo, and the mobility of US retaliatory forces) which would tend to reduce their confidence in their ability, with any given number of ICBMs, to destroy or neutralize US retaliatory forces through attack on fixed installations such as bomber bases.[6][7] *(Paras. 24–29, including footnotes to para. 28b, and Annex A)*

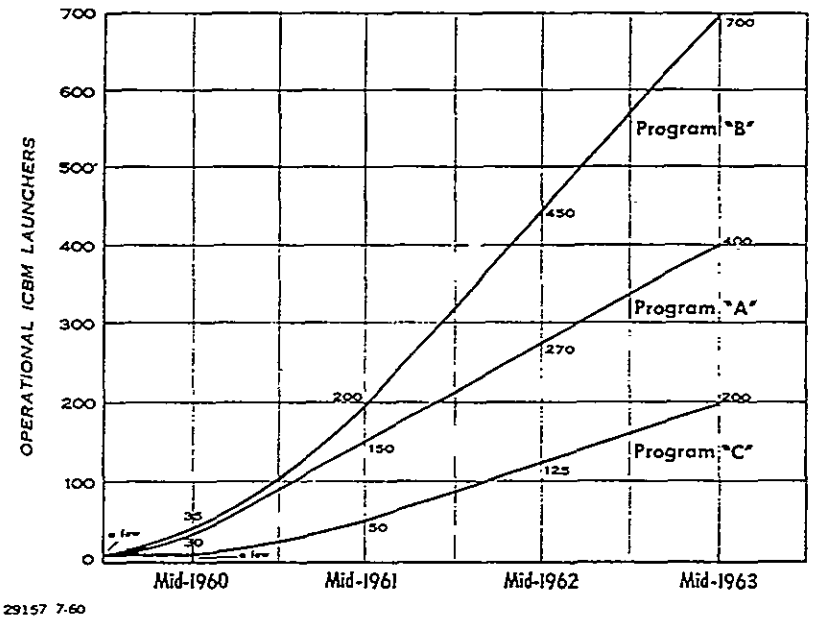
[5] The Assistant Chief of Staff for Intelligence, Department of the Army, believes that the direct evidence upon which to base an estimate of present Soviet ICBM strength is of major significance. He believes that much of this evidence constitutes negative indications and, therefore, that its rejection as insufficient leads to unrealistic overestimation. See his footnote to paragraph 15.

The Assistant Chief of Staff, Intelligence, USAF, does not concur in Conclusions 3 and 4. He believes that Soviet military doctrine, history, and behavior warrant the judgment that the USSR will strive to achieve a capability for decision which has as its basis the exploitation or application of military force, and he does not believe that the Soviets would be content with conceptual levels of pre-emptive attack and deterrence. Thus, he believes that the Soviet rulers would endeavor to achieve a military superiority over the US and would direct Soviet planners to assess those military requirements which would enable them either to force their will on the US through threat of destruction or to launch such a devastating attack that the US as a world power would cease to exist.

The Assistant Chief of Staff for Intelligence, Department of the Army, believes that operational considerations which extend beyond the computations of the number of ICBMs required to inflict severe damage on certain static targets would prohibit Soviet military planners from accepting with confidence any calculation that a certain number of ICBMs would be sufficient, in conjunction with the operations of other Soviet forces, to reduce the weight of a US retaliatory attack to an acceptable level. See his footnote to paragraph 29.

8. *(Continued)*

5. We have also examined the tasks and problems involved in the production and deployment of ICBMs through the elaboration of three illustrative Soviet programs. They represent the range of judgments, based on the direct and indirect evidence available to us, regarding the scale and tempo of Soviet effort. These illustrative programs are summarized, in the chart below, in terms of the numbers of operational ICBM launchers [8] which each would provide. (*Paras. 30–42, and Annex B*)



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6. With reference to the illustrative programs presented above, the members of the United States Intelligence Board have concluded as follows (*Para. 43*): [9]

a. The Director of Central Intelligence considers that program "A" should be regarded as the nearest approximation of the actual Soviet program.

b. The Assistant Chief of Staff, Intelligence, *USAF*, believes that program "B" approximates the most likely Soviet program.

c. The Director of Intelligence and Research, Department of *State*, the Assistant to the Secretary of *Defense*, Special Operations, and the Director for Intelligence, *The Joint Staff*, believe that through 1961 the Soviet program is likely

[8] The number of launchers is a good measure of the amount of activity involved in a given ICBM program, since it includes all of the facilities, in addition to the missiles themselves, which are necessary to the operational weapon system. Included are ground guidance facilities; test, checkout, and maintenance equipment; fueling and storage facilities; and housing and general purpose equipment.

[9] For a more extended expression of some of these views, see footnotes to paragraph 43.

8. *(Continued)*

to fall towards the high side of the range defined by illustrative programs "A" and "B," and, in the light of factors discussed in paragraph 8, they consider that in the 1962–1963 period it will continue to grow within the "A"–"B" range.

d. The Assistant Chief of Staff for Intelligence, Department of the *Army*, and the Assistant Chief of Naval Operations for Intelligence, Department of the *Navy*, believe that illustrative program "C" most nearly approximates the actual Soviet program.

7. It is notable that the potential threat posed by programs "A" and "B" is substantially the same through 1960. Before the end of the year, either would provide a capability to inflict massive destruction on the principal US metropolitan areas. At the beginning of 1961, either would provide sufficient ICBMs and launchers to threaten the SAC operational air base system. Thereafter, the threat posed by program "B" would increase more rapidly than that of program "A." By about mid-1961, program "B" would provide Soviet planners with a high assurance of being able to severely damage most of the SAC air base system in an initial salvo, whereas program "A" would reach this point late in the year. The considerably smaller program "C" would provide a capability to inflict massive destruction on the principal US metropolitan areas sometime in 1961. (*Para. 44*)

8. The present Soviet ICBM program is, of course, subject to change as the period progresses. Soviet planning for the period beyond 1961 will be substantially affected by the actual development of US retaliatory forces, the prospects for a greatly improved Soviet ICBM, and the prospects, on each side, for an effective defense against ICBMs, as well as the general development of the world situation and of relations between the US and the USSR. Our estimates for future years must be reviewed in the light of such developments and of such additional evidence as we may obtain regarding the actual progress of the Soviet program. They must therefore be regarded as highly tentative. For these reasons, we have not projected even a tentative estimate beyond 1963.[10] (*Para. 45*)

9. We continue to estimate that with relatively modest programs in 700 and 1,100 n.m. ballistic missiles the Soviets will acquire, by 1960 or 1961, a force of medium range missiles capable of seriously threatening the major Western landbased retaliatory targets within their range. (*Paras. 46–51*)

10. We estimate that the USSR now has a limited capability to launch ballistic missiles from about a dozen long range, conventionally-powered submarines. The Soviets will probably increase this force gradually over the next year or two, and then introduce a weapon system capable of delivering ballistic missiles against land targets from a submerged nuclear-powered submarine. While we believe the Soviets would employ submarine-launched missiles against selected US targets, their planning does not appear to contemplate delivery of the main weight of an attack by this means. (*Paras. 65–70*)

[10] The Assistant Chief of Staff, Intelligence, USAF, believes that, despite the difficulties engendered by consideration of the factors enumerated, an estimate beyond 1963 can be made. He believes that, lacking contradictory information, the rates of increase shown in program "B" should be continued through 1965.

8. *(Continued)*

11. The announced Soviet force reductions will probably bring some reduction in Long Range Aviation strength, but in 1965 the USSR will probably still retain a substantial bomber force. Even after a formidable ICBM capability has been established, the USSR will require long range bombers for a variety of purposes, including attacks on difficult land targets, reconnaissance, and operations against carrier task forces at sea. Air-to-surface missiles will be available in increasing quantity. The Soviets will probably introduce a new medium bomber capable of supersonic "dash," and we estimate that they are developing a long range, supersonic cruise-type vehicle, but BISONs and BADGERs will remain the most numerous of Soviet long range aerodynamic delivery vehicles. (*Paras. 52–64*)

12. Our numerical estimates of Soviet heavy and medium bombers in Long Range Aviation, medium range ballistic missiles, and missile-launching submarines are set forth in the following table:

	Mid-1960	Mid-1961	Mid-1962	Mid-1963	Mid-1964	Mid-1965
Bombers and Tankers [11]						
Heavy	135	150	140	130	120	100
Medium [a]	1,100	950	800	800	800	750
Ballistic Missiles						
700 n.m.						
Operational Inventory	250	350	450	450	450	450
Launchers [12]	110	150	150	150	150	150
1,100 n.m.						
Operational Inventory	80	160	240	300	300	300
Launchers [12]	50	100	100	100	100	100
Missile Submarines						
"Z" Class [b]	4	4	4	4	4	4
"G" Class [c]	9	14	18	18	18	18
Nuclear [d]	0	0	2	6	10	14

[a] Probably including a few new supersonic "dash" bombers in 1961, building up to perhaps 100 by 1963–1964.
[b] Each "Z" class submarine would probably carry two missiles.
[c] Each "G" class submarine would probably carry about six missiles.
[d] Each nuclear-powered submarine would probably carry 6–12 missiles.

[11] The Assistant Chief of Staff, Intelligence, USAF, believes that the numbers of bombers and tankers, should read:

	Mid-1960	Mid-1961	Mid-1962	Mid-1963	Mid-1964	Mid-1965
Bombers and Tankers						
Heavy	135	150	175	200	200	200
Medium *	1,100	1,000	950	900	800	800

* Probably including a few new supersonic "dash" bombers in 1961, building up to some 300 in mid-1965.

[12] The Assistant Chief of Staff, Intelligence, USAF, believes that each operational missile would be provided with a launcher.

9. NIE 11-8-61 *Soviet Capabilities for Long Range Attack*

~~TOP SECRET~~

APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

SOVIET CAPABILITIES FOR LONG RANGE ATTACK

THE PROBLEM

To estimate probable trends in the strength and deployment of Soviet air and missile weapon systems suitable for long range attack, and in Soviet capabilities for such attack, projecting forward for about five years where possible.[1]

ASSUMPTION

For purposes of this estimate, it is assumed that during the period under consideration no US-Soviet agreement on arms control or system of mutual inspection will be in effect.

CONCLUSIONS

1. The Soviet leaders, particularly Khrushchev, have been deeply impressed by what they regard as a major improvement of their strategic position resulting from their achievements with long range missiles. Although they still hold that the Soviet military establishment must comprise a balance of varied forces, long range weapon systems are now being allotted an increased share of the Soviet military effort. Within the long range striking forces, ballistic missiles are clearly intended to become the dominant weapons. (*Paras. 10–12, 20–22*)

2. We have reviewed the direct and indirect evidence pertaining to the development and deployment of the Soviet ICBM system. We are still unable to confirm the location of any ICBM launching facilities other than those at the test range. We are able, however, to support on reasonably good evidence a minimum number of two to four operational ICBM site-complexes.[2,3] We also have tenuous evidence regarding a number of other suspected deployment locations. Moreover, we believe that the direct and indirect evidence supports the view that: (a) the USSR has been conducting a generally successful

[1] The weapon systems considered are heavy and medium bombers, related air-to-surface missiles, ground launched missiles with ranges of 700 n.m. or more, and submarine-launched missiles.

[2] The Assistant Chief of Staff for Intelligence, Department of the Army, and the Assistant Chief of Naval Operations (Intelligence), Department of the Navy, find the evidence supporting the existence of such sites tenuous rather than reasonably good insofar as ICBM-associated deployment activities are concerned.

[3] The Assistant Chief of Staff, Intelligence, USAF, believes there is reasonably good evidence to support the existence of 10–15 operational ICBM site-complexes.

9. *(Continued)*

ICBM program, at a deliberate rather than an extremely urgent pace; (b) the USSR is building toward a force of several hundred operational ICBM launchers, to be acquired within the next few years. *(Paras. 23–42)*

3. We estimate that the probable Soviet force level in mid-1961 is in the range of 50–100 operational ICBM launchers, together with the necessary operational missile inventories and trained crews. This would probably involve the present existence of 10 to 15 operational ICBM site-complexes. This estimate should be regarded as a general approximation. The major bases for it are our sense of the tempo of the program and our judgment as to the relationship between what we have detected and what we are likely to have missed. We estimate that the program will continue to be deliberately paced and will result in force levels about as follows: 100–200 operational launchers in mid-1962, 150–300 in mid-1963, and 200–400 in mid-1964. Some of the launchers activated in the 1963–1964 period will probably be for a new and improved ICBM system.[4] [5] [6] *(Paras. 42–46)*

4. Soviet force goals for the period beyond 1963–1964 will probably be affected significantly by such developments as US acquisition of numerous hardened and mobile missiles and other improved capabilities, by Soviet development of antimissile defenses, and also by intervening political developments. We are unable to predict what the Soviet judgment will be as to the responses appropriate to these developments. Indeed, it is likely that the Soviet leaders themselves have not yet come to a definite decision as to force goals for 1965–1966.[7] *(Paras. 36, 41, 47, 118)*

5. Medium range ballistic missiles (700 and 1,100 n.m.) are presently deployed in mobile units located at a few bases, convenient to areas of likely operations in Eurasia and its periphery, from which they would probably move to dispersed launch points in the event of hostilities. A force of about 250–300 medium range missiles ready for launching, together with additional missile reloads, will probably be available in the very near future. A 2,000 n.m. missile employing fixed launch sites will probably be deployed initially within the next year. Force levels will probably be

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The Director of Intelligence and Research, Department of State, does not concur in this estimate. He believes (a) that NIE 11-8-61 should include an estimate of the largest ICBM force which the USSR *could have* in mid-1961 and that such a force could be as large as 200 operational launchers, and (b) that the *probable* Soviet force level in mid-1961 is in the range of 75–125 operational launchers and will increase to 150–300 in mid-1962 and to 200–450 in mid-1963. For a full statement of his position, see paragraphs 48–55.

[4] The Assistant Chief of Staff for Intelligence, Department of the Army, and the Assistant Chief of Naval Operations (Intelligence), Department of the Navy, estimate no more than a few operational launchers deployed in mid-1961. They believe that for succeeding years it is prudent and reasonable to expect that the numbers of such ICBMs may increase generally at the rate shown above. However, the actual rate of increase will be subject to many fluctuations and will be determined by many variables, particularly the point in time when the Soviets have developed a new and less cumbersome ICBM that can be more easily deployed. Their projection of probable Soviet ICBM force levels through mid-1964 is as follows: mid-1962, 50–100; mid-1963, 100–200; mid-1964, 150–300. For a full statement of their position, see paragraphs 56–59.

[6] The Assistant Chief of Staff, Intelligence, USAF, does not concur in this estimate. In his judgment the Soviet leaders recognize that the ultimate elimination of the US, as the chief power blocking their aim of a Communist world, requires a clear preponderance in military capabilities. He believes that this consideration is the major determining factor in the continuing development of Soviet military force goals. This factor and the available evidence, considered in light of the extreme Soviet security and the great lack of intelligence coverage of large suspect deployment areas in the USSR, leads him to believe that there are at least 120, and quite possibly an even greater number of operational ICBM launchers in mid-1961. Considering extensive Soviet experience and capabilities in the missile field and the fact that our evidence points to a program of widespread introduction of simplified launch facilities, he estimates about 300 operational ICBM launchers by mid-1962 and around 550 in mid-1963. He agrees that the Soviets will introduce a new and improved ICBM in 1963–1964. Following the introduction of this new missile he estimates that the Soviet force levels would be about 850 operational ICBM launchers in mid-1964, 1,150 in 1965, and around 1,450 in 1966. For a full statement of his position, see paragraphs 60–64.

[7] See the footnote of the Assistant Chief of Staff, Intelligence, USAF, to Conclusion 3.

9. *(Continued)*

maintained over the next five years by building up 2,000 n.m. missile strength as medium range missile strength is phased down.[8] *(Paras. 65–75)*

6. The USSR now has about 20 conventionally-powered submarines which are probably capable of launching short range ballistic missiles (150 or 350 n.m.), though not while submerged. By 1963 the Soviets could probably introduce nuclear-powered submarines with a submerged launch system employing medium range ballistic missiles (500–1,000 n.m.). In the meantime, it is possible that nuclear-powered submarines with short range, surface launched missiles could be operational this year. For attack on the US, submarine-launched missiles will play a role supplementary to that of ICBMs. *(Paras. 76–82)*

7. Long Range Aviation now comprises about 1,000 medium bombers and tankers and about 150 heavy bombers and tankers.[9] Taking into account a complex of operational factors, but excluding combat attrition, we estimate that at present the Soviets could put about 200 bombers over North America on two-way missions in an initial attack.[10] Medium bombers of Long Range Aviation, together with several hundred such bombers in other Soviet air components, are suited primarily for missions against Eurasian and peripheral targets. A new medium bomber with supersonic "dash" capabilities is now entering service. Air-to-surface missiles are available for medium and heavy bombers. The large Soviet manned bomber forces will probably decline gradually in numerical strength, but five years hence the Soviets will probably still supplement their missile forces with medium and heavy bombers for both weapon delivery and reconnaissance. *(Paras. 83–97)*

8. Soviet long range bombers and missiles assigned to attacking major military targets and centers of national power in US and Allied territory would employ high-yield nuclear bombs and warheads. A wide range of operational equipment for electronic warfare is also available. Reconnaissance capabilities will probably be strengthened in the coming years by the use of reconnaissance satellites and aircraft fitted for post-strike reconnaissance and bombing. A long range, supersonic aerodynamic vehicle could be available in a year or two, and might be employed for weapon delivery or reconnaissance. *(Paras. 101–106)*

9. The Soviet long range striking forces thus comprise a mix of bombers, missiles, and submarines, but their development in the next five years will be paced largely by the growth of ICBM and other missile forces. We believe that with the estimated current force of 50–100 operational ICBM launchers, the USSR would already be capable of bringing major US cities under attack by a single ICBM salvo. Alternatively, the Soviets may now be able to bring all SAC operational air bases under attack by missiles alone; they almost certainly will be able to do so within the next year. In 1963–1964, they will probably be able to bring under ICBM attack those US retaliatory and defensive targets for which their ICBM system is suited. However, they would remain unable to target effective ICBM strikes against the increasing numbers of US hardened, mobile, and fast-reaction forces.[11] [12] *(Paras. 111–118)*

[8] The Assistant Chief of Staff for Intelligence, Department of the Army, does not believe that this force goal will be attained in the near future, and believes that as a result of the expected absorption of initial salvo missions by the 2,000 n.m. missile in the future, Soviet planners may decide on lower force goals rather than a phase down of the 700 and 1,100 n.m. missile inventories. For his estimate of current and future force levels for medium and intermediate range missiles, see paragraph 74.

[9] The Assistant Chief of Staff, Intelligence, USAF, estimates that as of mid-1961, Soviet Long Range Aviation includes 175 heavy bombers and tankers.

[10] The Assistant Chief of Staff, Intelligence, USAF, believes that the Soviets could put some 300 bombers over North America on two-way missions in an initial attack. For a fuller statement of his views on this matter, see his footnote to paragraphs 92–94.

[11] The Assistant Chief of Staff for Intelligence, Department of the Army, believes that the overall Soviet capability to attack the US with ICBMs is at present extremely limited. His estimate of the number of ICBMs now operationally deployed, when considered in light of the accepted 40–65 percent reliability, makes the number of missiles with which

Footnotes continued on top of next page.

9. *(Continued)*

Footnotes continued from preceding page.
the Soviets are believed capable of reaching the US in mid-1961 very small. Manifestly, therefore, missile attacks on SAC bases would not at present be a major threat to our nuclear delivery capability. While he believes that the Soviet capability to attack one or more US urban industrial areas provides a serious deterrent, he believes Soviet capability in this regard at mid-1961 would remain limited to 4 or 5 cities as a maximum.

[15] The Assistant Chief of Naval Operations (Intelligence), Department of the Navy, does not believe that the USSR is currently capable of bringing as many as 25 major US cities under attack by a single ICBM salvo or of attacking all SAC operational air bases with missiles alone. Since he estimates only a few deployed Soviet ICBMs for mid-1961, it is his assessment that the Soviet overall capability to attack the US with ICBMs is at present extremely limited.

DISCUSSION

I. ROLE OF THE LONG RANGE STRIKING FORCES

10. The USSR's success in developing a long range striking capability has wrought a profound change in the Soviet leaders' thinking about the strategic position of their country. Even after World War II had left them the strongest conventional military power in Eurasia, a psychology of encirclement by a strong and hostile opponent remained a dominant element in their assessments. This sense of inferiority arose from the fact that the Soviet Union's bomber forces and air defense neither matched nor offset the strategic nuclear striking power of the US.

11. With the advent of their long range ballistic missiles, however, the Soviet leaders see themselves as overcoming this vital deficiency and reaching high ground hitherto inaccessible to them. For the first time in their history, they are able to bring to bear on North America the threat of immense destruction. Khrushchev now speaks of the USSR's strategic equality with the West, and even of its superiority. At the same time, he has taken pains to deny that Communists can draw from this the conclusion that general nuclear war has become a rational method of achieving their aims. Instead, he has vigorously combated those in the Communist camp, primarily the Chinese, who have seemed ready to reach this conclusion or at least to countenance assuming great risks of general war. In private discussion as well as public statement, the Soviet leaders have declared that they regard such a war as disastrous to their cause, and moreover, as folly at a time when political and economic forces are moving toward a world triumph for communism.

12. It is only in their heightened awareness of the calamitous consequences of nuclear war that the attainment of their new long range capability has sobered the Soviets; in all other respects it has exhilarated them. They see their own security, and that of the entire Bloc, as enormously enhanced. They see new opportunities to project Soviet power into areas long denied to them, and to inhibit the West from reacting forcefully in a variety of peripheral confrontations. They see many other political uses to which their new capability can be put, not the least of which are the attraction to their side of newer nations and the undermining of confidence in US commitments among America's allies.

13. The political potency of its long range striking forces is thus one of the factors affecting the USSR's decisions on the size and structure of these forces. The Soviet leaders are highly alert to the opportunities for deterrence and intimidation opened up to them by their development of an ICBM capability. They began to exploit these opportunities even before any operational capability was achieved and succeeded in impressing many in the world on the basis of an anticipated strength.

14. As long as the Soviets seek to avoid serious risks of general nuclear war, however, there are limits on the degree of intimidation they can achieve. In the absence of a clearly demonstrated preponder-

9. *(Continued)*

ance of offensive and defensive power, they probably regard their ability to intimidate as dependent more on political and psychological considerations than on a precise calculation, by either side, of the degree of devastation which could be inflicted or absorbed. Consequently, once a credible threat of ability to destroy millions of people has been established—and in this the Soviets have to a large extent already succeeded—it is difficult for the Soviets to establish ICBM force levels on the basis of their political utility without also relating them to potential military use.

15. The Soviet leaders evidently regard both sides as unable deliberately to initiate general nuclear war without at the same time gravely menacing their own societies. They have probably long regarded a premeditated US surprise attack as unlikely. Since their defensive and retaliatory capability has grown, they almost certainly now believe that this possibility has become very slight. They may be concerned over the possibility of the US eventually unleashing an attack in desperation over the imminent collapse of the capitalist system, but such an eventuality must appear to them to be remote.

16. We believe that the Soviet leaders will continue throughout the period of this estimate to seek to avoid general nuclear war, and that they are not planning to build up their long range striking forces to a peak for the initiation of general war at any specific time. At the same time, they recognize that their pressure tactics in foreign policy involve risks, and they must consider the possibility of war arising from miscalculation, from a local crisis in which each side became progressively committed, or from sheer accident. The Soviets consider that while the probability of general war is low, the likeliest way in which it might occur would be at a time of crisis when both sides were in a heightened state of alert.

17. Recognizing these possibilities, the Soviet leaders will wish to provide their long range striking forces with capabilities not only for purposes of deterrence and intimidation but also for actually fighting a war which might begin under a variety of circumstances. For these contingencies they would wish to possess a long range force which could either: (a) seize the initiative if war appeared unavoidable, in order to blunt an anticipated imminent US attack; or (b) survive an initial attack and go on to retaliate with great strength. These considerations, together with their desire to pursue an assertive political strategy, almost certainly cause the Soviets to desire a long range striking capability greater than the minimum necessary to threaten the massive destruction of population.[12]

18. At the same time, a variety of considerations tend to limit the effort devoted to building a long range force. Other military forces with essential missions compete for attention and funds, and so do numerous nonmilitary programs. Moreover, the pace of technological change pertaining to weapons is great, and any decision to put heavy emphasis upon a particular weapon, or mix of weapons, could rapidly be overtaken by developments. For example, the advantages possessed by the ICBM for surprise combined with heavy weight of attack offer the Soviets an opportunity to improve their initial strike capability, but the increase in US alert, mobile, and hardened forces is already beginning to offset this potential advantage.

19. In sum, we believe that the Soviet leaders will continue to accord the long range forces an extremely important place in Soviet political and military strategy. For the reasons outlined above, they wish to possess a strong and modern striking force. At the same time, we believe they recognize that there are limits to the role which such a force can play in furthering their primarily political objectives. These considerations are probably broadly controlling in shaping the role, size, and composition of the long range force.[14]

[12] See the footnote of the Assistant Chief of Staff, Intelligence, USAF, to Conclusion 3.

10. NIE 11-8/1-61 *Strength and Deployment of Soviet Long Range Ballistic Missile Forces*

~~TOP SECRET~~

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CIA HISTORICAL-REVIEW PROGRAM

~~SC 09678-61~~

NATIONAL INTELLIGENCE ESTIMATE

NIE 11-8/1-61

STRENGTH AND DEPLOYMENT OF SOVIET LONG RANGE BALLISTIC MISSILE FORCES*

(SUPPLEMENTS NIE 11 - 8 - 61)

THE PROBLEM

To estimate current Soviet operational strength in ICBM's and other ground-launched ballistic missiles with ranges of 700 n.m. or more, to identify present areas and methods of deployment, and to estimate the probable trends in strength and deployment over the next few years.

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* NIE 11-8/1-61 revises and updates the estimates on this subject which were made in NIE 11-8-61: "Soviet Capabilities for Long Range Attack", TOP SECRET, 7 June 1961. [ ] The new estimate is issued [ ] so that the reader can fully appreciate the quantity and quality of information on which it is based.

A brief summary of this estimate, [ ] will be included in the forthcoming NIE 11-4-61: "Main Trends in Soviet Capabilities and Policies, 1961-1966", now scheduled for completion in December 1961. In that estimate, the treatment of ground launched missiles will be incorporated into a summary of the entire Soviet long-range attack capability, including bombers, air-to-surface missiles, and submarine-launched missiles. For our current estimates on these latter elements of the long range striking force, see NIE 11-4-61, Annex A: "Soviet Military Forces and Capabilities", 24 August 1961, TOP SECRET, paragraphs 16-23.

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10. *(Continued)*

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CONCLUSIONS

1. New information, providing a much firmer base for estimates on Soviet long range ballistic missiles, has caused a sharp downward revision in our estimate of present Soviet ICBM strength but strongly supports our estimate of medium range missile strength.

2. We now estimate that the present Soviet ICBM strength is in the range of 10 - 25 launchers from which missiles can be fired against the US, and that this force level will not increase markedly during the months immediately ahead. 1/ We also estimate that the USSR now has about 250-300 operational launchers equipped with 700 and 1,100 n.m. ballistic missiles. The bulk of these MRBM launchers are in western USSR, within range of NATO targets in Europe; others are in southern USSR and in the Soviet Far East. ICBM and MRBM launchers probably have sufficient missiles to provide a reload capability and to fire additional missiles after a period of some hours, assuming that the launching facilities are not damaged by accident or attack.

3. The low present and near-term ICBM force level probably results chiefly from a Soviet decision to deploy only a small force of the cumbersome, first generation ICBMs, and to press the development of a smaller, second generation system. Under emergency conditions the existing force could be supplemented somewhat during the first half of 1962, but Soviet ICBM strength will probably not increase substantially until the new missile is ready for operational use, probably sometime in the latter half of 1962. After this point, we anticipate that the number of operational launchers will begin to increase significantly. On this basis, we estimate that the force level in mid-1963 will approximate 75-125 operational ICBM launchers. 2/

1/ The Assistant Chief of Staff, Intelligence, USAF, does not concur in this sentence. See his footnote following the Conclusions.

2/ The Assistant Chief of Staff, Intelligence, USAF, does not concur in paragraph 3. See his footnote following the Conclusions.

4. In addition to 700 and 1,100 n.m. missiles now available, the USSR will probably have a 2,000 n.m. system ready for operational use late this year or early next year. The USSR's combined strength in these missile categories will probably reach 350-450 operational launchers in the 1962-1963 period, and then level off.

5. Soviet professions of greatly enhanced striking power thus derive primarily from a massive capability to attack European and other peripheral targets. Although Soviet propaganda has assiduously cultivated an image of great ICBM strength, the bulk of the USSR's present capability to attack the US is in bombers and submarine-launched missiles rather than in a large ICBM force. While the present ICBM force poses a grave threat to a number of US urban areas, it represents only a limited threat to US-based nuclear striking forces. 3/

3/ The Assistant Chief of Staff, Intelligence, USAF, does not concur in paragraph 3 and the last sentence of paragraph 5. See his footnote following the Conclusions.

10. *(Continued)*

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~~SC-09678-61~~

Position on ICBM force levels of the Assistant Chief of Staff, Intelligence, USAF:

1. The Assistant Chief of Staff, Intelligence, USAF believes that the Soviets had about 50 operational ICBM launchers in mid-1961 and that they will have about 100 in mid-1962 and about 250 in mid-1963. In his view, the early availability and high performance record of the first generation ICBM indicates the probability that, by mid-1961, substantial numbers of these missiles had been deployed on operational launchers. Four considerations weigh heavily in this judgment:

a. The continuance of [ ] firings of the first generation ICBM;

b. The feasibility of adapting the type "C" pad - now identified as being deployed in the field - for use with the first generation system;

c. [ ]

d. The USSR's current aggressive foreign policy indicates a substantial ICBM capability.

2. In view of the time that has passed since the first generation system became suitable for operational deployment, now over 18 months, the Assistant Chief of Staff, Intelligence, USAF believes that about 50 operational launchers in mid-1961 is likely, even though the Soviets may have elected to await development of second generation missiles before undertaking large-scale deployment.

3. The Assistant Chief of Staff, Intelligence, USAF believes that the force now deployed constitutes a serious threat to US-based nuclear striking forces.

4. As to the future, the Assistant Chief of Staff, Intelligence, USAF believes that the Soviets will continue to deploy first generation missiles, as an interim measure until the second generation missiles become available. He believes that the Soviets would prefer this approach to acceptance of an inordinate delay in the growth of their ICBM capabilities. Once the second generation system has become operational, which could be in early 1962, he believes that deployment will be accelerated, with first generation missiles being withdrawn from operational complexes and replaced by the new missiles. It is evident from their test program that the Soviets feel obliged to increase the tempo of their efforts. The Assistant Chief of Staff, Intelligence, USAF believes that this sense of urgency, plus the gains realizable from experience will result, in the next year or two, in a launcher deployment program more accelerated than that indicated in the text.

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DISCUSSION

6. The requirement to revise our estimates on Soviet long range ballistic missile forces stems from significant recent evidence [ ] the 1961 activities at the Soviet ICBM and space vehicle test range has provided information on the new types of ballistic vehicles now being developed and on the pace and progress of the development programs. [ ] the first positive identification of long range ballistic missile deployment complexes, [ ] excellent guidance as to Soviet deployment methods, [ ] useful evidence on the general status and organization of long range missile forces. Therefore, although significant gaps continue to exist and some of the available information is still open to alternate interpretations, the present estimate stands on firmer ground than any previous estimate on this critical subject.

ICBM Development

7. The test-firing program from the Tyuratam CBM and space launching rangehead has been much more intensive in 1961, and has at the same time suffered many more failures, than in any other period in its four year history. Thirty-nine launching operations were undertaken between January and 17 September 1961. 4/ Of these, 13 involved either first generation ICBMs or space vehicles using essentially the same booster. All but one of these 13 were generally successful. The other 26 operations involved new vehicles not previously observed in range activities. Of these, only about half resulted in generally successful

4/ A more recent launching operation on 19 September 1961, which resulted in a failure, cannot as yet be categorized as to type of vehicle.

firings which reached the vicinity of the instrumented impact areas. Of the last seven operations involving new vehicles, however, six have been generally successful. (See Figure 1.)

8. One of the new vehicles (called Category B by US intelligence) is probably a second generation ICBM; the other (Category C) may be a competitive ICBM design or a special vehicle to test ICBM and space components. Both are tandem staged, that is, the upper stage is ignited at altitude as in the case of Titan, rather than at launch as in the case of Atlas and the first generation Soviet ICBM. Our data are sufficient to show that both of the new vehicles are liquid propelled, but not to establish whether the propellants are storable or non-storable. Some aspects of [ ] performance of the upper stage of the Category B vehicle are similar to those of the 2,000 n.m. missile, which was tested intensively at Kapustin Yar for some months preceding the Category B operations at Tyuratam. The vehicles fired to a distance of 6,500 n.m. into the Pacific on 13 and 17 September 1961 were probably Category B vehicles. Some relationship seems to exist between the upper stages of the Category C vehicle and Venus probes. Despite this apparent relationship with space vehicles, it was a Category C firing which immediately preceded Khrushchev's remark to McCloy last July, that a "new ICBM" had been launched successfully. No further details are known about the configuration, propulsion, guidance, range, or payload of the new vehicles. 5/

9. The 1961 tests confirm our previous estimate that the Soviets would develop a new ICBM system, and we continue to believe that a major requirement for such a system is a missile which can be more readily handled and deployed than their original ICBM. This belief is supported by a reliable clandestine source who learned, in 1960 or early 1961, that the Soviet leadership desired an ICBM using higher-energy fuel which

5/ We have taken note of Soviet statements concerning a 100 megaton weapon. We do not believe that present Soviet capabilities include a missile warhead with 100 megaton yield or a ballistic vehicle capable of delivering such a warhead to intercontinental ranges. We will examine this matter in fuller detail in an early estimate.

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would require less bulk. In order to be flight tested in early 1961, design work on a new missile was certainly underway in 1958. Nuclear tests appropriate to the development of lighter warheads were conducted in 1957 and 1958; the current nuclear testing program may serve further to prove the warhead design.

10. Although the flight-test failures in the first half of 1961 probably set back the Soviet schedule for development of second generation missiles, it is clear from the test range activities that the R&D program has been pursued with great vigor. The recent successes with the Category B vehicle, and the probable firing of such vehicles to 6,500 n.m. after only about 8 months of testing to Kamchatka, suggest that the initial difficulties with this system may now have been largely overcome. Moreover, it is probable that one or both the new vehicles have borrowed components or at least design techniques from proven systems, thereby aiding the R&D program. We believe that the program will continue to be pursued with vigor, and that a smaller, second generation ICBM will have been proven satisfactory for initial operational deployment in the latter half of 1962.

11. Thus we believe that the first generation system will be the only Soviet ICBM system in operational use for the months immediately ahead and probably for about the next year. Despite its inordinate bulk and the other disadvantages inherent in a non-storable liquid fueled system, the first generation system is capable of delivering a high yield nuclear warhead with good accuracy and reliability against targets anywhere in the US. (For a summary of its estimated operational characteristics, see Figure 2.) Test range launchings of first generation missiles (now called Category A) continued from January through July. [

] These latest Category A firings were normal, [

] Firings 16 hours apart could reflect

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the training of operational crews for launching second salvos, but it cannot be determined whether these firings were from a single pad. Accuracy could not be determined, but reliability continued high. 6/

Utilization of Launching Pads

12. Soviet ICBM capabilities at present depend in part, and in the near future will depend in considerable measure, upon whether or not the deployment complexes now being discovered [ ] can be used to fire first generation missiles, or whether they cannot become fully operational until a second generation missile becomes available. The first generation missile is obviously compatible with massive, fully rail-served launchers similar to those at Tyuratam Areas A and B. But the launchers at confirmed field complexes, whose construction began only in late 1959 or thereafter, resemble the simplified pair of pads at Tyuratam Area C, where missiles are transported to the pad by road and some of the support equipment is mounted on vans. (For artists' conceptions of the launchers at Tyuratam and a layout of the rangehead, see Figures 3-5.)

13. From our examination of the 1961 test firing program, the physical dimensions of various items at Areas A and C, and the requirements for handling and firing the first generation missile, we conclude that the simplified Area C was designed for a new and smaller missile now being test fired. Although it is technically feasible for the Soviets to adapt the rail-based first generation missile to road served launchers of the type at Area C, it would be necessary to redesign much of the check-out, handling, erecting, and fueling equipment. This redesigned equipment would differ from both that at Area A and that designed for use with the

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6/ To date we have no firm evidence to indicate that the Soviets have experimentally investigated the decoy problem in ICBM flights to Kamchatka. [ ] We believe that the Soviets can and will provide decoy protection, should they deem it necessary.

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new missile. Such action might have been taken as an interim measure if a long delay in the advent of the second generation system had been anticipated well in advance.

ICBM Deployment

14. [ ] over the past three months, we have positively identified three ICBM complexes under construction. Two are near Yur'ya and Yoshkar-Ola, in a region several hundred miles northeast of Moscow, and the third is near Verkhnyaya Salda in the Urals. The paired, road-served pads at these complexes closely resemble those at Tyuratam Area C. Near Kostroma, in the same general region but closer to Moscow, [ ] we believe this is possibly a fourth complex similar to the others. [ ] Plesetsk, farther to the northwest, [ ] was too limited either to confirm or rule out this location as an ICBM deployment complex. (The locations of presently known and suspected areas of ICBM deployment activities are shown in Figure 9.)

15. The new evidence confirms that the present Soviet deployment concept involves large, fixed complexes, with multiple pads and extensive support facilities. The identified deployment complexes are served by rail spurs which provide their major logistic support. The complexes are highly vulnerable to attack. For example, although the Yur'ya complex is quite large, the entire installation is soft and each pair of pads is separated from its neighbor by only 3-4 n.m. [ ] For active defense against aircraft, SA-2 surface-to-air missile sites are being installed near the complexes.

16. At Yur'ya, the confirmed complex whose construction appears most advanced, eight launchers in four pairs were observed in various

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stages of construction in mid-1961 (see Figure 6). Considerations of logistics and control, together with evidence from the MRBM program and other factors, lead us to believe that eight is the typical number of launchers for this type of complex.7/ Each pair of launchers has checkout and ready buildings which are probably capable of housing a missile for each pad; however, the extent of the support facilities strongly suggests that additional missiles are to be held there to provide a reload or standby capability. The designed salvo capability of the complex is apparently to be eight missiles. There would be at least 5 minutes delay between groups of four missiles if the system is radio-inertial (as is the first generation ICBM) and if one set of guidance facilities is provided for each pair of launchers. A second salvo might be attempted after some hours, assuming the launching facilities were not damaged by accident or attack. Although we have no direct evidence on this matter, we believe it might be feasible to prepare a second salvo in 8-12 hours.

17. On the basis of evidence dating back to 1957 and other more recent information, we have estimated that Plesetsk is an ICBM complex with rail-served launchers designed to employ the first generation ICBM. The installation at Plesetsk (see Figure 7) is even larger than the Yur'ya complex. Although the presence of ICBM launchers has not been confirmed, there are SAM sites, several very large support areas, and numerous buildings, including what appears to be housing for some 5,000 to 15,000 persons. [ ] evidence is inadequate to establish the number of launchers which may be at Plesetsk. We believe that the number may be as few as two, but four or more is also possible. An ICBM complex involving this much equipment, investment, and personnel would probably have a reload of at least one missile per pad. Based on

7/ The Assistant Chief of Staff, Intelligence, USAF, believes that this typical number may be larger than eight. He agrees, however, that if guidance facilities are provided for each pair of launchers, the sequence of launching would be as described in the text.

Tyuratam experience, we estimate the time to prepare a second salvo at about 16 hours. 8/

18. The new evidence gives a better measure of the timing of some ICBM deployment activities. Based on its size, the extent of its facilities, and its present state of construction, the Yur'ya complex must have been started in the autumn of 1959, concurrent with or very shortly after the start of construction at Tyuratam launch Area C. Yur'ya is probably one of the earliest complexes of its type. Construction and installation of equipment will probably be completed some time early in 1962. The similar complex at Yoshkar-Ola is many months behind Yur'ya; the evidence is less conclusive with respect to Kostroma and Verkhnyaya Salda, but what can be seen is apparently in the early stages of construction. From the evidence, therefore, we have reasonably firm indications that at least two years were used for the construction of even the simpler ICBM complexes, although this may be reduced to about 18 months as experience is gained.

Adequacy of Recent Intelligence Coverage

19. [ ] since mid-1960, our coverage of suspected deployment areas in the USSR has been substantially augmented. [ ] Soviet missile test range installations [ ] are now known to bear a close resemblance to deployment sites in the field. On the basis of this activity, combined with other information and analysis, we now estimate that we have good intelligence coverage of [

8/ The Assistant Chief of Naval Operations (Intelligence), Department of the Navy, believes that evidence of ICBM deployment at Plesetsk is indeterminate but that, in the aggregate, it points against such deployment.

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more than 50 percent of those portions of the USSR within which ICBM deployment is most likely. 9/

20. Of the five confirmed or possible ICBM complexes Yur'ya, Plesetsk, and Verkhnyaya Salda were previously suspected We previously had not suspected Yoshkar-Ola or Kostroma.

21. many previously suspected areas did not contain ICBM complexes as of the summer of 1961. Four areas remain under active consideration as suspected locations of ICBM deployment activity (see Figure 9). Past experience indicates that some or all of the areas now under active consideration may prove to be negative, and conversely, that deployment activity may now be under way in other unsuspected areas.

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Probable ICBM Force Levels 10/

22. We believe that our coverage of both test range activities and potential deployment areas is adequate to support the judgment that at present there are only a few ICBM complexes operational or under construction. While there are differences within the intelligence community as to the progress of the Soviet program to date and the precise composition of the current force, we estimate that the present Soviet ICBM capability is in the range of 10-25 launchers from which missiles can be fired against the US. The low side of this range allows for the possibility that the Soviets could now fire only a token ICBM salvo from a few launchers, located at the Tyuratam rangehead and an operational complex, perhaps Plesetsk. The high side, however, takes into account the limitations of our coverage and allows for the existence of a few other complexes equipped with first generation missiles, now operational but undetected.

23. The Soviet system is probably designed to have a refire capability from each launcher. The USSR may therefore be able to fire a second salvo some hours after the first, assuming that the launching facilities are not damaged by accident or attack.

24. The reasons for the small current capability are important to an estimate of the future Soviet buildup. The first generation system, designed at an early stage of Soviet nuclear and missile technology, proved to be powerful and reliable but was probably too cumbersome to be deployed on a large scale. One or more first generation sites may have been started but cancelled. [

] The urgent development of at least one second generation system probably began in about 1958, and an intensive firing program is now underway concurrent with the construction of simplified deployment complexes.

10/ The Assistant Chief of Staff, Intelligence, USAF, does not concur in the estimate of ICBM force levels. For his position, see his footnote following the Conclusions.

We therefore believe that in about 1958 the Soviet leaders decided to deploy only a small force of first generation ICBMs while pressing toward second generation systems.

25. The net effect of this Soviet decision, together with whatever slippage is occurring in the development of second generation systems, has been to produce a low plateau of ICBM strength. Under emergency conditions the existing force could be supplemented during the first half of 1962 by putting some second generation ICBMs on launcher at one or two completed complexes before the weapon system has been thoroughly tested. However, the Soviets could not have very much confidence in the reliability, accuracy and effectiveness of such a force. In any event, operational ICBM strength will probably not increase substantially until the new missile has been proved satisfactory for operational use, probably some time in the latter half of 1962. Alternatively, the possibility cannot be excluded that second generation ICBMs could be proved satisfactory for operational use somewhat earlier in 1962, possibly as soon as the first simplified complex is completed. After this point, we anticipate that the number of operational launchers will begin to increase significantly.

26. We continue to believe, for the many reasons adduced in NIE 11-8-61, that the Soviet leaders have desired a force of several hundred operational ICBM launchers, to be acquired as soon as practicable over the next few years. In addition to the complexes known to be under construction, it is probably that work is under way on other undiscovered complexes and that the construction of still others is scheduled to begin soon. Taking account of this probability, together with our present intelligence coverage and our information on site activation lead-time, we estimate that the force level in mid-1963 will approximate 75-125 operational ICBM launchers. The high side of this range allows for eight complexes of eight launchers each under construction at the present time, with four more scheduled to begin by the end of the year; it would

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require site activation time to decrease to about 18 months by the end of the year; it builds from a present force level of about 25 operational launchers. The low side of the mid-1963 range would be achieved if six complexes were now under construction, two more were begun by the end of the year, and the present force level were only about 10 launchers.

27. As noted in NIE 11-8-61, Soviet force goals for the period to 1966 will be increasingly affected by developments in US and Soviet military technology, including the multiplication of hardened US missile sites, the possible advent of more advanced Soviet missiles which can better be protected, and by developments in both antimissile defenses and space weapons. The international political situation will also affect Soviet force goals, and there is a good chance that the Soviet leaders themselves have not yet come to a definite decision. We have not been able as yet to review, in the light of the new evidence, these and other considerations pertaining to the probable future pace of the Soviet ICBM program. Therefore we are unable to project a numerical estimate beyond mid-1963. Considering the problems involved in site activation, however, we believe that a rate of 100 or possibly even 150 launchers per year beginning in about 1963 would be feasible. To accomplish such a schedule, the USSR would have to lay on a major program of site construction within the next year, which we believe would be detected

[ ]

Medium and Intermediate Range Ballistic Missiles

28. [ ] confirms the large-scale deployment of 700 and 1,100 n.m. ballistic missiles in western USSR. [ ] approximately 50 fixed sites with a total of about 200 pads suitable for launching these MRBMs have been firmly identified in a wide

belt stretching from the Baltic to the southern Ukraine. [ ] we are virtually certain that there are about 10 additional sites [ ] Taking account of indicators pointing to still other locations [ ] we estimate with high confidence that in the western belt alone there are now about 75 sites with a total of about 300 launch pads, completed or under construction. (For known and estimated site locations in this area, see Figure 9.)

29. The new information does not establish whether individual sites are fully operational, nor does it reveal which type of missile each is to employ. [ ] approximately three-quarters of the identified sites appeared to be complete or nearly so, some were under construction, and the evidence on others is ambiguous. Construction has probably been completed at some sites [ ] the installation of support equipment and missiles could probably be accomplished relatively quickly thereafter, perhaps in a period of some weeks. Three basic site configurations have been observed, all of them bearing a strong resemblance to launch areas at the Kapustin Yar rangehead (see Figure 8). Any of the three types could employ either 700 or 1,100 n.m. missiles, whose size and truck-mounted support equipment are virtually identical. The sites could not employ ICBMs, but one type might be intended for the 2,000 n.m. IRBM which has been under development at Kapustin Yar.

30. On the basis of the new evidence and a wealth of other material on development, production, training and deployment, we estimate that in the western belt alone the USSR now has about 200-250 operational launchers equipped with 700 and 1,100 n.m. ballistic missiles, together with the necessary supporting equipment and trained personnel. From these launchers, missiles could be directed against NATO targets from Norway to Turkey. On less firm but consistent evidence, about 50 additional

launchers are believed to be operational in other areas: in the Transcaucasus and Turkestan, from which they could attack Middle Eastern targets from Suez to Pakistan; and in the southern portion of the Soviet Far East within range of Japan, Korea, and Okinawa. [ ] the presence of some sites in Turkestan and in the Soviet Far East, north of Vladivostok.

31. On this basis, we estimate that the USSR now has a total of about 250-300 operational launchers equipped with medium range ballistic missiles, the bulk of them within range of NATO targets in Europe. This is essentially the same numerical estimate as given in NIE 11-8-61, but it is now made with greater assurance.

32. Contrary to our previous view that MRBMs were deployed in mobile units, we now know that even though their support equipment is truck-mounted, most if not all MRBM units employ fixed sites. Like the ICBM complexes, these are soft, screened from ground observation by their placement in wooded areas, and protected against air attack by surface-to-air missile sites in the vicinity. The systems are probably designed so that all ready missiles at a site can be salvoed within a few minutes of each other. Two additional missiles are probably available for each launcher; a second salvo could probably be launched about 4-6 hours after the first. There is some evidence that after one or two salvos the units are to move from their fixed sites to reserve positions. Their mobility could thus be used for their immediate protection, or they could move to new launch points to support field forces in subsequent phases of a war.

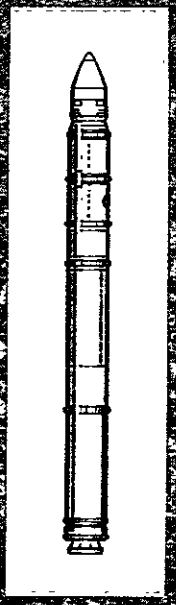
33. The Soviet planners apparently see a larger total requirement for MRBMs and IRBMs than we had supposed. While the rate of deployment activity in the western belt is probably tapering off after a vigorous three-year program, some sites of all three basic types are still under construction. There will therefore be at least some increase in force levels in the coming months. The magnitude of the buildup thereafter will depend largely on the degree to which the 2,000 n.m. system is deployed,

and whether or not it will supplement or replace medium range missiles.

34. With the advent of the 2,000 n.m. IRBM, probably in late 1961 or early 1962, the Soviets will acquire new ballistic missile capabilities against such areas as Spain, North Africa, and Taiwan. To this extent at least, they probably wish to supplement their present strength. They may also wish to deploy IRBMs or MRBMs to more northerly areas within range of targets in Greenland and Alaska. Moreover, evidence from clandestine sources indicates that the Soviet field forces are exerting pressure to acquire missiles of these ranges. In general, however, we believe that the future MRBM/IRBM program will emphasize changes in the mix among the existing systems, and later the introduction of second generation systems, rather than sheer numerical expansion. Taking these factors into account, we estimate that the USSR will achieve 350-450 operational MRBM and IRBM launchers sometime in the 1962-1963 period, and that the force level will be relatively stable thereafter.

PART II

SOVIET STRATEGIC FORCE DEVELOPMENT 1960-72



Part II:
Soviet Strategic Force Development, 1960-72

Soviet military policy is in part a product of Kremlin politics . . . nothing of consequence can be decided until it has been collectively scrutinized and weighed against the individual interests of the political leaders.

NIE 11-4-68

Soviet Force Requirements

For most of the 1960s the intelligence community struggled to find criteria that it could use to measure and understand the growth of the Soviet ICBM force. In general, analysts were inclined to believe that the Soviets were seeking across-the-board supremacy in strategic forces, but the Board of National Estimates, supported by CIA's Office of Research and Reports, did not believe that the Soviets could realistically hope to achieve a decisive superiority over the United States.

A key element in projecting Soviet force requirements was the personality of the mercurial Nikita Khrushchev. In reforming and modernizing the Soviet armed forces, he had sought to improve their effectiveness while bringing about needed (and, in the end, illusory and futile) internal economic reform. Arguing that nuclear weapons would be decisive in future wars, Khrushchev had worked to build up Soviet strategic forces while cutting back on conventional land forces. Soviet defense spending thus remained relatively stable, but at the cost of growing opposition from within the Soviet military.[1] The "collective leadership" that overthrew Khrushchev in 1964 (soon to be dominated by the Communist Party General Secretary, Leonid Brezhnev) put an end to this policy of restraint, or tried to. Expansion of Soviet strategic forces now would be matched by renewed emphasis on conventional theater and ground forces.[2] In the end this policy would destroy the Soviet economy and contribute to the destruction of the nation itself, but the immediate result was an alarming growth in Soviet military capabilities across the board.

NIE estimates of projected Soviet force levels (force projections) in the 1960s failed to recognize the sacrifices that the Soviet leadership was willing to make to match or exceed US guided missile deployments. The result

[1] NIE 11-4-65 *Main Trends in Soviet Military Policy*, 14 April 1965; pp. 4, 7-8.
[2] NIE 11-4-68 *Main Issues in Soviet Military Policy*, 19 September 1968; pp. 3-8.

was that, although near-term projections were more accurate than those for several years into the future, there was a general tendency to underestimate Soviet force levels. In fact, Soviet ICBM launcher deployments were underestimated by about the same amount that they had been overestimated in the previous decade. Such was the progress (if that is the word) of the arms race, however, that a far smaller percentage of the Soviet ICBM force was involved.

11. NIE 11-4-60 *Main Trends in Soviet Capabilities and Policies, 1960-1965*

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APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

MAIN TRENDS IN SOVIET CAPABILITIES AND POLICIES, 1960–1965

THE PROBLEM

To review significant developments affecting the USSR's internal political situation, economic, scientific, and military programs, relations with other Bloc states, and foreign policy, and to estimate probable Soviet policies and actions over about the next five years.

SUMMARY OF THE ESTIMATE

1. The attempt to forecast developments within the USSR and in Soviet power and policy for five years ahead is subject to some very severe limitations. Our estimative reach in many of the detailed matters discussed in the body of this Estimate is frankly acknowledged to fall well short of such a period. In respect of matters where we have actually made five-year estimates the degree of certainty falls off markedly for the later years. In the summary paragraphs which follow we are dealing with the broader trends which will determine the nature and magnitude of the challenge which the USSR will present to US security in the years ahead. These we believe are predictable in the main, although their particular manifestations clearly depend upon unknown and imponderable factors, or even upon purely fortuitous developments.

THE PRESENT SOVIET OUTLOOK

2. One of the principal factors which will shape future developments is the outlook of the Soviet leaders themselves. There are two essential aspects of this. One is the Soviet leaders' belief, derived from the Marxist-Leninist ideology which continues to dominate their thinking, that their society and the non-Communist world are locked in an irreconcilable struggle which must continue until their system comes to dominate the world. There is no evidence at present to indicate that the Soviets will come to accept a world system which assumes the genuine coexistence of states and ideologies. For so brief a period as five years, Soviet behavior and policy will surely be marked by fundamental hostility toward the West, and especially toward the US as the principal obstacle to the fulfillment of Soviet aims.

3. A second essential feature of the Soviet outlook in the current period is its high confidence in the growth of the USSR's power and influence. Looking back to the weak and perilous position in which the new Communist regime found itself in 1917, remembering all the internal and external trials it has survived, and considering its growth in relative economic and military power over the last 20 years, the Soviet leaders are encouraged in their doctrinaire expectations about communism's inevitable triumph. That it was a Communist rocket which first ventured into space symbolizes for them that they are marching in the vanguard of history. They think they see a response to their doctrines and influence in the revolutionary turmoils of Asia, Africa, and Latin America. They expect to associate the peoples emerging from colonialism and backwardness with their own cause, mobilizing them against an ever more constricted world position of the Western states. The relative internal stability of the latter at present they see as only a transient phase.

11. *(Continued)*

4. While hostility toward the West and confidence in the eventual outcome of the world struggle will inspire Soviet behavior in the period ahead, we do not believe that the result will be policies of recklessness. The Soviet leaders recognize that Western resources remain great, and that the struggle for Communist power in the uncommitted world will be prolonged. They are particularly conscious of the hazards of nuclear war. Moreover, they have numerous problems of their own within the Communist Bloc which may move them to caution. Their policies will be marked by a persistent activism and opportunism, but also by what they consider to be a due measure of caution. More important, however, than the Soviet outlook and aims, especially since these offer little hope for accommodation and genuine peace, are the strengths and resources which the Soviets will be able to bring to the pursuit of their aims.

THE SOVIET POWER BASE

Economic Aspect

5. Perhaps the most firmly based of our estimates are those which relate to the growth of Soviet economic power. The Soviet economy has the resources and plant as well as the planning and directing mechanisms to insure steady fulfillment of most of the goals in industrial expansion which the leadership sets. The industrial targets of the Seven-Year Plan (1959–1965), providing for 8.6 percent annual increase in industrial output, will almost certainly be met ahead of schedule. We estimate that by 1965 total investment will reach about one-third of gross national product (GNP), as compared with the present US rate of about one-fifth of GNP. Only in agriculture, which is burdened by a heritage of errors and neglect, will the regime fall well short of its goals, but even here we estimate that output will increase by about 3 to 4 percent per year. The GNP of the USSR in 1959 was somewhat less than half that of the US; it is growing about twice as fast and by 1965 will probably be somewhat more than half of US GNP.

6. GNP is a rough measurement, however. More important in terms of world power competition are the uses to which economic resources are put. The USSR maintains a defense effort judged to be of about the same magnitude as that of the US. The dollar value of Soviet investment in industry in 1959 exceeded the highest US figure, achieved in 1957. For purposes related to national power—defense, science, foreign economic and political operations—the Soviets are increasingly in a position to assign resources freely and without agonizing self-denials. That they are able to provide the resources for national power on a scale equivalent to the US is due to the virtually absolute command which the leadership has over the disposal of resources. It will continue to give the highest priority to purposes related to national power in order to "overtake and surpass" the US. The Soviet regime has bought economic growth and military strength at the expense of the living standards of the Soviet people. But its resources are now great enough so that it feels able to provide for improved living standards also. The consumption level remains low but we estimate that per capita increases will occur over the next five years at the respectable rate of four percent annually. The Soviet challenge in the economic field will be increasingly formidable, not because the USSR has any chance of overtaking the US standard or style of living, but becomes Soviet resources for the competition in power are already great and will continue to grow rapidly.

Military Aspect

7. As indicated, military power has one of the first claims upon Soviet resources. Our estimates on the development of Soviet military power until 1965 are far less certain than those on the Soviet economy. This is partly due to unpredictable developments during a period of rapid change in military technology. It is due more to gaps in certain kinds of critical information about Soviet military programs. Although in recent years the Soviets have released fuller economic data than previously,

11. *(Continued)*

on essential matters in the military field they continue to maintain a policy of extreme secrecy, which they evidently view as a major military asset in itself.

8. The most significant development in the military field during the period of this estimate will be the USSR's emergence from strategic inequality, primarily through the build-up of an ICBM force, and also through development of its defense systems against nuclear attack. The overcoming of an inferiority under which the Soviets have operated throughout the postwar period is already having a profound effect on Soviet attitudes and policy. It inspires the confidence remarked upon above, has emboldened the Soviets to challenge the West on a vital issue like Berlin, and has led them to engage the West in other areas around the world formerly conceded to be beyond the reach of Soviet power.

9. The Soviet leaders will not be content with the gains in military power they have made. They will seek, by intensive research and development through the years ahead, as well as by equipping their forces with advanced weapons as these become available, to acquire an advantage over the West. If they succeed, they will press their advantage ruthlessly, though still within what they would consider to be the limits of tolerable risk to their own rule and system. It seems quite clear that in their present view both sides are deterred from the deliberate initiation of general war as a rational course of action. Moreover, with the weapons systems now on hand or likely to be available during the next few years, the Soviets probably do not count on acquiring an advantage so decisive as to permit them to launch general war under conditions which would not gravely menace their regime. Nevertheless, they are building their nuclear striking power with vigor, and we believe that they will build a substantial missile force. What we can learn of Soviet ideas suggests that their long-range striking capability is thought of primarily in terms of deterrence, and of employment for a heavy blow should the Soviets finally conclude that deterrence had failed, rather than in terms of the deliberate initiation of general war.[1] The Soviet missile force will also constitute an important means of political pressure, even though it is never used in actual combat.

10. In order to deal more effectively with the continuing bomber threat the Soviets are incorporating a large number of surface-to-air missiles into their air defense. They are now also doing large-scale research and development on antimissile systems in the hope of obtaining an advantage in this critical aspect of the future weapons balance. By the period 1963–1966 they will probably begin to deploy such a system, though its effectiveness is uncertain. Soviet research and development effort will probably also focus on the new threat presented by Polaris.

11. Partly as a result of the increased security the Soviets feel they have gained from their development of a variety of offensive and defensive missiles, they have announced a major personnel reduction in their forces, from about 3.6 to about 2.5 million men by the end of 1961. Barring a serious deterioration in the international situation, we believe the cut will be substantially carried out. We believe that tactical aviation has already been cut by one-half and naval aviation by two-thirds, the latter primarily through elimination of the fighter arm. However, the main weight of the cut will fall on the very large ground forces. Even with the reduction, the Soviets will still have substantial field ground forces: we estimate nearly 1.5 million men organized in 65 divisions averaging two-thirds strength and some 60 cadre divisions at about one-fourth strength. The submarine force will become even more than it is today the primary component of the Soviet Navy, and will include

[1] The Assistant Chief of Staff, Intelligence, USAF, believes that the evidence of offensive missile and bomber production and deployment shows a definite intent by the Soviet rulers to achieve a clear military superiority at the earliest practicable date. He feels we are entering a very critical twenty-four month period in which the USSR may well sense it has the advantage. The Soviet leaders may press that advantage and offer the US the choice of war or of backing down on an issue heretofore considered vital to our national interests.

11. *(Continued)*

nuclear and missile-carrying types suitable for strategic attack.

12. In sum, the USSR will continue to develop formidable military strength despite the personnel reduction. The Soviet military posture is designed primarily, we believe, to deter general war but also to fight such a war if necessary.[2] Equally, it is intended to bolster the USSR's power position and thereby to promote its general policies. Soviet capabilities for limited war in areas close to Bloc borders are obviously great, but for conflict in more distant areas they are comparatively slight. We do not believe that the USSR intends as a matter of policy to conduct limited war at remote ranges. However, we do not exclude that, with their current tendency to political involvement in remoter areas, the Soviets may seek to develop a greater capacity for intervening militarily, even if only to establish a military presence, in such areas. A really effective ability to do this would presumably depend heavily upon acquisition of base rights and facilities under friendly political arrangements.

Scientific Aspect

13. The Soviets obviously understand that science has become one of the key fronts in the world struggle, not only because of its relations to military capability but also because it is a major element in great power prestige. The scale of their effort, thanks to the heavy investment they made in training scientists in past years, is probably now roughly on a par with that of the US, at least in some fields of the basic sciences and in critical areas related to weapons technology. Presumably the scope of Soviet scientific activity will broaden as needs in these first priority areas are met. The quality of Soviet scientific work in many fields is now such that achievements conferring great prestige are as likely to occur in the USSR as in any other country.

Political Aspects

14. It is in estimating the political aspect of future developments within the Soviet Bloc that the greatest imponderables intrude. The political system within the USSR itself is stable, and it will almost certainly retain its totalitarian features. The regime will not be openly challenged by the Soviet people, who, even though many of them view it with apathy and ideological disillusionment, are in general hopeful for improvement in the conditions of their life and patriotically moved by the USSR's achievements and its position of world power. If there is change in the Soviet political system it will come from the higher levels of the party and government. In the relatively small group which constitutes the real governing class there are some signs of a desire for more regular participation in policy making, and for more reliance in policy execution on professional expertise instead of party agitational methods. While Khrushchev has avoided or been obliged to avoid the arbitrariness of Stalin, among those who surround him there are probably some who would like to move still further away from the domination of one man in the system. Given Khrushchev's age and state of health he may not survive as the dominating leader throughout the next five years. His successor at the head of the Soviet Government and party may be more restricted in the personal power he wields, but in any totalitarian system political developments are likely to depend heavily on the qualities and style which individual personalities bring to the exercise of great and arbitrary power.

15. In the area of political developments within the Communist Bloc it is the evolution of relations among the Bloc states which raises the greatest uncertainties at present. In general, the states of Eastern Europe have gained in economic strength and political stability in recent years, despite the continuing alienation and resentment of large parts of their populations. There seems little doubt that, with the more flexible and indirect methods of control the USSR has been employing since 1956–1957, it will be able to maintain a generally effective hegemony. However,

[2] The Assistant Chief of Staff, Intelligence, USAF, believes the Soviets seek a clear military superiority. See his footnote to paragraph 9.

11. *(Continued)*

China has raised a fundamental challenge to Soviet leadership of the Bloc. Even if some way is found to resolve the issues posed by China's desire to pursue a more militant policy toward the West, it raises the serious question as to whether the long-term unity of the Bloc under Soviet leadership can be maintained. We believe that there is a trend away from monolithic unity, and that in the long run, if China is to remain within the Bloc, a looser relationship is bound to develop. The future course of Sino-Soviet relations will obviously have profound consequences for the nature of the challenge which communism poses for the Free World. The West may be faced either with new dangers or new opportunities, or both.[3]

SOVIET POLICIES TOWARD THE NON-COMMUNIST WORLD

16. The general Soviet strategy for carrying on the world struggle in the present phase rests on two propositions. The first is that general nuclear war must be avoided because the costs in physical damage and social disintegration would be intolerable. The second is that the world position and power of the "imperialist" states can be undermined by a persistent and aggressive campaign waged by methods short of war—political struggle, economic and scientific competition, subversion. Political struggle takes the form of a constant agitation designed to capture and organize in broad mass movements the sentiments which focus on the great issues of the current period—peace, disarmament, anticolonialism, social justice, economic development. By manipulating these issues and by dramatizing the growth of Soviet power, the Soviets are also trying to align the governments of the underdeveloped and uncommitted states with the Bloc, and against the West. The Soviet leaders hope that the result will be a progressive isolation and loss of influence for the Western powers, divisions among them, and a decline in their ability to deal effectively with threats to their interests. This is what the Soviets mean by "peaceful coexistence"—a strategy to defeat the West without war.

17. This is not a strategy which aims immediately at the revolutionary seizure of power by Communist parties and the setting up of Communist regimes. The Soviets know that there are few countries where the Communists are strong enough to undertake such action, and where they themselves could count upon being able to deter intervention by non-Communist forces. The "peaceful coexistence" strategy is aimed mainly at gradually eliminating Western and building up Soviet influence around the world. The Soviets naturally expect that conditions will thereby be created which are favorable to the growth of Communist movements and which will sooner or later permit the latter to acquire state power peacefully, or by revolutionary action if necessary. Even though overt seizure of power is not now the main aim of the Soviet strategy, over a five-year period situations might arise where the gains from such action would seem important enough to the Soviets so that they would be willing to depart from their present general line.

18. The general line of Soviet policy estimated in the two preceding paragraphs falls within a range which excludes, on the one hand, the deliberate assumption of serious risks of general war, and on the other, abandonment of active struggle against the West. Within these limits we believe that the Soviet leaders will display both militancy and conciliation, at various times and in various proportions as seems to them most profitable. However, the Chinese challenge to Soviet authority involves basic questions of foreign policy, and brings severe pressure to bear on Soviet policy decisions. In trying to adjust to Chinese pressures, the Soviets may go farther in the direction of militancy and risk-taking

[3] The Assistant Chief of Staff for Intelligence, Department of the Army, and the Director for Intelligence, Joint Staff, believe that, in spite of Sino-Soviet frictions, the USSR and Communist China will continue to be firmly allied against the West and will render one another mutual support whenever an important interest of one or the other is threatened by the non-Communist world.

11. *(Continued)*

than they otherwise would. On the other hand, if the Soviets should conclude that the Chinese were pushing them towards unacceptable dangers, they might move as a matter of temporary expediency toward a greater degree of stabilization in their relations with the West than they would otherwise consider, though without altering their long-term aim of establishing Communism throughout the world.[4]

19. As a general rule, we believe that the Soviets would consider that the initiation of limited war with Soviet or even Bloc forces entailed unacceptably high risks and political liabilities. However, it cannot be excluded that situations will appear in which they would conclude that some prize was great enough, and the military and political risks acceptable enough, to justify resort to such action. The Soviets are aware, however, that any limited war carries a danger of expanding into general war. We believe, therefore, that their attitude toward the involvement of Soviet or Bloc forces in local and limited war will be a very cautious one, and will be governed by their estimate of the risks and advantages, both political and military, in each situation. Even so, there is always a possibility that they may miscalculate risks.

20. Negotiations with the Western Powers over outstanding issues are conceived by the Soviets as one of the modes of waging the struggle of "peaceful coexistence." They hope that the pressures which they attempt to build up against the West will result in concessions at the negotiating table. Intervals of more accommodating behavior and appeals for relaxed tensions are intended to encourage the making of such concessions. We expect this alternation of pressure and accommodation to be the regular pattern of Soviet behavior with respect to negotiation in the years ahead. Since the U–2 incident in May 1960 the Soviets have adopted a hostile and aggressive attitude which has made effective negotiation impossible. We believe that within the next six months or so the Soviets are likely to moderate this attitude and to attempt to get negotiations started again. It is also possible, however, that on the Berlin issue, where negotiation has so far failed to get them results, they will resort to intensified pressure and threats in an attempt to force the West into high-level negotiations under more unfavorable conditions.

21. We do not believe that the Soviets have a five-year plan for foreign policy in the sense that they set themselves particular goals to accomplish within a set time. Their policy is marked rather by an extraordinary opportunism, and in recent years by rapidity of response and vigor in execution. Over the next five years they probably look for new developments favorable to their interests to occur in a number of areas, but more especially in Africa, Latin America, Japan, Indonesia, and Iran. They probably intend to give particular attention to establishing a diplomatic and economic presence in Africa, to stimulating and exploiting movements on the Castro model in Latin America, and to encouraging the growth of a radical anti-American mass movement in Japan. Above all, however, they intend to build up their base of power within the Bloc itself, in the belief that during the next several years they can considerably improve their relative power position vis-a-vis the West. They believe that if they do so, more opportunities for Communist expansion, and more readily exploitable ones, will open up for them.

[4] The Assistant Chief of Staff, Intelligence, USAF, agrees that the Chinese challenge to Soviet authority will, undoubtedly, have its effect on Soviet policy toward the non-Communist world; however, he believes that the relationship of Soviet military power vis-a-vis the US is the essential determinant. Further, as expressed in his footnote to paragraph 9, he believes that should the Soviets feel that they have achieved a clear military superiority, they are likely to adopt policies involving serious risks of general war.

12. NIE 11-4-63 *Soviet Military Capabilities and Policies, 1962-1967*

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DISCUSSION

I. SOVIET MILITARY POLICY

A. Basic Views on War and Military Policy

1. The Soviets see military power as serving two basic purposes: defense of their system and support for its expansion. Thus, one of the most important objectives of Soviet military policy is to deter general war while the USSR prosecutes its foreign policies by means short of actual hostilities involving Soviet forces. Military power is constantly brought into play in direct support of these policies, through the threats which give force to Soviet political demands, through the stress on growing power which is intended to gain respect for the Soviet state and its Communist system, and through the military aid and support rendered to allies, friendly but neutral regimes, and anti-Western movements.

2. The Soviet leaders realize that their deterrent must be credible in the sense that it rests upon powerful military forces. Moreover, they recognize that deterrence may fail in some key confrontation in which, despite their best efforts to retain control over risks, either they or their opponents come to feel that vital interests are under challenge. Against this contingency, they wish to have a combination of offensive and defensive capabilities which will enable them to seize the initiative if possible, to survive enemy nuclear attack, and to go on to prosecute the war.

3. The Soviets evidently believe that the present overall military relationship, in which each side can exert a strong deterrent upon the other, will probably continue for some time to come. The Soviets are vigorously pursuing programs of research and development in advanced weapons, hoping if possible to create a strategic balance favorable to them. It is possible that some future technological breakthrough or advance would persuade them that they had acquired a decisive advantage which permitted them to take a different view of the risks of general war. We do not believe, however, that the Soviets base their military planning or their general policy upon the expectation that they will be able to achieve, within the foreseeable future, a military posture which would make rational the deliberate initiation of general war or conscious acceptance of grave risks of such a war.

4. A number of Soviet statements in recent years have expressed the view that limited war involving the major nuclear powers would inevitably escalate into general war. While such statements are intended in part to deter the West from local use of force, this official view also reflects a genuine Soviet fear of the consequences of becoming directly engaged in limited war involving Soviet and US forces. This probably

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also extends to involvement of Soviet forces with certain Allied forces in highly critical areas, notably Western forces in the European area. Nevertheless, they might employ their own forces to achieve local gains in some area adjacent to Bloc territory if they judged that the West, either because it was deterred by Soviet nuclear power or for some other reason, would not make an effective military response. They would probably employ Soviet forces as necessary if some Western military action on the periphery of the Bloc threatened the integrity of the Bloc itself. Should the USSR become directly involved in a limited war with US or Allied forces, we believe that the Soviets would not necessarily expand it immediately into general war, but that they would probably employ only that force which they thought necessary to achieve their local objectives. They would also seek to prevent escalation by political means.

5. Recent Soviet military writings call for professional study of the problems of nonnuclear combat, which could lead to some modification of the official view on limited war. However, we believe that the attention now being devoted to this problem is primarily responsive to indications of US interest in building NATO's capabilities for nonnuclear combat. In our view, it does not reflect any new Soviet conclusion that the USSR can now launch such wars without great dangers of subsequent escalation.

6. The USSR has regularly recognized the importance of the "war of national liberation," in which pro-Soviet or anti-Western forces challenge colonial or pro-Western regimes in a primarily internal conflict. In practice, Soviet behavior has followed neither the course of full support to all these wars, as Soviet propaganda often alleges, nor the course alleged by Khrushchev's Chinese critics, who claim that he withholds support entirely because of exaggerated fears that such a conflict might spark a general war. The USSR has rendered active assistance in some cases, such as Laos and Yemen, and little or none in others, such as Algeria and Angola, depending upon such practical factors as accessibility, the risk of defeat, and the attitude of other powers involved.

7. The USSR has also shown a recent willingness to provide some non-Bloc recipients of its military aid with more advanced equipment than heretofore. In some cases, notably Cuba and Indonesia, Soviet personnel have been employed to man this equipment, and are training indigenous specialists to operate it. This represents a significant departure from previous Soviet practice, which may be extended to other areas in the future.

8. As new and favorable opportunities arise, the Soviets will continue to offer these various kinds of assistance, and they may do this more frequently and aggressively in the future if their efforts to expand

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Soviet influence by political and economic means encounter continued frustration. We believe, however, that the Soviets will remain chary of any great commitment of prestige to the support of belligerents over whom they do not exercise substantial control or in circumstances in which they feel that winning is unlikely, and they will seek to avoid risk of widened hostilities which might result from "wars of national liberation." In particular, we believe that the Soviets will be very reluctant to commit their own forces openly in conflicts where they would risk a direct confrontation with US forces.

B. Soviet Military Policymaking

9. The application of these basic attitudes to particular situations and to the allocation of resources does, of course, pose serious policy problems. A number of additional factors have long affected the character of Soviet military policy. Geography and the traditions bound up with historical experience have inclined the Soviets toward a military preoccupation with Western Europe and a stress on large-scale ground combat. The capabilities and structure of US and other opposing forces influence directly both the size and shape of Soviet forces and exert a general upward pressure upon requirements in all fields. Perhaps most important is the technological and economic base of the nation, which constantly offers prospects for more effective weapons but also determines the extent to which these opportunities can be exploited without too great a sacrifice in other programs.

10. These factors, pointing in many contradictory directions, do not make for easy or unanimous decisions. Indeed, we have clear evidence of disagreement, compromise, and even reversal in the formulation of military policy in the last three years. This process of policymaking in the USSR appears in large part to involve the same problems familiar to US decision-makers. In addition, however, certain special features stand out. Fully informed Soviet military discussion, for example, seems to involve a smaller circle than in the US. Beyond the political leadership, some military officers, and a limited number of scientists and engineers, we know of no body of civilian advisers or publicists in the USSR comparable to the social scientists involved in the evolution of US military thinking. This is in part due to the great Soviet emphasis on security, which has the additional effect of reducing the flow of information within the officer corps. As a result, the Soviet military appear to experience special difficulty in adjusting their doctrine and concepts to the rapid changes characteristic of the postwar period. The continuing major influence of World War II commanders and the vivid memories of the Soviet experience in that war also contribute to a resistance to new concepts which is evident in professional discourse.

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11. Military programs have become more complex and expensive, and the professional recommendations of the military leadership on military problems have a greater impact on economic and foreign policy decisions. Furthermore, the political climate which has developed under Khrushchev is one which permits continuing discussion on a variety of problems, and the military leaders have used this opportunity to expound their views. With military and economic debates proceeding simultaneously and in close dependence on each other, it seems likely that the arguments of the marshals have been supported by those political leaders who did not wish to permit programs for consumer goods to impinge upon allocations to heavy industry.

12. We do not believe that the military aspires to an independent political role within the political system, and if it were to, party traditions and controls appear strong enough to defeat any efforts in this direction. But if, as we expect, the military and economic choices facing the USSR become more acute, the senior officers will probably find themselves more deeply involved in matters of general policy.

C. *The Recent Course of Military Policy*

13. The most important viewpoints in the controversy over military policy of the last few years have been those represented by Khrushchev and a few military theorists, on the one hand, and the majority of the senior military leaders, on the other. Three major differences have distinguished Khrushchev's approach to defense policy from that of the military leaders. First, Khrushchev is heavily concerned with the political uses of military power, whereas the professional responsibilities of the marshals require them to look in the first instance to actual war-fighting capabilities. Second, Khrushchev has asserted that a general war is almost certain to be short, with victory decided in the strategic nuclear exchange and with conventional arms, particularly theater forces, playing a quite secondary role. Most military leaders, on the other hand, appear to believe that general war would probably, but not certainly, be short but that, in any event, its conduct would require high force levels for most of the traditional service arms, including a multi-million man army. Third, Khrushchev is far more concerned than the marshals to keep military expenditures in check in order to meet what he regards as pressing needs in the civilian economy.

14. All these considerations were involved in the reorganization of the armed forces which Khrushchev inaugurated in January 1960. The essence of his plan was to place main reliance on nuclear missile forces and, on this basis, to reduce military manpower substantially and to accelerate the retirement of older weapons. This, he asserted, was the force structure best suited both to deter war and to fight one if necessary; moreover, it would release men and money for the civilian economy.

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15. From Khrushchev himself we know that this plan and its strategic justification were accepted only reluctantly by the military leadership. A controversial discussion ensued, encouraged by the regime, in which high officers debated, polemicized, and explored the military implications of modern warfare in a far more systematic fashion than previously. Several schools of thought became apparent, but a predominant view soon emerged which accepted the likelihood that the initial phase of a general war would be decisive, but went on to argue that even a relatively short war would require large forces of all types capable of defeating comparable enemy forces, overrunning base areas, and occupying territory in Eurasia. This discussion also focused attention on the enormous difficulties of mounting major military operations after receiving the full weight of a Western first strike, and the resulting importance, if in the Soviet view war became imminent and unavoidable, of seizing the strategic initiative by a pre-emptive attack.

16. At present, official military doctrine holds that a general war will inevitably involve the massive use of nuclear weapons, will begin with a strategic exchange, and will develop almost simultaneously along fronts of engagement as well. Strategic missile forces will play the primary role. The course and outcome of the war may well be decided in its initial phase by strategic nuclear weapons. However, the Soviets hold that such a conflict will not necessarily be short, and envisage the possibility of a long war involving protracted operations in Eurasia. Therefore, while current doctrine emphasizes a military policy of building strategic attack and defense capabilities, it supports as well the maintenance of large theater and naval forces, for use both in the initial and the possible subsequent phases of a general war.

17. We believe that debate continues in the USSR, not only over subsidiary propositions, but perhaps over some of the central tenets of this doctrine. The course of the debate was heavily influenced by external events in 1960–1961 which, intruding upon the discussion, undermined some of Khrushchev's contentions and permitted the military to retrieve some concepts which he had discarded. Thus the U–2 affair cast doubt on the adequacy of Soviet air defenses, on the efficacy of Soviet security, and on the wisdom of Khrushchev's efforts to relax tensions in relations with the US. In the following year, the US took decisions to step up both its strategic attack and general purpose forces. In Vienna, Khrushchev determined that the US did not regard the relationship of military power as requiring it to make major concessions on the Berlin question. All these developments called into question the adequacy of the Soviet military posture, both for supporting foreign policy and for conducting general war if necessary. In these circumstances, Khrushchev made such demonstrative military moves as the public suspension of the manpower reductions and the resumption of nuclear tests.

18. At about the same time, another burden was laid on Soviet military policymaking. For some months, US public disclosures had hinted that Soviet ICBM strength might be much smaller than had previously been believed. Beginning in the fall of 1961, the US began to assert this conclusion with great conviction, and to assert more strongly that the US was the strategic superior of the Soviet Union. From US statements and behavior, the Soviets could almost certainly judge that their security had been penetrated in an important way, probably one which, by permitting the US to locate Soviet targets, had a tangible effect upon the military balance. Their fears that no major Western concessions on Berlin would be forthcoming must have been strengthened. And the image of Soviet superiority, which they had heavily exploited to document their claims of the inevitable triumph of their system, was badly damaged.

19. It was against this background that the USSR took its decision to deploy strategic missiles to Cuba. This move involved a host of policy considerations and judgments which are not yet fully clear. In its military terms, however, it appears to have been a response to the question of how to create new opportunities for Soviet foreign policy by improving the strategic position of the USSR vis-a-vis the US, at some acceptable cost and at some early date. Even deployment at the levels detected promised a significant increase in first-strike capabilities for general nuclear war, and the Soviets may have intended to follow this up by establishing a larger missile force as well as a submarine base.

20. Khrushchev, however, probably considered its main impact to be psychological. At one level, the deployment and its acceptance by the US was intended to demonstrate Soviet might and US inability to contain it, thereby reversing the tendency of world opinion to regard the West as strategically superior. At another, however, it was intended to increase the deterrence laid upon the US in cold war confrontations. Khrushchev evidently felt that, despite all the military problems involved in making effective strategic use of Cuba in wartime, the deployment would have a powerful impact on US opinion which would reduce resistance to his political demands, in the first instance those concerning Berlin.

D. Problems of Future Military Policy

21. The Cuban adventure and its outcome both highlighted and heightened the dilemma of the Soviet leaders. Both the deployment and its reversal constituted a tacit public admission that the USSR was in a position of strategic inferiority. Among its other results, the Cuban fiasco has almost certainly thrown the Soviets back onto a further re-evaluation of their strategic posture.

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22. Programs already under way will largely govern the size and composition of Soviet strategic forces through about mid-1964, but new decisions taken this year could significantly affect force levels thereafter. We are unlikely to learn directly of such decisions. Moreover, the physical activities which might reveal their nature will probably not be apparent for another year or more. In considering future Soviet force levels, it is therefore necessary to explore the various alternatives now open to the USSR.

23. Confronted with the continuing buildup of US forces for intercontinental attack programmed for the next few years, Soviet planners may be considering a wide range of alternatives. At one extreme would be an attempt to achieve such a clear superiority over the US in strategic offensive weapons that they would have a high assurance of destroying US nuclear striking forces prior to launch. At the other extreme would be the acceptance of continued strategic inferiority, perhaps coupled with genuine efforts to reach agreement with the West on arms control.

24. The first of these extreme alternatives is probably now regarded as unattainable. Thousands of Soviet missiles would be required to give the Soviet leaders a high assurance of destroying even the fixed bases of US nuclear forces programmed for the mid-1960's. We do not believe that the Soviet leaders would be prepared to impose a strain of this magnitude upon the Soviet economy. In addition, the Soviets would almost certainly expect the US to detect such an effort, and thereupon to step up its own program so as to raise Soviet requirements still higher. Moreover, US warning capabilities, fast reaction times, and mobile forces (airborne bombers and missile submarines) already have reduced Soviet capabilities, against US retaliatory forces. We believe that the Soviets will continue to estimate that, throughout the period of this estimate, the US will retain retaliatory capabilities which could not be eliminated by such striking forces as the USSR could acquire.

25. The second of these extreme alternatives might be considered by the Soviet leaders. Even if current strategic weapons programs were allowed to level off after 1964, the Soviets would possess a powerful deterrent force. Moreover, they might hope to reduce US superiority by means of disarmament agreements. But the main appeal of this alternative would be economic; resources would in time be made available to reverse the current slowdown in economic growth. However, we have seen as yet no persuasive indications that the USSR is prepared to move very far in this direction. The Cuban venture has indicated that, at least to date, the Soviet leaders are far from willing to accept a position of strategic inferiority.

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26. Between these extreme alternatives, we believe that the Soviets have almost certainly considered an effort to attain rough parity with the US in intercontinental weapon systems. Soviet military leaders almost certainly have urged enlarged and improved forces of ICBMs and missile submarines. However, a major Soviet effort to attain parity in the near term would require either a substantial increase in the Soviet military budget or sharp cuts in other types of forces. Moreover, the Soviets would almost certainly reason that the US would detect an effort of such magnitude, and that they could have no assurance of winning the intensified race which would ensue. Our evidence does not indicate that the Soviets are attempting to match the US in numbers of weapons for intercontinental attack; we believe, however, that they will attempt to offset US superiority by other means.

27. Soviet statements and military writings suggest that the Soviet leaders see in technological achievements the means by which they may improve their total strategic position relative to that of the US. This consideration may lie behind the testing of very high-yield weapons, the claimed development of a global missile, the high priority given to the antimissile program, and the Soviet interest in military space programs. By such means, the Soviets may attempt to attain rough parity or even superiority in the total strategic context, although they remain numerically inferior in delivery vehicles. Hardened ICBMs and submerged-launch submarine missiles will contribute to Soviet strategic capabilities. In addition, over the next few years the ICBM force will probably come to include new large missiles, armed with very high-yield warheads or capable of global ranges. Moreover, the USSR is almost certainly investigating the feasibility of space systems for military support and offensive and defensive weapons.

28. In defense against strategic attack, the major new element is the antimissile program, where deployment of one system has already begun at one location, and research and development toward a more advanced capability is continuing. The Soviets may see a possible solution to their strategic confrontation with the US in a combination of antimissile defense plus very effective though numerically inferior intercontinental striking forces. The technical difficulties as well as the great expense of any extensive antimissile deployment will be restraining influences. Nevertheless, we believe that deployment of antimissile defenses may be the largest new Soviet military program in the period of this estimate.

29. Although we believe that Soviet military policy is most likely to continue along current lines, we cannot exclude the possibility of new departures in military policy, perhaps resulting in major changes in the composition of the Soviet military establishment and in the relative emphasis given to forces designed to accomplish the major military missions. Drastic cuts in the theater field forces remain a possibility;

while Khrushchev's proposals for manpower reductions have been shelved for the present, economic pressures and developments in military technology almost certainly will cause this subject to be reconsidered. It is also possible that the increasing involvement of the USSR in the more remote areas of the world will lead to the development of new capabilities for distant, limited military action. In this connection, the Soviets may attempt to acquire base and logistical support rights in key non-Bloc countries, but we have no evidence that the USSR has raised this question with these countries.[7]

30. In general, Soviet military policy will continue to be shaped, not only by a variety of strategic, historical, technical, economic and political factors, but also by differing views about the relative importance of these factors, and shifting compromises among these views. As a result, we believe that the numerous aspects of this policy will not always be wholly consistent with each other, and that force structure and future programming will reflect neither a fully-integrated strategic doctrine nor a firm timetable for achieving specified force levels. In any case, we do not believe that the Soviets conceive of existing weapons systems as the answer to their military problem or that they have fixed and inflexible plans for their force structure in the period five to 10 years from now. They have debated and revised some of their ideas, and they will probably do so again. They have made scientific military research and the development of new weapons matters of high urgency, and they have a demonstrated capability to concentrate human and material resources on priority objectives. If they develop new concepts or new weapons which give promise of military and political advantage, they will seek to add them rapidly to their arsenal and to gain maximum benefit from them. Thus, during the next five years, we expect the Soviets to be working on even more advanced weapons with which they may hope to enhance their capabilities at a later date.[8]

II. SOVIET HIGH COMMAND STRUCTURE

31. We believe that during the past two or three years the Soviet military high command structure has been modified to speed the process of initiating or responding to strategic nuclear attack. The growth of nuclear and missile forces on both sides has almost certainly persuaded the Soviets to establish the command and control channels necessary for the swift initiation of military operations upon the decision of the political leadership.

[7] For a discussion of the limitations imposed on such Soviet overtures by the receptivity of other countries, see NIE 10-63, "Bloc Economic and Military Assistance Programs," dated 10 January 1963.

[8] With reference to paragraphs 23-30, see the Assistant Chief of Staff, Intelligence, USAF, footnote to Conclusion E.

12. *(Continued)*

32. We have information, some of it from classified documents and some from public statements, about both a Supreme Military Council and a Supreme High Command. Khrushchev is chairman of the Council and Supreme High Commander. The Council, a body of high-level party, government, and military officials, has existed since before World War II to provide a forum for discussion and decision on major issues of military policy. The Supreme High Command directed military operations during World War II with Stalin at its head, but was disbanded thereafter. Such information as we have suggests that steps have been taken in recent years to designate membership in the Supreme High Command and to develop procedures to permit the quick assumption by this body of top level control of military operations under Khrushchev should events so dictate.

