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SOVIET INTENTIONS 1965-1985

Volume I An Analytical Comparison of U.S.-Soviet Assessments During the Cold War.

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MEMORANDUM FOR DISTRIBUTION

SUBJECT: John Hines' Report -- *Soviet Intentions 1965-1985*

I originally initiated this project to exploit the opportunity afforded by the collapse of the USSR and what I expected to be a relatively short window of opportunity to interview effectively key Soviet military officers and defense officials. I hoped to understand how key US and Soviet senior defense officials viewed and assessed the military balance and associated doctrines and force postures. Also, the methods of assessment used were of special interest to me.

This effort was able to identify and compare differences (and similarities) in US and Soviet assessments of the military balance and to analyze the two very distinct ways in which Washington and Moscow developed and operated their nuclear arsenals. Of particular interest may be the evolution of Soviet views on the utility of nuclear warfare, the relationship between their military doctrine and actual force deployment decisions, and the complex, antagonistic relationship between Moscow's military and defense industrial establishments.

The report, however, leaves some questions unanswered. The failure to complete the report prior to John Hines' departure from BDM resulted in some unresolved issues. Thus it remains for other analysts to determine if it was the General Staff or the defense industrialists who drove the Soviet strategic force deployments. Questions of the disconnect between Soviet doctrine and observed force structure, or the claimed fear on the part of the Soviet leaders of falling behind remain to be answered.

Nevertheless, the report is quite interesting. In particular, those who worked on the military balance issues in the past will be particularly interested in the views held by their Soviet counterparts in the not too distant past. Ongoing developments in Russia, make it appear that the opportunity to interview key participants and to freely obtain data on relatively sensitive issues is rapidly closing, if it has not already closed.

A. W. Marshall
A. W. MARSHALL

Attachment



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Introduction/Preface

Interviews with former senior Soviet officials who participated in Cold War policy making have created the opportunity to begin a historical review of U.S. assessments of Soviet nuclear strategy and force planning. A comparison of these assessments with the information provided by Soviet interview subjects suggests that most U.S. observers understood the basic tenets of Soviet nuclear doctrine but in some instances seriously misjudged Soviet military intentions. The inaccuracies in U.S. assessments seem in retrospect to have had little impact on the course of the arms race, because Soviet nuclear force building was relatively unresponsive to U.S. actions and policy pronouncements, mostly for reasons U.S. analysts did not fully understand. Nevertheless, these inaccurate estimates had the potential to mislead, to some extent, U.S. decision makers in the event of an extreme crisis in which misjudgment could have had very serious consequences.

Through a series of private discussions with retired Soviet officers, analysts, and Communist Party Central Committee and government officials, the authors gathered information related to long-standing disputes among U.S. specialists over interpretation of Soviet national security aims. The interview material helped the authors to judge in several cases which U.S. interpretations of Soviet behavior were more accurate. Many of the weaknesses in the U.S. assessments may be attributed to a serious misunderstanding of the Soviet decision-making process, and specifically to an underestimation of the decisive influence exercised by the defense industry.

The authors do not attempt to provide a comprehensive record of all Western analysis nor even of all U.S. assessments of Soviet strategic intentions. Of the great volume of policy statements and analytical work produced in the West during the Cold War, the authors chose to concentrate on reviewing a representative sample of U.S. beliefs and assessments, both to limit the scope of the work and to focus on those views that were known to enjoy significant support in some parts of the U.S. policy and operational communities at various times during this period. This work does not pretend to be a history of actual Soviet military planning, nor do the authors intend this as a comprehensive history of the Cold War, even from a Soviet perspective. The purpose of the work is to reveal what was learned from Soviet Cold War leaders and analysts concerning Soviet strategic intentions and the relationship of those intentions to Soviet strategic force development, and to relate these findings to other sources and contemporary U.S. assessments. Finally, we compare the Soviet findings to official U.S.

THE RESEARCH PROCESS - DEBRIEFING UNHAPPY COLD WARRIORS

Three kinds of primary sources are available to scholars seeking information about Soviet intentions during the period of the Cold War: open Soviet and post-Soviet literature, materials from secret archives, such as those of the Ministry of Defense, KGB, and the Communist Party, and, for a relatively short period of time, interviews with Cold War participants themselves. This report is based largely on the latter set of sources. Beginning in 1990, the authors held numerous private discussions in Moscow with former Soviet officials, including senior officials of the defense industry and Defense Industrial Department of the Central Committee, military analysts and planners, as well as with high-ranking military officers who served on the General Staff or with the Strategic Rocket Forces (SRF) at critical times since 1965. Given the access they enjoyed to the process of formulating and implementing Soviet defense policy, these officials often provide insightful and credible explanations for the USSR's strategy and force posture. The citations of Soviet materials refer mostly to the authors' interviews.