33. Adjustments in the structure of the Soviet high command have apparently been closely related to the growth of the USSR's strategic defense and long-range missile forces. A new rocket command was established in 1960 and designated a main component of the Soviet armed forces. This change followed by about five years the elevation of the Soviet air defense component to similar status. At present, there are five major force components administered by main directorates or equivalent headquarters within the Ministry of Defense: ground, naval, air, air defense, and rocket.

34. Highly centralized civilian control over the Soviet military establishment is exercised through the Council of Ministers, which includes the Minister of Defense. The Minister is assisted by the Unified General Staff of the armed forces, which formulates the overall military program and would probably constitute the principal headquarters element of the Supreme High Command in time of war. Party and government leaders reportedly participate regularly in the deliberations of the Supreme Military Council. Additional channels for exercising party control over the military include the Main Political Directorate of the armed forces and the numerous party officials who are assigned to all levels of the military establishment.

35. The flow of operational orders from the Minister of Defense to the Soviet armed forces follows no rigid or consistent pattern. Commanders in Chief of the Strategic Rocket Forces, Long Range Aviation, the Air Defense Forces, and the Navy are believed to have direct operational control over the forces assigned to them. On the other hand, ground force components are operationally controlled by the commanders of the Military Districts and the Groups of Forces. The Commander in Chief of the Air Force similarly has no direct operational control over air components. The operations of other than Long Range Aviation air elements are controlled by the commands or forces to which they are assigned, i.e., commanders of Groups of Forces, Military Districts, Air Defense Districts, Fleets, and Airborne Forces.

West remained unfavorable. The economic strain of the arms competition loomed as costly as ever. There is evidence of considerable hesitation and re-evaluation in Soviet policy since the failure of the Cuban missile venture, although since about mid-1963, a number of developments have occurred which suggest the general direction Khrushchev proposes to follow. In the economic sphere, short-term plans for 1964–1965 have been revised in order to shift resources, notably to the chemical industry. Consistent with this has been a change in foreign policy tactics, beginning with the test ban, in an effort to relax East-West tensions. The attempt to create a more favorable international climate, in turn, has allowed Khrushchev to secure reductions in the overt defense budget as well as to propose some reductions in military manpower. The sum total of these various steps in related fields suggests that Khrushchev has settled on a general line of policy to contain the arms race, if only in a limited way, and to reduce some of its burden on the Soviet economy.

19. In strategic terms, this line of policy suggests a recognition of the necessity to accept the general balance of power which emerged in the Cuban crisis. Presently, and for some time to come, the Soviet strategic forces will be numerically inferior to those of the US and more vulnerable to attack. The Soviet leaders must recognize, therefore, that the US would enjoy a considerable advantage should it strike first, and that the relative invulnerability, the fast reaction time, and the mobility of US strategic power make a Soviet first strike completely irrational. Nevertheless, in assessing the military balance, the Soviets are confident that they possess a credible deterrent based on both their massive capabilities to devastate Eurasia and their growing intercontinental striking power. Thus, the Soviets see the present situation as one in which both sides are deterred from deliberately initiating general war or from knowingly initiating courses of action which would involve grave risk of such a war.

II. FACTORS AFFECTING FUTURE SOVIET MILITARY POLICY

20. Soviet decisions as to force structure and military programs over the next several years are likely to be made in the context of a situation in which, although the US enjoys a clear strategic advantage, a condition of rough mutual deterrence exists. The Soviets will seek to improve their strategic capabilities *vis-a-vis* the US, however, policy decisions will be influenced by the continuing strain on economic resources, and the pressure arising from competition with the US in scientific and technological developments with military applications. Such decisions will be greatly influenced also by the Soviet estimate of the political situation, the opportunities which it affords, and the contribution which military power can make to the realization of these opportunities.

13. *(Continued)*

21. We believe that in these circumstances the primary concern of Soviet policy will be to continue to strengthen their deterrent against US attack primarily through a gradual buildup of ICBMs, hardening of sites, and increased mobility through missile submarines. At one time the Soviets may have considered an attempt to achieve capabilities sufficient to neutralize US strategic forces in a first strike, and they almost certainly have also considered the lesser goal of achieving rough parity with the US in intercontinental weapon systems. In the aftermath of Cuba they may have considered a substantial increase in their military effort. Our evidence does not indicate, however, that the Soviets are presently attempting to match the US in numbers of intercontinental delivery vehicles. Recognition that the US would detect and match or overmatch such an effort, together with economic constraints, appears to have ruled out this option. On the other hand, available evidence on the development of large nuclear warheads and compatible delivery vehicles strongly suggests that the Soviets may be seeking to improve their position relative to the West by increasing the destructive power of their numerically inferior intercontinental strategic attack forces.

22. Continuation of present lines of policy will ensure the Soviets of a growing credibility for their deterrent. However, the dynamism of Soviet policy depends to a great extent on the proposition that the balance of forces in the world is shifting in favor of the Communist world. The Sino-Soviet rupture has already badly damaged this thesis, as has the inability of the Soviets to match the West in military power. It is conceivable that at some point a Soviet leadership would come to believe that they had to forego their expansionist aims, unless they could greatly improve their relative military strength, or at least refurbish the world's image of this strength. They might even be willing to make new economic sacrifices or assume some risks in order to accomplish this. What precise programs they might undertake in pursuit of such an aim we cannot now say, but we cannot rule out that changes in the scale or character of Soviet programs would come about in this way.

23. Internal political considerations resulting from changes in the leadership could have important consequences for military policy. It is likely that Khrushchev will have passed from the scene by the end of the decade, and the ages of the marshals suggest that there will be a wholesale replacement of the top military leadership in this period. What the attitude and policies of a new set of leaders will be cannot be estimated with any certainty. If, as we believe likely, economic and military questions are still paramount issues when Khrushchev departs, the professional advice of the military is likely to grow in importance. The chances for important changes in military policy may improve if a protracted succession struggle develops, but we believe it unlikely that radical departures would occur unless at the same time there were significant changes in the economic or strategic situations confronting the USSR.

24. Any of a host of other changes and opportunities could also affect Soviet military policy and force structures. For example, increasing Chinese hostility toward the USSR could retard reductions in conventional forces by strengthening the arguments of the traditionalists and by posing the need for augmented garrisons near the Chinese borders. In addition, Communist China's unremitting challenge to the Soviets for leadership of the world Communist movement may increase Soviet readiness to support "wars of national liberation." Situations may arise which would offer the Soviets an opportunity for extending their military capabilities through foreign bases or logistic facilities. A further strengthening of NATO would probably also increase Soviet caution with respect to reductions, as might the further loosening of the USSR's hold on its European Satellites. Soviet military requirements could also be affected by shifts in the political and military alignment of Western nations, or by new crises or a heightening of international tensions. While developments such as these are unlikely to bring about drastic changes in Soviet military policy, they would probably affect the pace of evolution in policy and force structure.

Economic Constraints

25. We believe that over the next several years the Soviets will strive to hold down defense and space expenditures so as to release scarce resources to other sectors of the economy. Despite Soviet efforts to economize, we do not foresee a substantial decline in Soviet military expenditures, and they may continue to rise. But the rapid growth rates of recent years probably will not be maintained.

26. The announced four percent reduction in the overt defense budget for 1964 does not necessarily mean that Soviet defense spending will in fact be smaller than before. In the past, planned and actual Soviet military expenditures have differed. Moreover, the published defense budget has covered only about two-thirds of estimated Soviet defense expenditures in recent years. The announced reduction in the defense budget may reflect to some extent anticipated savings from reductions in military manpower, although we have no evidence that force reductions are currently underway. In the longer term, some reductions in military manpower will almost certainly be made. But, while reductions in manpower alone could effect some savings, even drastic cuts would not solve the basic Soviet economic problem: the scarcity of high quality resources.

27. The Soviets could make scarce resources available to the economy in the short term by sharply cutting back or abruptly halting current programs for the production and deployment of major weapons systems to which substantial resources are presently committed. Such extreme measures would be highly wasteful of resources, however, and they would almost certainly encounter strong resistance from the mili-

tary. Considering the reliance which Khrushchev apparently places on the deterrent effect of strategic weapons, we think it unlikely that he would propose drastic interruptions in current deployment programs, but stretch-out could occur for either technical or economic reasons.

28. It seems to us more likely that the Soviet leadership sees the present as an advantageous time to plan for longer term savings in scarce resources by canceling, curtailing, deferring, or stretching out the production and deployment of some of the follow-on weapon systems which are now under development. Our evidence indicates that certain very large programs are approaching completion. The deployment of MRBMs and IRBMs appear to be virtually complete; while we estimate continued improvement of these systems, it seems unlikely that they need to be completely replaced by follow-on systems in the next five years or so. The deployment of SA–2 defenses will probably be substantially completed in the next year or two, and it appears unlikely that deployment of the low altitude SA–3 will reach the scale of the SA–2 program. Thus, completion or near-completion of these very large programs will probably make resources available for other uses.

29. Programs for follow-on offensive and defensive systems are almost certainly under continuing review. Potential military claimants for additional resources include follow-on ICBM and missile submarine systems, antisubmarine warfare systems, advanced aircraft for various purposes, another round of new equipment for theater ground forces, and military space systems. If the Soviets program early and substantial deployment of such systems, many of the resources freed by the completion of other major military programs would be absorbed. But it is also possible for them to adjust military programs so as to channel resources into nonmilitary sectors of the economy.

30. Overshadowing all other potential military claimants for resources, however, would be the deployment of ABM defenses. In this field, the evidence strongly suggests that despite intensive developmental efforts over many years, the Soviets have not yet been successful in developing a system for defense against strategic missiles which they consider satisfactory. The Soviet leaders have apparently thus far authorized only very limited deployment, and we believe that they have not yet decided whether to commit the vast resources needed to provide ABM defenses for a major portion of their population and industry. Considering the long lead times involved in the deployment of so complex a system, it is possible that, if a decision is delayed two or three years, even a large ABM deployment program would not begin to have a major impact on the economy much before the end of the decade. If at that time, Soviet strategic striking forces have reached planned

13. *(Continued)*

levels, resources could be diverted to an ABM program. Unless some such diversion of resources can be made within the military establishment, any large-scale ABM deployment program will exert a strong upward pressure on Soviet military expenditures.

31. The Soviet space program must also have come under scrutiny by the Soviet leaders in their search for the high-quality resources required for economic expansion. The space program to date has made extensive use of military facilities and hardware. The program has required scarce resources, however, and ambitious future space activities, involving more specialized facilities and hardware, would considerably increase the drain on resources. Limitations in available resources will almost certainly prevent the Soviets from pursuing all the space programs which would be within their technical capabilities within this decade. We do not expect any major and obvious cutback in Soviet space activities, but the resources pinch may cause the Soviets to limit or stretch out certain expensive, long-term space programs which they once contemplated.

Technical Factors

32. The high and increasing cost of military R and D and the current budgetary squeeze will undoubtedly force some reappraisals by Soviet planners, especially on highly expensive developmental projects. Some programs considered to be of marginal utility may be cut back or suspended. However, evidence available indicates continued large-scale efforts in the major categories of military R and D: ballistic missiles, ABMs, nuclear submarines, ASW, aircraft, nuclear weapons, and CW. Further, we see continued efforts of considerable magnitude on the scientific fronts supporting military requirements, such as computer technology, meteorology, oceanography, geophysics, and electronics. This evidence indicates that reductions in the present level of Soviet expenditures for military R and D are unlikely, although there is some evidence that the rate of growth is declining.

33. The Soviets almost certainly consider that they can ill-afford to fall behind the US in R and D on advanced weapons systems. Further, Soviet statements and writings have suggested that the Soviet leaders see in technological achievements a means for possibly improving their strategic position relative to the US. They will continue to make military research and development a matter of high urgency, and they have a demonstrated capability to concentrate human and material resources on priority objectives. Even with economic factors imposing restraints on military policy, the Soviets will seek urgently to develop new concepts or weapons which give promise of significant military and political advantage. Such weapons or concepts, if successfully developed, would be prime candidates for rapid addition to the Soviet arsenal. We do

not believe, however, that Soviet policy can be based on the expectation of achieving technological advances or breakthroughs of such dimensions that they would reverse the strategic balance within the period of this estimate.

III. FUTURE TRENDS IN MILITARY PROGRAMS

34. The preceding discussion forecasts no drastic increase or decrease in the total Soviet military effort within the present decade. Our evidence on current Soviet military development and deployment programs points to a present Soviet intention to maintain a large military establishment and to continue improving its capabilities. Translated into force structure, this continuation of policy by no means implies a static situation. We believe that the next several years will bring important changes in the Soviet military posture, but that these changes are more likely to be evolutionary than revolutionary in nature.

Strategic Attack Forces

35. In the buildup of strategic strike forces, the Soviets have recently been placing major emphasis upon weapons for intercontinental attack, particularly ICBMs. We believe that by the end of the decade they will have several hundred ICBM launchers, a sizable force of missile submarines, and a significant though reduced force of bombers. In the ICBM force, qualitative improvement will be emphasized; we believe that the Soviets will introduce follow-on systems characterized by better accuracy, larger payloads, better reliability, and easier handling and maintenance. We believe that they will also attempt to improve survivability by deploying a greater proportion of their ICBMs in hard sites, by providing their submarines with submerged launch ballistic missiles of longer range than their present surface launched missiles, and by increasing the readiness of their strategic forces. If our estimates are correct, the Soviets will not be able to pursue a strategy of destroying US nuclear striking forces prior to launch, but they will have a force capable of attacking major US cities and soft military targets, as well as a capability for retaliation even after an initial US attack.

36. We believe that Soviet strategic attack forces intended for Eurasian operations are nearing planned levels. The large missile forces deployed primarily against Europe will probably remain at about their present size, but survivability will be enhanced through hardening and possibly by the introduction of ground mobile systems. The medium bomber force will probably decline in size over the next several years, but capabilities will probably improve with the continued introduction of supersonic aircraft. Thus the Soviets will maintain massive forces for strategic attack in Eurasia and will improve the quality of these forces.

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DISCUSSION

I. THE KHRUSHCHEV ERA

1. The Khrushchev era was a period of fundamental changes in the armament, organization, and operational concepts of the Soviet armed forces. Khrushchev inherited a military machine comprising enormous land armies for offensive operations, masses of anti-aircraft guns and fighters for strategic defense, and only limited nuclear capabilities. By the end of 1964, the force included a formidable nuclear delivery capability for offensive operations, modernized missile, air, and naval forces for strategic defense, and smaller, but greatly modernized theater forces for land campaigns in a nuclear environment. This radical change in the nature of the military establishment was accompanied by important changes in basic Soviet military doctrine and policy. In the mid-fifties, Soviet military theorists concentrated heavily on large-scale campaigns in Europe; by the early sixties they were giving increased attention to the complex problems of intercontinental strategic exchange.

2. Khrushchev's personality and political skill accelerated the revolution in Soviet military affairs but did not cause it. Marked advances in military technology, the rising costs of modern weapons, and the growing strength of NATO would have forced change in the Soviet military establishment in any case. But Khrushchev grasped the politico-military significance of the new technology far quicker than most of his conservative military hierarchy; his designs for adjusting the military establishment to new situations were often much too bold for most of the Soviet marshals. Although Khrushchev used a wide variety of polemical, political, and organizational devices to overcome their opposition, he often received only grudging support for his military policies—sometimes he encountered near defiance.

3. While the marshals approved of the new missiles, with rare exceptions they opposed Khrushchev's accompanying military policies, in particular his penchant for viewing military forces more as political tools than in terms of their actual use in warfare. Khrushchev looked upon his missile forces primarily as a barrier against war. Aware of Soviet strategic inferiority, he nonetheless believed that the missile forces would serve to deter a direct attack on the USSR. He also believed that they could be used to dissuade a potential enemy from opposing Soviet interests in local conflicts for fear of provoking a direct confrontation with the Soviet Union. He argued that, if general war should occur, it would be decided in a very short time by the initial nuclear exchange. Consequently he often spoke and sometimes acted as though his missile forces constituted in effect an all-purpose substitute—and indeed a less expensive substitute—for the diverse military capabilities which the Soviet Union had long maintained.

4. Such a politico-military doctrine struck at some fundamental premises of the Soviet military establishment. It called into question such specifics as the value of large theater forces and the mass-mobilization system. More

fundamentally, it cast doubt on the relevance of traditional military experience. Khrushchev's emphasis on deterrence of all wars through strategic rocket forces left scant basis for the military to develop operational concepts and requirements for other components of the forces.

5. Khrushchev's decision to embrace openly a deterrent military policy was clearly based in part on economic considerations. The kind of forces advocated by the marshals to fight a war if it should come, including huge ground forces, were obviously much more expensive than those advocated by Khrushchev with his faith in the efficacy of deterrence. But Khrushchev's rationale for his military policies also indicated that he had considered, at least broadly, the technical aspects of strategic nuclear warfare. He concluded that the requirements for a successful disarming strike were enormous and, further, that the first exchange of a nuclear war would wreak such damage that subsequent operations could have only minor effects on the outcome. These views were in some respects oversimplified, but they were quite sophisticated when compared to those held by most Soviet marshals at the time.

6. Under Khrushchev's prodding, and with the actual advent of large numbers of new weapons, the military leaders began to explore in new depth the implications of nuclear warfare. They did so, however, not so much from the standpoint of defining what force levels might be adequate for deterrence, but primarily in order to formulate requirements for fighting this new kind of war. In the process, the force commanders concluded, not that their arms of service had no further role to play, but that they confronted new and more demanding requirements. They constantly warned that the USSR should be prepared for the contingency in which deterrence had failed. Neither Khrushchev nor the more conservative marshals ever wholly prevailed in Soviet doctrine, and the forces actually deployed reflected compromises between their views.

7. Beyond these purely military disputes, the marshals were probably alarmed by certain political decisions entailing commitments and responsibilities, some of which Soviet capabilities could not sustain. Anxious to make political capital of the new missile forces, Khrushchev precipitated a Berlin crisis in 1958 which found the military establishment unready to overawe the US in strategic terms. His ill-fated Cuban venture presented the military leaders with the grim prospect of a military confrontation with the US under particularly unfavorable circumstances. And the military implications of the rift with Communist China must have added to the marchals' concern over the wisdom of Khrushchev's leadership.

Changes in the Strategic Relationship

8. Dramatic successes in programs to develop offensive missile systems led the Soviet leadership by the mid-1950s to foresee the day when a massive array of nuclear-armed strategic missiles would remove the USSR from the galling position of gross strategic inferiority. Beginning in 1955 (when MRBM deployment started), the Soviet missile force grew rapidly. ICBM deployment pro-

grams were slower and often uneven, but by the end of 1963, the USSR had a strategic missile force targeted against both Eurasia and the US which had indeed sharply changed the nature of the East-West strategic relationship. The bulk of the strategic missiles were of medium and intermediate range, holding Europe hostage against US strategic attack; the ICBM force, though much smaller, increased Soviet assurance that the US would be struck in a general war. This marked advance in Soviet strategic stature was further enhanced by Soviet space achievements.

9. The buildup of strategic missile forces on both sides impelled Soviet military thinking to grapple with the global nature of modern war. In this context the Soviets soon found their new missile forces deficient in important respects. In exploring the nature of general war, they naturally discovered that enormous advantages belonged to the side which struck first. But their own force was neither large enough to risk a first blow nor well enough protected to assure them that the enemy would not be tempted to attack. Indeed, concern for the vulnerability of the Soviet strategic missile force—soft launchers grouped by twos and fours—probably became acute once the Soviets discovered that the US had penetrated their security and located their missile sites.

10. One course of action open to the Soviets was to multiply their strategic attack forces to such a high level that in time of crisis US policy would be powerfully restrained by fear that the Soviets might risk a first strike. But Soviet advances had spurred the US into large programs of its own which made it difficult for the USSR to set force goals which were economically feasible and could promise, when reached, to have this effect. Accordingly, the Soviets chose the alternative means of strengthening their deterrent by improving retaliatory capabilities; they sought to achieve this by some increase in the size of strategic attack forces, by diversification and improvement of delivery means and nuclear warheads, and by protection of their forces through hardening, dispersal and reduced reaction times.

11. Measures to strengthen the Soviet deterrent also included vigorous efforts to revamp strategic defense capabilities. Surface-to-air missiles replaced AAA guns. Several new-generation supersonic interceptors with all-weather capabilities and air-to-air missiles were introduced into air defense units to replace some of the old day fighters. Warning and control systems were expanded and sophisticated. The R&D program to develop anti-missile defenses was given high priority. Despite impressive improvements, however, Soviet strategic defense capabilities did not overtake the increasingly sophisticated and diversified Western attack capabilities—in particular, the growing threat posed by ballistic missiles.

General Purpose Forces

12. Khrushchev's view of the nature of modern war made land armies, tactical aviation, and surface fleets the prime candidates for reduction to offset the heavy economic burden imposed by Soviet efforts in strategic attack and defense and the space programs. By the late 1950s, Khrushchev's determination to reduce

the size of theater forces was evident as he poured scorn on the utility of mass armies in modern warfare. Soviet military manpower had already been cut by about two million men between 1955 and the end of 1959, largely at the expense of ground forces. In January 1960, Khrushchev announced his intent to reduce military manpower from 3.6 to 2.4 million. He made it clear that this cut was to be absorbed largely by general purpose forces; that the intended cut in these forces would exceed 1.2 million was implicit in the rapid growth of strategic attack and defense elements.

13. This challenge was more than conservative Soviet military leaders could bear in silence, and their objections appeared in the open military press. Most spokesmen defended multimillion men armies on the grounds of their vital role in general nuclear war. Others almost certainly pointed, in closed forums, to the possibility of "flexible response" by NATO and the contingency of conflict with China, and an article by Sokolovskiy in 1964 cited the possibility of protracted non-nuclear war, thereby implying a new rationale for large theater forces.

14. Khrushchev never was able completely to override proponents of large theater forces. The force reductions announced in 1960 ground to a halt early in 1961, half-completed, and for a time Khrushchev's policies were apparently checked. However, another decline in military manpower during the 1962-1964 time period indicated that this check was only temporary. Although the size of theater forces was cut sharply during his regime, their capabilities for general nuclear war were considerably increased as the result of greater mechanization and the introduction of free rocket or missile nuclear and CW delivery systems.

15. On the face of it, it appears strange that Soviet marshals would continue to register great discontent with an army of at least 120 divisions backed up by a formidable array of tactical missiles and aircraft. From the Soviet marshals' point of view, however, the cuts had been drastic. Some 35 to 55 line divisions had been deactivated. Further the remaining divisions were sharply cut in size and about half were maintained at reduced or cadre strength. Combat and service support of ground forces had also been reduced. The number of operational aircraft in Tactical Aviation was halved during 1960-1961. In many circumstances, it would be difficult fully to mobilize and deploy Soviet theater forces. Nevertheless, it is apparent that they still represent a formidable capability for land warfare, despite their loss of prominence during the Khrushchev era.

Economic Factors

16. The post-1958 expansion of strategic attack and air defense capabilities, as well as the intensification of efforts on military R&D and space, led to a marked increase in total defense expenditures.[2] This increase would have been

[2] The question of defense expenditures for 1964 is currently under study, and a Memorandum to Holders of this estimate, covering this subject, will be published when this analysis is completed.

even greater except for the substantial reduction in military manpower—on the order of three-quarter million men between 1958 and 1964. These new programs contributed to the slowdown in the growth of the Soviet economy over the past few years, principally because their impact was greatest in areas requiring specialized skills, equipment, and resources critically needed for other important economic objectives.

17. After 1962, to relieve the increasingly acute strains in the Soviet economy, Khrushchev began again to press for changes to resource allocation. He accompanied this by efforts in the field of foreign policy, resuming the tactics of detente, highlighted by the limited nuclear test ban. In discussing the next long-term plan, just before he fell, he referred to Soviet military forces as being "at their proper level." A leveling off in military spending brought apparent curtailments or slowdowns in a number of military programs. Meanwhile, the marshals, while refraining from direct attacks on the ceilings imposed by the total military budget, argued for military doctrines and force structures not achievable under those ceilings. The evidence suggests that this problem and these conflicts remained unresolved when Khrushchev left the Soviet leadership in October 1964. They will almost certainly continue to play an important role in the formulation of policy under the new leaders.

II. POST-KHRUSHCHEV DEVELOPMENTS IN MILITARY POLICY

18. The military evidently played no active role in the removal of Khrushchev, although some military leaders were presumably consulted and assurances of their neutrality and of their backing if necessary were secured. The price, if any, for these assurances was probably not high. In any event, since the ouster there have been no indications of any general alteration of Khrushchev's military policy; indeed, an early action of the new leadership in this sphere was to announce a slight reduction in the overt military budget.

19. After a few months of silence, the military press began in 1965 to carry a series of articles by prominent officers. These articles all profess obedience to party control of the military, but seize on the concept of collectivity, currently stressed by the political leadership for other reasons, to assert the importance of professional military advice. They also turn to special use the anti-Khrushchev epithets of "bragging," "hare-brained scheming," and "subjectivism." These formulations appear to be aimed, in the military context, against reliance upon a single weapon system for deterrence as opposed to forces capable of dealing with all contingencies should deterrence fail. In these articles, the concepts of ultra-conservative marshals came in for sharp criticism, and there was no reference to "multi-million man armies." One prominent theme has been the need to approach military problems in a comprehensive and scientific way, eschewing partial solutions which leave unsolved or even aggravate other problems. While the argument is obscure, these articles suggest a willingness to abandon earlier extreme positions, and call for the further development of many types of forces against a variety of military contingencies.

20. Thus far the military spokesmen do not appear to be championing a particular view of doctrine, force structure, or resource allocation. It appears that, in their view, the first order of business for the military is to reassert itself in the formation of Soviet military doctrines and policies and thus be able to establish a rationale for force structuring. Such steps, however, are probably but a prelude to basic arguments about resource allocations in general, and it is no accident that military spokesmen have become vocal as the Five-Year-Plan for 1966-1970 is being formulated. The new Soviet leaders will continue to apply economic restraints to the expansion of military programs.

III. FACTORS AFFECTING FUTURE POLICIES AND FORCE LEVELS

21. Our view of the future course of Soviet military affairs has always been based in large part upon an evaluation of a large number of political, economic, and strategic factors. The complexity of relationships among these factors has been markedly increased by the recent change of Soviet leadership and the prospect of a struggle for power.

Internal Politics

22. We cannot rule out the possibility of sudden political changes in the Soviet Union, including changes in the relations between the party and the military and in the concepts which guide military policy. The present situation of divided leadership makes it likely that there will be a struggle for supreme power among the various leaders, and one of the issues in this struggle may be that of military policy. As a relatively cohesive force among the elements which make up the Soviet elite, the officer corps of the Soviet armed forces could constitute either a strong support or a potential threat to existing leaders. It may occur to one man or another (as it did to Khrushchev in 1955) to make a bid for power with military support. How the military would greet such a proposal is by no means certain; many leading military figures would almost certainly fear too close an involvement in political struggles. On the whole, it seems to us more likely that in any struggle for power the military would confine themselves to their traditional role of supporting the aspirations of that political leader who least threatened their privileged position in Soviet society, or who promised to pay greater attention to their opinion in the decision-making process.

23. The marshals may believe that collective leadership will better serve their interests than would the rule of any one man. The basically conservative Soviet military establishment may see in the collective arrangement opportunities to press its views with more chance of success than it would have against a single ruler, especially if that ruler had some of the predilections of Khrushchev.

24. Over the next six years, there will almost certainly be a wholesale retirement of the aging top leadership of the Soviet military establishment. A new generation of marshals, admirals, and generals may take quite different views from those currently expressed by the military on a broad range of subjects.

Economic Requirements

25. Given the uncertainties in our estimates of civilian economic developments and of the size and composition of the defense program, conclusions about the burden on the economy of defense expenditures can be stated only in general terms. Probable Soviet military and space programs through 1970 foreshadow an increase in the requirement for highly skilled engineers and scientists, complex machinery, and high-cost materials. Even if defense spending were to increase by 20 percent during the period of the estimate, the Soviet economy could shoulder this burden and at the same time gradually improve the equipment and technology of Soviet industry and the standard of living. If, on the other hand, defense spending were to decrease somewhat, the absolute requirement for these scarce resources would still be little different from what it was in 1964, but the strain on the civil economy would be eased because of the increasing supply of these resources.

26. In any case, we anticipate that military programs will be increasingly subjected to critical examination in terms of their cost and their effectiveness; not the least of the factors considered will be an assessment of Western military strategy and capabilities. In early Soviet weapons programs (i.e., the first ICBM, the first SAM, and the first missile submarine), the Soviets apparently paid scant attention to consideration of cost and effectiveness or to the life expectancy of the system in view of Western technological advances. In this period they almost certainly felt impelled by the exigencies of their strategic position to capitalize on early technology at whatever cost. But this type of pressure has diminished, while the cost of modern armaments has risen.

27. It is still too early to tell what effect, if any, the new agricultural investment program, announced by Brezhnev on 24 March 1965, will have on military spending. It is clear that the plan for investment in agriculture (71 billion rubles in the next five years) will require resources which can be provided only by reducing the growth of budgetary allocations to other priority claimants from past rates. While Brezhnev did not specify the claimants whose budgets would be "adjusted" to provide agriculture with its added rubles, some reduction in the rate of growth of previously favored components of heavy industry seems probable. Also, while the types of inputs needed to boost agriculture would not seem to require a cut in projected military research and development outlays, it is possible that certain hardware procurement schedules will be adjusted downward. Barring important changes in the international situation, however, and in view of the apparent outlook of the current leadership, major changes in Soviet defense spending in either direction seem unlikely.

Manpower

28. During the period of this estimate, the nature of Soviet military manpower problems will be fundamentally changed. Problems of quantity, caused by the low birth rates of World War II, are being replaced by problems of quality.

The sophistication of equipment in all types of forces will demand an increasing degree of professionalism in all ranks which may prove incompatible with the conscription system now in effect, as well as competitive with increasing demands for high skill in the civil economy. Whatever the Soviet solution to this problem, the cost per man of the military establishment is likely to increase substantially.

Research and Development

29. Over the past several years, the Soviet R&D effort has continued to grow. Our evidence indicates large-scale and continuing efforts in all major categories of military R&D: ballistic missiles, ABMs, certain space programs, nuclear submarines, ASW, aircraft, nuclear weapons, and CW. Further, we see continued efforts of considerable magnitude on the scientific fronts supporting military requirements, such as computer technology, meteorology, oceanography, geophysics, and electronics. The quality of this evidence varies considerably. In general, however, we have virtually no information on the laboratory and design phase of the military R&D cycle; operational testing usually provides the earliest indication that a major new weapon system is under development. Thus, new systems of which we have no knowledge could now be in early stages of development.

30. The Soviets will continue to press their dynamic military and space R&D programs. Soviet security considerations demand vigorous efforts to prevent a Western military technological advantage which might threaten the credibility of their deterrent. Beyond this, we believe that the Soviet R&D effort represents an attempt to achieve major technological advances in the hope of offsetting present Western strategic advantages.

31. Should the Soviets achieve a technological advance which offered the prospect of significant improvement in military capabilities, the Soviet leaders would certainly seek to exploit such an advance to gain political and military advantage, and they would undoubtedly consider increasing their military expenditures if effective exploitation seemed to require it. But their decisions as to deployment would involve a weighing of economic considerations and of US capabilities to counter against the politico-military gains to be achieved.

32. The USSR's space program has become a key element in Soviet world prestige. Space remains the major area in which the Soviets can still propound a creditable claim to world primacy. There have been tenuous indications that the costly Soviet space program may be subjected to more critical scrutiny by the new Soviet leadership. For political reasons, however, the Soviets could ill afford to slacken in the space race, and from all indications they have no intention of doing so. We believe that the Soviet space program will retain its priority, that its accomplishments will continue to be impressive, and that it will focus on goals for which the USSR can most favorably compete.

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Changes in Alliance Systems

33. Over the next five years, important changes will probably occur in the military situation around the Soviet periphery. In Western Europe, France's acquisition of an independent capability for strategic nuclear attack will pose an additional contingency to Soviet thinking. The possibility that West Germany may acquire nuclear weapons in some way is of great concern to the USSR. In Eastern Europe, if present trends toward autonomy continue, the Warsaw Pact will become more a conventional military alliance, less a westward extension of Soviet forces. In Asia, the hardening of the Sino-Soviet dispute will probably force the USSR to recognize the military implications of China's hostility and ambitions.

34. These prospective developments, cutting across familiar concepts of a bipolar world organized into two cohesive rival camps, have military as well as political implications. With respect to China, the Soviets will count their overwhelming strategic superiority as an underlying advantage, but they will probably nevertheless anticipate security problems to which a nuclear response would be wholly inappropriate. We therefore think that the USSR will strengthen conventional forces in Soviet Asia. As for Western Europe, the Soviet leaders will almost certainly calculate that forces and doctrines developed to cope with NATO will suffice to meet lesser threats arising from France and West Germany. But the Soviets would consider their military problem to be sharply altered by any important changes in the political cohesion or military effectiveness of NATO.

35. The USSR has in recent years strengthened the forces of its East European allies, indicating that the Soviets rely on these forces at least for the defense of their own territories. But as autonomy spreads in Eastern Europe, the range of contingencies in which the USSR can rely on effective military support from its Warsaw Pact allies will narrow. We believe that the Soviet leaders already recognize this trend and question the utility of East European forces for conflicts in which individual national interests do not coincide with those of the USSR. This may require the Soviets to re-examine their concept of a rapid offensive sweep through Western Europe, at least to the extent that they had depended on the Satellite forces for supporting action.

US Military Capabilities

36. The Soviets will continue to weigh the adequacy of most current military programs primarily against US capabilities, and to judge the desirability of proposed programs against probable US reaction. For example, in weighing the pros and cons of ABM deployment, the Soviets have almost certainly considered probable US future developments in penetration aids. Soviet military doctrine, force structure, and weapons programs will be adjusted to reflect significant changes in estimates of US capabilities and could change sharply in the event of unexpected developments in US military policy or capabilities.

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DISCUSSION

I. INTRODUCTION

1. Today, as for the past several years, the major problems of Soviet military policy concern the US, Europe, and China. The great bulk of the Soviet military effort has been directed to meeting the military challenge from these areas. Elsewhere in the world the USSR's military problems stem primarily from the use of military power and resources in support of Soviet foreign policy. Such problems have increased in number and importance as the USSR has become involved in new areas and its commitments have grown.

2. Even before the Czech crisis, the improved strategic relationship with the US, the restiveness of Eastern Europe, the unremitting hostility of China, the June war in the Middle East, and the prolonged conflict in Vietnam had raised new questions of priorities and requirements both within the Soviet military establishment and between the USSR and its allies. And the competition between civilian and military demands on national resources promised to sharpen as both military costs and consumer expectations rose. In this situation the Soviet leaders apparently were conducting a searching review of the military policies of the past few years and exploring options for the future.

3. The Czech crisis has raised no entirely new military problems for the USSR, but it has exacerbated old ones. Long concerned with the restiveness of its East European allies, the USSR, for political as well as military reasons, has sought to strengthen the Warsaw Pact; now the Pact is in some disarray and the Soviet leaders must entertain new doubts about the reliability of East European forces, particularly the Czech forces. The intervention has aroused new apprehensions within NATO and has probably arrested the decline in NATO military efforts, at least for a time. These considerations are relevant to future Soviet decisions concerning general purpose forces—decisions which will be greatly influenced by the course of events in Eastern Europe over the coming months. In the strategic weapons field, the Soviet leaders had, after considerable delay, agreed to discuss arms control with the US. But the Czech invasion has soured US-Soviet relations and put new obstacles in the way of a possible arms control agreement.

II. INTERNAL FACTORS AFFECTING MILITARY POLICY

Political-Military Relations

4. Soviet military policy is in part a product of Kremlin politics, which, like politics elsewhere, involves questions of power—who makes the decisions—and of priorities—what decisions should be made. Under conditions of collective leadership, however, the decision-making process is complicated by the fact that nothing of consequence can be decided until it has been collec-

tively scrutinized and weighed against the individual interests of the political leaders. This diffusion of authority has not prevented the leadership from dealing effectively with a wide range of problems, but it has tended to inhibit or delay initiative in defense matters.

5. This situation has had an important bearing on the relative weight of the military voice in Soviet councils. Not only has the political leadership seemed more responsive to special interest arguments, but at times the absence of clear signals from the top has given greater influence in the decision-making process to military and civilian advocates of improved military forces. Although the military itself has periodically shown signs of interservice rivalries over resource priorities and future force structuring, it has nonetheless been united in making its claims for continued preferential treatment in the allocation of resources. The increases in the military budget of the past few years indicate, moreover, that the vigor with which the military has presented its arguments has not gone unrewarded. The military has exploited and benefited from the resurgence of a more suspicious and fundamentalist Communist outlook that has occurred under the present collective leadership.

6. Trends in Soviet military doctrine have been generally consistent with the improvement in the fortunes of the military under the collective leadership. The role of the conventional forces as an instrument of national policy has been emphasized, but the Soviets have continued to stress the primacy of the strategic forces as the ultimate recourse in war. We believe that this relatively harmonious approach to military requirements reflected the general satisfaction of the military with the policy pursued by the new leadership.

7. Even before the Czech crisis, however, there were issues of military policy that promised to introduce new tensions into political-military relations. There is no persuasive evidence that the military played a decisive role in the very hard political-military decisions involved in the intervention in Czechoslovakia, or that their views came down on one or another side of the choices posed. They will, however, be much concerned with the implications of the new situation created by the Czech events for Soviet military posture and plans. Issues affecting the future of the Warsaw Pact, Soviet deployments in Central Europe, and even the pace of the strategic arms race will complicate the military's dealings with the political leadership for some time.

Economic Considerations

8. We believe that the perennial problem of resource allocation is likely to become a sharper issue in the making of Soviet military policy. In Khrushchev's last years Soviet military expenditures were temporarily stabilized, due in part to a pause in strategic weapon deployment and in part to his efforts to economize. Under the new leadership, however, they have continued to rise, primarily as the result of increased outlays for strategic weapons and for research and development (R&D). The increase has not outpaced the overall growth of the economy, but the requirements of these programs for scarce high-quality

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resources of the sort needed to sustain economic growth have aggravated the impact of defense spending.

9. We estimate current Soviet expenditures for military and space programs at about 20 billion rubles—the equivalent of about $60 billion. Of this total, we believe that nearly 30 percent goes to the strategic attack and strategic defense forces combined, over 25 percent to the general purpose forces, 15 percent to command and general support, and 30 percent to military R&D and the space program. The distribution of expenditures for the Soviet military has changed substantially over the past several years, reflecting the pattern of priorities. The most pronounced change has occurred in expenditures for R&D and space, which in 1960 accounted for only 15 percent of the total. In the same year, expenditures for general purpose forces amounted to about 35 percent of the total.

10. Soviet criticism of the high level of arms expenditures in the US, which Kosygin termed "catastrophic," almost certainly reflected the leadership's concern over rising military costs in the USSR. The Soviet military leaders have undoubtedly pointed to the US military effort in pressing their claims for increased outlays for defense. And articles in the Soviet military press justifying such outlays and stressing the importance of heavy industry suggested that the "military-industrial complex" in the USSR saw a threat to its favored position. The immediate effect of the Czech crisis will be to strengthen the position of these elements.

11. In the past, the strategic forces have led in the competition for resources between the military establishment and the civilian economy. The Soviet leaders may have hoped that when certain strategic programs reached planned levels they could divert some of these resources to other uses—to the civilian economy, or perhaps to the relatively neglected general purpose forces. We believe that economic considerations weighed heavily in their decision to discuss arms control with the US. Any such calculations, however, probably have been upset by the Czech crisis, which almost certainly will lead to pressures for increases in the theater forces in excess of previous plans, and would weigh against cuts in other military spending. Thus an intensification of competition is likely not only between civilian and military programs, but also within the military establishment.

12. For the near term, at least, Soviet military expenditures almost certainly will continue to rise. New requirements for theater forces could not be met by reductions in outlays for other forces, even if the Soviets should seek to do so, and we doubt that they would in the present situation. Resources allocated to strategic programs are not readily transferrable. Nevertheless, the impact of the larger military effort on the economy will probably impel Soviet leaders to search for savings in military programs. It is possible that it will add to the incentives that led the USSR to agree to discuss strategic arms control with the US.

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III. THE STRATEGIC RELATIONSHIP WITH THE US

13. Despite Moscow's immediate concern over its position in Eastern Europe, the most important issues of Soviet military policy relate to the strategic balance between the US and the USSR. The goals of Soviet strategic weapons programs were set at a time when the US enjoyed such a superiority in intercontinental delivery systems as to put the USSR at a political and psychological disadvantage. The aim of Soviet strategic policy, therefore, has been to achieve a more formidable deterrent and to narrow and eventually to overcome the US lead. Toward this end the Soviets have built strategic forces which provide a large assured destruction capability and important damage-limiting capabilities as well.

14. The Soviets evidently attach great importance to the attainment of strategic parity with the US, but we do not know how they define it. If they seek parity in numbers of intercontinental delivery vehicles, it is clear that they have not reached it. By 1970, their intercontinental ballistic missile (ICBM) force will probably surpass the US force in numbers of launchers, but the Soviets will remain inferior in submarine-launched ballistic missiles (SLBMs) and heavy bombers. At present construction rates, they could match the US Polaris force by 1975, but their heavy bomber force will probably decline.[1] We believe, however, that in assessing the strategic balance the Soviets would go beyond numbers to consider qualitative differences in weapon systems such as warhead yield, the target system to be attacked, and damage-limiting capabilities. Viewed in this light, the Soviets may consider their capabilities for intercontinental attack roughly comparable to those of the US.

15. The Soviet concept of strategic forces differs from that of the US, which focuses upon intercontinental delivery systems. We believe that in the USSR the strategic mission is assigned to the Strategic Rocket Forces, Long Range Aviation, and ballistic missile submarines. All of these forces include elements—medium-range ballistic missiles (MRBMs), intermediate-range ballistic missiles (IRBMs), medium bombers,[2] and diesel-powered submarines—which we believe are intended primarily for use in Eurasian operations. The US has no MRBMs or IRBMs and has virtually eliminated its medium bomber force. Moreover, the US has no counterpart to the Soviet submarine-launched cruise missiles, which, in addition to their primary antishipping role, also have the capability for use against land targets. If the Soviets include medium range as well as intercontinental delivery systems in their assessment of the strategic balance, they could conclude that the USSR had attained strategic parity with the US, or even superiority.

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[1] Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, does not believe there will be any appreciable change in the size of the Soviet heavy bomber force during the period of this estimate. For his view see the forthcoming NIE 11-8-68, "Soviet Strategic Attack Forces."

[2] Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, continues to believe the Soviet medium bomber force has an intercontinental mission. For his views see NIE 11-8-68.

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16. Recent statements by Soviet leaders have in fact, laid claim to strategic parity or superiority for the USSR. In announcing Soviet acceptance of arms control talks, Gromyko described Soviet military power relative to that of the US as being "by no means lesser." A few days later, Brezhnev declared that the US planned "to try to achieve strategic superiority over the Soviet Union." These statements were undoubtedly intended to justify the Soviet decision to enter into arms control negotiations, but they may also reflect the USSR's appraisal of its present strategic position.

The Arms Control Talks

17. The timing of the belated Soviet acceptance of the US proposal for arms control talks raises questions of the USSR's motives. It would appear to run counter to repeated Soviet statements that any significant improvement in US-Soviet relations was impossible in the context of the Vietnam war. And it came only six months before a change of administration in Washington which could lead to changes in US arms control policy. Its timing, however, was probably dictated by a number of factors, political and military. The Soviets probably reasoned that the political climate had been changed by the initiation of negotiations between the US and North Vietnam, and they may have hoped to influence the US position in Paris. The delay in the Soviet response also permitted a considerable build-up in the Soviet ICBM force, thus strengthening the Soviet position at the conference table. And, finally, debate within the Soviet regime may have contributed to the delay.

18. The economic considerations contributing to the Soviet decision are probably no more compelling than the strategic considerations. Military arguments for strategic arms control in the USSR probably center around the present strategic situation, the most favorable to the USSR in the postwar period. Considering US plans for improvements in its strategic forces—antiballistic missile (ABM), Minuteman III, and Poseidon—the Soviets probably believe that a considerable sustained effort would be necessary to maintain the relative position they have now achieved. They may also be concerned lest the end of the Vietnam war enable the US to divert additional resources to its strategic forces. Finally, they may reason that further increments to their strategic forces would have little effect on the relationship between the US and the USSR so long as the US maintained its large, second-strike assured destruction capability. If these arguments were to prevail in the USSR, the Soviets would probably seek an agreement that preserved their present strategic relationship with the US.

19. It is too early to assess the full implications of the Czech crisis for Soviet policy toward arms control. The Soviets still have the same basic economic and military incentives; indeed, it is possible that the new military requirements generated by the Czech crisis have added to those incentives. Moreover, the present Soviet line seems to be that the Czech crisis is an internal Communist Bloc affair that should have no effect on the USSR's relations with the West. It is possible, therefore, that the Soviets will seek to proceed with arms control talks. At a minimum, however, the Czech crisis has delayed the opening of

talks with the US and has dampened the prospects of any real progress toward arms control in the near term.

20. Nevertheless, we believe that the Soviet Government is still interested in some form of strategic arms control for both economic and military reasons. We cannot estimate, however, whether the USSR will actually accede to an arms control agreement, or, until the ultimate Soviet position is known, whether an agreement is possible. Moreover, the pressures against such an agreement within the Soviet system would be formidable. The Soviet Government's decision to negotiate was probably contested, and its opponents probably still hope to reverse it, and to continue the longstanding pattern of increases in Soviet strategic forces.

21. In any case, the Soviet leaders cannot base their strategic planning on the possibility of strategic arms control and will almost certainly explore other alternatives. They might consider a policy of minimum deterrence aimed only at maintaining a large assured destruction capability, or they might consider a try for strategic superiority of such an order that it could be translated into significant political gain. We consider it highly unlikely that the Soviets would select either of these courses of action. The first, that of unilateral deescalation, would involve a decision to sacrifice the hard-won gains of recent years. The second would involve economic sacrifices that are probably unacceptable to the present leadership and would almost certainly provoke a strong US reaction. We believe, therefore, that in the absence of a strategic arms control agreement the USSR will continue the arms competition with the US with the object of maintaining and if possible improving its relative strategic position.

Trends in Strategic Forces

22. The future size and composition of Soviet forces for intercontinental attack will depend not only on Soviet initiatives, but also upon developments on the US side, in particular upon US deployment of MIRVs and ABMs, and on the terms of any arms control agreement. The Soviet response will probably be both quantitative and qualitative. The intercontinental striking forces will probably include an ICBM force with at least as many launchers as those now programed for the US, a force of nuclear-powered ballistic missile submarines comparable to the US Polaris fleet, and a heavy bomber force significantly smaller than that of the US. We also estimate an increased emphasis on qualitative improvements, particularly those related to survivability and capacity to penetrate enemy defenses.[3]

23. Closely related to the question of force goals for strategic attack forces is the adequacy of strategic defenses. For a number of years, the Soviets have given equal priority to both. They have built air defenses which have a formidable capability against aircraft attacking at medium and high altitudes. They are currently deploying on a large scale a new long-range surface-to-air

[3] Detailed estimates of Soviet strategic forces appear in the forthcoming NIE 11-8-68.

missile (SAM) system which will greatly improve their capabilities against high-flying, supersonic aircraft and standoff weapons. They do not yet have adequate defense against strategic attack at very low altitudes.

24. In 1962 the Soviets began to deploy around Moscow an ABM system which was then still under development. Deployment is continuing and the first elements of the system will probably become operational this year. Changes in construction activity around Moscow suggest that the Soviets do not consider this system satisfactory, and they almost certainly will not deploy it elsewhere. Dissatisfaction with this system was probably one consideration behind the Soviets' decision to enter arms control talks. As soon as an improved system is available, the Soviets will probably deploy ABMs in defense of other areas, but their numbers may be restricted by an arms control agreement. We doubt that such a system could be brought into service before the early 1970's.[4]

25. *Strategic Policy Under Arms Control.* As noted above, we believe that Soviet interest in strategic arms control stems primarily from a desire to stabilize the present strategic situation of mutual deterrence and to conserve resources that would otherwise be consumed by strategic weapon programs. The Soviets are most unlikely to accede to an agreement that would limit their strategic options without securing these objectives.

26. Soviet strategic policy in an arms control environment can be forecast only in the most general way. Whatever the terms of an agreement, the development of Soviet strategic forces would not come to a standstill. The Soviets would almost certainly continue a strong R&D effort with the objectives of improving their strategic forces and of hedging against a possible abrogation of the treaty. They would also make qualitative improvements to their forces in the field, aimed at maintaining their assured destruction capability and improving their damage-limiting capabilities. But if, as we believe, economic considerations had played a large part in a decision to accept arms control, there would probably be some reduction in Soviet expenditures for strategic forces, or at least a leveling out.

IV. MILITARY PROBLEMS IN EUROPE AND THE FAR EAST

27. The major part of the Soviet military establishment consists of forces, strategic and general purpose, which are equipped and deployed for operations on the USSR's periphery. Most of these forces are concentrated in the West, but the traditional European orientation of Soviet military policy has undergone some modification in the past few years as the Soviets have sent strong reinforcements to the Chinese border area. Now the Soviets face a changed political and

[4] Lt. Gen. Joseph F. Carroll, the Director, Defense Intelligence Agency, Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, and Brig. Gen. Vasco J. Fenili, the Acting Assistant Chief of Staff for Intelligence, Department of the Army, believe that this paragraph unduly ignores the possibility that the SA-5 may possess an ABM capability. The question will be discussed in detail in the forthcoming NIE 11-3-68, "Soviet Strategic Air and Missile Defenses."

16. NIE 11-8-62 *Soviet Capabilities for Long Range Attack*

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SOVIET CAPABILITIES FOR LONG RANGE ATTACK

APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

THE PROBLEM

To estimate probable trends in the strength and deployment of Soviet weapon systems suitable for long range attack, and in Soviet capabilities for such attack, projecting forward for about five years.[1]

CONCLUSIONS

1. Major new developments are evident in Soviet programs for long range striking forces. First, as forces for attack on Eurasia are reaching planned levels, greater emphasis is being placed on forces for intercontinental attack, especially ICBMs. Second, the Soviets are attempting to improve their capabilities for both preemptive and retaliatory action, by measures designed to shorten reaction times and increase survivability.

2. The tempo of the ICBM program has quickened. The present relatively modest force level of about 50 operational launchers will probably grow substantially, reaching some

[1] The weapon systems considered are ground-launched missiles with ranges of 700 nautical miles (n.m.) or more, submarine-launched missiles, heavy and medium bombers, air-to-surface missiles, and advanced delivery and supporting systems such as orbital and suborbital vehicles. Emphasis is placed on those systems designed primarily to attack land targets in North America, and in Eurasia and its periphery.

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125–175 launchers in mid-1963 and 200–300 in mid-1964.[2, 3] From 1963 onwards, an increasing proportion of the ICBM force will probably be deployed at launch sites having some degree of hardening.

3. The USSR is developing a submerged-launch ballistic missile submarine system, with medium or intermediate range missiles. This improved system will probably be incorporated into some portion of the 40 or so existing ballistic missile submarines, and into a new submarine class. Soviet submarines armed with cruise-type missiles are also capable of attacking land targets. Within the next few years, Soviet nuclear-powered missile submarines will probably be conducting regular patrols within firing range of the US.

4. For employment against Eurasia, the Soviets have built formidable missile and bomber forces, which they will continue to maintain and improve. Their limited bomber capability against North America will be tailored increasingly to conduct missions supplementary to ballistic missile attack.

5. The weight of nuclear attack which the USSR could launch will increase with the growth of long range striking forces and a general upward trend in weapon yields. Within the next few years, limited numbers of very high yield weapons in the 25–100 megaton range will be available for delivery by bombers and probably ICBMs. Ground-launched missile units are believed to have more than one missile per launcher, to provide a refire capability.

6. In the mid-1960's, the principal Soviet forces for attack on North America will be increasing numbers of ICBM launchers, supplemented by increasing numbers of nuclear-powered missile submarines and decreasing numbers of bombers. In a preemptive attack at that time, the USSR would be able to strike at the fixed bases of an important segment of the US nuclear delivery capability. Moreover,

[2] The Assistant Chief of Staff for Intelligence, Department of the Army, believes that the number of Soviet ICBM launchers is unlikely to exceed the low side of the ranges shown for mid-1963 and mid-1964.

[3] The Assistant Chief of Staff, Intelligence, USAF, estimates the number of operational launchers as follows: mid-1962, 75–100; mid-1963, 175–250; and mid-1964, 300–450.

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it would have some prospect that a portion of its own long range striking forces could survive an initial US attack and go on to retaliate.

7. With the long range striking forces we estimate it will have in the mid-1960's, however, the USSR could not expect to destroy the hardened, airborne, seaborne, and fast reaction nuclear delivery capabilities of the US.

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DISCUSSION

SOVIET POLICY TOWARD LONG RANGE STRIKING FORCES

8. The Soviets regard forces for long range attack as essential for supporting an aggressive political posture, deterring the West from resort to military action, and fighting a war as effectively as possible should one occur. In our view, they are building forces which they regard as appropriate to these objectives rather than attempting to achieve the very high degree of superiority required to launch a deliberate attack on the West. Efforts to gear their forces better for both preemptive and retaliatory operations, along with greater emphasis upon forces capable of attacking the US, are the major new developments in the Soviet programs for long range striking forces.

9. In building these forces, the Soviets put initial stress on creating a massive capability against Eurasia and its periphery. Intercontinental capabilities were not neglected, but deployment of medium range delivery systems occurred earlier and in much larger numbers. This pattern is probably changing. We believe that deployment of medium range systems is approaching the planned level, and that major emphasis is now being given to further development of forces for intercontinental attack, primarily ICBMs.

MAJOR WEAPON PROGRAMS, 1962–1964

Intercontinental Ballistic Missiles

10. The tempo of ICBM development and deployment has quickened noticeably in the past year or two. While present force levels are relatively modest, there is good evidence that the Soviets have been conducting high priority R&D on new ICBM systems, with concurrent construction of deployment complexes. Moreover, the Soviets are probably building new sites with some degree of hardening.

11. *Development and Deployment.* During the past 18 months, activity on the Soviet ICBM test range has intensified, with firings of three different types of ICBMs. The most urgent recent program at Tyuratam has been the development of the second generation SS–7 ICBM system, which is now being deployed. Testing of the SS–8 ICBM has proceeded at a slower pace; it could be available for operational use in 1963. Firings of the first generation SS–6 ICBM, which probably became operational in 1960, have been at a reduced pace. We believe that within the next year or so the Soviets will begin firing new ICBMs or space vehicles which are as yet unknown to US intelligence.

12. The urgency apparent in the development of the second generation ICBM almost certainly relates to a Soviet decision to deploy the first generation system in only limited numbers. The SS–6 ICBM is a very large vehicle of nearly half a million pounds gross takeoff weight, with nonstorable liquid propellants and radio-inertial guidance. Ground control and support facilities are correspondingly large and include rail service direct to launchers. The second generation SS–7 ICBM is simpler and considerably less bulky, and probably employs storable liquid propellants and all-inertial guidance. A typical SS–7 complex consists of a rail-served support area and eight or more launchers, which are deployed in pairs and are road-served.

13. *Probable Hardening.* All currently operational Soviet launchers are deployed at soft, fixed sites, but we believe the Soviets have

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probably initiated a program to construct launch sites having some degree of hardening. Considering past Soviet practices, we estimate that there will be two ICBM launchers at each site. The first of these new sites will probably be operational in early 1963. It is probable that such sites are to employ either the SS–7 ICBM with redesigned ground support equipment or the SS–8 ICBM. Our information on the SS–8 system is inadequate to determine whether the missile employed is even larger than the SS–6 or whether it is smaller than the SS–7.

14. *Estimated Force Levels to 1964.* The ICBM force will increase substantially above its present level in the next year or so. Our estimate of the growth of the force in this period is affected, on the one hand, by the increasing tempo of the Soviet program, and on the other hand, by the greater time and effort required to build hardened launch sites. Considering these factors, together with all the other evidence available to us, we estimate as follows the size and composition of the ICBM force to 1964: [1] [2]

OPERATIONAL SOVIET ICBM LAUNCHERS, 1962–1964

	Mid-1962	Mid-1963	Mid-1964
Soft 1st Generation (SS–6)	6–10	6–10	6–10
Soft 1st Generation (SS–7)	40–45	110–140	150–200
Hardened		10–25	50–100
Approximate Total	50	125–175	200–300

[1] The Assistant Chief of Staff for Intelligence, Department of the Army, believes that the number of Soviet ICBM launchers is unlikely to exceed the low side of the ranges shown for mid-1963 and mid-1964.

[2] The Assistant Chief of Staff, Intelligence, USAF, estimates about 75–100 operational ICBM launchers in mid-1962. He would estimate the force levels through 1964 as follows:

TOTAL LAUNCHERS

	Mid-1962	Mid-1963	Mid-1964
SS–6	10–25	10–25	
SS–7	65–75	145–185	250–300
Hardened		20–40	50–150
Total	75–100	175–250	300–450

Medium and Intermediate Range Ballistic Missiles

15. MRBM and IRBM sites, each with four pads, are soft, fixed, and road-served. More than 90 percent are deployed in a broad belt of Western USSR stretching from the Baltic to the Black Sea, within range of NATO targets in Norway, most of Western Europe, and Turkey. A lesser concentration of sites in the Soviet Far East is capable of bringing Japan, Korea, and Okinawa under fire. A few sites in south central USSR are within range of US and Allied military installations in Turkey and Pakistan. IRBMs could extend the target coverage from these various areas to include all of Spain, North Africa, Taiwan, and the northern Philippines.

16. We estimate that the USSR now has about 500 operational MRBM and IRBM launch pads. We do not have evidence that all of these launch pads are manned, and it is possible that some of them represent alternate firing positions. The site construction program has probably slowed but not ceased. The force will probably grow over the next year or two to a total of about 550–650 launch pads (including some 50–100 IRBMs), after which it will probably level off.

Operational Procedures of Missile Units

17. ICBM, IRBM, and MRBM units are believed to have refire capabilities. Although the evidence is not firm, we believe that an average of two missiles is provided for each launch pad. Preparation to fire initial and subsequent salvoes probably requires a number of hours. Sophisticated methods of attaining a high degree of simultaneity and flexibility in operations are not believed to be employed. The USSR is working to reduce the reaction and refire times of strategic missile units, but current system designs will preclude the constant maintenance of readiness conditions approaching those of US systems.

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Submarine-Launched Missiles

18. The Soviets now have operational about 40 long range ballistic missile submarines, including 7 diesel-powered "Z" class, 25 diesel-powered "G" class, and 10 nuclear-powered "H" class submarines. This force carries a total of about 120 ballistic missiles with ranges up to 350 n.m. The effectiveness of these submarines is limited by the small number of missiles each carries, the short range of the missiles, and the requirement for submarines to surface for launching. There is reliable evidence, however, that the Soviets are now developing a capability to launch ballistic missiles from submerged submarines. The range of the missiles may be either 650 or 2,000 n.m. A program to retrofit some portion of the existing force of about 35 "G" and "H" class submarines will probably begin soon. All of these submarines could be so equipped within the next two to four years. A new nuclear-powered submarine class is probably also under development to employ this new missile system; we estimate that the first such submarine could become operational in 1963–1964. The probable numbers of ballistic missile submarines in Soviet operational units through mid-1964 are estimated as follows:

SOVIET BALLISTIC MISSILE SUBMARINES, 1962–1964

	Mid-1962	Mid-1963	Mid-1964
Diesel-powered	32	32–35	32–35
Nuclear-powered	10	12–15	15–20

19. The Soviet Navy has also developed 350 n.m. submarine-launched cruise missile systems, designed primarily for low altitude, supersonic attack against Western surface ships, particularly carrier task forces. They are now carried by a few converted diesel-powered submarines and at least four nuclear-powered submarines. We believe that the Soviets are now extending their capability to attack land targets with missiles of this type.

Long Range Aviation

20. Soviet Long Range Aviation, by reason of its equipment, basing, and deployment, is much better suited to Eurasian operations than to intercontinental attack. We estimate that as of mid-1962 Long Range Aviation comprises some 165 heavy bombers and 950 jet medium bombers.[6] Virtually all of the medium bombers are BADGERs, but a few supersonic BLINDERs have probably now been delivered to units. It is unlikely that a new heavy bomber will be developed for operational use.[7] Recent trends indicate little change in total aircraft strength over the next two years.

ESTIMATED STRENGTH OF LONG RANGE AVIATION, 1962–1964

Bombers and Tankers	Mid-1962	Mid-1963	Mid-1964
Heavy			
BISON	110	110	100
BEAR	55	55	50
Total	165	165	150
Medium			
BADGER	950	900	800
BLINDER	a few	50	100
Total	950	950	900

[6] The Assistant Chief of Staff, Intelligence, USAF, believes that the heavy bomber force will have the composition included in the following table:

Bombers and Tankers	Mid-1962	Mid-1963	Mid-1964
Heavy			
BISON	120	120	115
BEAR	80	80	75
Follow-on	..	.	10
Total	200	200	200

[7] The Assistant Chief of Staff, Intelligence, USAF, believes that a follow-on heavy bomber will be introduced in 1964. The continued research and development of large supersonic aircraft substantiates the Soviets' interest in large supersonic vehicles and indicates their intent to increase their strategic attack capabilities by such means.

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16. *(Continued)*

21. In attempting to overcome the range limitations of Long Range Aviation for intercontinental attack, the Soviets have given considerable emphasis to aerial refueling and Arctic training in BADGER and BISON units. Most of the BEARs have been modified to deliver 350 n.m. air-to-surface missiles. We believe that the Soviets might plan to commit as many as 400–500 aircraft to initial attacks on North America. Considering a variety of operational factors, but excluding combat attrition, we estimate that the Soviets could now put about 200 bombers over North America on two-way missions in initial attacks; of these nearly half could be heavy bombers. The patterns of Arctic training and base utilization indicate that aircraft would probably be staged through a few bases in successive waves over a number of hours.*

Nuclear Weapons

22. The present Soviet stockpile consists almost entirely of weapons developed from nuclear tests conducted prior to the 1961 test series. Most of the weapons allotted to Long Range Aviation are probably high-yield types ranging from about 100 KT to 8 MT. Ballistic missiles now in service could deliver warheads with maximum yields in the megaton range. MRBMs are probably also equipped with lower yield warheads. Naval cruise-type missiles and air-to-surface missiles are probably armed with warheads of low or medium yield for use against ships, but could deliver warheads in the low megaton range against land or coastal targets. The general trend in the yields of weapons allotted to long range attack will probably be upwards. A few very high-yield bombs of 25 MT, or even 100 MT, could now be available. It is possible that a few ICBMs capable of delivering these very high yield weapons could be available within the next two years.[9]

TRENDS IN LONG RANGE STRIKING FORCES, 1965–1967

23. In the middle 1960's the USSR will continue to strengthen and modernize its long range striking forces, with emphasis on those systems capable of attacking the US. The effort devoted to long range attack forces will be affected by the competing demands of other essential military and nonmilitary programs. We cannot estimate with confidence the decisions the Soviet leaders will make or the success they are likely to achieve in various weapons programs. However, we believe that while a mixed striking capability will be retained, the ICBM will be the dominant weapon.

ICBM Forces

24. The Soviet ICBM program will be influenced by a variety of factors: Soviet strategic concepts, technical improvements, other Soviet weapons programs, the nature and size of Western forces, and the international situation. These factors place broad limits on the future Soviet ICBM force but do not lead us to a particular program. For this reason we can only estimate the Soviet force level within a broad range. All things considered, we believe the Soviet force level in mid-1967 will be within the range of 300–600 operational launchers. The majority of launchers will probably have a degree of hardening, including some fully hardened. To achieve the high side of the range, the USSR would need to commit resources throughout this period at rates at least as high as those now evident in the ICBM program. Many of the launchers will probably have more than one

*The Assistant Chief of Staff, Intelligence, USAF, believes that the Soviets would use a number of bases for staging and would not be restricted in their mode of attack. He further believes that the Soviets could commit about 750 aircraft to initial two-way attacks on North America. Considering operational factors and allowing for noncombat attrition, about 300 bombers could reach North American targets.

[9] For a detailed discussion of Soviet nuclear weapon characteristics, see NIE 11-2-62, "The Soviet Atomic Energy Program," dated 18 May 1962, TOP SECRET (Limited Distribution).

missile available, to provide a refire capability. Our estimate, reflecting the considerable range of uncertainty in any figures for this period, is as follows:

OPERATIONAL SOVIET ICBM LAUNCHERS, 1965–1967 [*] [**]

	Mid-1965	Mid-1966	Mid-1967
Soft	150–250	150–250	150–250
Hardened	100–175	125–250	125–250
Fully Hard	0–a few	a few–25	25–100
Approx. Total	250–425	275–525	300–600

25. The smaller force would give the Soviets high assurance in an initial attack of destroying US soft fixed nuclear bases, semihardened ICBM sites, communication and control facilities, and the principal US metropolitan areas. The larger force would provide an additional attack capability against some hardened targets, control centers, and other elements contributing to US striking and defensive strength, and would increase the Soviet retaliatory capability. We believe that the programmed buildup in US intercontinental attack forces makes it increasingly unlikely that the Soviets would judge that they could launch an attack on US nuclear forces and inflict sufficient damage to assure that resulting damage to the USSR was acceptable.

26. The accuracy, reliability, and reaction time of the ICBM force will improve. Better command, communications, and other equipment will increase its flexibility and capability for simultaneous attack. The bulk of the force will probably be equipped with warheads in the [ ] range, but a number of [ ] missiles and [ ] missiles will probably be available. To improve the survivability of the force, the Soviets will probably continue to deploy ICBMs at launchers which are dispersed and have some degree of hardening. They will also probably develop a fully hardened system which we believe could become operational in 1965 or 1966.

[*] The Assistant Chief of Staff for Intelligence, Department of the Army, believes that the force level is likely to be towards the low side of the estimate presented in the table above.

[**] The Assistant Chief of Staff, Intelligence, USAF, believes the operational Soviet ICBM launchers for the period 1965–1967 will be as follows:

	Mid-1965	Mid-1966	Mid-1967
Soft	250–300	250–300	250–300
Hardened	150–200	150–200	150–200
Fully Hard	About 50	About 150	About 300
Total	450–550	550–650	700–800

MRBM and IRBM Forces

27. Soviet strength in these systems will probably have been stabilized before 1965 at approximately 550–650 operational launch pads. To improve the survivability of the MRBM force, the Soviets may also develop road mobile or hardened systems.

Submarine-Launched Forces

28. Soviet planners will probably look upon submarine missile forces as an important supplement to their ICBM strength because of their relative invulnerability and their capability for varying the direction and nature of attacks on the US. We believe that the number of nuclear-powered submarines capable of launching ballistic missiles will be on the order of 25–30 in mid-1967. The Soviets will probably also have about two dozen nuclear submarines equipped with cruise-type missiles. In addition, diesel-powered missile submarines will remain in operation. The ranges of submarine-launched missiles may be extended to as much as 2,000 n.m. for ballistic missiles, and to 650 n.m. for cruise missiles. By the mid-1960's, some Soviet nuclear-powered missile submarines will probably be conducting regular patrols within missile range of US coasts.

Bomber Forces

29. With the growth and improvement of missile capabilities, the Soviets would probably plan to employ bomber forces in follow-on attacks after initial missile strikes had been delivered or to supplement the retaliatory blow if the USSR were attacked first. Aircraft

16. *(Continued)*

equipped with improved penetration aids and nuclear weapons would probably be used for increasingly specialized missions, such as armed reconnaissance and attacks on hard targets. By mid-1967, Long Range Aviation will probably include some 750 medium bombers, about one-third of them supersonic BLINDERs. Heavy bomber strength will probably have been reduced to about 100 aircraft. We estimate as follows the strength of Long Range Aviation in the mid-1960's:

Bombers and Tankers	Mid-1965	Mid-1966	Mid-1967
Heavy [12]			
BISON	90	80	70
BEAR	45	40	35
Total	135	120	105
Medium			
BADGER	700	600	500
BLINDER	150	200	250
Total	850	800	750

SPACE SYSTEMS

30. We have no evidence of Soviet plans or programs for the military use of space. We think it highly unlikely, however, that the USSR would omit this field in its vigorous search for qualitative improvements in its military posture and for achievements with which to support claims of superiority. We believe that the Soviets could launch reconnaissance, communications, meteorological, navigation, or geodetic satellites at any time. There is no evidence that the Soviets are working to develop offensive space weapon systems, but the course of the Soviet space program to date suggests that any effort in this field would be directed toward an orbital bombardment vehicle. It would be technically feasible for the Soviets to launch weapons of limited capability into orbit in the mid-1960's, but we do not believe they could achieve an effective offensive capability by the end of the decade.[13]

IMPLICATIONS OF CAPABILITIES

31. The capabilities of Soviet long range striking forces will be only in part a function of the numbers of weapons available, their performance, and the adequacy of supporting elements. Equally critical will be the way in which the Soviets employ their striking forces, their ability to maximize the effects of these forces under the various circumstances in which war could begin, and their assessment of Western capabilities and plans.

32. The current Soviet targeting concept reflects the view that even a general nuclear war is likely to be protracted and that victory requires the reduction of all elements of the Western warmaking potential. These elements include: the bases of strategic delivery systems; nuclear weapons facilities; communication and governmental centers; military and war supporting industry. We have no evidence that avoidance of heavy civilian casualties is among the objectives underlying Soviet targeting.

[12] The Assistant Chief of Staff, Intelligence, USAF, believes that the heavy bomber force will have the composition included in the following table (see footnotes 6 and 7):

Bombers and Tankers	Mid-1965	Mid-1966	Mid-1967
Heavy			
BISON	110	100	90
BEAR	70	60	50
Follow-on	20	40	60
Total	200	200	200

[13] The Assistant Chief of Staff, Intelligence, USAF, believes that a Soviet orbital bombardment capability could be achieved prior to the end of the decade. Based on technical considerations and using a (large) SS-8 booster and techniques known to exist today or to be within Soviet capability, he believes that such a system could be developed as early as 1965. This system could be composed of orbital vehicles of 30,000 pounds gross weight, which could deorbit a very high yield weapon to a CEP of 4 n.m. initially and later to 1.8 n.m.

16. *(Continued)*

33. Should the Soviets conclude that the West was irrevocably committed to an imminent nuclear attack on the USSR, they would launch their available ready forces in a preemptive attack designed to blunt the expected Western blow. The mixed force which they have available for such operations would permit flexibility of tactics and complicate Western defensive problems, but would pose severe difficulties of coordination. Initial missile and bomber attacks against the US would probably extend over a period of many hours, and those against Eurasia over at least a few hours. We believe that at present the Soviets would plan to employ few if any missile submarines in initial attacks against the US; initiation of routine submarine patrols within missile range of the US could change this situation.

34. By the mid-1960's, the USSR will have acquired a substantial missile capability to deliver nuclear weapons against the US, in addition to its already formidable forces for strikes in Eurasia. Significant portions of this force will be relatively invulnerable to attack. The Soviets will be in a position to strike preemptively at the fixed bases of an important segment of the US nuclear delivery force, and they will have some prospect that a portion of their own force could survive an initial US attack and retaliate with high yield nuclear weapons. With the long range striking forces we estimate that they will have in the mid-1960's, however, the Soviets could still not expect to destroy the growing numbers of US hardened, airborne, seaborne, and fast reaction nuclear delivery vehicles.

17. NIE 11-8-64 *Soviet Capabilities for Strategic Attack*

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CIA HISTORICAL-REVIEW PROGRAM

SOVIET CAPABILITIES FOR STRATEGIC ATTACK

THE PROBLEM

To estimate probable trends in the strength and deployment of Soviet forces for strategic attack and in Soviet capabilities for such attack through mid-1970.

SCOPE NOTE

This estimate covers those Soviet military forces which are suitable for strategic attack. Other major aspects of the Soviet military strength are treated in separate estimates on air and missile defense, on theater forces, on the nuclear program, and on the space program. Trends in the USSR's overall military posture and in Soviet military policy are examined in an annual estimate, the next issuance of which will be in the first quarter of 1965.

SUMMARY AND CONCLUSIONS

A. Major changes in Soviet programs for the development of strategic attack forces have become apparent during the past year. In 1962–1963, certain ICBM and ballistic missile submarine programs came to an end, and a pause ensued in the growth of these forces. At the same time, the pace of ICBM research and development increased markedly. More recently, the USSR has resumed ICBM deployment in a new and improved configuration, and the probable advent of a new submarine which we believe is designed to carry ballistic missiles probably marks the start of yet another deployment program. (*Para. 1*)

B. Soviet military policy in recent years has been to build up strategic offensive and defensive capabilities, maintain and improve large general purpose forces, and pursue research and development

17. *(Continued)*

programs in advanced weapons. In our view, the primary concern of Soviet military policy for the next several years will continue to be the strengthening of the USSR's strategic deterrent. The evidence to date does not indicate that Soviet deployment programs are directed toward a rapid numerical buildup. We do not believe that the USSR aims at matching the US in numbers of intercontinental delivery vehicles. Recognition that the US would detect and match or overmatch such an effort, together with economic constraints, appears to have ruled out this option. (*Paras. 2–4*)

C. A stress on qualitative factors suggests that the Soviets see technological advance in weapons as a means by which they can improve their strategic position relative to the West. In the ICBM force, for example, major qualitative improvements currently being achieved include hardening and dispersal (which will sharply increase the number of aiming points), as well as better accuracy and larger payloads. (*Paras. 4–5*)

D. By the end of the decade, Soviet intercontinental attack capabilities will rest primarily upon an ICBM force of some hundreds of launchers, supplemented by a sizable missile-submarine fleet and a large but reduced bomber force. These forces will represent a marked improvement in Soviet retaliatory capability and a considerable strengthening of the Soviet deterrent. In the light of current and programmed US military capabilities, however, we do not believe that the Soviets will expect to achieve, within the period of this estimate, strategic attack capabilities which would make rational the deliberate initiation of general war. (*Para. 5*)

The ICBM Program

E. Major developments since mid-1963 include a proliferation of test facilities at Tyuratam, flight-testing of two third-generation ICBM systems (the SS–9 and SS–10), and the beginning of construction of hard, single-silo ICBM launchers, probably for one or both of the new systems. The deployment of second-generation ICBMs has probably ceased, and a pause between the second- and third-generation programs has slowed deployment. We believe that the Soviets now have about 200 operational ICBM launchers, and that the total number of operational launchers in mid-1965 will approximate the low

17. *(Continued)*

side of the 250–350 range previously estimated. These figures do not include R&D launchers at Tyuratam.[1] (*Paras. 6–8, 10–18, 31*)

F. Research and development on third-generation systems has been generally successful. The SS–9 system appears to be an outgrowth of the SS–7 with improved accuracy and a larger payload. We have little information on the characteristics of the SS–10. Both new systems could enter service in 1965. We believe that work is underway on still other ICBM systems, which we cannot as yet identify. We continue to believe that the Soviets are developing a very large ICBM, capable of delivering [ ] We estimate that it could enter service in the period mid-1966 to mid-1967. In addition, the Soviets might be developing a new, small ICBM employing improved propellants. If they are, it could become operational as early as 1967. (*Paras. 19–26*)

G. The Soviets are now emphasizing deployment of single-silo hard launchers for ICBMs, and we expect this emphasis to continue. We expect third-generation deployment to include the expansion of both second-generation complexes and the initiation of additional new complexes. (*Paras. 9, 27*)

H. The growth of the Soviet ICBM force over the next several years will be influenced by a number of factors. In economic terms, the program must compete for funds with other military and space activities and with the civilian economy. In the technical field, we believe that research and development is proceeding on additional, follow-on ICBM systems, and we doubt that with these in the offing the USSR will fix upon any one or even two existing systems for urgent deployment on a large scale. We are also mindful that the interruptions that marked second-generation deployment programs may recur. In strategic terms, the Soviets evidently judge that an ICBM force in the hundreds of launchers, together with their other strategic forces, provides a deterrent. On the basis of the evidence now available, to us, we do not believe that they are attempting to deploy a force capable of a first-strike which would reduce the effects of US

[1] The Assistant Chief of Staff, Intelligence, USAF, considers the estimate of the numbers of launchers operational now and expected in mid-1965 is too low. He estimates that the Soviets now have about 240 operational launchers, including about 20 at Tyuratam and a 10 percent allowance for unlocated launchers. He believes the total number in mid-1965 will be between 275 and 325. See his footnote, page 11, para. 10.

retaliation to an acceptable level.[2] At the same time, we expect them to continue a vigorous R&D effort in the hope of achieving important technological advances, in both the offensive and defensive fields, which would alter the present strategic relationship in a major way. (*Para. 30*)

I. We estimate a Soviet ICBM force of 400–700 operational launchers for mid-1970; in our previous estimate, we projected this force level for mid-1969. By mid-1970, we believe that the force will include most or all of the launchers now deployed, some 125–200 single-silo SS–9/10 launchers, and 10–20 launchers for very large ICBMs. We believe that the attainment of as many as 700 operational launchers by mid-1970 would be likely only if the Soviets begin deploying a new, small ICBM at a rapid rate about 1967. The Soviet ICBM force which we estimate for mid-1970 will represent a substantial increase in numbers and deliverable megatonnage. Further, the trend to single silos will increase the number of aiming points represented by individual launch sites from about 100 at present to some 300–575 in mid-1970, the bulk of them hard. This will greatly improve the survivability, and hence the retaliatory capability, of the force.[3] (*Paras. 32–37*)

J. In the past few years the Soviets have improved the readiness and reaction time of their ICBM force. Our evidence now indicates that from the normal state of readiness, the soft sites which constitute the bulk of the present force would require 1–3 hours to fire. Hard sites would require about half an hour or less. A higher state of alert (i.e., 5–15 minutes to fire) can be maintained at most soft sites for a number of hours and at most hard sites for days. (*Paras. 38–40*)

K. There is ample evidence that the Soviets designed their soft ICBM systems to have a refire capability. We have re-examined the

[2] The Assistant Chief of Staff, Intelligence, USAF, considers that the Soviets may already have directed their intensive military R&D effort toward achievement of an effective first-strike counter-force capability before the close of this decade. Considering the length of time covered by this estimate and the number of unknowns involved, he believes this is a possibility which should not be disregarded.

[3] The Assistant Chief of Staff, Intelligence, USAF, considers the ICBM force by mid-1970 could range from approximately 600 to as high as 900 operational launchers depending on whether a new, small, easily deployed system is introduced. (See his footnote to table on page 18.) An ICBM force of this size would increase the number of aiming points represented by individual launch sites to approximately 400–700 in mid-1970.

17. *(Continued)*

factors likely to affect refire time, and conclude that it would require little longer to fire the second missile than the first. Our present estimate of refire time is 2–4 hours, considerably less than previously estimated. We believe that, on the average, two or more missiles are provided per soft launcher for initial firing, refire, and maintenance spares. We believe that hard ICBM sites do not have a refire capability. (*Paras. 41–43*)

L. We have little evidence on the hardness of Soviet ICBM sites. Given the many uncertainties in this area, only a very tenuous estimate can be made, but our best judgment is that Soviet hard ICBM sites have a hardness in the 300–600 psi range. This implies a design overpressure in the 200–400 psi range, somewhat higher than previously estimated.[4] (*Paras. 49–50*)

M. Qualitative improvements in the force can be expected as new ICBM systems enter service. Currently operational ICBMs have CEPs on the order of 1–2 n.m. The SS–9 will probably have an accuracy of 0.5–1.0 n.m. with radio assist, or 1.0–1.5 with all-inertial guidance. By mid-1970, the Soviets could achieve accuracies on the order of 0.5 n.m. or better. The SS–9 will probably carry a payload [ ] as compared with [ ] for second-generation ICBMs. We do not believe that the Soviets have yet developed penetration aids or multiple warheads, but they may do so in the future, particularly if the US deploys antimissile defenses. (*Paras. 44–48*)

MRBMs and IRBMs

N. Deployment programs for the 1,020 n.m. MRBM and the 2,200 n.m. IRBM are now ending, and almost certainly will be completed by mid-1965. We estimate that at that time the MRBM/IRBM force will have a strength of about 760 operational launchers, 145 of them hard. The bulk of the force (about 90 percent) is deployed in western USSR, with the remainder in the southern and far eastern regions of the USSR. This force is capable of delivering a devastating first strike or a powerful retaliatory attack against targets in Eurasia, and can attack such areas as Greenland and Alaska as well. Some of the

[4] The Assistant Chief of Staff, Intelligence, USAF, considers that, given the uncertainties involved, no meaningful estimate of the hardness of Soviet hard sites can be made. However, he believes that the design overpressure of Soviet hard sites is no greater than the 100–300 psi previously estimated.

17. *(Continued)*

MRBM/IRBM launchers are probably intended to support ground operations. (*Paras. 51–55*)

O. We doubt that the Soviets will expand their MRBM/IRBM force during the period of this estimate. It is possible, however, that operational capabilities will be improved by the introduction of a new missile system, which probably would be deployed in single-silos. Such a system, employing improved propellants, could become operational in the 1966–1968 period and would probably replace some of the soft launchers now operational. (*Paras. 56–59*)

Missile Submarine Forces

P. The Soviets now have operational some 40–50 ballistic missile submarines, including 8–10 nuclear powered. Most of these submarines are equipped with 350 n.m. missiles and must surface to fire. One or two are equipped with a new 700 n.m. submerged-launch missile, and others will probably be retrofitted. The USSR also has operational about 30 cruise-missile submarines, including 11–14 nuclear powered. The majority are equipped with 300 n.m. missiles designed for low altitude attack, primarily against ships. The remainder carry a newer 450 n.m. version of this missile, which probably has an improved capability to attack land targets. Current Soviet missile submarines carry relatively few missiles: the ballistic missile classes, two or three, and the cruise missile types, up to eight. The entire present force has a total of 120–140 ballistic missile tubes and 135–150 cruise-missile launchers. (*Paras. 60–71*)

Q. We believe that the Soviets have under construction a submarine which we estimate to be the first of a new nuclear-powered, ballistic missile class. We estimate that it will employ the submerged-launch 700 n.m. missile, and have a few more missile tubes than current classes. The first unit will probably become operational in 1965. Beyond this new class, we consider it unlikely that the Soviets will develop an entirely new follow-on ballistic missile submarine system within the period of this estimate, although they will probably continue to improve existing systems. We believe that they will also continue to construct cruise-missile submarines. By mid-1970 the Soviet missile submarine force will probably number 100–130 ships, about half of them cruise-missile submarines and about half ballistic. (*Paras. 72–75*)

R. In the past year, limited numbers of Soviet missile submarines have engaged in patrols in the open oceans. We expect a gradual expansion of this activity. By the end of the decade, Soviet missile submarines will probably be conducting regular patrols throughout the North Atlantic and Pacific, and possibly into the Mediterranean. (*Para. 76*)

Long-Range Bomber Forces

S. We have no recent evidence of major changes in the capabilities and structure of Soviet Long-Range Aviation (LRA). The force now includes some 190–220 heavy bombers and tankers and 850–900 mediums. It is being improved primarily through the continued introduction of Blinder supersonic dash medium bombers and through modification of older bombers for air-to-surface missile delivery, for aerial refueling, and for reconnaissance. Use of both medium and heavy bombers of the LRA in support of maritime operations has increased. (*Paras. 80–86*)

T. Considering noncombat attrition factors and the requirements for Arctic staging and aerial refueling, we estimate that the Soviets could put somewhat more than 100 heavy bombers over target areas in the US on two-way missions. Recent trends lead us to believe that medium bombers do not now figure prominently in Soviet plans for an initial bomber attack against North America. Nevertheless, should they elect to do so, we believe that at present the Soviets could put up to 150 Badgers over North American target areas on two-way missions. We have serious doubt about how effectively the Soviets could launch large-scale bomber operations against North America. We consider it probable that initial attacks would not be simultaneous, but would extend over a considerable number of hours.[5] (*Paras. 91–97*)

U. The Soviets will probably maintain sizable bomber forces, which will decrease gradually through attrition and retirement. Although continued Soviet work on advanced transports could be applied to military purposes, we think it unlikely that the Soviets will bring any follow-on heavy bomber into operational service during the period

[5] The Assistant Chief of Staff, Intelligence, USAF, considers this paragraph seriously underestimates the manned aircraft threat to the continental US. In the event war should eventuate and the USSR attacks the US with nuclear weapons, he believes this will be an all-out effort aimed at putting a maximum number of weapons on US targets. He therefore estimates that the number of heavy and medium bombers, including BADGERS on one-way missions, could exceed 500. See his footnote on page 32, para. 94.

17. *(Continued)*

of this estimate. We believe that Blinder medium bombers, some equipped with advanced air-to-surface missiles, will be introduced during much of the period of this estimate. By mid-1970, Long-Range Aviation will probably include some 140–180 heavy bombers of present types and 300–500 mediums, mostly Blinders.[6] (*Paras. 87–90*)

Space Weapons

V. Although the USSR almost certainly is investigating the feasibility of space systems for use as offensive and defensive weapons, we have no evidence that a program to establish an orbital bombardment capability is seriously contemplated by the Soviet leadership. We think that orbital weapons will not compare favorably with ICBMs over the next six years in terms of effectiveness, reaction time, targeting flexibility, vulnerability, average life, and positive control. In view of these considerations, the much greater cost of orbital weapon systems, and Soviet endorsement of the UN resolution against nuclear weapons in space, we believe that the Soviets are unlikely to develop and deploy an orbital weapon system within the period of this estimate. (*Paras. 98–103*)

[6] The Assistant Chief of Staff, Intelligence, USAF, believes the Soviets will continue to consider manned strategic aircraft an important adjunct to their ICBM force. He estimates that the USSR will introduce a follow-on heavy bomber. He further estimates the heavy bomber force will remain at about 200 or somewhat larger, depending on the timing of the expected follow-on bomber, and that by mid-1970 the medium bomber/tanker force will probably still include about 650–850 aircraft. See his footnote to table on page 31 following para. 90.

18. M/H NIE 11-8-64 *Soviet Capabilities for Strategic Attack*

SOVIET CAPABILITIES FOR STRATEGIC ATTACK

THE PROBLEM

To review the evidence acquired since the publication of NIE 11-8-64, and to assess its implications for the Soviet ICBM forces through mid-1966.

SCOPE NOTE

NIE 11-8-64, "Soviet Capabilities for Strategic Attack," dated 8 October 1964, TOP SECRET RESTRICTED DATA, is a comprehensive estimate of Soviet capabilities in the field of strategic attack. This memorandum has been prompted by new evidence which requires us to review our judgments of Soviet ICBM programs and, in particular, the pace of ICBM deployment. A new estimate in the 11-8 series, which will deal with all Soviet strategic attack systems, will be issued in late 1965.

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18. *(Continued)*

DISCUSSION

1. In NIE 11-8-64, we estimated that deployment of second-generation ICBMs in soft sites and three-silo hard sites had come to an end, and that the Soviet ICBM program was moving into a new phase characterized by dispersed single silos. Subsequent evidence has confirmed these trends, but single silos apparently have been started at a faster pace than previously estimated.

2. We have now identified about 125 single silos, all begun since about January 1964. The actual number under construction is probably larger. When compared to past rates of starting ICBM launchers, the present level of activity is high; the largest number of ICBM launchers previously started in a single year was about 80. The building rate, however, is not without precedent nor does it represent what could be termed a maximum effort; at one point in 1963 about 140 ICBM launchers were under construction in a variety of site configurations, and MR/IRBM launcher construction was also continuing.

3. We believe that the most advanced of these launchers will not reach operational status until late 1965. This means that the mid-1965 operational ICBM strength will be about 225,[1] somewhat lower than our previous estimate of 235-250.[2] On the other hand, the pace of single-silo deployment could carry the force by mid-1966 beyond the high side of the previously estimated range of 285-320. Considering the estimated time to bring launch groups to operational status and making allowance for undetected launchers now under construction, our new estimate for mid-1966 is:

Soft Launchers	146[3]
Hard (3 silo)	78
Single Silo	126-178
TOTAL (Rounded)	350-400[1]

The number of hardened ICBM launchers will increase from the present figure of 78 to 200-250 in mid-1966. The force will become more dispersed, with 150-200 separate hardened sites in mid-1966 in contrast with the present 26.

[1] These totals do not include R&D launchers at Tyuratam. There are now about 25 completed R&D launchers and we believe this number will increase to approximately 45 by mid-1966. We judge these launchers are not normally available for operational use, but varying numbers of them could be prepared to fire ICBMs at the US depending on the amount of advance notice.

[2] The Assistant Chief of Staff, Intelligence, USAF, continues to hold to his footnote estimate in NIE 11-8-64, but considers the mid-1965 figure will be at the low side of his forecast spread of 275-325 (including Tyuratam launchers and a small allowance for unlocated second-generation operational launchers). The mid-1966 figure will somewhat exceed the high side of his forecast spread of 325-425 operational launchers in the field and at Tyuratam.

[3] This number does not include the SS-large, which we estimated in NIE 11-8-64 at 0-5 for mid-1966. Because this missile has not yet been tested, we no longer believe it could become operational by that date.

18. *(Continued)*

4. We cannot yet determine what missiles are intended for the new silos. The Soviets have tested two third generation ICBM systems, the SS-9 and the SS-10. We believe that the SS-9 which has followed a normal test program will be deployed in at least some of the silos. The SS-10 was test fired eight times between April and October 1964 but, for reasons we cannot explain, there have been no test firings since. It too may be deployed in some of the silos.

5. Finally, there is evidence pointing to the development of other missiles, including one which is probably small, at the test range. Thus, it is possible that some of the silos are intended for a new ICBM, which has not been identified in test firings.[4] If so, the deployment of the launchers so far in advance of the flight tests of the missile would represent a departure from previous Soviet practice. Such an innovation would imply confidence that no major changes in the weapon system will be required; it could stem from a desire to reach a planned ICBM force level more quickly than would otherwise be possible. An intensive and successful test program would be necessary for this missile to become available for extensive deployment as early as mid-1966. Thus it is possible that many of the new silos listed as operational in mid-1966 will at that time lack missiles.

6. It is not now clear how far the Soviets will push the current deployment program or whether it will be succeeded by follow-on programs. Though by mid-1967 the Soviets almost certainly will have more than the 330-395 operational launchers estimated in NIE 11-8-64, it is yet too early to revise our estimate that the Soviets will achieve a force of 400-700 ICBM launchers over the next five years. We expect, however, that evidence collected before the publication of NIE 11-8-65 this far will help to clarify Soviet goals.[5]

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[4] We are unable to determine whether this missile would employ solid or liquid propellants; we believe that storable liquids are likely.

[5] The Assistant Chief of Staff, Intelligence, USAF, sees no basis in current evidence for change to his footnote in NIE 11-8-64, which projected 600-900 operational ICBM launchers by mid-1970.

19. NIE 11-8-65 *Soviet Capabilities for Strategic Attack*

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SOVIET CAPABILITIES FOR STRATEGIC ATTACK

THE PROBLEM

To estimate the strength and capabilities of Soviet strategic attack forces through mid-1967, and to estimate general trends in these forces over the next decade or so.

NOTE

Estimates of Soviet strategic attack capabilities for the present and the next few years can be made with high confidence; those for the period five to 10 years in the future are, of course, highly tentative. The Soviet planners themselves may not yet have set clear force goals for the 1970-1975 period. Even if they have, it seems certain that such decisions will be modified repeatedly in response to changes in military technology, in other Soviet weapons programs, in US forces, in resource availability, and in the general Soviet view of world affairs.

CONCLUSIONS

A. Over the next 10 years, we estimate a considerable strengthening of Soviet strategic attack forces, particularly in retaliatory capabilities, with chief emphasis on ICBMs. We do not believe, however, that the Soviets will expect to achieve, within the period of this estimate, forces which would make rational the deliberate initiation of general war. We believe that they will continue to adhere to the concept of a deterrent force. A stress on qualitative factors suggests that the Soviets see technological advance in weapons as a means by

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19. *(Continued)*

which they can improve their strategic position relative to the West. (*Paras. 4-7*)[1] [2]

B. *ICBM Force.* The present Soviet ICBM force of 224 operational launchers represents a formidable capability in terms of deliverable megatonnage but it is a predominantly soft, concentrated force. Apparently recognizing its vulnerability, the Soviets are now deploying ICBMs in dispersed single silos. Within the next two years, the number of ICBM launchers will approximately double, but the number of separate launch sites will increase from about 100 to at least 300. (*Paras. 8-10, 25, 31*)

C. We estimate that the Soviet ICBM force in 1975 will be somewhere between 500 and 1,000 operational launchers. A force near the high side of the range would probably consist primarily of small ICBMs in single silos. By contrast, a force near the low side, though including substantial numbers of small, single silo launchers, would probably incorporate greater qualitative improvement and significant numbers of larger ICBMs, perhaps with multiple warheads and penetration aids. It is possible that within the next 10 years the Soviets will deploy a rail mobile ICBM system. (*Paras. 23, 26-30*)[3]

D. *MRBM/IRBM Force.* During the past year, the Soviet MRBM and IRBM force leveled off at about 735 operational launchers, some 135 hard, deployed at almost 200 sites. It is capable of delivering a devastating first strike against targets in Eurasia, but like the present ICBM force it is soft and concentrated. By 1975, the Soviets will

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[1] Deterrence is defined as the prevention from action by fear of the consequences. Deterrence is a state of mind brought about by the existence of a credible threat of unacceptable counteraction.

[2] The Assistant Chief of Staff, Intelligence, USAF, would reword the last two sentences as follows:

> "We believe they will continue to adhere to the concept of a deterrent force so long as they continue to be in a posture of strategic inferiority, but the intensive Soviet military R and D effort raises the possibility that Soviet leaders already are focusing on achievement of a strategic superiority which would enable more aggressive pursuit of their political aims, perhaps within the time frame of this estimate."

[3] The Director, Defense Intelligence Agency, and the Assistant Chief of Naval Operations (Intelligence), Department of the Navy, do not concur in the high side of the estimated ICBM launcher spread for mid-1975, believing it to be too high. See their footnote to paragraph 27.

The Assistant Chief of Staff, Intelligence, USAF, estimates that the Soviet ICBM force in 1975 will include at least 1,000 operational launchers and could well be above that figure.

19. *(Continued)*

probably have replaced the major portion of the force with new solid-fueled missiles deployed in dispersed hard sites and on mobile launchers. The flexibility and survivability of such a force may lead them to conclude that the same target system could be covered with fewer launchers. We estimate that in the 1970-1975 period Soviet MRBM/IRBM strength will stabilize at some 350-700 launchers. (*Paras. 38, 40, 42-46*)

E. *Missile Submarines.* The Soviet Navy has 43-48 ballistic missile submarines, including 8-10 nuclear-powered, with a total of 120-140 tubes. Construction of ballistic missile submarines of current classes ended in 1963. We estimate, however, that the Soviets will produce a new class which could become operational in 1968. It will almost certainly be nuclear powered and will probably carry more missiles than are carried by current classes, perhaps 6-12. A new submarine-launched ballistic missile with a range of about 1,000 n.m. will probably enter service in two or three years, and by 1975 a 2,000 n.m. missile may be available. At that time the Soviets will probably have some 60 ballistic missile submarines, including about 20 of a new type. Only recently have Soviet ballistic missile submarines regularly carried out ocean patrols; this activity will increase, and by 1975 about 25 percent of the force will probably be on station. (*Paras. 47, 49, 51, 53-54, 65*)

F. In recent years, the USSR has emphasized construction of cruise missile submarines. The Soviet Navy now has 39-43, including 16-18 nuclear-powered with a total of 195-210 launchers. These submarines were initially intended to counter naval task forces, but their mission may be expanded to include land targets. Construction appears to be tapering off, but will probably continue at a reduced rate for several years. By 1975, the Soviets will probably have 60-70 cruise missile submarines, possibly including some of a new type. At that time, they will probably also have available new types of cruise missiles. (*Paras. 47, 55-57, 65*)

G. *Bomber Force.* Long Range Aviation, a force of some 200 heavy bombers and 800 mediums, is in general much better suited for Eurasian than for intercontinental operations. This force will decrease gradually through attrition and retirement. The Soviets may

develop another new aircraft of medium bomber range, but we believe it unlikely that they will introduce a follow-on heavy bomber into Long Range Aviation. By 1975, the heavy bomber force will probably be reduced to about 50 aircraft, and the medium bomber force to some 250-500, comprised largely of Blinders.[4] *(Paras. 66, 70, 72-76)*

H. *Space Weapons.* Our evidence does not indicate that the USSR is developing offensive space weapons, but it is almost certainly investigating their feasibility. We do not believe that they will deploy such weapons within the next 10 years. This conclusion is based upon our judgment that such systems will not compare favorably in cost and effectiveness with ground-based systems and, to a lesser extent upon our view that the Soviets would see political disadvantages in deploying weapons in space. The USSR has, however, orbited reconnaissance and communications satellites, and is probably developing other military support systems. *(Paras. 83, 86, 87)*

[4] The Assistant Chief of Staff, Intelligence, USAF, believes the Soviets will continue to consider manned strategic aircraft an important element of their intercontinental striking forces. He estimates that the USSR will introduce a follow-on heavy bomber into Long Range Aviation. He further estimates that in 1975 LRA will still include 125-200 heavy bombers and 450-600 medium bombers, up to half of which could be a follow-on to the Blinder.

19. *(Continued)*

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DISCUSSION

I. SOVIET POLICY TOWARD STRATEGIC ATTACK FORCES

1. The change in leadership in the USSR has introduced a new element of uncertainty into Soviet military policy over the coming period. The main change has been one of style, but although the new leaders avoid Khrushchev's demagoguery, they appear no less committed than he to ambitious programs for overall economic growth, an improvement in agriculture, more consumer goods, and stronger defenses. Yet the tight economic situation continues, the competition for high-quality resources remains high, and agricultural deficiencies persist.

2. The major difference in the coming period may be the inability of a collective leadership to chart a clear course. It is already apparent that the USSR is proceeding into the next five-year economic plan period in a political environment more favorable to military interests than in the last years of the Khrushchev era. After a lull of a few months various military spokesmen are openly asserting the need for an enlarged defense effort, the importance of more professional participation in military-political decisions, and a claim to a greater share of industrial support. In particular, the issue of the proper allocation of manpower between civilian and military industry has been raised, along with calls for a greater research and development effort to support military needs. Moreover, the restoration of Chuykov as commander of the Ground Forces, may signify an end to Khrushchev's continual effort to pare down the general purpose forces and save money this way. In sum, Khrushchev's effort to keep a restraining hand on the military sector may be giving way to the various internal and external pressures for a total increase in the USSR's defense effort.

3. Even if this trend fails to develop, we think that strategic attack forces would not be significantly affected by any tightening of defense spending. We know of no significant opposition, under Khrushchev or since, to the buildup of large missile forces. What opposition did develop was largely over the issue of whether the buildup should be at the expense of other more traditional arms. Thus, while there are many political uncertainties inherent in a change of leadership, we think it unlikely that this will have any short-term effect on strategic attack forces. Over the longer term, of course, political and economic developments could lead to another crisis that could involve specific military programs as well as general doctrinal concepts. Thus our judgments about longer term programs and goals must be qualified because of the probability of important political shifts in the Soviet leadership during the period of this estimate.

4. These goals will be influenced by the Soviet view of their prospects in related military fields, especially antimissile forces. Developments on the US

side are equally important: for example, the large US ICBM force almost certainly influences the USSR to increase its force, and US deployment of ballistic missile defenses might incline them toward even higher numbers. Technological advances will play a major part, and a stress on qualitative factors is already evident as part of the USSR's effort to improve its relative strategic position.

5. Given all these uncertainties, we rely on past and present trends, as well as Soviet requirements and capabilities, in estimating the broad outlines of future developments. In general, we believe that over the next decade the Soviets will continue to adhere to the concept of a deterrent force.[5] We believe that strategic attack forces will include a variety of weapon systems, with chief emphasis upon ICBMs. We expect a considerable strengthening of these forces, particularly their capabilities for retaliation. We do not believe, however, that the Soviets will expect to achieve by the mid-1970s strategic attack capabilities which would make rational the deliberate initiation of general war.

6. We have considered the possibility of a Soviet attempt to acquire a combination of offensive and defensive forces, which, going beyond deterrence, would permit a first strike which would limit damage to the Soviet Union to acceptable proportions. Considering the number, hardness, and reaction times of targets to be struck in such an attack, and the likelihood that many, such as Polaris submarines, would escape destruction, such a Soviet effort would require both a large, highly sophisticated missile force and a widespread, very effective air and missile defense. In view of the technological and economic magnitude of the task and the likelihood that the US would detect and match or overmatch the Soviet effort, we believe it highly unlikely that the Soviets could achieve such a force during the next 10 years.[6]

7. Short of an effective first-strike capability as defined above, but greater than might seem adequate for deterrence, lie force levels which would reflect no comprehensive strategic or doctrinal design. Such forces might result from the sheer momentum of deployment programs, attempts to capitalize on a temporary technical advantage, or a psychological urge to match the US in delivery systems. But they would most likely result from Soviet difficulties in defining and agreeing on force levels which would constitute adequate deterrence.

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[5] For the view of the Assistant Chief of Staff, Intelligence, USAF, see his footnote to Conclusion A.

[6] The Assistant Chief of Staff, Intelligence, USAF, considers that a major Soviet effort to achieve a first-strike counterforce capability during the next ten years is likely in view of the emphasis which he believes the Soviets currently are devoting to their massive military R and D programs which might eliminate their strategic inferiority. Whether such a capability can be attained may depend in considerable measure on the timeliness with which any Soviet R and D programs or technological breakthroughs are detected.

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SOVIET CAPABILITIES FOR STRATEGIC ATTACK

THE PROBLEM

To estimate the strength and capabilities of Soviet strategic attack forces through mid-1968, and to estimate general trends in these forces over the next 10 years or so.

SUMMARY AND CONCLUSIONS

A. The Soviets retain their belief in the primacy of strategic attack and defense forces, to deter the US and to support their foreign policy. Soviet strategic attack forces will continue to include a variety of weapon systems, with chief emphasis upon ICBMs. The Soviets are building forces which we believe will give them, in the next year or two, greatly increased confidence that they have a retaliatory capability sufficient to assure the destruction of a significant portion of US industrial resources and population. They will probably also seek, through both strategic attack and defense programs, to improve their ability to reduce the damage the US can inflict on the USSR should deterrence fail and war in fact occur. We do not believe, however, that the Soviets will expect to achieve by the mid-1970's strategic capabilities which would make rational the deliberate initiation of general war.[1]

[1] Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, believes that developments of the past year reflect a continuing Soviet dissatisfaction with a posture of strategic inferiority vis-a-vis the US and a determination to eliminate such inferiority. He would add the following to the final sentence:

> ". . . but programs already underway, plus a continuing strong R&D effort, reflect a Soviet determination to rise from a position of strategic inferiority to one of at least numerical parity with the US in the belief that such a posture would markedly enhance the aggressive pursuit of Communist aims."

20. *(Continued)*

B. *ICBM Force.* The Soviets now have about 335 operational ICBM launchers. We estimate that the USSR will have some 670-765 operational launchers in mid-1968. This is considerably more than we anticipated in our last estimate and reflects our belief that construction of launchers has been started at a higher rate than ever before.

C. In mid-1968, about half the operational launchers will be for the small and relatively inaccurate SS-11. This missile is suitable mainly against large, soft targets such as cities. Deployment of the SS-9, a large missile more suitable for attacking hard targets, is also continuing, though at a slower rate than the SS-11.

D. The present Soviet stress on dispersed single silos, especially those for the SS-11, probably reflects decisions taken several years ago to improve sharply the survivability and thus the retaliatory capabilities of the ICBM force. In mid-1968 about 80 percent of the total launchers will be hard.

E. The Soviets might not find it advantageous to build ICBM forces much larger than those we estimate for 1968. On the other hand, they might consider their deterrent to be significantly more convincing and their military power improved if they can acquire an ICBM force about as large as that of the US. We therefore estimate a Soviet ICBM force of some 800-1,100 operational launchers in mid-1971 and some 800-1,200 in mid-1976.[2]

F. A 1976 force of about 1,200 launchers would probably consist primarily of small, less expensive ICBMs. A force of 800 or so would probably incorporate greater qualitative improvements and significant numbers of larger ICBMs. Characteristic of future deployment will be hard silos and possibly mobile launchers. Qualitative improvements will probably include much better accuracies and may include sophisticated reentry vehicles and penetration aids. The development of the force will probably be marked by interruptions and leveling-off

[2] Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, believes that the Soviets could construct single silo ICBM launchers at a rate which would enable the USSR to achieve numerical parity with the planned US program by 1970.

He would delete the last sentence and substitute the following:

"We estimate a Soviet ICBM force of some 1,000-1,100 operational launchers by 1970-1971. If the USSR develops a MIRV capability, the launcher total may hold at around 1,000-1,200; otherwise, the Soviets probably will have upwards of 1,200 and perhaps 1,500 launchers by the mid-1970's."

20. *(Continued)*

phases as new, more effective systems are introduced and older systems are phased out.

G. We think that ICBM forces falling anywhere within these estimated ranges could be considered as meeting a broad Soviet criterion for a credible deterrent. Thus we intend our estimate of future force levels as a range of uncertainty, either side of which would reflect the same basic Soviet strategic concept. For a period so far ahead, however, much will depend on the interplay between US and Soviet decisions taken in the interim.

H. The Soviets have recently conducted feasibility tests of what may be a depressed trajectory ICBM or a fractional orbit bombardment system. We cannot determine which, if either, of these systems will be deployed. Either could become operational during 1968 but probably would not be deployed in large numbers.

I. *MRBM/IRBM Forces.* No major changes in the MRBM/IRBM force have been noted during the past year. We estimate that the current force comprises somewhat over 700 operational launchers, some 135 of them hard, deployed at about 200 sites. This force is capable of delivering a devastating attack against Eurasian targets but is predominantly soft and concentrated. We believe that throughout the period of this estimate the USSR will maintain some 500-700 MRBM/IRBM launchers. Qualitative improvements are expected to include solid propellant missiles, more hard launchers, and probably mobility for some portion of the force.

J. *Missile Submarines.* The Soviets presently have some 45 ballistic missile submarines (8-10 nuclear-powered) with a total of about 130 launchers, and an equal number of cruise missile units (21-23 nuclear-powered) with about 250 launchers. No new ballistic missile submarines have become operational since 1963. We believe, however, that a new class of ballistic missile submarine—which almost certainly will be nuclear-powered and may carry 8 or more missiles with a range of some 1,000 to 2,000 n.m.—will be operational by mid-1968. We estimate that by 1976 the Soviets will have some 60 to 70 ballistic missile submarines, including about 30 of the new type. We believe that production of cruise missile submarines will continue, but

20. *(Continued)*

at a reduced rate, into the 1970's. We estimate that some 55-65 of these units will be operational in 1976.

K. Regular open ocean patrols by Soviet missile submarines have been stepped up in recent months. This patrol activity will probably continue to increase. By the early 1970's, as much as 30 percent of the ballistic missile submarine force may be on station in potential missile launch areas at any one time. This number could be augmented by whatever portion of their cruise missile submarine force the Soviets allocate to a strategic attack mission.

L. *Strategic Bomber Force.* Long Range Aviation is now composed of 950-1,000 bomber/tanker aircraft, 200-210 of which are heavies and the rest mediums. The primary mission of the heavies is intercontinental attack; at present, the Soviets could probably put about 100 heavy bombers over US target areas on two-way missions. The medium bombers are mainly for use against Eurasian targets, though a few squadrons might be employed for initial strikes against Alaska, Canada, Greenland, and Iceland. The Soviets could augment the force over North America by using medium bombers on one-way missions, but we think this unlikely. The Soviets may develop a new medium bomber during the period of this estimate, but probably not a new heavy. We estimate that by 1976 attrition and retirement will have reduced the heavy force to some 70-100 aircraft and the medium force to about 300-500.[3]

M. *Space Systems.* For some years the USSR has been orbiting several types of satellites including reconnaissance types. Within the next 5 to 10 years the Soviets will probably develop and employ a variety of space systems (such as navigation and communications satellites) to further support their strategic attack forces. The Soviets

[3] Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, believes the Soviets will continue to consider manned strategic aircraft an important element of their intercontinental strike forces. He estimates the USSR has the capability and—considering the currently limited size of the Soviet ICBM force—the requirement for a major manned strategic bomber effort against the US in the event of general war, and could put as many as 400 heavy and medium bombers over US target areas.

He estimates the USSR is likely to introduce both a follow-on heavy bomber and a new medium bomber into LRA within the next few years. He concludes that in 1976 LRA will consist of about 200 heavy bombers and some 400-600 medium bombers of both new and old types.

20. *(Continued)*

have long had the capability to orbit a nuclear-armed satellite and have frequently alluded to "orbital rockets." Recent feasibility tests could lead to a multiple-orbit bombardment system. For the foreseeable future, however, ICBMs are likely to be much more effective and far less costly. This, plus the political liability which would be incurred by orbiting a nuclear weapon, lead us to believe that the Soviets are unlikely to deploy a multiple-orbit bombardment system in space during the period of this estimate.

N. *Research and Development.* The Soviets continue to pursue a vigorous R&D program to develop and improve strategic attack systems. A high level of R&D activity is expected to continue. The USSR appears to be about as capable as the US of developing new strategic systems and subsystems which its leaders feel are important enough to justify the expenditure of resources. In deciding to deploy any new weapon system, however, the Soviets would have to weigh the prospective gain against the economic cost and the capabilities of the US to detect and counter it.

20. *(Continued)*

DISCUSSION

I. TRENDS IN POLICY AND DOCTRINE

1. The present Soviet political leaders seem more attentive than was Khrushchev to professional military advice, and they have been willing to authorize increases in both military expenditures and manpower. Current military writings reveal a search for ways to broaden the options available to the USSR in the application of its military power. The Soviets are showing increasing interest in improving the capabilities of their general purpose forces to meet contingencies short of general war. At the same time, costly and intensive development of strategic forces is continuing.

2. The Soviets retain their belief in the primacy of strategic attack and strategic defense forces, to deter the US and to support foreign policy. A major element of their policy for many years has been to build strategic attack and defensive capabilities so as to achieve forces which could pose a direct threat to the US and its allies and could defend the Soviet homeland against Western nuclear attack. To this end, the Soviets built a variety of forces to hold Western Europe hostage. Over the years, they developed an intercontinental attack force, at first relying primarily on bombers, then increasingly on ICBMs in soft sites. They are now deploying hardened and dispersed ICBM systems at an accelerated pace. They probably expect that these systems—supplemented by the other elements of their strategic attack forces—will increase the credibility of their deterrent by providing a retaliatory capability sufficient to assure the destruction of a significant portion of US industrial resources and population.

3. We believe that over the next 10 years, Soviet strategic attack forces will include a variety of weapon systems, with chief emphasis upon ICBMs. We expect a considerable strengthening of these forces, particularly their capabilities for survival and retaliation. In addition, they will probably seek, through both offensive and defensive programs, to improve their ability to reduce the damage the US can inflict on the USSR.

4. Since Khrushchev's ouster, there has been some renewal of discussion about preemptive attack in Soviet military writings.[4] In April 1966, Marshal Sokolovskiy stated that "there is an increase in the possibilities for the prompt detection not only of the onset of the attack, but also of the onset of direct preparation of an attack—that is, there are possibilities to prevent a sudden attack." He goes on to imply that a Soviet attack may be directed toward blunting the enemy attack and disorganizing his command and control mechanisms, as well as against the broad economic and military base of the nation. This type of theoretical

[4] By preemptive attack we mean an attack initiated on the conviction that an enemy attack is imminent.

20. *(Continued)*

discussion may be intended to provide a rationale for developing strategic attack forces which could contribute to improved damage limiting capabilities.

5. We have considered the possibility of a Soviet attempt to acquire a combination of offensive and defensive forces which would permit a first strike sufficient to limit damage to the Soviet Union to acceptable proportions. Considering the number, hardness, and reaction times of targets to be struck in such an attack, and the likelihood that many would escape destruction, such a Soviet effort would require a large, highly sophisticated missile force, widespread and effective air and missile defenses, and an effective antisubmarine warfare (ASW) capability. In view of the technological and economic magnitude of the task and the likelihood that the US would detect and match or overmatch the Soviet effort, we believe the Soviets would not consider it feasible to achieve, by the mid-1970's, strategic capabilities which would make rational the deliberate initiation of general war.

6. The specific Soviet force goals will be influenced by a wide variety of factors. These could involve, for example, the sheer momentum of deployment programs, attempts to capitalize on some temporary technological advantage, or a psychological urge to match or surpass the US in delivery systems. The large US strategic missile force has almost certainly influenced the USSR to increase its ICBM force and to develop and deploy an antimissile defense system. The Soviets must be aware, however, that current US programming calls for a leveling off of strategic missile deployment within the next year or so; they may see this as offering them the opportunity to catch up with or surpass the US in numbers of ICBM launchers. On the other hand, the prospect of continuing qualitative improvements in US strategic attack forces (e.g., improvements in accuracy, multiple reentry vehicles [RVs], etc.) will require constant Soviet reevaluation of the numbers and types of weapons they need. US deployment of an ABM system would probably elicit an increase in Soviet attack capabilities in a variety of ways, including development of sophisticated RVs and penetration aids. But in any case, the Soviets will probably face great uncertainties in deciding what precise force levels and composition would constitute adequate deterrence.

7. The Sino-Soviet dispute is not likely to affect Soviet programs for strategic attack forces during the period of this estimate. Such plans as the Soviets have developed in recent years have probably considered the possibility of a confrontation with the Chinese. Soviet forces for strategic attack in the Eurasian area are sufficiently large and flexible to deal with Communist China as well as other targets.

8. The Soviets will almost certainly continue intensive R&D on strategic attack systems. They probably regard such an effort, like their other military R&D programs, as imperative in order to prevent the US from gaining a technological advantage and, if possible, to gain some advantage for themselves. Evidence

20. *(Continued)*

shows that the Soviets are still intensively developing systems to improve their strategic attack capabilities, especially in the missile field. However, in deciding to deploy any new weapon system they would have to weigh the prospective gain against the economic cost and the capabilities of the US to detect and counter it.

II. INTERCONTINENTAL BALLISTIC MISSILES

A. Recent Deployment Activities

9. The principal new development in Soviet ICBM deployment during the past year has been the starting of launcher construction at a rate higher than ever before. After a possible slowdown during the first half of 1965, the start rate for small single silos was accelerated. However, a delay has occurred in the completion of the small silos and somewhat fewer launchers are now considered operational than were previously estimated. The large silo program has moved ahead about as estimated, although some increase in the start rate probably occurred in this program also. A slight speedup in the pace of construction has been detected at these latter sites and the large silos are being completed about three months earlier than estimated. We do not know how long these trends will continue.

B. Force Levels and Composition to 1968

10. All 224 of the first and second generation ICBM launchers are believed to remain operational. There is no indication of a Soviet effort to modify or phase out older sites. We believe, however, that at least one of the SS-6 sites may have a role in the Soviet military space program.

11. We have identified 25 ICBM complexes, and we believe it highly unlikely that additional complexes remain undetected. On the other hand, we consider it likely that some single silos in early stages of construction at these complexes have escaped detection; we make allowance for this in our estimate. We believe that operational Soviet ICBM strength over the next two years will be comprised solely of the types of systems shown below.

20. *(Continued)*

ESTIMATED OPERATIONAL ICBM LAUNCHERS

	1 Oct 1966	Mid-1967	Mid-1968
Soft			
SS-6[a]	4	3–4	0–4
SS-7	128	128	128
SS-8	14	14	14
Subtotal	146	145–146	142–146
Hard (Triple Silo)			
SS-7[b]	69	69	69
SS-8	9	9	9
Subtotal	78	78	78
Hard (Single Silo)			
Large (SS-9)[c]	35	70–80	130–140
Small (SS-11)[c]	70–80	130–180	320–400
Subtotal	105–115	200–260	450–540
TOTAL[d]	329–339	423–484	670–765
Tyuratam ICBM Launchers			
Soft	13	15	15
Hard	28	31	34
TOTAL	41	46	49

[a] At least one of these launchers may now be allocated to the Soviet space program.

[b] Thirty of these launchers may be equipped with SS-9s.

[c] These numbers do not reflect the possibility that the Soviets could fit some single silos for an emergency launch capability shortly before they become fully operational.

[d] We estimate that some, say 10, of the launchers at Tyuratam could have an operational as well as R&D and training role. We judge that the other launch facilities at Tyuratam are not normally available for operational use, but they could be prepared to fire ICBMs at the US, the number depending upon the amount of advance notice.

[e] Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, believes that inasmuch as operational launchers at Tyuratam pose a threat to target areas in the US[redacted] all Tyuratam ICBM launchers should be included in the operational totals.

For the launchers listed in the table he would substitute:

	1 Oct 1966	Mid-1967	Mid-1968
Field Sites	329–339	423–484	670–765
TTMTR	41	44	44
TOTAL	370–380	467–528	714–809

Large Silos (SS-9)

12. Construction of large single-silos for the SS-9 missile began in early 1964 at six new ICBM complexes. We believe that until late 1965, the construction start rate averaged 10-11 sites per quarter but subsequently increased somewhat to an average of 15-16 sites per quarter. We have now identified about 130 large silos operational and under construction. These silos are deployed in

groups of six, but we believe that each has its own launch control facility and that they can become operational one by one.

Small Silos (SS-11)

13. Construction of small single-silos for the SS-11 missile began in March 1964. The SS-11 program differs from other Soviet ICBM programs in several respects: (a) the silos are smaller and less complex; (b) they are being built in greater numbers; and (c) construction had been started on some 100 deployed sites before the first test firing of the SS-11 missile.

14. Construction of small single-silos is now underway at nine complexes. We believe that until late 1965, construction starts averaged 22-23 sites per quarter, although the rate was not constant and there may have been a slowdown early that year. Subsequently, however, the rate increased to about 50 starts per quarter, and perhaps as many as about 60. We have now identified about 340 small silos operational or under construction at the nine complexes. They are apparently being deployed in groups of 10 with one launch control facility for each group.

C. Operational Capabilities of the ICBM Force[5]

Survivability

15. More than 40 percent of the launchers in the current Soviet ICBM force are soft and are hence highly vulnerable, but the vulnerability of the force is decreasing as hard single-silo sites become the predominant elements. All present types of Soviet hard ICBM sites, including the new single silos, are estimated to have a design overpressure of 200-400 psi.[6] [7] We believe that single-silo sites are so widely dispersed as to present separate aiming points.

Reaction Time

16. Reaction times for current Soviet ICBM systems vary widely according to propellant (cryogenic or storable liquid) and site configuration (soft, multi-silo hard, or single-silo hard). From normal readiness conditions, the times required to fire after the execution order is received are estimated to range from 30 seconds to 3 minutes for the SS-11 system to at least 12 hours for the SS-6. Somewhat more than half of the launchers in the current operational

[5] For performance characteristics of Soviet ICBMs, see Table I.

[6] A hard site is designed to remain *completely operable* at a specified overpressure from given weapon yields. This specified overpressure is called design overpressure. Hardness is the overpressure at which, for given weapon yields, a site becomes *inoperable*. The design overpressure estimated above is for a 10 MT weapon. Hardness will vary with differences in engineering practice and in weapon yield.

[7] Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, considers that, given the uncertainties involved, no meaningful estimate of the design overpressure of Soviet hard sites can be made. If a figure is required, he believes that a value of 100-300 psi should be used.

20. *(Continued)*

force are capable of firing in 15 minutes or less when at normal readiness; about two-thirds of the estimated operational launchers in mid-1968 will be capable of firing in five minutes or less.

Alternate Targeting

17. We believe that Soviet strategic missile forces are capable of alternate targeting, but that this capability is not as flexible and rapid as in US systems, because of the nature of the guidance systems and the lack of onboard computers.

Reentry Vehicles

18. The Soviets have moved toward RVs with lower ballistic coefficients and larger radar cross section. Such vehicles are less accurate and more vulnerable to detection and interception. On the other hand, they lend themselves to simpler nuclear weapon design and would be more adaptable to terminal guidance (though the latter would require an RV design different from those now employed in the SS-11). Current Soviet RVs may have some inherent hardness against X-rays[ ]

]

Accuracy

19. All present Soviet ICBMs have radio-inertial or all-inertial guidance systems[ ] The best current Soviet ICBM accuracy is represented by the SS-9, which we estimate has a CEP of 0.5-1.0 n.m. now and will probably approach 0.5 n.m. next year with normal product improvement. With its large payload and this accuracy, the SS-9 is suitable for attacking hard targets. The SS-11, though developed somewhat more recently, was evidently intended for a different purpose and does not incorporate as accurate guidance as the SS-9. With its relatively small payload and an estimated present CEP[ ] it is useful mainly against large, soft targets. The very blunt, slow-speed RV of the SS-11 contributes to its inaccuracy. The SS-11 could incorporate accuracy improvements to achieve CEPs[ ] This would require, however, a redesigned RV and a test program covering about two years. We think it unlikely that the Soviets will undertake such a program in light of the probable development of more accurate follow-on systems.

20. We have considered Soviet capabilities to achieve very high ICBM accuracies, focusing mainly on whether and when the Soviets are likely to achieve CEPs of about 0.25-0.5 n.m., to increase the effectiveness of relatively small RVs against small, hard targets. To achieve CEPs in the lower end of this range the Soviets would have to develop new guidance systems, probably featuring midcourse corrections, and to design new RVs for either faster reentry or limited terminal guidance maneuver. These changes could be incorporated into present or follow-on ICBM systems after a development program of about

20. *(Continued)*

five years, though in the case of any present system the changes could be such as to constitute for all practical purposes the development of a new system. We would probably detect the testing of such a system one to two years prior to IOC.

21. We think it unlikely that the Soviets have embarked on the development of very high accuracies for their present systems. In the case of SS-11, accuracy was not a critical factor and the Soviet object has clearly been to rapidly develop and deploy a large number of survivable city-busters. In view of past Soviet development practices, the major changes that would be required in the SS-11, and the probable Soviet intent to develop a follow-on ICBM with improvements of various sorts (see later section), it is likely that very high accuracy in a small ICBM would await a new system. In the case of the SS-9, very high accuracy would be required if the Soviets elected to develop an effective MIRV capability against hard targets. In this case, retrofit into the SS-9 force or incorporation into a follow-on large ICBM system would be possible alternatives.

22. We do believe, however, that the Soviets will seek very high accuracies for some future ICBM systems. Considering the techniques required and probable development times, we think that such systems will probably have operational CEPs of about 0.5 n.m. when they reach IOC in the late 1960's or early 1970's. If a decision to achieve an 0.25 n.m. CEP is made soon, these new systems could have this accuracy by about 1972. We have no evidence that the Soviets have made such a decision but consider it likely that they will do so in the next year or so.

Refire

23. We believe that Soviet soft launchers have a refire capability and that on the average two missiles are available for each such launcher. This gives the current force a theoretical refire capability of more than 140 ICBMs some 2-4 hours after the initial launch from soft sites. As soft sites are phased out, this capability will decline. It is unlikely that the hard sites have a refire capability.

D. ICBM Research and Development

Construction Activity at Tyuratam

24. We estimate that there are 55 launchers operational or under construction at Tyuratam. Most of the facilities there can be associated with existing ICBM systems or with the space program, but some of those recently completed or under construction are probably intended for systems still under development. Testing of some new missiles appears likely during the next year or so.

Testing of Current ICBMs

25. Test range firing of all currently deployed ICBMs has continued over the past year. Launches have been made from Tyuratam and, for some ICBMs,

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CIA HISTORICAL-REVIEW PROGRAM

SOVIET CAPABILITIES FOR STRATEGIC ATTACK

NOTE

This Memorandum to Holders is prompted by a recent review of Soviet submarine order-of-battle which requires us to change the judgments made in NIE 11-8-66, "Soviet Capabilities for Strategic Attack," dated 20 October 1966, TOP SECRET, RESTRICTED DATA, LIMITED DISTRIBUTION, on the size and composition of the Soviet missile submarine force.

DISCUSSION

1. In NIE 11-8-66, we estimated that as of 1 October 1966 the Soviet missile submarine force had some 45 ballistic missile submarines (8-10 nuclear-powered) with a total of about 130 launchers, and an equal number of cruise missile units (21-23 nuclear-powered) with about 250 launchers.

2. A recent review of Soviet submarine order-of-battle indicates that as of 1 October 1966 there were 36 ballistic missile submarines in the Soviet Navy (7 of them nuclear-powered) with a total of about 100 launchers. The cruise missile submarine force—whose primary mission is to counter naval task forces—was found to have a slightly greater number of units than previously estimated, and a greater proportion of nuclear-powered units. Since the latter are equipped with more missile launchers than the diesel-powered boats, approximately 265 launchers (rather than 250) were found to be in the cruise missile submarine force.

3. We continue to believe that a new type of ballistic missile submarine will enter service by mid-1968. Since fewer ballistic missile submarines are now operational than previously estimated, however, our projection of the number of such units which will be operational in 1976 has been reduced from some 60-70 to about 55-65. There is no change in our estimate of the total number of cruise missile sub-

21. *(Continued)*

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marines for 1976 (i.e., 55-65 units) but we believe the proportion of nuclear submarines in the cruise missile force will be somewhat higher at that time (i.e., about 45 out of 60, rather than 40 or so out of 60).

4. A new table listing the estimated Soviet missile submarine strength for 1966 through 1968 follows. The new table supersedes that in Section IV of NIE 11-8-66.

ESTIMATED SOVIET MISSILE SUBMARINE STRENGTH, 1966-1968

	1 Oct 1966	Mid-1967	Mid-1968
Ballistic Missile Submarines			
Nuclear			
H-I (3 tubes)	3	2–1	1–0
H-II (3 tubes)	4	5–6	6–7
New class (8 or more tubes)	0	0	1
Subtotal	7	7	8
Diesel			
Z-Conversion (2 tubes)	6	6	6
G-I (3 tubes)	22	22	22–20
G-II (2 tubes)	1	1	1–3
Subtotal	29	29	29
TOTAL Ballistic Missile Submarines	36	36	37
Cruise Missile Submarines			
Nuclear			
E-I (6 tubes)	5	5	5
E-II (8 tubes)	20–21	24–25	28–29
Subtotal	25–26	29–30	33–34
Diesel			
W-Conversion (1 to 4 tubes)	13	13	13
J-Class (4 tubes)	7–10	9–12	11–15
Subtotal	20–23	22–25	24–28
TOTAL Cruise Missile Submarines	45–49	51–55	57–62

5. In addition, the final sentence of the last paragraph of Section VII A of NIE 11-8-66 should be deleted and replaced by the following:

> In any case, we believe we could identify a MOBS sometime during its test program which would probably extend over a year or two. If the Soviets follow established test procedures, identification is likely to occur about a year prior to attainment of an accurate, reliable system.

(NOTE: Paragraphs 1-4 approved by USIB—13 March 1967
Paragraph 5 approved by USIB—2 March 1967)

Soviet ICBM Accuracy and MIRVs

In the early 1960s, with the appearance of photoreconnaissance satellites and other new sources of information, discussion in the Estimates tended to shift away from what had been broad discussions of overall Soviet policy and strategy to more tightly focused analyses of strategic forces technologies and programs. It was now possible to estimate such things as Soviet missile accuracy and range with some confidence. The size and location of Soviet missile and bomber forces were known and it was possible to plot production and rates of deployment. Confidence in strategic forces analysis grew as innovative techniques were developed to fully exploit the new sources of information, while the prospect of a truly devastating strategic surprise gradually diminished.

The 1960s were perhaps the most prolific decade for the development of strategic nuclear weapons. By 1966 the United States had completed the deployment of its first generation ICBMs (Atlas and Titan-I) and deployment of the second generation (Titan-II and Minuteman-I and -II) was well under way. With the retirement of the earliest Atlas launchsites all US ICBMs now were deployed in specially hardened, below-ground silos. Development of a third-generation ICBM (Minuteman-III) with three multiple, independently targetable reentry vehicles (MIRVs)[3] would result in that missile's initial operational capability and deployment by the end of the decade. Intercontinental-range B-52s had been operational with nuclear weapons since 1955, and in 1960 the first US nuclear-powered ballistic missile submarine (SSBN), *USS George Washington*, was commissioned. US strategic nuclear forces now comprised a "strategic triad" made up of intercontinental-range missiles, long-range heavy bombers, and nuclear-powered ballistic missile submarines.

Parallel developments were under way in the Soviet Union. From 1966 to 1968 the Soviets phased out the four first-generation SS-6 ICBMs, while completing deployment of their second-generation ICBM (the SS-7) in 1965, followed by small numbers of the less successful

[3] MIRVs significantly enhance the capabilities of an ICBM by allowing one missile to be used against several targets—one for each warhead or reentry vehicle (RV). The Minuteman-III, for example, could be used against up to three targets. An MRV (multiple reentry vehicle) system has no targeting flexibility and generally is not capable of attacking more than one target, but releases several (usually two or three) RVs in a fixed pattern for a "shotgun effect." In the 1960s, both the United States and the Soviet Union used MRVs to achieve greater effectiveness than otherwise might have been possible with the guidance systems then available.

Both MRVs and MIRVs were more survivable than single-warhead missiles when used against an active defense system, such as the Safeguard ABM, because they multiplied the number of incoming warheads that would have to be destroyed to mount an effective defense.

SS-8. Meanwhile, two new missiles achieved their initial operational capabilities and began deployment: the large SS-9 and the smaller SS-11. All were deployed in hardened underground silos. The Soviets were the first to send ballistic missiles to sea, initially on conventionally powered submarines—the Zulu-V ballistic missile submarines (SSBs—the absence of the "N" denoting a conventional propulsion system) and the Golf-I and -II SSBs—but deploying the nuclear-powered Hotel-I and -II SSBNs by the mid-1960s, followed shortly thereafter by the Yankee-I SSBN, a Soviet nuclear-powered submarine design similar to the *George Washington*. The Soviet heavy bomber force was built around the Tu-95 Bear and remained small.[4]

It was the SS-9 that caused US intelligence analysts the most concern at this time. Bigger than the SS-6, it carried an enormous payload that made it effective against even hardened, underground ICBM silos.[5] Worse, from 1966 it looked as if the Soviets might be testing the SS-9 with multiple warheads, possibly MIRVs. Complicating the situation was consideration of two ballistic missile defense (ABM) systems in the United States: "Sentinel," which would protect population centers, and later "Safeguard," which would defend ICBM silos. Both these systems were capable of defending against a limited nuclear attack and had deterrent value against a larger one, but would be overwhelmed by a Soviet ICBM force with large numbers of MIRVs. The impending large-scale deployment of Soviet MIRVs thus brought into question the credibility of the whole US land-based nuclear deterrent.

At issue, too, was the structure and strategic purpose of Soviet strategic forces considered as a whole. If the Soviets sought nuclear supremacy, they probably would pursue a "counterforce" strategy, with the aim of destroying US strategic forces in a single, preemptive strike. This would require an ICBM force made up of large numbers of "silo killers": missiles with the combination of accuracy and yield necessary to destroy US ICBMs in their silos before they could be used in retaliatory strikes. On the other hand, if the Soviets were content to build up their nuclear forces as a deterrent (whether as a long-term solution or merely an intermediate goal), they could opt for a "countervalue" strategy, in which US cities might be the principal targets. In a countervalue strategy, force accuracy and hard-target kill capability would be less important than survivability and reliability. Judgments concerning the accuracy, size, and configuration of Soviet ICBMs thus were important elements in understanding the structure of Soviet strategic forces taken as a whole.

[4] Bison comprised about half the force until the mid-1970s.

[5] The capability to destroy an ICBM silo, or other protected targets (hard-target kill capability) derived from a combination of missile accuracy and warhead yield. Within certain limits, a more accurate missile can carry a smaller warhead and still be capable of destroying an ICBM silo.

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~~TOP SECRET~~ 1

SOVIET CAPABILITIES FOR STRATEGIC ATTACK

THE PROBLEM

To estimate the strength and capabilities of Soviet strategic attack forces through mid-1969 and to estimate general trends in those forces over the next 10 years.

CONCLUSIONS

A. Soviet programs for strategic attack forces have been aimed at narrowing the lead that the US has held in this field. In addition to military considerations, the Soviets undoubtedly see political and psychological advantages in improving their position relative to that of the US. Soviet strategic policy has recognized that its first aim must be to maintain a credible deterrent, not only against US nuclear attack on the USSR but also against US actions that would endanger Soviet vital interests. They have been building strategic attack forces to assure that, however nuclear war began, the US would face destruction on a scale unacceptable to its leadership. Beyond this, they are also seeking, through both offensive and defensive strategic programs, to limit the damage they would sustain should general war occur.

B. The Soviet leaders almost certainly believe that their relative strategic position has improved markedly in recent years, primarily as the result of extensive intercontinental ballistic missile (ICBM) deployment. We estimate that the ICBM force has more than tripled in the past 2 years, that it now has about 700 operational launchers, and that by the end of 1968 will have about 1,000, approximately the same number as the US. We believe that most of these (nearly 80 percent) will be in dispersed, hardened single silos, greatly improving the survivability and readiness of the force. The USSR

22. *(Continued)*

will remain inferior, however, in numbers of bombers and submarine-launched ballistic missiles. Moreover, the Soviets almost certainly realize that even this relative improvement in their position does not promise to be permanent. Consequently, they almost certainly believe that to improve their strategic position vis-a-vis the US requires continued effort.

C. For the longer term, Soviet leaders face decisions of increasing complexity and uncertainty. One reason is the inescapable interaction between US and Soviet strategic capabilities in the 1970's. Even with no increase in the number of US launchers, planned improvements in the US strategic attack forces during the next decade will confront the Soviets with much greater numbers of more sophisticated warheads. Moscow must also be concerned that the planned "thin" US antiballistic missile (ABM) defense might be expanded to provide significant damage-limiting capabilities against Soviet forces.

D. Another complicating factor is that their strong research and development (R&D) effort has given the Soviets a broader range of options than in the past, and their programs will almost certainly reflect different priorities from those which have hitherto been controlling. They probably will place greater emphasis on qualitative improvements—including survivability, capacity to avoid early warning (EW) and to penetrate enemy defenses, accuracy, and reliability. The strategic situation emerging in the 1970's will make these qualities more important than sheer numbers of launchers.

E. If the Soviets believed that they could obtain a meaningful advantage over the US in strategic forces, they would, of course, attempt to do so, and they may forge ahead in one or another particular field. In deciding whether to undertake any new weapon program, however, they would have to weigh the prospective gain against the economic cost and the capabilities of the US to detect and counter it. In endeavoring to improve their overall strategic posture, they will be alert to improving their counterforce and damage-limiting capability in the belief this would not only deter the US from nuclear war but would also reduce US opposition to aggressive Soviet actions in support of political objectives elsewhere in the world. As indicated by our projections of Soviet forces for the next 10 years, however, we believe that they will not consider it feasible to achieve strategic capabilities

22. *(Continued)*

which would permit them to launch a first strike against the US without receiving unacceptable damage in return.

F. *ICBMs.* We estimate that the Soviet ICBM force will number something more than 1,000, but is not likely to exceed 1,300 launchers by mid-1972; by mid-1977 we estimate a force numbering more than 1,000, but not exceeding 1,500 launchers.[1] A force near the low side, say 1,100, would reflect a deliberate Soviet decision for political reasons to hold the number of launchers at a level about equal to that of the US. Regardless of their decisions as to number of launchers, the Soviets will probably begin deployment of at least one new ICBM system within the next few years. We believe that the Soviets are flight testing a small solid-propellant ICBM and may be developing a new large liquid-propellant system. They are probably investigating a mobile ICBM system and may deploy one. Qualitative improvements may include more sophisticated reentry vehicles (RVs), penetration aids, multiple reentry vehicles (MRVs), multiple independently-targeted RVs (MIRVs), hardened warheads, and better accuracy.

G. *Space Weapons.* For almost 2 years, the Soviets have been conducting flight tests which we believe relate to development of a fractional orbit bombardment system (FOBS). We believe that the chances are better than even that the Soviets will within the next few years deploy a FOBS in order to negate or delay US warning and otherwise complicate the US defense problem; any deployment would be in relatively small numbers. We consider it unlikely that they will deploy a multiple-orbit bombardment system (MOBS) in view of the probable adverse political consequences and of its cost and effectiveness as compared to other systems.

H. *MRBM/IRBMs.* The Soviets will continue to maintain massive strategic forces against Eurasia. We estimate that new MRBM and IRBMs will supersede present systems within the next 10 years, and

[1] Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, would delete the first sentence and substitute the following: "We estimate that the Soviet ICBM force in the mid-1970's will number more than 1,000 but is not likely to exceed 1,500 launchers if the USSR by then has operationally deployed missiles with some type of multiple reentry vehicles. Otherwise, and particularly in view of the numbers of targets in the US and the planned US ABM capability, the Soviet Union probably will have considerably more than 1,500 launchers. A program which added only 100 launchers per year beyond those already identified would exceed 1,700 by 1977."

that the introduction of improved missiles may result in some decrease in numbers. We believe that one or more new missiles in this category could become operational as early as 1969. Some of the new missiles may be deployed in mobile launchers.

I. *Submarine-Launched Missiles.* The Soviets are clearly placing increased emphasis on ballistic missile submarines. They are introducing a new nuclear-powered class of ballistic missile submarine with 16 launch tubes which we believe will carry a missile with a range of about 1,500 n.m. We estimate that, by the mid-1970's, the Soviets will have twice as many ballistic missile submarines as at present, and six to seven times as many launchers.

J. *Long Range Aviation (LRA).* Attrition and retirement of older models will gradually reduce the heavy bomber force. We still believe that the Soviets are unlikely to introduce a follow-on heavy bomber. The medium bomber force will probably decline as Badgers are phased out; by the mid-1970's it will probably be composed largely of the supersonic-dash Blinder.[2]

[2] Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, believes the Soviet Union will continue to consider manned strategic aircraft an important element of their intercontinental strike forces. He estimates the USSR is likely to introduce both a follow-on heavy bomber and a new medium bomber into LRA within the period of this estimate. He expects that in the mid-1970's LRA still will include about 200 heavy bombers (approximately the same number as at present), and some 400-600 medium bombers of both new and old types.

22. *(Continued)*

DISCUSSION

I. TRENDS IN POLICY AND DOCTRINE

1. Our estimate of overall Soviet military policy and doctrine appears in NIE 11-4-67, "Main Trends in Soviet Military Policy," dated 20 July 1967, SECRET. As we emphasized there, the most important issues of Soviet military policy center upon the strategic relationship with the US, and strategic weapons continue to receive primary emphasis in Soviet planning, deployment, research and development (R&D). Soviet strategic policy has recognized that its first aim must be to maintain a credible deterrent; the Soviets are building forces which we believe are giving them greatly increased confidence in their ability, even in retaliation, to assure the destruction of a significant portion of the US population and industrial resources. Beyond this, they are also seeking, through both offensive and defensive strategic programs, to improve their ability to limit the damage they would sustain should general war occur.

2. The Soviet leaders almost certainly believe that their relative strategic position has already improved markedly. They are aware that US deployment of strategic missile launchers has leveled off; their own intercontinental ballistic missile (ICBM) deployment programs, which have been underway for the past few years, will give them a rough parity with the US in numbers of ICBM launchers within the next year or so. After many years of strategic inferiority, they undoubtedly see political and psychological advantages in the attainment of such parity even though it does not alter the basic situation of mutual deterrence and still leaves them inferior in heavy bombers and submarine-launched missiles.

3. Moreover, the Soviets almost certainly realize that even this relative improvement in their position does not promise to be permanent. For the longer term, they are aware of announced US programs for various qualitative improvements in strategic missile forces which would erode relative Soviet strength. They must also calculate the effects of the US decision to begin antiballistic missile (ABM) deployment, allowing not only for the system as announced but also for the possibility of its expansion.

4. To maintain an assured destruction capability in the strategic situation that is emerging, qualitative improvements, particularly those related to survivability and capacity to penetrate enemy defenses, become more important than sheer numbers of launchers. There will undoubtedly be pressures for a continuing enlargement of the ICBM force, and it may continue to grow. But having attained rough numerical parity in ICBMs with the US, the Soviet planners will probably give increased attention to other options. Further measures to enhance survivability and effectiveness of the strategic attack forces could include

22. *(Continued)*

a greater emphasis on ballistic missile submarines, development of a mobile ICBM, ABM defense of ICBM launching sites, and a variety of systems designed to elude or penetrate US ABM defenses.

5. Thus, the Soviets face a number of uncertainties in deciding what force composition and force levels they should attempt to acquire for the 1970's. The interaction between US and Soviet strategic programs introduces extraordinary complications and variables. But given the technical complexities and long lead times required for modern weapons, the Soviet leaders must already have made some decisions for future strategic systems, and will have to make others before long. Whatever their specific decisions, we believe that they are determined to maintain an assured destruction capability, and that they will seek to improve their strategic position *vis-a-vis* the US.

6. The internal situation appears favorable to continuation of a strong military effort. The present leadership is evidently more responsive than was Khrushchev to the views of the military hierarchy. We estimate that military and space expenditures for 1967 represent an increase of 16 percent over 1965, a decided change from the more stable spending level of 1963-1965. It is not yet clear how the recent 15 percent increase in the publicly stated Soviet defense budget may relate to actual expenditures. Some of it probably reflects programs for military aid to Vietnam and the Middle East, as well as changes in the Soviet price structure and accounting practice. In any case, however, we think it clear that real Soviet military expenditures are continuing to rise.

7. The continuing development and large-scale deployment of strategic weapons has been largely responsible for the increase in these expenditures of the past few years. The Soviets have given roughly equal weight to forces for strategic attack and for strategic defense. We cannot estimate at this time how the increase in 1968 defense expenditures will be allocated among the various force components, but the high priority of strategic programs is almost certain to continue.

8. We believe that the Soviets' effort to improve their strategic position relative to the US—already evident in their ICBM deployment—will be extended to some other components of their strategic attack forces, and that they may see an opportunity to forge ahead in some particular field. We believe that they will also continue to maintain massive strategic forces against Eurasia. And they will almost certainly pursue intensive R&D on strategic attack systems, both in order to prevent the US from gaining a technological advantage and to gain any advantage they can for themselves. In deciding whether to develop and deploy any new weapon system, however, they would have to weigh the prospective gain against the economic cost and the capabilities of the US to detect and counter it.

9. In considering the goals of their strategic weapons programs, the Soviet leaders will, of course, examine the possibility of achieving a first-strike counter-

22. *(Continued)*

force capability which—in conjunction with their strategic defenses—would be sufficient to limit to acceptable proportions the damage which a US retaliatory strike could inflict on the USSR. Considering the number, hardness, and reaction times of US targets which would have to be struck in such an attack, and the likelihood that many would escape destruction, such a Soviet effort would require not only a very large, highly sophisticated strategic attack force, but also widespread and effective air and missile defenses as well as an effective antisubmarine warfare (ASW) capability. The technological and economic magnitude of the task would be formidable, however, and the Soviets would have to consider the likelihood that the US would detect and match or overmatch the Soviet effort. In endeavoring to improve their overall strategic posture they will be alert to improving their counterforce and damage-limiting capability in the belief this would not only deter the US from nuclear war but would also reduce US opposition to aggressive Soviet actions in support of political objectives elsewhere in the world. All things considered, however, we continue to believe that the Soviet leaders will not expect to acquire strategic capabilities which they would deem sufficient to permit them to launch a first strike against the US without receiving unacceptable damage in return.

II. INTERCONTINENTAL BALLISTIC MISSILES

A. Current Deployment

10. We believe that within the past year, hard, single-silo launchers have come to comprise the bulk of the Soviet ICBM force. We estimate the present strength of the force to be about 700 operational launchers, deployed in 25 large complexes across the central USSR. We estimate that more than 450 of these launchers are single silos for the SS-9 and SS-11 ICBM systems; older systems, which are deployed in soft sites or in triple-silo hard sites, account for the remainder.

11. *Status of First and Second Generation ICBM Sites.* We estimate that virtually all of the first and second generation ICBM launchers remain operational, most of them employing the SS-7 ICBM. We believe that two of the four SS-6 launchers have been assigned a primary space role; the other two will probably also be allocated to the space program or phased out altogether in the near future. We believe that the 14 soft SS-8 launchers will have been phased out by mid-1969. We believe that the nine hard SS-8 launchers remain operational.

12. In previous estimates we considered the possibility that a group of SS-7 triple-silo launch sites had been equipped with the SS-9 ICBM. We now believe, however, that these sites are equipped with SS-7s and that SS-9s are deployed only in the single-silo configuration. We have no evidence suggesting phase-out of any SS-7 launchers, and believe that they will remain operational for some time to come.

22. *(Continued)*

B. Force Levels and Composition to Mid-1969

13. We believe that the Soviets are developing new ICBMs and that at least one of them could be ready for operational deployment soon,[3] but we doubt that it will reach IOC in hard sites by mid-1969. Our estimate of the Soviet ICBM force for the next 2 years includes only types now operational, but we do not rule out the possibility that it will include a few missiles of a new type.

ESTIMATED OPERATIONAL ICBM LAUNCHERS

	1 October 1967	Mid-1968	Mid-1969
Soft			
SS-6	2	0	0
SS-7	128	128	128
SS-8	14	0–14	0
Subtotal	144	128–142	128
Hard (triple-silo)			
SS-7	69	69	69
SS-8	9	9	9
Subtotal	78	78	78
Hard (single-silo)			
Large (SS-9)	114	162–174	180–222
Small (SS-11)	330–380	480–530	560–610
Subtotal	444–494	642–704	740–832
TOTAL[4]	666–716	848–924	946–1,038

[4] In addition to the ICBM launchers cited above, we believe that the Soviets have about 50 launchers at the Tyuratam range which are associated with ICBM development. About 40 of these launchers are considered to be complete, and we believe that most of them could be readied to fire at the US. We are unable to make any valid estimate of the time required to ready them, reaction times, or the availability of missiles for them.

C. Operational Capabilities of the Force

Survivability

14. The vulnerability of the force is decreasing. We estimate that about 80 percent of the current operational force is deployed in hard sites. We think it likely that by mid-1969 80 percent of the force will be in single silos. We believe that single-silo sites are so widely dispersed as to present separate aiming points. We believe that all hardened ICBM launchers deployed in the field are designed to remain completely operable when exposed to overpressures on the order of 200-400 psi.

[3] See paragraph 22 below regarding the recent R&D firings of a solid-propellant ICBM. It might achieve IOC before mid-1969. Hence our estimate of ICBMs for the next 2 years may have to be modified. It is also possible that [redacted] relates to both ICBM and IRBM development.

22. *(Continued)*

Reliability and Reaction

15. The continuing introduction of single silos has brought improvements in both reliability and reaction time. We believe that ICBMs deployed in single silos can be launched in 5 minutes or less after the execution order is received. Overall reliability of the SS-9 and SS-11 systems is probably somewhat higher than that of older systems.

16. An extensive program of test firings of currently deployed systems has probably improved reliability, in terms of both equipment and training. During the past year, about 100 ICBMs have been launched primarily for purposes of production sampling and crew training. This is the highest yearly total ever observed. Firings included 41 SS-7s, 2 SS-8s, 12 SS-9s, and 45 SS-11s.

Reentry Vehicles

17. Soviet ICBM tests observed during the past year continue to show reentry vehicles (RVs) with low ballistic coefficients and large radar cross sections. There is no evidence to show that the Soviets are trying to develop RVs with higher ballistic coefficients, which are more accurate and less vulnerable to detection and interception. On the other hand, the current Soviet RVs lend themselves to simpler design and packaging of nuclear weapons and may be more adaptable to hardening.

18. We have virtually no evidence to indicate whether current Soviet RVs are designed to withstand nuclear radiation, but we believe that hardening of their RVs for this purpose is within the Soviet state of the art. If they have not already begun to harden, deployment of a US ABM defense would be an added incentive for them to do so.

Accuracy

19. Current Soviet ICBMs use radio-inertial or inertial guidance systems[ ] The SS-9, using radio-inertial guidance, is the most accurate ICBM in the inventory. We estimate that it has a CEP on the order of 0.5-0.75 nautical miles (n.m.). With this accuracy and its large payload, the SS-9 is suitable for attacking hard targets. The SS-11 has a relatively small payload and an estimated CEP[ ] Apparently accuracy was not a critical requirement for the SS-11; we believe that the Soviet objective was to deploy rapidly a large number of survivable weapons for use against relatively soft targets.

20. The Soviets may seek very high accuracies for some future ICBM systems. We have considered their capabilities to achieve accuracies of 0.25-0.5 n.m. Considering the techniques required and probable development times for new systems, we believe that the Soviets could achieve an operational system with a CEP of 0.5 n.m. about 1970 and 0.25 n.m. about 1972. To achieve CEPs in this

22. *(Continued)*

range the Soviets would have to improve their guidance systems, probably introduce midcourse corrections, and design new RVs for either faster reentry or limited terminal guidance maneuver.

Refire

21. We believe that Soviet soft launchers have a refire capability and that on the average two missiles are available for each such launcher. This gives the current force a theoretical refire capability of up to 140 ICBMs some 2-4 hours after the initial launch from soft sites. As soft sites are phased out, this capability will decline. The hardened launchers are not considered capable of refire.

D. ICBM Research and Development

Solid Propellants

22. We believe that there are an adequate number of solid-propellant manufacturing and test facilities within the USSR to support a rather ambitious solid-propellant strategic missile program. We believe that the Soviets have a solid-propellant ICBM under development. They have been testing solid-propellant missiles to ranges of 1,050 n.m. from Kapustin Yar and to 3,100 n.m. from Plesetsk for about 2 years. We believe that these two programs are related [ ] Recently (on 23 October), the Soviets fired a solid-propellant missile from Plesetsk to a range of about 4,750 n.m. We believe that this latest test is related [ ]

Status of Mobile ICBMs

23. The Soviets have displayed what they claim to be two mobile surface-to-surface missile launchers and have claimed that one of the missiles (Scrooge) has an intercontinental range. We have no information on such a missile, and there is no evidence that it has been flight tested to ICBM range. We doubt that these missiles are prototypes of a mobile ICBM. The USSR, however, may develop a mobile missile to improve the survivability of its ICBM force. The SS-11 could be adapted for a mobile system, but we consider this unlikely. [ ] would lend itself to mobile deployment but we have no evidence suggesting that this is the Soviet intent.

Future ICBM Development

24. As noted above, evidence of test firings from Plesetsk indicates that the Soviets have a small, solid-propellant ICBM in an advanced stage of development. We estimate that this system will have about the same payload and accuracy as the SS-11. It would be adaptable to mobile deployment but we believe that it will be deployed, at least initially, in hard sites. We doubt that this system could become operational until about mid-1969. It could be deployed in a mobile mode somewhat later.

22. *(Continued)*

25. We have detected no test firings of a new ICBM from Tyuratam for over two and one-half years but we estimate that at least one is in R&D. Until flight test begins, we cannot estimate its precise characteristics but we believe that the most likely possibility would be a large, liquid-propellant ICBM about the size of the SS-9, but having better performance, including some form of improved reentry system. This weapon could be either a modification of the SS-9 or an entirely new missile, and would probably be deployed in hard single silos. We estimate that it could reach IOC in the 1970-1972 period.

26. The Soviets will also probably seek to improve the quality of their existing force by modification of the SS-11 and they may replace it with a new, small liquid-propelled ICBM system. Early improvements to the SS-11 could be aimed at better accuracy or the incorporation of penetration aids or multiple reentry vehicles (RVs). If they elect to replace the SS-11 with a new system, it would probably become operational in the mid-1970's.

Reentry Vehicle Development

27. The Soviets will almost certainly take steps to reduce the vulnerability of their RVs, especially in light of the US decision to initiate ABM deployment. A Soviet decision to develop any particular penetration system will, of course, be affected by their knowledge of the nature of the ABM system the US plans to deploy. They have extensive experience in chaff and electronic countermeasures (ECM) in conjunction with aircraft defense. We believe that they could have exoatmospheric (above 300,000 feet) penetration aids 2 to 4 years after starting a development program. The low ballistic coefficients and high observability of present Soviet RVs decrease the effectiveness of endoatmospheric (below 300,000 feet) penetration aids; a terminal decoy program including a suitable RV would probably require at least 5 years of R&D. We believe that the Soviets would test penetration aids to ICBM ranges and we would probably detect such testing a year or two before IOC.

28. The Soviets are probably well aware of the potential use of radiation kill mechanisms, and the development of RVs with increased hardening to withstand some nuclear effects is probably well within their capabilities. With a program of underground nuclear testing, the Soviets could investigate the response of various materials to X-rays at various energy levels in a simulated exoatmospheric environment and conduct development tests of new hardened warheads.

29. There is no evidence that the Soviets have initiated an advanced RV program. However, they might, regardless of US programs, develop MRVs and multiple independently-targeted RVs (MIRVs), for purposes other than penetration, e.g., to increase the numbers of deliverable warheads. A relatively simple MRV delivery capability probably could be achieved within 12 months after the start of flight testing. Development of either very accurate MIRVs or maneuver-

22. *(Continued)*

able RVs (MaRVs) would involve significantly greater complications, particularly in guidance and control; operational capabilities could probably be achieved about 2 to 3 years after flight testing began. We would expect to detect any of these developments during the flight test phase.

30. If the Soviets undertake early implementation of a MIRV program, we think the SS-9 would be the most likely carrier because of its large payload capability. An SS-9 MIRV system, capable of attacking soft targets, could be attained by 1969; its development would require about a year of flight testing, which we would expect to detect. We consider it unlikely that this program would be undertaken in light of the substantial capability for attacking soft targets represented by the SS-11 ICBM deployment. To give the SS-9 a MIRV capability against hard targets would require the development of some method for accurately delivering several independent RVs having a combined weight of about 9,000 pounds. Accuracy would be the pacing item and would probably require improvements in boost-phase guidance and the addition of a radio midcourse correction system. Even if such a MIRV program were to be initiated in the very near future, we doubt that IOC could be achieved before 1972. We would expect to detect testing of such a system 2 to 3 years prior to its IOC. Development of a MaRV would take at least as long.

E. Force Levels and Composition 1970-1977

31. Soviet decisions as to the best mix of weapons and the proper force levels have become increasingly difficult, not only because of the growing complexity of the threat they face, but also because of the broadening range of options open to Soviet planners. The size and composition of Soviet strategic forces in the 1970's are most likely to reflect a compromise which will embody several of the options now open to Soviet planners. The most likely effect of such a compromise on ICBM programs would be a shift in emphasis from numbers to qualitative improvements—though this would not necessarily preclude additional deployment. Thus, although the Soviets could deploy several thousand ICBM launchers by the mid-1970's, we do not believe that they will seek a substantial numerical superiority.

32. In estimating the size of the ICBM force for the 1970's, we must use a fairly wide range rather than a precise figure—particularly since, for a period so far ahead, much will depend on the interplay between US and Soviet decisions taken in the interim. The low end of the range represents the minimum figure that can be postulated on the basis of our present evidence. We think that ICBM forces falling anywhere within the ranges estimated below would meet a broad Soviet criterion for an assured destruction capability and, hence, a credible deterrent.

22. *(Continued)*

33. We estimate that the Soviet ICBM force will number something more than 1,000, but is not likely to exceed 1,300 launchers by mid-1972; by mid-1977 we estimate a force numbering more than 1,000, but not exceeding 1,500 launchers. A force near the low side, say 1,100, would reflect a deliberate Soviet decision, for political reasons, to hold the number of launchers at a level about equal to that of the US.* It would imply some phaseout of older missiles. It would also imply a Soviet decision to emphasize qualitative improvements rather than a simple increase in numbers of launchers. If they opt for the low side, the single-silo launchers for the SS-9 and SS-11 would continue to make up the bulk of the force. A new solid-propellant ICBM would probably be brought into service in the next few years. A new large, liquid-propellant ICBM may also be deployed in hard single silos sometime later in the period. The Soviets will probably undertake qualitative improvements to increase weapon effectiveness and to counter US ABM defenses; such improvements could include better accuracy, more sophisticated RVs, penetration aids, MRVs, or MIRVs.

34. A force toward the high side of our estimate would have many of the features of the smaller force, including the qualitative improvement of existing systems. It would, by the latter part of the period, include some 700 new launchers, requiring a deployment program roughly comparable in size to the current SS-9 and SS-11 programs combined. It would probably also involve retention of the SS-7 hard launchers for several years and the introduction of one or more new ICBM systems. Deployment on this scale would consist primarily of small ICBMs deployed in single silos; some of the deployment may be in mobile launchers.

III. MILITARY APPLICATIONS IN SPACE

35. Throughout the period of the estimate the Soviets will experiment with a variety of space systems which could be used for military purposes. New military space applications will be introduced as Soviet technology advances and as requirements for such systems are developed. The high priority evident in the reconnaissance satellite program will probably be extended to other selected military support systems which the Soviet leaders decide are essential; these will probably include systems for improved communications, weather observation, and navigation.

36. Evidence of Soviet interest in orbital bombardment systems dates from Khrushchev's remarks in early 1962 and subsequent references to "global rockets" and "orbital missiles." These can be interpreted to refer to either or both of two concepts which have come to be called "fractional orbit bombardment system"

* For the position of Maj. Gen. Jack E. Thomas, the Assistant Chief of Staff, Intelligence, USAF, see his footnote to Conclusion F.

APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

~~TOP SECRET~~ 1

SOVIET STRATEGIC ATTACK FORCES

THE PROBLEM

To estimate the strength and capabilities of Soviet strategic attack forces through mid-1970 and to estimate general trends in those forces over the next 10 years.

CONCLUSIONS

A. The primary objectives of Soviet strategic policy have been to achieve a more formidable deterrent and to narrow and eventually to overcome the US lead in capabilities for intercontinental attack. Toward this end the Soviets have built strategic forces, both offensive and defensive, which provide a large assured destruction capability and important damage-limiting capabilities as well. While they have only begun to narrow the gap in submarine-launched ballistic missiles and remain inferior in heavy bombers, the Soviets will shortly overcome the US lead in numbers of intercontinental ballistic missile (ICBM) launchers. Current programs will bring further improvements in the USSR's strategic position, already the most favorable of the postwar period. But the Soviets face in the future a strategic situation changed and complicated by projected improvements in US forces—Poseidon, Minuteman III, and the antiballistic missile system—that threaten to erode their relative position.

B. In deciding upon the future size and composition of their strategic forces the Soviets are almost certainly exploring a number of alternatives. They are evidently interested in strategic arms control as an option that could conserve economic resources and protect their improved strategic position. In the absence of an arms control agreement, we believe that they will continue the arms competition with the US, seeking to maintain and if possible improve their relative strategic

position. In any case, they will probably give increased attention to qualitative improvements, particularly those designed to enhance survivability and capacity to penetrate defenses.

C. *ICBMs.* The great improvement in the USSR's strategic position results primarily from the rapid and extensive ICBM deployment of the past few years. The Soviet ICBM force now has about 900 operational launchers and we believe that it will surpass the US force in numbers by 1970. The Soviets have begun deployment of a small solid-propellant ICBM, they probably are developing a new large liquid-propellant system, and they probably will develop a mobile ICBM system. In addition, they are flight-testing multiple reentry vehicles (MRVs).

D. We believe that for the period of this estimate the Soviet force goal will lie somewhere between 1,100 and 1,500 ICBM launchers.[1] If it lies near the low side, the Soviet ICBM force would probably peak at a higher level until older launchers were phased out. Such a force would probably embody considerable qualitative improvements including better accuracy, more sophisticated reentry vehicles such as MRVs and multiple independently-targeted reentry vehicles (MIRVs), and possibly penetration aids. A force toward the higher side of our estimate would also include qualitative improvements, and it would rely in part upon larger numbers to attain improved capabilities.

E. *Space Weapons.* At the time of our last estimate the Soviets were conducting extensive flight tests which we believed related to development of a fractional orbit bombardment system (FOBS). Developments since that time have lowered our confidence that we understand the intended purpose of the system under test; the Soviets may be trying to develop a FOBS, a depressed trajectory ICBM, or perhaps a dual system which could perform both missions. Until our evidence is more conclusive, we are unable to make a confident estimate as to the type of system being developed, when it could reach initial operational capability (IOC), or how it may be deployed. We continue to believe it unlikely that the Soviets will develop a multiple orbit bombardment system.

[1] For the position of Maj. Gen. Jammie M. Philpott, the Acting Assistant Chief of Staff, Intelligence, USAF, and Maj. Gen. Wesley C. Franklin, for the Assistant Chief of Staff for Intelligence, Department of the Army, see their footnote to paragraph 33.

23. *(Continued)*

F. *Medium-Range Ballistic Missiles/Intermediate-Range Ballistic Missiles (MRBM/IRBM).* There has been little change in the size of the MRBM/IRBM force, which still stands at about 700 launchers. We estimate that new MRBMs and IRBMs will supersede present systems within the next 10 years. The Soviets will continue to maintain massive strategic forces against Eurasia, but the introduction of improved missiles may result in some decrease in numbers. We believe that the Soviets are developing and will deploy, in both a fixed and a mobile configuration, a new solid-propellant MRBM (designated SS-14) of about 1,500 n.m. range which could reach IOC in a year or two. We estimate that they will also develop a solid-propellant IRBM with a range of about 3,000-3,500 n.m., and that it will reach IOC in 1970-1971. It will probably be deployed in both fixed and mobile launchers and with its extended range will provide more flexible coverage of Eurasian targets.

G. *Submarine-Launched Missiles.* The Soviets have clearly embarked upon a high priority program to improve and expand their ballistic missile submarine force. We estimate that 6, possibly 7, of the 16-tube Y-class submarines have now come down the ways and production of this class may be stepped up soon. We believe that the Soviets are building toward a ballistic missile submarine force that will confront the US with a threat roughly comparable to that which the Polaris force presents the USSR. They could reach that position by the mid-1970's, when they will probably have some 65-80 ballistic missile submarines, of which 35-50 will be Y-class types.

H. *Long-Range Aviation.* Attrition and retirement of older models will gradually reduce the Soviet heavy bomber force. The medium-bomber force will probably also decline as Badgers are phased out, but at a slower rate than we estimated last year. The introduction of a new air-to-surface missile into the Badger force suggests that the Soviets intend to extend the useful life of some of those aircraft for a few more years. We still believe that the Soviets are unlikely to introduce a follow-on heavy bomber; they may introduce a follow-on medium if the Blinder does not satisfy their future requirements.[2]

[2] For the position of Maj. Gen. Jammie M. Philpott, the Acting Assistant Chief of Staff, Intelligence, USAF, see his footnotes to Section VI.

23. *(Continued)*

DISCUSSION

I. TRENDS IN POLICY AND DOCTRINE

1. The most important issues of Soviet military policy concern the strategic balance between the US and the USSR. The goals of Soviet strategic weapons programs were set at a time when the US enjoyed such a superiority in intercontinental delivery systems as to put the USSR at a political and psychological disadvantage. The aim of Soviet strategic policy, therefore, has been to achieve a more formidable deterrent and to narrow and eventually to overcome the US lead. Toward this end, the Soviets have built strategic forces, both offensive and defensive, which provide a large assured destruction capability and important damage-limiting capabilities as well, and they have substantially reduced the US lead in numbers of intercontinental delivery vehicles.

2. The great improvement in the USSR's strategic position results from the buildup of Soviet strategic forces begun by Khrushchev several years ago. The new leaders have made some decisions as to the size and composition of their strategic forces, but they have generally followed the strategic policies and programs that they inherited. In the future, however, they face a strategic situation significantly changed from that which led to present Soviet policies. Projected improvements in US strategic forces—Poseidon, Minuteman III, and the antiballistic missile (ABM) system—threaten to erode their relative position. Now the Soviet leaders are confronted with the necessity for new decisions on the future size and composition of their strategic forces. Other military requirements and the growing needs of the general economy are among the factors which the leaders must consider in making these decisions.

3. Under the collective leadership, military expenditures have continued to rise, primarily as the result of the continuing development and large-scale deployment of strategic weapons, which account for about half of the total military expenditures. The requirements of these programs for scarce high-quality resources of the sort needed to sustain economic growth have aggravated the impact of defense spending on the economy. Now, events in the Far East and in Europe have posed new military requirements which probably will result in a substantial increase in the strength of Soviet theater forces. Thus the perennial problem of resource allocation promises to sharpen. Economic considerations almost certainly were among the principal reasons for the Soviet decision to discuss arms control with the US.

4. Nevertheless, the economic considerations contributing to the Soviet decision are probably no more compelling than the strategic considerations. Considering US plans for improvements in its strategic forces, the Soviets probably recognize that a considerable sustained effort would be necessary to maintain the relative position they have now achieved. They may also be concerned

23. *(Continued)*

lest the end of the Vietnam War enable the US to divert additional resources to its strategic forces. Finally, they may reason that further increments to their strategic forces would have little effect on the relationship between the US and the USSR so long as the US maintained its large, second-strike assured destruction capability. If these arguments were to prevail in the USSR, the Soviets would probably seek an agreement that preserved their present strategic relationship with the US.

5. It is too early to assess the full implications of the Czech crisis for Soviet policy toward arms control. The Soviets still have the same basic economic and military incentives; indeed, it is possible that the new military requirements generated by the Czech crisis have added to those incentives. Moreover, the present Soviet line seems to be that the Czech crisis is an internal Communist Bloc affair that should have no effect on the USSR's relations with the US. It is possible, therefore, that the Soviets will seek to proceed with arms control talks. At a minimum, however, the Czech crisis has delayed the opening of talks with the US and has dampened the prospects of any real progress toward strategic arms control in the near term.

6. In any case, the Soviet leaders cannot base their strategic planning on the possibility of strategic arms control and will almost certainly explore other alternatives. At a minimum, they might consider a policy of deterrence aimed only at maintaining a large assured destruction capability. Or they might consider a try for strategic superiority of such an order that it could be translated into significant political gain. We consider it highly unlikely that the Soviets will select either of these courses of action. The first, that of unilateral deescalation, would involve a decision to sacrifice the hard-won gains of recent years. The second would involve economic sacrifices that are probably unacceptable to the present leadership and would almost certainly provoke a strong US reaction. We believe, therefore, that in the absence of a strategic arms control agreement, the USSR will continue the arms competition with the US with the object of maintaining and if possible improving its relative strategic position.

7. For several years, the Soviets have given the highest priority to the effort to overcome the US lead in numbers of intercontinental delivery vehicles, particularly in intercontinental ballistic missiles (ICBMs). By 1970, the Soviets will probably surpass the US force in numbers of ICBM launchers but they will remain inferior in submarine-launched ballistic missiles (SLBMs) and heavy bombers. To maintain an assured destruction capability in the strategic situation that is emerging, qualitative improvements, particularly those related to survivability and capacity to penetrate defenses, become more important. There will undoubtedly be pressures for a continuing enlargement of the ICBM force, and it may continue to grow. But having attained rough numerical parity with the US in ICBMs, the Soviets will probably give increased atten-

23. *(Continued)*

tion to other options designed to enhance the survivability and effectiveness of their strategic attack forces.

II. INTERCONTINENTAL BALLISTIC MISSILES

A. Recent Deployment Activities

8. The growth in the Soviet ICBM force continues at about the same pace as in previous years, but there have been several significant developments within the structure of the force. We believe that the construction starts of silos for the SS-9 will continue at least for awhile but that the SS-11 program may be approaching its planned level. We believe deployment of sites for the small, solid-propellant SS-13 began in the summer of 1967 and has been proceeding at a very slow rate.

B. Current Deployment

9. We estimate the present strength of the Soviet ICBM force to be about 900 operational launchers. Of these, some 500 are for the small SS-11 and about 150 are for the large SS-9. Both of these systems are deployed in dispersed, single silos. Older systems, which are deployed in soft sites or triple-silo hard sites, account for the remainder.

10. *Single-Silo Deployment.* In addition to the operational force, about 130 launchers for the SS-11 and about 70 for the SS-9 are estimated to be in varying stages of construction. We expect that all of those will be completed by mid-1970. Although the SS-13 is still in the flight test phase, we estimate that about 20 of the launchers for that system could be completed by mid-1969.

11. Since we believe that the initiation of construction of silos for the SS-13 has been proceeding at a very low rate, and probably at only one complex, we have some doubts about the future of that program. This deployment pattern is highly unusual when compared to earlier programs. Deployment of all the presently operational systems was undertaken simultaneously at several complexes and proceeded rapidly, concurrently with their development. It may be that as the Soviet ICBM force approaches parity with the US force there is less urgency in deployment. In these circumstances, the Soviets may have decided upon a modest initial deployment while development was still underway.

12. It is possible, however, that technical reasons have led the Soviets to modify their plans for the SS-13. In terms of our estimate of its performance characteristics it offers little, if any, advantage over the SS-11 in most respects. For this reason, the Soviets may have decided to limit field deployment of the system to just a few sites. Or they may have found that modifications

23. *(Continued)*

were required to improve the missile's performance, possibly modifications that necessitated changes in the launch facility; they may be waiting until the problem is resolved before proceeding further with deployment in the field. It is also possible that the Soviets intend that future deployment of the SS-13 will be in a mobile configuration rather than in fixed sites[ ]. On the other hand, the slow rate of construction starts for the SS-13 may be based upon political considerations. Soviet decisions as to future ICBM deployment and force levels may have been postponed until the possibility of strategic arms control has been explored in talks with the US.

13. The SS-7 and SS-8 second-generation launchers remain operational, but we believe that the four first-generation SS-6 launchers have been phased out of the force. We believe that the SS-7 launchers will be retained in the force at least through mid-1970, but that phase-out of the SS-8 launchers will have begun by that time.

C. Force Levels and Composition to Mid-1970

14. Our estimate of the Soviet ICBM force over the next two years is based on our estimate of the number of launchers now operational or under construction, the estimated time to bring launch groups to operational status, and the filling out of launch groups already started. We are virtually certain that there are no more than 25 operational ICBM complexes in the USSR. We allow for the possibility that there are a few SS-9 and SS-11 silos under construction of which we are not aware.

23. *(Continued)*

ESTIMATED OPERATIONAL ICBM LAUNCHERS

	1 September 1968	Mid-1969	Mid-1970
Soft			
SS-7	128	128	128
SS-8	14	14	0–14
Subtotal	142	142	128–142
Hard (Triple Silo)[a]			
SS-7	69	69	69
SS-8	9	9	0–9
Subtotal	78	78	69–78
Hard (Single Silo)[a]			
Large (SS-9)[b]	156	198–222	228–240
Small (SS-11)[b]	520	620–650	680–720
Small (SS-13)	0	0–20	30–50
Subtotal	676	818–892	938–1,010
TOTAL[c]	896	1,038–1,112	1,135–1,230

[a] We believe that the silos in the triple silo sites are so close to each other that they represent one aiming point per site. We believe that single silos are located so far apart as to represent separate aiming points. We believe that all hardened ICBM launchers deployed in the field are designed to remain completely operable when exposed to overpressures on the order of 200-400 psi.

[b] It is possible that the Soviets could fit SS-9 and SS-11 silos for emergency launch at some stage in the fitting out period after they are externally complete. In the case of the SS-11, the launch control facility for the group would have to be complete and operational. Such a procedure would provide a launch capability up to three months earlier than otherwise. We think it unlikely they would do this unless they foresaw a crisis situation in that period.

[c] We estimate that there is a silo and a control facility at each of the SS-9 and SS-11 complexes which serves as a crew training facility and is not a part of any group in the complex. Additionally, the Soviets have about 45 completed launchers and about 15 others under construction at Tyuratam and Plesetsk which we associate with ICBM development. We believe that most of them, as well as the training silos at the SS-9 and SS-11 complexes, could be readied to fire at the US. We are unable to make any valid estimate of the time required to ready them, their reaction times, or the availability of missiles for them.

D. Operational Capabilities of the Force[3]

15. From the history of Soviet ICBM flight testing and analysis of the current state-of-the-art, we now estimate that the overall ICBM force has a somewhat higher reliability rate than we have estimated previously. The one exception is the SS-8 which now appears to be less reliable than we had estimated.

16. Continuing analysis leads us now to estimate that the SS-9 has a circular error probability (CEP) of about 0.5 nautical miles (n.m.) using radio-inertial

[3] See TABLE I for our estimate of characteristics and performance data for Soviet ICBMs.

23. *(Continued)*

guidance and about 0.75 with inertial guidance alone. Thus, it is the most accurate ICBM in the Soviet inventory. With this accuracy and its large payload, the SS-9 is suitable for attacking hard targets. The rest of the missiles in the force have CEPs of 1.0 n.m. or greater. The SS-11 with its lesser accuracy, [ ] and its lighter payload would probably be used against relatively soft targets.

17. We believe that Soviet soft ICBM launchers have a refire capability and that on the average two missiles are available for each such launcher. We believe that the Soviets do not plan to refire from hard launchers.

18. In assessing the feasibility of developing an initial strike counterforce capability, Soviet planners might consider an attempt to achieve a nuclear pin-down of US missile forces. This tactic might offer advantage as part of a deliberate surprise or preemptive attack on the US. Considering the manifold uncertainties involved in such an attack, however, we believe that the Soviet leaders could have no assurance that the USSR would not receive unacceptable damage in return. Nevertheless, in an effort to optimize their damage-limiting capability under the various circumstances in which a nuclear war might erupt, the Soviets may include this tactic in their planning for the employment of their strategic forces.

E. ICBM Research and Development

New Systems

19. The solid-propellant SS-13 [ ] is the only new ICBM that we have identified in flight tests. There have now been 9 firings of the SS-13 to 3,100 n.m. and 3 to 4,700 n.m., and we expect it to be tested to longer ranges before being deployed. The SS-13's reliability during the test program has been somewhat low, possibly because of Soviet inexperience with solid-propellant technology, but we believe that the system will be about 65 percent reliable by the time it is deployed. We estimate that the SS-13 will be capable of carrying a reentry vehicle (RV) weighing [ ] to about 5,500 n.m. when it is ready to become operational; it will probably achieve initial operational capability (IOC) in fixed sites about mid-1969 or shortly thereafter. The IOC of the SS-13 in a mobile mode probably will come somewhat later.

20. Based upon the Scrooge transporter-erector-launcher (TEL) which the Soviets have been displaying since 1965, we believe that they are developing a mobile missile system which could be either an ICBM or an intermediate range ballistic missile (IRBM). Our analysis of the TEL indicates that it is too small for the Savage which we believe to be the prototype for the SS-13. It could contain a full range ICBM, however, and this may, in fact, be the case. We believe it more likely that the missile will be 2 of the 3 stages of the SS-13 in which case it would have a range of about 3,000-3,500 n.m. A missile of this

range would fit the Soviet definition of an ICBM: i.e., a missile with a range of over 5,000 km (2,750 n.m.). It would be at the upper range limit of our definition of an IRBM and at the lower limit of our ICBM definition. However, a missile with a range on the order of 3,000 n.m. would have to be deployed above the Arctic Circle in the Soviet northeast if it were to provide any significant coverage of US targets. The logistic and operating problems posed by such deployment would be formidable. We think it is highly unlikely that the Soviets would develop a system for attack on the US which would pose so many problems and such great expense. We consider, therefore, that the chances are better than even that the missile apparently under development is an extended range IRBM for use against Eurasian targets; this subject is addressed in the later section dealing with Soviet medium and intermediate range ballistic missile (MRBM/IRBM) forces.

21. If this missile system is, in fact, an extended range IRBM, it would indicate that all three stages of the SS-13 will be undergoing test in mobile systems since we have good evidence that the mobile SS-14 uses two stages of the SS-13. Assuming these test programs are successful, the development of a mobile version of the SS-13 ICBM would require little more than adaptation to a suitable TEL and we estimate that such development will occur.