The authors' repeated attempts, all of which proved unsuccessful, to gain access to useful material from the Central Committee and the Ministry of Defense archives for the post-1960 Cold War period indicate the continuing difficulty of obtaining Soviet documents related to the USSR's strategic intentions during the middle and latter parts of the Cold War. Although some documents dating from the 1940s and 1950s have been made available to scholars¹ those dated later than 1963 remain virtually inaccessible. For the time being, oral testimony on Soviet decision making during the later Cold War period remains far more accessible than written records.

The authors are aware that reliance exclusively or primarily on interviews has its disadvantages. The passage of time tends to distort the memory of facts and events. The human mind's recall of the past is often subconsciously selective, defensive, or self-promoting. An individual's institutional loyalties also may color his recollection of the roles of different personalities or organizations in decision making. Finally, an interview subject's experience may be limited or irrelevant, and his access to information

¹ Scholars participating in the Cold War History Project sponsored by the Woodrow Wilson Center and the Ford Foundation, have begun to publish the result of their work. Most work to date has focused on the events surrounding the Korean War.

information might be found. In that spirit, the authors hope that the interviews obtained in this effort will help to guide subsequent archival research as such material becomes more accessible.

Of the former Soviet officials and analysts interviewed for this study the more noteworthy include:

Military Analysts:

Dmitrii S. Chereshkin, Head of a Department in the All-Union Scientific-Research Institute for Systems Studies (VNIISI). Dr. Chereshkin specialized in cybernetics and automated communications networks.

Gen.-Maj. Vladimir Z. Dvorkin, Director of TsNII-4, the Central Scientific-Research Institute of the Strategic Rocket Forces. Gen. Dvorkin worked for over two decades within the SRF carrying out or directing analysis in support of Soviet nuclear strategy and strategic missile developments and deployments.

Col. Petr M. Lapunov, Department Chief in TsOSI, the Center for Operational and Strategic Research, Russian General Staff. Col. Lapunov is a serving General Staff officer with over two decades of experience in the Soviet Army analyzing force structure.

Col. Vitalii N. Tsygichko, Head of the Theater Forces Modeling Department of the Scientific Research Institute NII-6 of the Main Intelligence Directorate (GRU) of the General Staff (1967-1977), and Senior Analyst at VNIISI (1977 to present). NII-6 carried out the primary analytical and modeling work for the GRU and, through the GRU, supported the General Staff Main Operations Directorate (GOU) in the preparation of strategic and operational force comparisons (nuclear and conventional) with a focus on the U.S., NATO, and other "probable enemies."

Military-technical specialist:

Aleksei S. Kalashnikov. Kalashnikov worked for more than 25 years in the area of missile and nuclear weapons testing. For five years he headed the Strategic Rocket

Gen.-Col. Andrian A. Danilevich. Gen. Danilevich served in sensitive, special-access positions in the Soviet General Staff for 26 years beginning in 1964. His assignments included: Assistant (*Pomoshchnik*) to Director of the General Staff's Main Operations Directorate (The Planning and Operational Center of the General Staff) until 1977 and Special Advisor for military doctrine to the Chief of the General Staff (1977-1988). He was a close associate of Marshal Ogarkov. General Danilevich is credited by other Soviet Generals who worked closely with both him and Marshal Ogarkov with being the author of much, if not most, of the writings credited to Ogarkov in the 1970s and 1980s. In the mid-1970s, Danilevich headed a collective that produced the only comprehensive articulation of Soviet military doctrine and strategy since Sokolovskii's seminal *Voennaia strategiiia*, (*Military Strategy*) published in 1962. Danilevich's three-volume work carried the force of a directive (*nastavlenie*) and has been described by Soviet general officers as the best such work ever to come out of the General Staff.

Gen. Makhmut A. Gareev, Chief of the Tactical Training Directorate of the General Staff (1974-1977); Deputy Chief of the Main Operations Directorate of the General Staff for Training and Readiness (1977-1984); Deputy Chief of the General Staff for Scientific Work and Operational Readiness (1984-1989); and Special Representative of the Soviet Ministry of Defense in Afghanistan (1989-1990).

Gen. Iurii A. Kirshin, Chief of the Strategy Department of the Military Science Directorate, General Staff (1977-1989); and Deputy Director, Institute of Military History, Ministry of Defense (1985-1992). Gen. Kirshin worked for Gen. Makhmut A. Gareev for much of his career as a senior officer, including his time in the Military Science Directorate of the General Staff. He is especially knowledgeable about Gen. Gareev's career and the special relationship he had with Marshal Ogarkov.