22. We believe that the Soviets are developing a large, liquid-propellant ICBM which could be ready for deployment in the 1970-1972 period. It will probably have greater accuracy and possibly a larger payload than the SS-9, and may be the best candidate for carrying a new sophisticated reentry system. It will probably be deployed in hard silos, and may be suitable for retrofit into SS-9 silos.

23. Another research and development (R&D) program which may relate to a new weapon system is underway at the Plesetsk Missile and Space Center. The limited amount of data gained does not allow us to understand clearly what type of system is undergoing test. [redacted] Based on the data presently available, it is not possible to determine whether these events are the early test of a space weapon system or a ballistic missile system.

Future ICBM Development

24. In addition to the ICBM systems now under development, the Soviets may undertake development of other advanced ICBM systems. They will

23. *(Continued)*

probably seek to improve the quality of their existing force by modification of the SS-11, and they may replace it with a new, small, liquid-propellant ICBM system. They may also develop a small solid-propellant system as a follow-on to the SS-13, particularly if that system fails to measure up to their expectations; this system may be developed for mobile deployment.

Reentry Vehicles

25. Soviet ICBM tests observed during the past year continue to show RVs with low ballistic coefficients and large radar cross sections. There is no evidence to show that the Soviets are trying to develop RVs with higher ballistic coefficients, which are more accurate and less vulnerable to detection and interception. On the other hand, the current Soviet RVs lend themselves to simpler design and packaging of nuclear weapons and may be more adaptable to hardening.

26. The Soviets are aware of the potential use of radiation kill-mechanisms and the development of RVs hardened to withstand some nuclear effects is almost certainly within their capabilities. With a program of underground nuclear testing, the Soviets could investigate the response of various materials to X-rays at various energy levels in a simulated exoatmospheric environment and conduct development tests of new hardened warheads.

27. The Soviets will almost certainly take steps to reduce the vulnerability of their RVs, especially in light of the US decision to initiate ABM deployment. We believe that they could have exoatmospheric penetration aids (for use above 300,000 feet) a year or so after initiation of flight testing. A terminal decoy program, effective down to very low altitudes, including a suitable RV, would probably require two to three years of flight testing. We believe that the Soviets would test penetration aids to ICBM ranges and we would probably detect flight testing a year or two before IOC.

28. We now have evidence indicating that the Soviets are working toward some form of advanced reentry system. On 23 August and 11 September, ICBMs launched from Tyuratam into the Kamchatka Peninsula [redacted] showed three objects reentering the atmosphere at the end of the flight and telemetry indicates that all survived to impact. The system tested consisted of an SS-9 first and second stage with a 12,500 pound class payload consisting of three RVs which impacted at a range of approximately 3,400 n.m. Although these events are indicative of multiple reentry vehicle (MRV) testing, it is too early in the test program to assess the ultimate operational configuration. The evidence, however, is not incompatible with tests leading to a multiple independently-targeted reentry vehicle (MIRV) capability. We do not believe these tests involved penetration aids.

23. *(Continued)*

29. We believe that the Soviets could achieve an operational MRV employing three RVs in a modified SS-9 payload by late 1969. This RV system, as now observed, would degrade the overall accuracy and reliability of the SS-9 system; the SS-9 equipped with three warheads may still be effective against a single hard target. If this is a program aimed at MIRV development, we estimate that the Soviets could achieve IOC with a MIRV system suitable for attack against soft targets by 1970. A MIRV system capable of attacking hard targets such as Minuteman silos could probably not reach IOC until 1972.

Accuracy

30. The Soviets still do not have an active flight test program for the type of RV (i.e., one with a high ballistic coefficient) considered essential for very high accuracy without terminal guidance. In spite of their trend toward low-ballistic-coefficient RVs, the Soviets may seek very high accuracies for some future ICBM system. Considering their present state-of-the-art, and the techniques and probable development times required, we believe that, if they elected to do so, the Soviets could have a new ICBM system with a CEP of 0.5 n.m. if introduced about 1970 and 0.25 n.m. if introduced about 1972. To achieve CEPs on this order the Soviets would have to improve their guidance systems, probably introduce midcourse corrections, and design new RVs for either faster reentry or limited terminal guidance. We believe that we would detect efforts to improve accuracy during the flight test phase.

F. Force Levels and Composition 1971-1978

31. We believe that for the past few years rough numerical parity with the US has been the minimum objective of Soviet ICBM deployment programs. The momentum of current programs will carry the Soviet force past this goal within the next year. As we have noted above, we estimate that the Soviets now have about 900 ICBM launchers operational and about 200 under construction; we estimate that in mid-1970 the Soviets could have as many as 1,230 operational launchers. We estimate that the 220 older launchers in the force will be phased out during the period of this estimate, but that most of them probably will be kept in service at least through mid-1970.

32. For the 1971-1978 period, the Soviets will have the option of stabilizing their ICBM force at a numerical level about equal to that of the present US force, or of going for a substantially larger number. The force goal they set will depend on their assessment of the force needed to meet their strategic planning requirements, and upon their judgment as to the best means of compensating for programed qualitative improvements in US strategic forces. It will also be influenced by their assessment of the risk of stimulating a large new missile deployment in the US. Moreover, the Soviet decision will be made not in isolation but in the context of Soviet strategic forces as a whole, both offensive and defensive.

33. We estimate, therefore, that for the period of this estimate the Soviet force goal will lie somewhere between 1,100 and 1,500 ICBM launchers.[4] Forces toward either the low or the high side of our estimate would have certain common features. When the phase-out of older systems is completed, they would be composed almost entirely of hard, dispersed single silos, but they could include some mobile launchers. Launchers for the SS-9 and the SS-11 would make up the bulk of either force, but the higher option would mean the construction of 400-500 new launchers for one or more new ICBM systems, including a large liquid-fueled ICBM, and possibly a new, small system with either solid or liquid propellants. A force toward the low side would probably embody considerable qualitative improvements including better accuracy, more sophisticated RVs such as MRVs and MIRVs, and possibly penetration aids; it could also include a new large, liquid-fueled ICBM. A force toward the high side would also include qualitative improvements, and it would rely in part upon larger numbers to attain improved capabilities.

III. MILITARY APPLICATIONS IN SPACE

34. Throughout the period of this estimate the Soviets will experiment with a variety of space systems which could be used for military purposes. New military space applications will be introduced as Soviet technology advances and as requirements for such systems are developed. The high priority evident in the reconnaissance satellite program will probably be extended to other selected military support systems which Soviet leaders consider essential; these will probably include systems for improved communications, weather observation, and navigation. There has already been a significant increase in the use of applied satellites in recent years; military entities probably are using the Molniya communication satellites and are almost certainly receiving some benefits from weather and navigation satellites.

35. At the time of our last estimate, the Soviets were conducting an intensive flight test program of a vehicle which we have designated the SS-X-6. In the initial tests, the SS-X-6 was fired into Kamchatka on a flight profile with a low apogee of 120 n.m. suggesting to us at that time the development of a depressed trajectory ICBM. (The normal apogee for this range is about 400-500 n.m.) [ ] In two of these tests, the RV was retrofired and did not follow a

[4] Maj. Gen. Jammie M. Philpott, the Acting Assistant Chief of Staff, Intelligence, USAF, and Maj. Gen. Wesley C. Franklin, for the Assistant Chief of Staff for Intelligence, Department of the Army, would delete the first sentence and substitute the following:

We believe that for the period of this estimate the Soviet force goal will lie somewhere between 1,200 and 1,500 ICBM launchers providing the USSR operationally deploys a sizable number of ICBMs with multiple reentry vehicles. Otherwise, and particularly in view of the number of targets in the US and the planned US ABM capability, the Soviet Union probably will have considerably more than 1,500 launchers by the late 1970's. A program which added only 100 launchers per year beyond those already identified would exceed 1,800 by 1978.

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~~TOP SECRET~~

SOVIET STRATEGIC ATTACK FORCES

THE PROBLEM

To estimate the strength and capabilities of Soviet strategic attack forces through mid-1971 and to estimate general trends in those forces over the next 10 years.

FOREWORD

Our estimates of Soviet military capabilities are organized on lines which the intelligence community and users of the estimates have for some years found useful. This organization is in terms of the mission to be performed rather than of administrative subordination. Thus, for example, the elements of the strategic attack forces are variously subordinated, the pertinent missiles to the Strategic Rocket Forces, the bombers to Long Range Aviation, and the missile submarines to the navy. This method of treating Soviet forces is basically the same as that being used by DOD in US military planning, although there are differences in detail. Moreover, within the category of strategic attack forces, which is the subject matter of this estimate, we have been accustomed to distinguish between forces for intercontinental and those for peripheral attack.

It should be recognized, however, that this organization is somewhat arbitrary. The line of distinction between the various categories is necessarily a fuzzy one, and is becoming more so. For example, cruise missile submarines (which we deal with as general purpose force weapons) can, if the occasion warrants, be used to attack strategic targets near enemy coasts. Strategic ballistic missiles can be employed in sup-

24. *(Continued)*

port of theater force operations. And fighter bombers or missiles of less than MRBM range are plainly suitable for attacking strategic targets in Eurasia.

Similarly, as shifts in the international situation occur or as a war progresses, the assignment of a weapon to a particular category can lose validity. The need of the hour dictates that any weapon system that can fruitfully be brought to bear on a specific target should be used. Thus, today's strategic weapon may be tomorrow's tactical one; witness the only combat use to which B-52s have thus far been put. Accordingly, though we continue to treat the various Soviet weapon systems within the categories already established, it must be recognized that any given system may have other uses as well.

CONCLUSIONS

Soviet Strategic Policy

A. For several years, the primary objectives of Soviet strategic policy have evidently been to build a more formidable deterrent and to overcome the US lead in capabilities for intercontinental attack Today, while the Soviets remain inferior in numbers of intercontinental delivery vehicles, they have overtaken the US in numbers of operational ICBM launchers. Current programs will bring further improvements in the USSR's strategic position, already the most favorable of the postwar period. But the Soviets face in the future a strategic situation changed and complicated by projected improvements in US forces and by the threat of a hostile China with an emerging nuclear capability.

B. We can make only the most general conclusions as to the course of Soviet strategic policy over the 10 year period of this estimate. In the absence of an arms control agreement, Moscow will almost certainly continue to strengthen its strategic forces, giving first priority as in the recent past to the forces for intercontinental attack and for strategic defense. Although we have no direct evidence of Soviet force goals, we believe that the Soviets will seek as a minimum something

24. *(Continued)*

that they can regard as rough parity with the US; it is equally possible that they will seek some measure of superiority.[1]

Forces for Intercontinental Attack

C. The Soviets have built forces for intercontinental attack capable of inflicting heavy damage on the US even if the US were to strike first. Most of the ICBMs and all of the submarine-launched ballistic missiles are best suited for attacks on soft targets. The SS-9 is the only ICBM with the combination of payload and accuracy to attack hard targets effectively, but in its present numbers with single warheads it could attack no more than a small percent of the US ICBM force. The USSR's capability to attack hard targets, however, is likely to increase considerably over the next 10 years. The Soviets will probably introduce ICBMs of greater accuracy. They are now testing multiple re-entry vehicles on the SS-9 and though the purpose of these tests is unclear, we believe the Soviets will introduce MIRVs [2] capable of attacking hard targets. If the multiple re-entry vehicle tests are aimed at the development of a simple MRV, such a system could reach IOC late this year. If on the other hand they are aimed at the development of a MIRV system designed to attack Minuteman silos as described in paragraph 29 of the text, IOC could not be achieved before late 1970. A highly accurate MIRV system or one employing more than three RVs probably could not be developed before 1972, although its IOC might be delayed until as late as the mid-1970's.

D. *ICBMs.* In the recent past, the Soviets have sought to improve their strategic position by a rapid buildup in the numbers of ICBM launchers. In the strategic situation that is emerging, qualitative improvements—particularly those related to accuracy, survivability, damage limitation, and the ability to penetrate defenses—become more important. Moreover, the number of launchers will probably become

[1] For the views of Mr. George C. Denney, Jr., Acting Director of Intelligence and Research, Department of State; Vice Adm. Noel Gayler, the Director, National Security Agency; and Maj. Gen. Jammie M. Philpott, the Assistant Chief of Staff, Intelligence, USAF, see their footnotes to paragraph 12.

[2] See the Glossary for definition of MRV and MIRV. In this estimate, the words "multiple re-entry vehicles" include both MRVs and MIRVs.

less significant in Soviet calculations than the numbers and kinds of re-entry vehicles. Considering current deployment activity and the probable phase out of older launchers, a Soviet ICBM force of some 1,300 launchers appears to be a minimum. Depending upon its composition and the extent to which it is supplemented by other weapons, such a force could in our view be consonant with a Soviet policy aimed either at rough parity or at some margin of advantage. Other factors, however, such as concern for survivability, a Soviet decision not to deploy MIRVs, a substantial delay in Soviet MIRV deployment, a try for superiority, or even the momentum of military programs could push these figures upward by some hundreds of launchers. We cannot now estimate the maximum size of the force which might result from such pressures.[3]

E. *Space Weapons.* There have been extensive flight tests which we think are related to development of a fractional orbit bombardment system (FOBS), a retrofired depressed trajectory ICBM, or perhaps a dual system to perform both missions. We have observed no testing since October 1968. We still think the chances are better than even that some version of the system will be deployed. Until our evidence is more conclusive, however, we cannot make a confident estimate as to the type of system being developed, when it could become operational, or how it might be deployed.

F. *Nuclear-Powered Ballistic Missile Submarines.* Production of the 16-tube Y-class ballistic missile submarine continues; some five or six are now in commission. In addition, the Soviets may be developing a 3,000 n.m. submarine-launched ballistic missile. We continue to believe that the Soviets are building a nuclear-powered ballistic missile submarine force which will be roughly comparable to the US Polaris fleet by the mid-1970's.

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[3] For the views of Mr. George C. Denney, Jr., Acting Director of Intelligence and Research, Department of State; Rear Adm. Daniel E. Bergin, for the Acting Director, Defense Intelligence Agency; Brig. Gen. DeWitt C. Armstrong, III, for the Assistant Chief of Staff for Intelligence, Department of the Army; Rear Adm. Frederick J. Harlfinger, II, the Assistant Chief of Naval Operations (Intelligence), Department of the Navy; and Maj. Gen. Jammie M. Philpott, the Assistant Chief of Staff, Intelligence, USAF, see their footnotes to paragraph 41.

24. *(Continued)*

G. *Heavy Bombers.* The Soviets still have about 200 heavy bombers and tankers in operation. We have no evidence that any are currently being produced for Long Range Aviation, and we consider it unlikely that a new heavy bomber will enter service. Hence, by 1979 the heavy bomber force will probably be largely deactivated.[4]

Forces for Peripheral Operations

H. Soviet strategic forces for peripheral operations consist primarily of MRBMs, IRBMs, medium bombers, and diesel-powered ballistic missile submarines. In addition, the Soviets are probably deploying some short-range ballistic missiles and some ICBMs against targets in Eurasia. These forces are arrayed for the most part against Europe, and in massive strength—an emphasis that will probably continue. The conflict with China, however, has posed new requirements for strategic forces. These can be met to some extent by retargeting existing systems (e.g., bombers and ICBMs), but there will probably be some additional deployment of strategic missiles against China.

I. Within the period of this estimate, the MRBMs and IRBMs now in service will probably be completely replaced. Our evidence of new missile development is scanty and inconclusive, but a 1,500 n.m. solid-propellant missile and a missile of longer range (up to 3,000 n.m.) seem the likeliest possibilities. We project an MRBM/IRBM force of some 400-700 launchers, supplemented by additional short-range missiles and ICBMs. The medium bomber force will probably decline from its present level of some 700-750 aircraft.[5] It seems highly unlikely that any new diesel-powered ballistic missile submarine will be built.

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[4] For the views of Maj. Gen. Jammie M. Philpott, the Assistant Chief of Staff, Intelligence, USAF, see his footnotes to paragraphs 61 and 62.

[5] For the views of Maj. Gen. Jammie M. Philpott, the Assistant Chief of Staff, Intelligence, USAF, see his footnote to Section III D.

24. *(Continued)*

DISCUSSION

I. SOVIET STRATEGIC POLICY

1. The primary objectives of Soviet strategic policy evidently have been to build a more formidable deterrent and to narrow and eventually to overcome the US lead in capabilities for intercontinental attack. These goals were probably set in the wake of the Cuban missile crisis, when the US enjoyed such superiority as to put the USSR at a political and psychological disadvantage. At that time, Soviet leaders probably calculated that forces poised against Europe were adequate for any likely contingency and that the smoldering dispute with China posed no new requirements beyond a strengthening of the border guard. Thus, the forces for intercontinental attack and for strategic defense could be given first priority.

2. As a result, the Soviets have wrought a considerable change in the strategic situation. There can be no doubt today concerning the credibility of the Soviet deterrent. And while the Soviets remain inferior in total numbers of intercontinental delivery vehicles, they have overtaken the US in numbers of operational ICBM launchers. Thus, in only five or six years, the Soviets have emerged from a strategic situation which they evidently considered threatening to their security and damaging to their prestige.

3. The political situation has changed even more drastically over the past several years. Relations with China have deteriorated to the point that major hostilities could occur. It is clear that the Soviets now regard China as a major threat to the USSR, and they apparently see this threat as active, growing, and of long duration. The Soviet military buildup in the Sino-Soviet border area has primarily involved the theater forces, but there have been some related developments in the strategic forces. Substantial Soviet forces will almost certainly be stationed on the eastern frontier for the foreseeable future.

4. At the same time, the Soviets probably see no diminution of their military requirements in other areas. Indeed, in Europe, where Soviet troops still occupy Czechoslovakia, the requirement for theater forces has if anything grown. And although the danger of war with the US—in particular, of a US surprise attack—has in the Soviet view probably receded, the US remains the USSR's most formidable opponent. It constitutes the principal obstacle to the growth of Soviet influence in world affairs, and it alone has the military power to severely damage the USSR. In short, the Soviets only five years ago faced two major military problems: the strategic capabilities of the West and the security of Eastern Europe. Now there is a third, a hostile China with an emerging nuclear capability.

5. Under the present leadership, military expenditures have continued to rise, primarily as the result of the continuing development and deployment of stra-

24. *(Continued)*

tegic forces, which account for about half of the total military expenditures. This increase plus increased allocations for the consumer are squeezing Moscow's ability to invest in the future growth of the economy. Now, events in the Far East and in Europe have posed new military requirements. Thus the perennial problem of resource allocation has sharpened, and promises to sharpen further.

6. Though economic considerations almost certainly were among the principal reasons for the Soviet expression of willingness to discuss arms control with the US, strategic considerations must have been equally compelling. In view of US plans for improvements to its strategic forces, the Soviets probably recognize that a large sustained effort would be necessary to maintain the relative position they have now achieved. They may also reason that relatively modest increases in their strategic forces would not significantly enhance Soviet security while large increases would trigger a US response. Moscow's willingness to discuss strategic arms control probably reflects the view that it has attained or is in the process of attaining an acceptable strategic relationship with the US. Moreover, Moscow may believe that even if an agreement could not be reached, negotiations would have the effect of damping down the arms race, perhaps for a considerable time.

Future Goals

7. In the absence of an arms control agreement, the Soviets will almost certainly continue to strengthen their strategic forces. As in the past, we have no direct evidence concerning Soviet goals for their intercontinental attack forces in the future. Furthermore, we doubt that the Soviets themselves have set precise goals for the next 10 years. In the past, their strategic programs have moved in waves rather than in a steady progression, and force goals have obviously been modified as the situation changed. The present size and composition of these forces, deployment programs now underway, and R&D activities all provide useful indications for the near term. But a consideration of the factors that will shape these forces over the longer term—Soviet policy objectives, US actions, economic constraints, technological capabilities—leads only to the most general conclusions as to the future course of Soviet policy.

8. The development of US strategic capabilities will probably be the most important single factor affecting Soviet decisions on force goals. The Soviets, for example, are surely concerned that projected improvements in US forces—Poseidon, Minuteman III, and ABM—will erode their relative strategic position, and they must be considering how best to counter them. Their decisions will in turn affect developments on the US side. We cannot predict with any accuracy the end result of this interaction between US and Soviet strategic programs over the next 10 years.

24. *(Continued)*

9. The strategic forces built to date furnish some insight into Soviet strategic policy and objectives. The Soviet forces for intercontinental attack appear designed primarily for deterrence and, of course, for fighting a nuclear war if deterrence should fail. They have important damage-limiting capabilities, but most of the ICBMs and all of the submarine-launched ballistic missiles (SLBMs) are best suited for attacks on soft targets. The size of the forces for intercontinental attack, however, considerably exceeds that which the Soviets would probably think necessary to deter the US from deliberate attack.

10. Political and psychological factors must have weighed heavily in setting the force goals for current programs. An important objective of their strategic policy has been something that the Soviets could regard as rough parity with the US. We believe it will continue to be their minimum objective. This does not mean parity in each category of weapons; they are making no apparent effort, for example, to match the US in heavy bombers. We believe that in assessing the strategic balance the Soviets would go beyond numbers to consider qualitative differences in weapon systems and the interplay between offensive and defensive forces.

11. If forces on both sides could be maintained at something like present levels, such a policy might be attractive to the Soviets. It would be less costly than the strategic buildup of recent years, and could free resources for other pressing requirements. But, if the arms race should escalate sharply, maintenance of parity could prove very costly. Considering their other military problems, it is conceivable that in this situation the Soviets would settle for something less, i.e., a large assured destruction capability. For the foreseeable future, however, we believe that they would be prepared to continue the arms competition with the US.

12. We do not attempt to estimate how far the Soviets might carry a strategic buildup over the next 10 years. In evaluating future US strategic programs, they may conclude that a continuation of their efforts on the current scale will be essential merely to avoid retrogressing from their present relative position. But there are undoubtedly pressures in Moscow for a strategic policy aimed not merely at parity but at superiority over the US—it goes without saying that the marshals, and indeed the political leaders as well, would like to have a substantial edge. Should they aim at superiority, it seems reasonable to suppose that their programs might still be limited by a desire to stop short of forces that would provoke a US reaction. But they might either miscalculate or ignore the costs and risks involved in an indefinite continuation of competitive arms buildups. In any case, it seems likely that their programs will gradually cease to consist primarily of the deployment of additional launchers, and instead will emphasize developments such as MIRVs, and qualitative improve-

ments such as survivability, capacity to penetrate defenses, and damage-limiting capabilities.[6] [7]

II. SOVIET FORCES FOR INTERCONTINENTAL ATTACK

A. General

13. The forces to be discussed in this section are ICBMs, nuclear-powered ballistic missile submarines, and heavy bombers. Development of these forces began in the 1950's. Deployment, however, was relatively limited until the mid-1960's when more effective and less expensive systems—new ICBMs and missile submarines—became available. Since that time, the buildup of these forces has proceeded rapidly.

B. ICBMs

Current Status

14. The SS-9 and the SS-11 constitute the backbone of the Soviet ICBM force. Although the SS-11 is deployed in far larger numbers, the SS-9 can carry a much heavier payload, and is more accurate. Both systems are emplaced in hardened single-silo launchers, the SS-11 in groups of 10 and the SS-9 in groups of six. The older SS-7s and SS-8s are deployed in soft launch positions or in hardened triple-silo sites. All of the above systems use liquid-propellants. The newest Soviet ICBM, the solid-propellant SS-13, is deployed in only a small number of silos at one of the 25 Soviet ICBM complexes.

15. Our estimate of the numbers of operational launchers in the Soviet ICBM force over the next two years appears in the following table. The spreads shown in

[6] Mr. George C. Denney, Jr., Acting Director of Intelligence and Research, Department of State, considers that the general thrust of this paper permits a further statement on the future Soviet strategic buildup and that such a statement should be made. He believes that the Soviets would face great difficulties in any attempt to achieve strategic superiority of such an order as to significantly alter the strategic balance. In particular, he does not see how they would be able within the period of this estimate to achieve a capability to launch a surprise attack against the US with assurance that the USSR would not itself receive damage it would regard as unacceptable. For one thing, the cost of such an undertaking along with all their other military commitments would be enormous. More important, it would be extremely difficult if not impossible for them to develop and deploy the combination of offensive and defensive forces necessary to counter successfully the various elements of US strategic forces as they develop. Finally, even if such a project were economically and technically feasible the Soviets would face the prospect that the US would detect and match or overmatch their efforts.

[7] Vice Adm. Noel Gayler, the Director, National Security Agency, and Maj. Gen. Jammie M. Philpott, the Assistant Chief of Staff, Intelligence, USAF, believe that it is more likely than not that the Soviets are seeking some measure of superiority. The massive Soviet R&D effort and the pace of their deployment support this view. Some visible superiority would provide the Soviets with advantage in political affairs and greater leverage in crisis confrontations. They do not, however, believe the Soviets are seeking the capability to limit any US attack to tolerable levels, as this capability is not feasible.

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SOVIET FORCES FOR INTERCONTINENTAL ATTACK

THE PROBLEM

To assess the strength and capabilities of Soviet forces for intercontinental attack, to estimate their size and composition through mid-1975, and to forecast general trends thereafter.

SUMMARY CONCLUSIONS

I. PRESENT STATUS OF SOVIET INTERCONTINENTAL ATTACK FORCES

General

A. The intercontinental attack forces considered in this paper include intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and heavy bombers. In the course of the past 10 years the Soviets have engaged in a vigorous and costly buildup of these elements of their military establishment. While all defense spending increased during the period, the estimated share allocated to these forces doubled, going from about 5 percent in 1960 to more than 10 percent in the later years of the decade. The 1969 level—an estimated 2.3 billion rubles (the equivalent of $5.6 billion) [1]—was more than three times as high as the 1960 level. For the decade as a whole, spending on intercontinental attack forces accumulated to about 16

[1] The dollar figures (appearing in parenthesis after the rubles) are approximations of what it would cost to purchase and operate the estimated Soviet programs in the US.

25. *(Continued)*

billion rubles (about $36 billion) with ICBMs accounting for about 80 percent of this amount. These figures do not include the cost of research and development (R&D), which rose faster during the 1960s than any other component of Soviet defense spending, and which we estimate has now surpassed that of the US.

B. As a result of this effort, the Soviets had on 1 October 1970 an estimated 1,291 operational ICBM launchers at operational ICBM complexes, and they will have an estimated 1,445 launchers operational by mid-1972. To this number may be added: (1) an estimated 80 SS-11 launchers (120 by mid-1972) believed to be deployed at intermediate-range ballistic missile (IRBM) and medium-range ballistic missile (MRBM) complexes and possibly intended for use against Eurasian targets, which are nevertheless capable of reaching the US, and (2) some 90 launchers which we believe are located at test or training sites. Of the 1,445 ICBMs estimated to be at operational complexes by mid-1972, 306 probably will be of the large SS-9 type and 850 the smaller SS-11. The remainder will consist of older SS-7 and SS-8 missiles, plus an estimated 80 of the small, solid-propellant SS-13s.

C. While these ICBM programs were under way, the Soviets were also energetically developing nuclear-powered, ballistic-missile-firing submarines. Of these the most notable is the Y-class, which, like the US Polaris, has 16 tubes for launching missiles. The missile presently carried by this class has an estimated range of about 1,300 n.m., a yield of [ ] and a system Circular Error Probable (CEP) of [ ] Y-class submarines are now being produced at the estimated rate of 7-8 a year; we believe that 14 are now operational and that some 5 others are in various stages of fitting out and sea trials. Another 12 or 13 are believed to be in various stages of assembly. Besides the Y-class there are submarines of earlier design which could contribute to the intercontinental attack mission.

D. The USSR has not, in recent years, shown equal interest in manned bombers of intercontinental capability. At present there are 195 heavy bombers and tankers operational, all of them of the Bison and Bear types, whose designs date from the 1950s. We believe that a prototype now exists of a new aircraft, [ ] It might be used in an intercontinental role, and the force may be built up beginning about 1974 or 1975.

25. *(Continued)*

The Principal Types of ICBMs

E. The SS-11, by far the most numerous of Soviet ICBMs, is estimated to have a CEP of [ ] and a yield [ ] It is thus a weapon best suited for use against soft targets—cities, industrial installations, and some military targets. It can reach all parts of the US, but has also been tested to ranges as short as 500-600 n.m., indicating much flexibility in its possible uses. In 1969 testing began of a modified version. Analysis of these tests has not yet produced a full understanding of their implications; we remain confident nevertheless that the modified SS-11 will still be a soft-target weapon, designed to improve the ability to penetrate antiballistic missile defenses. Deployment of the SS-11 may have ceased at ICBM complexes, and appears to be tapering off at IRBM and MRBM complexes.

F. The SS-9 now exists in four variants: Mod 1, which carries a reentry vehicle (RV) weighing about 9,500 pounds; Mod 2, whose RV weighs about 13,000 pounds; Mod 3, which has been tested both as a depressed trajectory ICBM (DICBM) and as a fractional orbit bombardment system (FOBS); and Mod 4, which carries three RVs. Leaving Mod 3 aside for the time being, our analysis of evidence on the capabilities of Mods 1, 2, and 4 turns up some perplexing problems.

G. There is general agreement that the SS-9 was developed, early in the 1960s, to provide better accuracy and a larger payload than the SS-7, presumably for use against hard targets—i.e., the US Minuteman system. The Mod 1 appears reasonably well adapted for this purpose. In 1965, however, the Soviets began to test the Mod 2, which with its heavier payload was estimated to have a yield of [ ] These tests were pursued with great vigor, and the Mod 2 was actually deployed before the Mod 1. [ ] But the Mod 2 has never in its numerous flight tests actually demonstrated enough range to reach any Minuteman complexes. We believe that its demonstrated range could be increased sufficiently to cover most or all of them (there are differences on this point) by using up more of the available propellant, removing telemetry packages, etc. Yet it remains curious that

25. *(Continued)*

the Mod 2, alone among ICBMs except the SS-13, has never been tested to what we would presume to be its intended operational range.

H. The kill probability of a missile against hard targets is more sensitive to accuracy than to yield. The accuracy of the SS-9 cannot be ascertained from observations. It must be deduced [ ] In the Intelligence Community, opinions as to the CEP of the SS-9 range from [ ] Small as they may appear, the significance of these differences is considerable.[2] It is generally agreed that in actual operational employment, accuracies in the force as a whole would be somewhat poorer.

I. In sum, with respect to the capability of the Mod 2 against Minuteman, we have estimated that it can have sufficient range to reach most or all targets even though such range has not been demonstrated in tests. We see no reason to doubt that in the event of general war the Soviets would use it for whatever it could accomplish against the Minuteman system. But, the Soviets would have to deploy several times the present number of SS-9 Mod 1 and Mod 2, with their present capabilities, before achieving a force which would pose a serious threat to the Minuteman force as a whole. This brings us to a consideration of the Mod 4.

J. In August 1968, the Soviets began testing the SS-9 Mod 4, carrying three RVs. By April 1970, they had carried out 17 tests, about the usual number for a missile before it goes into operational deployment. In these tests, the three RVs [ ] were not independently targetable, and the weapon as tested was not a multiple independently targetable re-entry vehicle (MIRV). [ ] we presume that the Mod 4 has not been operationally deployed, though it could be at any time.

[2] See paragraphs 52-54 for a discussion of the effect of differences in accuracy and yield.

25. *(Continued)*

K. In October 1970, tests resumed, and by 5 November there had been four more. One of these was like the earlier tests; one was a failure. The two others exhibited [redacted] one practicable method of developing a MIRV, though it is a different method from that used by the US. Data are still scanty, and analysis far from complete. Should the Soviets decide to deploy a MIRV system based on these tests they could probably begin to do so in late 1971, using the present SS-9 guidance system. This guidance system would give each RV a CEP no better than that of the SS-9 with a single RV. The yield of each of the three RVs is estimated to be [redacted] The Mod 4 has sufficient range to reach Minuteman silos.

L. Returning now to the SS-9 Mod 3, as observed above it has been tested both as a DICBM and as a FOBS. In neither form does it have sufficient accuracy to attack hard targets effectively; its apparent function would be to attack soft strategic targets, avoiding early detection by the US Ballistic Missile Early Warning System. (New US warning systems give promise of reducing or eliminating this advantage.) There is some difference of opinion as to the capability of this vehicle operating as a FOBS. It is agreed, however, that the Mod 3 has been deployed only to a very limited extent, and that its future deployment will also be limited.

II. SOVIET POLICY AND FUTURE PROGRAMS

M. The broader reasons for the USSR's energetic buildup of intercontinental attack forces are neither complex nor obscure. In the early 1960s the Soviet leaders, politically and ideologically hostile to the US, and thinking and behaving as rulers of a great power, perceived that in this particular respect their military forces were conspicuously inferior to those of their most dangerous rival, the US. Consequently, they set themselves to rectify the imbalance—to achieve at a minimum a relation of rough parity. Parity in this sense cannot be objectively measured; it is essentially a state of mind. Such evidence as we have, much of it from the strategic arms limitation talks, indicates

that the Soviet leaders think that they have now achieved this position, or are about to achieve it, at least in respect to weapons of intercontinental range.

N. Many aspects of the present force structure are also susceptible to simple and probably correct explanation. The Soviets built a large number of ICBMs in order to match—and now to surpass—the number of US ICBMs, and also to increase the probability that many would survive an initial US attack. They built missile-launching-submarines which are virtually invulnerable to attack when deployed, and they retained a manned bomber force as yet another option.[3] The intercontinental attack force is obviously capable of being used in war, but there is no reason to believe that the Soviet leaders intend deliberately to make nuclear war. The force is an attribute of power, an instrument to support policy, a deterrent to the US.

O. Looking to the future, it seems clear that the Soviet leaders intend to maintain at a minimum such forces as will continue to give them—in their own phrase—a sense of "equal security" with the US. One method of doing so might be through an arms limitation agreement; they appear seriously interested in this possibility. We do not know whether an agreement will be reached, or on what terms. If it were indeed concluded, the development of Soviet intercontinental attack forces would be subject to its terms, but in this Estimate we confine ourselves mainly to a consideration of the situation in the absence of agreement.

P. With the general attitudes and policies of the USSR being what they are, it might seem obvious to infer that the Soviet leaders will strive to achieve marked superiority over the US in strategic weaponry. We do not doubt that they would like to attain such a position. The question is whether they consider it a feasible objective—whether they believe the chances of success good enough to justify allocation of the necessary resources, adjustment to the political implication of an all-out arms race, and acceptance of the risk that instead of sur-

[3] Maj. Gen. Rockly Triantafellu, the Assistant Chief of Staff, Intelligence, USAF, does not believe Soviet missile-launching submarines are virtually invulnerable to attack. Based on the discussion of Soviet submarine patrol activity (paragraphs 127-132), only a few appear to be deployed at any one time; the remainder become vulnerable soft-targets in port. In view of extensive US efforts in ASW operations he further believes that some portion of the deployed subs would also be vulnerable and that vulnerability will increase as ASW technology improves.

25. *(Continued)*

passing the US they might fall behind, especially in the technological competition. They might, in any case, think it feasible to seek a strategic posture that, while falling short of marked superiority, makes clear that the Soviets have advantages over the US in certain specific areas. For example, they can now claim an advantage in numbers of ICBM launchers. While this might not be significant militarily, it would help to dramatize the strategic power of the Soviet Union.

Q. But even if Soviet intentions go no further than maintenance of "equal security," their arms programs are bound to be vigorous and demanding. This is in part because Soviet leaders must have an eye not to what forces the US has at present, but to what it can have, or may have, in future years. In this respect they are likely to be cautious—to overestimate rather than underestimate the US threat. Moreover, the weapons competition nowadays is largely a technological race; each side is impelled to press forward its R&D lest it be left behind. Weapons programs also tend to attain a momentum of their own; the immense apparatus of organizations, installations, personnel, vested interests, and so on, tends to proceed in its endeavors unless checked by some decisive political authority.

R. On the other hand, there are constraints upon Soviet arms programs. The most obvious is economic; resources are not unbounded; the civilian economy demands its share; one weapon system competes with another for allocations; and intercontinental attack forces compete with strategic defense and general purpose forces. The various bureaucracies with interests in one or another area compete partly with rational argument and partly in sheer political infighting. Soviet leaders must also consider how far they may wish to press their own programs lest they provoke countervailing programs in the US. And they must assess not only the present and future US threat, but also that from China, and elsewhere.

S. While the foregoing considerations probably govern the nature of Soviet decisions as to future weapons programs, they provide us with little or no basis on which to estimate in detail what these programs will be. We have never had solid evidence on the problem, and there is no reason to expect that we shall have such evidence in the future. Moreover, in the present era the rapidity of technological advance tends to produce especially vigorous action and reaction be-

25. *(Continued)*

tween military programs of the USSR and the US, and it has made the strategic relationship more susceptible to change than ever before.

T. Yet the possibilities are not unlimited, certainly in the next five years or so. For one thing, intercontinental weapons systems are of such complexity that their development, testing, and deployment take a long time. We can observe the testing phase, and thus project potential deployments. It usually takes about two years from the time we observe the first flight test of a new ICBM until that system becomes operational in the field. The interval for SLBMs is about the same or longer, and for bombers it is much longer. We can therefore estimate with much confidence that the *kinds* of weapons systems deployed by the Soviets during the next two years or so will be those already in operation or in the late stages of development. Even in the period from two to five years from now the force will be composed largely of existing kinds of delivery vehicles, though towards the end of the period some new ones may come into operational status, and some older ones be retired.

U. Because of the lead times involved in construction and deployment, we can also be highly confident of the *number* of launchers of intercontinental weapons which will be operational up to about two years from now. Beyond two years uncertainty increases as the time period of projection increases. Some reasonable limits to this uncertainty can nevertheless be derived from our knowledge of past deployment rates, especially those obtaining at a time when the Soviets appeared to be making a particularly vigorous effort.

V. But it is not in new types of weapon systems or in gross numbers of launchers that the most significant developments in Soviet forces for intercontinental attack will probably lie during the next several years. Rather it is in *qualitative improvements* to present systems, and of these the most important are in accuracy of missiles and multiple re-entry vehicles for them.

1. *Accuracy.* On technical grounds, we believe that the Soviets, without going to new guidance concepts but mainly by improving the components of the present guidance systems and changing the configuration of their RVs, could in two years achieve CEPs of about 0.25 n.m. for their ICBMs, and begin to introduce these improvements into the force. Hitherto, the Soviets have dem-

25. *(Continued)*

onstrated no urgent disposition to achieve high accuracies. But they are likely to do so—at least for the SS-9—in the next few years, primarily because of the great increase in capability against hard targets which this development would afford them, and because, if for no other reason, the necessary technical developments are sure to occur in the normal course of product improvements.

2. *Multiple Independently Targetable Re-entry Vehicles.* We continue to expect the Soviets to develop MIRVs capable of attacking hard targets such as Minuteman. These could proceed from the current SS-9 Mod 4 program, or from a different concept such as that represented by the "bus" system used by the US. With the high order of accuracy desired in a hard target MIRV, we think that neither could be operational before late 1972 at the earliest. A MIRV with no more accuracy than the present SS-9 Mod 1 or Mod 2 could eventuate from the current Mod 4 program by late 1971.

3. *Land-Mobile ICBMs.* The Soviets will probably continue work on these, but it remains to be seen how extensively they may deploy them. There are many difficulties of maintenance, security, transportation, and the like which cause us to believe that the Soviets might have doubts about the practicability of such a system. In any event we would not expect it to become operational before 1975.

W. With respect to submarines, the Soviets will almost certainly continue to increase their Y-class fleet at the rate of about eight per year, for some time to come. Meanwhile, a new missile, the SS-NX-8, has been undergoing flight tests at a deliberate pace since June of 1969. Its range is indicated to be about 3,000 n.m., a substantial improvement over the missile presently carried by the Y-class. A puzzling aspect, however, is that the SS-NX-8 appears too large to be fitted into the Y-class. Moreover, we have no evidence of a new submarine class designed to carry this missile. We think it likely that, at a minimum, the SS-NX-8 will be deployed on 10 modified diesel-powered G-class units. Evidence is insufficient, however, for us to make a confident estimate as to the nature or extent of any further deployment. By about 1975 Soviet submarines could have missiles equipped with multiple warheads or penetration aids; the system CEP would probably be about 0.5 n.m. or worse.

25. *(Continued)*

X. The fleet of intercontinental manned bombers will probably diminish in numbers gradually until at least 1975, when the new [ ] could begin to enter operational units. We believe that the [ ] is best suited for peripheral operations, but that it has some capability for intercontinental attack. All but the Air Force believe that our knowledge of this aircraft is still too limited to jusify a confident judgment of its capabilities and future employment. The Air Force believes that the capabilities of [ ] as now assessed, indicate a Soviet intent to employ the aircraft in both intercontinental and peripheral operations.

* * * *

Y. The various uncertainties summarized above make it evident that no exact estimate of the future Soviet force structure, at least after about the end of 1972, could be defended. We have therefore constructed, in Section XII of this Estimate, several illustrative models to depict various possibilities. The first, called Force A, represents little more than a completion of programs presently under way; it seems highly unlikely that the Soviets would stop at this. Another model, Force D, is a sample of what we believe would be a maximum effort short of converting to a wartime basis; this also appears highly unlikely. Force C, without going as far as Force D, represents something the Soviets might undertake if they were to place top priority on the early acquisition of a capability to knock out virtually all of the US ICBM force; we also think this unlikely.[4]

Z. Between these outer limits of reasonable force structures we have set forth three others designated respectively B1, B2, and B3. These differ primarily in the rapidity with which the Soviets, either for technological or other reasons, deploy MIRVs, and they reflect also some differences in general force structure which would seem likely to obtain because of such differences in MIRV development. Our estimate is that Soviet intercontinental attack forces are most likely to fall somewhere in the area depicted by these B-models, but we wish to emphasize that these and the other models are strictly illustrative, and not to be regarded as confident estimates or as pro-

[4] Maj. Gen. Rockly Triantafellu, the Assistant Chief of Staff, Intelligence, USAF, does not agree with the judgments in this paragraph. For his views, see his footnote to Section XII, page 61.

25. *(Continued)*

jections for planning. As one moves beyond the next two years or so, all projections become increasingly uncertain; beyond five years they are highly speculative.[5]

[5] Maj. Gen. Rockly Triantafellu, the Assistant Chief of Staff, Intelligence, USAF, does not agree with the judgments in this paragraph. For his views, see his footnote to Section XII, page 61.

APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

~~TOP SECRET~~ 1

SOVIET FORCES FOR INTERCONTINENTAL ATTACK

THE PROBLEM

To assess the strength and capabilities of Soviet forces for intercontinental attack, to estimate their size and composition through mid-1976, and to forecast general trends thereafter.

SUMMARY AND CONCLUSIONS

I. PRESENT STATUS OF SOVIET INTERCONTINENTAL ATTACK FORCES

General

A. The intercontinental attack forces considered in this paper include intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and heavy bombers. In the course of the past 10 years, the Soviets have engaged in a vigorous and costly buildup of these elements of their military establishment. As a result of this effort, the Soviets had operational on 1 October 1971 an estimated 1,375 launchers at regular ICBM complexes, 440 SLBM launchers, and 195 heavy bombers and tankers. To this may be added (1) 120 SS-11 launchers at Derazhnya and Pervomaysk which, though possibly intended for use against European targets, are nevertheless capable of reaching the US, and (2) 88 ICBM launchers at test or training sites. When all construction now under way on currently operational systems is completed by late 1973, the Soviets will have 1,407 launchers at regular ICBM complexes, including 288 of the large SS-9 type; about

750 SLBMs, including about 650 on Y-class submarines; and 190 heavy bombers and tankers. During the past year, it appeared that the large-scale deployment programs of the 1960s had run their course and that no further deployment of existing ICBMs was planned. Construction of new types of silos which we believe to be underway, however, may indicate a new phase of deployment.

B. We believe that construction of two, possibly three, new types of silos is underway at the test center at Tyuratam and at some complexes in the field. The purpose of the new silos is not clear. They may be intended to house wholly new missiles, variants of present missiles, or existing types in a program aimed at increased survivability. Some may not be intended for missiles at all. We believe that at least one new missile system has been under development for some time and is probably nearing the flight test stage; it may be intended for one of the new types of silos. It would require about two years of testing to reach initial operational capability.

C. Production of the Soviets' 16-tube Y-class ballistic missile submarine has continued apace. We estimate that these submarines are now being built at the rate of about nine per year. There probably are now 23 operational, five or perhaps six in various stages of fitting-out and sea trails, and another 12 on the building ways. Besides the nuclear-powered Y-class, there are missile submarines of earlier design which could contribute to the intercontinental attack mission.

D. The USSR has not, in recent years, shown equal interest in manned bombers of intercontinental capability. No heavy bombers are currently in production, and the design of types now in service—the Bear and Bison—dates from the 1950s. Testing of a new strategic bomber—the Backfire[ ]—is probably well under way, however, and the first units could be operational by late 1973 if equipped with existing weapons. All but the Air Force believe that this aircraft is best suited for use against Europe and Asia; the Air Force believes that it is suitable for both intercontinental and peripheral operations.

E. The Soviet system of command and control has been considerably improved over the past decade, and it is now flexible, reliable, and highly survivable. It permits Moscow to exercise highly cen-

tralized control over the Soviet forces for intercontinental attack. Soviet writings have considered a number of circumstances under which the order to fire might be given; there is little evidence from these or other sources that the Soviets consider a bolt-from-the-blue first strike a workable strategy, or that they think a US first strike likely. In the event of war, the primary mission of the Soviet strategic attack forces would probably be the classic one of destroying the enemy's war making potential: ICBM launchers and launch control facilities, submarine and bomber bases, command posts, communications and power facilities, and industrial centers.

The Principal Types of Intercontinental Ballistic Missiles

F. The SS-11 Mod 1, by far the most numerous of Soviet ICBMs, is estimated to have a circular error probable (CEP) at intercontinental range of [ ] and a yield [ ]. Thus it is a weapon best suited for use against soft targets—cities, industrial installations, and some military targets. It can reach all parts of the US, but has also been tested to ranges as short as 500-600 n.m., indicating much flexibility in its possible uses. In 1969, testing began on two versions of a modified SS-11 having greater throw weight and increased range. One, the Mod 2A, has a new re-entry vehicle (RV), a warhead probably yielding [ ] and what are probably one or more exoatmospheric penetration aids. The other, the Mod 2B, has three RVs which are not independently targetable. Each RV has a warhead with an estimated yield [ ]. The SS-11 remains a soft target weapon; the two new versions are most likely intended to improve the system's ability to penetrate antiballistic missile defenses.

G. The SS-9 exists in four variants: Mod 1, which carries an RV weighing about 9,500 pounds; Mod 2, whose RV weighs about 13,500 pounds; Mod 3, which has been tested both as a depressed trajectory ICBM (DICBM) and as a fractional orbit bombardment system (FOBS); and Mod 4, which carries three RVs. Leaving Mod 3 aside for the time being, our analysis of evidence on the capabilities of Mods 1, 2, and 4 turns up some perplexing problems.

26. *(Continued)*

H. There is general agreement that the SS-9 was developed, early in the 1960s, to provide better accuracy and a larger payload than the SS-7, presumably for use against hard targets—i.e., the US Minuteman system. The Mod 1 appears reasonably well adapted for this purpose. In 1965, however, the Soviets began to test the Mod 2, which, with its heavier payload, was estimated to have a yield [ ] These tests were pursued with great vigor, and the Mod 2 was actually deployed before the Mod 1. [ ]

[ ] But the Mod 2 has never in its numerous flight tests actually demonstrated enough range to reach any Minuteman complexes. We believe that its demonstrated range could be increased sufficiently to cover all of them by using up more of the available propellant, removing telemetry packages, etc. Yet it remains curious that the Mod 2, alone among ICBMs except the SS-13, has never been tested to what we would presume to be its intended operational range.

I. The kill probability of a missile against hard targets is more sensitive to accuracy than to yield. The accuracy of the SS-9 cannot be ascertained from observations. It must be deduced [ ]

[ ] In the Intelligence Community, opinions as to the CEP of the SS-9 range from a low of 0.4 n.m. to a high of 0.7 n.m. The significance of these differences is considerable.[1] It is generally agreed that in actual operational employment, accuracies in the force as a whole would be somewhat poorer.

J. In sum, with respect to the capability of the SS-9 Mod 2 against Minuteman, we have estimated that it can have sufficient range to reach all targets even though such range has not been demonstrated in tests.

[1] See paragraphs 32, 33, and 34 for a discussion of the effect of differences in accuracy and yield.

26. *(Continued)*

We see no reason to doubt that in the event of general war the Soviets would use it for whatever it could accomplish against the Minuteman system. But, the Soviets would have to deploy several times the present number of SS-9 Mod 1s and Mod 2s, with their present capabilities, before achieving a force which would pose a serious threat to the Minuteman force as a whole. This brings us to a consideration of the Mod 4.

K. In August 1968, the Soviets began testing the SS-9 Mod 4, carrying three RVs. By April 1970, they had conducted 17 tests, about the usual number for a missile before it goes into operational deployment. In these tests, the three RVs [redacted] were not independently targetable, and the weapon as tested was not a multiple independently targetable re-entry vehicle (MIRV) [redacted] there was no evidence that the Mod 4 had been operationally deployed.

L. In October 1970, tests resumed, and by 5 November there had been four more. One of these was like the earlier tests; one was a failure. The two others exhibited [redacted] This led us to point out in NIE 11-8-70, "Soviet Forces for Intercontinental Attack", dated 24 November 1970, TOP SECRET, RESTRICTED DATA, that a system of the type implied by preliminary analysis of these tests could have the capability of attacking independently three separate targets, [redacted] In-depth analysis of the four latest tests has cast doubt on the preliminary judgment of last year that the Soviets appeared to be testing a MIRV. There are now divided views: some agencies believe that the Mod 4 is and will remain a soft target multiple re-entry vehicle (MRV); others believe that it could be either an MRV or an MIRV with limited targeting flexibility; still others think that it was intended to be an MIRV, but that development may have been discontinued.[2] No further tests of the Mod 4 have taken place since last fall.

[2] See paragraph 52 for a detailed presentation of the positions of the various agencies.

26. *(Continued)*

[ ] there are indications that the Mod 4 is being deployed [ ] All are agreed that if this is so, what is now being deployed is an MRV.

M. Returning now to the SS-9 Mod 3, as observed above it has been tested both as a DICBM and as a FOBS. In neither form does it have sufficient accuracy to attack hard targets effectively; its apparent function would be to attack soft strategic targets, avoiding early detection by the US Ballistic Missile Early Warning System. (New US warning systems give promise of reducing or eliminating this advantage.) The Mod 3 appears to have limited capability as a FOBS. It is agreed that it has been deployed only to a very limited extent, and that its future deployment, if any, will also be limited.

II. SOVIET POLICY AND FUTURE PROGRAMS

N. The broader reasons for the USSR's energetic buildup of intercontinental attack forces are neither complex nor obscure. In the early 1960s the Soviet leaders, politically and ideologically hostile to the US, and thinking and behaving as rulers of a great power, perceived that in this particular respect their military forces were conspicuously inferior to those of their most dangerous rival, the US. Consequently, they set themselves to rectify the imbalance—to achieve at a minimum a relation of rough parity. Parity in this sense cannot be objectively measured; it is essentially a state of mind. Such evidence as we have, much of it from the Strategic Arms Limitation Talks (SALT), indicates that the Soviet leaders think that they have now generally achieved this position, or are about to achieve it.

O. Many aspects of the present force structure are also susceptible to simple and probably correct explanation. The Soviets built a large number of ICBMs in order to match—and now to surpass—the number of US ICBMs, and also to increase the probability that many would survive an initial US attack. They built missile-launching submarines which are highly survivable when deployed, and they retained a manned bomber force as yet another option. The intercontinental attack force is obviously capable of being used in war, but there is no reason to believe that the Soviet leaders intend deliberately to make nuclear war. The force is an attribute of power, an instrument to support policy, a deterrent to the US.

26. *(Continued)*

P. Certain features of the Soviet system have affected the way in which decisions are made, and by whom. In the case of military policy and programs, decision-making is probably centered on two key elements—the military and military-industrial authorities who formulate new programs, and the top political leaders. The latter have the final say, but they must operate in a context of other forces and take them into account. Decision-making appears to involve clusters of advisory and executive bodies which are likely, at times, to be in competition with one another. Bureaucratic pressures, conflicts, and constraints may be heavy on occasion. We think it unlikely that observed Soviet programs are the product of a carefully thought out strategy or rationale which is undeviatingly executed. It is probably fair to say that the system is characterized by conservatism, both in making new proposals and in disposing of them.

Q. Looking to the future, we have little basis in evidence for estimating the content of specific decisions on strategic policy or particular weapon programs. It seems clear that the Soviet leaders intend to maintain at a minimum such forces as will continue to give them—in their own phrase—a sense of "equal security" with the US. One method of doing so might be through an arms limitation agreement; they appear seriously interested in this possibility. We do not know whether an agreement will be reached, or on what terms. If it were indeed concluded, the development of Soviet intercontinental attack forces would be subject to its terms. While we have given consideration in this Estimate to possible effects of a SALT agreement, we confine ourselves mainly to a consideration of the situation in the absence of agreement.

R. With the general attitudes and policies of the USSR being what they are, it might seem obvious to infer that the Soviet leaders will strive to achieve marked superiority over the US in strategic weaponry. We do not doubt that they would like to attain such a position. The question is whether they consider it a feasible objective—whether they believe the chances of success good enough to justify allocation of the necessary resources, adjustment to the political implications of an all-out arms race, and acceptance of the risk that instead of surpassing the US they might fall behind, especially in the technological competition. They might, in any case, think it feasible to seek a strategic posture that, while falling short of marked superiority, makes clear that the Soviets have advantages over the US in certain specific areas. For

example, they can now claim an advantage in numbers of ICBM launchers. Whether or not such advantages are significant militarily, they help to dramatize the strategic power of the Soviet Union.

S. But even if Soviet intentions go no further than maintenance of "equal security", their arms programs are bound to be vigorous and demanding. This is in part because Soviet leaders must have an eye not to what forces the US has at present, but to what it can have, or may have, in future years. In this respect, they are likely to be cautious—to overestimate rather than underestimate the US threat. Moreover, the weapons competition nowadays is largely a technological race; the USSR is impelled to press forward its research and development lest it be left behind. Soviet weapon programs also tend to attain a momentum of their own; the immense apparatus of organizations, installations, personnel, vested interests, and so on, tends to proceed in its endeavors unless checked by some decisive political authority.

T. On the other hand, there are constraints upon Soviet arms programs. The most obvious is economic; resources are not unbounded; the civilian economy demands its share; one weapon system competes with another for allocations; and intercontinental attack forces compete with strategic defense and general purpose forces. The various bureaucracies with interests in one or another area compete partly with rational argument and partly in sheer political infighting. Soviet leaders must also consider how far they may wish to press their own programs lest they provoke countervailing programs in the US. And they must assess not only the present and future US threat, but also that from China, and elsewhere.

U. While the foregoing considerations probably govern the nature of Soviet decisions as to future weapon programs, they provide us with little or no basis on which to estimate in detail what these programs will be. We have never had solid evidence on the problem, and there is no reason to expect that we shall have such evidence in the future. Moreover, in the present era the rapidity of technological advance tends to produce especially vigorous action and reaction between military programs of the USSR and the US.

V. Yet the possibilities are not unlimited, certainly in the next five years or so. For one thing, intercontinental weapon systems are of such

complexity that their development, testing, and deployment take a long time. We can observe the testing phase, and thus project potential deployments. It usually takes about two years from the time we observe the first flight test of a new ICBM until that system becomes operational in the field. The interval for SLBMs is about the same or longer, and for bombers it is much longer. We can therefore estimate with much confidence that the kinds of weapon systems deployed by the Soviets during the next two years or so will be those already in operation or in the late stages of development. Even in the period from two to five years from now the force will be composed largely of existing kinds of delivery vehicles, but it could change substantially by the end of the period of this Estimate.

W. Because of the lead times involved in construction and deployment, we can also be highly confident of the number of launchers of intercontinental weapons which will be operational for periods up to about two years from now. Thereafter uncertainty increases as the time period of projection increases. Some reasonable limits to this uncertainty can nevertheless be derived from our knowledge of past deployment rates, especially those obtaining at a time when the Soviets appeared to be making a particularly vigorous effort.

X. The most significant developments in Soviet forces for intercontinental attack during the next several years will probably lie in qualitative improvements to the ICBM force. The most important of these are likely to be in accuracy of missiles, in MIRVs for them, and in survivability.

1. *Accuracy.* There is still no direct evidence that the Soviets are taking the steps that would be required for them to improve significantly the accuracy of their ICBMs. Improvements sufficient to give system CEPs of about 0.25 n.m. could come about through normal advances in present technology, but an improvement to say 0.15 n.m. would require the Soviets to go to wholly new techniques of guidance. Whether they decide to do this will depend on their future targeting requirements and particularly on how much stress they place on improving capabilities to attack land-based ICBMs.

2. *Multiple Independently Targetable Re-entry Vehicles.* We continue to believe that the Soviets will develop MIRVs for their ICBMs. We expect a flight test program to start soon involving a new missile with MIRVs and with better hard target capabilities

26. *(Continued)*

than the SS-9. About two years of testing would be required for this missile to achieve an initial operational capability. The Soviets probably could develop MIRVs based on the technology of the SS-9 Mod 4 with only one year of flight testing, but such MIRVs could not, in so short a time, be made more accurate than the present SS-9—that would require an improved guidance system and about two years of flight testing. Although there are differences of opinion on the future of the SS-9 Mod 4, all agree that it is unlikely to be developed as a hard target weapon if a new missile with hard target MIRVs is in fact to become available in the next two years or so.

3. *Survivability.* The USSR's concern about the survivability of its ICBM force is likely to increase, as the US deploys increasingly large numbers of independently targetable RVs. In addition to the employment of active defenses, survivability can be achieved through hardness and mobility. The new silos which are believed to be under construction will probably be harder than existing types. The Soviets may also pursue development of land-mobile ICBMs, but we believe this less likely than we did a year ago.

Y. With respect to ballistic missile submarines, the Soviets already have about 40 Y-class units in service or under construction, and may continue this program for some time. By the end of 1973 the Soviets will have as many launchers on Polaris-type submarines as the US, and these launchers will constitute a substantial portion of their forces for intercontinental attack. A new missile, the 3,000 n.m. range SS-NX-8, has been undergoing flight testing since June of 1969. Although this missile would be a substantial improvement over the 1,300 n.m. SS-N-6 now carried by the Y-class, the SS-NX-8 appears too large to be carried by Y-class submarines as they are currently configured, and we have yet to identify a new submarine class which might be designed to carry this missile. If the Soviets do in fact deploy a new submarine for the SS-NX-8, the first units probably could not reach operational status until about 1975, by which time the Soviets could have SLBMs equipped with penetration aids or multiple warheads, possibly including MIRVs. As an alternative to a new class of submarines, the Soviets might develop a new missile of extended range (at least 2,000 n.m.) for the present Y-class. If so, the first retrofitted Y-class unit probably could not be operational before late 1974, even if testing of a new missile began soon.

26. *(Continued)*

Z. The present fleet of intercontinental manned bombers will probably remain about the same size or diminish only slightly up to the mid-1970's. In time, however, increasing numbers of aircraft in the current inventory are likely to be phased out. We believe that the Backfire is best suited for peripheral operations, but that it may have some capability for intercontinental attack. If so, it could be used to replace or augment existing elements of the intercontinental bomber force, provided a suitable tanker force were also developed. All but the Air Force, however, believe that our knowledge of this aircraft is still too limited to justify a confident judgment of its capabilities and future employment. The Air Force believes that the capabilities of the Backfire indicate a Soviet intent to employ the aircraft in both intercontinental and peripheral operations.

* * * * * * *

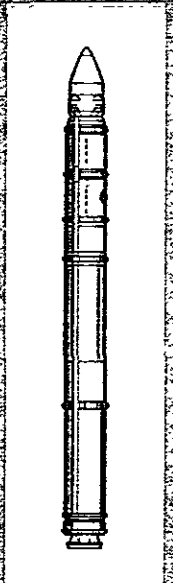
AA. The various uncertainties summarized above make it evident that no exact estimate of the future Soviet force structure could be defended. We have therefore constructed, in Section X of this Estimate, several illustrative models to depict various possibilities. The first two, called SALT 1 and SALT 2, represent postures the Soviets might develop under the terms of a postulated SALT agreement. SALT 1 assumes that the primary Soviet objective would be the maintenance of a strong retaliatory capability. SALT 2 illustrates a maximum Soviet effort within the constraints of the postulated agreement and is designed to improve counterforce as well as retaliatory capabilities. We have constructed several other illustrative force models which consider possible Soviet courses without an arms limitation agreement. The first of these, Force 1, is illustrative of the results of a Soviet decision to stay with what they have plus the minimum improvement necessary to maintain what they might consider an adequate deterrent. It seems highly unlikely that the Soviets would be satisfied with such a force. Another model, Force 4, is a sample of what we believe would be a maximum effort short of converting to a wartime basis; this also appears highly unlikely. Force 3, without going as far as Force 4, represents something the Soviets might undertake if they were to place top priority on the early acquisition of a capability to knock out virtually all of the US ICBM force; we also think this unlikely.

26. *(Continued)*

BB. Between these outer limits of reasonable force structures we have set forth three others, designated respectively 2A, 2B, and 2C. These differ primarily in the rapidity with which the Soviets, either for technological or other reasons, deploy MIRVs, and in the extent of deployment of new silos. They also reflect some differences in general force structure which would seem likely to obtain because of differences in MIRV development. Our estimate is that Soviet intercontinental attack forces are likely to fall somewhere in the area depicted by the "2" series of force models, but we wish to emphasize that these and the other models are strictly illustrative, and not to be regarded as confident estimates or as projections for planning. As one moves beyond the next two years or so, all projections become increasingly uncertain; beyond five years they are highly speculative.

PART III

ARMS CONTROL, SOVIET OBJECTIVES, AND FORCE PLANNING, 1968-83



The emergence of détente and the first Strategic Arms Limitation Treaty (SALT-I) in 1972 did not prevent or slow the substantial modernization and general expansion of Soviet armed forces that began with Khrushchev's fall from power in 1964 and continued for over two decades. This meant first building Soviet strategic forces up to SALT limits and then an extensive "force modernization" program. The more modern Soviet ICBMs were mostly MIRVed and had improved accuracy and greater range than the single RV missiles they replaced. The Soviets thus significantly improved the flexibility and effectiveness of their strategic missile forces while remaining within SALT restrictions. Soviet strategic naval forces also expanded up to the SALT limits, through the continued construction of Yankee-class SSBNs, supplemented from 1972, and later supplanted by the newer Delta-series boats. The Soviets continued to place less emphasis on their heavy bomber force, which was actually reduced in this period, although they began to deploy a new medium bomber, the Tu-22M Backfire in the mid-1970s.

This apparent dualism in Soviet policy—arms control and détente on the one hand, force modernization and expansion on the other—reinvigorated the debate over Soviet strategic intentions and figured prominently in military policy NIEs written in this period.

Part III:
Arms Control, Soviet Objectives, and Force Planning, 1968-83

The broader reasons for the USSR's energetic buildup of its forces for intercontinental attack are neither complex nor obscure. . . . The force is an attribute of power, an instrument to support policy, and a deterrent to the US.

NIE 11-8-72

Soviet Strategic Objectives and Force Planning

The question of the objectives that underlay Soviet strategic force planning occupied the intelligence community from the moment the Soviets acquired long-range offensive weapons. In general, the debate over the sources of Soviet nuclear strategy hinged on the relationship between Soviet actions and policy, Marxism-Leninism, and Soviet strategic doctrine. Although analysts in the intelligence community agreed that Soviet global ambitions were, at bottom, hegemonic in character, they were uncertain how the Soviets might meet the demands of their largely ideologically inspired quest for world dominion.

The central problem facing strategic forces analysts was the question of strategic supremacy: how far would the Soviets go in building up their strategic nuclear forces, what means would they use, and what would they be willing to sacrifice to achieve some kind of superiority over the United States? That achieving qualitative and quantitative superiority in military forces was a good idea was more than self-evident to Soviet military planners—it was a central tenet of their strategic doctrine.[1] Difficulties arose when Western analysts tried to determine how closely the Soviets would seek to approach the *ideal* of strategic supremacy in their military programs. Would they seek across-the-board military supremacy, or would they focus on building up, say, their ground forces and settle for strategic nuclear forces adequate for deterrence? Did the Soviets believe that numerical superiority could be used to counterbalance the West's undoubted technological superiority? Or would they seriously enter into direct technological competition with the West, attempting to match US strategic forces system for system? Finally, and most important, if the Soviets once achieved a margin of superiority, how would they use it? Were they committed to peaceful competition with the West, or were Soviet strategic programs nothing more than a buildup for war?

[1] See Scott and Scott, passim.

The emergence of détente and the first Strategic Arms Limitation Treaty (SALT-I) in 1972 did not prevent or slow the substantial modernization and general expansion of Soviet armed forces that began with Khrushchev's fall from power in 1964 and continued for over two decades. This meant first building Soviet strategic forces up to SALT limits and then an extensive "force modernization" program. The more modern Soviet ICBMs were mostly MIRVed and had improved accuracy and greater range than the single RV missiles they replaced. The Soviets thus significantly improved the flexibility and effectiveness of their strategic missile forces while remaining within SALT restrictions. Soviet strategic naval forces also expanded up to the SALT limits, through the continued construction of Yankee-class SSBNs, supplemented from 1972, and later supplanted by the newer Delta-series boats. The Soviets continued to place less emphasis on their heavy bomber force, which was actually reduced in this period, although they began to deploy a new medium bomber, the Tu-22M Backfire in the mid-1970s.

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DISCUSSION

I. THE LINKS BETWEEN MILITARY AND FOREIGN POLICIES

1. There are important elements of continuity underlying Soviet concepts of military power and its uses. These derive primarily from geopolitical considerations, but are influenced by ideology as well. Certain broad aims of Soviet military policy can thus be described today in much the same way as a decade or more ago: (a) security of the homeland and of the world communist "center"; (b) protection of the "gains of socialism" and more specifically maintenance of loyal communist regimes in Eastern Europe; (c) fostering awareness everywhere of Soviet military strength and readiness so as to support a strong foreign policy aimed at expanding Soviet influence.

2. These constants notwithstanding, Soviet military policy has changed over the years in many of its aspects. The factors that have most visibly influenced these changes in recent years are the USSR's perception of its own power vis-à-vis the other major states of the world, its estimate of the source and nature of the external threat, and the influence of science and technology on Russian forces and on the forces of potential enemies. The present mix among strategic offensive, defensive, and the various elements of general purpose forces is, for example, a far cry from that which prevailed during Stalin's time, when the emphasis was on massive conventional forces. This change, in the broadest sense, reflects changes in the nature of the threat and in the impact of technology. It also reflects in part certain changes in the approach of Soviet leaders since Stalin's departure. There continues to be a personal element in Soviet military decision making but this now appears less important than it once was; the calculations of risk and gain made by the present regime contrast markedly with the impulsive quality of some of Khrushchev's decisions.

3. Not only have developments in other parts of the world caused Russian assessments to change, but many of the mechanisms and circumstances within the USSR which help

to shape policy have also altered. The relationship between political, economic, and military interests (and among the proponents of these interests) has changed. Progress (or lack of progress) in disarmament negotiations has become an increasingly important consideration; and the formulation of tactics and strategy has become more complex as the USSR has begun fully to play the role of a superpower.

4. In trying to achieve its aims, the present Soviet leadership, like its predecessors, has been intensely concerned with the international balance of power—in Soviet terms, "the relation of forces". In the Russian tradition, military power bulks large in the conduct of foreign policy. This is true not in the sense that the Soviets are irresistibly drawn to the actual use of force to achieve foreign policy objectives although on occasion they have taken that course—but rather in the sense that they believe in the implied threat of its use as a way of affecting the attitudes and decisions of other states. In giving major weight to military power as a determinant of the conduct of states, the Soviet leaders do not measure such power entirely by the numbers, i.e., of missiles or divisions. They also judge it in the context of more general considerations: they attach great importance to underlying social-economic forces, to the degree of internal unity or division to be found within adversary states, and to the capacities of opposing leaders and their will to confront risks.

5. The Soviets have clearly become more confident than ever before regarding the "relation of forces" between the USSR and the US. They have achieved what they evidently regard as rough strategic equality with the US, and their acceptance of strategic arms limitation talks (SALT) has been based at least partly on the desire to have the US formally recognize this equality. Moreover, they have ample reason to regard their general position in the world as greatly improved since the low point of the Cuban missile crisis in 1962. Although they face persistent internal problems, particularly in the economic sphere, their posture and policy abroad have led to a betterment in their relations with a variety of non-communist governments. Inter alia, they have largely repaired the damage to their interests posed by crises in the Middle East in 1967 and in Eastern Europe in 1968. And the Soviets perceive that the world influence of the US has declined, that its alliances have been under strain, and that it has been faced with considerable internal discord—involving sharp clashes over external policies.

6. The Soviets do not now regard NATO as an imminent military threat, and they see opportunities to pursue a more forward diplomacy of their own in Western Europe. In view of the changing relationship between the US and Western Europe, and of persistent West European desires for détente, the Soviets now see themselves in a good position to promote long-standing objectives in Europe: recognition of the status quo in Eastern Europe and in Germany, the achievement of greater leverage in Western Europe, and eventually, a withering of Atlantic ties and the withdrawal of US forces.

7. While some of the USSR's concerns in Europe have eased during the past decade, the problem of China has grown; the Soviet leadership now seems to regard the rivalry with China as having become as intense as the rivalry with the US or more so. In addition to the requirement the Soviets see for keeping pace with the US and its ongoing strategic program, they must give appropriate weight to China's potential. In the nearer term they must take account of the emerging Chinese peripheral strategic capabilities—medium bombers, medium-range ballistic mis-

siles, and intermediate-range ballistic missiles—which they regard as directed primarily against them. The Soviets also must guard against further Chinese attempts to build political influence, even in Eastern Europe. Moreover, Moscow continues to face the threat of being outflanked politically on the left by the Communist Chinese, particularly in the underdeveloped world.

8. The Soviets' own increasing involvement in the Third World has been paralleled by a growing capability to undertake new activity there. Soviet military forces which can operate effectively in distant areas have developed as a part of the strengthening of their overall military posture. But such forces, together with the continuing emphasis which Moscow gives to its military assistance programs, support the enlargement of the USSR's international role.[2]

9. The Soviets are clearly aware that their moves to expand and strengthen their influence outside the communist camp will not always go smoothy. Their détente efforts in Western Europe could over time have adverse effects on their position in Eastern Europe. They have been obliged to assume larger commitments and to accept some increase in military risks in order to preserve their prestige and influence in parts of the underdeveloped world, notably in the Middle East and South Asia. They have also found in many places that nationalism and parochial self-interest are more vigorous forces than they had supposed and not easy ones to harness. In other places they have been disappointed by the ineptness or instability of regimes they have supported. In a number of cases the extension of aid has proven more expensive and less useful to Soviet aims than Moscow had anticipated. For reasons such as these, the Soviets recognize that the contest for international primacy has become increasingly complicated and less amenable to simple projections of power.

10. Despite this, there is much confidence in the Soviet attitude, and on two principal counts. First, the Soviets probably feel that they are free of any immediate threat to their national security. The immediacy of the threat posed by NATO is seen as having diminished; the Chinese threat is seen as potentially grave but not immediately so. Secondly, by achieving equal status with the US in strategic terms, the Soviets believe they have earned at last an equal voice in world affairs. "There is not a single question of any importance", Foreign Minister Gromyko told the Soviet Party Congress last April, "which could at present be solved without the Soviet Union or against its will".

II. SOME INTERNAL FACTORS BEARING ON MILITARY POLICY AND PROGRAMS

A. Economic Considerations

11. Resource constraints upon the development of Soviet military forces and programs are relative, not absolute, and decisions on expenditures probably derive as much from bureaucratic processes and pressures as from carefully thought out political and economic decisions. For the most part, physical capacity does not constitute a constraint; the plant capacity of Soviet industry existing or under construction is adequate to support high levels of output of land armaments, aircraft, warships, and missiles. Moreover, given the great size of the Soviet economy, an expansion of physical capacity could be undertaken relatively easily; even low growth rates increase available resources considerably. Thus the USSR would not be *obliged,* for purely eco-

[2] See Annex I, NIE 11-10-71, "The Uses of Soviet Military Power In Distant Areas", dated 15 December 1971, SECRET.

nomic reasons, to forego military programs its leaders see as essential.

12. On the other hand, the increasing technical complexity of the military forces, together with the growth of military research, development, test and evaluation (R&D),[3] plus civilian space programs, has produced a rapid increase in requirements for highly trained technicians and managers and the most advanced equipment and materials. The military's first claim on these scarce resources has contributed to the difficulties that the Soviets have experienced in increasing material incentives for the labor force. It has also contributed to the problems of introducing new technology into the civilian economy and, to some extent, to the resulting decline in the productivity of new investment. The interest of the Soviet leaders in SALT is in part a consequence of a desire to limit the economic cost of further expanding and strengthening the military establishment. Consequently, the perennial problem of resource allocation is a major issue in deliberation on Soviet national policy and is likely to remain so in the years ahead. But the same, of course, can be said of the US. To be sure, economic resources in the USSR are more limited than in the US, but political and social controls are such that the Soviet leadership enjoys relatively great freedom of action in deciding how to allocate them.

B. Political and Military Influences on Decision-Making

13. Certain distinctive features of the Soviet system affect the way in which decisions on military policy are made. The decision-making power over a very broad range of matters is reserved to a small collective in the top political leadership. The principle of close and relatively detailed Party supervision of military affairs is well established. The military, in turn, have become deeply involved in the Party system.

14. The Soviet military do not, by any means, constitute a separate political element and they do not view the country's future in terms which are basically at odds with the concepts of the Party. But they do constitute an interest group which must contend with other bureaucratic interests. The present political leaders, unlike Khrushchev, have preferred to avoid direct conflict with the military in the area of the latter's professional competence. In the case of military programs, the members of the Politburo appear to call on the military to formulate requirements and recommendations. While they have machinery for screening and evaluating such recommendations, they appear, in practice, to be heavily dependent on the technical judgments of their military advisers.

15. The military leadership is not, of course, always of one mind. There is ample evidence of rivalries in the past; these became acute, for example, when Khrushchev was trying to build up the Strategic Rocket Forces at the expense of the general purpose forces, but they have been evident on other issues as well. Such differences, though now muted, almost certainly continue. Yet the combined arms tradition is strong, and since the time of Khrushchev, the military appear to have been successful in working out their internal differences and presenting a united front. Part of the reason, perhaps, is that under the collective leadership the total military expenditures have increased each year, which has made the competition for resources among the various military contenders less keen than if expenditures were constant or diminishing.

16. Despite the institutional power of the military, and of the scientific establishment, defense industry, and other groups involved in defense planning, the political leadership—

[3] When the term military R&D is used in this estimate, it does not include civilian space expenditures.

i.e., the Politburo—clearly has the final say. Beyond their role in determining overall political-military policy, Politburo members on occasion project themselves into quite narrow and specific matters. For the most part, however, they must operate within the context of these other forces, and not only take them into account, but often—perhaps for lack of effectively formulated alternatives—approve what they advise. The growing complexity of the decisions to be made, and the impossibility of acquiring independently all the information needed to make them, impose this limitation on the leadership.

17. One consequence of the whole process seems to be a tendency toward the conservative—toward trying to cover all risks, toward working deliberately along established lines, toward pressing for consensus to avoid strong opposition, toward minimizing the chances of error or waste. In many areas of weapons development and procurement, solutions seem to be devised more by building on proven approaches than by vigorously pushing the state of the art. And to some extent the process makes it more difficult to shift resources from one major military program to another, or to change the size and overall disposition of military forces.

III. ISSUES OF POLICY: OPTIONS AND PROBABLE CHOICES

A. What Kind of Strategic Competition With the United States?

18. Probably the single most important issue of military policy now facing the Russians is their future strategic relationship with the US. As Moscow clearly realizes, the US for years to come will be the only nation with the capability to inflict such damage on the USSR as to challenge its existence. But, in Moscow's view, the character of the problem is no longer the same as it was; the Soviets have finally caught up strategically and the options they can now consider cover a considerably wider range than before.[4] The broad alternate lines of action now available to them can nonetheless be indicated simply: to pursue the competition with the US intensively across a wide spectrum with a view to achieving some kind of superiority, or to find means of narrowing the realm of competition with a view to maintaining something close to rough parity.

19. Yet, for the Soviet leaders, each of these broad choices involves various complexities. There is no easy way to define, in practical terms, what the most appropriate means is to assure continuation of rough parity, or even to specify confidently which weapons and forces on the one side offset which weapons and forces on the other. Such determinations will quickly encounter questions of geographic-strategic asymmetry and will become increasingly difficult as technology changes and new programs are introduced. Thus there is ample room for differences within the Soviet leadership and between leaders and advisers on many particular questions, as well as on more general issues, and in these circumstances the tendency in Moscow will probably be to build in a "safety factor" when they make their calculations.

20. A further problem centers on the provisions Moscow feels it must make—at least over the longer term—to cope with the Chinese nuclear threat. Deployment of certain types of strategic weapons against China may appear to increase, or indeed actually increase, Soviet capabilites against the US—and thus risk escalating the US-Soviet competition.

[4] For discussions of the earlier decisions and programs that brought the Soviets to rough parity see Section I of NIE 11-3-71, "Soviet Strategic Defenses", dated 25 February 1971, TOP SECRET, and Sections I and IX of NIE 11-8-71, "Soviet Forces for Intercontinental Attack", dated 21 October 1971, TOP SECRET.

This seems sure to become a more difficult problem over time as the Chinese develop increased strategic capabilities.

21. Beyond these considerations, there are undoubtedly some in Moscow urging that the USSR maintain the momentum that has brought it to rough parity. The Soviet leadership would no doubt be attracted by the notion that some margin of advantage—or at least the appearance of some margin—could be established without precipitating a new competitive cycle. And they might reason that such a margin, in addition to its possible military benefits, could be useful in political-psychological ways to enhance the USSR's international position.

22. There are, on the other hand, a number of important factors which would deter Soviet leaders, in a quest for advantage, from plunging ahead with programs and deployments so extensive as to upset the strategic balance. They have shown themselves to be sensitive to the high costs of such efforts, and they apparently recognize that major new endeavors on their part would produce a new element of uncertainty in the arms race and risk triggering vigorous US counterefforts long before Moscow's objective could be reached.

23. The policy course the Soviets have chosen, at least for the immediate future, is to attempt to stabilize some aspects of the strategic relationship with the US through negotiations. The above considerations will probably lead the Soviets to recognize a need to set some outer bounds on further deployment activities, lest these activities lead to US charges of bad faith and possible breakdown of the talks. But there will almost certainly be strong countervailing pressures in the USSR to maintain enough deployment to achieve the goals involved in their ongoing programs, as well as to keep up bargaining pressure on the US and to hedge against the failure of the negotiations. Moreover, the Soviets will continue to be hard bargainers. Despite their apparent desire for accommodation, the Soviets have emphasized in SALT that they will not accept any agreement that in their view, would compromise their concept of equal security.

24. During the more than two years of SALT they have laid greatest stress on limiting antiballistic missile (ABM) deployment—presumably because of concern that major US deployments would be destabilizing to their disadvantage, and probably also out of a desire to avoid the heavy new expenditures that any large-scale ABM deployment on their side would entail. However, they realize that any agreement would have to provide for some interim limitations on the further deployment of strategic offensive weapons. They appear to believe that a formal ABM agreement and an interim freeze on some strategic offensive weapons, on terms they can accept, are within reach. They have committed themselves, in the context of such a first-stage agreement, to follow-on negotiations on comprehensive limits for strategic offensive weapons.

25. The Soviets have strong incentives to continue the strategic dialogue as a means of exercising influence over US strategic decisions and keeping the competition in bounds. They would probably see political disadvantage in permitting SALT to fail. Perhaps more importantly, they would see the end of SALT not only as removing a useful means of restraint on full-scale arms competition, but also as possibly compelling them to return to such competition. They recognize that an escalating arms race could be to their disadvantage—beyond the matter of its very high costs, they would see a danger that they could fall behind the US and thus again be in an apparent, if not actual, position of strategic inferiority.

26. A complete breakdown in the SALT talks seems highly unlikely; a possibility

worthy of more serious consideration would be a continuation of the talks over an extended period of time with little progress toward agreement on comprehensive limitations. If such a situation of stalemate developed in the negotiations, the Soviets would presumably make such selective additions to their forces as they judged necessary; they might hope, in the process, to achieve some margin of advantage without triggering a spiralling competition.

27. The Soviets realize, of course, that what they are contemplating in continuing serious negotiations in SALT is not a matter of ending strategic compeition between the two countries, but rather narrowing its focus. There is one important area where intense competition will continue no matter what the outcome of the talks—that of military R&D. Neither side has shown strong interest in limiting such R&D, because of uncertainties about monitoring the qualitative improvements which might result and also because neither side wants to forego the possible advantages which might be involved.

28. Moscow has, for several years, been increasing expenditures and efforts on R&D for military and space purposes; apparently it intends to go on doing so. The Soviet leaders are known to have great respect for US prowess in R&D; presumably they will maintain their own high priority as insurance that they won't again fall far behind in some important strategic regard.

29. Even given such sustained efforts in R&D, the resource savings realized by the Soviets in a state of "stabilized parity" as compared with wide-range competition would permit them, over time, to consider various trade offs. A shift of funds could be made to provide additional or more modern conventional arms for Soviet military forces in Eurasia—and/or for forces to be used in areas more distant from the USSR. A shift of some funds and facilities from strategic military production to the civilian sector would also be possible.

B. Reshaping Forces Facing Europe and China? [5]

30. With respect to their military policy for Eurasia, the most recent and pressing Soviet concern has to do with the threat—present and potential—from China, and with the size and scope of Soviet military deployments required by that threat. A second issue which may be drawing Soviet attention is whether the size and character of the Soviet forces deployed in the West against NATO will continue to make sense in terms of Moscow's reading of the situation there and in terms of the détente policies it is now pursuing in Europe. Moscow's view of this latter issue will be conditioned by the requirement it sees for military deployments sufficient to assure control over Eastern Europe, as well as its need to sustain a strong Warsaw Pact posture *relative* to that of NATO.

Maintenance of Forces or Reductions in Europe?

31. From Moscow's standpoint, there now seems to be a certain loss of force in the argument that Soviet objectives in Europe require the maintenance of troop strength at present levels. Deployments remain large: there are now, for instance, some 27 Soviet and 31 East European divisions in East Germany, Poland, and Czechoslovakia, opposite

[5] Dr. Ray S. Cline, the Director of Intelligence and Research, Department of State, Maj. Gen. Phillip B. Davidson, Assistant Chief of Staff for Intelligence, Department of the Army, and Maj. Gen. George J. Keegan, Jr., the Assistant Chief of Staff, Intelligence, USAF, disagree with some of the views expressed in this section (paragraphs 30-41). Their position is set forth at the end of the section on pages 14-15.

28. SNIE 11-4-73 *Soviet Strategic Arms Programs and Detente: What Are They Up To?*

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APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

SOVIET STRATEGIC ARMS PROGRAMS AND DETENTE: WHAT ARE THEY UP TO?

NOTE

On 9 July 1973, Soviet authorities signed to press an editorial in the CPSU journal *KOMMUNIST* that may well rank as the most optimistic assessment of the prospects for US-Soviet relations printed in the USSR in the last decade. The editorial reiterates that peaceful coexistence does not mean "a weakening of the class struggle in the international arena" but actually promotes such Soviet interests as the "national liberation movement" and the fight against "bourgeois ideology." It struck a new note, however, in asserting that US-Soviet relations have passed a historic and fundamental turning point for the better, that "considerable obstacles" already exist to prevent a reversion to Cold War relations, and that political detente involves military detente in "organic" combination.

On the same day, the Soviets conducted [ ] flight test of a true MIRV system on board the SS-X-17 ICBM.

The purpose of this paper is to attempt to understand the intentions and motivations behind Soviet policy evidenced by recent events: on the one hand, the foreign policy apparently aimed at a far-reaching detente with the US and its allies; and, on the other hand, the vigorous pursuit of weapons development programs that portend substantial improvements in Soviet strategic capability.

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28. *(Continued)*

PRÉCIS

In the months since the strategic arms accords were signed in May 1972, the Soviet government has increasingly stressed its commitment to a policy of detente with the US and the West. Certainly a number of Soviet political interests ride on this policy, Brezhnev's own prestige is heavily tied to it, and its collapse would be very unsettling to Soviet leaders. At the same time, the Soviets have been conducting a vigorous and wide-ranging program of strategic weapons development clearly aimed at a major modernization of their strategic forces.

This Estimate assesses the relationship between these two strains of Soviet policy. Its principal judgments are:

— Current Soviet development programs for ICBM force modernization were well underway in May 1972 and do not appear to have been altered by the Interim Agreement. The Soviets do not feel they are constrained from proceeding with extensive modernization of their deployed ICBM force.

— However, the Soviets have undertaken activities that raise serious questions for the US about the verifiability of the Interim Agreement and about Soviet willingness to respect US unilateral declarations. These activities include: possible development of the SS-X-16 as a mobile ICBM; continuation of concealment practices for this development; and construction of new large silos, beyond the numerical limit established by the Interim Agreement, which are probably intended as launch control facilities yet whose purpose cannot now be verified. The activities in question, although they certainly originated in normal Soviet planning, imply *de facto* tests of US resolve on the rules of SALT compliance. Whether these tests are intentional and how determined they prove to be must await evidence on Soviet responses to whatever protests the US makes.

28. *(Continued)*

— We doubt that the leadership has made a determination either to settle for strategic parity with the US or to strike out for superiority. The former would require abandonment of aspirations too firmly lodged in the Soviet system and pressed by Soviet military institutions to be entirely suppressed; the latter would require more optimism about a declining US vitality and more faith in Soviet prowess than the leaders could confidently hold.

— We believe the Soviet leadership is currently pursuing a strategic policy it regards as simultaneously prudent and opportunistic, aimed at assuring no less than the continued maintenance of comprehensive equality with the US while at the same time seeking the attainment of some degree of strategic advantage if US behavior permits. The Soviets probably believe that unilateral restraints imposed on the US by its internal problems and skillful Soviet diplomacy offer some prospect that a military advantage can be acquired. To this end, they can be expected to exploit opportunities permitted them under the terms of SALT. At the same time, since they cannot be fully confident of such an outcome even as they probe its possibilities, they are probably also disposed to explore in SALT the terms on which stabilization of the strategic competition could be achieved.

— It is quite likely that the Soviet leaders see no basic contradiction between their detente and arms policies. Indeed they have publicly said as much on numerous occasions. Even if they do recognize a potential for conflict, they are probably uncertain about how far the US is prepared to insist on linking the two, and hence are probably inclined to test what the traffic will bear.

— This view of the Soviets' stance implies that they cannot be persuaded to moderate their current weapons programs except on two conditions: (1) they are persuaded that the unrestrained progress of those programs will provoke US reactions that jeopardize both their opportunistic and their minimum or prudential objectives; and (2) at the same time, they can conclude that, if their programs are restrained, reciprocal restraints will be placed on US strategic programs sufficient to assure attainment of Soviet prudential objectives.

28. *(Continued)*

— The question is whether they will come to the view that they cannot have both substantially improving strategic capabilities and continuing benefits of detente—simultaneously and indefinitely. The US is unlikely to obtain answers without further direct exploration and negotiation. The US will not get the Soviets to respond to specific concerns on SALT compliance without frankly stating them. And we have estimated above that they are not likely to curb new programs unless they are persuaded both that US reactions to such programs would jeopardize their minimum objectives and that Soviet restraint would be reciprocated. But precisely what price, in terms of strategic limitations, the Soviets will prove willing to pay for detente remains to be tested.[1]

[1] The Assistant Chief of Staff, Intelligence, USAF, believes this Estimate stops short of answering the original question, "What are the Soviets up to?" The available evidence suggests a strong Soviet commitment to achieving both numerical and qualitative strategic superiority over the US. They probably view detente as a tactic to that end. Whatever its other advantages, the Soviets need detente to bring about a slowdown in US technology. They need to gain access to US guidance and computer technology, to buy time to redress their current technology imbalance and to exploit what they consider to be a favorable opportunity to attain a technological lead during the next 10 to 15 years. The Soviets are no doubt aware of the impact detente is already having on NATO and US defense outlays and in gaining easier access to US technology. Accordingly they must view detente as a principal means of forestalling US advances in defense technology while enhancing their own relative power position.

28. *(Continued)*

THE ESTIMATE

THE WEAPONS PROGRAMS

The Programs of Concern in Brief

1. The Soviet Union is engaged in a broad effort to augment and modernize its strategic forces. Among other things, it has commenced deployment of a new SLBM, the SS-N-8, and is developing a modification of the SS-N-6 carrying multiple reentry vehicles. It is continuing R&D activity on ABM interceptors and radars. The source of principal concern to the US at present, however, is the Soviet ICBM development effort.[2]

2. Since March 1972, the Soviets have commenced flight testing on four new ICBM designs of varying class and characteristics, and even more advanced systems may be in early stages of development. The effort easily matches and may prove to exceed that displayed in the mid-1960s when the SS-9, SS-X-10 (later cancelled), SS-11, and SS-13 ICBMs were under development. Although the four new ICBM designs, the SS-X-16, SS-X-17, SS-X-18, and the SS-X-19 [ ] have evolutionary ties to previous Soviet designs, they represent a very extensive modernization effort. They are evidently intended for a generation of new or highly modified silos; one may be intended for mobile deployment. All demonstrate efforts to improve guidance techniques. The SS-X-17, SS-X-18, and SS-X-19 have demonstrated a MIRV capability. The SS-X-16 has displayed post-boost vehicle (PBV) activity that makes its association with MIRV probable. All four new Soviet ICBM designs can be traced back at least to the 1966-1968 period, prior to the commencement of SALT. About the same time, or shortly after, work on currently emerging MIRV bus/PBV designs probably began.

3. Soviet interest in developing MIRVs and many other aspects of the new development programs were clearly portended at the time of the SAL accords and were generally antici-

[2] Soviet strategic forces will be discussed in considerably greater detail in the forthcoming NIE 11-8-73, "Soviet Forces for Intercontinental Attack," scheduled for completion in October. They are considered here to the extent necessary for purposes of analyzing Soviet strategic policy and detente.

28. *(Continued)*

pated in our earlier estimates. Moreover, the Soviets have repeatedly made clear in SALT that they intended to proceed with modernization of their forces as permitted under the SAL accords. However, the overall scope of the activities we observe, and notably the number of individual programs under way at the same time, suggest a remarkably ambitious and concurrent effort.

4. In addition to such activities, other Soviet activities have been observed which at a minimum raise disturbing questions about Soviet willingness to cooperate in meeting US verification requirements under SALT. The most serious of these is construction of a silo adjacent to the launch control facilities at each of eight existing SS-11 groups—all of them started since the signing of the SALT agreements in May 1972. There are a number of reasons for believing that these structures are intended to house improved and harder ICBM launch control facilities. But unless features are observed which would preclude installing a missile in them, national technical means of verification will not be able conclusively to rule out their possible use as ICBM launchers.

5. Another question arises at the Plesetsk test range where the Soviets are flight testing the solid-propellant SS-X-16. Tenting cover associated with this program[ ]This missile appears to be under development for deployment both in silos and as a mobile ICBM, perhaps using partially deactivated ICBM launch facilities for logistic and handling support.

6. The new construction at Derazhnya and Pervomaysk, and the Plesetsk developments, although they certainly originated in normal Soviet planning, imply *de facto* tests of US resolve on the rules of SALT compliance. Whether these tests are intentional and how determined they prove to be must await evidence on Soviet responses to whatever protests the US makes.[3]

7. The scope of the Soviet ICBM development programs raises questions about what kind of deployment they portend, how far they will go, and what impact they will ultimately have on the US-Soviet strategic relationship. If a launch capability for the new silo-like structures cannot be conclusively ruled out, and the Soviets continue to emplace them, the viability of the 1972 Interim Agreement might come into question. If the Soviets deploy the SS-X-16 as a mobile missile, the strong US unilateral declaration of May 1972 that such a step would violate the intent of the Interim Agreement could come into play. Should mobile ICBMs employ deactivated ICBM launch and support facilities, the intent of the Protocol to the Interim Agreement as seen by the US would clearly be violated. Continued use of tenting at Plesetsk, if challenged by the US, would suggest an insufficiently accommodating Soviet attitude toward SALT compliance and verification.

Possible Motivations and Forces Behind the ICBM Programs

8. The primary motivation driving Soviet strategic programs has been a desire to achieve a force of sufficient overall size and impressiveness to underwrite Soviet *international political objectives.* Soviet policymakers repeatedly assert the view that their military posture is a crucial element of Soviet status as a great power and vital to shaping a favorable "correlation of forces" in the world.

[3] The question of SALT ambiguities is discussed in more detail in the Annex.

28. *(Continued)*

9. Within this broad context, certain operational characteristics are derived from Soviet *military doctrine*. Since the early 1960s, the Soviet military has articulated a view of strategic requirements that links deterrence with the ability actually to wage strategic war to the point of some form of victory. In addition to surviving attack and retaliating against urban-industrial targets, strategic forces, according to Soviet military writings, must be able to attack the enemy's strategic weapons, including hardened targets. The survivability requirement serves as a rationale for a large ICBM force of increased hardness as well as mobile ICBMs. The military requirement for hard-target counterforce capability has provided a rationale for the pursuit of higher throw-weight, MIRV, and increased accuracy for all or part of the modernized ICBM force. A MIRV capability, to which payload and guidance improvements contributed, was also dictated by the need to penetrate possible US ABM defenses of military or urban targets.

10. Another motivation for the new designs is found in the *imperatives of technology*. Technical advances, making the most of the developing state of the art, would lead to new guidance techniques, increased throw-weights, and MIRVs. The natural desire of missile designers to improve their product would have been supported by military and political decisionmakers, who felt impelled to do as much as possible to improve Soviet capabilities.

11. These early decisions on the follow-on programs were probably influenced by very important *institutional interests* in the Soviet defense establishment. The Soviet Strategic Rocket Forces, the premier service, certainly had an interest in moving beyond existing systems. The three major missile design entities presumably pressed the opportunity to engage themselves in follow-on programs. Apparently the Soviet pattern of partly competitive designs from different design entities was repeated in the new programs.

12. Soviet determination to carry these programs forward was probably also reinforced by Soviet *perceptions of US weapons activity*. In the near term, they could observe MIRVing and accuracy improvement for Minuteman and Poseidon and arming of US bombers with SRAM; in the more distant future, the prospect of Trident and the B-1. Soviet publications generally depict US strategic programs as dynamic, purposeful, and threatening. The Soviets certainly also recognize the political hurdles these programs must surmount in Congress, and use various means of encouraging opposition to them. The Soviets have, however, seen US programs proceed despite vigorous opposition in Congress, and they would therefore consider it imprudent to assume that major US force improvement plans will not, in the end, be acted upon. Thus, the Soviet military probably has had as a part of its case for current programs that they are a prudent investment against US force improvements.

13. Finally, although the new ICBM development programs were well under way by the time SALT began in 1969, and ABM proved to be the main concern of the USSR during SALT ONE, the Soviets probably now see some utility in their new ICBM programs as possible *sources of leverage* on the US.

14. Top-level Soviet decisions on proceeding into a vigorous R&D test program preceded the culmination of SALT ONE and the May 1972 Summit. [redacted] new ICBM flight tests commenced in March 1972. If the Moscow Summit and its SALT agreements influenced or deflected the impending test programs, this is not discernible. Brezhnev firmly asserted the Soviet intent to press vigorously on R&D and permissible force modernization. There is

28. *(Continued)*

evidence that the top leaders were very concerned to obtain assurances that one of the future ICBMs could be deployed within the constraint of a 10-15 percent increase in the size of silos for small ICBMs.

Where Do the Soviets Go From Here?

15. The Soviets certainly appear determined to press their current ICBM test programs forward to the point where they could deploy any or all models with MIRVs. It is difficult to project with confidence the kind of deployed force that will emerge from these programs, although possible force variants can be conjectured. What is clear is that the Soviets intend the present development effort to yield a major modernization of their deployed forces. There is evidence that the Soviets are now planning to produce more of some types of new missiles than required purely for R&D testing.

16. The Soviets have in SALT often spoken of mutuality of deterrence, but they have not accepted a concept of parity in numbers of intercontinental delivery vehicles. They refer to a more general idea of "equal security" with the US as an objective. But Moscow has not regarded "equal security" as dictating equality in numbers. On the contrary, "equal security" has been the basis of Soviet demands for larger numbers of Soviet intercontinental delivery vehicles, for example, as compensation for forward based systems. Qualitatively, they no doubt consider that it requires the attainment of technological equality with the US, which, in the most immediate terms, means the freedom to develop and deploy MIRVs. More broadly, they speak of the need to insure against unexpected technological breakthroughs by the US.

17. In addition, they have been factoring requirements for peripheral attack, particularly against China, into operational deployments of central strategic forces, notably by deploying some SS-11s so as to include full coverage of China. They have suggested at SALT that peripheral attack requirements should be gauged in estimating overall Soviet force requirements, but they have not indicated how these requirements are to be reconciled with an equitable US-Soviet balance.

18. The experience of SALT ONE probably heightened the Soviet appreciation of the leverage their programs could have on negotiations. The Soviets had dynamic programs for the deployment of new launchers at the time, while the US did not. Soviet leaders may well perceive the qualitative momentum of present efforts as imposing negotiating pressure on the US similar to that generated by their continuing ICBM and SLBM deployments during most of SALT ONE.

19. Since the US Government also intends to press force modernization programs allowed under SALT, the need to hedge against US force improvements probably continues to be a strong motivation behind current Soviet weapons development. Soviet leaders no doubt believe that the Soviet effort to match the US qualitatively is shooting at a moving target and that laxity on the Soviet part may concede future advantages to the US.

20. Finally, Soviet political and military leaders, or at least some of them, probably believe that a combination of vigorous weapons development, a skillful detente diplomacy, and a good measure of luck in the form of

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US laxity, could at some point deliver them a meaningful strategic advantage. They would see greater strength as improving their foreign policy positions and at least marginally improving war outcomes for them if deterrence failed. Beyond this, how they might gauge such an advantage in operational terms is not obvious since the kind of superiority that the US once had over the USSR would hardly appear feasible to them in the foreseeable future. But they could persuade themselves of the value of a credible threat to Minuteman even if other components of the US Triad remain highly survivable.

21. As noted earlier, Soviet military writings of the last 10 years reflect a clear concern for war-fighting capabilities, including counterforce capabilities. Some of these writings have rejected the notion that the destructiveness of nuclear weapons renders strategic war "unwinnable" and thereby posit, in principle, that strategic superiority is essential. While the broad outlines of military doctrine are subject to top-level political approval, it is not clear to what extent individual Politburo members accept all the precepts of that doctrine, particularly as it bears on the "winnability" of nuclear war. The Soviet positions at SALT suggest that, with regard to retaliation, the Soviet leadership accept the view that both the US and USSR possess more than enough nuclear weapons to bring about a world-wide catastrophe, that the side attacked first would retain a retaliatory force that would make a war between the US and the USSR disastrous for both. However, while the political leaders refer with apparent sincerity to the futility of nuclear war, they accept the idea of maximizing the effectiveness of the force they would use if deterrence fails. Accordingly, there has been a substantial Soviet investment in developments and deployments that can best be explained as an effort to enhance their strategic capabilities, including counterforce missions.

22. The Soviet regime faces new conditions bearing on strategic choices. The missile build-up of the 1960s has attained for the USSR recognized status as an equal of the US in the strategic arms field. China has come to be a major and permanent strategic military problem for Soviet planners. The current stage of the SALT process requires a closer dialogue between Soviet military and political leaders on military and political goals. SALT tends to give the "action-reaction" phenomenon in the arms competition more substance than it had in the past by placing the arms decisions of both sides in a negotiating context. The ABM Treaty requires a reappraisal of Soviet strategic doctrine in which extensive active defense was seen as a necessary part of a viable war-fighting posture.

23. In deciding on and implementing strategic force policy, Soviet leaders face a multitude of specific choices. Diverse pressures bear upon them, particularly pressures from military claimants and weapons producers. But it is difficult to imagine these choices being made without a general rationale concerning the kind of strategic relationship with the US they desire. The range of policy directions open to the Soviets could be stated as: (a) acceptance of strategic parity with the US on the basis of explicit SALT undertakings and some element of self-restraint, with the result that the strategic weapons competition substantially subsides; or (b) a quest for strategic superiority, in which they try to use SALT to restrain US programs while Soviet weapons programs drive inexorably forward.

28. *(Continued)*

24. The trouble with posing Soviet policy choice as one between parity and superiority, however, is that it dichotomizes too starkly what is for the Soviet leadership a much more complex and conditional predicament. Positing strategic superiority as both a desire and an expectation requires the Soviets to be overly optimistic about the decline of the US's military vitality and about their own technological prowess. Although the vigor and extent of Soviet weapons efforts conjure up the image of a single-minded quest for superiority, we do not believe they should as yet be construed to mean that. Present Soviet efforts to develop improved ICBMs can so far be held consistent with the goal of narrowing the technological gap between US and Soviet capabilities. Soviet diplomacy and SALT policy avow, indeed, an aim no more ambitious than "equal security."

25. On the other hand, positing parity as a Soviet strategic goal requires discounting power aspirations that are firmly lodged in the Soviet system as a whole and pressed by its various military institutions. The burden of historical and ideological tradition makes it very difficult for some Soviet political and military leaders to accept the notion that an area of competition so vital to their security as the strategic military competition with the US can be set aside by agreement. This is especially so insofar as the terms of agreement, dictated by current nuclear realities, require explicit and indefinite acceptance of a condition of military vulnerability for their society. Several clandestine reports allege that Soviet political and military leaders see SALT and detente as devices for buying time—one mentions a 10-15 year breathing space—during which the Soviets and their allies can build political, economic, and military power for future tests of strength. In context, these views probably reflect an admixture of genuine belief and policy justification, but some Soviets are no doubt disposed to accept the idea of a long-term breathing spell as a rationale for detente. Those who are may see some prospect for the USSR's acquiring strategic advantage over the time period covering the life-cycle of newly appearing weapons systems.

26. We doubt that the Soviet leadership has firmly settled on either of the courses described above. Rather, we believe it is currently pursuing a strategic policy it regards as simultaneously prudent and opportunistic, aimed at assuring no less than the continued maintenance of comprehensive equality with the US while at the same time seeking the attainment of some degree of strategic advantage if US behavior permits. The Soviets probably believe that unilateral restraints imposed on the US by its internal problems and skillful Soviet diplomacy offer some prospect that a military advantage can be acquired—an advantage which could have political usefulness for the Soviets in normal diplomacy and possible crises. To this end, they can be expected to exploit opportunities permitted them under the terms of SALT. At the same time, since they cannot be fully confident of such an outcome even as they probe its possibilities, they are probably also disposed to explore in SALT the terms on which stabilization of the strategic competition could be achieved.

27. The logic of this prudential-opportunistic mix fits well with Soviet external conditions, i.e., uncertainty about the vigor of US military competitiveness, and also with the institutional and doctrinal forces pressing from within. It appears fully consistent with Soviet foreign policy behavior and with their

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comportment at SALT. It implies that the Soviets cannot be persuaded to moderate their current weapons programs except on two conditions:

(a) They are persuaded that the unrestrained progress of those programs will provoke US reactions that jeopardize both their opportunistic and their minimum or prudential objectives;

(b) At the same time, they can conclude that, if their programs are restrained, reciprocal restraints will be placed on US strategic programs sufficient to assure attainment of Soviet prudential objectives.

SOVIET DETENTE POLICY AND STRATEGIC POWER

28. It is quite likely that the Soviet leaders see no basic contradiction between their detente and arms policies. Indeed they have publicly said as much on numerous occasions. Even if they do recognize a potential for conflict, they are probably uncertain about how far the US is prepared to insist on linking the two, and hence are probably inclined to test what the traffic will bear.

29. The question can then be raised of what price the Soviets would be willing to pay in the coin of strategic activities and power aspirations to keep up the considerable momentum of political detente, if the issue confronted them in these terms. There can be little doubt that the Soviet leadership has a considerable interest and investment in that momentum. Brezhnev can and probably has argued persuasively to his colleagues that there is at present no truly viable alternative to his detente policy on the political level.

30. The continuity of that policy is most pronounced in its European dimension, where the mid-1960s found the Soviets groping for a more activist diplomacy that would serve the multiple goals of consolidating Soviet hegemony in East Europe; responding to the new assertiveness of West European states while attenuating their incentives to achieve political, economic, and military unity; and fostering the decline of US presence and influence in Western Europe.

31. Documentary evidence as well as the historical sequence of events indicates that the flare up of Sino-Soviet hostilities in 1969 plus the subsequent Peking-Washington moves toward rapprochement added an urgent new dimension to Soviet imperatives toward detente. In the face of these events, the Soviets drew the natural conclusion that their adopted course of striving for a long-term military and political containment of China could not work successfully if Peking's relations with the West and with Japan were markedly better than Moscow's.

32. Finally, of course, there is the substantial economic interest that the Soviets have in the momentum of detente. They certainly hope and some Soviet leaders surely expect that political detente will bring economic rewards in terms of access to advanced Western technology and capital investment for the exploitation of energy and raw material resources and the modernization of Soviet industry.

33. For a variety of reasons, bearing essentially on the willingness and ability of the West to provide such benefits and on the ability of the Soviet economic system to absorb and exploit them effectively, there may be a considerable gap between the results achieved and Soviet expectations about them. But this is not to deny the political strength of the latter in current Soviet calculations.

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34. The economic burden of defense does not compel the Soviets to seek force limiting agreements, even though the defense sector consumes a large share of some high-value resources. In fact, the Soviets can probably sustain a steady, gradual increase in military spending. Nevertheless, the economic and political benefits of detente at the very least offer a fairly relaxed environment in which conflicting military and civilian priorities can be reconciled and minimize the prospect that military spending will have to be sharply increased.

35. In sum, the Soviet interest and investment in political detente is considerable. And the personal investment of key leaders, notably Brezhnev, is great. He and the regime generally would be severely discomfitted by the collapse of detente. The Soviet regime sees detente with the US and its allies as a fundamentally competitive relationship. Moreover, as Soviet treatment of domestic dissidents and East-West human contacts makes clear, the Soviet conception of detente excludes the close social and cultural relations that the West regards as a normal part of international life. Nevertheless, the Soviet leadership proclaims and evidently believes that political detente can be a useful and long-term proposition. But the question is whether they will come to the view that they cannot have both substantially improving strategic capabilities and continuing benefits of detente—simultaneously and indefinitely.

36. The US is unlikely to obtain answers without further direct exploration and negotiation. The US will not get the Soviets to respond to specific concerns on SALT compliance without frankly stating them. And we have estimated above that they are not likely to curb new programs unless they are persuaded both that US reactions to such programs would jeopardize their minimum objectives and that Soviet restraint would be reciprocated. But precisely what price, in terms of strategic limitations, the Soviets will prove willing to pay for detente remains to be tested.

Arms Control and Qualitative Competition

With the signature and ratification of the ABM Treaty and the 1972 Interim Agreement on the Limitation of Strategic Arms (usually referred to as SALT-I, or, less frequently, as the Interim Agreement) the focus of strategic forces NIEs now shifted to consideration of what options the Soviets might pursue within the framework of those agreements, as well as what might happen in the event of abrogation or failure of the strategic arms limitation agreements. SALT-I, as well as the still hypothetical SALT-II, emerged as the means by which the Soviets would shape their own perception of the strategic environment and thereby make their own judgments concerning further efforts to expand the size and capabilities of their own strategic forces. As in the military policy NIEs (the 11-4s) produced in this period, the strategic forces Estimates struggled to achieve a balance between a realistic appraisal of Soviet intentions and the growing, and increasingly obvious, efforts to modernize and improve Soviet strategic strike capabilities. These most notably included improved ICBM accuracy, the development of the first Soviet MIRVs (on the SS-18 and SS-19), and the appearance of the first of the Delta-series SSBNs, armed with improved, longer range SLBMs.

~~TOP SECRET~~ 1

APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

SOVIET FORCES FOR INTERCONTINENTAL ATTACK

SCOPE NOTE

This NIE assesses the strengths and capabilities of Soviet forces for intercontinental attack, discusses questions of policy with respect to those forces, and estimates their size and composition over the next several years.

SUMMARY AND CONCLUSIONS

I. PRESENT STATUS OF SOVIET FORCES FOR INTERCONTINENTAL ATTACK

General

A. An estimate on Soviet forces for intercontinental attack is subject to some special difficulties this year. For one thing, the strategic arms limitation (SAL) agreements concluded in May have profound implications both political and military. They create a new milieu, and affect both the choices open to the Soviets and the way in which they will be exercised. In addition, the Soviet forces for intercontinental attack are in a kind of interim phase technically, and there is much uncertainty about the characteristics of new systems being developed. The issues involved are taken up in depth in the body of the paper,

29. *(Continued)*

but only some can be resolved on present evidence. This summary sets forth (1) essential facts about present Soviet forces for intercontinental attack (2) considerations bearing on Soviet policy choices and (3) some likely changes in the characteristics of these forces. It concludes with a brief description of the illustrative future forces contained in the body of the paper and brief comments on the likely future shape of Soviet forces.

B. In the course of the past decade, the Soviets have engaged in a vigorous and costly buildup of the various elements of their forces for intercontinental attack. As a result of this effort, the Soviets had operational on 1 October 1972 an estimated 1,527 ICBM launchers, including 120 SS-11 launchers at Derazhnya and Pervomaysk which, though possibly intended for use against European targets, are nevertheless capable of reaching the US, 516 submarine-launched ballistic missile (SLBM) launchers, and 195 heavy bombers and tankers.

C. The large-scale deployment programs for ICBMs which began in the 1960s have now run their course, but the construction of new types of silos and certain activity at the test ranges indicate that Soviet ICBM programs are entering a new phase characterized by emphasis on qualitative improvements. The new silos are found at the Tyuratam missile test center and at several missile complexes. Two basic sizes are involved—one large and one small. The new silos probably will be harder to disable than existing silos. There is evidence which suggests that silos at operational ICBM complexes will be converted to the new configurations.

D. It appears that two new liquid-propellant missile systems are under development at Tyuratam which are to be used both in new silos and in reconstructed silos. [ ] The smaller missile is in the SS-11 class, and we think it will be deployed in reconstructed SS-11 silos. It may also be deployed in 60 new small silos at Derazhnya and Pervomaysk, but there is evidence that these silos will house the SS-11 Mod 3, at least initially. The larger missile is in the SS-9 class; the available evidence suggests that it could be either the size of the SS-9 or somewhat larger. We expect this missile to be de-

29. *(Continued)*

ployed in the 25 new large silos located at SS-9 complexes and in reconstructed SS-9 silos. In addition, flight tests have begun at the Plesetsk missile test center on a solid-propellant missile which could be entirely new or a highly modified SS-13.

E. Twenty-seven Y-class submarines, each equipped with 16 launch tubes, are currently operational, and an additional 4 are fitting out or conducting sea trials prior to entering service. The Soviets have launched a modified Y-class submarine which differs from all previous units of that class. This submarine, which has been designated the D-class, is longer than the Y-class and has 12 launch tubes rather than 16. We believe that it will carry the SS-NX-8 missile, which has a much greater range than the SS-N-6 missile carried by Y-class submarines.

F. The Soviet force of intercontinental bombers and tankers consists of 110 Bears, 70 of which carry air-to-surface missiles, and 85 Bisons, including 50 tankers. The first units of a new strategic bomber—the Backfire—could become operational by late 1973. All but the Air Force continue to believe that it is best suited for use against Europe and Asia. The Air Force believes that it is suitable for a variety of missions including intercontinental attack.

The Principal Types of Intercontinental Ballistic Missiles

G. The SS-11 Mod 1, by far the most numerous of Soviet ICBMs, is estimated to have a circular error probable (CEP) at intercontinental range of [ ]. There is disagreement about its yield,[1] but whichever view is correct, the missile is still suitable only for attacking soft targets. In 1969, testing began on two new versions of the SS-11, both apparently developed to help penetrate antiballistic missile defenses. Testing on one version ceased in December 1970 and the program has almost certainly been terminated. The other version, now called the Mod 3, has three re-entry vehicles (RVs) which are not independently targetable. There is disagreement about the yield of this weapon as well,[2] but again it is clearly suitable only for attacking soft

[1] See paragraph 24.
[2] See paragraph 27.

29. *(Continued)*

targets. Testing of the Mod 3 continues, and deployment is likely to begin later this year.

H. The SS-9 exists in four variants: Mod 1, which carries an RV weighing about 9,500 pounds; Mod 2, whose RV weighs about 13,500 pounds; Mod 3, which has been tested both as a depressed trajectory ICBM (DICBM) and as a fractional orbit bombardment system (FOBS); and Mod 4, which carries 3 RVs.

I. There is general agreement that the SS-9 was developed to provide better accuracy and a larger payload than the older SS-7, presumably for use against hard targets—e.g., the US Minuteman system. The Mod 1, carrying a warhead estimated to have a yield [ ] appears reasonably well adapted for this purpose. In 1965, however, the Soviets began to test the Mod 2, which, with its heavier payload, is estimated to have a yield of [ ] The Mod 2 actually reached operational status before the Mod 1, and we estimate that [ ] of all operationally deployed SS-9s are Mod 2s. But the Mod 2 has never actually demonstrated enough range to reach any Minuteman complex. We believe that its demonstrated range could be increased sufficiently to cover all of them by using up more of the available propellant, removing telemetry packages, etc. It remains curious, however, that the Mod 2, alone among the ICBMs except the SS-13, has never been tested to what we would presume to be its intended operational range.

J. The accuracy of the SS-9 must be deduced [ ] In the Intelligence Community, opinions as to the CEP of the SS-9 Mod 1 and Mod 2 under flight test conditions range from a low of 0.4 nm to a high of 0.7 nm; all are agreed that under operational conditions the CEP would be degrated somewhat. The significance of these differences is considerable, but the Soviets would in any event have to deploy several times the present number of SS-9 Mod 1s and Mod 2s, with their present capabilities, before achieving a force that would pose a serious threat to the Minuteman force as a whole.[a]

[a] See paragraph 13 for a discussion of the differing views on accuracy and paragraph 14 for a discussion of the effect of differences in accuracy and yield.

29. *(Continued)*

K. As to the SS-9 Mod 3, it would not have sufficient accuracy in either the DICBM or FOBS mode to attack hard targets effectively; its apparent function is to attack soft strategic targets, negating or delaying detection by the US Ballistic Missile Early Warning System. (New US warning systems give promise of reducing or eliminating this advantage.) The Mod 3 appears to have limited capability as a FOBS. It may be deployed in very small numbers; future deployment, if any, will probably also be limited.

L. The Soviets have also developed the SS-9 Mod 4, which carries three RVs. [ ] For several years, there has been controversy within the Intelligence Community about whether the three RVs could be targeted independently and there is still some disagreement on this point. Some agencies believe that the Mod 4 is and will remain a multiple re-entry vehicle (MRV) for use against soft targets; others believe that the Mod 4 could have represented either an MRV or a multiple-independently targetable re-entry vehicle (MIRV) with limited targeting flexibility but that the development program has been terminated; still others think it was intended to be a MIRV and also believe that the development program has been terminated.[4] There is also disagreement about the probability that the Mod 4 has been deployed, but all agree that if now deployed, it is as an MRV and in small numbers.

II. SOVIET POLICY AND FUTURE PROGRAMS

M. The broader reasons for the USSR's energetic buildup of its forces for intercontinental attack are neither complex nor obscure. In the early 1960s the Soviet leaders, politically and ideologically hostile to the US, and thinking and behaving as rulers of a great power, recognized that in this particular respect their military forces were conspicuously inferior to those of their most dangerous rival, the US. Consequently, they set themselves to rectify the imbalance—to achieve at a minimum a relation of rough parity. Parity in this sense cannot be objectively measured; it is essentially a state of mind. The evidence available, including Soviet statements at the SAL talks, indicates that the Soviet leaders think that they have now generally achieved this position.

[4] See paragraph 19.

29. *(Continued)*

N. Many aspects of the present force structure are also susceptible to simple and probably correct explanation. The Soviets built a large number of ICBMs in order to match—and then to surpass—the number of US ICBMs, and also to increase the probability that many would survive an initial US attack. They built missile-launching submarines which are highly survivable when deployed, and they retained a manned bomber force as yet another option. The intercontinental attack force is obviously capable of being used in war, but there is no reason to believe that the Soviet leaders intend deliberately to make nuclear war. The force is an attribute of power, an instrument to support policy, and a deterrent to the US.

O. Decisions about military policy and programs are probably centered on two key elements—the military and military-industrial authorities who formulate new programs, and the top political leaders. The latter have the final say, but they must operate in a context of other forces and take them into account. Decision-making appears to involve clusters of advisory and executive bodies which are likely, at times, to be in competition with one another. Bureaucratic pressures, conflicts, and constraints may be heavy on occasion. We think it unlikely that observed Soviet programs are the product of a carefully thought out strategic plan or rationale which is undeviatingly executed. It is probably fair to say that the Soviet system gives considerable weight to military claims and interests, and that it is characterized by an inertia which favors large established bureaucratic interests in general and tends to work against sharp changes in direction.

P. Looking to the future, we have little basis in evidence for estimating the content of specific decisions on strategic policy or on particular weapon programs. Soviet strategic policy will of course be affected by the specific provisions of the SAL agreements, and by the manner in which these agreements alter or appear to alter the strategic, political, and economic conditions and opportunities confronting the USSR. Decisions about future forces will also be influenced by Soviet perceptions of the US strategic threat, and by what weapons they are able to develop and the feasibility of procuring and deploying them.

Q. It seems clear that the Soviet leaders intend to maintain at a minimum such forces as will continue to give them a sense of equal security with the US. The general attitudes and policies of the USSR

being what they are, it might seem obvious to infer that they will strive to exceed that minimum and to achieve marked superiority over the US in strategic weaponry. We do not doubt that they would like to attain such a position, but the question is whether they consider it a feasible objective, particularly in the light of the arms limitation agreements. They might think it feasible to seek a strategic posture that, while falling short of marked superiority, makes clear that the Soviets have advantages over the US in certain specific areas. Whether or not such advantages are significant militarily, they would help to dramatize the strategic power of the Soviet Union.

R. But even if the Soviet intention is to go no further than maintenance of "equal security", their arms programs are bound to be vigorous and demanding. This is in part because Soviet leaders must have an eye not only to what forces the US has at present, but also to what it can have, or may have, in future years even within the framework of arms control agreements. In this respect, they are likely to be cautious—to overestimate rather than underestimate the US threat. Moreover, the weapons competition nowadays is largely a technological race; the USSR is impelled to press forward its research and development (R&D) lest it be left behind. Soviet weapon programs also tend to attain a momentum of their own; the immense apparatus of organizations, installations, personnel, vested interests, and so on, tends to proceed in its endeavors unless checked by some decisive political authority.

S. In some respects, these tendencies will be reinforced now that the SAL agreements have been concluded. For military and political reasons, the Soviet leaders will wish at least to keep pace with the US. Also the leadership has a personal and political stake in insuring that the USSR suffers no real or apparent erosion of its relative position. It will want to maintain a strong bargaining position for the follow-on negotiations, and to develop new options in the event that future talks break down.

T. On the other hand, there are constraints upon Soviet arms programs beyond those imposed by the terms of the SAL agreements. The most obvious is economic: resources are not unbounded; the civilian economy demands its share; one weapon competes with another for allocations; and intercontinental attack forces compete with strategic

29. *(Continued)*

defense and general purpose forces. The various bureaucracies with interests in one or another area compete partly with rational argument and partly in sheer political infighting. Soviet leaders must also consider how far they may wish to press their own programs lest they provoke countervailing programs in the US. And they must assess not only the present and future US threat, but also that from China, and elsewhere.

U. In the context of arms control, other pressures for moderation will be at work. The SAL agreements have been hailed in the USSR as a successful manifestation of the current Soviet policy of détente; consequently there will be incentives to avoid actions which, though not actually violating the agreements, might jeopardize them. Many of the top political leaders, and most notably Brezhnev, have identified themselves personally with the accords, and would have much to lose politically if they came unstuck. Similarly, various groups in the USSR now have a stake in the agreements, as a consequence of a long and difficult process of negotiation which undoubtedly required a delicate balancing of individual interests. Any step which might constitute a threat to the agreements would probably disturb this balance.

V. While the foregoing considerations probably govern the nature of Soviet decisions as to future weapon programs, they provide us with little or no basis on which to estimate what these programs will be and, in particular, their features in detail. We have never had solid evidence on these matters, and there is no reason to expect that we shall have such evidence in the future. Moreover, as the past 10 years have shown, technological advance can produce vigorous action and reaction between military programs of the USSR and the US.

W. Yet the possibilities are not unlimited, certainly in the next five years or so. For one thing, intercontinental weapon systems are of such complexity that their development, testing, and deployment take a long time. We can therefore estimate with much confidence that the kinds of weapon systems deployed by the Soviets during the next two years or so will be those already in operation or in the late stages of development. Even in the period from two to five years from now the force will be composed largely of existing kinds of delivery vehicles, but it could change substantially by the end of the period of this Estimate.

29. *(Continued)*

X. As a result of the SAL accords, the main questions about the future of Soviet forces for intercontinental attack center more than ever on the pace and scope of technological change. Also as a consequence of the accords, and of the opportunities and risks they present, future strategic programming decisions will probably be even more directly influenced than in the past by the Soviet leadership's sense of stability or change in its strategic relationship with the US. To be sure, as China moves closer to establishing a credible nuclear force, the need to counter Chinese capabilities will also affect Soviet plans. For many years to come, however, Soviet planning of strategic offensive weapons is likely to be concerned primarily with the US arsenal, in terms both of the strategic threat it poses and the diplomatic and political leverage it affords.

Y. The next few years should see significant qualitative improvements in Soviet forces for intercontinental attack, as the USSR pushes ahead with its R&D and exercises options open to it under the SAL accords. The most important of these improvements are likely to be in accuracy of missiles, in MIRVs for them, and in survivability.

1. *Accuracy.*[5] We have for some time thought that the Soviets would incorporate greater accuracy in follow-on missile systems, and we now have some positive indications of this intent. The Soviets appear to be moving toward less blunt RVs for their missiles. Such RVs pass through the atmosphere more quickly, and are thus less subject to deflection while in the atmosphere. Improvements in the components of present Soviet guidance systems and a continuation of the recent trend to less blunt RVs could result in CEPs as low as about 0.25 nm for ICBMs. The Soviets could achieve significantly smaller CEPs but this would require, in addition, wholly new techniques of guidance. It is too early to tell what methods of guidance are being employed in the new ICBMs described earlier[redacted]

[redacted]

[5] Lt. Gen. Samuel C. Phillips, the Director, National Security Agency, and Maj. Gen. George J. Keegan, Jr., the Assistant Chief of Staff, Intelligence, USAF, believes this Estimate overstates the improvements in ICBM accuracies the Soviets might achieve during the period of this Estimate. For their views, see footnotes to paragraphs 54, 57, and 58 in Section I.

29. *(Continued)*

2. *MIRVs.* We continue to believe that the Soviets will develop MIRVs, including some with the yields and accuracies necessary to attack hard targets. We estimate that it would take at least two years of flight testing to develop a MIRV system, and at least an additional year if wholly new techniques of guidance, designed to achieve very high accuracies, were also involved.

3. *Survivability.* The USSR's concern about the survivability of its forces will surely continue strong as the US deploys increasingly large numbers of independently targetable RVs. In addition to the employment of active defenses, survivability can be achieved through hardness and mobility. The new silos under construction promise to be considerably harder than present types, and so do reconstructed SS-9 and SS-11 silos. The Soviets could also deploy mobile ICBMs, an option not actually barred by the SAL accords; we continue to think this unlikely, the more so because of the unilateral US statement opposing this development.[6] We do expect the Soviets to replace their older ICBMs with SLBMs as permitted by the agreements, in part to achieve greater survivability.

Z. We have little evidence concerning the qualitative improvements to be incorporated in the three new ICBMs. We are fairly confident that the new large missile will carry a heavier payload than the SS-9, and the new small liquid-propellant missile a heavier payload than the SS-11. Although there is as yet no evidence on the point, we believe that one or more of these missiles will carry MIRVs, in due course if not at first, and that all will incorporate at least some improvements in accuracy. More definitive judgments on these missiles cannot be made until more data become available.

AA. As to ballistic missile submarines, in two years or so the Soviets will have as many launchers on their Y- and D-class submarines as the US has in the Polaris force, and these launchers will constitute a substantial portion of Soviet forces for intercontinental attack. We expect the current SSBN production program to continue for some time, with most if not all future units consisting of the 12-tube D-class carrying the SS-NX-8. There is no direct evidence of another new class of ballistic missile submarines, but we believe that one will appear in the next five

[6] Maj. Gen. George J. Keegan, Jr., the Assistant Chief of Staff, Intelligence, USAF, does not agree with this judgment. For his views, see his footnote to paragraph 49 in Section I.

years or so. A new construction hall is being built at the Severodvinsk shipyard, which may be for a new class. A new submarine with more launch tubes than the D-class would permit the Soviets to come closer to the combination of 62 modern ballistic missile submarines and 950 launchers allowed by the SAL agreements.

BB. We have judged for the past several years that as their ICBM and SLBM forces grew, the Soviets would come to rely less and less on their intercontinental bombers. Those missile forces have now reached significant proportions, but there has been no phase-out or appreciable attrition of the heavy bombers and tankers in Long Range Aviation for several years, or any significant reduction in their training activity. Thus, it appears that current Soviet leaders believe that the advantages afforded by an intercontinental bomber force, for the present at least, are worth the cost of retaining one. If they persist in this view, they must decide whether to put their rapidly aging aircraft through more difficult and costly rehabilitation programs than in the past, or, alternatively, to go for a new heavy bomber which would give them greater capabilities for intercontinental attack than their present force does.

CC. It is evident that there are many uncertainties regarding the future makeup of Soviet forces for intercontinental attack. In order to depict a range of possible developments, we present in Section V of this Estimate five illustrative forces representing different levels of effort by the Soviets and different degrees or rates of technological advance within the constraints of the interim agreement on strategic offensive weapons.[†] Three of them postulate that the Soviets do *not* introduce new and highly accurate guidance systems for their missiles within the period of this Estimate. Force 3 represents about the most the Soviets could achieve under this postulate; it assumes that new missile systems reach initial operational capability in the minimum possible time. Force 2 illustrates what could happen if some difficulties and delays were encountered during development. Force 1 postulates, in addition, less ambitious technological goals than those of Forces 3 and 2. Two other forces postulate that the Soviets *do* introduce new and highly

[†] Vice Adm. Vincent P. de Poix, the Director, Defense Intelligence Agency, and Maj. Gen. William E. Potts, the Assistant Chief of Staff for Intelligence, Department of the Army, are in fundamental disagreement with several aspects of Section V. For their views see their footnotes throughout that Section.

29. *(Continued)*

accurate guidance systems for their missiles, providing accuracies of the order of 0.15 nm CEP. Force 4 postulates the introduction of such accuracies and other improvements later in the decade. Force 5 constitutes a limiting case, and, in a sense, an artificial one, illustrating what the Soviets could theoretically achieve under the interim agreement if they have highly ambitious programs already well under way and encounter no significant setbacks or delays.[s]

DD. On the whole, we think the Soviets will probably head into the next round of SAL talks with something like the goals of Force 3. They probably will be forced to settle for some slippages and delays of the sort illustrated on an across-the-board basis in Force 2. The outcome would then be something between Force 3 and Force 2. We wish to emphasize, however, that these and the other models are strictly illustrative, and not to be regarded as confident estimates. As one moves beyond the next two years or so, all projections become increasingly uncertain; beyond five years they are highly speculative.

[s]Maj. Gen. George J. Keegan, Jr., the Assistant Chief of Staff, Intelligence, USAF, believes that Forces 2-5 overstate the missile accuracies the Soviets could achieve in the time periods reflected in those models. For his reasons, see his footnote to paragraph 54 in Section I.

30. NIE 11-8-73 *Soviet Forces for Intercontinental Attack*

~~TOP SECRET~~ 1

APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

SOVIET FORCES FOR INTERCONTINENTAL ATTACK

KEY JUDGMENTS

The Soviets are now well into a broad range of programs to augment, modernize, and improve their forces for intercontinental attack.[1] This round of programs—which follows hard on a large-scale, sustained deployment effort that left the USSR considerably ahead of the US in numbers of intercontinental ballistic missile (ICBM) launchers and in process of taking the lead in submarine launched ballistic missile (SLBM) launchers—was conceived long before the Interim Agreement was signed in May 1972, and most of the programs involved were already evident or foreseeable at that time. Nevertheless, they represent a breadth and concurrency of effort which is unprecedented, particularly in the field of ICBM development. Questions thus arise

[1] This Estimate is concerned with the major elements of Soviet strategic attack forces specifically intended for intercontinental attack—ICBMs, certain SLBMs, and heavy bombers. The present size and composition of these forces are summarized in paragraphs 3 (and accompanying table), 49 and 58 of the Estimate. Other Estimates, e.g., NIE 11-10-73, "Soviet Military Posture and Policies in the Third World," and the NIE 11-13 and 11-14 series dealing with Warsaw Pact forces for operations in Eurasia, discuss other forces with some strategic and tactical intercontinental capabilities.

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30. *(Continued)*

concerning Soviet willingness to accept additional limitations on their intercontinental attack forces and the potential effect on the strategic balance if such limitations are not imposed.

The Soviets are presently testing four new ICBMs—one as a follow-on to the SS-13 and probably also as a mobile missile, one as a follow-on to the SS-9, and two as replacements for the SS-11. All four incorporate new guidance and reentry systems, and two of them a new launch technique.[2] Three have been tested with multiple independently targetable reentry vehicles (MIRVs), though two of these three have also been tested with single RVs. The other employs a post-boost vehicle (PBV) which could be used to dispense MIRVs, but all tests to date have been with a single reentry vehicle (RV). If testing proceeds smoothly, all could be ready to begin deployment as early as 1975 or soon thereafter.

Meanwhile, the Soviets have begun introducing a new version of the widely deployed SS-11, with three non-independently targetable reentry vehicles (MRVs), at three complexes in eastern Siberia and two in the Ukraine. At the latter complexes, existing SS-11 silos are now being converted, either for the SS-11 variant or for one of the follow-on missiles. Conversion of existing SS-9 silos to accommodate the SS-9 follow-on has also begun at one complex.

Production of the 12-tube D-class submarine, with its 4,200 nm missile, is continuing apace, with construction of a stretched version large enough to carry 16-18 tubes now under way. In addition, the Soviets are well along with the development of a longer range (1,600 nm) missile with MRVs for the widely deployed Y-class submarine and are preparing to test a follow-on to the larger missile carried by the D-class.

The new swing-wing strategic bomber we call Backfire is being introduced into Long Range Aviation (LRA). All Agencies but *Army* and *Air Force* believe it best suited for peripheral missions,

[2] The Assistant Chief of Staff, Intelligence, USAF, believes that the new missile systems now under test which use the cold launch technique will be likely to have a refire capability. See his footnote to paragraph 48 of the Estimate for further discussion.

30. *(Continued)*

and *CIA* and *Navy* believe it is primarily intended for this role. *Army* and *Air Force* believe that Backfire is suitable for a variety of missions including intercontinental attack, but that it would be prudent to await additional evidence before making a judgment on its primary role.

The present Soviet activity doubtless reflects in part internal bureaucratic and technological drives and the concerns of a country which still sees itself in a dynamic strategic competition with the US and also has concerns about China and other potential foes. However, the present Soviet effort involves more than can readily be explained as merely trying to keep up with the competition.

On the one hand:

— The Soviets have long indicated a need to catch up in MIRVs and other aspects of technology if they are to continue to be accepted as strategic equals of the US. They appear genuinely concerned about such US programs as Trident, B-1, and SRAM.

— Increased concern for survivability is reflected in development of harder silos and launch control facilities for the new Soviet ICBMs and probably figured in the apparent Soviet interest in land mobile ICBMs, in the desire to expand the SLBM force, and in introduction of the long-range missile for the D-class submarine.

— The Soviet emphasis on MIRVs and the apparent interest in greater targeting flexibility for ICBMs probably reflect an expectation of a growing requirement to plan for various contingencies, increasingly involving China and perhaps other peripheral targets as well as the US.

— In this connection, analysis completed within the last year indicates that though all Soviet ICBMs can be directed against the US, over 300 standard SS-11 silos—roughly the last third of the force to be deployed—were specifically oriented so as also to provide full coverage of China or more extensive coverage of other peripheral areas. The broad targeting flexibility of the SS-11 which makes this possible has been further ex-

30. *(Continued)*

tended with the new SS-11 variant now being deployed—and presumably also with the new ICBMs.

On the other hand, Soviet actions almost certainly reflect a hope that vigorous pursuit of their opportunities under the Interim Agreement and any subsequent accords that may be achieved will enable them to improve their relative position vis-à-vis the US. Though they have probably not decided whether they could get away with it, their objectives probably include an opportunistic desire to press ahead and achieve a margin of superiority if they can. Thus:

— The MIRVing of the large SS-9 follow-on, the SS-X-18, and evident Soviet interest in greater accuracy for ICBMs almost certainly reflects a desire for improved ability to strike at US strategic forces—a factor long stressed in Soviet strategic doctrine.

— The Soviets must recognize that extensive MIRVing of their ICBMs would threaten to leave the US behind in independently targetable weapons, as well as in delivery vehicles.

— Each of the new ICBMs has substantially more throw weight than the missile it is evidently designed to replace. Deployment of the new systems in large numbers would thus provide the USSR with an even greater advantage in missile throw weight than now exists.

In sum, the Soviets have been laying the groundwork for very substantial improvements in already large and formidable intercontinental attack forces. This process is not yet irreversible, and the Soviets may prove willing to accept some curbs on it within the broader context of their détente policy. Nevertheless, they have shown little disposition to exercise voluntary restraint.

How far the Soviets will go in carrying out current programs will depend in the first instance on the outcome of SALT II and, in particular, on how successful the US is in persuading them that they cannot have both substantially improving strategic capabilities and the benefits of détente, simultaneously and indefinitely; that unrestrained pursuit of present programs will provoke offsetting US

30. *(Continued)*

reactions which could jeopardize their competitive position; and that restraint on their part would be reciprocated.[3]

In absence of a new agreement constraining the Soviet strategic buildup, the Soviets will presumably continue most of the broad array of programs now under way. Moreover, they are continuing to expand their large research and development facilities. Early development is probably already under way for new or improved follow-ons for the new missile systems now in flight test.

Our examination of various ways in which such a buildup might proceed leads us to believe that under no foreseeable circumstances in the next 10 years are the Soviets likely to develop the ability to reduce damage to themselves to acceptable levels by a first strike against US strategic forces. The Soviets would have to calculate that the US would be able to make a devastating reply to any Soviet surprise attack.

Except with a minimal effort, however, the Soviets, if unconstrained, are likely by the early 1980s to surpass programmed US forces in numbers of missile RVs and increase their considerable superiority in missile throw weight, while retaining their advantage in numbers of delivery vehicles. These static measures of strategic power would convey an image of a margin of Soviet superiority to those who ascribe high significance to these measures.

In addition, the Soviet strategic forces now being developed—whatever their specific makeup—will probably have better counterforce capabilities than the present ones. How much better will probably remain a matter of considerable uncertainty.

— Unless Soviet ICBMs obtain better accuracies than [ ] they would have to assign more than one weapon to each target to disable a large portion of the US ICBM forces.

[3] See SNIE 11-4-73: "Soviet Strategic Arms Programs and Détente: What Are They Up To?" dated 10 September 1973, TOP SECRET, ALL SOURCE, for a further discussion of Soviet strategic policies and programs in the present context of SALT negotiations and détente.

30. *(Continued)*

— However, we will probably be unable to determine the accuracies of the new Soviet ICBMs with confidence. And we will probably remain uncertain about both the feasibility of attacking targets with more than one weapon, which involves some technical problems, and about Soviet willingness to rely on this tactic.

— All in all, the strategic relationship over the next decade is likely to be much more sensitive to uncertainties like these than to more readily measurable factors such as launcher or weapon numbers. More than ever, the strategic, and especially the political impact of the Soviet buildup will probably depend a great deal on how it is perceived abroad, in the US and elsewhere.

~~Top Secret~~

SUMMARY

THE USSR'S CURRENT STRATEGIC SITUATION

1. The Soviets are pressing ahead with a broad range of programs for the near-term deployment of much improved offensive systems for intercontinental conflict. In addition they are gradually improving their deployed strategic defenses, and are vigorously pursuing the development of advanced technology applicable to strategic forces.

— *In offensive forces,* they are focusing on improving the accuracy, flexibility, and survivability of their ICBMs and SLBMs and on MIRVing their ICBMs. Four new ICBMs, three with MIRV payloads, are being flight tested. A mobile version of one of the missiles probably is being developed. Hardened launch control centers are being constructed at missile complexes, and a standby airborne command post for the Strategic Rocket Forces probably now is operational. New classes of nuclear-powered ballistic missile submarines with long-range missile systems continue under construction, and a new multipurpose bomber is starting to be deployed. Additional ICBMs and SLBMs are in the preflight stages of research and development.

— *In defensive forces,* the Soviets are improving the capability of forces already deployed and are developing new systems. Older fighter-interceptors and surface-to-air missile systems are being phased out gradually as improved equipment is introduced. Current research and development activity includes programs for antisubmarine warfare, an antiballistic missile system which can be deployed much more rapidly than the one now operational, an endoatmospheric ballistic missile interceptor, and the application of lasers to strategic defense.

2. These developments follow a series of large-scale deployment programs over the past ten years which have provided the Soviets with a reliable deterrent and have brought about world recognition of the USSR's status as a superpower roughly on a par with the US. Through these earlier programs, the USSR has largely eliminated previous US quantitative advantages in strategic offensive forces.

In terms of commonly used static measures of strategic offensive forces, the USSR now leads the US in numbers of ICBM and SLBM launchers and has a large lead in missile throw weight. The US retains a large lead in total missile and bomber weapons, owing in part to the MIRVing of its ICBMs and SLBMs.

In defensive forces, the USSR retains large numbers of SAM launchers and interceptor aircraft, whereas comparable US forces are small and declining. For a summary view of quantitative trends over the past ten years, see Figure 1.

3. We believe that the Soviets view their strategic forces in 1974 as a credible deterrent and a powerful buttress to their international position, with a considerable potential for improvement under the terms of the Interim Agreement. They see the present US-Soviet strategic situation as one of mutual deterrence, in which either side would retain a massive retaliatory capability even if the other struck first. They are aware, however, that the US has a large numerical advantage in deliverable warheads and bombs, a significant lead in many technologies applicable to strategic forces, and an impressive capability to improve its forces further in the future. They believe that the better Soviet forces are prepared to fight nuclear war successfully, the more effective their deterrent will be. Thus, while having ample reason for satisfaction with their progress to date, the Soviet leaders see a need for continued efforts to improve their strategic forces.

4. The Soviet leaders must be uncertain about future US strategic arms decisions. On the one hand, they perceive powerful economic and political forces acting to constrain the US. On the other, they observe significant US force improvements currently under way and in prospect, and they display an abiding respect for the political and technological ability of the US to respond to strategic challenge. In the face of these uncertainties, the Soviets seem convinced for now that their current force improvement programs are important to their security and their political image, and that simultaneous pursuit of detente provides a way of enhancing the economic and technological strength of the USSR. They evidently see no contradiction between these elements of their policy.[2]

FACTORS INFLUENCING SOVIET STRATEGIC POLICY

5. Decisions already made, and programs already in progress, impart a strong underlying momentum to the present Soviet force modernization efforts. The Soviets, however, will need to make new decisions at various stages with respect to the future—including decisions about the pace and ultimate size of ongoing programs and about the deployment of systems which have not yet reached the late stages of research and development. These decisions will be affected by a variety of factors which shape Soviet strategic policy. Among these are detente and SALT, economic and bureaucratic influences, Soviet threat perceptions, Soviet military doctrine, and the influence of US strategic policies.

6. We believe the Soviet leaders are united in the conviction that powerful strategic forces are essential to deter nuclear war, to wage nuclear war effectively should deterrence fail, and to project an image of national power. Beyond that, they appear united in the belief that strategic power is at once the

[2] See paragraph 15 for the view of the Assistant Chief of Staff for Intelligence, Department of the Army, the Director of Naval Intelligence, Department of the Navy, and the Assistant Chief of Staff, Intelligence, Department of the Air Force.

31. *(Continued)*

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enabler and guarantor of detente. Detente itself is viewed as the optimum present atmosphere for maximizing the power, security, and economic strength of the USSR, and as a way of setting prudent limits on strategic rivalry while allowing for greater Soviet foreign policy maneuver. There is little evidence that the leadership finds the present burden of defense spending unacceptable, or that the USSR would forgo, for purely economic reasons, military programs the leaders consider important. Both detente and SALT have received general support from the Soviet military, probably in part because of strong personal ties between Brezhnev and Minister of Defense Grechko, and also because detente has thus far gone hand in hand with ambitious military programs.

7. At present, the Soviets probably do not expect detente or SALT to face them with pressures sufficient to alter their near-term deployment plans in any major way. They will continue to explore the extent to which SALT can be used to limit US programs while minimizing limitations on their own. It is not likely that they will agree to meaningful limits on their forces unless they are persuaded that these will be matched by reciprocal constraints on the US and that failure to reach agreement will lead to major new US arms initiatives. We do not know whether they would moderate their strategic arms programs if they came to the view that they cannot continue to have both substantially improving strategic capabilities and detente.

8. The Soviets must see the strategic threat to the USSR as dynamic and constantly improving. In forecasting its future, they probably make generous assumptions about US capabilities and determination. Moreover, expressed Soviet concerns about US forward-based systems, the forces of US allies, and the emerging strategic capabilities of China suggest that Soviet planners do not separate peripheral and intercontinental threats to the extent that US strategy does. They have both military and political concerns about US nuclear strike forces based on European and Asian territory and on carriers, about French and British SLBMs and other strategic nuclear delivery forces, and about the likelihood that China's present limited nuclear deterrent will be expanded to include potential threats to Moscow and other cities west of the Urals. This general outlook tends to weigh Soviet strategic power—including both medium range and intercontinental systems—against the combined power of all potential enemies. It tends to drive Soviet interests toward large and flexible forces, not governed solely by the US-Soviet balance.

9. Traditional Soviet military doctrine calls for superior military forces capable of waging and winning a nuclear war should deterrence fail. The relevance and nature of superiority and victory in a nuclear era, however, remain ill defined and probably contested. Elements of the doctrine which actively influence Soviet force posture decisions are probably those calling for forces to be employed in preemptive attack—if the Soviet leaders obtain convincing strategic warning—or in retaliatory attack after an enemy strike. Soviet doctrine makes it clear that, whether employed preemptively or in retaliation, a principal objective of Soviet strategic strikes would be to destroy the enemy's means of waging war. Thus, counterforce capabilities have high priority in Soviet military thinking.

10. US adoption earlier this year of a policy providing for a wide range of options for the use of nuclear forces—including selective, relatively small-scale employment options—will compel the Soviet leaders to consider the implications of limited intercontinental conflict. Thus far, the Soviets have generally re-

31. *(Continued)*

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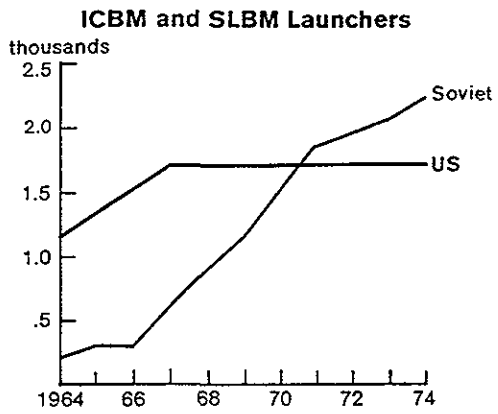
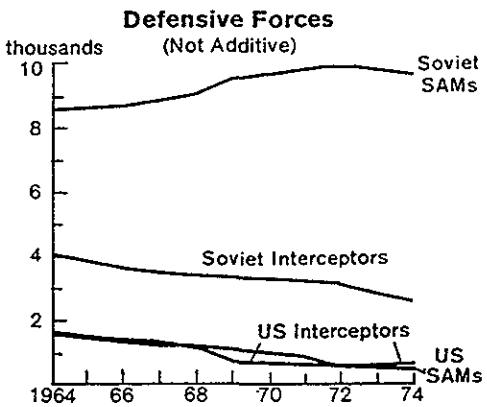
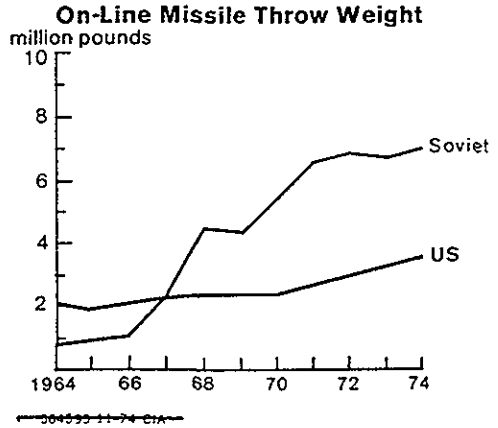
Figure 1

Historical Trends in Selected Aspects of Strategic Forces







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jected the possibility that either the US or the USSR would be able to exercise restraint once nuclear weapons had been employed. They consider that theater nuclear war could quickly escalate to intercontinental conflict. Soviet statements and doctrine reflect the view that if nuclear weapons were employed against Soviet territory, the response would be unlimited retaliation. There is, however, circumstantial evidence of Soviet planning for limited use of nuclear weapons in a Central European war, and it is conceivable that such use might eventually be embraced in Soviet planning for intercontinental attack. Considering Soviet doctrinal aversion to limited nuclear conflict, however, we believe it unlikely that the Soviets will adopt limited-use concepts at the intercontinental level during the 1970s, although the capabilities of Soviet forces to adjust to such a possibility are likely to improve steadily.

THE QUESTION OF SOVIET STRATEGIC OBJECTIVES

11. During the long years when the USSR trailed far behind the US in strategic power, the Soviet leaders could readily agree that the country needed more and better strategic weapons. The present strategic situation, however, presents a mixed picture from the Soviet point of view. In these circumstances, while the Soviet leaders clearly agree on both the broad outlines of detente policy and the high value of strategic power, it is reasonable to suppose that they differ on priorities. They may differ as to whether restraint in future Soviet military programs is required in pursuit of detente goals, though there is little to suggest such differences today. As the need to make new strategic policy decisions arises, more clear-cut divergences among the Soviet leadership may become evident.

12. For the short term, we believe that the Soviet leadership has forged a working consensus which includes a commitment to move forward with major force improvement programs. The Soviets may well justify these programs as necessary to meet present and future deterrent and war-fighting requirements, to reduce or overcome the US lead in strategic weapon technology, and to hedge against uncertainties about US behavior and arms limitation prospects. But these programs also raise the question of whether the Soviet objective is some form of militarily or politically useful strategic superiority.

13. We doubt that Moscow has firmly settled on either acceptance of parity or a decision to seek *clear-cut* strategic superiority, in part because these concepts are difficult to relate to the practical choices of policy on weapons systems, budgets, and negotiating tactics. Rather, we believe Moscow is pursuing a strategic policy which is simultaneously prudent and opportunistic, aimed at assuring no less than the continued maintenance of comprehensive equality with the US, while at the same time seeking to attain some degree of strategic advantage if US behavior permits.

14. Unless the future sees dramatic changes in either Soviet or US strategic policy, it is likely that this pragmatic opportunism will continue to characterize Soviet strategic behavior. Underlying it, however, are attitudes of deep-seated fear as to the capabilities and intentions of the US and other nations, coupled with ambition and optimism that the process of history will allow the global balance of forces to swing in the Soviets' favor. Ideological attitudes, as well as an entrenched body of strategic doctrine, make it difficult for the Soviets to embrace concepts of long-term strategic stability that take into account US security interests as well as their own.

15. The Assistant Chief of Staff for Intelligence, Department of the Army, the Director of Naval Intelligence, Department of the Navy, and the Assistant Chief of Staff, Intelligence, Department of the Air Force, believe that the Soviet leaders foresee a decisive shift of the strategic balance in their favor, and view the superiority they hope to achieve as an umbrella under which to pursue their conflict goals throughout the world with a decreasing risk of interference ("counter-revolution") from the United States.

PRESENT FORCES FOR INTERCONTINENTAL ATTACK AND PROSPECTS FOR THEIR IMPROVEMENT

A. INTERCONTINENTAL BALLISTIC MISSILE FORCES

Status of Deployed Forces

16. As of 1 November 1974 the Soviets had a total of 1,607 ICBM launchers deployed. This number includes 1,399 operational launchers for five different systems and 174 launchers under construction, modernization, or conversion. It also includes 34 soft SS-7 launchers which are now considered nonoperational. Not included are 18 SS-9 launchers at Tyuratam that are probably part of the operational force.

The New Missiles

17. The Soviets are continuing to test four new missiles which incorporate major improvements over currently deployed systems:

— The SS-X-16 is a small, solid-propellant missile probably being developed both as a silo-based replacement for the SS-13 and as a mobile ICBM. It has about double the throw weight of the SS-13. The SS-X-16 is the only one of the new ICBMs which has not been tested with MIRVs, but it appears capable of employing MIRVs in the future.

— The SS-X-17 is a medium-sized liquid-propellant missile with more than double the throw weight of the most capable SS-11 modification. It is being developed as a replacement for the SS-11. Although the SS-X-17 was tested initially with a single warhead, all recent tests have been with MIRVs.

— The SS-X-19 is another medium-sized liquid-propellant missile with even greater throw weight than the SS-X-17. The SS-X-19, called the "main missile" by Soviet leaders, is also being developed as a replacement for the SS-11. The SS-X-19 has been tested only with MIRVs.

— The SS-X-18 is a large, liquid-propellant ICBM with slightly greater throw weight than the SS-9, the missile it is being developed to replace. The SS-X-18 is being tested in both MIRV and single-warhead versions.

18. The continued testing of each of the four new Soviet ICBMs and the silo construction programs for them indicate that one or more versions of all of them will be deployed. Deployment of the MIRVed SS-X-19 and the single-RV version of the SS-X-18 could begin by the end of this year. Deployment of the SS-X-16 in silos, the MIRVed SS-X-17, and the MIRVed version of the SS-X-18 could begin in 1975. A mobile version of the SS-X-16 could be ready for deployment a year or two later. See Figure 2 for characteristics of these and other Soviet ICBMs.

19. Deployment of the new missiles will give the Soviets a large increase in the number of warheads available in their ICBM force. The combination of relatively high-yield war-

The A-Team/B-Team Experiment and Its Aftermath

By the early 1970s, concern that strategic forces Estimates were understating the magnitude of the Soviet "threat" was becoming widespread, at least in part because of the debate over Soviet counterforce capabilities (for example, the SS-9 and Soviet MIRVs). President Ford and his DCI, George Bush, thus were receptive to a suggestion from the PFIAB that the NIEs might be "improved" by an attempt at competitive analysis. The upshot was the so-called A-Team/B-Team Experiment.

There were in fact three A-Team/B-Team trials, two on technical issues and one on Soviet strategic objectives.[2] In the latter, an analytical team (A-Team) assembled under the NIO for Strategic Programs (NIO/SP), worked in parallel with a group of Soviet specialists critical of CIA from government and academic circles (B-Team). As planned, the A-Team would follow established NIE procedures while the B-Team would make its best substantive case for a more pessimistic viewpoint. For this purpose they were granted extensive access to the relevant intelligence data. The two teams would then meet to compare and review their respective positions, followed by briefings of NFIB and the PFIAB. The final results would be compared by an independent panel, which would make recommendations based on its conclusions.

In fact, the two teams chose very different methodologies. The A-Team report persisted in the general formula established in previous NIEs, but, in its final form, gave prominence to dissenting opinions from within the intelligence community. The B-Team abandoned the formula agreed upon for the experiment, in favor of a detailed critique of the assumptions and methodologies that underlay strategic forces NIEs produced over the previous decade or so. Discussion focused on the role played by ideology, strategic doctrine, and national character in determining Soviet nuclear policy. In the end, the A-Team report on Soviet objectives was incorporated into NIE 11-3/8-76, along with a memorandum from DCI George Bush that denied any major influence from the B-Team report.

Shortly after the completion of the parallel drafts, the incumbent President, Gerald R. Ford, was voted out of office. The new President, Jimmy Carter, had no commitment to the experiment and declined to pursue it further. Finally, President Carter rejected the experiment in its entirety.

The A-Team/B-Team experiment thus was never brought to its intended conclusion. In a kind of last bow, DCI Bush commissioned NIE 11-4-77 as

[2] The technical issues discussed were ICBM accuracy and strategic air defense. The reports have not been reproduced here.

an effort to ventilate the conceptual differences that divided the intelligence community. As indicated in Bush's accompanying memorandum, this Estimate was intended to help the reader understand the argument, rather than to resolve it. For the first time the "Key Judgments" presented, not conclusions, but questions: Do the Soviet leaders base policy on the belief that the USSR *will* continue to make progress toward a position of world dominance over the next 10 years? Do the Soviets believe that the risks of an aggressive policy are substantially less than in the past? To the point of being acceptable to "prudent yet ambitious men?" [3] Outlining the points of agreement and disagreement, 11-4-77 summarized the conflicting arguments as hinging on whether the Soviets perceived that the "crisis of capitalism" was at hand and the global correlation of forces shifting in their favor, or whether their new-found strategic parity had simply made them more confident in pursuit of their policy of pragmatic opportunism.[4]

The next year's NIE 11-4-78 noted that, if the Soviets' military position had improved, they still lacked confidence in their superiority over NATO while Soviet military policy continued to be influenced by "a deeply ingrained tendency to overinsure against perceived foreign threats and to overcompensate for technological deficiencies." [5] The Estimate concluded with a description of a Soviet leadership preoccupied with domestic problems and—with the aging Soviet Premier, Leonid Brezhnev, in ill health—working under the looming shadow of a succession crisis.[6]

Adding to this uncertainty was the gradual erosion of the process of arms limitation and control. The interim agreement limiting strategic offensive forces expired in 1977. A supplemental agreement was signed at Vladivostok in 1974, but unresolved substantive issues stalled negotiations on the second Strategic Arms Limitation Treaty (SALT-II), which dragged on through 1978. Meanwhile, in the wake of the Soviet invasion of Afghanistan, domestic pressures in the United States were mounting against the treaty, so that, by the time it came before the Senate, sufficient opposition had been mustered to prevent its ratification. Both sides ultimately pledged to abide by the terms of SALT-II, but Soviet strategic forces analysis was left to deal with an arms control environment that was becoming increasingly nebulous.

Issued in March 1980, the 1979 strategic forces Estimate was the first to be prepared following the failure of the Senate to ratify SALT-II. Although the

[3] NIE 11-4-77 *Soviet Strategic Objectives,* 12 January 1977; p. 1.
[4] NIE 11-4-77, p. 3.
[5] NIE 11-4-78 *Soviet Goals and Expectations in the Global Power Arena,* 9 May 1978, p. vii.
[6] NIE 11-4-78, pp. ix-xii.

limitations imposed by the temporary protocol remained in effect through 1985, this Estimate had to consider the possibility that the Soviets would abandon the arms control process as a whole and resume the unrestrained expansion of at least their strategic offensive forces—and possibly their strategic defensive forces as well, despite the still-valid ABM Treaty.

In this situation, the controversy over Soviet strategic objectives once again came to the fore. The continued inability to resolve this issue brought a total disaffection of the military intelligence services from the summary judgments presented in NIE 11-3/8-79 (actually issued in March 1980). The DCI, Adm. Stansfield Turner, played a major role in drafting this portion of the NIE.

To prevent a repetition of the military's disassociation from 11-3/8-79, the following year's NIE 11-3/8-80 (issued in December 1980) contained two sets of "Key Judgments." The first, ascribed to the Director of Central Intelligence, was an expansion upon the summary judgments contained in the previous year's NIE. The second, which differed substantially in style and presentation, was coordinated among the member agencies of the intelligence community.

32. NIE 11-3/8-76 *Soviet Forces for Intercontinental Conflict Through the Mid-1980s*

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THE DIRECTOR OF CENTRAL INTELLIGENCE
WASHINGTON, D. C. 20505

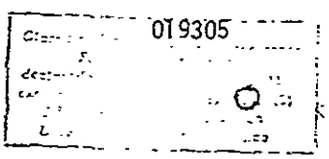
APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

MEMORANDUM FOR: Recipients of National Intelligence Estimate 11-3/8-76, "Soviet Forces for Intercontinental Conflict Through the Mid-1980s"

FROM George Bush

1. The attached National Intelligence Estimate is the official appraisal of the Director of Central Intelligence. This Estimate, including its italicized statements of differing views by members of The National Foreign Intelligence Board, was drafted and coordinated by professional intelligence officers of the US Intelligence Community and was approved by me with the advice of the Board.

2. The judgments arrived at in this Estimate were made after all parties to the Estimate had the benefit of alternative views from the various elements of the Community and from panels of experts from outside government on a few selected subjects. The assembling of the panels of outside experts, and the consideration of their views, was agreed upon by me and the President's Foreign Intelligence Advisory Board as an experiment, the purpose of which was to determine whether those known for their more somber views of Soviet capabilities and objectives could present the evidence in a sufficiently convincing way to alter the analytical judgments that otherwise would have been presented in the attached document. The views of these experts did have some effect. But to the extent that this Estimate presents a starker appreciation of Soviet strategic capabilities and objectives, it is but the latest in a series of estimates that have done so as evidence has accumulated on the continuing persistence and vigor of Soviet programs in the strategic offensive and defensive fields.



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3. The experiment in competitive analysis that was begun with this Estimate has not been completed, and any final judgment on its utility cannot be rendered. Nevertheless, there is a negative aspect that is already clear and which concerns me deeply; namely, the selective leaks regarding the details of the process and, worse, the substantive conclusions developed by the "Team B" panel that was concerned with Soviet strategic objectives. Inspired by these selective leaks, allegations have appeared in the press that the judgments appearing in this official Estimate were shaped by pressure from the "Team B."

4. There is no truth to such allegations. The judgments in the attached Estimate are the best that can be made on the basis of the analysis of the available evidence.

5. Although these leaks may appear to discredit what I continue to regard as a worthwhile experiment, they have not diminished the integrity of the Estimate itself, nor the integrity of the Intelligence Community.

George Bush

Attachment

32. *(Continued)*

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KEY JUDGMENTS

CURRENT DEVELOPMENTS IN SOVIET PROGRAMS

In offensive forces for intercontinental conflict, the Soviets are continuing their long-term effort to acquire more powerful, flexible, and survivable weapon systems.

— New intercontinental ballistic missiles (ICBMs) are being deployed at a moderate pace. About 200 now are operational, most of them with multiple independently targetable reentry vehicles (MIRVs), and there will probably be more than 900 in 1980. These missiles have better accuracy, greater throw weight, and more survivable silos than their predecessors. Deployment of a land-mobile ICBM is apparently still deferred.

— Several units of a new version of the Soviets' latest class of nuclear-powered ballistic missile submarine (SSBN) have been launched. They will probably carry the first Soviet submarine-launched ballistic missile (SLBM) to be equipped with MIRVs. A new, large ballistic missile submarine may be under construction. If so, it could be operational by about 1980.

— Improvements in ICBMs and SLBMs will not stop with the current missiles. The Soviets are developing a number of new and modified ICBMs and SLBMs,[ ]These systems will incorporate qualitative improvements, probably including still better accuracy.

— The Backfire bomber continues to be deployed. There are uncertainties and differences of view within the Intelligence Community about the extent of the Backfire's capability for intercontinental operations and about Soviet intentions to employ it in this role. We have additional evidence this year pointing to Soviet development of a new long-range bomber and a new aerial tanker.

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The Soviets are also pressing ahead with efforts to improve their strategic defenses.

— Large new radars under construction in the northwestern USSR will improve and extend Soviet ballistic missile early warning capabilities when they become operational in about 1979. There are uncertainties and differences of view in the Intelligence Community about whether these radars will also be given capabilities to direct and manage antiballistic missile (ABM) defenses. The Soviets continue their research and development on ABM systems.

— A number of programs are aimed at remedying the critical deficiencies in Soviet defenses against low-altitude air attack. The Soviets have been deploying data-handling systems and are introducing an improved fighter into strategic air defense forces. New air defense radars, a new low-altitude surface-to-air missile (SAM) system, and a new fighter with better low-altitude intercept capabilities are under development and could be operational by about 1980.

— Soviet forces for antisubmarine warfare (ASW) are improving but are not now an effective counter to US SSBNs. The Soviets continue to investigate both acoustic and nonacoustic techniques in an effort to solve their fundamental problem of detecting and tracking SSBNs at sea.

— The Soviets have this year demonstrated a capability to attack satellites at low to medium altitudes in a more timely manner.

— Soviet civil defense preparations are steadily improving. This program is more extensive and better developed than we had previously understood. The Soviets also continue to harden facilities associated with strategic forces.

— The Soviets are conducting research and development which could lead to directed-energy weapons having important applications in strategic defense. *The Assistant Chief of Staff, Intelligence, Department of the Air Force, believes that this effort includes a large and well-funded program to develop a charged-particle-beam weapon.*

SOVIET OBJECTIVES AND EXPECTATIONS

The growth of Soviet capabilities for intercontinental conflict over the past decade has provided the USSR with a powerful deterrent and

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has contributed to its recognition as a superpower equal to the US. An assessment of the perceptions and objectives underlying present Soviet programs is a matter of interpretation and considerable uncertainty. Much that we observe can be attributed to a combination of defensive prudence, superpower competitiveness, worst-case assumptions about US capabilities, a military doctrine which stresses war-fighting capabilities, and a variety of internal political and institutional factors. But the continuing persistence and vigor of Soviet programs give rise to the question of whether the Soviet leaders now hold as an operative, practical objective the achievement of clear strategic superiority over the US during the period of this Estimate.

The Soviets' belief in the eventual supremacy of their system is strong. They see their forces for intercontinental conflict as contributing to their ultimate goal of achieving a dominant position over the West, particularly the United States, in terms of political, economic, social, and military strength. Having come this far in strategic arms competition with the US, the Soviets may be optimistic about their long-term prospects in this competition. But they cannot be certain about future US behavior or about their own future strategic capabilities relative to those of the US. They have seen US technology and industry mobilized to great effect in the past and are concerned about current US force modernization programs. Thus, they probably cannot today set practical policy objectives in terms of some specific relationship between their intercontinental capabilities and those of the US, to be achieved in a specific period of time.

We do not believe that the Soviet leaders presently count on a combination of actions by the USSR and lack of action by the US which would give them, in the next 10 years, a capability for intercontinental conflict so effective that the USSR could devastate the US while preventing the US from devastating the USSR. Soviet expectations, however, clearly reach well beyond a capability that merely contines to be sufficient to deter an all-out attack.

In our view, the Soviets are striving to achieve war-fighting and war-survival capabilities which would leave the USSR in a better position than the US if war occurred. The Soviets also aim for intercontinental forces which have visible and therefore politically useful advantages over the US. They hope that their capabilities for intercontinental conflict will give them more latitude than they have had in the past for the vigorous pursuit of foreign policy objectives, and that these capabilities will discourage the US and others from using force or the threat of force to influence Soviet actions.

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The Director, Bureau of Intelligence and Research, Department of State, agrees with the statement above on the ultimate Soviet goal but believes the Soviet leaders have more modest expectations for their strategic programs. He would emphasize that the Soviet leaders

- *know that the US need not concede the USSR any meaningful strategic advantage and do not expect the US to do so, whatever their assessment of present US resolve might be; and*
- *do not entertain, as a practical objective in the foreseeable future, the achievement of what could reasonably be characterized as a "war-winning" or "war-survival" posture.*

Rather, in his view, Soviet strategic weapon programs are pragmatic in nature and are guided by more proximate foreign policy goals. He sees the Soviets undertaking vigorous strategic force improvements with a view to achieving incremental advantages where possible but, above all, to avoid falling behind the US in a strategic environment increasingly characterized by qualitative competition—and thus losing the position of rough equivalence with the US which they have achieved in recent years through great effort. Moreover, he believes it unlikely that the Soviet leaders anticipate any improvement in the USSR's strategic situation vis-a-vis the US over the next 10 years which would substantially influence their behavior—especially their inclination for risk taking—during periods of crisis or confrontation with the West.

The Defense Intelligence Agency, the Energy Research and Development Administration, the Assistant Chief of Staff for Intelligence, Department of the Army, the Director of Naval Intelligence, Department of the Navy, and the Assistant Chief of Staff, Intelligence, Department of the Air Force, believe that the Soviets do, in fact, see as attainable their objective of achieving the capability to wage an intercontinental nuclear war, should such a war occur, and survive it with resources sufficient to dominate the postwar period. Further, these agencies believe that this objective serves as a practical guideline for Soviet strategic force development even though the Soviets have not necessarily set a specific date for its achievement. In their view:

- *Soviet programs for improving forces for intercontinental conflict (including those for strategic hardening and civil defense), their extensive research on advanced weapons technology, and their resource allocation priorities are in keeping with this objective and illustrate its practical effect.*

32. *(Continued)*

— *In combination with other military and nonmilitary developments, the buildup of intercontinental nuclear capabilities is integral to a programed Soviet effort to achieve the ultimate goal of a dominant position in the world.*

— *While it cannot be said with confidence when the Soviets believe they will achieve this goal, they expect to move closer to it over the next 10 years and, as a result, to be able increasingly to deter US initiatives and to inhibit US opposition to Soviet initiatives.*

The Assistant Chief of Staff, Intelligence, Department of the Air Force, further believes that this Estimate understates, as have previous NIEs, the Soviet drive for strategic superiority. The lines of Soviet strategic policy, objectives, and doctrines enunciated in a large body of authoritative literature are viewed within the context of differing US perceptions and aspirations rather than in the larger context of Soviet history, ideology, and military investment.

The Soviets have made great strides toward achieving general military superiority over all perceived constellations of enemies and for attaining a war-winning capability at all levels of conflict. War survival and civil defense efforts to date have already placed the US in a position of serious strategic disadvantage by neutralizing much of its capability to destroy or damage effectively those elements of the Soviet leadership, command, military, and urban-industrial structure required for maintaining a credible deterrent balance. A realistic calculation of nuclear fatality exchange ratios in a war today would probably show the USSR emerging with considerably more than a twenty-to-one advantage.

There now is a substantial basis for judging that the Soviets' negotiations at SALT and their detente, economic, and arms-control diplomacy have thus far been exploited by them for strategic advantage: by slowing down US defense investment and by permitting easy access to high US technology. The net effect of improved Soviet and East European access to loans, goods, and services from many Western countries is that inefficient sectors of the Soviet economy are in effect being subsidized, thus encouraging uninterrupted investment in strategic forces. A degree of hostage control is being acquired over elements of the West European banking structure by Moscow and its East European allies—in the form of extensive loans (now approaching allowable limits for many banks)—which has serious economic warfare implications. Additionally, the extraordinary advances being made by the Soviets in ASW and high-energy particle-beam technology could

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place the Free World's offensive ballistic missile capability at serious risk well before the terminal date of this Estimate.

While the present NIE is much improved over some of its predecessor documents, it falls far short of grasping the essential realities of Soviet conflict purpose and evolving capability, the latter clearly constituting the most extensive peacetime war preparations in recorded history—a situation not unlike that of the mid-1930s, when the entire Free World failed to appreciate the true nature of Nazi Germany's readily discernible preparations for war and conflict. The dissenting judgments of the past five years regarding Soviet defense expenditures, Soviet strategic objectives and policy, ICBM refire capability, predictions in 1973 that some 10 to 15 major new or modified offensive ballistic missile systems were under development, Soviet war-survival and civil-defense measures, Backfire bomber capability, and directed-energy weapons development have often served as the principal means of alerting the national leadership to trends which now are clearly evidenced. Failure now to anticipate the implications of such trends will impact adversely on lead times essential for the alteration of policy and redirection of technology programs.

Such lead-time impacts are illustrated dramatically in judgments of the late 1960s and 1970 which implied that Soviet goals entailed no more than strategic parity and did not involve commitment to a major civil defense program. The Assistant Chief of Staff, Intelligence, Department of the Air Force, believes that the former was the basis for US arms control policy in 1969, while the latter influenced the ABM Treaty of 1972. He is concerned that the present perceptions of Soviet goals and evolving capability provide an inadequate basis for the pursuit of further negotiations at SALT or the reformulation of national defense and foreign security policy. At issue is whether present intelligence perceptions provide an adequate basis for averting global conflict in the decades ahead.

TRENDS IN FORCES AND CAPABILITIES

Varying degrees of uncertainty characterize our estimates of Soviet strategic programs and of the quantity and quality of Soviet forces. Forecasts for the next few years can be made with relatively high confidence on the basis of direct evidence. For the period of primary concern—five to 10 years hence—estimates of system characteristics and force composition must be based on very limited evidence and indirect considerations. In this connection, it should be noted that uncertainties about the quality of strategic weapons and forces—at

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present and particularly for the future—are in some areas large enough to affect judgments about important aspects of the strategic balance.

Our forecast for the next 10 years assumes that the ABM Treaty remains in effect and that US forces will evolve as currently programed. We employ commonly used measures of force capability but cannot take full account of operational factors which would affect the actual outcome of an intercontinental conflict. Examples of such factors are the efficiency and vulnerability of US and Soviet command and control systems, and the effectiveness of US air attacks and Soviet air defenses in an electronic warfare environment.

Offensive Capabilities

The bulk of Soviet intercontinental striking power will remain in ICBM forces. The striking power and survivability of SLBM forces will continue to grow. A relatively small intercontinental bomber force will be retained to complement the ballistic missile forces.

— In the early 1980s, the number of Soviet missile reentry vehicles (RVs) will probably approximate and possibly exceed that of the US. The large Soviet advantage in missile throw weight will be much greater than it is today, and the Soviet advantage in total equivalent megatonnage (EMT) will be somewhat greater. Soviet ICBMs will pose an increased threat to US missile silos; this threat could become a major one in the next year or so if Soviet ICBM capabilities are at the more threatening but highly unlikely extremes of our range of uncertainty. Soviet silo-based ICBMs, however, will not be very much more vulnerable than at present. Despite the probability that the US will continue to have more varied offensive forces with a larger total number of weapons, increasing Soviet missile throw weight and numbers of RVs, and the increased threat to US silo-based ICBMs, will add to perceptions of Soviet strategic power.

— After the early 1980s, the raw power of Soviet offensive forces will continue to increase. Soviet ICBMs will pose a major threat to US missile silos, although the Soviets themselves would remain uncertain about the results of countersilo attacks. If US forces develop as now programed and Soviet forces continue to develop along present lines, some of the earlier Soviet gains in relative offensive capabilities will be eroded. With the deployment of new US systems, Soviet forces would be likely to fall behind in numbers of missile RVs and farther behind in total weapons. In any event, the chances that the Soviets could

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achieve a large lead in missile RVs would be reduced. Their advantage in total EMT would be likely to drop back to about today's level, but their advantage in missile throw weight would remain very large. The Soviets could judge that their own silo-based missile forces had become very vulnerable.

In the next few years, SLBMs will become a larger percentage of the total Soviet ICBM and SLBM force, thus increasing the proportion of launchers which can achieve better survivability through mobility. Although the Soviets have evidently deferred deployment of a land-mobile ICBM, they will probably continue R&D on such systems and might deploy one to counter a perceived danger to their silo-based ICBMs. A land-mobile intermediate-range ballistic missile (IRBM) now about to be deployed will be difficult for US intelligence to distinguish from a similar land-mobile ICBM and might be convertible to an ICBM fairly rapidly.

The Soviets could at any time increase the threat to US bombers on alert by deploying SSBNs close to US coastlines to reduce the potential warning times available to bomber bases. In deciding whether to rely on SLBMs for this purpose, the Soviets would have to consider US ASW capabilities, US options to reduce the vulnerability of existing bombers, and the US B-1 program. We believe the Soviets would conclude that, throughout the next 10 years, most US alert bombers would survive a surprise SLBM attack.

We believe the Soviets have no compelling military reasons to deploy long-range cruise missile systems in the present strategic environment. They evidently believe the US has a technological advantage in such systems, but if they cannot prevent US deployment through SALT, they may follow suit. They could modify any one of several existing air- and sea-launched cruise missiles for long-range use or could develop large, new ones for deployment by the end of the 1970s. Small, long-range cruise missiles accurate enough to destroy hard targets probably could not be flight-tested before the early to mid-1980s.

Soviet intercontinental striking power would be increased if Backfire bombers were employed against the US. The Backfire is well suited to operations against land and sea targets on the Eurasian periphery using a variety of flight profiles, and it has some capability for operations against the US on high-altitude subsonic profiles. *The Defense Intelligence Agency, the Assistant Chief of Staff for Intelligence, Department of the Army, and the Assistant Chief of Staff, Intelligence, Department of the Air Force, estimate that the Backfire has significant capabilities for operations against the US without air-to-*

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air refueling. The Central Intelligence Agency and the Department of State estimate that it has marginal capabilities against the US under the same conditions. With air-to-air refueling, the Backfire would have considerably increased capability for intercontinental operations, even in the case of the lowest performance estimate. In addition, the Backfire could be modified in various ways to improve its range.

We believe it is likely that Backfires will continue to be assigned to theater and naval missions and—with the exception of DIA, ERDA, Army, and Air Force—we believe it is correspondingly unlikely that they will be assigned to intercontinental missions. If the Soviets decided to assign any substantial number of Backfires to missions against the US, they almost certainly would upgrade the performance of the aircraft or deploy a force of compatible new tankers for their support. *The Defense Intelligence Agency, the Energy Research and Development Administration, the Assistant Chief of Staff for Intelligence, Department of the Army, and the Assitant Chief of Staff, Intelligence, Department of the Air Force, believe the available evidence on Backfire employment indicates only that peripheral and naval attack are its current primary missions. Since the Soviets could use the Backfire's intercontinental capabilities at their initiative, these agencies believe that the Backfire clearly poses a threat to the US, even without the deployment of a compatible tanker force or the upgrading of the aircraft's performance. The Assistant Chief of Staff, Intelligence, Department of the Air Force, further believes that a portion of the Backfire force will have missions against the contiguous US.*

Defensive Capabilities

The Soviets are continuing to improve their ballistic missile detection and tracking systems to close gaps in existing coverage, to make warning information more precise, and to provide additional warning time. We believe that two large phased-array radars now under construction in the northern USSR will be used for ballistic missile warning. Radars such as these, however, could also be given the capability for ABM battle management—that is, to provide tracking and prediction data to support ABM defenses. *The Central Intelligence Agency and the Department of State, basing their judgment on analysis of the individual characteristics, locations, and orientation of these two radars and on the status of the Soviet ABM research and development program, believe that both radars are intended only for ballistic missile early warning. The Defense Intelligence Agency, the Assistant Chief of Staff for Intelligence, Department of the Army, and the Assistant Chief of Staff, Intelligence, Department of the Air Force, however, believe*

the available evidence regarding these radars does not permit a confident judgment about whether they may also be intended for ABM battle management. Concern about the possible use of the large phased-array radars for ABM battle management would increase if the Soviets started to construct more such radars in locations appropriate for ABM support and if the Soviets pursued ABM research and development vigorously. *The Department of State believes that the extent to which construction of additional such radars would be cause for concern would also depend on the assessment at the time of the likelihood of Soviet abrogation of the ABM Treaty. This assessment, in turn, would depend in large part on the extent to which the circumstances which led the Soviets to negotiate this treaty—and thus avoid an ABM competition with the US—had changed. The Assistant Chief of Staff, Intelligence, Department of the Air Force, believes the two radars alone might be able to support significant deployment of ABM defenses in the western and central USSR.*

An ABM system which the Soviets have been developing since 1967 is more rapidly deployable than the current system at Moscow. The pace of flight testing has been slow over the past two years, but recently the interceptor missile was fired against a live target for the first time. With this interceptor, the system appears to have at best a limited capability. Recent construction at the test range suggests development of a high-acceleration interceptor, which could greatly enhance the system's capability. If development proceeds vigorously, the system could be ready for deployment in one to three years or so, depending on whether it includes the high-acceleration interceptor. This ABM research and development activity probably is a hedge against uncertainties about the future strategic situation. We believe it is highly unlikely that the Soviets now plan to deploy ABM defenses beyond Moscow.