Operational military staff:

Gen.-Col. Varfolomei V. Korobushin, First Deputy Chief of Staff of the SRF (10 years); and Director of the General Staff's Center for Operational and Strategic Research (TsOSI).

Ogarkov) who had agreed to be interviewed passed away. While they and many of their former colleagues may leave diaries or other private papers behind, they will no longer be able to answer specific questions posed by Western researchers.

Almost all of the former Soviet officials who contributed to the research gave follow-on interviews over a period of months and years. Two of the best informed sources spoke to the authors on several occasions over the course of the last three years. Follow-on interviews were used to revisit responses given in previous interviews.

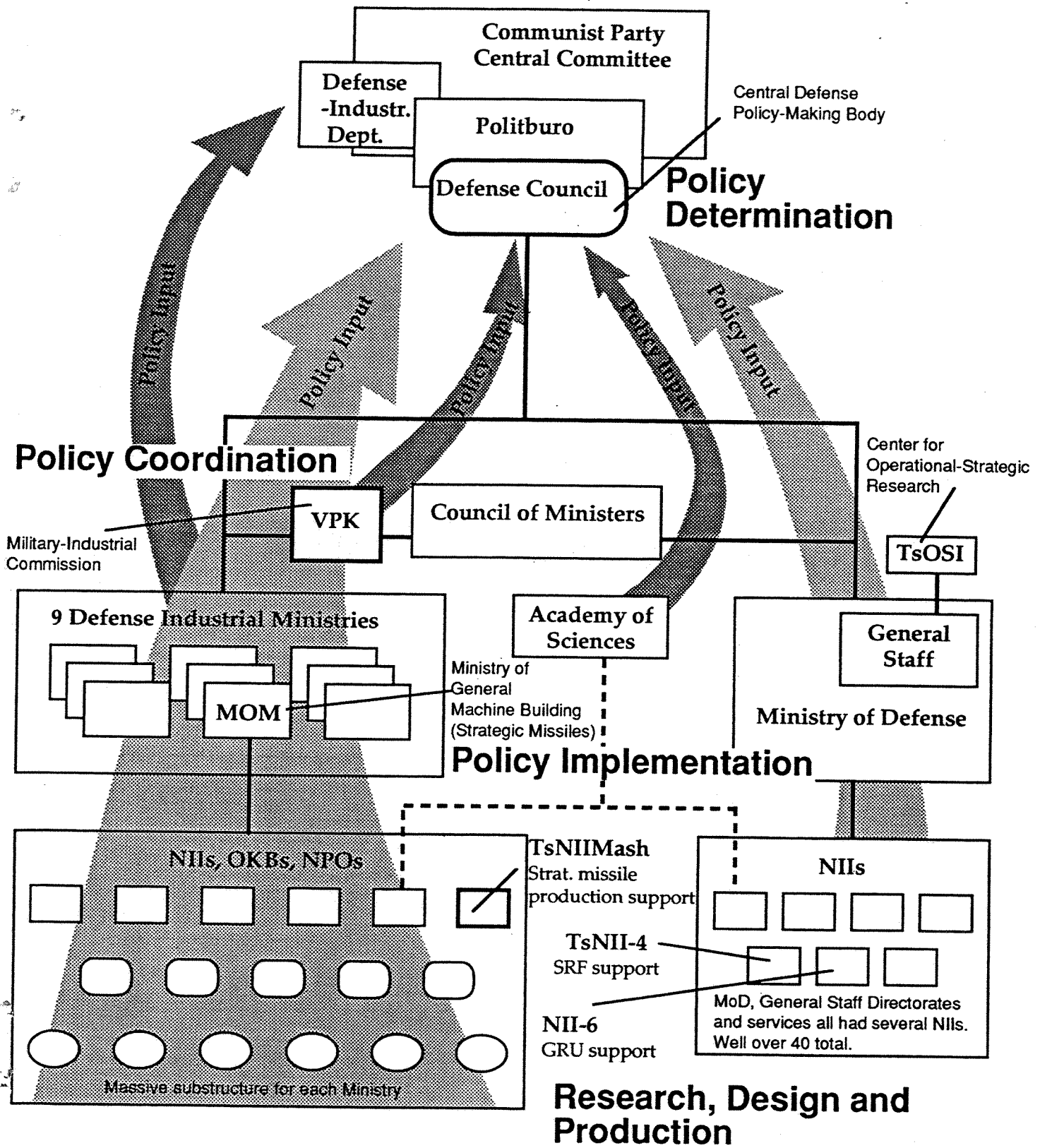
As in most interview efforts, there is an unevenness in the quality and quantity of materials provided by various interview subjects. Some, such as Gen.-Col. Danilevich, provided a great volume of information of considerable quality given his many years in very sensitive, influential positions within the General Staff. Others, such as Gen. Kirshin, were of greatest assistance in helping the authors to understand the knowledge and possible prejudices of various sources as well as relationships among the sources themselves. Others listed in the bibliography, but not cited in the text, did not add substantively to the work even though they contributed immeasurably by helping the authors to understand structure and relationships or to make judgments about testimony of other interviews by independently corroborating or qualifying the statements of other contributors to the project.