The USSR will probably not have significantly better defenses against low-altitude air attack before 1980. For the period beyond that time, we estimate that:

— For defense against low-altitude bombers, improvements in Soviet air defenses will have the potential for overcoming many existing technical deficiencies by the mid-1980s. It might be possible for the Soviets to overcome these deficiencies somewhat earlier with a very high level of effort. If Soviet deployments are at the rates we think probable, bomber penetration of Soviet defenses would be considerably more difficult in the mid-1980s than it would be today.

32. *(Continued)*

— For defense against short-range attack missiles (SRAMs) in flight, one Soviet SAM system now under development might have some capability. While there are uncertainties about the characteristics of this system, we believe that, if it has any capability against SRAMs, engagements would be at short ranges with low reliability. We believe that the Soviets will not have an effective defense against the SRAM by the mid-1980s.

— For defense against low-altitude cruise missiles in flight, current Soviet low-altitude SAMs and future air defense systems would have some capabilities. Their effectiveness will depend on their specific characteristics, their numbers, and their deployment patterns. We are uncertain about the degree of protection that could be achieved against low-altitude cruise missiles in the mid-1980s, but we believe it would be low. *The Assistant Chief of Staff, Intelligence, Department of the Air Force, believes, however, that the Soviet SAM system under development might have capabilities permitting deployment to provide some limited terminal defense against cruise missiles for approximately half the estimated target groupings in the USSR in the mid-1980s.*

The combination of US air attack forces will continue to be more difficult to defend against than any one of its elements alone. The air defense problems which the Soviets now face would be complicated even further by US deployment of advanced bombers and cruise missiles. US penetration tactics and the degradation of defenses by ballistic missile strikes would continue to weigh heavily against the overall effectiveness of Soviet air defenses. We cannot, however, assess the full effects of these and other operational factors.

Recent developments point to modest but steady improvement in Soviet ASW systems and continued growth in their numbers. The future effectiveness of Soviet defenses against SSBNs on patrol will depend in large part on how successful the Soviets are in detecting and tracking SSBNs at sea. Improved US SSBNs and greatly expanded SSBN operating areas will further compound the Soviet problem. From our understanding of the technologies involved and of the R&D programs in the US and the USSR, we believe that the Soviets have little potential for overcoming SSBN detection and tracking problems in broad ocean areas. This judgment must be qualified, however, because of gaps in our knowledge of some technical aspects of potential sensor developments. On the basis of evidence now available, we believe that Soviet capabilities against SSBNs in confined waters will improve during the period of this Estimate, but that Soviet ASW capabilities

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will fall short of being able to prevent most US SSBNs on station from launching their missiles.

Soviet civil defense preparations could have a significant impact on both Soviet and US assessments of the likely outcome of a nuclear conflict. The Soviets probably believe that civil defense measures contribute to giving the USSR a chance to survive as a national entity and to be in a better position than the US after a nuclear exchange. The priorities of the Soviet program evidently are: first, to assure the continuity of government by protecting the leadership; second, to provide for the continuity of important economic functions and the protection of essential workers; and, last, to protect the nonessential part of the population.

There are gaps in our knowledge of the civil defense program. Our tentative judgment is that, under optimum conditions which included an adequate period of warning and evacuation, Soviet civil defenses would assure survival of a large percentage of the leadership, reduce urban casualties to a small percentage, and give the Soviets a good chance of sustaining the population with essential supplies. With minimal warning, some key leaders would probably survive, but the urban population would suffer high casualties and the chances of adequately supplying survivors would be poor. The Soviets probably do not have a highly optimistic view about the effectiveness of their present civil defenses. Even under the most favorable conditions, they probably would expect a breakdown of the economy and, under the worst conditions, catastrophic human casualties as well.

Our evidence of Soviet civil defense preparation indicates a continuing, steady program rather than a crash effort. Because of the gaps in our knowledge, however, we cannot make a confident estimate of its pace and future effectiveness.

The Department of State believes that the Soviet civil defense program is seen by the Soviet leadership primarily as a prudent hedge against the possibility of attack by a nuclear-armed adversary. The Department believes that these Soviet civil defense efforts will not materially increase Soviet willingness to risk a nuclear exchange and will not undermine the deterrent value of US strategic attack forces. It further believes that, at the present time, the scope of the civil defense program does not indicate Soviet strategic objectives beyond maintenance of rough equivalence with the US.

The Defense Intelligence Agency, the Energy Research and Development Administration, the Assistant Chief of Staff for Intelligence, Department of the Army, the Director of Naval Intelligence,

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Department of the Navy, and the Assistant Chief of Staff, Intelligence, Department of the Air Force, believe that the impact of Soviet war-survival efforts upon the US-USSR strategic balance is greater than can be inferred from the foregoing discussion of the Soviet civil defense program. In their view, the Soviets see their civil and passive defense program as an essential element in the achievement of the capability to wage intercontinental nuclear war, should one occur, and survive with resources sufficient to dominate the postwar period. These agencies believe that this program will have a definite and increasing impact on US-USSR strategic balance assessments in the years ahead. Further, they believe the Soviets will attempt to enhance their influence, particularly in the Third World and Europe, by capitalizing on real and perceived improvements in their war-waging capabilities. The Assistant Chief of Staff, Intelligence, Department of the Air Force, further believes that the strategic balance already has been altered in a major way by civil defense and other measures the Soviets have carried out thus far.

OTHER CONSIDERATIONS

Some of the Soviets' present programs reflect concerns that US programs would affect their own strategic position adversely. Examples are ICBM silo hardening and the deployment of long-range SLBMs. We are uncertain about the implications of others. The mobile IRBM and ICBM programs, for example, would enable the Soviets to place more of their missiles on launchers less vulnerable to attack. By their continuing efforts to improve ABM technology, the Soviets could put themselves in a position to deploy additional ABM defenses if the ABM Treaty were abrogated. Such programs probably represent Soviet hedges against future US threats as well as deterrents to US withdrawal from strategic arms limitation agreements. They could also represent efforts to give the Soviet leaders the future option to break out of such limitations if they concluded that the situation warranted.

A SALT TWO agreement based on the Vladivostok accord would confront the Soviets with difficult choices and trade-offs between new and existing systems within an aggregate ceiling on delivery vehicles. It would limit the more extreme possibilities for growth in Soviet missile throw weight and number of missile RVs. In the absence of a SALT TWO agreement, the Soviets would probably increase their intercontinental delivery forces moderately; it is possible that they would increase them considerably. They would not, however, expect quantitative competition alone to alter the strategic balance significantly. They have evidently come to recognize that the strategic environment in the

32. *(Continued)*

1980s will be most significantly affected by the quality of the forces deployed by the two sides. Their progress in this area will be largely independent of SALT TWO.

Soviet R&D programs are consistent with a desire both to avoid slipping behind the US and to gain the lead in the technology of strategic offensive and defensive forces, particularly if US programs falter. We continue to examine closely Soviet R&D programs and prospects for major advances that might seriously erode US deterrent capabilities. We give particular attention to R&D applicable to directed-energy weapons for use in air and missile defense and to the detection and tracking of US ballistic missile submarines. The Soviets are working actively in both fields, and there are gaps in our knowledge of this work. The available evidence, together with our appreciation of the physical, engineering, and operational hurdles which must be overcome, leads us to rate as small the chances that the Soviets can sharply alter the strategic balance through such technological advances in the next 10 years. But Soviet efforts in these fields merit very close watching.

The Assistant Chief of Staff, Intelligence, Department of the Air Force, believes that the Soviets are significantly ahead of the West in the technologies applicable to particle-beam-weapons research, and that the Soviets could be operating a prototype charged-particle-beam system by 1985.

PROSPECTS FOR THE STRATEGIC ENVIRONMENT

The long time period of this Estimate and the gaps in our understanding and information about aspects of Soviet capabilities require that judgments about the future strategic environment be made with varying degrees of certainty. We conclude that:

— The strength of Soviet offensive forces for intercontinental attack will continue to increase. It may be at its greatest relative to US programed forces in the early 1980s. In subsequent years, some of the earlier Soviet gains will be eroded, assuming that US forces develop as now programed and Soviet forces continue to develop along present lines.

— Soviet ICBMs will pose an increasing threat to US missile silos, but Soviet forces will almost certainly remain unable to prevent most US alert bombers and SLBMs at sea from being launched. Soviet defenses will almost certainly remain penetrable by missile and bomber weapons.

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— Soviet forces will be able to inflict massive damage on the US in either initial or retaliatory attacks. It is extremely unlikely that Soviet forces will be able to prevent massive damage to the USSR from initial or retaliatory US attacks.

— There are critical uncertainties, however, about the degree to which the Soviets in the 1980s would be able to reduce human casualties and limit damage to those functions and facilities which the leadership would consider essential to the survival of their society.

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SUMMARY ESTIMATE

I. SOVIET POLICY FOR INTERCONTINENTAL FORCES

1. The Soviets are continuing to press forward with a broad and vigorous program for improving their capabilities for intercontinental conflict. Soviet programs during the past decade have enabled the USSR to surpass the US in a growing number of quantitative measures, although the United States has maintained many qualitative advantages in such capabilities (see Figure 1). Current Soviet programs include:

- In offensive forces, the deployment of a new generation of ICBMs with multiple independently targetable reentry vehicles (MIRVs), greater throw weight, better accuracy, and more survivable silos; the production of a third version of the D-class SSBN, probably to carry a new MIRVed missile; the development of additional new or modified ICBM and SLBM systems; the development of a new, large SSBN, a new heavy bomber, and possibly an aerial tanker; and continued deployment of the Backfire bomber, the range and missions of which remain controversial.

- In defensive forces, continuing expansion of Soviet capabilities for obtaining early warning of missile attack; improvement in capabilities against air attack, especially low-altitude attack; continuing search for ASW capabilities to counter the US SSBN force; improvement of civil defense capabilities and other passive defense measures; and further developmental work on ABM systems and an antisatellite system.

There are more uncertainties and differences of view this year about the Soviet perceptions and objectives which underlie these developments than there were last year.

A. Factors Influencing Soviet Forces for Intercontinental Conflict

The Utility of Forces

2. Soviet forces for intercontinental conflict have political as well as military utility. The Soviets see these forces, along with other military capabilities, as serving their long-term aim of achieving a dominant position over the West. At present, they believe that the growth of their capabilities for intercontinental conflict, along with political, economic, and other military developments, have helped create a new "correlation of forces" in the world that is more favorable to the USSR. ("Correlation of forces" is a frequently used Soviet term roughly synonymous with "balance of power," but more broadly construed to encompass political, social, and economic as well as military elements.) In the Soviet view, the present correlation requires Western policymakers to accord the USSR the status of a superpower equal to the US, and to give greater consideration to the USSR now than in the past when dealing with various world situations. In a confrontation, the Soviets expect their strategic power to enhance the prospect of favorable outcomes, while reducing the likelihood of nuclear war. They would, however, expect the resolution of a local crisis or conflict to rest as well on factors other than the strategic weapons balance, such as the comparative strengths and dispositions of general purpose forces. [1]

[1] Under the conditions of local crisis or conflict described above, the readiness of US theater forces and of reserves based in the contiguous United States becomes increasingly important. Since the mid-1960s, the Soviets have carried out a major expansion and renovation of their theater forces. Overall, the changes of the past decade have not only expanded the size of Soviet forces but have also made them more balanced and operationally flexible, with improved capabilities for both nuclear and nonnuclear warfare. See NIE 11-14-75 for a detailed discussion of the momentum of the Soviet drive to maintain superiority of theater forces in Europe.

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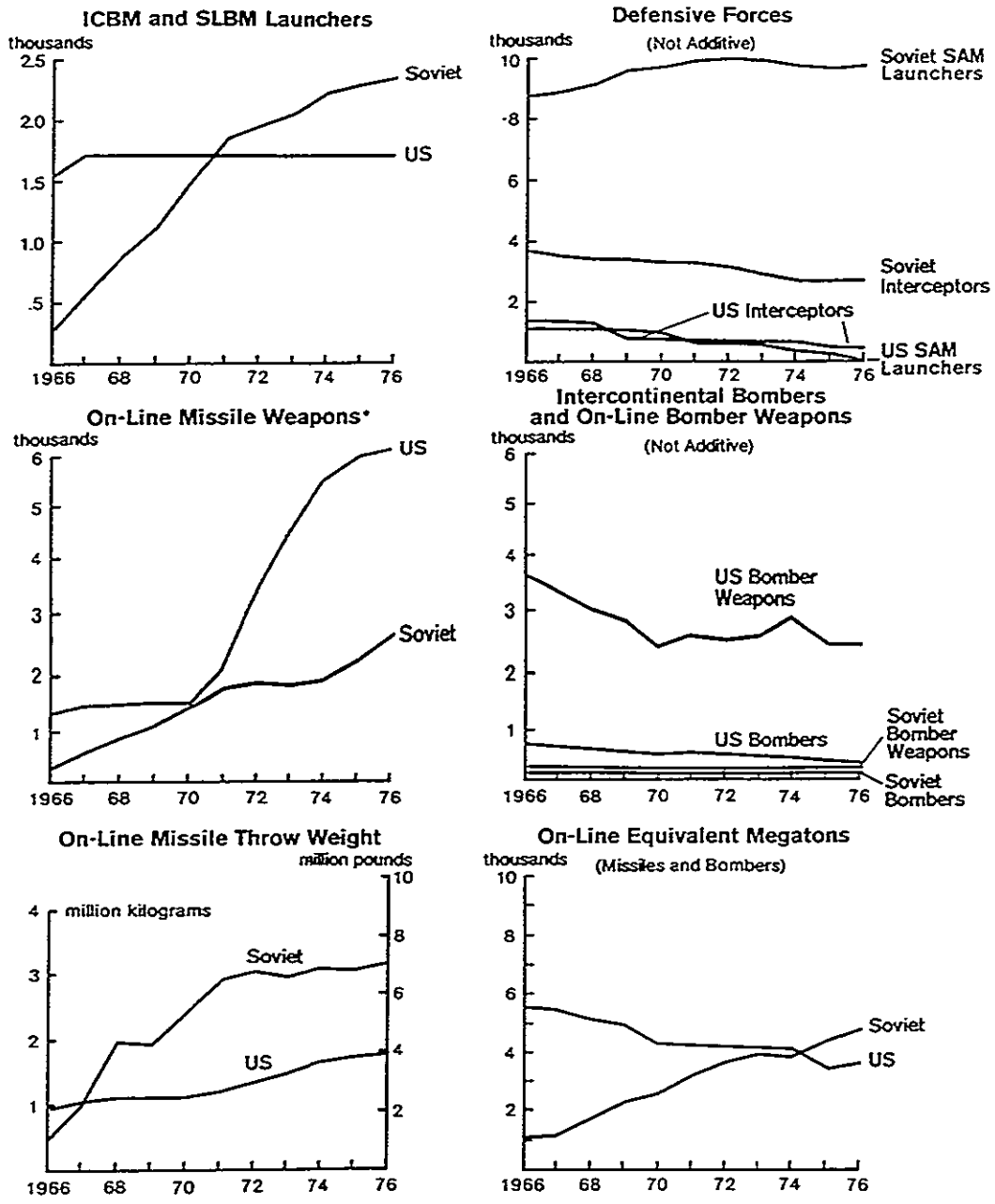
Figure 1

Historical Trends in Selected Aspects of Strategic Forces



* Excludes ICBM silo launchers under construction or conversion and SLBM launchers on SSBNs undergoing sea trials, conversion, or shipyard overhaul. Missile payloads composed of MRVs (which are not independently targetable) are counted as one RV.

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3. *The Assistant Chief of Staff, Intelligence, Department of the Air Force, believes that heavy-handed Soviet support for clients in the Middle East, Southeast Asia, and Angola since the attainment of strategic superiority attests to the Soviets' growing confidence and to the political leverage which they seek from their forces for intercontinental conflict. He further believes that the sizable asymmetry of the current strategic nuclear relationship between the US and the USSR resulting from the combination of strategic offensive and defensive forces being developed and deployed by the Soviets, along with massive war-survival preparations, should allow the Soviets a growing ability to coerce at all levels of confrontation—short of and including nuclear.*

4. The available open and classified Soviet literature indicates that the Soviets are committed to improving their capabilities for waging nuclear war. This commitment reflects a leadership consensus on the need to assure the survival of the Soviet Union in case of such a war and a military doctrine which holds that a nuclear war could be won. Although the Soviet leaders apparently accept mutual deterrence as a present reality in East-West relations, the US concept of mutual assured destruction has never been doctrinally accepted in the USSR. The Soviets do not see the present correlation of forces as desirable or lasting, or as a condition which would preclude major confrontations between the US and the USSR.

5. Soviet military doctrine calls for capabilities to fight, survive, and win a nuclear war. In the Soviet view, war-fighting capabilities constitute the best deterrent. Thus, Soviet doctrine emphasizes counterforce capabilities and the necessity to destroy an enemy's war-making ability, and also stresses active and passive defense measures to limit damage to the Soviet homeland. The extent of Soviet active and passive defense efforts contrasts sharply with that of the US.

Perceptions of the US

6. Both open and clandestinely acquired Soviet writings reflect high respect for the economic, technical, and industrial prowess of the United States. Although the Soviets continue to believe that problems in the West represent another phase in the steady retreat of capitalism, Soviet commentators have viewed the recent US recession as essentially cyclical rather than the beginning of a final crisis of capitalism. The Soviets probably assume that US strength and resiliency will permit continued improvement in US strategic capabilities.

7. Some trends in US policies over the past year or so probably fueled Soviet hopes that the US was weakening in its resolve to remain a vigorous strategic and political competitor. The Soviets probably saw events in Angola, for example, as an indication of US reluctance to confront Soviet influence more directly in some parts of the world. This perception may have made the Soviets feel bolder about involvement in areas of low risk to themselves or of marginal concern to the US. On the other hand, in the atmosphere of cooler relations between the superpowers following the war in Angola and the Conference on Security and Cooperation in Europe (CSCE), the Soviets have witnessed a closer dialogue between the US and its allies, a greater willingness by Congress to vote for defense funding, and a more assertive US attitude against further expansion of Soviet influence. These developments are probably perceived by Soviet leaders as elements of a stiffened US policy toward the USSR. Since the US election, key Soviet leaders have indicated that they expect no important shift in US defense policy under the new administration. They have expressed guarded optimism about the future of detente and SALT. *The Defense Intelligence Agency, the Energy Research and Development Administration, the Assistant Chief of Staff for Intelligence, Department of the Army, the Director of Naval Intelligence, Department of the Navy, and the Assistant Chief of Staff, Intelligence, Department of the Air Force, believe that this paragraph overstates Soviet concern about US willingness to adopt a more assertive attitude toward the USSR's efforts to enhance its influence.*

Attitudes Toward Detente and SALT

8. Detente for the Soviets provides for limited spheres of cooperation and relaxation of tensions within a larger context of continued competition. In its broadest aspect, detente is looked upon as a framework for nurturing changes favorable to Soviet interests, while avoiding direct challenges to the US and its allies that would provoke them into concerted and effective counteraction. For the USSR, detente affords opportunities to reduce Western competitiveness, to constrain US strategic programs, to improve the Soviet economic base, and to acquire militarily

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useful Western technologies. At the same time, a highly competitive relationship with the US is assumed, with recurring gains and losses for both sides.

9. The Soviet leaders value SALT for a variety of reasons. The process itself confirms and continually publicizes the USSR as the strategic and political equal of the US, and it has a prominent place in Soviet detente policy. It provides a forum for constraining US strategic arms programs and for influencing US strategic goals and perceptions of the USSR. The ABM Treaty averted a competition in ABM deployment at a time when the Soviets viewed the US as having major advantages in ABM technologies. Implicit in the more recent Vladivostok understanding is Moscow's judgment that the USSR can compete successfully with the US during the next decade in a situation in which the aggregate ceiling on ICBM launchers, SLBM launchers, and limited types of bombers is equal on both sides. The Soviets foresee a vigorous qualitative strategic arms competition with the US in which they will continue to strive to maintain and enhance their relative position.

10. The Soviets' interest in negotiating a SALT TWO treaty has undoubtedly been sustained by ongoing US strategic programs and by concern over the forthcoming expiration of the Interim Agreement on Offensive Arms and mutual review of the ABM Treaty. Even during the period of uncertainty prior to the US elections, the Soviets reaffirmed their interest in securing such an agreement and showed a willingness to move ahead on the technical issues being discussed in Geneva. More recently, Brezhnev has stressed the importance to the USSR of concluding a SALT TWO agreement based on the Vladivostok accord.

11. *The Assistant Chief of Staff, Intelligence, Department of the Air Force, believes that the Soviets view SALT as a means through which they can achieve a superior strategic position over the US. He would note that, shortly after the signing of the SALT ONE agreement, the Soviets began unambiguous testing of four new ICBM systems, at least three of which are now being deployed. He would note further that today the Soviets are engaged in a number of development programs for both offensive and defensive strategic weapons which superficially would not be SAL-accountable but which have inherent capabilities to make them so. For example, he believes the SS-X-20 could be fired with a lighter payload to ranges of up to nearly 8,300 km (4,500 nm). In defensive weaponry, he believes the SA-5 long-range SAM may already have been covertly modified to give it an ABM capability.*

12. *In a related area, he notes that, while signing the ABM Treaty—which in effect agreed to keeping the populations of both the USSR and the US hostage to the nuclear threat by leaving them undefended—the Soviets had previously initiated a massive civilian and industrial sheltering program, which has since been accelerated. Thus, he believes that the Soviets viewed their passive defense program as retaining the protective benefits which widespread ABM deployment might have provided, while inducing the US to end its own ABM deployment. Consequently, he considers the ABM Treaty to have been intended by the Soviets as a diplomatic deception.*

13. *In sum, the Assistant Chief of Staff, Intelligence, Department of the Air Force, believes that SALT ONE has had little, if any, constraining impact on programs designed to give the Soviets strategic superiority over the US. Moreover, he believes that the Soviets have programs underway designed to circumvent any strategic arms agreement or treaty which they might agree to sign.*

Economic Considerations

14. New evidence and analysis of Soviet defense expenditures indicate that we have underestimated the proportion of GNP the Soviets have devoted to defense and, therefore, that they have been willing to accept a heavier defense burden than we previously thought to be the case. This analysis also indicates that Soviet defense industries are less efficient than formerly believed. It leads the Central Intelligence Agency to estimate that the overall Soviet defense budget absorbs some 11 to 13 percent of the Soviet GNP, as compared with 6 percent for the US. There has been little change, however, in the share of Soviet GNP taken by defense. (See Figure 2 for a graphic summary of the results of the new analysis.) Expenditures for forces for intercontinental conflict have increased sharply in the past few years, largely because of the deployment of new systems for intercontinental attack. *The Defense Intelligence Agency and the Assistant Chief of Staff for Intelli-*

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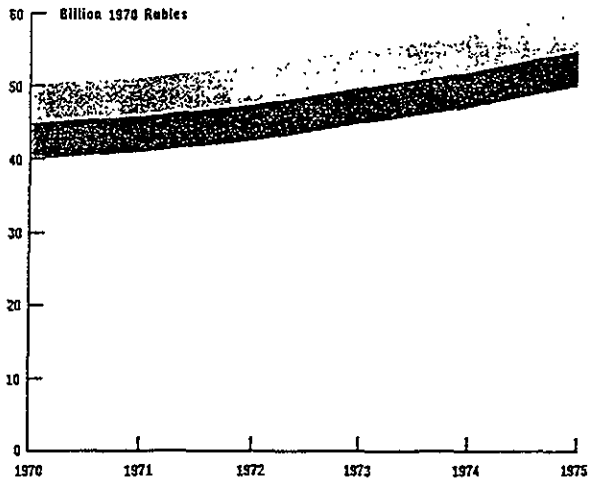
Figure 2

Estimated Soviet Expenditures for Defense, 1970-1975

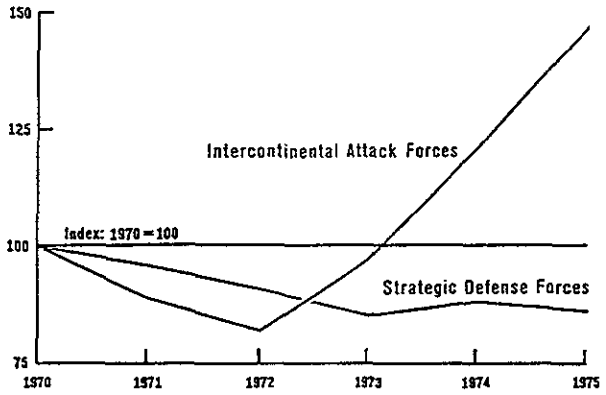
A. Estimated Total Expenditures



Estimate defined as the Soviets might view their defense effort.

Estimate defined for comparison with US accounts.

B. Index of Growth of Estimated Total Expenditures for Procurement and Operation of Intercontinental Attack and Strategic Defense Forces (Calculated in 1970 Rubles)



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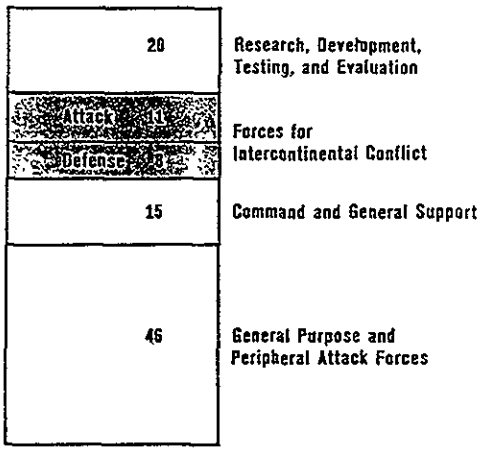
C. Percentage Distribution of Estimated Total Expenditures (Calculated in 1970 Rubles)



The expenditures shown in Charts B and C for forces for intercontinental conflict represent spending on procurement for and operation of these forces, and are derived from our order-of-battle data on deployed forces. Such expenditures accounted for roughly one-fifth of total Soviet defense spending over the 1970-1975 period. Outlays related to forces for intercontinental conflict actually consume a substantially larger share of total Soviet defense outlays, however, for the following reasons:

- Outlays for military research, development, testing, and evaluation (RDT&E)—about 20 percent of total outlays—and for command and general support (C&GS) activities—about 15 percent—clearly impact on forces for intercontinental conflict. CIA believes that the largest share of RDT&E funds is for the development of intercontinental attack and strategic defense systems and that a portion of spending for C&GS certainly is for activities supporting the forces for intercontinental conflict.
- Costs for those naval forces which have an ASW capability are included in the outlays for general-purpose naval forces, although we realize they have in part a mission against SSBNs.
- Expenditures for Backfire aircraft are included with outlays for peripheral attack forces. It should be noted, however, that there are differing views on the capabilities and role of the Backfire (see Chapter II).
- No estimate of the cost of the Soviet civil defense program is available. A community-wide effort currently is underway to develop such an estimate.

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gence, Department of the Army, believe that the percentage of Soviet GNP devoted to defense spending could be somewhat higher.

15. *The Assistant Chief of Staff, Intelligence, Department of the Air Force, notes that use over the last decade of undervalued ruble prices has led to unrealistically low estimates of Soviet defense spending. He believes that new Soviet pricing data alone do not provide a sufficient basis for revising estimates of the productivity of Soviet defense industry. He rejects the negative notion regarding Soviet defense industries as "less efficient than formerly believed." He also believes that the extent of the economic burden of the Soviet defense effort is greater than reflected, because of its physical dimension and because of the economic growth rate and the paucity of consumer goods. The principal causes of low estimates, in his judgment, have been the costing methodologies used, failure to account for 10 to 15 major ballistic missile systems known to be under development, and inadequate accounting with respect to a significantly large number of imprecisely defined defense-related activities. He believes that more complete exploitation of data available from recent Soviet emigres, coupled with extensive analysis of pertinent overhead photography, could add several percentage points to the estimate of the portion of Soviet GNP devoted to defense spending.*

16. We see no evidence that economic considerations would inhibit the Soviets from continuing the present pace and magnitude of their strategic programs or from undertaking increases if these were deemed essential by the leadership. Major military programs have been generously supported, even in periods of economic setback, and the military sector continues to command the best of the USSR's scarce high-quality resources. If a SALT TWO agreement is reached, economy-minded leaders may push for more critical scrutiny of strategic programs. Reduction of expenditures would be unlikely, however, given the momentum of strategic programs, the political perceptions and military doctrine which animate them, institutional influences, and the projected availability of resources from a constantly expanding industrial sector.

Commitment to Research and Development

17. The Soviet leadership fosters a large and efficient base of military R&D as a national defense asset. As their design and industrial capabilities have grown over the years, the Soviets have made generous allocations for weapons development, as well as for basic scientific research and industrial technology in support of R&D goals, regardless of shortages or difficulties elsewhere in the economy. The steady increase in the number, variety, and sophistication of R&D organizations and programs over the past decade indicates a major commitment to the continuing development of strategic systems in the USSR. In offensive missiles alone, we have evidence that at least 10 new or modified ICBM and SLBM systems are under development. It is unlikely that all of these will be deployed, but development of several more probably will be undertaken during the period of this Estimate.

18. The Soviets' broad base of technology has given them increased flexibility in weapons development, a better basis for evaluating perceived US threats, and a better capability for evolutionary development of weapon systems using proven technology. In their R&D establishment, the Soviets appear to have organizational and technological problems which may impede their efforts to develop and deploy exotic weapon systems. In recent years, however, they have embarked on energetic and well-funded military R&D programs in fields where significant and perhaps novel weapon systems may emerge, such as in the areas of ASW sensors and directed-energy weapons. In these areas, the Soviets have extensive R&D efforts in progress, even though the potential in terms of practical weapons development is not always clear.

B. Present Objectives for Intercontinental Forces

19. There remains the more fundamental question of the USSR's present objectives for its forces for intercontinental conflict. Our understanding of this subject is far from complete. We base our judgments about the Soviet leaders' objectives for intercontinental forces on a combination of Soviet statements and writings, both openly available and clandestinely acquired, on the past and present development and deployment activities which we observe, and on our appreciation of the challenges, opportunities, and constraints which we believe are operating on the Soviet leadership.

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20. In addressing this question, we distinguish between ultimate goals based on pervasive ideological principal and practical objectives which Soviet leaders may expect to achieve in some definable time period. It is a matter of interpretation and considerable uncertainty as to whether the two are becoming one. Much that we observe in their present posture and programs can be attributed to a combination of traditional defensive prudence, military doctrine which stresses war-fighting capabilities, superpower competitiveness, worst-case assumptions about US capabilities, and a variety of internal political and institutional factors. But the continuing persistence and vigor of Soviet strategic programs gives rise to the question of whether the Soviet leaders now hold as an operative, practical objective the achievement of clear strategic superiority over the US within the next decade.

21. Deeply held ideological and doctrinal convictions cause the Soviet leaders to hold as an ultimate goal the attainment of a dominant position over the West—particularly the United States—in terms of political, economic, social, and military strength. The Soviets belief in the eventual supremacy of their system is strong. Having come this far in strategic arms competition with the US, the Soviets may be optimistic about their long-term prospects, but they cannot be certain about future US behavior or about their own future capabilities relative to those of the US. They have high respect for US technological and industrial strength. They have seen it mobilized to great effect in the past and are concerned that current US force modernization programs could affect their own strategic position adversely. Thus, the Soviet leaders probably cannot today set practical policy objectives in terms of some specific and immutable posture for their intercontinental forces to be achieved in a predetermined period of time. Their programs almost certainly are framed and adjusted to hedge against possible future developments.

22. We do not doubt that if they thought they could achieve it, the Soviets would program now to attain capabilities for intercontinental nuclear conflict so effective that the USSR could devastate the US while preventing the US from devastating the USSR. We do not believe, however, that they presently count on a combination of actions by the USSR and lack of actions by the US which would produce such capabilities during the next 10 years. Soviet expectations, however, clearly reach well beyond a capability for intercontinental conflict that merely continues to be sufficient to deter an all-out attack.

23. In our view, the Soviets are striving to achieve a war-fighting and war-survival posture which would leave the USSR in a better position than the US if war occurred. The Soviets also aim for intercontinental forces which have visible and therefore politically useful advantages over the US. They hope that their capabilities for intercontinental conflict will give them more latitude than they have had in the past for the vigorous pursuit of foreign policy objectives, and that these capabilities will discourage the US and others from using force or the threat of force to influence Soviet actions.

24. *The Director, Bureau of Intelligence and Research, Department of State, agrees with the statement above on the ultimate Soviet goal, but believes the Soviet leaders have more modest expectations for their strategic programs. He would emphasize that the Soviet leaders*

- *— know that the US need not concede the USSR any meaningful strategic advantage and do not expect the US to do so, whatever their assessment of present US resolve might be; and*

- *— do not entertain, as a practical objective in the foreseeable future, the achievement of what could reasonably be characterized as a "war-winning" or "war-survival" posture.*

Rather, in his view, Soviet strategic weapon programs are pragmatic in nature and are guided by more proximate foreign policy goals. He sees the Soviets undertaking vigorous strategic force improvements with a view to achieving incremental advantages where possible but, above all, to avoid falling behind the US in a strategic environment increasingly characterized by qualitative competition—and thus losing the position of rough equivalence with the US which they have achieved in recent years through great effort. Moreover, he believes it unlikely that the Soviet leaders anticipate any improvement in the USSR's strategic situation vis-a-vis the US over the next 10 years which would substantially influence their behavior—and especially their inclination for risktaking—during periods of crisis or confrontation with the West.

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25. The Defense Intelligence Agency, the Energy Research and Development Administration, the Assistant Chief of Staff for Intelligence, Department of the Army, the Director of Naval Intelligence, Department of the Navy, and the Assistant Chief of Staff, Intelligence, Department of the Air Force, believe that the foregoing discussion is in error in that it gives the impression that the Soviets believe that ultimate goals cannot serve as practical policy objectives for future force development because they cannot be achieved in some predetermined time period—for example, the 10-year period of this Estimate. These agencies believe that the Soviets do, in fact, see as attainable their objective of achieving the capability to wage an intercontinental nuclear war, should such a war occur, and survive it with resources sufficient to dominate the postwar period. Further, these agencies believe that this objective serves as a practical guideline for Soviet strategic force development, even though the Soviets have not necessarily set a specific date for its achievement. In their view:

- *Soviet programs for improving forces for intercontinental conflict (including those for strategic hardening and civil defense), their extensive research on advanced weapons technology, and their resource allocation priorities are in keeping with this objective, illustrate its practical effect, and are bringing it progressively closer to realization.*
- *In combination with other military and nonmilitary developments, the buildup of intercontinental nuclear capabilities is integral to a programed Soviet effort to achieve the ultimate goal of a dominant position in the world.*
- *While it cannot be said with confidence when the Soviets believe they will achieve this goal, they expect to move closer to it over the next 10 years and, as a result, to be able increasingly to deter US initiatives and to inhibit US opposition to Soviet initiatives.*

26. The Assistant Chief of Staff, Intelligence, Department of the Air Force, further believes that this Estimate understates, as have previous NIEs, the Soviet drive for strategic superiority The lines of Soviet strategic policy, objectives, and doctrines enunciated in a large body of authoritative literature are viewed within the context of differing US perceptions and aspirations rather than in the larger context of Soviet history, ideology, and military investment.

27. The Soviets have made great strides toward achieving general military superiority over all perceived constellations of enemies and for attaining a war-winning capability at all levels of conflict. War survival and civil defense efforts to date have already placed the US in a position of serious strategic disadvantage by neutralizing much of the US capability to destroy or damage effectively those elements of the Soviet leadership, command, military, and urban-industrial structure required for maintaining a credible deterrent balance. A realistic calculation of nuclear fatality exchange ratios in a war today would probably show the USSR emerging with considerably more than a twenty-to-one advantage.

28. There now is a substantial basis for judging that the Soviets' negotiations at SALT and their detente, economic, and arms-control diplomacy have thus far been exploited by them for strategic advantage: by slowing down US defense investment and by permitting easy access to high US technology. The net effect of improved Soviet and East European access to loans, goods, and services from many Western countries is that inefficient sectors of the Soviet economy are in effect being subsidized, thus encouraging uninterrupted investment in strategic forces. A degree of hostage control is being acquired over elements of the West European banking structure by Moscow and its East European allies—in the form of extensive loans (now approaching allowable limits for many banks)—which has serious economic warfare implications. Additionally, the extraordinary advances being made by the Soviets in ASW and high-energy particle-beam technology could place the Free World's offensive ballistic missile capability at serious risk well before the terminal date of this Estimate.

29. While the present NIE is much improved over some of its predecessor documents, it falls far short of grasping the essential realities of Soviet conflict purpose and evolving capability, the latter clearly constituting the most extensive peacetime war preparations in recorded history—a situation not unlike that of the mid-1930s, when the entire Free World failed to appreciate the true nature of Nazi Germany's readily discernible preparations for war and conflict. The dissenting judgments of the past five years

regarding Soviet defense expenditures, Soviet strategic objectives and policy, ICBM refire capability, predictions in 1973 that some 10 to 15 major new or modified offensive ballistic missile systems were under development, Soviet war-survival and civil-defense measures, Backfire bomber capability, and directed-energy weapons development have often served as the principal means of alerting the national leadership to trends which now are clearly evidenced. Failure now to anticipate the implications of such trends will impact adversely on lead times essential for the alteration of policy and redirection of technology programs.

30. *Such lead time impacts are illustrated dramatically in judgments of the late 1960s and 1970 which implied that Soviet goals entailed no more than strategic parity and did not involve commitment to a major civil defense program. The Assistant Chief of Staff, Intelligence, Department of the Air Force, believes that the former was the basis for US arms control policy in 1969 while the latter influenced the ABM Treaty of 1972. He is concerned that the present perceptions of Soviet goals and evolving capability provide an inadequate basis for the pursuit of further negotiations at SALT or the reformulation of national defense and foreign security policy. At issue is whether present intelligence perceptions provide an adequate basis for averting global conflict in the decades ahead.*

II. SOVIET FORCES FOR INTERCONTINENTAL ATTACK

A. Intercontinental Ballistic Missile Forces

Deployed Forces

31. The Soviets had 1,556 ICBM launchers at operational complexes as of 1 November 1976—47 fewer than last year, because of completed deactivations of older launchers. In addition, there are 18 SS-9 launchers at the Tyuratam missile test center which we continue to believe are part of the operational force. Of the total force at operational complexes, 1,340 ICBM launchers were operational, 146 were under construction or conversion, and 70 were in the process of being dismantled under terms of the Interim Agreement. (See Table I for the status of the ICBM force and Figures 3 and 4 for system characteristics; see Volume II for additional details on both.)

The New Missiles

32. All four of the new Soviet ICBMs incorporate major qualitative improvements over the systems they are replacing:

— Three of the four new ICBMs are being deployed with MIRVs. Versions of the new SS-17 and SS-19 carry four and six MIRVs respectively. The SS-18 has been tested with both eight and 10 MIRVs. A single-RV version of the SS-18 has also been deployed. Single-RV versions of the SS-17 and SS-19 are being tested.

— The new systems have more throw weight (i.e., the useful weight which can be delivered to a target) than their predecessors. The SS-17 and SS-19 ICBMs have three to four times the throw weight of the SS-11 missiles which they are replacing.

— The new systems are more accurate than their predecessors. (We refer to accuracy as "circular error probable," or CEP; CEP is expressed as the radius of a circle into which there is a 50-50 chance that the warhead of a missile will fall.) We estimate [redacted] that accuracy will improve somewhat as the Soviets gain experience with the missiles (see Table II).

— The silos for the new ICBMs are several times harder—and thus less vulnerable to attack—than the older silos.

Our estimates of ICBM throw weight, accuracy, yield, and silo hardness are subject to varying degrees of uncertainty. Most important to the attack capabilities of the new missiles is the uncertainty in operational CEPs, which significantly affects judgments concerning the capability of Soviet ICBMs to attack hard targets. The implications of uncertainty about accuracy and yield, as well as improvements in accuracy anticipated in future modifications and new missiles, are discussed in later paragraphs of this section and in Section V.[2]

[2] For a full discussion of the methods of arriving at estimates of Soviet ICBM accuracies, and of the uncertainties in those estimates, see Volume III, Annex C.

33. B-Team Report: *Soviet Strategic Objectives: An Alternative View*

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CIA HISTORICAL-REVIEW PROGRAM

SOVIET STRATEGIC OBJECTIVES:
AN ALTERNATIVE VIEW
REPORT OF TEAM B

NOTE

This document is one part of an experiment in competitive analysis undertaken by the DCI on behalf of the President's Foreign Intelligence Advisory Board. The views expressed are those of the authors and do not represent either coordinated National Intelligence or the views of the Director of Central Intelligence.

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SUMMARY

Team "B" found that the NIE 11-3/8 series through 1975 has substantially misperceived the motivations behind Soviet strategic programs, and thereby tended consistently to underestimate their intensity, scope, and implicit threat.

This misperception has been due in considerable measure to concentration on the so-called hard data, that is data collected by technical means, and the resultant tendency to interpret these data in a manner reflecting basic U.S. concepts while slighting or misinterpreting the large body of "soft" data concerning Soviet strategic concepts. The failure to take into account or accurately to assess such soft data sources has resulted in the NIEs not addressing themselves systematically to the broader political purposes which underlie and explain Soviet strategic objectives. Since, however, the political context cannot be altogether avoided, the drafters of the NIEs have fallen into the habit of injecting into key judgments of the executive summaries impressionistic assessments based on "mirror-imaging," i.e., the attribution to Soviet decision-makers of such forms of behavior as might be expected from their U.S. counterparts under analogous circumstances. This conceptual flaw is perhaps the single gravest cause of the misunderstanding of Soviet strategic objectives found in past and current NIEs.

A fundamental methodological flaw is the imposition on Soviet strategic thinking of a framework of conflicting dichotomies which may make sense in the U.S. context but does not correspond to either Russian doctrine or Russian practice: for example, war vs. peace, confrontations vs. detente, offense vs. defense, strategic vs. peripheral, nuclear vs. conventional, arms limitations vs. arms buildup, and so on. In Soviet thinking, these are complementary or mutually supporting concepts, and they by no means exclude one another.

One effect of "mirror-imaging" is that the NIEs have ignored the fact that Soviet thinking is Clausewitzian in character, that is, that it conceives in terms of "grand strategy" for which military weapons, strategic ones included, represent only one element in a varied arsenal of means of persuasion and coercion, many of them non-military in nature.

Another effect of "mirror-imaging" has been the tendency to misconstrue the manner in which Soviet leaders perceive the utility of

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those strategic weapons (i.e., strategic nuclear forces) to which the NIEs do specifically address themselves. The drafters of NIE 11-3/8 seem to believe that the Soviet leaders view strategic nuclear weapons much as do their U.S. analogues. Since in the United States nuclear war is generally regarded as an act of mutual suicide that can be rational only as a deterrent threat, it is assumed that the USSR looks at the matter in the same way. The primary concern of Soviet leaders is seen to be the securing of an effective deterrent to protect the Soviet Union from U.S. attack and in accord with the Western concept of deterrence. The NIEs focus on the threat of massive nuclear war with the attendant destruction and ignore the political utility of nuclear forces in assuring compliance with Soviet will; they ignore the fact that by eliminating the political credibility of the U.S. strategic deterrent, the Soviets seek to create an environment in which other instruments of their grand strategy, including overwhelming regional dominance in conventional arms, can better be brought to bear; they fail to acknowledge that the Soviets believe that the best way to paralyze U.S. strategic capabilities is by assuring that the outcome of any nuclear exchange will be as favorable to the Soviet Union as possible; and, finally they ignore the possibility that the Russians seriously believe that if, for whatever reason, deterrence were to fail, they could resort to the use of nuclear weapons to fight and win a war. *The NIEs tendency to view deterrence as an alternative to a war-fighting capability rather than as complementary to it,* is in the opinion of Team "B", a grave and dangerous flaw in their evaluations of Soviet strategic objectives.

Other manifestations of "mirror-imaging" are the belief that the Russians are anxious to shift the competition with the United States to other than military arenas so as to be able to transfer more resources to the civilian sector; that they entertain only defensive not offensive plans; that their prudence and concern over U.S. reactions are overriding; that their military programs are essentially a reaction to U.S. programs and not self-generated. The NIEs concede that strategic superiority is something the Soviet Union would not spurn if it were attainable; but they also feel (without providing evidence for this critical conclusion) that Russia's leaders regard such superiority as an unrealistic goal and do not actively pursue it.

Analysis of Soviet past and present behavior, combined with what is known of Soviet political and military doctrines, indicates that these judgments are seriously flawed. The evidence suggests that the Soviet leaders are first and foremost offensively rather than defensively minded. They think not in terms of nuclear stability, mutual assured destruction, or strategic sufficiency, but of an effective nuclear war-

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fighting capability. They believe that the probability of a general nuclear war can be reduced by building up one's own strategic forces, but that it cannot be altogether eliminated, and that therefore one has to be prepared for such a war as if it were unavoidable and be ready to strike first if it appears imminent. There is no evidence that the Soviet leadership is ready, let alone eager, to reduce the military budget in order to raise the country's standard of living. Soviet Russia's habitual caution and sensitivity to U.S. reactions are due less to an inherent prudence than to a realistic assessment of the existing global "correlation of forces;" should this correlation (or the Soviet leaders' perception of it) change in their favor, they could be expected to act with greater confidence and less concern for U.S. sensitivities. In fact, there are disturbing signs that the latter development is already taking place. Recent evidence of a Soviet willingness to take increased risks (e.g., by threatening unilateral military intervention in the Middle East in October 1973, and supporting the Angola adventure) may well represent harbingers of what lies ahead.

Soviet doctrine, confirmed by the actions of its leadership over many decades has emphasized—and continues to emphasize—two important points: the first is unflagging persistence and patience in using the available means favorably to mold all aspects of the correlation of forces (social, psychological, political, economic and military) so as to strengthen themselves and to weaken any prospective challengers to their power; the second is closely to evaluate the evolving correlation of forces and to act in accordance with that evaluation. When the correlation is unfavorable, the Party should act with great caution and confuse the enemy in order to gain time to take actions necessary to reverse trends in the correlation of forces. When the correlation of forces is favorable, the Party is under positive obligation to take those actions necessary to realize and nail down potential gains, lest the correlation of forces subsequently change to a less favorable position. (It is noteworthy that in recent months one of the major themes emphasized in statements by the Soviet leadership to internal audiences urges the "realization" of the advances brought about by the favorable evolution of forces resulting from detente and the positive shift in the military balance.)

We are impressed by the scope and intensity of Soviet military and related programs (e.g., proliferation and hardening of its command, control and communications network and civil defense). The size and nature of the Soviet effort which involves considerable economic and political costs and risks, if long continued in the face of frustrated economic expectations within their own bloc and the possibility that the West may come to perceive the necessity of reversing current trends

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before they become irreversible, lead to the possibility of a relatively short term threat cresting, say, in 1980 to 1983, as well as the more obvious long range threat.

The draft NIE's do not appear to take any such shorter range threat seriously and do not indicate that the threat itself, or its possible timing, have been examined with the care which we believe the subject deserves.

Although in the past two years the NIEs have taken a more realistic view of the Soviet military buildup, and even conceded the possibility that its ultimate objective may well exceed the requirements of deterrence, they still incline to play down the Soviet commitment to a war-winning capability. Three additional factors (beside those mentioned above) may account for this attitude:

1. Political pressures and considerations. On some occasions the drafters of NIE display an evident inclination to minimize the Soviet strategic buildup because of its implications for detente, SAL negotiations, congressional sentiments as well as for certain U.S. forces. This is not to say that any of the judgments which seem to reflect policy support are demonstrably directed judgments: rather they appear to derive mainly from a strong and understandable awareness on the part of the NIE authors of the policy issues at stake.

2. Inter-agency rivalry. Some members of Team "B" feel that the inclination of the NIEs to downplay military threats is in significant measure due to bureaucratic rivalry between the military and civilian intelligence agencies; the latter, being in control of the NIE language, have a reputation for tempering the pessimistic view of military intelligence with more optimistic judgments.

3. The habit of viewing each Soviet weapons' program, or other development, in isolation from the others. The NIEs tend to assess each Soviet development as in and of itself, even when it is evident that the Russians are pursuing a variety of means to attain the same objective. As a result, with each individual development minimized or dismissed as being in itself of no decisive importance, the cumulative effect of the buildup is missed.

Analyses carried out by members of Team "B" (and presented in Part Two of this Report) of NIE treatments of certain key features of the Soviet strategic effort indicate the extent to which faulty method and biases of an institutional nature affect its evaluations. This holds true of the NIE treatment of Soviet strategic offensive forces (ICBMs

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and SLBMs); of its views of the alleged economic constraints on Soviet strategic forces; of its assessment of Soviet civil defense and military hardening programs; of its interpretation of the strategic implications of Soviet mobile missiles and the Backfire bomber; of its evaluation of Soviet R&D in the fields of anti-submarine, anti-satellite, and anti-ballistic missile defenses; and of its perception of Soviet non-central nuclear systems. In each instance it was found that through NIE 11-3/8-75, the NIEs have tended (though not in the same degree) to minimize the seriousness and success of the respective Soviet efforts, and (by the injection of *de facto* net assessments) to downgrade the threat which they pose to U.S. security.

In formulating its own estimate of Soviet strategic objectives, Team "B" divided it into two aspects: objectives in the broad, "grand strategic" sense, as they are perceived by the Soviet leader-ship; and objectives in the more narrow, military sense, as defined by NIE 11-3/8.

As concerns the first, Team "B" agreed that all the evidence points to an undeviating Soviet commitment to what is euphemistically called "the worldwide triumph of socialism" but in fact connotes global Soviet hegemony. Soviet actions give no grounds on which to dismiss this objective as rhetorical exhortation, devoid of operative meaning. The risks consequent to the existence of strategic nuclear weapons have not altered this ultimate objective, although they have influenced the strategy employed to pursue it. "Peaceful coexistence" (better known in the West as detente) is a grand strategy adapted to the age of nuclear weapons. It entails a twin thrust: (1) stress on all sorts of political, economic, ideological, and other non-military instrumentalities to penetrate and weaken the "capitalist" zone, while at the same time strengthening Russia's hold on the "socialist" camp; and (2) an intense military buildup in nuclear as well as conventional forces of all sorts, not moderated either by the West's self-imposed restraints or by SALT.

In its relations with the United States, which it views as the central bastion of the enemy camp, the Soviet leadership has had as its main intermediate goals America's isolation from its allies as well as the separation of the OECD nations from the Third World, which, it believes, will severely undermine "capitalism's" political, economic, and ultimately, military might.

With regard to China, while the spectre of a two-front war and intense ideological competition have to an inportant degree limited the Soviet Union's freedom of action in pursuance of their goals against the West, it has not proved an unlimited or insuperable limitation. Further,

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given current trends in the growth of Soviet military power, the U.S. cannot confidently anticipate that concern with China will deter the USSR from increasingly aggressive policies toward the West.

As concerns the more narrowly defined military strategic objectives, Team "B" feels the USSR *strives for effective strategic superiority in all the branches of the military, nuclear forces included.* For historic reasons, as well as for reasons inherent in the Soviet system, the Soviet leadership places unusual reliance on coercion as a regular instrument of policy at home as well as abroad. It likes to have a great deal of coercive capability at its disposal at all times, and it likes for it to come in a rich mix so that it can be optimally structured for any contingency that may arise. After some apparent division of opinion intermittently in the 1960's, the Soviet leadership seems to have concluded that nuclear war could be fought and won. The scope and vigor of Soviet strategic programs leave little reasonable doubt that Soviet leaders are indeed determined to achieve the maximum possible measure of strategic superiority over the U.S. Their military doctrine is measured not in Western terms of assured destruction but in those of a *war-fighting and war-winning capability;* it also posits a clear and substantial Soviet predominance following a general nuclear conflict. We believe that the Russians place a high priority on the attainment of such a capability and that they may feel that it is within their grasp. If, however, that capability should not prove attainable, they intend to secure so substantial a nuclear war-fighting advantage that, as a last resort, they would *be less deterred than we from initiating the use of nuclear weapons.* In this context, both detente and SALT are seen by Soviet leaders not as cooperative efforts to ensure global peace, but as means more effectively to compete with the United States.

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PART ONE

JUDGMENTS ABOUT SOVIET STRATEGIC OBJECTIVES
UNDERLYING NATIONAL INTELLIGENCE ESTIMATES
AND THE SHORTCOMINGS OF THESE JUDGMENTS

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PART ONE

JUDGMENTS ABOUT SOVIET STRATEGIC OBJECTIVES UNDERLYING NATIONAL INTELLIGENCE ESTIMATES AND THE SHORTCOMINGS OF THESE JUDGMENTS

1. *Influence of Intelligence Gathering Techniques on the Perception of Soviet Objectives*

The National Intelligence Estimates concerning the USSR are essentially assessments of Soviet military capabilities which, in the main, are based on data gathered by means of highly sophisticated optical and listening devices. Because the Soviet Union remains a uniquely closed society, human contacts, traditionally the principal source of foreign intelligence, play a distinctly subordinate role in the preparation of these documents: not only is such information exceedingly scarce, but it is always suspect of being the product of a deliberate disinformation effort in which the Soviet government engages on a massive scale. Furthermore, information obtained from sensitive human sources often has such limited distribution that it does not play a significant part in the preparation of NIEs. Thus it happens that the hard evidence on which the NIEs are based relates primarily to the adversary's capabilities rather than his intentions, his weapons rather than his ideas, motives, and aspirations.

The particular nature of the intelligence-gathering process exerts an important influence on the manner in which Soviet strategic objectives are assessed in the NIEs: we have here an instance of technology turning from tool into master. Because the hard evidence is so overwhelmingly physical (material) in nature, the tendency of the intelligence community is to focus on questions of *what* rather than *why* or *what for*. Problems of capabilities overshadow those of Soviet purpose. As a consequence, the NIEs either gloss over in silence the question of Soviet strategic objectives, or else treat the matter in a perfunctory manner. Judging by the available evidence, it seems that the intelligence community has spent more effort and produced more literature on each and every Soviet ICBM system than on the whole overriding question of why it is that the USSR develops such a strategic nulcear posture in the first place.

To gloss over Soviet purpose, however, does not mean to be rid of the issue: excluded from the front entrance, it has a way of slipping through the back door. The point is that whether one wants to or not, in assessing the enemy's capabilities one must of necessity make some kind of judgments about his objectives, or else the raw data are of no use. Facts of themselves are mute: they are like the scattered letters of an alphabet that the reader must arrange in sequence according to some system. The difference is only whether one arrives at one's judgments about an adversary's objectives consciously and openly, i.e., spells them out, or unconsciously. As a rule, whenever the latter course is taken, one's judgments tend to be drawn from simplistic "projections" of one's own values and aspirations. For unless we are prepared to acknowledge that our adversary is "different" and unless we are willing to make the mental effort required to understand him on his own terms, we have no choice but to fall back on the only alternate position available, namely the postulate that his basic motivation resembles ours. The result is that well-known phenomenon, "mirror-imaging", the persistent flaw of the NIEs bearing on the USSR, a flaw which may be said to constitute the principal source of their unsatisfactory assessments of Soviet objectives. In other words, the disinclination, in no small part induced by the scientific-technical character of intelligence gathering about the USSR, to face squarely the issue of objectives (which does not lend

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itself to conventional scientific or technical analysis) encourages the authors of the NIEs to adopt a set of questionable assumptions about Russian intentions. These assumptions, in turn, lead to the formulation of judgments about Soviet intentions which are not supported by the available evidence, and, indeed, sometimes stand in stark contradiction to it. Thus, overemphasis on "hard" data and the failure to draw on other sources of information with the same degree of conviction all too often causes the information supplied by the "hard" data to be misinterpreted. In the opinion of Team "B", *the NIEs are filled with unsupported and questionable judgments about what it is that the Soviet government wants and intends. It is this practice, rather than the absence of solid information, that has caused in the past (and in considerable measure does so in the present) recurrent underestimations of the intensity, scope, and implicit threat of the Soviet strategic buildup.*

2. *Implicit NIE Assumptions and Judgments About Soviet International Behavior*

The unspoken assumptions of the U.S. intelligence community (and, one may add, much of the U.S. political, intellectual, and business communities as well) about Soviet international behavior derive from several sources, which can be briefly identified as follows:

a. The U.S. commercial tradition and the business culture which permeates U.S. society; among their components are the beliefs that (1) peace and the pursuit of profit are "normal" whereas war is always an aberration; (2) in relations between parties both should enjoy a share of the profits; and, (3) human nature everywhere is the same, by and large corresponding to the rationalist, utilitarian model devised by Jeremy Bentham and his followers.

b. A democratic tradition which regards social equality as "natural" and elitism of any sort as aberrant.

c. An insular tradition derived from the fact that until two decades ago, when the Russians deployed their first ICBMs, the USA had enjoyed total immunity from a strategic threat to its territory.

These three traditions—commercial, democratic, and insular—have imbued the United States with a unique outlook on the world, an outlook that is shared by no other nation, least of all by the Russians whose historic background is vastly different. It is a world outlook *sui generis* and yet nevertheless one which deeply colors the intelligence community's perceptions of the motives and aspirations of the USSR.

As one reads the NIEs issued over the past fifteen years, one finds underlying their assessments a whole set of *unspoken assumptions* about Russian national character and goals *that in all essential respects corresponds to the idealized image the United States has of itself but bears very little resemblance to anything that actually relates to Soviet Russia.*

A. *NIE Conception of Soviet Strategy*

To begin with, the key word, the adjective "strategic." The Soviet conception of "strategic," is much broader than that covered by NIE 11-3/8. Russia is a continental power not an insular one, and it happens to have the longest external frontier of any country in the world. In contrast to the United States, it has never enjoyed the luxury of isolation, having always been engaged in conflict along its frontier, sometimes suffering devastating invasions, sometimes being the aggressor who absorbed entire countries lying along its borders. For a country with this kind of a historic background it would make little sense to separate any category of military weapons, no matter how destructive, from the rest of the arsenal of the means of persuasion and coercion.* The strategic threat to the homeland (i.e., the ability of an enemy to inflict "unacceptable" human and material losses) is for the Soviet Union nothing new, and the danger presented by strategic nuclear weapons, grave though it may be, does not call for a qualitative departure from the norms of traditional military thinking.

There is also a further factor which militates against the Russians' thinking of strategic weapons in the same way as do the Americans. In the United States, the military are not considered an active factor in the political life of the country, war itself is viewed as abnormal, and the employment of weapons of mass destruction as something entirely outside the norms of policy. The Soviet Union, by contrast, functions as a giant conglomerate in which military, political, and

* It is true, of course, that the Russians have created a separate branch of the armed forces, the Strategic Rocket Forces. This is an administrative device, however, which does not signify that they regard such forces as unique and fundamentally different from the army, navy, or air force.

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economic institutions—and the instruments appropriate to each of them—are seen as part of a diversified arsenal of power, all administered by the same body of men and all usable for purposes of persuasion and coercion. The distinction between the civilian and the military sectors of society and economy, appropriate to capitalist societies, is not very meaningful in the Soviet environment. *All of which means, that in the USSR military weapons in general, and strategic nuclear weapons in particular, are treated not as unique instruments to be used as a very last resort, but as elements of a whole range of mutually supporting means of persuasion and coercion available to the state in pursuit of its interests.*

The Soviet conception of strategy resembles that which in Western literature is sometimes referred to as "grand strategy": it entails the application of *all* the available resources in the pursuit of national objectives. Soviet military theory is decidedly Clausewitzian in orientation. In Soviet strategic writings, the point is made with monotonous emphasis that military actions are subordinate to politics, and have no function outside of politics. The following passage is a fair example of this kind of argument:

> The organic unity of military strategy and policy with the determining role of the latter signifies that military strategy proceeds from policy, is determined by policy, is totally dependent on policy, and accomplishes its specific tasks only within the framework of policy . . .

The distinction between the American and Soviet conceptions of strategic force is well reflected in the criteria which the two sides employ in assessing the power relationship between potential adversaries. The American concept of "strategic balance" concentrates almost exclusively on military forces, whereas the Soviet concept of "correlation of forces" (*sootnoshenie sil*) includes in the equation also such non-military factors as political power, economic capacity, social cohesion, morale, and so forth.

By adopting in its estimates of Soviet strategic objectives the narrow American definition of what constitutes strategy and a strategic threat instead of the broad Clausewitzian one, the NIEs 11-3/8 have no choice but to ignore weapons other than nuclear ones in the Soviet strategic arsenal.* They grossly underemphasize the connections between the political, military, economic, and ideological elements in Soviet foreign policy. By singling out for near exclusive treatment the three components of the Triad, they not only leave out of consideration other nuclear and non-nuclear military means but also a whole range of strategic weapons of a non-military kind which the Soviet leadership sees as available to it in the pursuit of world politics. And yet in Soviet eyes such actions as the interdiction of the Western flow of oil, supplies or the disruption of the democratic processes by Communist parties may well be perceived as "strategic" moves equal in importance to the deployment of the latest series of ICBMs.

B. NIE Assumptions and Judgments About Soviet Strategic Objectives

Much the same "mirror-imaging" holds true when we turn from the NIEs' perception of what constitutes a "strategic threat" to their view of Soviet "strategic objectives." Here we find a rather mechanistic projection onto Soviet society of the sentiments and aspirations of a society which sees war as an unmitigated evil and the military as a social overhead to be curtailed whenever possible, a society which conceives the purpose of organized life to be the steady improvement of the citizen's living standards. These views are never spelled out in so many words: nevertheless, they unmistakably underpin the NIEs evaluations of what it is that the Russians aim at.

Much of U.S. analysis of Soviet military programs and actions is based on granting excessive legitimacy to an alleged Russian obsession with national security derived of experience with foreign invasions and interventions.** Soviet Russia's relentless drive to enlarge and improve its military power, its impulsive reaction to any moves that threaten its territory, its overriding concern with obtaining international recog-

[redacted]

* This tendency is aggravated by the compartmentalization of the analysis of enemy capabilities by the intelligence community which originally separated strategic offensive weapons from strategic defensive weapons, and both from theatre tactical capabilities. This compartmentalization persists in various forms up to this day.

** See e.g., General George S. Brown's *United States Military Posture for FY 1977* where the following phrase occurs: "The Soviet historical experience of war, invasion, revolution, foreign intervention and hostility has produced strong anxiety concerning national security." (p. 8)

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nition of its post-world War II conquests—all of this is attributed to historically-induced national insecurities.

This basic assumption, strongly (though indirectly) reflected in the NIEs, has a number of important corollaries:

(1) That Soviet military policy is first and foremost *defensive* in character. This view is explicitly conveyed in NIE 11-4-72 (*Issues and Options in Soviet Military Policy*), one of the few intelligence publications which addresses itself seriously to Soviet strategic objectives in the context of "grand strategy"

> "Certain broad aims of Soviet foreign policy can . . . be described today in much the same way as a decade or more ago: (a) *security* of the homeland and of the world communist "center"; (b) *protection* of the "gains of socialism" and more specifically *maintenance* of loyal Communist regimes in eastern Europe; (c) fostering *awareness* everywhere of Soviet military strength and readiness so as to support a strong foreign policy aimed at expanding Soviet *influence*". (p. 5; emphasis supplied).*

The possibility that the Russians may be pursuing not a defensive but an offensive strategy is not entertained in the NIEs: the spread of Soviet "influence" (which can also mean the use of peaceful means) is as far as they are prepared to go in that direction. Apparently, the issue is discounted as not meriting serious thought. In line with this assumption, the whole immense Soviet buildup of nuclear strategic weapons is seen as serving primarily defensive purposes. A document called *Soviet Nuclear Doctrine: Concepts of Intercontinental and Theater War*, issued by the Office of Strategic Research in June 1973, flatly asserts that the Russians perceive their nuclear forces as serving essentially defensive aims: "The major effort has been on programs which ensure the ability of strategic forces to absorb a U.S. strike and still return a devastating blow" (p. 3). Here, too, the possibility of the Russians using their strategic weapons for offensive purposes is ignored. Indeed, the very possibility of nuclear war is rejected, for which reason the NIEs tend to disregard evidence that suggests the Russians view the matter differently.

(2) Consistently with this perception of Soviet defensive objectives, the Soviet Union is seen as being interested primarily in securing an effective deterrence force: "Deterrence is a key objective."* Moreover, deterrence is regarded as an end goal and, as in Western thinking, as something fundamentally different from war-fighting capability and strategic superiority. Proceeding from this premise, the NIEs have notoriously underestimated both the intensity and scope of the Soviet commitment to a strategic nuclear buildup. NIE 11-8-64 (p. 2) went on record as stating that there was no reason to believe that the USSR desired to match the United States in the number of ICBMs. By 1967-68 the NIEs conceded that the Russians might perhaps be aiming at strategic parity with the United States. Only in 1974-75, however, was the possibility of the Russians seeking advantage and superiority over the United States advanced as a serious contingency.**

(3) Once the Soviet Union has attained parity with the United States and assured itself of an effective deterrent, it will not wish to continue the arms race. As they gain strength, the Russians will also acquire self-confidence and therefore cease to feel the need to flex their muscles to impress potential enemies: the acquisition of military might will make the Soviet Union aware that the "contest for international primacy has become increasingly complicated and less amenable to simple projections of power." (NIE 11-4-72, p. 1). The Soviet Union will turn into a stabilizing force in international affairs and shift an increasing share of its resources from the military to the civilian sector ("The Soviet leadership would no doubt prefer to shift some scarce resources . . . to the civilian sector," NIE 11-4-72, p. 1).

(4) Because its preoccupation is with defense, in its military effort the Soviet Union mainly responds to initiatives of its potential rivals, especially the United

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* A similar view of Soviet military policy, i.e., as inherently defensive is advanced in NIE 11-3/8-75 Vol. II, Paragraph 40, pp. 10-11, and NIE 11-14-75 (p. 2). The latter, for instance, says: "The USSR considers its military strength in Europe to be fundamental to the *protection* of its national interests, to the *maintenance* of its strategic posture vis-a-vis the West, and to its management of foreign policy" (Emphasis supplied). The National Intelligence Estimates bearing on the Soviet Navy (e.g., NIE 11-15-74, *Soviet Naval Policy and Programs—Annexes*, p. A-4) also tend, on the whole, to see Soviet naval buildups in defensive rather than offensive terms.

* *Soviet Nuclear Doctrine: Concepts of Intercontinental and Theater War*, [ ]

** The NIE record in regard to Soviet strategic objectives is discussed at greater length in the Annex.

States. Its strategic moves are reactive in character and opportunistic rather than self-generated or long term in conception.

(5) Given the obsession with national security and the fact that its military arsenal serves primarily defensive purposes, the United States can watch without alarm the Soviet effort to attain military parity. The attainment of such parity will provide the Russians with the sense of confidence necessary for them to decelerate the arms buildup.

(6) The Russians would admittedly not be averse to gaining strategic superiority over the United States if they thought this goal feasible. However, until very recently the authors of NIE regarded such an objective to be unrealistic and they did not allow that Soviet leaders could seriously entertain it (e.g., "We believe that the USSR has concluded that the attainment of clear superiority in strategic weapons . . . is not now feasible": NIE 11-72, *Soviet Foreign Policies and the Outlook for Soviet-American Objectives*, p. 2; no evidence supporting this contention is given in this or any other document). Only very recently has the mass of data which suggests that the USSR may not be content with mere parity and mutual deterrence become so compelling as to force the NIE to concede that the Soviet Union could indeed possess more ambitious goals: "the scope and vigor of these [strategic] programs" says NIE 11-3/8-75 (p. 5), "at a time when the USSR has achieved a powerful deterrent as well as recognition as the strategic equal of the U.S., raise the elusive question of whether the Soviet leaders embrace as an objective some form of strategic nuclear superiority over the U.S." This qualified admission, after years of stress on the purely defensive character of Soviet strategic objectives, is gratifying, even though the NIE still tends to disparage the importance of such superiority and, refuses to acknowledge that it can be militarily meaningful. The prevailing tone of the NIE all along has been to view Soviet policy as one of prudent opportunism. The Russians are seen as unwilling to take high risks or to make any moves that might provoke the United States, on whose good will they are believed to place extremely high value.

(7) Soviet military doctrine and the official pronouncements of Soviet leaders which seem to indicate a more aggressive stance, as, for example, when they speak of "socialist" (read: Soviet) world hegemony, need not be taken too seriously. While some intelligence analysts apparently do attach considerable significance to Soviet doctrinal pronouncements, the consensus reflected in NIEs holds that Soviet doctrine is primarily exhortative in character and possesses little if any operative significance. Its main function is to serve domestic politics, for which reason it represents a kind of Soviet counterpart to U.S. campaign oratory.

It is not difficult to perceive that the picture of Soviet motivations and intentions as implicitly or (less frequently) explicitly drawn in the NIEs is one which in all respects but one—namely, the acknowledgement of an abiding, historically-conditioned and extreme sense of national insecurity—is like that of the United States. The Soviet Union is seen as defensive-minded, concerned with securing merely an effective deterrence, preferring to shift the competition with the United States to other than military arenas so as to be able to transfer resources to the civilian sector, and lacking in any strategic objectives apart from those that are forced upon it by the United States and other potential adversaries. Superiority is something the Russians would not scorn if the United States were to allow them to gain it; but by the very nature of things, it is not an objective they can actively pursue, the more so that strategic superiority in the nuclear age is something of a phantom. The Russians indeed do display opportunistic proclivities but they are above all prudent, cautious, and conservative.

These assumptions permeate the analyses presented in the National Intelligence Estimates and often lead to quite unwarranted assessments. Examples of such procedures are given in Part Two of this Report which indicates how, partly by virtue of "mirror-imaging," and partly as a result of firmly held convictions about what it is the Russians must or ought to want, hard data are interpreted in a manner that closer scrutiny reveals to be at best questionable and at worst palpably unsound.

3. Critique of these assumptions

The point is that these assumptions do not stand up to scrutiny in the light of Soviet history, Soviet doctrine, and Soviet actions.

(1) To begin with, the tendency to view "insecurity" as the motor force propelling Soviet foreign and military policies. Although undoubtedly the desire to protect the homeland is a factor in

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Russian behavior, it does not lead to a defensive posture in the ordinary meaning of the word: the Russians construe their own security in the sense that it can be assured only at the expense of their neighbors. This leads to an essentially aggressive rather than defensive approach to security. And in fact, Russian, and especially Soviet political and military theories are distinctly *offensive* in character: their ideal is the "science of conquest" (*nauka pobezhdat'*) formulated by the 18th Century Russian commander, Field Marshall A. V. Suvorov in a treatise of the same name, which has been a standard text of Imperial as well as Soviet military science.

There are valid reasons why Soviet political and military thinking should be offensive.

A. As a matter of the historical record, it is untrue that Russia has suffered an exceptional number of invasions and interventions: it has probably done more invading itself. The expansion of Russia as a continental empire is without parallel in world history: no country has grown so fast and none has held on so tenaciously to its conquests. It is no accident that Russia alone of all the belligerents has emerged from World War II larger than it had entered it. As concerns the celebrated interventions of the West in the Russian Revolution, most of what is said on this subject is myth pure and simple: suffice it to say that except on rare occasions Western troops did not actively fight the Red Army; that their intervention was a response to Soviet intervention in western politics (the call to class war and the overthrow of the existing governments); and that the net effect of U.S. intervention in the Russian Civil War has been to save Eastern Siberia for Russia from certain Japanese conquest. In other words, the Russian "right" to be obsessively concerned with security is a misconception based on a one-sided reading of history; indeed, if anyone has a right to be obsessed with security it is Russia's neighbors. It is really not surprising that "insecurity" plays a far lesser part in Russian thinking or psychology than is normally attributed to it. The Russian outlook, where politics and military affairs are concerned, has traditionally been confident and aggressive rather than anxious and defensive. Hence there is no reason to assume that the growth of military might will assuage the Russian appetite for expansion: the opposite proposition is far more plausible—*the stronger they are and feel, the more likely are they to behave aggressively.*

B. There are also internal reasons which push the Soviet leadership toward an offensive stance:

The great importance which Soviet political theory attaches to the sense of forward movement: the lack of any kind of genuine legitimacy on the part of the Soviet government compels it to create its own pseudo-legitimacy which rests on an alleged "mandate of history" and is said to manifest itself in a relentless spread of the "socialist" cause around the globe;

Connected with it, the attitude that in political, military, and ideological contests it is essential always to seize and hold the initiative;

Lack of confidence in the loyalty of the population (a World War II experience), especially where East Europe is concerned, and the fear of massive defections to the enemy in the event of prolonged defensive operations;

The better ability of the regime to exercise control over military commanders (as well as over the civilian population) in pre-planned, offensive operations, than under conditions where the initiative is left to the opponent;

The traumatic experience of the first few months of the Russo-German War of 1941-45, when a sudden Nazi onslaught caused immense Soviet losses in manpower and territory, and almost cost the Russians the war; the experiences of war in the Middle East in 1967 and 1973 have reinforced the belief of Soviet military in the value of decisive offensive action;

The conviction that in the nuclear age the decisive blows will be struck in the first hours of the conflict, and hence he who waits to strike second is almost certain to lose.

(2) There is no evidence either in their theoretical writings or in their actions that Soviet leaders have embraced the U.S. doctrine of mutual assured destruction or any of its corollaries. Neither nuclear stability, nor strategic sufficiency, nor "parity," play any noticeable role in Soviet military thinking. The Russians seem to have come to regard strategic nuclear weapons as weapons of unique capacity whose introduction has indeed profoundly affected military strategy, but which, in the ultimate analysis, are still means of persuasion and coercion and as such to be employed or not employed, as the situation dictates.

33. *(Continued)*

They regard nuclear war as feasible and (as indicated below in Parts Two and Three) take many active steps to attain a capability to wage and win such a war. The attainment of nuclear parity with the United States has served only to strengthen their view of the matter. True, Khrushchev in the early 1960s, and for several years thereafter various spokesmen from Soviet institutes, appeared to accept mutual deterrence as a concrete fact in the face of U. S. strategic superiority and the then bleak prospects for the USSR to reverse that situation. These indications of serious internal consideration of Western concepts of nuclear balance disappeared as prospects for meaningful Soviet strategic superiority improved, although Soviet spokesmen continued to suggest to Western audiences that nuclear war could be mutually destructive. In any event there is no evidence that Soviet planners have adopted the essentials of U.S. strategic thinking with its linchpin, the theory of nuclear sufficiency: indeed, all the available evidence points to their deliberate and steadfast rejection of such Western concepts.

(3) There is no reason to assume that the Soviet leadership, like its U.S. counterpart, regards military expenditures as a waste and wishes to reduce the military budget in order to be able to shift resources to the civilian sector. For one, the priority enjoyed by the Soviet military seems unchallengeable. Secondly, the sharp civilian-military duality, basic to our society, does not exist in the USSR; hence, the Soviet military budget is not clearly differentiated from the civilian one. The reduction of Soviet military expenditures by so many billion rubles would not automatically release resources for the civilian population. Finally, it is unwarranted to assume *a priori* that the Soviet leadership is eager significantly to raise its population's living standards. The ability to mobilize the population not only physically but also spiritually is regarded by the Soviet leadership as essential to any successful war effort. Having had ample opportunity to observe post-1945 developments in the West, the Soviet leaders seem to have concluded that a population addicted to the pursuit of consumer goods rapidly loses its sense of patriotism, sinking into a mood of self-indulgence that makes it extremely poor material for national mobilization. There is every reason to believe—on the basis of both the historic record and the very logic of the Soviet system—that the Soviet regime is essentially uninterested in a significant rise of its population's living standards, at any rate in the foreseeable future. Certainly, the prospect of acquiring additional resources for the civilian sector is for it no inducement for a reduction of the arms buildup.

(4) While the Soviet Union obviously, and for good reasons, keeps a very close watch on U.S. strategic developments, and, when necessary, adopts appropriate defensive countermeasures, there is no evidence that its long-term strategic planning is *primarily* influenced by what the United States or any other power happens to do. The Soviet Union is pursuing its own long term global objectives, doing all that is necessary to safeguard the home base, but without allowing the requirements of defense substantially to alter its offensive objectives. It is striking, for example, how little attention is paid in Soviet military literature (both open and classified) to SALT. In contrast to the United States, where strategic arms limitation is regarded as a central element in the development of the U.S.-USSR strategic balance, in Soviet literature SALT is treated as a minor sideshow without much influence on the overall strategic competition. Attention must also be called to the Soviet Union's response to what it must have perceived as the greatest threat to its security since the end of World War II, namely the conflict with China. Instead of depleting its Warsaw Pact forces to confront the Chinese threat, the Soviet Union proceeded in the 1960's to build up a powerful and substantially new military force on the Far Eastern front, thereby once again demonstrating that it does not intend actions by others to interrupt or deflect its own long term strategic planning.

(5) Since, as we have pointed out, the decisive motive in Soviet political and military thinking is not a defensive but an offensive spirit, the assumption that *growing Soviet strength will cause them to become less aggressive is unwarranted.*

(6) It is certainly true that the Russians have been prudent and generally cautious, and that they have avoided rash military adventures of the kind that had characterized nationalist-revolutionary ("fascist") regimes of the 1930's. As the record indicates, whenever they have been confronted with situations that threatened to lead to U.S.-USSR military confrontations, they preferred to withdraw, even at the price of some humiliation. The reason for this cautious behavior, however, lies not in an innate conservatism, but rather in military inferiority, for which reason one cannot count on it recurring as that inferiority

disappears. The Russians have a strongly developed sense of power relationships, of the equation of total power between adversaries, which they call the "correlation of forces." They believe that one's means should always match one's objectives, and hence that one should never engage oneself fully (i.e., without retaining a possibility of timely withdrawal) unless there is very high certainty that the correlation of forces is so favorable as to ensure success. (Their theorists claim, with unconcealed scorn, that "bourgeois" leaders habitually underestimate the strength of their opponents, rushing headlong into hopeless "adventures".) Whenever they feel that the correlation of forces is strongly in their favor, their doctrine calls on them to act decisively and with vigor. It may, therefore, be assumed that in proportion as the USSR gains strength and perceives the global "correlation of forces" shifting in its favor, it will act in a manner that *in our definition* will be *less* cautious.

(7) The internal pronouncements of Soviet civilian and military leaders concerning national objectives should on no account be dismissed as empty rhetoric. In authoritarian states, the will of individuals takes (by definition) the place of laws, for which reason formal pronouncements of the leader or leaders acquire quite a different significance and fulfill quite different functions from those they have in countries where governments are elected popularly and operate in accord with constitutional mandates. Communist rulers simply cannot say for internal consumption things which are significantly different from what they actually mean, or else they risk disorienting their subjects and disorganizing their administrations. (To the extent that they make contrary statements in private and "off the record" to Westerners, they can be assumed to have the purpose of influencing foreign public opinion.) One must bear in mind that the decisions of the Soviet leadership, as officially enunciated, are filtered down to the masses by means of a vast and well-organized *agitprop* machinery, and are understood by the population at large to be formal directives. Nowhere can "mirror-imaging" be more deadly than in the treatment of Soviet pronouncements with that cynicism with which we are accustomed to respond to our own electoral rhetoric.

4. Conclusion

If we juxtapose the implicit and explicit assumptions of NIEs about the Soviet mentality and Soviet strategic objectives with what history, the exigencies of the Soviet system, and the pronouncements of Soviet leaders indicate, we are not surprised that *the NIEs consistently underestimate the significance of the Soviet strategic effort.* All Soviet actions in this field tend to be interpreted in the light of a putative sense of insecurity; aggressive intentions are dismissed out of hand. It is our belief that the NIEs' tendency to underestimate the Russian strategic drive stems ultimately from three causes: (1) an unwillingness to contemplate Soviet strategic objectives in terms of the Soviet conception of "strategy" as well as in the light of Soviet history, the structure of Soviet society, and the pronouncements of Soviet leaders; (2) an unconscious (and related) tendency to view the USSR as a country whose basic strategic objectives are limited to an assured defense of the home country, and (3) the resultant tendency to ignore or misinterpret evidence that points to different conclusions. In other words, such misjudgments as have been committed and to some extent continue to be committed are due not so much to the lack of evidence as *to the absence of a realistic overall conception of Soviet motives and intentions, without which the significance of such evidence as exists cannot be properly assessed.*

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PART TWO

A CRITIQUE OF NIE INTERPRETATIONS OF CERTAIN SOVIET STRATEGIC DEVELOPMENTS

[Not Reproduced in This Volume.]

PART THREE

SOVIET STRATEGIC OBJECTIVES

To be properly understood, the strategic objectives of the Soviet Union require, in addition to a realistic analysis of strategic nuclear force capabilities, continuous, careful monitoring of Soviet global activities: theoretical pronouncements of Communist leaders must be observed concurrently with Soviet actions in the military, political, and economic spheres in the various regions of the globe; the evidence thus obtained needs to be juxtaposed and synthesized. Such monitoring and synthesizing is not effectively realized at the present time in the U.S. Government, and there exists no document that provides an overview of Soviet "grand strategy". Given the absence of a study of this kind within the U.S. Government, the best that can be done here is to provide an outline of some of the outstanding features of Soviet global strategy, especially as it bears on the United States.

1. *Political Objectives*

The ultimate Soviet objective is (as it has been since October 1917) the worldwide triumph of "socialism", by which is meant the establishment of a system which can be best characterized as a regime of state capitalism administered exclusively by a self-perpetuating elite on the model of the Soviet Communist Party. Soviet leaders still strive for such a new global system, wholly integrated with the Soviet Union and directed from Moscow. Judging by pronouncements of leading Soviet theorists, this ideal continues to remain a long-range objective. However, the realities of an expanding Communist realm have induced the Soviet leaders to accept (at any rate, for the time being) a more limited and flexible formulation in which the USSR remains the authority of last resort and the principal protector but no longer the model which all Communist countries must undeviatingly emulate. The East Berlin meeting of Communist parties held in June 1976 ratified this formulation; but only time will tell how willing the Soviet elite is to grant non-Soviet Communists a measure of political freedom.

It is adherence to the historic ideal of a worldwide Communist state and the steady growth of military confidence that lends Soviet policies that offensive character which is stressed in Part One of the present Report. Not the fear that "capitalism" will engage in an unprovoked assault against "socialism" but the desire steadily to reduce the "capitalist" realm and still to be able to deal with any possible backlash when it is in its death throes motivates Soviet political behavior.

The emergence of a worldwide "socialist" order is seen by the Soviet leadership as a continuous process, inexorable in nature but not without its pitfalls and temporary reverses. The ultimate triumph of the cause is seen as the result of economic, political and military processes which will bring about a series of convulsions in the structures of the Western world and end in their destruction. Once these conditions occur, Western Communist parties, leading the disaffected elements and backed by Soviet power, are expected to be able to assume control.

As noted, this historic process is perceived as occurring concurrently (though not necessarily in a synchronized manner) at all levels. Given this view, Communist "grand strategy" requires that a variety of weapons be utilized to stimulate the process of Western decline and to seize such opportunities as may present themselves while it is in progress. Thus, for example, the establishment of close Soviet economic ties with Third World countries or Soviet direct or indirect involvement in these countries can help to

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weaken the links connecting "capitalist" economies with their essential sources of raw materials and cheap labor, and thereby help to accelerate "capitalism's" economic decline. Communist parties operating in the "capitalist" world can help organize disaffected groups of all kinds and with their assistance undermine orderly democratic processes; or else, where they are too weak to undertake such ambitious attempts, they can seek to have their members or sympathizers occupy key positions in the trade unions, government or academic centers so as to be in a position to paralyze industrial economies and democratic institutes at the appropriate time. Violently discontented ethnic groups, such as the Palestinians, can be taken under Soviet wings and encouraged to promote conditions of permanent turmoil over large geographic areas.

In other words, *strategic weapons*—defined as weapons capable of destroying an enemy's capacity to resist—*embrace in the Soviet understanding a greater range of instrumentalities of persuasion and coercion than is commonly dealt with in Western strategic analyses.* The Soviet objective is an international system totally responsive to a Soviet mandate. In such a system an antagonist's military capabilities must be effectively neutralized so that they cannot be used to resist Soviet aspirations. If necessary, ultimately the Soviet Union should be able to destory those capabilities if the antagonist refuses to acquiesce. But this is not all. *Because the Soviet Union ultimately wishes to destroy not merely its opponents' fighting capacity but their very capacity to function as organized political, social, and economic entities, its strategic arsenal includes a great choice of political, social, and economic weapons beside the obvious military ones.* For this reason, *Soviet strategic objectives cannot be accurately ascertained and appreciated by an examination of the USSR's strategic nuclear or general purpose forces alone. Indeed, even an understanding of these military forces requires an appreciation of the leverage they can provide to attain economic and political objectives. "Power" in the Soviet strategic understanding is perceived not merely as serving specific objectives (for example, "deterrence"), but as negating the enemy's ability to survive. The grasp of this fact is fundamental for the understanding of Soviet strategy and Soviet strategic objectives.*

In the dualism "socialist-capitalist" which underpins Soviet thinking much as the dualism "good-evil" did that of Manicheanism, the United States occupies a special place. It is seen by Russia as the "citadel" of the enemy camp, the main redoubt without the final reduction of which the historic struggle cannot be won no matter how many victories are gained on peripheral fronts. By virtue of its immense productive capacity (and the resultant military potential), its wealth, prestige, its example and moral leadership, and—last but not least—its stockpile of strategic nuclear weapons, the United States is perceived as the keystone of the whole system whose demise is a precondition to the attainment of Communism's ultimate goal.

As seen from Moscow, the United States is something of a paradox in that it is at one and the same time both exceedingly strong and exceedingly weak. Its strength derives primarily from its unique productive capacity and the technological leadership which give it the capacity to sustain a military capability of great sophistication, dangerous to Soviet global ambitions. But the United States is also seen as presently lacking in political will and discipline, unable to mobilize its population and resources for a sustained struggle for world leadership, and devoid of clear national objectives. This assessment has led the Soviet Union to develop a particular strategy vis-à-vis the United States which, under the name first of "peaceful coexistence" and then "detente", has dominated its relations with the United States (except when overshadowed by immediate crisis situations as, e.g., Cuba in 1962 and Czechoslovakia in 1968) over the past two decades.

America's strategic nuclear capacity calls for a cautious Soviet external policy, wherever the U.S. enjoys an advantage or may resolutely resist, at any rate until such a time as the Soviet Union will have attained a decisive military edge. Not only do direct military confrontations raise a threat to the Soviet homeland, but they also tend to feed America's anxieties about the Soviet Union and thus to encourage a high level of military preparedness. An intelligent political Soviet posture toward the United States requires the allaying of the latter's fears of a Soviet threat. (Which does not mean, however, that USSR will hesitate to engage in direct confrontation if they deem it essential to achieve important national objectives). Economic relations ought to be utilized so as to create within the American business community influential sources of support for collaboration with the USSR. Cultural and scientific ties ought to be

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exploited so as to neutralize anti-Communist sentiments in the intellectual community. Encouragement ought to be extended to those American political groupings and to those office-holders and office-seekers who favor better relations with the Soviet Union. The effect of such a policy of "detente" is expected to be a reduction in the influence of those elements in U.S. society which desire greater military preparedness and military R&D, resulting in a weakening of the United States precisely in that sphere where lies its particular strength. Such a policy, furthermore, may bring the Soviet Union valuable additional benefits. As a result of closer economic and scientific links with the United States, the Soviet Union can expect to acquire capital and technology with which to modernize its economy, and in this manner to improve the quality of its military industries.

Soviet motivations for Strategic Arms Limitation Talks should be seen in the same way: They are means to further unilateral advantages instrumental to the continued shift of the strategic balance and to the realization of political gains from the shifting correlation of forces. SALT and the limitations it produces are seen as means of inhibiting U.S. political and military responses to the changing balance of forces. Agreements inconsistent with these ends or agreements that would restrict Soviet ability to further them are unacceptable. *The perception that there is any tension between Soviet interest in SALT and Soviet strategic programs reflects a fundamental misunderstanding of the Soviet approach to SALT,* and of the types of "restrictions" that can be expected from SALT agreements at the present time.