The subsections presenting the opinions of U.S. decision makers are based entirely on interviews conducted by the authors in the Washington, D.C. area during the last three months of 1991. These top-level U.S. government officials, including former Secretaries of Defense, explained their personal understandings of Soviet motives and pointed out areas of contention that arose during their tenures. The interviews with U.S. policy makers are designed to offer a representative sample of internal U.S. government interpretations of contemporary Soviet military intentions. This was further supported by an examination by the authors of declassified Top Secret executive summaries of the U.S. National Intelligence Estimates (NIE) from 1976 and 1983, as well as the 1976 "B"-Team estimate.

designers during World War II and during the Post-War period until they were subordinated by a system of ministries in the early 1960s. (Source: Separate discussions on March 30, 1992 with two senior Soviet-era military industrialists. Dr. Konstantin V. Cherevkov was the First Deputy to the General Director of the NPO, "Space Devices," (*Kosmicheskoe priborostroenie*). He was formerly in an NPO in the Ministry of General Machine Building that was responsible for the development of large missiles and related guidance and communications systems as well as for the Soviet space program, to include most satellites. Dr. Evgenii A. Fedosov was director of the State Research Institute for Aviation Systems, (*GosNIIAvs*), an NII in the Ministry of Aviation.)

As will be evident in the body of the thesis, considerable tension existed between the industrial and operational "camps" of the military sector, a division that deeply affected the kinds and quantities of arms produced by the Soviet Union. This competitive tension even extended to the NIIs that supported elements of the Ministry of Defense (MoD) on the one hand and those that supported the industrial ministries on the other. Competitive analysis, if you will, of the same issue having bearing on a given weapons program might be developed and presented in various fora, the most important of which were the VPK and Defense Council. The operators very often were on the losing side, according to both the military and the industrialists. The relative quality of the analyses did not seem to have much bearing on the outcome.

Fig. A: Soviet Force-Building Policy



Key:

- NII - Scientific Research Institute (large basic R&D and analytical organization)
- NPO - Scientific Production Conglomerate (very large enterprises - 10,000 - 45,000 pers.)
- OKB - Experimental Design Bureau (generator of specific line of weapons associated with specific Chief Designer)