At the same time, however, as provocations of the United States are avoided and economic, cultural, and political contacts with it exploited, nothing must be done that might slacken the global advance against the "capitalist" order of which the same United States is the principal protagonist. It appears that the *intermediate* Soviet strategic objective is to the greatest extent possible *to isolate the United States* from both its allies and the neutral countries of the Third World. This objective can be attained in several ways:

(1) As concerns America's allies: The most important of these are the countries of Western Europe combined in NATO followed by Japan, in the Far East. In respect to these countries, a primary Soviet objective is to drive a wedge between them and the United States. The separation of Europe from the United States can be attempted by a variety of means: establishing on Europe's eastern frontier a military force of such overwhelming preponderance that resistance to it will appear futile and the continuation of NATO not only pointless but dangerous; making Western Europe increasingly dependent economically on the USSR by incurring heavy debts there, entering with it into all sorts of long-term cooperative arrangements, and supplying an increasing share of Western Europe's energy needs; insisting on the participation of Communist parties in national governments; arousing doubts in Western Europe about the U.S. commitments to its defense; and so forth. This objective undoubtedly enjoys very high priority in Russia's strategic thinking. Severance of Western Europe from the United States would reduce any military threat or opposition from that area as well as deprive the U.S. of its European forward bases, eventually bringing Europe's immense productive capacities within the Soviet orbit, thus making the "socialist" camp equal if not superior to the U.S. in economic (and, by implication, military) productive capacities.

(2) As concerns the Third World: Here the stress is on political and economic measures, backed with military means. The Soviet Union strives to sever the links connecting the Third World with the "capitalist" camp, and especially the United States, by:

(a) supporting those political groupings and bureaucracies which tend to identify themselves with policies of nationalizing private enterprises and which broadly back Soviet international policies;

(b) working to undercut such private economic sectors as exist in the underdeveloped countries, and eliminating the influence of multi-national corporations;

(c) reorienting these economies to the maximum extent possible toward the Soviet Union by means of military assistance programs, economic aid, loans, etc;

(d) building interlocking networks of base, overflight, military and logistic agreements etc. which permit the use of surrogate forces (e.g. North Koreans or Cubans) for the purpose of conducting military operations so as to outflank positions important to the West;

(e) through the creation of voting blocs of Third World countries in the United Nations and its agencies to isolate the United States from them.

(3) In its relations with China, the Soviet leadership has as its main immediate goal access to Chinese internal political developments with a view to influencing long range Chinese orientation in a direction consistent with its view of "Communist internationalism". To support such an evolution and as a hedge against failure in achieving such a future orientation, they intend to be able to face China with preponderant military force even in the contingency of military confrontation with the U.S., and if possible and necessary, with political and military encirclement.

While seeking to isolate the United States, disintegrate the Western camp, and contain China, the Soviet Union is concurrently striving to maintain and strengthen the grip on its own camp. Three principal policies have been initiated toward that end:

(1) Economic integration through the so-called "complex plan" adopted by Comecon under strong Soviet pressure in 1971 and now in the process of implementation. The "complex plan" is a long-term undertaking which strives to transform the separate "socialist" economies into a single supra-national economic system with an internal "division of labor." Investments, labor, research and development are to be shared in common. Given the Soviet Union's economic preponderance, not to speak of its political and military hegemony within the Communist Bloc, there can be little doubt that if it is ever fully carried out, the "complex plan" will give the USSR decisive control over the other "socialist"economies as well as over those countries which, through Soviet aid, are being drawn within the orbit of Comecon.

(2) Political and military integration, both of which the USSR is pressing on the other "socialist" countries. Examples of such pressures are attempts to amend the constitutions of the "Peoples' Republics" so as to assign the Soviet Union special status in their internal and external relations; hints of the need to bring about a closer political union between the "Peoples' Democracies" and the USSR; the Soviet effort to compel these republics to accept the principle that in case of a war between the USSR and China, they will be obliged to come to the aid of the Soviet Union; and recent decisions (made mainly for military reasons) to integrate the East European highway and railway networks with those of the Soviet Union.

(3) The enunciation of a doctrine, called the "Brezhnev Doctrine" in the West and "proletarian internationalism" in the Soviet Union, which makes it both a right and a duty of the "socialist camp" to see to it (by military means, if necessary) that no country which had once made the transition from "capitalism" to "socialism" ever slides back and opts out of the "socialist bloc."

At this point, stress must be laid once again (as had been done in the Foreword to this Report) that *we are making no attempt to assess the probability of the Soviet Union attaining its strategic objectives.* There is, in fact, a great deal of evidence that the USSR is running into many difficulties with the implementation of its policies, and that the record of its grand strategy is often spotty. The evidence, however, supports the contention that the above are, indeed, Soviet objectives.

2. *Military Objectives*

In this global strategy, military power, including strategic nuclear weapons, have a distinct role to play. The Soviet Union, to an extent inconceivable to the average Westerner, relies on force as a standard instrument of policy. It is through force that the Communist regime first came to power, dispersed all opponents of its dictatorship, deprived the peasantry of its land, and established near-total control of the country. It is through military power that it defeated the Nazi attempt to subjugate Russia, and it is through the same means that it subsequently conquered half of Europe and compelled the world to acknowledge it as a "super-power." It is through sheer force that it maintains in the USSR its monopoly on authority and wealth. One may say that power in all its forms, but especially in its military aspect, has been the single most successful instrument of Communist policy, supplanting both ideology and economic planning on which the Soviet regime had originally expected to rely for the spread of its influence.* Thus,

* It is perfectly true, of course, that the use of force as a means of attaining and consolidating political power is not confined to Soviet Russia, being common in other parts of the world as well, including the West. However, what is rather unique to Soviet Russia is that here no serious attempt has been made in the nearly six decades that have elapsed since the coup d'etat of October 1917 to ground political power on a more stable foundation in which law and popular consent would play some significant role.

33. *(Continued)*

the regime has a natural predisposition to look to power, particularly in its most visible and readily applicable modes, as an instrument of policy, whether internal or external. This is the arena where it enjoys some decisive advantages over free societies, in that it can spend money on armaments without worrying about public opinion and mobilize at will its human and material resources. Militarism is deeply ingrained in the Soviet system and plays a central role in the mentality of its elite.

One of the outstanding qualities of Soviet military theory and practice is stress on the need for a great choice of options. This characteristic is to be seen in the broad spectrum of weapons in the arsenal of Soviet "grand strategy" as well as in the variety of military weapons which Russia produces. It would be quite contrary to ingrained habits for the Soviet elite to place reliance on any single weapon, even a weapon as potent as the strategic nuclear one. Its natural inclination is to secure the maximum possible variety of military options for any contingencies that may arise, all based on a real war-fighting capability, and thus both to produce at a high rate a broad range of arms and to accumulate stockpiles of weapons, old and new. This tendency alone militates against the USSR adopting a strategic policy that would place ultimate reliance on a single deterrent or on a "deterrence only" strategic posture. One of the fundamental differences between U.S. and Soviet strategic thought has been the rejection in Soviet doctrine and strategy of such concepts as mutual assured destruction, the underlying logic of which is that if deterrence fails neither side can hope to win a nuclear war. Rather, the main thrust of Soviet doctrine has been that in the event of a failure of deterrence, war-winning and national survival prospects can be improved by having in readiness balanced forces superior to those of the adversary, together with an effective civil defense system.

The USSR can be expected to continue pressing forward with large-scale diverse military programs on a broad front, any one of which might be regarded as containable by the West, but the cumulative effects of which may well be far more significant.

We do know that during Khrushchev's premiership there occurred a debate about the fundamentals of Soviet military doctrine, and in particular about the impact of nuclear weapons on doctrine. Khrushchev himself apparently encouraged a pragmatic examination of the prevalent Western view that the destructiveness of nuclear weapons had altered the nature of war to the extent that deterrence of war rather than war-fighting capabilities should determine military policy. This view challenged the fundamental Marxist-Leninist tenet drawn from Clausewitz that "war is an extension of politics by other means." Acceptance of the Western deterrence theory would have challenged the basic Marxist-Communist view that the capitalist world in its "death throes" is certain to lash out in war at the Communist camp.

This flirtation with Western concepts of deterrence was born in an era of obvious U.S. strategic superiority over the USSR. Eventually, the debate, which seems to have lasted until at least the mid-1960's, was settled in favor of the adherents of Clausewitz. The notion that strategic nuclear weapons had made general war mutually suicidal came to be denounced as heretical: the new doctrine declared that a nuclear war could be waged and won. The view which prevailed holds that in a general war "victory" will mean the triumph of Soviet military and political control over the world that emerges from the devastating conflict. (Within this framework, limiting civilian damage to the USSR is important not only as an end in itself but in relation to preserving the post-war political-economic power of the Soviet Union: hence, protection of the key cadres is of particular importance.) General nuclear war was still to be avoided if at all possible, which meant that other weapons in the Soviet arsenal—conventional military, political economic, etc.—were preferable instruments to support policy goals, with Soviet strategic nuclear weapons inhibiting Western counteractions.

The key decision adopted sometime in the 1960's seems to have had as one of its consequences the effort to build up all the branches of the military forces—strategic, conventional, naval—to the point where the Soviet Union could both confidently confront any possible hostile coalition raised against it (including a Sino-American alliance) and project its power in any region of the world where suitable opportunities might arise.

Since that time an intensified military effort has been under way designed to provide the Soviet Union with *nuclear as well as conventional superiority both in strategic forces for intercontinental conflict and theater or regional forces.* While hoping to crush the "capitalist" realm by other than military means, *the*

Soviet Union is nevertheless preparing for a Third World War as if it were unavoidable. The pace of the Soviet armament effort in all fields is staggering; *it certainly exceeds any requirement for mutual deterrence.* The continuing buildup of the Warsaw Pact forces bears no visible relationship to any plausible NATO threat; it can better be interpreted in terms of intimidation or conquest. The rapid growth of the Soviet Navy also seems to be connected more with the desire to pose a threat than merely to defend the Soviet homeland. Intensive research and/or testing in the fields of Anti-Submarine Warfare, Anti-Ballistic Missiles, Anti-Satellite weapons, as described in Part Two of this report, all point in the same direction. So do the massive Soviet civil defense and hardening programs. And so does the high proportion of the national budget devoted to direct military expenditures. The intensity and scope of the current Soviet military effort in peacetime is without parallel in twentieth century history, its only counterpart being Nazi remilitarization of the 1930's.

Short of war, the utility of an overwhelming military power for Moscow may be described as follows:

(1) It enables the USSR to forestall a United States (and potentially a Chinese or combined U.S.-Chinese) effort to compel the Soviet Union to alter any of its policies under the threat of a nuclear attack;

(2) It accords the Soviet Union "super-power" status which it interprets to mean that no significant decisions can be taken in any part of the world without its participation and consent;

(3) It intimidates smaller powers, especially those located adjacent to the USSR, making them more pliant to Soviet wishes. Judging by their pronouncements, it appears that some highly placed Soviet leaders believe that even the U.S. acceptance of detente ultimately resulted from a recognition of the Soviet capacity to intimidate.

(4) It will in time give the Soviet Union the capacity to project its power to those parts of the world where pro-Soviet forces have an opportunity to seize power but are unable to do so without outside military help;

(5) It is a source of influence on countries which purchase or receive surplus Soviet arms, as well as of hard currency earnings;

(6) It is an instrument by means of which, in the decisive moment in the struggle for world hegemony, the retaliatory power of the United States can be preventively neutralized, or, if necessary, actively broken.

Military power has for the Soviet Union so many uses and it is so essential to its global strategy that the intensity and scope of its military buildup should not be in the least surprising.

3. *Conclusion*

The principal Soviet strategic objectives *in the broadest sense* may be defined as follows: Break up the "capitalist" camp by isolating the United States, its backbone, from NATO and the Third World; undermine further the disintegrating "capitalist" realm by promoting and exploiting such economic, political, and social crises as may occur in it over time; solidify the "socialist" camp and Russia's control over it; contain China; and all the time continue building up a military force of such overwhelming might that it can in due time carry out any global missions required of it by Soviet policies.

In the *more narrow sense* of strategic objectives used by NIE 11-3/8, the scope and vigor of Soviet programs, supported by identifiable doctrinal imperatives, leave little reasonable doubt that Soviet leaders are determined to achieve the maximum attainable measure of strategic superiority over the U.S., a superiority which provides conservative hedges against unpredictable wartime contingencies; which is unrestrained by concepts of "how much is enough?"; and which is measured not in Western assured destruction terms but rather in terms of war-fighting objectives of achieving post-war dominance and limiting damage to the maximum extent possible. We believe that Soviet leaders, supported by internal political factors that assign the highest resource priority to the military, place a high priority on the attainment of a superiority that would deny the U.S. effective retaliatory options against a nuclear attack. Short of that, the Soviets intend to have a substantial enough strategic nuclear-warfighting advantage to be able to bring their local military advantages in both conventional and nuclear forces to bear without fear of a U.S.—initiated escalation.

The question of the extent to which such goals remain mere long term aspirations or have become

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practical and current objectives, as well as the question of timing, inevitably arise. It was pointed out in the Introduction that Team "B" focused on Soviet strategic objectives without trying to evaluate their chances for success, since the latter would require a net assessment which exceeds the scope of this effort. However, the team recognizes the overwhelming gravity of this question. Even without a net assessment, the team believes that it is possible, relying on the evidence available in Soviet pronouncements and in the physical data, to reach some judgments as to how the Russian leaders assess their chances of success.

The breadth and intensity of Soviet military programs, statements by Soviet leaders to internal audiences, available Soviet literature, and the growing confidence of Soviet global behavior, all lead us to conclude that *in Soviet perceptions the gap between long-term aspirations and short-term objectives is closing*. This probably means that the Soviet leaders believe that their ultimate objectives are closer to realization today than they have ever been before. *Within the ten year period of the National Estimate the Soviets may well expect to achieve a degree of military superiority which would permit a dramatically more aggressive pursuit of their hegemonial objectives*, including direct military challenges to Western vital interests, in the belief that such superior military force can pressure the West to acquiesce or, if not, can be used to win a military contest at any level. The actions taken by the West to develop its political cohesion and military strength will be critical in determining whether, how, and when the Soviets press to such conclusion.

34. NIE 11-4-77 *Soviet Strategic Objectives*

NIC Master File

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THE DIRECTOR OF CENTRAL INTELLIGENCE

WASHINGTON, D. C. 20505

National Intelligence Officers

18 January 1977

APPROVED FOR RELEASE
ON MANDATORY REVIEW PROGRAM

MEMORANDUM FOR: Recipients of NIE 11-4-77, "Soviet Strategic Objectives"

FROM : George Bush

1. The production of NIE 11-3/8-76 has disclosed a wide range of views within the Intelligence Community on the question of Soviet objectives for strategic forces, a question on which very little hard evidence is available. NIE 11-4-77, forwarded herewith, examines the broader question of Soviet strategic objectives overall, and is not intended to supersede NIE 11-3/8. NIE 11-4 uses a presentational technique different from that of 11-3/8. It is intended to help the reader understand the argument, rather than to resolve it.

2. For this reason NIE 11-4-77 is an unusual estimate. It presents two general lines of argument without requiring the NFIB principals to define their positions. Obviously, within these two general positions there are differences of emphasis among the individual agencies, but I believe that to state these would be more likely to hamper the reader's basic understanding of this important issue than to assist it.

George Bush

Classified by 005827
Exempt from general declassification schedule of E.O. 11652 exemption category 58(1),(2),(3)
Automatically declassified on
Date Impossible to Determine

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SOVIET STRATEGIC OBJECTIVES

KEY JUDGMENTS [2]

A. This Estimate addresses two closely related questions:

— Do the Soviet leaders now base policy—and the programs and activities which flow therefrom—on a belief that the USSR will continue to make substantial gains toward a position of overall dominance in the world? Do they now expect to achieve such a position in the next ten years?

— Have they come to believe—or will they soon—that aggressive actions on their part carry lower risks than earlier, and that these risks have become low enough to be acceptable to prudent yet ambitious men?

B. There is in the Intelligence Community agreement on some matters relevant to these questions and disagreement on others. Among the areas of agreement:

— The aims of Soviet global policy are far-reaching. The Soviet leaders' basic perception of the world still posits a struggle of two great systems, in which theirs will ultimately prevail. This outlook is reinforced by both defensive and expansionist impulses derived from Russia's history and boosted by the remarkable growth of Soviet power and prestige since World War II. Neither in its foreign policy nor its military policy does the USSR aim at long-term equilibrium between the two systems; instead it seeks a continual enhancement of its own power and influence.

— In prosecuting the struggle on multiple fronts, the Soviets see military power as a key instrument which can be used to attain strategic objectives without war.

— The Soviets have never accepted the concept of mutual assured destruction, with its connotation that some finite level of force is sufficient for deterrence, although they recognize mutual deterrence as a present reality that will be very difficult to alter. Moreover, trying to forge ahead of the US and at the same time

[2] *The Assistant Chief of Staff, Intelligence, Department of the Air Force believes the frequent use of such words as fear, anxiety, worry, caution, and concern to describe the state of mind of the Soviet leadership is overdone. He warns the reader that he should not let this excessive use of these words distract from the obvious determination and drive of the Soviet leadership to achieve strategic military superiority.*

34. *(Continued)*

fearful of falling behind it, they are little disposed to adjust their military programs unilaterally so as to foster strategic stability, or to moderate them lest they provoke US program reactions.

— The Soviets aim at advantage in their military forces. They continue to press forward with a broad and vigorous program for improving their military capabilities to support their political objectives.

— The striking thing about these programs is not that they have accelerated in the last few years but that they have grown at a more or less steady pace for two decades. We expect this growth to continue. Neither the creation of an acknowledged deterrent nor the achievement of acknowledged strategic parity has caused the effort to falter. Soviet military doctrine calls for capabilities to fight, survive, and win a nuclear war.

— At the same time, the Soviets worry that they may fall behind in the qualitative military competition, and this further reinforces the priority of their research and development effort.

— In the struggle, they are conscious of weaknesses on their own side, particularly those arising from economic and technological deficiencies and conflict with China. They are working to overcome these weaknesses, but they do not presently expect to remove them in the next decade.

— On the other hand, beyond their obvious military strength, they credit themselves with other important assets: disciplined policy-making, social cohesion, and perseverance.

C. Among our major disagreements:

— Some judge that the Soviets are persuaded that the US and the West, despite periodic rebounds, are in a long-term decline that will be reflected in a flagging of political resolve, military efforts, and economic growth. Others think the Soviets hope for this but do not count on it, and indeed may think that US and Western military effort is again on the rise.

— Some believe that, in improving their military forces, the Soviets pursue the acquisition of a war-winning capability as a realistic objective. Others believe that the Soviets have no realistic expectation of attaining such a capability.

These disagreements lead to conclusions that, while not diametrically opposed, present significant differences of emphasis.

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D. One line of argument holds that, in the Soviet view, the global correlation of forces has in the 1970s shifted in the USSR's favor and that this trend is likely to continue. The US and its allies have entered upon a new stage in the "general crisis of capitalism" that will prove irreversible even if there are periodic recoveries. The problems of the Soviet economy and the dispute with China are serious but, on the plane of international competition, not debilitating. In this situation, the Soviets aim to achieve the degree of military superiority over the West needed to permit them to wage, survive as a national entity, and win a conventional or nuclear war. The Soviets see their improvements in survivability and in counterforce capabilities, air defense and ABM development, and broad hardening and civil defense programs in particular, and their improvements in conventional forces in general, as all contributing to this objective. While it is uncertain when the Soviets expect to gain such a decisive strategic superiority, they view this objective as practical and attainable in a programed fashion. They expect to move closer to this goal over the next ten years. This trend, they believe, will increasingly enable them to deter US initiatives and to inhibit US opposition to Soviet initiatives, thereby advancing the Soviet objective of gaining a position of overall dominance in the world.

E. Another line of argument holds that, in Soviet thinking, the question is much more open. It too perceives an increased Soviet confidence, stemming much more from the achievement of parity in strategic forces than from other, nonmilitary trends. But this analysis holds that the Soviet leaders give greater weight than the preceding argument allows to the handicaps represented by the USSR's economic and technological weaknesses and its conflict with China. It believes that they attribute greater resilience to the capitalist economies and do not discount the recent turnaround in US defense spending as a short-term phenomenon. In this view, Soviet military programing and research is bent upon keeping pace with that of its adversaries as well as seeking margins of advantage wherever feasible. But Moscow does not have a realistic expectation of achieving a war-winning capability, particularly in the next decade. Expecting Soviet foreign policy to be assertive, this analysis nonetheless holds that Moscow's experience with the complexities of the external world does not at this point lead the Soviets to expect a series of advances that, by the mid-1980s, will cumulate into a finally decisive shift in the struggle. In short, this analysis attributes to the Soviets not a programmatic design for military superiority but a more pragmatic effort to achieve advantages where they can, and thus a more patient approach to continuing tough

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competition together with a dedication to high and steady levels of effort in the elements of power. Moscow's calculus of the risks attending forward action may decline, but this has not yet happened and, if it does, the process will be slow and subject to cautious testing.

F. This Estimate is obviously not a net assessment, nor our judgment of the likely outcome in East-West competition. It is a summary of the range of Community perceptions of Soviet objectives and Soviet views of the prospects for significant gains in this competition. We agree on a wide range of Soviet objectives short of decisive military superiority over the West. Our differences are over the Soviet leaders' perception of the feasibility of achieving such superiority. Finally, we agree that Soviet risk-taking abroad in any specific situation will continue to be governed by Moscow's perception of interests and power at the particular time and place.

35. NIE 11-4-78 *Soviet Goals and Expectations in the Global Power Arena*

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KEY JUDGMENTS

1. Soviet leaders appreciate that military strength is the foundation of the USSR's status as a global superpower, and will remain through the coming decade the key to its prospects in the world arena. They are sensitive to the view of some Westerners that other, nonmilitary factors, particularly international economic ones, may be acquiring a dominant role, and they know that the Soviet Union has little hope in the foreseeable future of becoming truly competitive with the advanced nations of the West in economic, technological, and social-cultural sources of influence and attraction. But they are persuaded by Soviet ideology, Russian history, and by their own life experiences to see political conflict involving the use of force or conducted in its shadow as the motor driving development both within states and in the international system. Their self-interest as well as their beliefs lead them in the conduct of foreign affairs to press global and regional issues of security, in which the weight of their military power can be brought to bear to political advantage.

2. To the extent that comprehensive comparisons are possible, it is clear that the USSR on balance has overcome its past military inferiority in relation to the United States. The Soviets know the USSR still lags in many defense-related technologies. They are envious and apprehensive about the latent technological potential of the US as a military competitor. But they have learned from their long experience of military competition with the United States that powerful domestic political pressures, of a kind to which they are largely immune, reinforce American criteria of military sufficiency, which are different from their own, in inhibiting fuller exploitation by the US of its enormous military potential.

3. The Soviets judge themselves to have a robust equality with the US in central strategic nuclear forces in which numbers and some characteristics, such as missile throw weight, compensate for technological deficiencies in their forces. Most important, the buildup of Soviet forces over the past 15 years has created a situation in which the US could not plausibly attack the USSR without the virtual certainty of massive retaliation.

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4. While the Soviets are aware that the converse is also true, they are conscious of emergent strategic capabilities that could by the early 1980s be perceived to give the USSR marginal advantages in a central strategic conflict--for example, active and passive defenses, a survivable command and control system, and superior countersilo capabilities. Beyond that time frame, however, they are concerned that US progress in areas such as cruise missiles and advanced ICBMs could work against them should the US successfully exploit its present technological advantages.

5. The regional military balances that most concern the USSR are with Europe and China. In both regions the Soviets are relatively confident that they possess clear military superiority, subject to important qualifications. In Europe, Soviet superiority presupposes successful conduct of a swiftly initiated offensive drive to the west that could, however, be thwarted if it triggered large-scale NATO use of nuclear weapons or if it failed to achieve victory before NATO could bring its larger economic and population resources to bear on the course of the war. In Asia, Soviet military superiority would permit the USSR to defeat Chinese military forces in a wide range of conflict situations. But it could not at the nuclear level assuredly prevent China from striking a limited number of Soviet urban areas; nor would it permit the USSR to invade and occupy central China.

6. The Soviets have made steady progress in building naval capabilities to operate in the world's oceans beyond the coastal defense regions traditionally dominant in their planning. While this effort was driven largely by the pursuit of strategic defensive objectives in the central nuclear competition, it has carried the Soviet Navy to a role of distant area operations where showing the flag in peacetime and a contingent capability to disrupt US naval and maritime operations in the event of hostilities serve Soviet foreign policy interests.

7. Growing military aid efforts have served as the main conveyor of Soviet influence into the Third World. Under permissive conditions, Soviet military assistance and support to proxies have come to be an effective form of bringing Soviet power to bear in distant areas. Recent large-scale support to Cuban expeditionary elements in

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Africa has shown Soviet willingness to press forward, and to explore the limits of the USSR's ability to project military power short of direct combat involvement.

8. The irony of the Soviet military situation overall is that, on one hand, direct comparison between the USSR and its major opponents shows the USSR in increasingly favorable positions, but, on the other hand, Soviet military doctrine and security aspirations continue to present exceedingly heavy demands. Thus, in the strategic nuclear arena, Soviet doctrine posits the real possibility of a central nuclear war and of one side prevailing in such a conflict. This in turn sets to Soviet policy the task of providing effective war-fighting capabilities, beyond those of pure deterrence, that are difficult to attain against a determined opponent. Similarly, unremitting Soviet defense efforts are seen as required for confident superiority over NATO and, in less degree, over China. The military policy of the USSR continues to be influenced by a deeply ingrained tendency to overinsure against perceived foreign threats and to overcompensate for technological deficiencies. But no less than these influences, the ambitious standards of Soviet military doctrine, deriving from tenacious notions of international competition, drive Soviet military efforts and sustain Soviet anxiety about prevailing military balances.

9. The Soviets see their growing military strength in general as providing a favorable backdrop for the conduct of foreign policy. It causes the USSR to be perceived as a natural and legitimate participant in the development of global and regional security arrangements. Soviet leaders ascribe the progress of Moscow's policy of detente since the late 1960s in large measure to the growth of their military power.

10. Where a palpable Soviet military preponderance can be achieved, the Soviets believe that it will, over time, encourage regional actors to seek security arrangements based on Moscow's good will, with attendant political and military concessions, especially as the alternatives of military self-help and countervailing alliances prove less attractive. They view this as a long-term process best promoted by persistent diplomatic efforts and the steady amassing of military strength to alter the security environment gradually while avoiding unwanted crises. But the Soviets know that this process is subject to disruption

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by circumstances they can neither foresee nor be wholly confident they can control. In any crises that may supervene, military power is seen by the Soviets as necessary for defending their interests and for levering crisis solutions in directions acceptable to them.

11. Soviet foreign policy has long displayed both conservative and assertive behavior. Soviet leaders themselves see their foreign policy as essentially revolutionary, resting on the expectation of fundamental changes in the international system and within the states that constitute it, and deliberately seeking--though cautiously and intermittently--to help bring these about. Their ideology and their experience in world affairs impart to Soviet leaders a mentality that permits near-term temperance and agile pragmatism to coexist with a deep sense of manifest destiny for Soviet power in the world. It sustains Soviet policy in steady pursuit of systemic shifts in the world through small steps, and guards its fundamental beliefs against demoralization and massive reappraisals in the face of reversals. The Soviets see the sweep of postwar international affairs as broadly confirming their convictions about the march of history. Because their beliefs about the course of world politics have deep cultural roots and stem from an ideology that confers domestic political legitimacy, even profoundly novel or disconcerting developments, such as the appearance of nuclear weapons and the defection of China, have not undermined their governing orthodoxy.

12. On balance, the performance of Soviet foreign policy under their rule is rated by present Soviet leaders as a success, and much of this success is attributed to the cumulative political impact of growing Soviet military power. This judgment is drawn in the light of a previous history of gross inferiority and desperate conditions in which options for assertive foreign policies were seriously constrained. Not only did Soviet policy succeed in averting disastrous possibilities, but it secured acknowledged coequal superpower status with the United States and moved the Soviet Union steadily into new areas at relatively low risk.

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13. Although they expect fluctuations in their fortunes abroad, the Soviets still see basic trends in the world as positive for themselves and negative for the United States. In seeking to capitalize on these trends, however, they are beset by problems of various kinds. In areas where they have actively sought to advance their influence they have suffered a number of setbacks, some of them very costly. Events of recent years in Egypt, Sudan, and Somalia provide examples. Elsewhere, as in Vietnam, Angola, and Ethiopia, they have been more successful. Although not oblivious to the costs and risks incurred by these enterprises, the Soviets see them as the inevitable accompaniment of a forward policy in the Third World.

14. While the Soviets have won recognition as the strongest military power in Europe and a legitimized role in the management of European security, they have not succeeded in winning the full respect for Soviet interests and preferences that they have sought. Some domestic developments in Western Europe, particularly the rising fortunes of Eurocommunism, give new promise of weakening NATO, but at a possible cost of further diminishing Soviet influence over European Communist parties and eventually of contaminating Eastern Europe.

15. To Soviet leaders the strategic meaning of US-Soviet detente is the management of change in world politics in ways that control costs and risks while constraining as little as possible Soviet efforts to exploit fresh opportunities for gain. Such processes as the strategic arms limitation talks (SALT) and US-Soviet cooperation in regional security negotiations allow the superpower competition to be monitored and modulated. On occasion, they offer Soviet leaders opportunities for exerting by diplomatic means influence that might not otherwise be available or require more costly or risky measures to pursue. These processes also oblige Soviet leaders to calibrate their own competitive behavior against the risks of disrupting detente, particularly in areas where core US interests are perceived to be deeply engaged. This concern does not, however, appear to have reduced the USSR's willingness to pursue competitive advantages vigorously in areas such as Africa, where Moscow may perceive US interests to be less deeply engaged or US policy more hamstrung by domestic political constraints.

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16. The Soviets probably expect to continue the military programs they have pursued in the last 10 years, with some marginal shifts in emphasis. They probably expect to improve somewhat on their present strategic relationship with the United States, at least temporarily in the period 1980-85; to keep their overall advantages in relation to China and NATO; and to make steady progress in the kinds of forces and access necessary for projection of their influence in third areas.

17. Soviet international behavior in the 1980s is likely to include a purposeful, cautious exploration of the political implications of the USSR's increased military strength. Soviet policy will continue to be competitive and assertive in most areas of engagement with the West. In crisis situations, the Soviets are likely to be more stalwart in defense of their declared interests than they have been in the past, particularly during the Khrushchev period. They will probably continue to assert the right to experiment with unsettled political-military conditions, as they have recently in Africa, in search of enduring new beachheads of influence.

18. On the whole, such a prognosis, while projecting some increase in the assertiveness of Soviet external behavior, represents a fairly natural evolution of the USSR's foreign policy. The changes from past behavior that are implied are gradual and unbroken, and are rooted in the basic perceptions and values that have long informed Soviet policy. It is therefore essentially a prognosis of continuity, taking into account, however, the greatly enhanced military capabilities and more insistent claims to a global role associated with the USSR's emergence as a superpower.

19. Soviet leaders are aware that current trends they now discern in international relations could be disrupted by large discontinuities they can envisage but not predict. Among those that would present major challenges to their interests are: reversion of the US to a "cold war" posture, large-scale Sino-American military cooperation, new wars in the Middle East or Korea threatening Soviet-American military confrontation, and widespread violent upheaval in Eastern Europe. Other abrupt changes could present major new opportunities: Sino-Soviet accommodation, revolutionary regime changes in Saudi Arabia or

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Iran, and defection from the US alliance system of Japan or a major West European state. Soviet leaders probably regard their military investments as both a hedge against possible adverse contingencies and as providing options for exploitation of possible windfalls.

20. Soviet leaders are sensitive to a range of domestic problems that seem likely to become aggravated in the coming decade, but evidently do not now see them as having the potential to raise challenges of a fundamental kind to the conduct of their foreign policy. In Soviet conditions, uncertainty, if not crisis, inevitably attends political succession, which will soon be upon them. Agriculture remains a major drag on the economy, serious energy and manpower problems are looming, and Soviet economic growth has slowed to the point where it probably already lags behind the growth in military spending. Far-reaching solutions to these problems might in the future require important shifts in the pattern of resource allocations and corresponding modifications of Soviet foreign and military policies, but the Soviet leadership as yet shows no signs it is preparing for radical new departures.

21. During the coming decade a substantial renovation of the top Soviet leadership is virtually certain. While the new Soviet leaders will have been promoted from the same political and social milieu as their predecessors, generational differences could affect their outlook in ways important for the future conduct of Soviet foreign and military policies. To a successor leadership, the USSR's superpower status may appear not so much the culmination of prolonged and costly efforts that must above all be consolidated, but as a point of departure from which to exert more pervasive leverage on world affairs. Alternatively, but less likely, younger leaders, lacking the conditioning preoccupation of their elders with the experience of confronting external threats from stronger opponents, may be inclined to give overriding priority to the solution of internal problems which their predecessors allowed to accumulate.

22. In any event, the new leaders, relatively inexperienced in managing the USSR's external affairs, will be impressionable in the early post-Brezhnev years and

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strongly influenced by their perceptions of the opportunities and risks of more venturesome foreign policies, on one hand, and of the costs and benefits of seeking more cooperative relations with the West, on the other. The quality and effectiveness of US international policies, particularly in areas of defense, in alliance cohesion, and in the Third World, are likely to be the principal external factor shaping the perceptions of new Soviet leaders.

The Director, Bureau of Intelligence and Research, Department of State, agrees with the general thrust of this Estimate that the USSR will continue to insist on being treated as a military coequal of the United States and that it will be no easier--indeed, perhaps more difficult--to deal with in the coming decade. However, he believes this Estimate tends to overemphasize the Soviets' perceptions of their own military power and undervalues political and economic considerations.

Specifically, the Director, INR, believes that the Soviets have a less positive, even more ambivalent view of the military balance in Europe and would be less confident of the superiority of the Warsaw Pact's forces over those of NATO than the net judgments of the Estimate suggest. INR believes that, in assessing the balance in Europe, the Soviets are very conservative in their calculations and make a number of assumptions which highlight their own weaknesses and Western strengths; the Soviets have greater fear of Western attack than the Estimate suggests. For these reasons, INR would draw the following implications of Soviet perceptions of the European balance:

-- *INR believes that Soviet programs to improve tactical aviation, upgrade armored forces, and enhance tactical nuclear capabilities are intended to remedy what Moscow evidently regards as weaknesses rather than to maintain or enlarge existing advantages. If so, Soviet motives would appear to be more compelling than the text suggests, and Moscow's efforts may be more intense.*

35.

-- *We doubt that the Soviets consider themselves to be in an appreciably better position militarily--and hence possibly more inclined--than they were 15 years ago to link a crisis in a third area to Europe. In terms of strategy, Moscow could easily manage to assemble a much superior force against the Western garrisons in Berlin, just as it could have done in earlier decades; moreover, the Soviet reckoning of the results of escalating such a localized confrontation would not be very different from what it was before. The Soviets would still have to count on the dangers of a major engagement of large ground forces and its potential for escalation to one or another degree of nuclear warfare.*

In addition, INR would note that the arms control motives attributed to the Soviets in the Estimate are essentially those which would apply to any participant in arms control negotiations. For example, they reflect a desire to prevent or slow the competition in areas where they are disadvantaged, and the desire to trade minimal restraint on their side for maximum restraint on the other. The Soviets probably see a range of potential benefits--political and economic as well as military--in arms control. At the same time, however, they also realize that there are practical limits to what arms control negotiations can accomplish.

36. NIE 11-3/8-79 *Soviet Capabilities for Strategic Nuclear Conflict Through the 1980s*

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SUMMARY [2]

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

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

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

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

A. Soviet Strategic Planning for the 1980s

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

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

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

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

— A powerful deterrent against nuclear attack by any adversary.

— Along with other military forces, the prospect of greater freedom of action in the world arena while minimizing the risk of nuclear war.

— An improvement in the chances that, if nuclear war should occur, the USSR could survive and emerge in a better position than its adversaries.

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

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

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

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

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

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

advantage rather than as countervailing responses to Soviet initiatives.

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

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

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

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

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

B. Main Current Trends in Soviet Programs

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

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

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

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

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include improved reliability and even better accuracies

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

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

— The much greater hardening of silos as they are converted to accommodate MIRVed ICBMs, and research and testing to make the silos even harder.

— The continued deployment of MIRVed, mobile IRBMs and [ ] development of two solid-propellant ICBMs, at least one of which could be deployed on mobile launchers.

— The further deployment of MIRVed SLBMs and an increase in the number of SSBNs on patrol or in transit. Additional increases are likely in the 1980s, especially with deployment of the new, large Typhoon submarine and missile.

— The continued expansion and protection of capabilities for command, control, and communications by a combination of hardening, redundancy, and mobility.

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

— The deployment of MIRVed missiles and the improvement of command and control systems are adding to Soviet targeting flexibility.

— Aerodynamic systems are being retained as part of both intercontinental and peripheral attack forces. Backfires continue to be deployed. A new bomber and cruise missile carrier are under development, but we now doubt that they could be operational until after 1985. The development of a long-range air-launched cruise missile (ALCM) continues.

— The SS-20 IRBM is adding to Soviet striking power and flexibility for attacking targets in Europe, the Middle East, and Asia. A variant of the SS-20 is being flight-tested. Some older MRBM and IRBM sites have been deactivated, but some of the launch-related equipment and missiles are apparently being transferred to remaining active sites.

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

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

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

— In strategic air defense, the Soviets are starting to deploy new versions of existing interceptors, but their low-altitude capabilities will be limited. Modified and new interceptors with lookdown/shootdown capabilities are being flight-tested, and deployment of a new low-altitude surface-to-air missile system is imminent. An airborne warning and control system (AWACS) that is being tested probably will have capabilities over land as well as over water. These systems will have better capabilities against low-altitude bombers, but they probably will have only limited capabilities against cruise missiles. There is as yet no evidence of active development of systems designed specifically to intercept cruise missiles at low altitudes.

— In ballistic missile defense, the Soviets are continuing to develop an ABM system that could be deployed more rapidly than the Moscow system. The R&D program for antiballistic missiles could give them options in the 1980s for upgrading their present ABM system at Moscow or for deploying ABM defenses more widely.

— In antisubmarine warfare (ASW), intensive efforts are under way to improve both acoustic and nonacoustic sensors. However, Soviet towed-array sonar development is not as far along as we had thought. [

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

C. Future Soviet Forces for Strategic Attack

Possible Soviet Reactions to MX/MPS

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

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

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

Soviet Intercontinental Striking Forces

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

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

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

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

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

Static Comparisons of US and Soviet Intercontinental Striking Forces

26. Figure 1 illustrates projected trends in the number of weapons in future Soviet forces and in their explosive power, with and without SALT II limitations. The top two charts compare the moderate SALT-limited Soviet forces, and the SAL/No-SAL force, with a US SALT-limited force that is based on Department of Defense projections. The charts show that the projected Soviet SALT-limited forces would improve relative to the projected US force in the early and middle 1980s, but that the trends would become less favorable to the Soviets in the second half of the decade if SALT II limits remained in effect throughout the period. The charts also show that Soviet forces could match or exceed those of the United States in the late 1980s if SALT II limitations expired in 1985, the Soviets expanded their forces, and the United States continued to develop its forces as currently programed:

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

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

- **In numbers of online missile RVs and bomber weapons,** the Soviets would be able to deploy more highly fractionated ICBMs and SLBMs (for example, a 20-RV SS-18 in 1985) than they could under SALT II. Owing to this greater flexibility, the number of Soviet missile RVs and bomber weapons grows more rapidly and by 1989 exceeds that of the SALT-limited forces by a substantial margin
- **In online equivalent megatons,** the Soviet No-SALT force grows to a level greater than that of the SALT-limited forces. The rate of increase,

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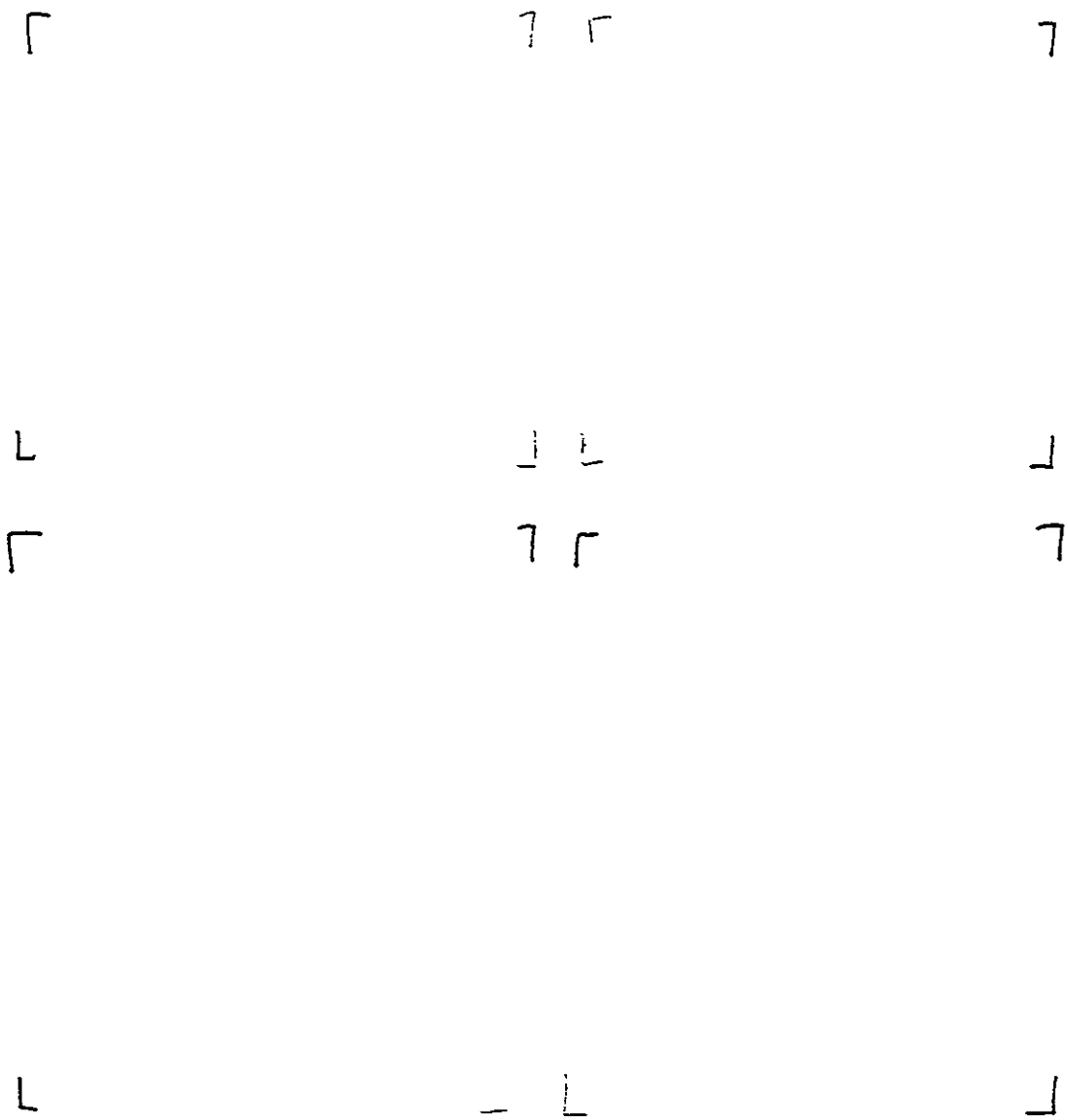
Indexes of Soviet and US Forces for Intercontinental Attack

Figure 1



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

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

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

Soviet Strategic Forces for Peripheral Attack

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

- Deployment of about 300 launchers for MIRVed, mobile IRBMs by about 1985, and the replacement of the SS-20 with a follow-on missile.
- Deployment of some 200 Backfires to Long Range Aviation by 1989, assuming that Backfire production is limited to 30 per year and that output continues to be shared about equally between LRA and Soviet Naval Aviation.
- Basing of the new weapon systems to ensure coverage of all areas on the Eurasian periphery, with mobile IRBMs divided in about equal thirds among the western, eastern, and central USSR and Backfires oriented primarily to penetrate European air defenses. There is an alternative view that the Backfire has good intercontinental capabilities, and that some portion of the Backfire force would be employed against targets in the United States.[4]
- Some continued deactivations of older MR/IRBM launchers, and retirements of older medium bombers. We are uncertain, however, about whether these aging systems will gradually decline or be retained, in part because the Soviets are probably hedging against NATO force modernization.

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

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

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

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

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

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

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

Counterforce Capabilities

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

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

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

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

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

Soviet Hard-Target ICBM Reentry Vehicles in 1989

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

36. *(Continued)*

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

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

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

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

39. The Soviets have ample capabilities to destroy all US SSBN bases as well as the bases of the US bomber force. We have no present evidence that the Soviets are trying to minimize the flight time of SLBMs in order to pose a greater threat to US alert bombers. In view of the dispersal and other measures the United States could exercise, it is unlikely that the Soviets would be able to destroy more than a few of the bombers the United States keeps on alert.

Prelaunch Survivability

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

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

36. *(Continued)*

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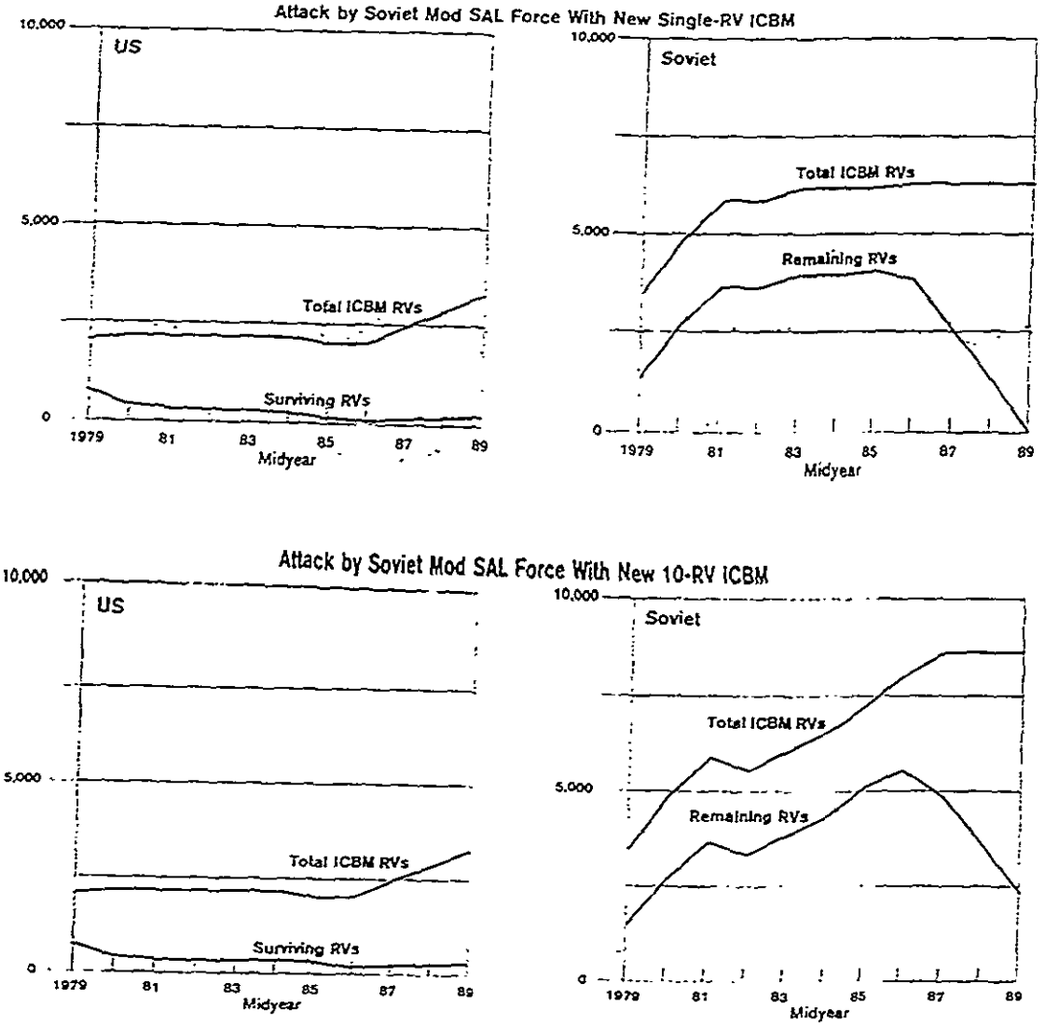
Capability of Soviet ICBMs To Attack US ICBMs in Silos and Shelters Figure 2

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



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

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36. *(Continued)*

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

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

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

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

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

44. Comparisons of the aggregate size of strategic forces provide important insights into significant trends in US and Soviet intercontinental striking power. Because such comparisons are essentially static in nature, however, they cannot fully reflect differences between the two forces and their capabilities that arise from qualitative asymmetries. These differences can be better illuminated by using an analytical technique—quasi-dynamic analysis—that has been an integral part of this Estimate for the past several years. This analysis addresses the potential of one side's ICBMs to attack the retaliatory forces of the other side and then compares the residual destructive potentials. The respective arsenals are reduced by subtracting those ICBMs needed for the attack and those retaliatory forces destroyed in the attack; the ICBMs of the side attacked are assumed to ride out the attack without being launched. The residuals are on-pad potentials, calculated without considering such factors as specific targeting doctrines, command and control degradation, attrition by air defenses, and other operational variables.

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

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

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

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

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

36. *(Continued)*

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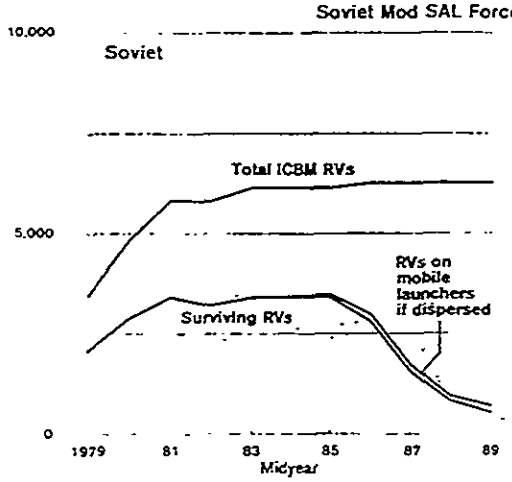
Figure 3

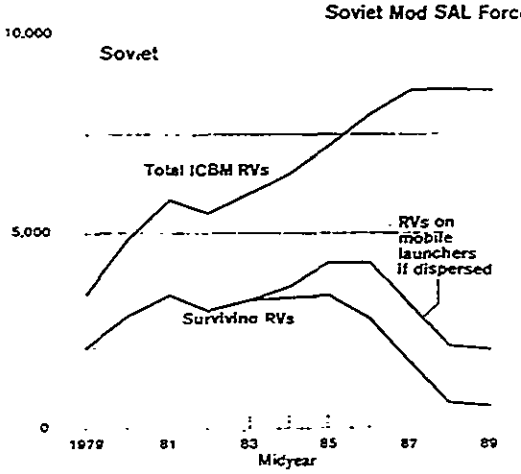
Survivability of Soviet ICBMs If Attacked by US ICBMs

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

Soviet Mod SAL Force With New Single-RV ICBM



Soviet Mod SAL Force With New 10-RV ICBM



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tion of intelligence. According to this view, only analysis of comprehensive two-sided exchanges can convey valid and useful impressions about relative US and Soviet strategic nuclear capabilities. In this view, such analysis from the US perspective should be accomplished within the Department of Defense with intelligence as a full partner, and should not be included in a National Intelligence Estimate. Consequently, the holders of this view believe that the analysis of residual forces in this Estimate (as summarized in figures 4 and 5) should be removed. Further, the holders of this view believe that the Intelligence Community should focus its efforts on understanding and, if possible, duplicating Soviet analytical techniques for net assessment.[6]

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

Soviet and US Residual Potentials

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

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

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

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

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

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

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

36. *(Continued)*

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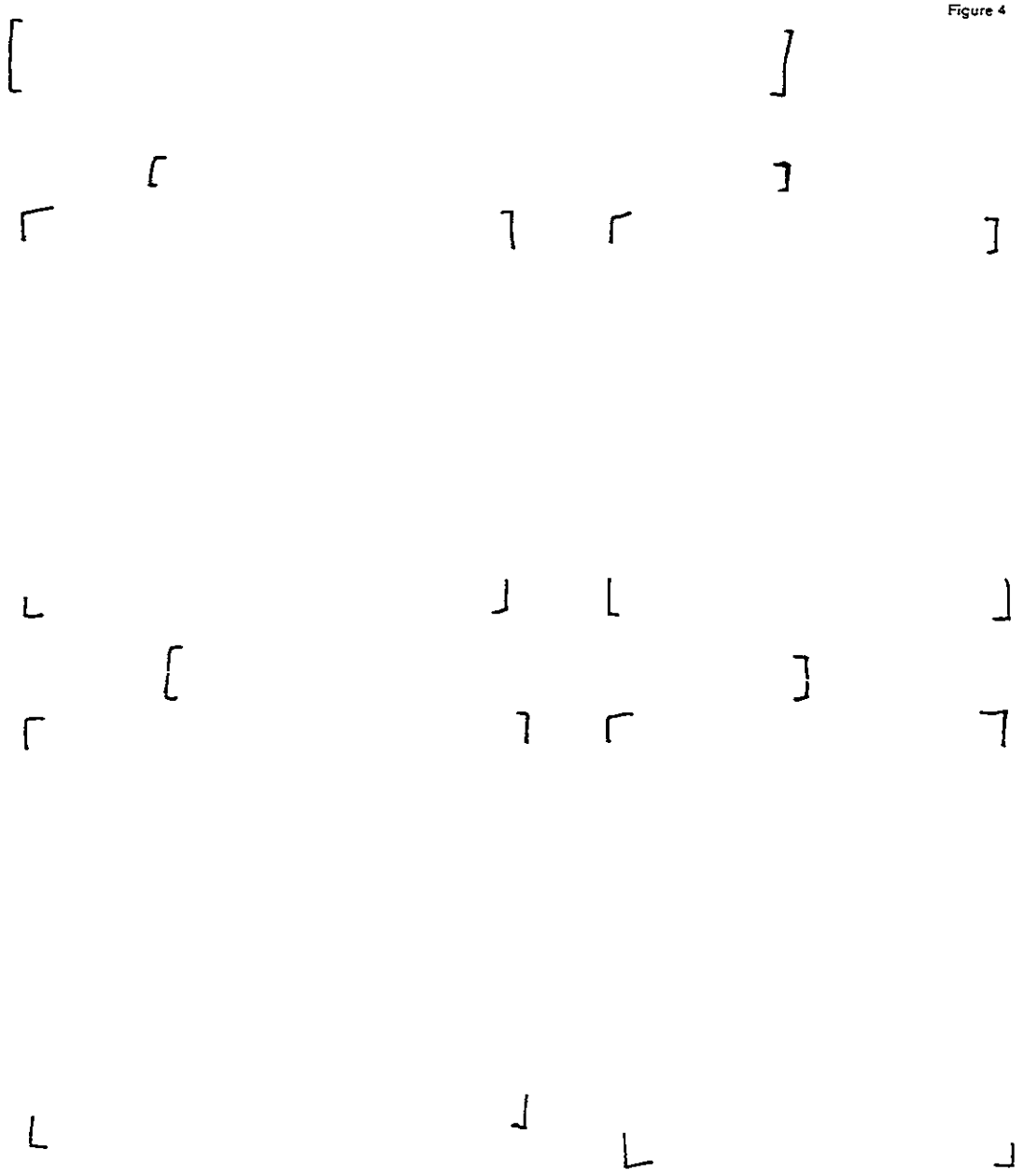
Figure 4



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

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

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

— Surviving US ICBM warheads would have the potential to destroy only a small number of Soviet ICBM silos, but a large proportion of the Soviet national- and intermediate-level command and control bunkers. Surviving US bomber weapons would have the potential to destroy a substantial portion of Soviet ICBM silos, although they have relatively long flight times and would be subject to air defense attrition.

— Surviving Soviet ICBM warheads, on the other hand, could destroy a substantial number of US silos, as well as US hardened command and control facilities in quick-reaction retaliatory strikes. They could destroy only a small fraction of the US MX shelters available in 1989, however.

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

Implications

55. With regard to absolute residual capabilities the quasi-dynamic analysis indicates that, throughout the period of the Estimate, the SALT-limited forces of each side could devastate the other side in retaliation after absorbing a first strike.

56. With regard to relative residual capabilities:

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

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

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

— The analysis shows a substantial Soviet improvement in the next few years, reaching a plateau in the early and middle 1980s or peaking in the middle 1980s. It shows a slight US decline in the early 1980s and a sharp improvement in the US position in the late 1980s.

— These trends are caused by the combined effects of heavy Soviet reliance on fixed land-based ICBMs, US force diversity and planned modernization, and SALT II limitations if extended through the decade.

F. Capabilities of Soviet Strategic Defenses

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

Air Defense

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

36. *(Continued)*

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Figure 5

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

— New interceptors, the majority of them equipped with modern lookdown/shootdown capabilities, and a new low-altitude surface-to-air missile system will be deployed in substantial numbers during the 1980s.

— The percentage of the area of the western USSR covered by air defense warning and control systems capable of vectoring lookdown/shootdown fighters will grow gradually. Significant gaps in coverage will remain, however.

— With the deployment of AWACS aircraft in conjunction with longer range interceptors, the Soviets in the middle and late 1980s would be able, for relatively brief periods (during a crisis, for example), to mount forward defenses along the approach routes to the western USSR. Such defenses would be designed to intercept US bombers and to force ALCM carriers to launch their missiles at considerable distances from Soviet borders.

60. We are unable to quantify the attrition that Soviet air defenses would be able to inflict on US low-altitude aircraft and cruise missiles, in part because of uncertainties about key technical characteristics of future Soviet systems, and in part because we cannot quantify the effects of important operational factors and interactions that would bear heavily on actual air defense performance. Accordingly, there is a view in the Intelligence Community which holds that graphs showing the gross area of theoretical coverage of air defense systems, particularly when standing alone, can be misleading as measures of Soviet air defense potential. Because such graphs cannot incorporate important deployment and operational considerations, this view concludes that the graphs are not useful.[9]

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

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

— In the middle and late 1980s, Soviet air defenses will probably have reduced the USSR's vulnerability to US defense avoidance tactics and, if undegraded, will have the potential to inflict considerably higher attrition against US bombers of current types. They will probably have little or no effective capability against in-flight US short-range attack missiles (SRAMs) carried by bombers.

— The Soviets will gradually develop the capability to defend some key areas against currently programed US cruise missiles. Because of technical and numerical deficiencies, however, their capability to defend against a large force of US cruise missiles will probably remain low.

— In addition, precursor missile attacks, defense saturation and suppression, and electronic warfare would degrade the overall effectiveness of Soviet air defenses.

— Thus, the actual performance of the defenses against combined attacks involving large numbers of US bombers, SRAMs, and cruise missiles will probably remain low during the period of this Estimate.

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

ABM Defense

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

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

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

36. *(Continued)*

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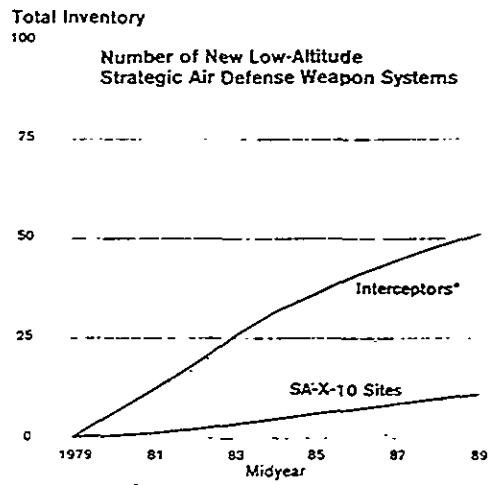
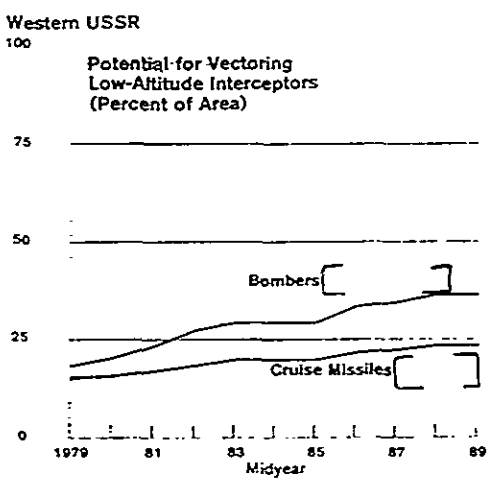
Figure 6

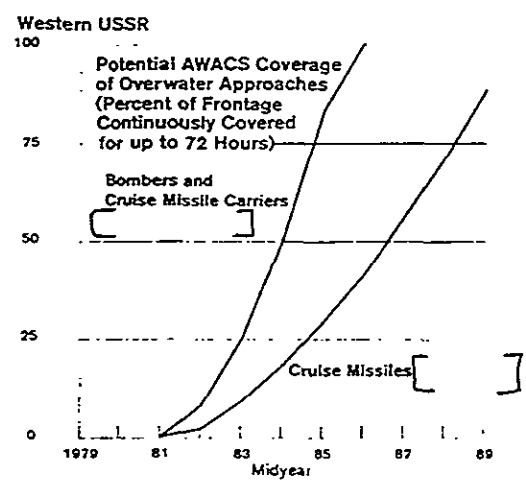
Soviet Strategic Air Defense Forces

Measures of Low-Altitude Defense Potential



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





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

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

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

66 Recent analysis [redacted] leads us to conclude that they have been designed and are intended for BMEW and space surveillance alone.

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

Antisubmarine Warfare

68. Soviet forces with ASW capabilities are not now an effective counter to US SSBNs. The critical problems confronting the USSR are limitations in sensors and signal data processing. Major R&D programs are under way to develop improved sensors for submarine detection. The number of nuclear-powered attack submarines (SSNs) with improved but still limited ASW capabilities will probably increase from about 25 at present to about 85 in the late 1980s, or to as many as 100 if a number of Y-class SSBNs are converted to SSNs. We believe new classes of Soviet SSNs will incorporate more effective noise reduction methods than those in existing submarine classes. New types of surface ships and long-range patrol aircraft with somewhat improved capabilities for ASW are likely. As a result:

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

Directed-Energy Weapons

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

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

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

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

— The Soviets probably have the capability to develop, by the middle 1980s, a ground-based nonnuclear electromagnetic pulse weapon designed to disrupt or destroy the electronic circuitry of enemy delivery systems.

— Soviet research programs applicable to particle beam weapons (PBW) may permit the USSR to determine the feasibility of such weapons several years before the United States. If feasibility is proved, the Soviets probably could begin testing a prototype short-range (about 3 km) PBW system for air defense by about 1990. There is an alternative view that Soviet research in technologies applicable to PBW could be sufficiently advanced to allow the USSR to begin prototype testing by the middle 1980s, if feasibility is proved.[11] All agree that development of long-range PBW weapons would take much longer.

Civil Defense

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

— Prompt Soviet casualties would be about 120 million (including 85 million fatalities) in the case of little or no preparation, about 100 million (60 million fatalities) if urban shelters were fully occupied, and about 40 million (15 million fatalities) if both sheltering and evacuation plans had been fully implemented.

— With a few hours' warning, a large percentage of the Soviet leadership at all levels of government probably would survive. With several additional hours for preparation, about one-fourth of the work force in key Soviet industries probably would also survive.

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

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

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

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

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

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

37. NIE 11-3/8-80 *Soviet Capabilities for Strategic Nuclear Conflict Through the Late 1980s*

~~Top Secret~~

APPROVED FOR RELEASE
CIA HISTORICAL-REVIEW PROGRAM

PART ONE—KEY JUDGMENTS

PREFACE

These Key Judgments consist of two sections. This year the Director of Central Intelligence has added his own key judgments (section A), which have not been coordinated with the Intelligence Community. He does not hold major disagreements with the key judgments coordinated by the Intelligence Community agencies (section B) or with the basic analysis in the Estimate. He does not believe, however, that the findings in section B adequately emphasize those areas of key importance to the President and his principal advisers on foreign policy. His key judgments, therefore, address what the basic Estimate tells us about the following four issues of cardinal importance to US policy on strategic forces:

— How the strategic capabilities of the two sides compare.

— What actions the Soviets may take as they view the comparative strengths of the strategic forces.

— Whether and how the balance of strategic forces prompts the Soviets to pursue strategic arms control agreements with the United States.

— Whether or not the advantages that the Soviets seem to have in ICBMs through 1986 would induce or pressure them to exploit what they might perceive as a "window of opportunity" before those advantages may be erased toward the end of this decade.

A. KEY JUDGMENTS OF THE DIRECTOR OF CENTRAL INTELLIGENCE

Soviet Perceptions of the Strategic Environment

1. The comprehensive nature of Soviet strategic offensive and defensive programs, the emphasis in Soviet military doctrine on capabilities to fight a nuclear war, and assertions that general nuclear war can be won indicate that some Soviet leaders hold the view that victory in general nuclear war is possible. The Soviets assert that a general nuclear war will probably be brief, but we believe that they have

37. *(Continued)*

contingency plans for protracted conflict. Soviet military writings and exercises imply that victory would be an outcome that preserves the Communists' political control, permits reconstitution of their economy, and leaves them in a superior military position on Eurasia, while neutralizing the United States and undermining the political and social systems of their weakened adversaries. Despite their growing strategic capabilities, the Soviets are aware that they could not prevent a large-scale retaliatory US nuclear attack from causing tens of millions of casualties and massive destruction of urban-industrial and military facilities in the USSR. Whether they view this as contradictory to what they consider to be their definition of "victory" is difficult to gauge.

2. We see the Soviets as basically pleased with the general recognition that they have achieved at least "parity" or perhaps "superiority" with the United States in strategic weaponry and the acknowledgment of superpower status which this confers. The Soviets must also see that they hold certain advantages in the strategic force competition with the United States that will help them maintain their present position.

— They have a massive, well-disciplined R&D organization, with a large number of new programs, as well as an expanding production capability, all of which provide options for future force growth and improvement. There are, for instance, 16 design bureaus engaged in developing some 90 strategic, tactical, and space systems or system improvements.

— In the defensive area, they are continuing an active ABM R&D program; attempting to solve problems of defense against low-flying aircraft and missiles, against SSBNs, and against satellites; continuing to expand their civil defense program (however, this effort relies heavily on massive evacuation and would likely provide a tipoff of Soviet intentions); and striving to achieve technological breakthroughs in laser and directed-energy approaches to solving defensive tasks.

— In the area of command and control, the Soviets continue to enhance their ability to flexibly control strategic forces. They are constructing redundant, hardened, and mobile command and communication links to enhance force survivability. Their early warning system, though suffering from some shortcomings, continues to improve, and the Soviets have the capability to employ their strategic nuclear forces in both initiative (bolt-from-the-blue or preemption) and responsive (launch-on-tactical-warning or retaliation) strikes.

The greater weight of Soviet effort in these areas also contributes to the perception of Soviet parity or superiority.

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3. At the same time, the Soviets could be apprehensive about whether they can hold on to their hard-won gains because:

— They are entering the 1980s with a record of declining productivity in the industrial sector, with reduced levels of output in a number of important raw materials such as coal, with a sharp drop in the rate of growth of the labor force, with the prospect of a peak and then a decline in oil production, and with increasing demands for economic support to their client states in Eastern Europe. They would prefer to avoid the additional strain which increased competition in the strategic arena would create.

— The Soviets must anticipate that if the SALT process does not collapse entirely, negotiations for a new strategic arms limitation agreement will take a long time. The Soviets view SALT II as a step toward avoiding greater tensions with the United States than they wish to risk and, they hope, toward reducing the possibility of a US surge in the strategic arms race.

— They feel that they now face an aroused US public which is willing to spend more on defense and a new administration that is likely to increase US strategic programs. This is particularly disturbing to them because of their respect for US technological prowess and industrial capacity.

— They are concerned with the range of major US strategic programs that are in process. They argue that MX is a move toward a first-strike capability; that modernization of tactical nuclear forces in Europe is much the same because of the short time of flight of those weapons to targets in the Soviet Union; and that the cruise missile and Trident programs further compound their problems of defense against attack by nuclear weapons. Moreover, the multiple protective shelters being considered for the MX missile will substantially increase the number of weapons required for a Soviet counterforce attack.

— The Soviets also contend that they face a considerable threat from third, fourth, and fifth nuclear powers, while the United States faces no such threat. The Soviet concern with this threat has been a constant thread in the positions the USSR has taken in SALT.

The strategic environment that the USSR may perceive is, then, one in which the trends in the strategic balance could shift against it later in the decade when programed US force improvements are deployed. In this environment we conclude that there is substantial likelihood that the leaders of the USSR will be looking at their next Five-Year Plan, which they are currently formulating, with a view toward acquiring even greater strategic forces than they might have contemplated a year ago.

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What Does "Parity" or "Superiority" Mean, and What Condition Prevails Today?

4. In considering how the Soviets and others view the strategic force balance today, there are three types of measures for comparing strategic forces:

— First, static indicators, such as the number of units, their size, range capability, and so forth.

— Second, quasi-dynamic indicators which describe the fighting or destructive potential of the forces. These are, in effect, measures of what the forces could do if unleashed.

— Third, dynamic measures, such as war games, that attempt to forecast how opposing forces would actually be used and to what end result.

In this Estimate we use the first two measures to compare US and Soviet strategic forces. Adequate means of conducting war-gaming on this scale and of translating the results into estimative conclusions have not yet been achieved.

5. Starting with static indicators, the four most useful are displayed on figure I:

— Number of delivery vehicles. This is a simple indicator which has been the basis for SALT negotiations to date. The upper left-hand graph shows that the Soviet buildup of the late 1960s and early 1970s put the USSR ahead of the United States, which during this same period was retiring older systems.

— Number of weapons. This measure dictates how many targets can be attacked when a delivery vehicle carries more than one weapon—that is, a bomber with a number of bombs or air-launched missiles, or an ICBM with multiple independently targetable reentry vehicles (MIRVs). The upper right-hand graph shows the United States has maintained a substantial lead throughout the decade. Although the Soviets have been closing this gap, the United States still has 40 percent more weapons than the Soviets have today.

— Equivalent megatons. This is a rough measure of the theoretical capabilities that weapon yield and number of weapons provide against soft area targets. The lower left-hand graph shows a growing Soviet advantage beginning in the mid-1970s, which is a direct result of an increasing number of ICBMs with large throw weights.

— Accuracy. Accuracy of each side's best ICBMs is another rough measure of the trends. The lower right-hand graph shows that the newest Soviet ICBMs have now surpassed the best US ICBM accuracies, thus eliminating the historical US advantage in this characteristic.

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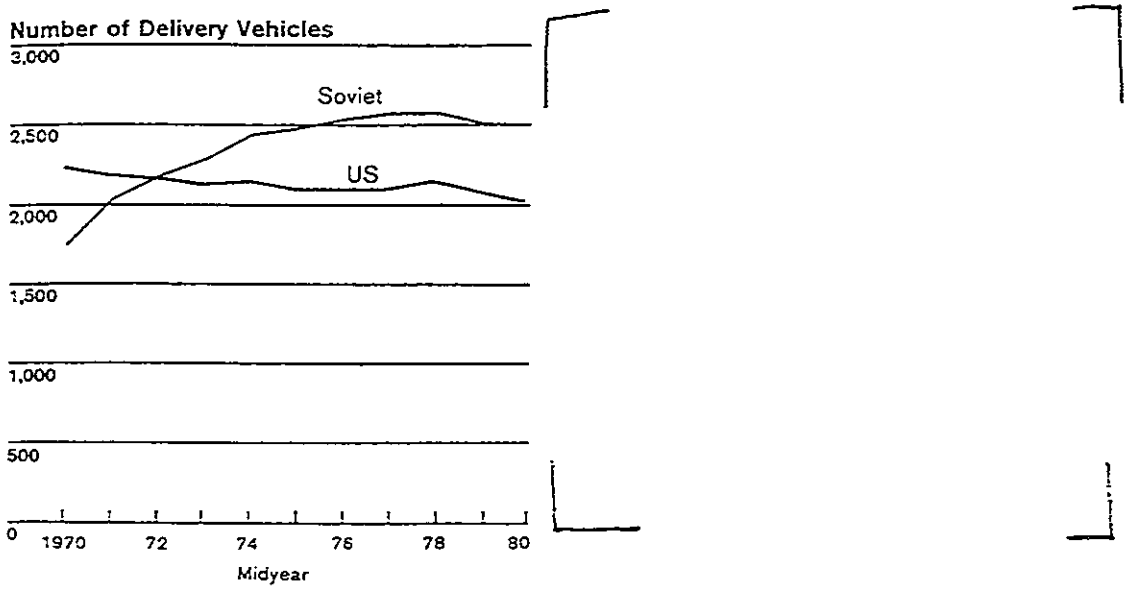
Figure I

Comparison of Soviet and US Forces for Intercontinental Attack, 1970–80



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In sum, according to these measures the US force excels only in the number of weapons. The Soviets lead in numbers of vehicles and their size, and have now surpassed the United States in ICBM accuracy, thereby closing this technological gap.

6. Next, quasi-dynamic indicators in effect combine these four static indicators into two measures of the destructive potential of a force.

— The first of these is known as lethal area potential (LAP). This is the area of land in which reinforced concrete buildings would be leveled.[1] This calculation is purely theoretical; that is, the target is a nominal, not a specific urban area, and no battle conditions or tactics are considered. Figure II shows that the Soviets have been ahead in LAP throughout the decade. This is because of their large throw-weight advantage.[

] Figure II also shows, however, that the US urban area is more than twice that of the Soviet Union. [

]

— The second quasi-dynamic measure is hard-target potential (HTP), or the potential to attack targets with hardnesses comparable to those of missile silos.[2] Figure III shows that when we consider both the lethality of the large Soviet warheads and their improving accuracies,[

] the Soviets have achieved a substantial advantage in

[1] For calculations of lethal area potential, an overpressure of [

] As a practical matter, it is not possible to lay down nuclear weapons in such a way that a constant overpressure could be obtained over an entire area. Furthermore, neither side would actually expend all its weapons in such an attack.

[2] [

] As with LAP, neither side would actually expend all its weapons in attacks on hard targets only.

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HTP. Figure III also compares the HTP of both sides with the respective number of hardened silos. This comparison shows that theoretically the Soviets now have almost twice as much hard-target potential as the United States has silos,

[1] In actuality HTP overstates the capability of a side to destroy the other side's ICBMs, but this measure does show important trends in counterforce potential.

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7. The critical issue that dominates perceptions in this country, however, is indicated on figure IV. The left-hand graph displays the vulnerability of US ICBMs to a first strike by the Soviets and assumes that the United States does not launch its ICBMs on warning. Today only about 30 percent of the US ICBM launchers would survive.[

]

8. To discern the full meaning of the vulnerability of US ICBMs, we must look at the total forces the Soviets would have to expect the United States to have left, after a Soviet surprise first strike eliminated most US ICBMs. Would surviving US forces be adequate either to deter such a strike in the first place or to wage nuclear warfare thereafter? To examine this issue, we use residual analyses of Soviet and US forces and project them out into the decade ahead.[5] These residual analyses are, again, theoretical calculations. They depict how many forces of one side would survive a first strike by the other and how that would compare with the forces that would still be left to the attacking side for other missions.[6]

[

]

[5] For these calculations we assume that the Soviets deploy, as their one new missile permitted under the SALT II terms, a medium-size, solid-propellant, silo-based ICBM with a single RV rather than the maximum of 10 RVs which is permitted. The United States is assumed to deploy 200 MX missiles based in 4,600 hardened shelters.

[6] In this analysis:

- The respective arsenals are reduced by subtracting those ICBMs needed for the attack and those retaliatory forces destroyed in the attack (bombers and SSBNs not on alert or at sea are assumed destroyed); the ICBMs of the side attacked are assumed to ride out the attack without being launched.
- The residuals are on-pad potentials, calculated without considering such factors as specific targeting doctrines, command and control degradation, attrition by air or ASW defenses, and other operational variables.

The calculations in the analysis do not attempt to simulate actual conflict outcomes.

- They seek to display comparative capabilities and limitations in a manner most relevant to nuclear deterrence in its most elementary form—that is, assured destruction.
- The analysis illustrates the retaliatory destructive potential that a side contemplating an attack would have to expect to survive on the side attacked even following a surprise attack—the worst case for the side attacked.
- The analysis makes no estimate of how many of these two types of targets would likely be attacked in retaliatory or second strikes.

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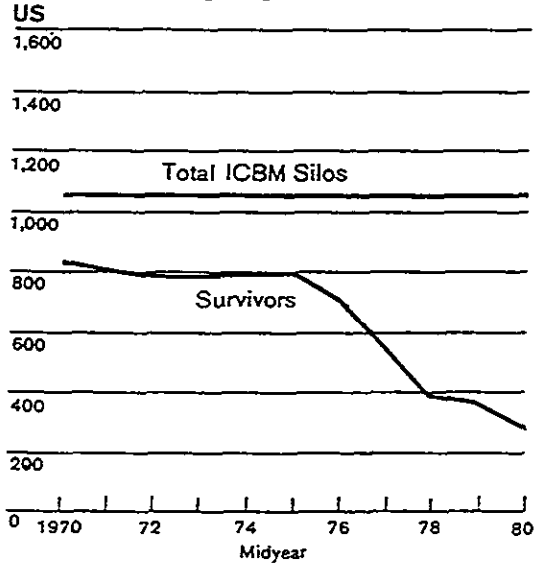
Figure IV

Capability of Soviet ICBMs To Attack US ICBM Silos, 1970–80

(Two-on-One Targeting)

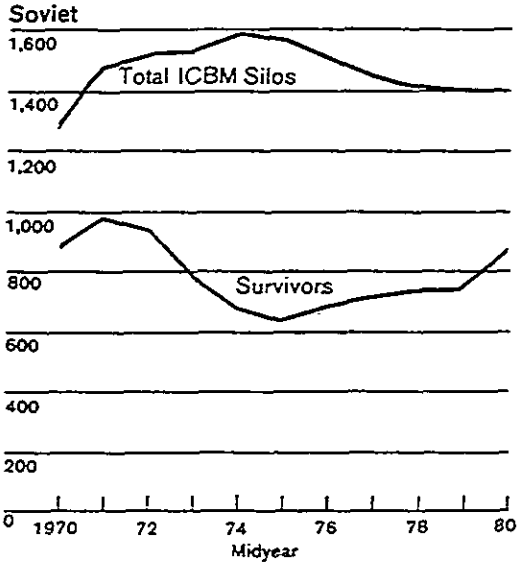
US



Survivability of Soviet ICBM Silos If Attacked by US ICBMs, 1970–80

(Two-on-One Targeting)

Soviet



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[redacted]

9. Figure V displays, in terms of LAP, what the residual forces of both sides could still do after a Soviet surprise first strike[redacted]

10. Figure VI illustrates the qualitative differences in the composition of the two residual forces. On the left, the Soviet force is shown to be nearly all ICBMs (until the late 1980s). On the right, the US force has few ICBMs, but many SLBMs and aerodynamic weapon systems such as bombs and cruise missiles. There are, of course, important differences here. ICBMs have greater speed of attack and better responsiveness to command and control. The slower aerodynamic systems would have to penetrate large, growing, and increasingly more effective Soviet air defenses. It is possible that the generally held notions of Soviet superiority derive in part from a preference for the qualities of ICBM systems over those of SLBMs and air-breathing weapons.

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11. The answer to the question of whether the residual US forces would be adequate to deter the Soviets lies in a subjective judgment as to conditions under which a Soviet leadership would risk initiating strategic nuclear war. It is likely, however, that, considering the US residual force that is shown on the right on figure VI, the Soviets would see such a war as being a very high risk even in the early 1980s when US surviving potential would be at its lowest.

12. The question of whether Soviet and/or US residual forces would be adequate for war fighting relates not only to the numbers of residual weapons and their destructive potential but also to the enduring survivability of their command, control, communications, and postattack assessment systems. For most of the 1980s the Soviets clearly have greater endurance capability. In terms of residual LAP following a Soviet first strike, they would need greater potential in the late 1980s, if they sought to be able to damage the same percentage of US urban area as they could earlier in the decade. In terms of residual HTP, they have an excess potential relative to the number of US hard targets, even in the late 1980s.

13. Another point on figures V and VI is the sharp dropoff in Soviet residual potential in the latter half of the decade. This dropoff is

37. *(Continued)*

due to the construction of MX shelters, which absorb most of the Soviet warheads in their initial strike. If the Soviets perceive these trends in anything like these terms, they will certainly consider actions to prevent this potential reversal.

14. The Soviets, as noted previously, are poised with a multiplicity of R&D programs. They can move out on whatever track they deem appropriate. We must try to deduce what they may attempt and how it would affect the comparison of forces.

Soviet Options in Strategic Force Programs

15. In considering their strategic programs for the 1980s, the Soviets will want to preserve and extend the gains of the 1970s and early 1980s; and despite economic difficulties and changes in leadership in the Soviet Union that are bound to occur in this decade, they will make a great effort to continue their emphasis on military preparedness.[7] Under these assumptions, there are a number of options which the Soviets are likely to consider: These include: (1) encouraging some form of nuclear arms limitations; (2) observing the SALT II constraints; (3) ignoring the SALT II constraints and increasing fractionation (increasing the number of RVs carried by a missile); (4) deploying additional offensive and defensive systems. The United States has, of course, a variety of options of its own, including expanding the number of additional MX shelters to counterbalance the Soviet options on fractionation.

16. We believe that the Soviets almost certainly prefer the first of these options—to encourage the ratification of SALT II or some other form of nuclear arms limitation—because it is most likely to dissuade the United States from entering into a strategic arms race. Besides this, it would, the Soviets hope, abet another of their key objectives, that of splitting the NATO allies by lulling them into a false sense of security. The Soviets are particularly worried by the prospect of a buildup of NATO tactical nuclear forces with long enough range to strike at the Soviet homeland. From their point of view, the addition of Pershing II's and GLCMs to the NATO arsenal would affect their position relative to the United States in the late 1980s even more adversely than shown in figure V.

17. If the Soviets chose to observe the limits under SALT II, we believe that they would probably push close to the limits under the agreement and thus hedge against an even greater need in the late

[7] The membership of the Soviet Politburo has changed substantially during the last 10 years but this has apparently not altered Soviet strategic force objectives.

37. *(Continued)*

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1980s. One area for expansion within the Treaty limits is in the number of ICBM RVs. The maximum to which the Soviets can expand is 8,600, an increase of 2,700 over that assumed in the previous discussion.[8] On the left side of figure VII we show again, as in figure V, the decline of residual Soviet LAP in the late 1980s under basic SALT II conditions. At the right we add a graph that shows the situation if the Soviets expand to 8,600 RVs. There would still be a dropoff in residual Soviet LAP but not nearly as much as on figure V We have also calculated, however, that if the United States should build a total of 7,200 shelters for MX rather than 4,600, the curve would return approximately to that of figure V. In short, an increase by the Soviets of 2,700 warheads could be offset by the addition of 2,600 shelters.

[8] They could reach 8,600 RVs by choosing to deploy a 10-MIRV ICBM as their one new ICBM permitted under SALT II rather than the single-RV version assumed in the previous calculations. This missile would replace currently deployed SS-17 and SS-19 ICBMs, thereby causing some programmatic disruptions.

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19. If the Soviets chose not to observe any SALT II limitations, especially those on fractionation, we estimate that the Soviets have the capacity to build to 14,000 ICBM RVs by 1990. The consequent new curve of LAP is shown in the right-hand graph of figure VIII (the two graphs from figure VII are on the left for comparison). Clearly this would completely offset the expected decline in Soviet potential. In turn, a total of about 10,700 MX shelters would be required to counter this and return conditions to those displayed on the left-hand graph. There would also be a US alternative of abrogating the ABM Treaty and deploying a new mobile ABM system.

20. The options examined above put some bounds on the impact of possible Soviet and US moves. It is unlikely that the Soviets would fractionate to 14,000 RVs or that the United States would build 10,700 MX shelters as a countermove. Other alternatives exist for both sides. What the calculations indicate, however, is that the Soviets will have an incentive to enter into a competition to maintain their present relative status; that the United States will then have an incentive to respond in some manner; and that these numbers of 14,000 and 10,700 simply represent some measure of the magnitude of the actions that would have to be considered.

21. Obviously the costs of whatever programs are selected would be considerable. Despite past evidence that economics has not had a profound effect on the size of the Soviets' strategic programs, the magnitude of their forthcoming economic problems may change this. They will at least try to avail themselves of lower cost options. In particular, we expect them to emphasize arms control agreements and to attempt to gain as much leverage as possible from the threat to fractionate extensively. This is certainly the option they can use most readily to pressure the United States. It is also an option they can implement relatively rapidly, and, the earlier they move to extensive fractionation, the more certain they can be of making the competition difficult for the United States. Ultimately, however, the Soviets will not let economic considerations deprive them of strategic forces they deem important to their security.

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21. The deployment of MX in the US inventory will have a second impact on the Soviets over and above that of acting as a sponge to absorb large numbers of Soviet warheads. As shown on figure IX, the advent of MX will be accompanied by a progressive decline in the survivability of Soviet silo-based ICBMs under conditions of a US first strike. This will then drive the Soviets to take steps to reduce the vulnerability of their ICBM force:

— One step would be to deploy additional SLBMs.

— Another would be to abrogate the ABM Treaty and expand their ABM defenses around their ICBM fields.

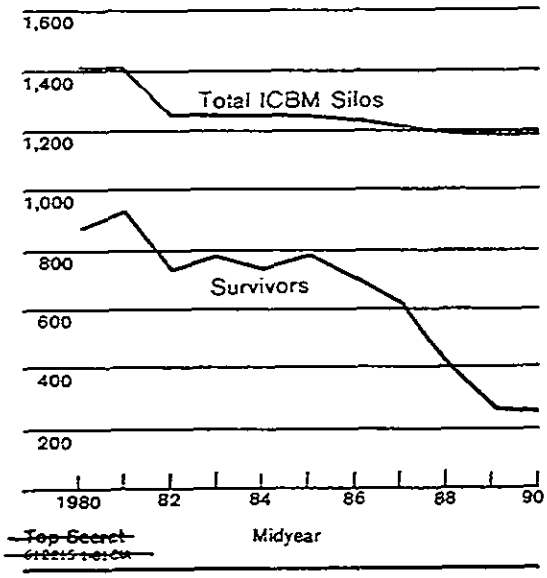
— Another would be to develop and deploy mobile ICBMs.

— Still another would be to press the development of long-range cruise missiles.

It is worth noting that the means of verifying mobile ICBMs and cruise missiles under an arms control agreement are limited.

Figure IX
Survivability of Soviet ICBM Silos If Attacked by US ICBMs, 1980–90

With SALT
(Two-on-One Targeting)
Soviet



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Implications

22. Because the Soviets will want, for a time at least, to keep open the possibility of a future SALT accord that would constrain US programs, we estimate that they will approve programs for the next five years that:

— Push their strategic forces toward the maximum levels permitted under SALT II and emphasize growth of a wide range of strategic programs not constrained by SALT II.

— Lay the groundwork for rapid expansion (even during this Five-Year Plan) of their forces in areas now constrained by SALT II, if they concluded that the Treaty were dead.

23. In light of the stark contrast in the projected Soviet strategic position in the first half of the 1980s, and the threat to it in the last half, should we expect the Soviets to take advantage of what some have referred to as the "window of opportunity" of the early-to-middle 1980s? The Soviets have regularly exploited opportunities in the Third World and have taken those measures necessary to secure their control of Eastern Europe even before they achieved parity. They have apparently done this less with reference to the strategic balance with the United States than with their estimation of the US resolve to take counteraction. Since the Vietnam war they have perceived the possibility of such counteraction as remote, especially in the Third World.

24. Accordingly, we believe that the Soviets will continue to make their estimation of US resolve the primary determinant in the degree to which they conduct an aggressive foreign policy in the Third World. Their sense of strategic parity or superiority may well, however, make them judge the risks to be less than they were in the past. In short, the "window of opportunity" which appears to exist in the early-to-middle 1980s with respect to the strategic equation will make the Soviets more willing to be adventuresome but not so much so as to "go for broke" in exploiting every opportunity that presents itself in the Third World. Their perception of the strategic balance is unlikely to induce them to undertake military action in Europe or against the United States. Still, these judgments must be caveated by the recognition that there are several important uncertainties in this estimation:

— First, internal political dynamics in the Soviet Union may become less predictable during a prolonged period of leadership change.

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— Second, the Soviets have surprised us before with the continued strength of their strategic programs and might build to a point of such strength that they might miscalculate the prospects for successful military action.

— Finally, with their extensive R&D program, they might achieve a technological breakthrough that would clearly give them superiority.

B. KEY JUDGMENTS COORDINATED BY THE INTELLIGENCE COMMUNITY AGENCIES

1. In this section we describe current Soviet programs and highlight those issues and uncertainties that we believe will be critical to the administration as it develops US strategic nuclear policy. We project alternative Soviet forces and discuss some of the implications of these forces. Finally, we address whether the US-Soviet strategic relationship would induce the Soviets to exploit what they may perceive as a period of strategic opportunity before US programs alter trends advantageous to the USSR.

Current Soviet Strategic Programs and Policies

2. Soviet leaders assert the inevitable victory of "socialism" in its struggle with capitalism, and, although they describe general nuclear war as a disaster to be avoided if possible, their military leaders argue that such a conflict can be won by the USSR. Moreover, the Soviets actively plan for national survival in the event of such a war. In public and private commentary, at SALT and in other forums, they have rejected Western notions of strategic sufficiency and the concept of mutual assured destruction. The Soviet Union's refusal to accept mutual vulnerability as a permanent basis for the strategic relationship is consistent with their open-ended weapons acquisition system and policy. The Soviets seek strategic forces and supporting elements, that, in the event of general nuclear war, could:

— Launch crippling counterforce strikes.

— Survive large-scale nuclear attack.

— Be employed flexibly against a wide range of targets.

— Substantially limit damage to the USSR.

3. To these ends the USSR relies on both offensive and defensive measures. Its offensive forces consist primarily of a large land-based ballistic missile force that today has the potential to destroy the bulk of US ICBM silos, and a survivable submarine-launched ballistic missile force that is growing in size and capability. The Soviet long-range bomber force is expected to continue to provide a relatively small portion of the USSR's total intercontinental attack capability. See figure I for an illustration of the growth and composition of Soviet strategic offensive forces over the last decade.

4. The Soviets continue to expand and upgrade what is already by far the largest air defense system in the world. They are developing a

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new ballistic missile defense system that could begin widespread deployment in the next few years.[1] They have a nationwide civil defense program that would cost at least $2 billion per year if duplicated in the United States. Although their antisubmarine warfare (ASW) capabilities have major deficiencies, they continue to expend great efforts in seeking solutions to their problems in this field.

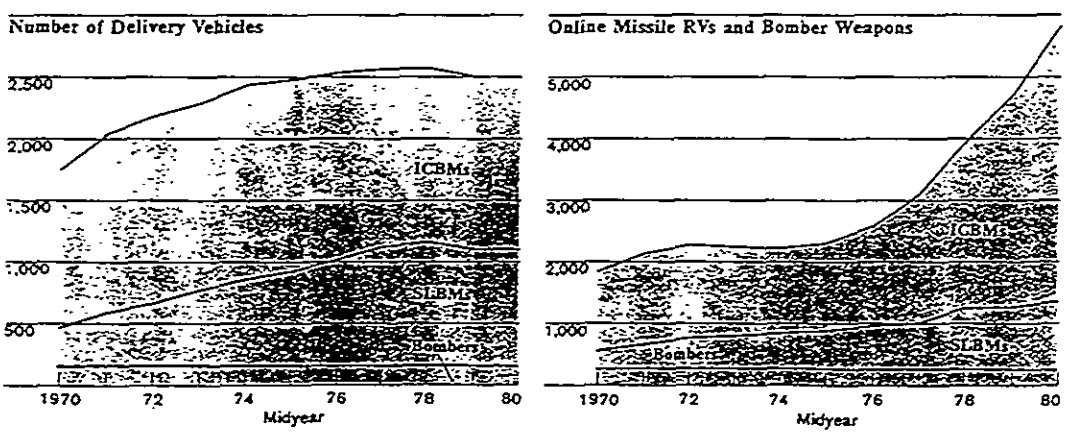
5. The Soviets have long stressed the importance of their command, control, and communications systems as critical to the fulfillment of their strategic goals in the event of war. These systems, even if directly attacked, can ensure the transmission of initial launch instructions to strategic forces. Their communications systems are sufficiently redundant that the loss of any one would not severely degrade command and control capabilities. Moreover, the primary communications circuits could be reconstituted within a period of several hours to a few days. Improvements in command and control have been an important aspect of the Soviets' efforts to enhance the flexibility of their forces.

6. The Soviets have sought to assure their ability to employ intercontinental forces in either initiative or responsive attacks, in either brief or extended conflicts. Which attack option the Soviets would

[1] *For an alternative view held by the Director, Bureau of Intelligence and Research, Department of State, see paragraph 36.*

Figure I

Growth and Composition of Soviet Offensive Strategic Forces, 1970–80



These forces do not include systems that have primarily peripheral missions, but also have some capabilities for intercontinental attack.

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select—surprise first strike, preemption, launch-on-tactical-warning, or retaliation—would depend on the circumstances, including the warning indicators available and the Soviet assessment of potential risks and gains.

7. To permit effective weapon systems to be regularly produced and deployed in support of the leadership's military and political objectives, the USSR's military research, development, and production establishments have been largely insulated from economic problems. At present the Soviets have under way about a dozen programs devoted to new or modified ballistic missile systems for intercontinental and peripheral attack, a new class of very large ballistic missile submarines (SSBNs), possibly long-range cruise missiles, a new ABM system, a new generation of fighters and advanced surface-to-air missiles. Experience indicates that many of these weapon systems will be deployed; however, for technical, political, or mission-related reasons some will not. While the Soviet approach to R&D relies mostly on evolutionary steps to minimize risks and avoid production problems, high-risk, innovative approaches are also undertaken. For example, in the defensive field directed-energy systems are being evaluated for their potential in air and ballistic missile defense and antisatellite applications. Today, the Soviets, by dint of broad and intensive research and development efforts, are in a good position to further modernize their strategic forces.

Critical Issues and Uncertainties

8. *Victory*. The comprehensive nature of Soviet strategic offensive and defensive programs, the emphasis in Soviet military doctrine on fighting nuclear wars, and assertions that general nuclear war can be won combine to indicate that some Soviet leaders hold the view that victory in general nuclear war is possible. While Soviet military writings available to us deal with preparations and operations on the assumption that a war may have to be fought, they do not specify what would constitute a politically meaningful victory in nuclear war. Soviet military writers devote their attention to the accomplishment of military missions rather than to political results, emphasizing what US strategists would call counterforce, damage-limiting missions and culminating in the seizure of key enemy military, political, and economic centers. [ ]imply that victory would be an outcome that preserves the Communists' political control, permits reconstitution of their economy, and leaves them in a superior military position on Eurasia, while neutralizing the United States and undermining the political and social systems of their weakened adversaries.

9. There is a divergent view that the concept of "victory" in Soviet writings is based on ideology rather than on objective, operational fac-

37. *(Continued)*

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tors. To deny the possibility of "victory" under any circumstances would challenge the legitimacy of Soviet ideology and, in effect, of the regime itself. This view further holds that the existence of military missions is not proof of an operational concept of "victory," given the lack of any identification of the requirements or character of "victory" in Soviet writings.[2] There is a second divergent view that available evidence indicates clearly that Soviet political and military leaders are in agreement on what would constitute victory. The holders of this view believe that the Soviet concept of a military and politically meaningful victory calls for: the survival of the USSR as a viable political entity, with the Communist party and leadership remaining supreme; the strategic and military neutralization of the United States; and the seizure and occupation of Western Europe.[3]

10. We believe that the Soviets would launch a preemptive intercontinental nuclear strike only if their leaders were to acquire what they considered unequivocal evidence that a US strike was both imminent and unavoidable. [redacted] indicate a belief that the most likely way in which intercontinental conflict with the United States would begin would be by escalation from a NATO–Warsaw Pact theater conflict. The Soviets apparently believe that the United States, facing a NATO defeat in Europe, would seek to salvage the situation by launching nuclear strikes.

11. *Limited Intercontinental Nuclear War.* We are uncertain about Soviet capabilities and strategy for limited intercontinental nuclear conflict. The Soviets publicly reject the possibility that limited nuclear wars can be kept limited. On this point, their public condemnation of the so-called "Schlesinger Doctrine" and more recently of PD-59 has been consistent. Privately, however, some Soviet spokesmen seemed to signal in 1975 that the USSR did not entirely disapprove of these concepts, and there is evidence that the Soviets plan for limited nuclear conflict at the theater level. Soviet forces have the technical sophistication and flexibility to initiate a broad range of limited options, although we continue to believe that even a "limited" Soviet strike, in keeping with the major tenets of their military doctrine, would involve a large-scale attack on US strategic forces and command and communication centers. The Soviets' ability to respond in kind to limited nuclear attacks on the USSR is constrained by their attack assessment capabilities. The improvements we expect the Soviets to make in their strategic forces during the 1980s will give them better capabilities for limited

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

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

intercontinental nuclear war, but we cannot predict the degree of improvement they will make in their attack assessment capabilities.

12. ***Protracted Intercontinental Nuclear War.*** The Soviets assert that a general nuclear war will probably be brief, but they have long allowed for the possibility that it might become lengthy. In view of their extensive activities aimed at survivability and command continuity—civil defense, leadership protection, force hardening and reconstitution, and hardened and redundant communications—we believe that the Soviets have contingency plans for protracted conflicts.[

]We cannot determine how thorough such planning may be or what specific preparations have been made.

13. *SALT.* Throughout the strategic arms limitation talks the Soviets have endeavored to slow the pace of US strategic force development while keeping open, to the extent feasible, options consistent with the USSR's military doctrine and its force acquisition plans. The agreements, however, have forced the USSR to make some trade-offs. In particular, the Soviets would not have reduced the number of SS-17, SS-19, and possibly SS-18 launchers that we believe they planned for deployment, and would not have dismantled Y-class SSBNs except for the arms control process. Nevertheless, since the strategic arms negotiations began, the Soviets have markedly enhanced the counterforce capabilities of their ICBMs and have continued ABM research and development.

14. Regardless of the fate of SALT II and despite anything the United States is likely to do or not do, the Soviets will substantially increase the capabilities of their forces during the next 10 years. Although they have indicated their willingness, if the Treaty is ratified, to proceed promptly to negotiate further reductions and limitations, we think the Soviet leaders will be very reluctant to entertain deep cuts in land-based ballistic missiles, because this would jeopardize the strategic posture they have worked so long to acquire. Moreover, continuation beyond 1985 of the SALT II limitations on new ICBMs, ICBM fractionation, and perhaps total numbers of MIRVed launchers would limit the USSR's ability to increase the counterforce potential of its ICBM force in response to projected US strategic force improvements. We are, therefore, uncertain whether the Soviets would be willing to extend such limits beyond 1985.

15. In the absence of SALT limitations, particularly in light of prospective US and NATO force improvements, the Soviets probably would take actions that would have been prohibited by the SALT II

Treaty and associated documents. During the next few months the USSR could:

— Begin sea trials for a new SSBN without dismantling older launchers as compensation.

— Test more than one "new type" of ICBM.

— Increase the number of reentry vehicles on the SS-18 beyond the Treaty's limit.

And in the next few years it could:

— Increase the number of land-based MIRVed launchers beyond Treaty limits.

— Deploy mobile ICBMs.

— Increase production of the Backfire bomber.

16. *Soviet Perceptions of the Strategic Environment in the 1980s.* Soviet planning seems driven by the perceived need to maintain forces adequate to prevail over any combination of opponents. There is an alternative view that Soviet force planning is based not on an operational imperative to achieve victory in nuclear war but on a strategy of deterrence through the development of a war-fighting capability.* The Soviets can expect that through the early-to-middle 1980s their ongoing force improvement programs will bring further gains in their strategic posture relative to the United States, NATO, and China. Despite the USSR's favorable prospects over the next few years, the issues now confronting Soviet policymakers and the implications for strategic force programs in the 1980s are unusually complex. They are faced with discontent among allies, the possibility of a deepening military involvement in Afghanistan, a volatile situation involving Middle East clients, continued poor relations with China, and an uncertain future for their relations with the West. They also see a growing Western determination to counter improvements in Soviet military forces. Key among the US and allied strategic initiatives with which the Soviets need to concern themselves are: MX missiles in multiple protective shelters (MPS), cruise missile and Trident programs, possibly a new bomber, and planned deployments in Western Europe of new long-range offensive systems. Thus, the strategic environment that the USSR may project is one in which Soviet gains of the 1970s and early 1980s could be eroded later in the decade.

17. *MX/MPS* is almost certainly a critical element affecting Soviet planning for the late 1980s. The MX missile represents a severe threat to

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

37. *(Continued)*

the survivability of the Soviet silo-based force. To enhance the survivability of their strategic forces with or without SALT the USSR could, for example, increase the number of its SLBM RVs. In the absence of the SALT II Protocol limits they could also deploy large numbers of mobile ICBMs.

18. In the event of a massive counterforce attack by the Soviets, the numerous hardened shelters in the MPS scheme would require the use of thousands of weapons in attacks on empty shelters. In response to the requirement to target large numbers of MX shelters, the USSR could, under SALT II limits, replace some of their existing MIRVed ICBMs with a 10-RV version of a missile now under development. In the absence of SALT they could further fractionate existing ICBMs. Another alternative for the Soviets would be to expand the role of their SSBN force to include attacks against MX shelters. The Soviets are considering a program to develop an advanced guidance system for future SLBMs. We do not believe that they will be able to deploy a hard-target-capable SLBM in the 1980s because of the difficulties in achieving the necessary accuracies. An alternative view holds that these accuracies could be attained by the end of the decade.[5]

19. *Long-Range Theater Nuclear Forces.* Prospective NATO long-range theater nuclear force (LRTNF) improvements—the deployment of advanced Pershing ballistic missiles and ground-launched cruise missiles—present the Soviets with new problems and uncertainties regarding warning time and assessment of the size and objectives of a nuclear attack from Europe. Moreover, these weapons could be seen by the Soviets as lessening the probability that they could accomplish their military objectives before a conflict escalated to the nuclear level. LRTNF deployment also serves to undermine the broader Soviet political objective of weakening the NATO alliance by casting doubt on the credibility of the US strategic umbrella.

20. The Soviets will seek to slow or halt these programs by diplomatic pressures, by arms control efforts, and by propaganda. Militarily, they will probably seek to counter NATO deployments by continuing steady improvements in their long-range theater offensive forces, and by deploying new shorter range nuclear missiles in the forward area of Eastern Europe. The Soviets may also have defensive counters. They have been working, since the early 1970s, on a new antitactical ballistic missile that when fully developed and joined to a suitable radar could have limited capabilities against some long-range theater ballistic missiles like the Pershing IIs and some submarine-launched ballistic missiles.

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

37. *(Continued)*

21. *Economic Factors.* Soviet defense spending has been increasing at an annual rate of 4 to 5 percent since about 1965. In 1978-79 the rate of growth in gross national product dropped to 2 percent, the lowest since World War II, thus increasing the defense burden. In the 1980s we expect the Soviet economy to continue to experience low growth rates. If, as expected, military outlays continue to rise at previous rates, the military share of GNP could reach 13 to 15 percent by 1985, as compared with today's 12 to 14 percent. Thus, the allocation of available resources among competing sectors of the Soviet economy will become more difficult. Nevertheless, evidence indicates defense spending will continue to increase at the rate of 4 to 5 percent at least through 1985. The number of major weapon systems under development and their pace have remained constant, more technologically complex systems have pushed costs higher, and construction activity at defense plants is at a high level. There is also evidence of planned expansion and modernization of military forces and of greater demands being made on Warsaw Pact allies for significant increases in defense spending.

22. Even if the Soviet leaders were forced by economic pressures to slow the growth of defense spending, we believe strategic programs would be the last to suffer a cutback. Reductions in strategic programs would offer only limited economic benefits, because the production resources devoted to them are highly specialized and are not readily transferable to the civilian economy. If, nevertheless, some cuts had to be made in Soviet strategic programs, we think they would choose only to defer or stretch out some force improvement programs.

Projections of Soviet Offensive Forces

23. Our projections of specific weapon programs are based on our knowledge of programs now in progress, past development and production trends, and our perceptions of Soviet force requirements. We have considered the possibility that, faced with a more challenging strategic environment and mounting economic difficulties, the Soviets might moderate their objectives for strategic forces and their resource commitments to them. We conclude, however, that the Soviets are not likely to alter significantly their commitment to long-term strategic force improvements.

24. *Impact of SALT Limitations.* Certain of the SALT II Treaty provisions would serve to constrain the Soviets' options for improving their forces. The limitations that most directly impact on our projections are:

— No increase in the number of RVs on existing ICBMs. The large throw weight of Soviet MIRVed ICBMs, particularly of the SS-18 booster, would permit much greater payload fractionation without sacrificing countersilo capabilities.

— Only one "new" ICBM, with a maximum of 10 RVs. The Soviets have at least two ICBMs under development that would be categorized as "new" under SALT II. We believe that the constraints of SALT II would lead the Soviets to choose as their "new" ICBM the larger of the two. Its greater throw weight would give the USSR more flexibility in selecting payload options that would maximize counterforce capability under SALT.

— No more than 1,200 launchers for MIRVed missiles. We expect that the continued deployment of the D-III SSBN, concurrent with the deployment of the new very large Typhoon SSBN, will bring the Soviets to the sublimit of 1,200 MIRVed-missile launchers in the mid-1980s. At that time, they would have to dismantle other MIRVed missile launchers to compensate for launchers on new Typhoon SSBNs.

25. ***Projections.*** To take account of the uncertainties about the future of US-Soviet arms limitation negotiations, we have projected alternative Soviet forces for intercontinental attack. We have used dates of initial operational capability (IOC) and deployment rates consistent with past trends, as well as our best estimates of weapon system characteristics. The SALT-limited projection assumes that the constraints imposed by the SALT II Treaty remain in effect through 1990. We project a single force, with an upper and a lower bound that reflects our uncertainty about Soviet ICBM and SLBM deployment options. Although a Soviet SALT-limited force will probably fall within the range presented, the upper bound is considered a less likely projection than the lower. In the absence of an agreement to extend the SALT II terms, the Soviets have the potential to expand their forces considerably in the mid-to-late 1980s. This potential is illustrated by the SALT/No-SALT projection. The No-SALT force illustrates Soviet development and deployment options under circumstances in which the SALT II Treaty is abandoned by mid-1981 and the SALT process breaks down. Our projections are summarized in the accompanying table.

Comparisons of Soviet and US Offensive Forces

26. To illustrate the capabilities of Soviet strategic offensive forces we use several indexes and we compare Soviet with US forces. US forces were provided by the Office of the Secretary of Defense (OSD) and are consistent with programed forces except in the No-SALT examples. The US No-SALT forces provided by OSD are regarded by the Secretary of Defense as unsuitable for use in an NIE. The Department of Defense has not produced an official estimate of what forces it would construct in the absence of SALT limitations. Accordingly, the comparisons which are made in this area must be viewed as representative of what might

37. *(Continued)*

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Soviet Options for Strategic Offensive Forces With and Without SALT

	Delivery Vehicles				Weapon Totals *		
	ICBM Launchers	SLBM Launchers	Bombers	Total	Hard-Target ICBM RVs	RVs on Mobile ICBM Launchers and SLBMs	Missile RVs and Bomber Weapons
1985							
SALT Lower Bound	1,238	908	104	2,250	5,700	2,650	8,650
SALT Upper Bound	1,238	908	104	2,250	6,100	2,650	9,350
No-SALT	1,569	1,089	151	2,809	8,800	3,400	12,250
1990							
SALT Lower Bound	1,178	972	100	2,250	5,900	3,600	10,250
SALT Upper Bound	1,238	908	104	2,250	8,200	4,400	12,650
SALT/No-SALT	1,454	1,068	190	2,712	12,150	5,950	18,400
No-SALT	1,695	1,224	230	3,149	14,000	6,300	20,450

* These numbers have been rounded to the nearest 50.

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be done, not as specific predictions. The indexes we use include static measures of the current relative size and qualitative characteristics of Soviet and US forces. We also look at measures of the destructive potential of Soviet and US forces to attack soft urban areas and hardened military targets like silos. There is an alternative view that the US forces used in the Estimate have no official status and therefore should not be used.[6]

27. The static indexes we look at include number of missile RVs and bomber weapons and equivalent megatonnage of the two forces. We also look at key qualitative characteristics, including accuracy of each side's most effective hard-target ICBMs and the hardness of each side's ICBM silos. Our comparisons of current forces indicate the following:

— Missile RVs and Bomber Weapons. The number of weapons is a rough indicator of the number of targets that can be attacked. The United States continues to maintain a substantial lead. It [ ] and the Soviets about 6,000. The major factors weighing in the US favor are a larger MIRVed SLBM force and a larger force of intercontinental bombers.

— Equivalent Megatons. This measure combines weapon yield and numbers of weapons to provide a rough indicator of the potential of a force to attack soft area targets. The present Soviet advantage that began in the mid-1970s is primarily the result of a large number of ICBMs with high throw weights.[

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

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— Accuracy. The accuracy of each side's best ICBMs is a rough measure of the trends in hard-target capability.

— Silo Hardness. The hardness of a silo is a rough measure of its survivability.

Overall, Soviet silo systems are probably more vulnerable than indicated by these figures, but we still consider them to be significantly harder than US silo systems.

In sum, the Soviets lead in equivalent megatonnage and average hardness of ICBM silos, and have now surpassed the United States in ICBM accuracy. They still lag behind the United States in numbers of weapons.

28. *Measures of Destructive Potential.* We examine the total number of missile RV and bomber weapons in terms of two theoretical measures—lethal area potential (LAP) and hard-target potential (HTP). LAP is defined as the area of land over which an overpressure sufficient to level reinforced concrete structures, can be applied. The second measure, HTP, assesses the potential of each side's total force—ICBMs, SLBMs, and bomber weapons—to destroy hardened targets such as missile silos. While these measures indicate trends in the destructive potential of offensive forces, neither side would plan to employ its entire force exclusively for one of these missions and there is thus no pretense that our calculations are based on the application of strategic weapons to real target sets. However, because we apply the same assumptions for both sides, the comparisons are useful in that they convey more information than presented by static force comparisons alone.

— With respect to LAP the USSR has been ahead throughout the 1970s. However, the US urban area is twice the size of the USSR's

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— The number and lethality of large Soviet warheads and the hardness of Soviet ICBM silos give the USSR a substantial advantage over the United States in HTP.

29. There is a divergent view that only detailed damage assessment of individual targets can properly indicate destructive potential for meaningful comparison of strategic forces. According to this view, LAP overstates the potential destructive capabilities of a force because actual targets are not clustered in neat circles where [ ] overpressure can achieve maximum damage. The HTP calculations also misstate force potential because in many cases when weapons are applied to real target sets the damage achieved is less than the theoretical HTP of a given weapon.[1]

30. *Soviet Potential To Attack US ICBMs.* Projected Soviet ICBM forces will have an increasing potential to destroy US ICBM silos. Using two RVs against each silo, they could destroy about 60 percent today and about 90 percent by 1985. Deployment of the MX missile in multiple protective shelters in the late 1980s, however, would make the accomplishment of the Soviet counterforce mission a much more expensive proposition. Although the US shelter program could dramatically

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

increase the RV requirements for a Soviet counterforce attack—in both the SALT and No-SALT environments—we project the Soviets could meet that requirement but would have to expend most of their ICBM RVs.

31. ***Soviet and US Residual Potentials.*** The methods and measures used in our analysis are simplified ones. They do not depict the outcome of a US-Soviet nuclear exchange or a protracted nuclear conflict and do not account for the operational factors that would be essential to assess the performance of Soviet and US forces under wartime conditions. They do, however, illustrate the progress made by the Soviets toward satisfying the counterforce requirements they have established for their forces. Further, our assessment of the surviving US potential, after US forces have absorbed a hypothetical first strike, is particularly important to those who see the key ingredient of the strategic balance as the ability of the United States to absorb a first strike and retain enough absolute destructive potential for a large-scale retaliatory attack.

32. There is a divergent view that the residual analysis in this Estimate produces misleading results with respect to trends in the strategic balance, sheds little light on the question of deterrence or escalation control, and comprises an unrealistic net assessment. According to this view, net assessments from a US perspective are not a proper function of intelligence. In this view, analysis based on a US perspective should be accomplished within the Department of Defense with intelligence as a full partner, and should not be included in a National Intelligence Estimate.[6]

33. It is the view of the Director of Central Intelligence that the residual analysis in this Estimate is indeed a proper function for the Intelligence Community. The DCI believes that the Department of Defense should be a full partner in such assessments, but he does not believe it in the national interest that DoD should control all comparisons of the effectiveness of its forces with other forces.

34. Figure III displays the destructive potential of Soviet remaining and US surviving weapons, with and without SALT, following a surprise Soviet attack when US forces are on day-to-day alert—a worst case circumstance for US forces. The charts illustrate that the potentials of Soviet forces—measured in terms of either LAP or HTP—will improve over the next few years whether or not SALT is in effect. The sharp decline in residual Soviet destructive potential in the latter half of the 1980s, shown on the charts, results from planned US strategic force

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

37. *(Continued)*

improvement, especially MX/MPS. Similar calculations show that in the case of a US first strike, the potential of Soviet surviving forces would also grow only through the mid-1980s.

35. We have examined the potential of US forces during their most vulnerable period—after a surprise attack by the USSR in the early 1980s. Our analysis shows that the United States would retain significant retaliatory potential even though US residual capabilities would be at their nadir. We have presumed mission requirements that surviving US forces be capable of destroying 70 percent of the Soviet economic and military base. We find that:

— Either the surviving US SLBM or bomber force could each destroy more than 70 percent of Soviet economic value and the surviving ICBM force could almost do the same.

— For retaliatory attacks against nonsilo military targets, presumed to have varying degrees of hardness, the mission could be accomplished by a combination of surviving SLBMs, bombers, and ICBMs.

These calculations have not taken into account the attrition caused by Soviet strategic defenses.

36. *The Extent to Which Soviet Strategic Defenses Can Limit Damage.* In the 1980s the Soviets are expected to deploy new air defense systems, particularly for low-altitude defense; further develop their ABM options; continue efforts to acquire effective ASW capabilities; and improve their civil defenses. Despite these growing strategic capabilities, the Soviets during the 1980s could not prevent a large-scale US nuclear attack by surviving US forces from causing tens of millions of casualties and massive destruction of urban-industrial and military facilities in the USSR:

— Strategic Air Defense. At present the massive Soviet air defense forces could perform well against aircraft at medium and high altitude, but would have little aggregate capability against targets at low altitudes. In the middle and late 1980s, Soviet air defenses will have the potential to inflict considerably higher attrition against US bombers of current types. By 1990 areas with adequate deployments of new systems could be defended against currently programed US cruise missiles. In addition, a forward defense with AWACS aircraft and interceptors could threaten some cruise missile carriers prior to launch. Nevertheless, because of numerical deficiencies, the Soviet capability to defend against an attack by large numbers of US cruise missiles will probably be limited over the next 10 years. Finally, collateral damage from a prior ballistic missile attack and the use of

37. *(Continued)*

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defense saturation, suppression, and electronic warfare tactics would degrade the overall effectiveness of Soviet air defenses. Thus, the actual performances of Soviet air defenses against combined attacks involving large numbers of US bombers, SRAMs, and cruise missiles will probably remain low during the period of this Estimate.

— Ballistic Missile Defense. The Soviets could begin deployment, after 1982, of an ABM system with the potential for one-on-one intercept of current and programed types of US ballistic missile RVs. As an example (although contrary to the ABM Treaty), the Soviets could have some 150 sites with 900 aboveground launchers for the defense of 20 to 25 high-value targets within four to five years of a deployment decision, assuming a high level of effort.[

]The effectiveness of the missile defense would depend on the size of the attack and the availability of target data, as well as US reactions, such as the deployment of penetration aids or the use of saturation tactics. There is an alternative view that discussions in this estimate of a new ABM system and possible deployment scenarios imply a far greater knowledge than we have and do not convey the significant uncertainties regarding the identification and current status of the components which would constitute a system suitable for deployment. According to this view, there is an insufficient basis upon which to evaluate system capabilities and the likelihood of various deployment possibilities. Moreover, it is misleading to imply that deployment could begin within the next few years,

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— ASW Capabilities. The present effective range of Soviet submarine detection sensors is too short to enable the Soviets to detect US SSBNs in their patrol areas, and the capabilities of Soviet forces are too limited to maintain continuous tracking of SSBNs once detected. During the 1980s the Soviet ASW problem will become much more difficult as US SSBN operating areas are expanded following deployment of longer range SLBMs on Poseidon and Trident submarines. We believe, therefore, that during the decade the Soviets would be unable to prevent US SSBNs on patrol in broad ocean areas from launching their missiles.

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

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— Civil Defense. Soviet casualties from the initial effects of a large-scale US nuclear attack could range from 125 to 150 million if little or no time were available for civil defense preparations. The benefit to the USSR of complete implementation of sheltering and evacuation would be the prevention of about 80 to 100 million casualties in the immediate aftermath of an attack. Under these circumstances the Soviet leadership and most of the essential work force would probably survive. Expected improvements in Soviet civil defense preparations in the 1980s will increase the likelihood of survival of a large percentage of the leadership and essential personnel, but the number of casualties and fatalities among the urban population would be somewhat greater than today. Increases in the number of Soviet blast shelters during the next 10 years will be offset by expected increases in Soviet urban population and in the number and yield of US weapons.

Implications

37. The Soviets credit their strategic programs of the 1970s with lessening the probability of general nuclear war with the United States and probably with improving the war-fighting capabilities of their forces. They probably view their improved strategic position as providing a more favorable backdrop than before to the conduct of an assertive foreign policy and to the projection of Soviet power abroad. They probably believe that their strategic forces would deter the United States from initiating intercontinental nuclear war in circumstances short of a clear threat to US national survival. It is likely that they see a high risk of escalation to the nuclear level in any conflict with the United States in areas (such as Western Europe) perceived vital to US interests. In other areas, particularly in regions where the USSR or its allies would have the advantage in conventional forces, the current strategic relationship enhances Soviet confidence that the risk of a direct US military response would be low.

38. The extent to which Soviet gains in strategic forces projected through 1985 would embolden the USSR to challenge the United States is unclear. In part, this is because the relationship between the strategic balance and Soviet behavior in the international arena is uncertain. Even when they were clearly inferior in strategic nuclear power the Soviets regularly exploited opportunities in the Third World and took those measures necessary to secure their control of Eastern Europe. Thus, during the early-to-middle 1980s, when the Soviets strategic capabilities relative to those of the United States would be greatest, we would expect them—as in the past—to probe and challenge the United States steadily to determine at what point it will react strongly. For

37. *(Continued)*

them to "go for broke" during the next few years would mean that they had ignored the strategic equation. We think it highly unlikely that this eventuality will come to pass. Their perception of the strategic balance is unlikely to induce them to take military action against Western Europe or the United States.

39. There is a divergent view regarding the implications of Soviet strategic programs. The holders of this view believe that the overall pattern of Soviet force improvements, while providing a high degree of military security, also enables the Soviets to create and exploit foreign policy opportunities for expansion. They believe that the early-to-middle 1980s has greater potential for Soviet challenges to Western influence than indicated above. They further believe that the Soviet leadership is now confident that the strategic military balance has shifted in the Kremlin's favor and that the aggressiveness of its foreign policy will continue to increase as the Soviet advantage grows. The Kremlin is likely to accelerate pursuit of its global ambitions, weighing the local "correlation of forces" in those regions where it wishes to increase its influence or gain control.[10]

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

Strategic Weapons in Context With Soviet Ambitions

In 1981 a new President, Ronald Reagan, brought a sweeping reappraisal of American security interests and an avowedly "hardline" Soviet policy. His DCI, William J. Casey, had served on the PFIAB, was a member of the Committee on the Present Danger, and a man with a clearly defined conception of the Soviet Union.

Casey saw his task to be a reform and reorientation of the intelligence community. In his tenure, the debate over Soviet objectives was to be subsumed by a new analytical paradigm that understood the strategic arms race in context with "the main threat," defined by Casey as "the Soviet ability and will to project its power worldwide through subversion and insurgency." It was important, Casey felt, not to become fixated on "the surface questions and manifestations of (the) competition with the Soviet Union" but to remember the "real nature of the contest . . . the lineal descendent of the conflict Western civilization had struggled with for millennia—state despotism versus . . . individual freedom and creativity."[7]

The dynamism of the 68-year-old DCI was evident from the moment he took office, evinced by a reorganization of the CIA's Directorate of Intelligence (then the National Foreign Assessment Center). Unusually, among his first actions was to commission a Memorandum to Holders of NIE 11-4-78 (M/H NIE 11-4-78)—some three years after that document was disseminated. This new appraisal painted a portrait of Soviet goals and expectations that was vastly different from the one displayed in 1978: whereas previous NIEs of this series had given strong emphasis to Soviet strategic military policy, this edition focused on Soviet efforts to achieve a dominant position in the Third World. It depicted a Soviet leadership that was assertive and confident despite the approaching succession crisis and a stagnating economy with little prospects for improvement. [8] The next year's NIE 11-4-82—the last of this NIE series to be written on the Soviet Union—was more traditional in its review of Soviet military policy, but nevertheless focused on Soviet activities in the Third World. [9]

[7] William J. Casey, *Scouting the Future: The Public Speeches of William J. Casey*, (Washington DC: Regnery Gateway, 1989), pp. 26, 150. According to his biographer, Casey felt that the "indictment" of the 1970s (in the A-Team/B-Team controversy) was "a bum rap . . . The specifics may have been technically accurate, but they had been wrenched out of context and grotesquely magnified to serve political ends." Joseph E. Persico, *Casey: From the OSS to the CIA*, (New York; Viking, 1990), p.216.

[8] M/H NIE 11-4-78 *Soviet Goals and Expectations in the Global Power Arena*, 7 July 1981; p. 6.

[9] The NIE 11-3/8 series took over many of the relevant policy functions of the 11-4 series on its demise.

In the strategic forces NIEs themselves, the sharpening of the antagonism between the Soviet Union and the United States, the resurgence of American strategic nuclear programs, and the expanded scope of the arms race was reflected in a growing preoccupation with the prospect of nuclear war. Whereas previous strategic forces NIEs had concentrated on system capabilities and the programmatic aspects of the arms race, the NIEs produced in the 1980s for the first time gave a full account of the Soviet concept of war: [10] how it might begin, what might cause it to escalate to a nuclear exchange, and the structure and chronology of a potential Soviet strategic strike against the United States and its allies. [11] NIE 11-3/8-83 expanded this discussion to evaluate the role played by mobile ICBMs, ALCMs, and submarine-deployed SLCMs in Soviet nuclear strategy. [12]

[10] NIE 11-3/8-80 had included a similar discussion, but in much less detail.

[11] NIE 11-3/8-82 *Soviet Capabilities for Strategic Nuclear Conflict, 1982-92,* 15 February 1983; pp. 27-33. Also see NARA RG-263 NIE 11-3/8-81, pp. 8-12, not reproduced here.

[12] NIE 11-3/8-83 *Soviet Capabilities for Strategic Nuclear Conflict, 1983-93,* 6 March 1984; pp. 3-4, 40-49.

38. M/H NIE 11-4-78 *Soviet Goals and Expectations in the Global Power Arena*

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KEY JUDGMENTS [1]

We believe that Soviet leaders regard military strength as the foundation of the USSR's status as a global superpower and as the most critical factor underlying Soviet foreign policy. As it enters the 1980s, the current Soviet leadership sees the heavy military investments made during the last two decades paying off in the form of unprecedentedly favorable advances across the military spectrum, and over the long term in political gains where military power or military assistance has been the actual instrument of policy or the decisive complement to Soviet diplomacy.

Since the mid-1970s the Soviet Union has demonstrated a new willingness to challenge the West in Third World settings as exemplified by its actions in Angola and Ethiopia and its invasion of Afghanistan. This more assertive Soviet international behavior is likely to persist as long as the USSR perceives that Western strength is declining and as it further explores the utility of its increased military power as a means of realizing its global ambitions.

A central question for the 1980s is whether the Soviets may be more inclined now than in earlier periods to confront the United States in a crisis. Moscow still views such a prospect as extremely hazardous. However, in light of the change in the strategic balance and continued expansion of general purpose forces, the Soviets are now more prepared and may be more willing to accept the risks of confrontation in a serious crisis, particularly in an area where they have military or geopolitical advantages.

Policy Toward the United States

The Soviet leadership sees the present US administration as basically hostile to the USSR and as intent upon linking Soviet behavior in the Third World to East-West relations, particularly arms control. Moscow has categorically rejected this "linkage" and has reaffirmed its

[1] *In the view of the Director, Bureau of Intelligence and Research, Department of State, and of the Special Assistant to the Secretary of the Treasury (National Security), the Memorandum tends to understate the historical continuity of the ideological and political underpinnings of Soviet assertiveness in the Third World. Moscow has pursued opportunities and advantages during periods of relative military weakness as well as during periods of enhanced strength (for example, Korea, Laos, Congo, Berlin, and Egypt). The factors, moreover, that have influenced Soviet actions in these regions have been more their view of the situation and opportunities and of the potential US responses to Soviet initiatives than the precise state of development of Soviet military programs.*

commitment to support "national liberation" movements. Although the Soviets may doubt that the administration will actually be able to pursue as assertive a policy toward the USSR as it has suggested it would, they are probably reviewing their options for responding over the longer term to that possibility.

The Soviets will continue to stress the importance of the arms control dialogue with Washington as the key to bilateral relations, and they will seek to resuscitate detente as the most promising way of constraining US military policies, of advancing their military and political objectives, and of controlling the costs and risks of heightened international tensions. If they conclude that there is no prospect in the near term for meaningful results from renewed SALT, they may decide to go beyond the SALT II constraints, seeking to place the onus for failure on the United States and to exploit the breakdown to widen cleavages in the Atlantic Alliance. At the same time, Moscow would continue to urge the United States to enter SALT negotiations and would undoubtedly attempt to manipulate West European commitment to SALT in order to increase the pressure on Washington.

Europe

Moscow apparently views the policies of the present administration in Washington as likely to sharpen contradictions within the Atlantic Alliance. The Soviets see a lack of Western consensus—for example, in implementing NATO's program to modernize its long-range theater nuclear forces (LRTNF). They seek to exploit these differences with a dual purpose: to pursue certain economic and political interests with the Europeans even if Soviet relations with the United States deteriorate, and to generate pressures on West European governments to influence Washington toward greater flexibility in its dealings with the USSR.

The USSR perceives that some Western governments are more concerned about military imbalances such as the Soviet preponderance in LRTNF. The Soviets will continue to act politically to prevent the implementation of NATO's force modernization programs (particularly regarding US LRTNF) through arms control offers that would ratify Soviet military advantages in Europe and through threats of counter deployments.

Poland presents the USSR with the most threatening and complex challenge to its vital interests to emerge in Eastern Europe in the postwar period. Soviet leaders are prepared to use military force to preserve Soviet domination if they become convinced that changes taking place in Poland jeopardize the USSR's hegemony over Eastern Europe. However, because they know that the political, military, and economic costs of intervention would be extremely high, they may bring

themselves, so long as Poland's commitment to the Warsaw Pact is assured, to live with a much-modified Communist system in Poland.[2]

The Soviets probably anticipate that their military intervention in Poland, even under the most favorable scenario, would cause a harsh West European reaction and an initially unified US–West European stand against them. They see this as removing or reducing, at least temporarily, what they would otherwise expect to be the restraining influence of the European allies on the United States. Nevertheless, the Soviets would expect that differences between the United States and the European allies on the scope, intensity, and duration of countermeasures against the USSR would gradually emerge and provide the USSR with opportunities for renewing detente with at least Western Europe.

China and Japan

The Soviets are deeply concerned by what they perceive as a quasi-alliance evolving between the United States and China, and they will seek to frustrate and to delay the emergence of a "Washington-Beijing-Tokyo axis" with links to NATO directed against Moscow. They will also cooperate with the Vietnamese who, although wary of Moscow's embrace, have become a junior partner in the Soviet effort to reduce US influence in Indochina and encircle and neutralize China. The present Soviet leaders developed the containment policy against China and built the forces as well as the alliance and diplomatic framework to support this policy. They are unlikely to abandon this policy for the extreme alternatives of either far-reaching concessions to placate Chinese demands or military measures to defeat or coerce the Chinese leaders.

Third World

The Soviets believe that they have the legitimate right and the military strength to pursue an aggressive foreign policy in the Third World. In seeking to assert the USSR's status as a power with broad, global interests, they will attempt to:

— Create as well as to exploit opportunities stemming from regional conflicts to enlarge Soviet influence, using military assistance and Soviet military power.

— Reduce Western—particularly US—influence by expanding the USSR's presence and encouraging anti-Western regimes — and elements.

[2] We are unable to judge the precise limit of Soviet tolerance, and we doubt that the Soviet leaders themselves have as yet determined this limit.

38. *(Continued)*

— Augment Soviet strategic reach and counter Western military activity.

— Increase hard currency earnings as well as to promote political and strategic interests through arms sales.

More specifically, in the Middle East, Moscow seeks to:

— Preserve and exploit the strategic advantages it holds by virtue of geography, potentially reinforced by the Soviet military presence in Afghanistan, and by Soviet influence in Syria, Libya, and South Yemen.

— Encourage a shift of Persian Gulf states from a pro-Western to a more "nonaligned," and eventually pro-Soviet position, while at the same time helping "national liberation" movements that might seize power in the Gulf. In this context the Soviets have attempted also to improve relations with the conservative, pro-Western governments in the Gulf region.

— Improve Soviet access to and ultimately establish control over Persian Gulf oil, with all that would mean for enhanced Soviet leverage over Western Europe and Japan.

In attempting to realize these objectives, Soviet policymakers also have to take into account more fundamental concerns. First, they must approach with care any move that could lead to a direct military clash with the United States. Second, they must assess the impact of actions in the Gulf on their own global strategic, political, and economic interests. And, third, they must judge how they wish to affect—and to be seen affecting—Gulf oil supplies to the West. Such considerations might not deter the Soviet leaders if they were confronted by strategic opportunities or severe challenges in the Gulf region. Soviet behavior during the Iran-Iraq war and the evolution of its diplomatic position on Gulf security suggest, however, that Moscow seems more immediately interested in averting a major US military buildup in the region and in advancing Soviet claims for recognition as a legitimate coguarantor of Gulf security than in risking the employment of its military forces.

Moscow's present goals in Afghanistan—not easily realized—are to achieve political control and military consolidation while avoiding the introduction of major additional forces. The Soviets seek to establish conditions for political domination and a continued military presence in the country; the scale and nature of any postinsurgency military presence will reflect their broader regional objectives. Moscow will increase pressure on Pakistan through military threats, border incidents, subversion, and possibly strengthened ties with India in an effort to persuade Islamabad to accommodate Soviet objectives in Afghanistan.

With respect to Iran and Iraq, the Soviets will seek an outcome of their current war that leaves both dependent to some extent on the USSR, and that does not foreclose the possible further acquisition of oil from Iraq by the USSR and other Soviet Bloc countries. The Soviets will attempt to maintain Iraqi dependency on the USSR for arms supply, and they will seek in the near term to prevent any improvement in US-Iranian relations and to influence the Khomeini succession in a way that might lead a follow-on regime to adopt a posture more favorable to Soviet interests.

There will clearly be continuing opportunities in Africa for the USSR and its proxies. The most acute problems Soviet and Soviet proxy actions in Africa may create for the United States in the next several years could be:

- A substantial increase in Soviet backing for or involvement in the insurgency in Namibia.
- Extension of the USSR's influence elsewhere in Sub-Saharan Africa by providing military assistance—either directly or through the Cubans—to Soviet clients in order to develop or exploit internal instability in Zaire, Zambia, or Zimbabwe, or by collaborating to further Libyan aims in Chad and Sudan.
- Soviet provision of significantly larger numbers of advisers and equipment, or more support for the Cubans, in order to prop up Moscow-oriented regimes in Angola, Mozambique, or Ethiopia if they are threatened by dissident elements or faced by internal collapse.
- Military conflict between a Soviet client regime and a third country—with or without Soviet encouragement. (For example, Ethiopian encroachment on Somalia, or—less likely—clashes between Angola or Mozambique and South Africa related to Namibia or bilateral disputes.)

Inspired by the success of revolution in Nicaragua in 1979, the USSR is actively seeking to promote insurgencies in Central America aimed at bringing anti-US leftist regimes to power. Cuba is an increasingly important outpost for Moscow in the hemisphere, as well as a surrogate in the Middle East and Africa. The Soviets will continue to use Cuban airfields and other facilities and to underwrite the Cuban economy. Beginning in 1980 the USSR has actively been encouraging and facilitating Castro's return to militancy in Central America. The Soviets seek to maintain a degree of revolutionary momentum in the region, to undermine US interests, and to keep the Atlantic Alliance embroiled over how to deal with Soviet- and Cuban-sponsored instability and civil war thrust on friendly governments in Central America.

Domestic Considerations

Several sources of domestic pressure and vulnerability in the Soviet system could force difficult choices on the leaders in the 1980s. These include deteriorating economic performance, a growing possibility of social instability and internal dissidence, and a change in leadership. None of these factors alone will necessarily alter Soviet behavior. Their interaction could, however, lead to significant changes in foreign policy; it certainly will make this policy less predictable.

As the USSR begins its 11th Five-Year Plan, economic prospects are gloomier than at any time since Stalin's death, and there is a strong possibility the economic situation will get progressively worse in the second half of the decade. Annual increments to national output even in the early 1980s will be insufficient to avoid having to make choices among the competing demands for investment, consumption, the cost of empire, and continued growth in defense spending. As Soviet leaders survey what they regard as a hostile external environment, however, foreign policy and military requirements are likely to dominate their policy calculations. They will therefore try to maintain high defense spending, promote higher productivity and assure domestic control by appeals to a more extreme patriotism, and, if social instability arising from consumer dissatisfaction or ethnic tensions makes it necessary, by resorting to repressive measures.[3]

It is difficult to assess what impact the forthcoming leadership succession may have on Soviet policy, particularly since the environment in which a new top leadership has to act will probably be more important than the individual views of its members. If the new leaders believe the global "correlation of forces" to be favorable, especially if they are less impressed than Brezhnev with US military might and more impressed with their own, they might employ military power even more assertively in pursuit of their global ambitions. Greater caution in foreign policy could result, however, from the pinch of internal economic difficulties and popular dissatisfaction. On balance, although the policies of the new leadership cannot be confidently predicted with any precision, we believe that they will display general continuity with those of the Brezhnev era.

[3] *The Special Assistant to the Secretary of the Treasury (National Security) notes that investment, labor, and consumption shortfalls will still be likely, and believes that these will place constraints on major Soviet foreign policy initiatives.*

[redacted]

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KEY JUDGMENTS

The Soviet challenge to US security interests is rooted in Moscow's conception of its relationship with the United States as fundamentally adversary. This concept, based on ideological antagonism and geopolitical rivalry, governs Soviet behavior and also shapes Soviet perceptions of US policies toward Moscow. Its most dramatic manifestation is growing Soviet military power and capabilities which form the cutting edge of Moscow's persistent efforts to extend its global presence and influence at the expense of the United States and the West.

Although Soviet leaders regard military power as the USSR's principal currency as an international actor, they also view the East-West relationship as a more encompassing struggle involving political, economic, social, and ideological factors—a totality which the Soviets characterize as "the correlation of forces." Soviet leaders profess confidence that this correlation is "changing in favor of socialism" and Soviet policy, in turn, has sought to further this transition through the exploitation of a variety of means including military and economic aid, the use of proxies, covert activities, and the political alignment of the USSR with regimes or revolutionary movements opposed to US policies.

The Soviets believe that they enjoy some strategic advantages over the United States and view their current overall position as supporting the conduct of an assertive foreign policy and the expansion of Soviet influence abroad. However, they do not believe that they currently enjoy decisive strategic advantages over the United States and do not wish a major confrontation. They have an abiding respect for US military capabilities and are confronted themselves with the dilemmas of declining economic performance and the increasing burden of defense spending for the economy as a whole. They are unlikely to initiate military hostilities in an area of crucial importance to the United States like the Persian Gulf. However, they will seize opportunities offered by instability in the Third World to enhance their geopolitical influence and also to divert US attention from areas of direct US-Soviet interaction, even in situations where the USSR has little prospect of making significant gains for itself. Moreover, they may increasingly expect that the burden of avoiding potential confrontation, particularly in areas contiguous to the USSR, should shift to the United States. The Soviets' perception of their own opportunities is reinforced by a sense of US frustrations and geopolitical vulnerabilities, partic-

ularly in the Third World, where US regional equities appear to Moscow to be increasingly threatened by political radicalism and economic nationalism.

The advent of a new US administration, openly critical of the premises of detente and avowedly intent on increasing US military might, has not changed this basic perception but has raised Soviet concerns about a reinvigorated US effort to counteract Soviet expansionism and exploit underlying Soviet economic and geopolitical vulnerabilities. However, the Soviets view Washington's ability to heighten the economic and military costs of the East-West competition to Moscow as subject to competing US domestic economic priorities and to reluctance on the part of US allies to incur the costs of increased defense expenditures, deferred economic opportunities, or increased tensions with Moscow. West European unease over a perceived lack of US commitment to arms control and US 'allies' resistance toward US-restrictive policies on East-West economic relations are viewed by the Soviets as presenting opportunities to provoke divisions between the United States and its principal allies.

In their current efforts to exploit these perceived divisions, the Soviets have been especially active in the clandestine realm. They have been engaged in a range of "active measures," including the dissemination of forged documents intended to embarrass the United States and the covert financing of activities by some elements of the "peace movement" in Western Europe—particularly those groups either closely associated with indigenous Communist parties or anti-American in orientation.

The balance of strategic intercontinental nuclear forces is a critical index for Moscow's assessment of relative military power between the United States and the USSR. The Soviets believe that in the present US-Soviet strategic relationship each side possesses sufficient capabilities to devastate the other after absorbing an attack. Soviet leaders state 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 and have not accepted mutual vulnerability as a desirable or permanent basis for the US-Soviet strategic relationship. Although willing to negotiate restraints on force improvements and deployments when it serves their interests, they prefer possession of superior capabilities to fight and win a nuclear war with the United States, and have been working to improve their chances of prevailing should such a conflict occur. A tenet in their strategic thinking appears to be that the

better prepared the USSR is to fight in various contingencies, the more likely it is that potential enemies will be deterred from initiating attacks on the Soviet Union and its allies, and will be hesitant to counter Soviet political and military actions.

The sustained expansion and modernization of Soviet general purpose forces—both conventional and theater nuclear—highlight the broader aspects of Moscow s military challenge to the United States and its allies. The persistent Soviet effort to upgrade these forces demonstrates Moscow's intention of dominating the regional military balances in Central Europe and along the Sino-Soviet frontier. Moreover, Moscow's military salient in Afghanistan and the Soviet military presence in Ethiopia and South Yemen underscore the vulnerability of pro-Western Arab regimes to potential Soviet military action and the implicit threat to Western oil supplies.

In many respects, the Third World is seen by Moscow as the Achilles heel of the West, where the radicalization of postcolonial elites and the anti-US orientation of many "nonaligned" states have created tempting opportunities for the USSR to insinuate itself through offers of military and technical assistance. The USSR has developed only limited forces for operations beyond the Eurasian periphery, but modest improvements in Soviet airlift and amphibious capabilities enhance Soviet options for dealing with Third World contingencies in the future. In addition, the Soviets have been willing on occasion to use naval deployments to signify their political support for clients and friendly regimes, or to demonstrate Soviet interest in a regional conflict. The Soviets also hope to capitalize on opportunities to gain access to facilities for naval aircraft and ships.

Moscow's presence in the Third World is furthered by means of arms sales and military advisers. Arms sales do not necessarily translate directly into political leverage but they are a keystone of Soviet entree into the Third World and an important source of hard currency income to Moscow. The apparatus for administering arms sales and military training programs is highly centralized and, by drawing on existing large stockpiles, the Soviets possess an impressive capability to respond rapidly to the needs of clients or friendly regimes.

Another significant trend in Soviet Third World involvement is the continuing use of Cuban and East European proxies and other intermediaries together with covert Soviet involvement in supporting insurgent groups and the military adventures of client or dependent regimes. For the Soviets, the proxy relationship minimizes the level of direct Soviet involvement while achieving Soviet aims and projecting the ideological-

39. *(Continued)*

image of "socialist solidarity" with the recipient regimes. Covert Soviet military support for clients allows Moscow the defense of "plausible denial" of Soviet involvement, as in Moscow's support for Cuban activities in Central America. Along with these efforts the Soviets also are involved with allied or friendly governments or entities—notably Libya, certain Palestinian groups, South Yemen, Syria, and Cuba—which in turn directly or indirectly aid the subversive or terrorist activities of a broad spectrum of violent revolutionaries.

Increasing foreign debt obligations and hard currency shortages could affect the level of Moscow's commitment to client regimes in the Third World. Even under present conditions, the hard currency crunch probably will make the Soviets reluctant to provide other clients with economic aid as extensive as that provided to Cuba or Vietnam. Soviet military assistance, however, probably will not be seriously affected and arms sales are unlikely to be affected. The net result is that Moscow will be more dependent on military aid as an entree of influence in the Third World.

The Soviets, nevertheless, recognize that even in areas where they have substantial political or military investments, they remain vulnerable to US and Western economic and diplomatic leverage, and that their ability to project military power into the Third World—with the important exception of the immediate periphery of the USSR—remains inferior to that of the United States. They have suffered dramatic failures in the past—as in their expulsion from Egypt in 1972—and they view current US initiatives, such as the attempt to broker political settlements in southern Africa and the Middle East, as threatening to erode Soviet influence. Regional hostilities, moreover, often present the Soviets with difficult policy choices.

Over the next three to five years, Soviet policies will be motivated by a desire to build upon the Soviet Union's status as a global superpower. Soviet policies, however, will also be determined by leadership anxieties about an uncertain—and potentially more hostile—international environment, the consequences of an ongoing political succession, and declining economic growth. The Soviets view as a serious problem the prospect of a mutual arms buildup with the United States which threatens to tax Soviet economic resources during a period of domestic political uncertainty. On the other hand, the heightened military challenge that the United States poses to the USSR, specifically in terms of strategic nuclear programs planned for the latter half of the 1980s, is an ominous development from the Soviet perspective. But, in

Moscow's assessment, US plans could be curtailed as a result of domestic political and international factors affecting US policymakers.

It is doubtful, however, that Soviet leaders perceive a "window of opportunity" stemming from an overweening confidence in present Soviet nuclear forces relative to future prospects. From the perspective of the Soviet leadership, there will remain important deterrents to major military actions that directly threaten vital US national interests. These include the dangers of a direct conflict with the United States that could escalate to global proportions, doubts about the reliability of some of their East European allies, and an awareness of the greater Western capacity to support an expanded defense effort. These concerns do not preclude action abroad, but they act as constraints on military actions in which the risk of a direct US-Soviet confrontation is clear.

Strategic nuclear arms negotiations are likely to remain a central Soviet priority even in a post-Brezhnev regime. Moscow will continue to see the strategic nuclear arms control process as a means of restraining US military programs, moderating US political attitudes, and reducing the possibility of a US technological breakthrough that might jeopardize Moscow's strategic nuclear status. But any US decision to go beyond the putative SALT restrictions would induce a similar move by the Soviets. Some Soviet options, however, are reversible—such as an eventual failure to dismantle older missile submarines and land-based missiles as new ones are deployed. The Soviets might therefore undertake such measures either as a means to pressure the United States to refrain from certain weapons deployments or to induce Washington to resume the strategic arms dialogue within the general framework of previous strategic arms agreements.

Despite declining economic growth, we have seen no evidence of a reduction in Soviet defense spending. Indeed, on the basis of observed military activity—the number of weapon systems in production, weapon development programs, and trends in capital expansion in the defense industries—we expect that Soviet defense spending will continue to grow at about its historical rate of 4 percent a year at least through 1985. Such continued growth in defense spending could well lead to declines in living standards. Per capita consumption probably would continue to grow marginally for the next few years, but by mid-decade would almost certainly be in decline.

Although absolute cuts in defense spending are highly unlikely, declining economic growth will further intensify competition for resources, compelling Soviet leaders to weigh the effect of constant—

increases in defense spending on the overall development of the economy.

The Soviets believe that, without strong West European support, the United States would have little leverage to affect future Soviet economic choices. Although the Soviets would prefer to expand trade with the United States, particularly to achieve access to US credits and technology, they assess US attitudes toward such expansion as embodying unacceptable political linkages. Past experience undoubtedly has contributed to this assessment, and expanded trade with Western Europe is probably seen by Moscow as an acceptable substitute. The Soviets are likely to look increasingly to Western Europe and Japan as sources of trade and technology, dependent upon the willingness of Western bankers and governments to extend long-term credits to Moscow. In addition, the Soviets view security and trade divergences between the United States and other NATO members as major opportunities to undermine NATO's cohesion as a military alliance and to negate the possibility that the United States might involve its NATO allies in support of a more extended Western defense role beyond Europe.

The specific foreign policy options of a successor leadership will be conditioned not only by the level of East-West tensions but by the prevailing consensus within the new leadership. Fairly radical policy adjustments cannot be excluded as new leaders review existing policies. A new leadership, for instance, may attempt "breakthrough" policies toward Western Europe or China, designed primarily to undercut the US geopolitical posture. Moscow's principal assets in these instances would be the unique ability to offer greater intercourse between East and West Germany in Europe and, with China, to offer significant concessions on contentious military and border issues.

On the negative side, Moscow is probably concerned about the potential for renewed social and political turbulence in Eastern Europe. The economic conditions that engendered the political crisis in Poland in 1980 are present to varying but significant degrees in the other Warsaw Pact states. Increasing foreign debt obligations, diminishing hard currency reserves, and deteriorating economic performance throughout Eastern Europe will worsen these conditions. Soviet policymakers as a consequence will be confronted with the dilemma of weighing the increasing burden of economic subsidization of the East European economies against a political reluctance to accept greater economic reform. The result could be a recurring pattern of Soviet repression and intervention.

The Soviets are probably also pessimistic about the prospects for a significant moderation of US-Soviet tensions over the next several years, particularly in light of planned US weapons programs and the likelihood of a prolonged redefinition of the terms of the strategic arms dialogue. But, even in the event of an improved climate of US-Soviet relations, the fundamentally antagonistic nature of US-Soviet interaction will persist because of conflicting political and international goals. Limited accommodations in the areas of arms control or other bilateral issues are possible, but a more encompassing accord on bilateral relations or geopolitical behavior is precluded by fundamentally divergent attitudes toward what constitutes desirable political or social change in the international order. Moreover, factors that go beyond tangible or measurable indexes—such as ideological conviction and a lingering sense of insecurity and of hostile encirclement—as well as a contrasting confidence and sense of achievement in the USSR's emergence as global superpower, collectively will tend to reinforce Moscow's commitment to sustain the global dimensions of Soviet policy.

Despite uncertainties, the Soviets probably anticipate that they will be able to take advantage of trends in international politics, particularly in the Third World, to create opportunities for the enhancement of Moscow's geopolitical stature. The persistence of regional rivalries, economic disorder, and the political undercurrents of anti-Americanism are viewed by Moscow as developments that will pose continuing dilemmas for US policy and, conversely, relatively low-risk opportunities for Soviet exploitation of regional instabilities. Active Soviet efforts to exploit such instabilities are particularly likely in those areas—such as southern Africa, the Middle East, and Central America—where US policy is closely identified with regionally isolated or politically unpopular regimes. A basic Soviet objective, consequently, will be to frustrate US diplomatic and political attempts to resolve regional disputes in the Third World. In Third World regimes that experience successful economic growth, however, the Soviets will be poorly equipped to offset the economic benefits to such regimes of closer association with the industrialized West.

As the Soviet leadership moves further into a period of political succession, Soviet policies will become less predictable. The potential confluence of greater Soviet military power, increased regional instabilities, more assertive US policies, and the potential for expanded US military capabilities in the late 1980s could make a successor Soviet leadership increasingly willing to exploit opportunities in what it perceives as low-cost, low-risk areas. This attitude, in turn, could increase the possibilities of miscalculation and unpremeditated US-Soviet confrontations, most likely in the Third World.

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

— There is evidence that the Soviets are working on a project to develop a megawatt-class space-based laser weapon. Testing of a megawatt-class prototype, for ASAT application, could begin in the late 1980s at the earliest, more likely not until the early 1990s. If testing were successful, an initial operational system—a few satellites, each having a megawatt-class laser weapon with an ASAT range of hundreds of kilometers—could be available by the early 1990s, more likely in the mid-1990s. If they were developing a prototype with much lower power, it could be tested somewhat earlier than the megawatt-class prototype.

— While space-based weapons for ballistic missile defense are probably feasible from a technical standpoint, such weapons require significant technological advances. In view of the technological requirements, we do not expect them to have a prototype space-based laser ballistic missile defense (BMD) system until after 1990 or an operational system until after the year 2000.

— Soviet particle beam weapon (PBW) research might eventually have some ASAT or BMD applications, but the achievement of a prototype system for such uses would be at least 10 to 15 years in the future. An alternative view holds that a space-based PBW system, intended to disrupt the electronics of ballistic missiles and requiring significantly less power, could probably be developed and deployed in the 1990s.*

— Currently there are two facilities at Saryshagan that are assessed to have high-energy lasers and associated optical equipment with the potential to function as ground-based ASAT weapons.

— We expect that a high-energy laser facility at the test range will be used during the 1980s for testing the feasibility of BMD applications. If feasibility is demonstrated, our judgment is that a prototype ground-based laser weapon for BMD would then have to be built and would not begin testing until the early 1990s. An initial operational capability (IOC) probably would not be achieved until after the year 2000. An alternative view holds that, if tests from this facility proved successful in engaging ballistic missile RVs, the Soviets would not have to construct a new prototype weapon, and therefore that a deployed ground-based laser weapon system for BMD could reach IOC by the early-to-middle 1990s.[10]

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

D. Operations of Soviet Strategic Forces in a Conflict

Preparations and Training of Nuclear Forces for Conflict

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

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

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

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

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

41. With respect to the first sentence of the preceding paragraph, there is an alternative view that Soviet force acquisitions and operations are guided by the counterforce and damage limitation precepts of military doctrine, and are constrained by technological, bureaucratic, and budgetary influences. The Soviets recognize that the concept of prevailing in nuclear war is far too imprecise to guide force acquisitions and operations, and are fully aware of the great uncertainties and catastrophic losses that would be incurred by all parties in a nuclear war.[11]

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

—

— Refined their force employment strategies in preparation for more varied contingencies, through measures such as development of a launch-on-tactical-warning (LOTW) capability for land-based missiles, and planning for conducting theater and intercontinental nuclear warfare operations over an extended period and for reconstituting a portion of their forces after an initial massive nuclear strike.

— Made changes in some of the operational modes of their strategic forces, such as the creation of SSBN bastions where SSBNs can be more effectively controlled and protected by ASW forces, the operation of SSBNs in the Arctic near or under the polar icecap, and the deployment of the mobile SS-20 forces.

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

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

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

Scenario for Operation of Soviet Strategic Forces in a Conflict

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

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

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

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

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

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

46. *Conventional Phase.* The Soviets apparently believe that a major nuclear conflict, if it occurs, would be likely to arise out of a conventional conflict. The Soviets perceive the conventional phase of a NATO–Warsaw Pact conflict as lasting from a few days to as long as several weeks, during which the Warsaw Pact would contain a NATO attack and then launch a counteroffensive deep into Western Europe. Key objectives would be to weaken the enemy's theater-based and sea-based nuclear capability, while protecting their own nuclear force:

- At the outset of hostilities, the Soviets would try to implement a theaterwide air offensive in which hundreds of Pact aircraft, employing conventional weapons, would be massed, with the objective of achieving air superiority and destroying NATO's command and control facilities, nuclear assets, and other high-value military targets.
- We believe that most, if not all, of the mobile SS-20 IRBM force would be deployed to the field by this time.
- All available Soviet SSBNs would be ordered to deploy from bases. Soviet general purpose naval forces would protect those SSBNs in areas contiguous to the USSR. In addition to the protection of their own SSBNs, a primary goal of Soviet naval forces would be to weaken as much as possible enemy sea-based nuclear strike forces, principally SSBNs and aircraft carriers.
- We believe that there is a high likelihood that, during this conventional phase, the Soviets would attempt nondestructive interference with selected US space systems that provide important wartime support.

47. *Initial Nuclear Phases.* We believe the Soviets envisage that it would be to their advantage to conduct a rapid conventional campaign to accomplish their theater objectives in NATO. In this campaign they would employ nonnuclear means, including some elements of strategic aviation to attempt to destroy

NATO nuclear forces, with Soviet theater and strategic nuclear forces standing ready to preempt if NATO were detected beginning nuclear release procedures. The Soviets, in our judgment, are unlikely to initiate nuclear conflict on a limited scale, with small-scale use confined to the immediate combat zone, because they would probably see it as being to their advantage instead to keep the conflict at the conventional force level. However, they appear to be developing a means for dealing with the possibility of NATO's initiation of such limited nuclear use, without the Soviets' necessarily having to go to large-scale nuclear war.

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

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

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

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

- The Soviets would be attempting, as in earlier stages, to acquire strategic warning of strikes from enemy forward-based nuclear forces against the Soviet homeland, as well as from intercontinental nuclear forces. We are unable to judge what information would be sufficiently convincing to cause Soviet leaders to order a massive preemptive attack.
- They would be more likely to seize the initiative by launching intercontinental nuclear strikes if the war had already reached the level of theater nuclear conflict, than if it was still at the conventional level. By taking the initiative, they would expect to reduce the capability of US strike forces and to disrupt to some extent the coordination of a US response. Evidence indicates that they would not expect to be able to prevent a US nuclear retaliatory strike. They also probably consider it likely that the United States would attempt to launch its forces on tactical warning.
- We believe they would be likely to launch a preemptive intercontinental strike if there had been large-scale theater nuclear strikes against the western USSR. It is more difficult to judge whether the Soviets would feel similarly inclined if they had launched a large-scale preemptive strike against theater targets but had suffered little or no retaliation from NATO theater strikes.
- If they acquired convincing evidence that a US intercontinental strike was imminent, they would try to preempt. We believe that they would be more likely to act on the basis of ambiguous indications and inconclusive evidence of US strike intentions if a theater nuclear conflict were under way than during a crisis or a conventional conflict.
- In a situation in which nuclear war in Europe was still limited to a battlefield stage, the Soviets' recognition of the consequences of intercontinental nuclear conflict could give them incentives to wait.

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

— We believe the Soviets recognize the possibility that they might fail to get reliable tactical warning of an enemy intercontinental nuclear strike. They prepare for the possibility that they would be unable to act quickly enough to successfully launch a large number of missiles on tactical warning, and could retaliate only after absorbing an attack.

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

51. Elements of Soviet strategic forces would probably have suffered some losses during the previous phases of the conflict. The Soviets expect they would have lost some SSBNs in their forward patrol areas, in transit, and in the protected havens. Some SRF assets might have been damaged or destroyed

Naval bases and command, control, and communications facilities in the USSR could have been damaged, and losses of strategic bombers in conventional operations probably would have been considerable.

52. Soviet offensive objectives in carrying out large-scale nuclear strikes would be to neutralize US and Allied military operations and warmaking capabilities. In intercontinental strikes the Soviets would seek to destroy US-based nuclear forces and to disrupt and destroy the supporting infrastructure and control systems for these forces. They would attempt to isolate the United States from the theater campaign by attacking its power projection capabilities. Depending on the circumstances, they might also attempt to reduce US military power in the long term by attacking US military-industrial capacity. Limiting the initial strikes only to command, control, and communications targets, or only to a portion of US strategic forces such as ICBM silos, is not consistent with the evidence

53. In large-scale theater nuclear strikes, which are likely to be conducted shortly before, concurrently with, or within hours of intercontinental nuclear strikes, the Soviets probably would employ hundreds of tactical nuclear weapons as well as a large share of their strategic forces that have strike missions against theater targets. The Soviet Navy would continue strikes, using both nuclear and conventional weapons, against Western naval strike forces. Soviet strategic aviation would conduct nuclear and conventional strikes against high-value military targets.

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

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

— It is less clear how the Soviets intend to use their SSBNs during intercontinental nuclear conflict. Some forward-deployed Y-class SSBNs would probably be used in an initial strike against time-urgent US command, control, and communications targets and bomber bases. Other submarines also might be employed in an initial attack, against targets in the United States and Eurasia. Some SSBNs in protected areas near the Soviet homeland probably would be withheld for potentially protracted nuclear operations, others for longer term reserve.

— Some strategic bombers may have a role in initial intercontinental nuclear strike operations, within hours after the initial missile strike. We believe it is likely that bombers would be used later, for postattack reconnaissance and strikes against surviving targets in the continental United States. Deployment of the new Blackjack A long-range bomber and of the new variant of the Bear bomber capable of carrying ALCMs, however, will increase the Soviets' flexibility in conducting bomber strikes at intercontinental ranges as well as against theater targets. There is an alternative view that Soviet long-range strategic bombers would, as currently constituted, have a definite role in initial intercontinental nuclear strike operations, within hours after the initial missile strike. The holder of this view believes this role will expand as the new Bear and Blackjack A bombers armed with ALCMs become available in substantial numbers in the late 1980s.[12]

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

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

— Air defense in depth, to impose successive barriers to enemy penetration. The Soviets probably would have relocated some surface-to-air missiles to thwart defense suppression and avoidance tactics. They evidently plan to use nuclear-armed SAMs against penetrators

the rapid restoration of damaged SAM sites, airfields, and command, control, and communications facilities.

— ASW operations to attempt to destroy enemy SSBNs.

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

— Full implementation of civil defense plans, initiated earlier. Most of the Soviet leaders at both the national and regional levels would be in protective facilities from which they would direct emergency rescue and recovery operations by civilian units and civil defense military troop units. With a few days for preparations, the essential workers either would be in shelters at their place of work or, if off duty, would be dispersed to zones outside the cities. We believe the Soviets would attempt to evacuate most of the urban population.

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

57. We are highly uncertain about their actual capabilities to reconstitute strategic forces. Overall, we believe the Soviets could maintain the combat effectiveness of many of the surviving withheld weapons and would be able to reconstitute strategic forces at least to some extent with surviving reserve weapons and materiel, although damage to the logistic system

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

and requirements for decontamination would stretch out the time required for reconstitution. The restoration of combat effectiveness would be contingent on restoring command and control communications.

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

— We believe the Soviets would withhold of their initial ICBM force, and a small portion of the peripheral attack forces, for protracted operations. We believe they would reconstitute ICBM and SS-20 forces using reserve missiles and equipment; we believe they maintain reserve missiles for their ICBM and SS-20 force, beyond those required for maintenance and training. We believe these forces would be used against residual enemy conventional and nuclear forces and command and control, and perhaps key surviving elements of the economy supporting military operations. According to an alternative view, Soviet ICBM reconstitution efforts to date have not the inclusion of refire in Soviet war plans. Moreover, the holder of this view believes that estimated missile storage capacity is consistent with maintenance and training requirements.[13]

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

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

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Evidence suggests they do not expect most aircraft to survive the earlier phases of nuclear conflict. We believe that any remaining bombers would conduct reconnaissance and strike operations against key surviving targets.

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

59. The evidence that we have on the later stages of general nuclear war deals with the conduct of a successful military campaign. with the USSR's forces reconstituting after heavy losses and physically occupying much of continental Western Europe.

the Soviets would seek to end a nuclear war on their terms—by neutralizing the ability of US intercontinental and theater nuclear forces to interfere with Soviet capabilities to prevail in a conflict in Eurasia.

60. We have no specific evidence on whether the Soviets would attempt to end such a war by negotiation, or on initiatives they might undertake if they perceived they could not achieve their military objectives.

E. Trends in Soviet Capabilities To Perform Strategic Missions

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

— Destroy enemy nuclear delivery means.

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

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

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

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

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

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

E. Operations of Soviet Strategic Forces in a Conflict

Preparations and Training of Nuclear Forces for Conflict

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41. *(Continued)*

~~Top Secret~~

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

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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[

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

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

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—Adjusted their force employment strategies to respond to more varied contingencies.

— Made changes to enhance the survivability and endurance of some of their strategic forces, such as the creation of bastions where SSBNs can be more effectively controlled and can be protected by ASW forces, the operation of SSBNs in the Arctic near or under the polar icecap, and the deployment of the highly mobile SS-20 force.

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

]

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

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

Scenario for Operation of Soviet Strategic Forces in a Conflict

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

] we believe this composite picture captures

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

41. *(Continued)*

~~Top Secret~~

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

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

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

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

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

An alternative view contends that there is insufficient evidence at this time to support the judgment of Soviet intent to use active EW against satellites.

Moreover, the holder of this view concludes that, if a Soviet active EW capability against satellites does exist, brute force jamming would be the most likely EW technique.

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

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

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

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

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

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

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

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

- The Soviets would be attempting, as in earlier stages, to acquire strategic warning of strikes from enemy forward-based nuclear forces against the Soviet homeland, as well as from intercontinental nuclear forces. We are unable to judge what information would be sufficiently convincing to cause Soviet leaders to order a massive preemptive attack. Should the Soviets acquire warning of US missile launches, they probably would await confirmation from ballistic missile early warning (BMEW) radars before deciding whether to order a responsive strike.
- They would be more likely to seize the initiative by launching intercontinental nuclear strikes if the war had already reached the level of small-scale battlefield nuclear use, than if it was still at the conventional level. By taking the initiative, they would expect to reduce the capability of US strike forces and to disrupt to some extent the coordination of a US response. Evidence indicates that they would not expect to be able to prevent a US nuclear retaliatory strike. They also probably consider it likely that the United States would attempt to launch its forces on tactical warning.
- We believe they would launch a coordinated theater and intercontinental strike if there had been a large-scale theater nuclear strike against the western USSR. Should the Soviets choose to launch a massive preemptive theater strike against NATO forces in Europe, we believe they would also launch a preemptive strike against the United States at the same time, as available evidence suggests. It is possible, however, they could choose to delay the intercontinental strike, in the possible hope that the United States would not retaliate against the Soviet homeland. An alternative view holds that—even though decoupling is a long-term Soviet goal—the available evidence suggests that it is highly unlikely that the intercontinental strike would be delayed.[20]
- If they acquired convincing evidence that a US intercontinental strike was imminent, they would try to preempt. We believe that they would be more likely to act on the basis of ambiguous indications and inconclusive evidence of US strike intentions if a battlefield nuclear conflict were under way than during a crisis or a conventional conflict.
- For reasons such as lack of convincing evidence from their strategic warning systems or fear of unnecessarily or mistakenly initiating intercontinental nuclear war, the Soviets might not mount a preemptive strike. Their LOTW capability would permit a larger and more coordinated counterattack than retaliation, while reducing the risk of escalation based on insufficient or faulty information.
- We believe the Soviets recognize the possibility that they might fail to get reliable tactical warning of an enemy intercontinental nuclear strike. They prepare for the possibility that they would be unable to act quickly enough to successfully launch a large number of missiles on tactical warning, and could retaliate only after absorbing an attack. For example, their tactical warning

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

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

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

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

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

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

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

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

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

41. *(Continued)*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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perceived they could not achieve their military objectives.[

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Impact of Future Systems on Soviet Operations

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

- A mixed force of mobile and silo-based systems will enable the Soviet planner of the 1990s to continue to rely primarily on silo-based ICBMs for use in initial strikes, while withholding most or all of the mobile ICBMs for subsequent strikes. Mobile ICBMs provide a highly survivable force element. We believe the Soviets will apply extensive camouflage, concealment, and deception measures to make the probability of accounting for or detecting their mobile ICBM units on a timely basis more difficult.
- The deployment of mobile ICBMs will also lead to improved capabilities for ICBM reload. Although mobile ICBMs would have many of the logistic and operational problems associated with silo refire, they would have major advantages over silo-based systems for reconstitution and refire. The use of solid propellants would ease handling procedures and shorten reaction time. Mobility would improve ICBM survivability, thereby increasing the Soviets' capability to reconstitute a larger fraction of their ICBM force. Reloading could be concealed and carried out in remote locations. Mobile launchers dispersed from a central support base could avoid the damage and contamination that might be present for reload of fixed-point silos. In addition, a mobile system probably would be less vulnerable to enemy follow-on strikes. The SS-X-25 is apparently going to be deployed in a manner similar to that for the SS-20, and we expect its reload practices to be similar to those for the SS-20. An alternative view holds that, while mobile ICBMs theoretically offer advantages for reload, operational considerations suggest that requirements for additional deliverable warheads can be satisfied with greater assurance by deployment of missiles on launchers. The holder of this view notes that unwieldy and vulnerable logistics, as well as damage and contamination from US nuclear strikes, could make refire as problematic as for silo-based ICBMs.[

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- The Soviets almost certainly will apply their experience with the mobile SS-20 IRBM in establishing command and control readiness procedures for these units. We believe they will greatly expand their present mobile command and control system of fixed-wing and helicopter airborne command posts and field-mobile command, control, and communications van units at all echelons.
- The Soviets' new extremely-low-frequency (ELF) communications system will potentially increase the survivability of their SSBN force by allowing SSBNs to operate deeper or under polar ice and still be able to monitor communications. Also, an ELF system is capable of operating in an electronic warfare environment, and its signal is relatively unaffected by nuclear bursts and atmospheric disruptions, but its transmitters are subject to direct attack.
- The introduction of long-range cruise missiles into the strategic bomber force probably will not alter the fundamental relationship between bombers and ballistic missiles in Soviet planning. The employment of bombers in intercontinental strikes would be likely to follow massive strikes by land- and sea-based Soviet missile systems. Deployment of the AS-X-15 ALCM will give the Soviets the long-range standoff strike capability

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

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

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

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

Launching submarines would be subject to detection by ASW systems.

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

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

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

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

F. Trends in Soviet Capabilities To Perform Strategic Missions

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

— Destroy enemy nuclear delivery means.

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

— Destroy other military and nonmilitary targets.

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

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

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

PART IV

AFTERWORD

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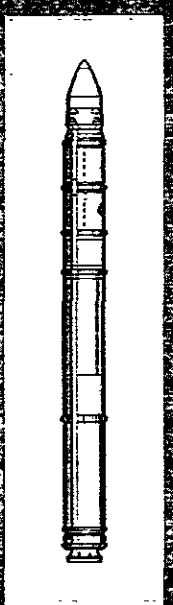

Part IV:
Afterword

Estimating is what you do when you do not know.[1]

Sherman Kent

The establishment and evolution of the CIA occurred almost concurrently with the creation and subsequent development of intelligence analysis as a profession. Begun in World War II, this process antedated the first Soviet strategic forces Estimates by a few years, but it was still under way when the first of these documents was written and it continued for some years afterward. The same can be said for the strategic weaponry that these Estimates assessed. Missiles and bombers with intercontinental capability were the product of the Cold War and had no precedent in the prewar world. The effort to understand these new technologies and explain their significance was key to US participation and ultimate victory in the arms race. Once ancillary to military planning, intelligence was now woven directly into the fabric of strategic thought.

The process by which estimative intelligence contributed to Western knowledge of Soviet capabilities and forecast their intentions certainly was never perfect and was always evolving. Neither could the Estimates' judgments ever rise above the strengths and limitations of the people who made them. Although seemingly isolated—because of security considerations—from the world outside the US intelligence community, they nonetheless mirrored and focused its preoccupations.

In evaluating the Estimates of Soviet strategic forces, we must remember how little was known of the Soviet Union in the period after World War II, how much we have learned since, and yet how narrow our understanding of the Soviet system remains to this day. The information and breadth of knowledge acquired through the study of Soviet intentions, strategic capabilities, and force structure broadened our understanding of the Soviet people and system. This, in turn, increased our confidence in our own nuclear deterrent, and helped to stabilize the strategic relationship between the two superpowers in ways that may not be immediately apparent when the Estimates are viewed in isolation.

[1] Sherman Kent, "Estimates and Influence," in Donald P. Steury, ed., *Sherman Kent and the Board of National Estimates* (Washington, DC: Center for the Study of Intelligence, 1994), p. 35.

It is clear, moreover, that the process of estimative intelligence production was beneficial in and of itself. The Estimates were at the heart of the debates that surrounded Soviet strategic forces. They not only served as fora for discussion, they defined the issues and provided the basic, intellectual framework for the analysis of Soviet strategic developments. The confidence that this enduring process engendered, not necessarily in the answers provided in the Estimates, but in the ability of the intelligence community to understand a problem of such immense complexity, was of incalculable importance to the development of American strategic culture and had far-reaching consequences for American foreign policy. It is doubtful, for example, that any phase of the strategic arms control and reduction process would have been possible without the Estimates, which not only provided analyses of the structure and capabilities of Soviet strategic forces, but stood as credible evidence of the intelligence community's ability to monitor Soviet compliance.

On a more empirical level, the concentration of intellectual effort that went into the Estimates actually worked to bring about the great intelligence breakthroughs of the Cold War—not least in the development of photoreconnaissance satellites and other forms of remote sensing apparatus. These vastly expensive, long-term programs could be justified only because the information they provided could be understood in an overall strategic context, because the questions they addressed endured from year to year, and because national-level policymakers vouched for the importance of the answers they provided. Although exploitation of the information provided by reconnaissance satellites occurred on a multiplicity of levels, once again it was the estimative process that provided a cohesive intellectual framework in which it all could be understood.

At the same time, one must exercise both caution and understanding when considering the information and judgments conveyed in the Estimates. Estimative intelligence is essentially an attempt to know the unknowable. Except in its most basic, reportorial form, all intelligence analysis consists at least partly of speculation about intentions and future actions—however well informed that speculation might be. It is thus virtually inevitable that all intelligence analysis is, at least in some portion, wrong. Estimative intelligence, which is always highly predictive in format, is seldom able to paint a picture that more than approximates the situation. Under these circumstances, success is achieved, not by being highly accurate (although one always strives for accuracy), but by identifying and isolating, or "bounding," the uncertainties the analysis contains.

The Estimates written on Soviet strategic forces and programs were efforts to understand a highly complex topic with what in any other discipline

would be considered a bare minimum of verifiable information. Moreover, the increasingly lengthy leadtimes associated with the development of strategic weapons systems over time demanded that the estimators look further and further into the future in making their forecasts. The accuracy of their speculation thus depended largely on the accuracy of Soviet planning, and the capability of the Soviet military economy to produce the required results. The value of the strategic forces Estimates hence lay less in the ability of the estimators to describe a weapon system in detail or to project a deployment rate than in the degree that they succeeded in conveying a general understanding of Soviet capabilities, of Soviet goals and intentions, and of what might be expected in future developments.

By these standards, the Estimates prepared on Soviet strategic nuclear forces were remarkable, not for whatever errors they might contain, but for their consistency in identifying uncertainties, in laying out alternatives, and in establishing the factors that could be expected to govern Soviet strategic forces development. The strength of the Estimates lay in their continuity. In any given year, no single Estimate could be said to completely describe the full panoply of Soviet strategic forces or the intricacies of Soviet strategic thought. It was over time, in the march of annual Estimates, that the process as a whole succeeded. As generations of weapons succeeded each other, as understanding of each successive stage of Soviet force development matured, so did each yearly Estimate fill in the gaps left by its predecessors, alter the details of the picture, and leave it just that much more complete. By the end of the Cold War the Estimates process had achieved a kind of sustained growth, fueled by the estimators' ability continually to refine their own understanding of Soviet strategic weapons development and secure in the continued existence of the arms race. It might have gone on forever, had the Soviet Union done so.

By the middle of the 1980s, however, the strain of nearly four decades of military competition with the United States was bringing the Soviet system to a crisis. With the economy in a state of stagnation and near-permanent decline, discontent, long prevalent in the populace as a whole, became manifest within the Communist Party itself. In 1982 the feeble, aging Leonid Brezhnev died. He was replaced, briefly, by Yuri Andropov, the former head of the KGB. But Andropov, too, died, early in 1984. His replacement, the ailing Konstantin Chernenko, did not last out the year. His death brought an end to the grasp of the Stalin-era gerontocracy on the leadership of the Soviet Union. Chernenko's successor, the moderate Mikhail Gorbachev, promised reform, but proved unable or unwilling to ease the burden of military spending or to rejuvenate the economy, which continued and accelerated its decline. Gorbachev's failure brought the failed August 1991 coup d'état, the dissolution of the Soviet state, and the end of the Cold War.

Although the demise of the Soviet Union did not mean an end to the writing of estimative intelligence, by bringing an end to the continuity of the arms race it forever altered the kind of intelligence analysis that was produced. The prevailing arms control agreements, which imposed a kind of minimal order on the strategic environment, helped the Estimates process adjust to the new situation. Remarkably enough, the Strategic Arms Reduction Treaty (START), negotiated by the Reagan and Bush administrations in the waning years of the Soviet state, remained in force. Russia excepted, the Soviet successor states had neither the means to maintain sizable strategic nuclear forces nor, for the most part, the interest in so doing. Russia helped matters somewhat by renouncing the first use of nuclear weapons. Ukraine, the second-largest holder of former Soviet nuclear weapons, declared its intention to adhere to START, and indeed to rid itself of nuclear weapons altogether. The foundations were thus laid for a general standdown of nuclear forces.

Now called upon to watch over the destruction of Soviet nuclear weapons, strategic forces analysts found themselves looking at familiar systems, but in a totally different way. Although START provided for the destruction of many weapons and delivery platforms, the nuclear material that made them such a potent destructive force could not be destroyed. Accounting for and monitoring all the stockpiles of weapons and weapons-grade fissionable material in Asia and Eastern Europe became a security problem of growing concern, as was the question of the stability and security of Soviet nuclear forces in a disintegrating social system. The process of arms reduction may prove to be more dangerous than the arms buildup ever was. Like Rasputin's ghost, the specter of Soviet nuclear forces remains distressingly present long after it was supposed to be gone.

Plotting the growth and development of Soviet intercontinental-range strategic forces was one of the most important, difficult, and controversial intelligence problems faced by US Intelligence throughout the Cold War. National Intelligence Estimates on Soviet strategic forces drove the entire strategic analytical process within the American Intelligence Community and played a major role in the great strategic debates affecting US behavior. Drawn from some of the most sensitive intelligence sources available to the United States, these important documents were highly classified and strictly controlled by the Intelligence Community. With the collapse of the Soviet Union, however, it became possible to declassify and release these Estimates to the general public for the first time. Excerpts from 41 of the most important Estimates are included in this volume, a sampling of the much greater volume of material that has been released to the National Archives.

The CIA History Staff is publishing these excerpts from declassified Estimates as the fifth volume in its Cold War Records Series. The declassified Estimates were released in their entirety in conjunction with the conference, "Estimating Soviet Military Power, 1950-1984," cosponsored in December 1994 by the CIA's Center for the Study of Intelligence and Harvard University's Kennedy School of Government.

Since 1992 this volume's editor, Dr. Donald P. Steury, has been a member of the CIA History Staff, where his research and writing have focused on the CIA's strategic and military-economic analysis of the Soviet Union. An Oregon native, Dr. Steury received B.A. and M.A. degrees at the University of Oregon and a Ph.D. in European International History from the University of California, Irvine. He joined the Central Intelligence Agency in 1981 and served until 1992 in the Office of Soviet Analysis and its successor, the Office of Slavic and Eurasian Analysis.