CHRONOLOGY OF SOVIET NUCLEAR STRATEGY

MILITARY POLICY	ANALYSIS	FORCE DEVELOPMENT	PERSONALITIES/INSTITUTIONS
<ul style="list-style-type: none"> • SRF created (1959); reliance on nuclear weapons • maximum strategic use of ground burst to contaminate/irradiate enemy • ground burst planned to maximum contamination of U.S.—80% of targets • strategic simplicity objective • presumption of enemy nuclear initiation preferred strategy/ not initiation of war with first strike • forced retaliation (failed preemption) (massive retaliation for any nuclear use anywhere—maintained until late 60s) 	<ul style="list-style-type: none"> • tested ground/air bursts, blast effects • Poliburo + GS intent on massive retaliation for any use—deter U.S. NATO limited use. Real response ad hoc. • hardening discussed • ground burst found much superior to airburst against point targets • TsNIMash: no victors in nuclear war. conclusions—suppressed • creation of survivable second strike through hardening/mobile second in principle/ implementation delayed by Grechko • Academy of Sciences and GS modeling of nuclear war. nuke use counterproductive—suppressed • CS modeling of theater nuclear war. nuke use operationally counterproductive—suppressed. • CS modeling: nuke use at front level—unacceptably high losses. operational stalemate with use of 2% of tactical nuclear inventory—suppressed. • GS discusses limited strikes—Phase II in new periodization of war. Other scenarios considered. • Ustinov orders NII-4 (SRF) to model depressed trajectory strike against US silos—found ineffective 	<ul style="list-style-type: none"> • developed Dead Hand • began developing mobile ICBMs (Tangel) • Grechko cancels mobile ICBMs, postpones hardening • replaced "all or nothing" C2 system • launch times reduced to minutes • modernization of theater nuclear forces • Dead Hand missile component probably operational • MIRVs • C3 improvements; improve central control • SS-20 deployments • buildup of theater nuclear forces • space-based early warning begins deployment • LUA becomes technically feasible. • nuclear artillery deployed in Warsaw Pact/Europe 	<ul style="list-style-type: none"> • Khrushchev ousted (Oct. 64) • Ustinov Central Committee Secretary for Defense Industries • MOM created • Brezhnev General Secretary (Apr. 66) • Grechko made MOD—strong personal preference for large numbers, preemption against LNO theoretical approaches, focused on investments in survivability (mobiles, hardening). • Brezhnev loses mental competence • Grechko dies—industrialist civilian Ustinov becomes MOD • Ogarkov Chief GS—distrusts LNO; emphasis on strategic nuclear force; defense industrialists including Ustinov • differences over strategy vs. hardware, etc. drive Ustinov & Ogarkov to cease talking/ Akhromeev shadow chief of GS (8/7/84) • Brezhnev dies • Ogarkov dismissed & reassigned/ Akhromeev Chief GS (Sept. 84) • Ustinov dies
<ul style="list-style-type: none"> • Yalta meeting accepts second strike as planning objective • prepared retaliation/LUA—accepted in theory* • preemption retained as option/preference • reduced reliance on ground bursts • Poliburo nuclear exercise + reliance on theater nuclear war • LUA confirmed as desirable/achievable objective 	<ul style="list-style-type: none"> • 1965 • 1970 • 1975 • 1980 • 1985 	<ul style="list-style-type: none"> • 1965 • 1970 • 1975 • 1980 • 1985 	<ul style="list-style-type: none"> • 1965 • 1970 • 1975 • 1980 • 1985
<ul style="list-style-type: none"> • new periodization of war—conventional, limited nuclear (theater), unlimited nuclear, conclusion • conventional phase accepted/extended • stopped using ground bursts • renounced preemption • retain retaliation and adopt LUA • LNO dominant strategy (Theater only) • GS: nuclear ops counterproductive in Europe (reflects 1973 analysis)** • conventional war only now, possible/probable • parity doctrine 	<ul style="list-style-type: none"> • 1965 • 1970 • 1975 • 1980 • 1985 	<ul style="list-style-type: none"> • 1965 • 1970 • 1975 • 1980 • 1985 	<ul style="list-style-type: none"> • 1965 • 1970 • 1975 • 1980 • 1985

*LUA — Launch under attack (in Russian *otvetno-razrachnyy udar*) accepted as concept but not implemented until at least the late 1970s because of Grechko's opposition and lack of requisite early warning systems and responsive control.
 **GS — General Staff

I. Macro Trends in Soviet Strategy 1965 - 1985

Interviews with former Soviet civilian and military participants in military and force-building policy debates during the period in question suggest several trends in the evolution of Soviet views on the strategic relationship with the U.S., Soviet nuclear and conventional military strategy, and on the factors shaping Soviet force development. Here are the highlights of this research:

The Strategic Relationship

Soviet strategists considered the nuclear balance to be unstable, because technological advances and increases in the size of the arsenal could significantly augment the power of one side relative to the other, thereby upsetting the balance. The Soviets assessed overall nuclear power (*iadernaia moshch'*) to be a function of yield, total number of weapons, and accuracy. Accuracy had a particularly decisive effect as a multiplier of the overall nuclear power of a missile. By the early 1980s, greater accuracy, in combination with other factors, increased the effective power of the U.S. nuclear arsenal by a factor of three, according to Soviet estimates.³ Such great fluctuations in the relative power of the two sides made the balance extremely unstable and induced both the United States and the USSR constantly to upgrade their nuclear forces.⁴

The Soviets felt that the only truly stable nuclear situation was one in which one side had clear superiority over the other. To be both secure and stable, the imbalance had to be in the Soviets' favor. Therefore, throughout this period the Soviets attempted to gain strategic superiority over the U.S., with the primary goal not of ensuring victory in a nuclear war (which the informed military leadership considered unattainable in any meaningful sense), but of enhancing their general security, to include the security of Soviet influence in Europe and around the globe. Despite achieving rough nuclear parity with the U.S. in the mid-1970s and some degree of superiority by the early 1980s, the Soviet leadership did not feel that their security had been enhanced, because they perceived U.S. intentions to be aggressive and did not believe the superpower nuclear

³ Interview with Dr. Vitalii Kataev, June 23, 1993, *Vol. II: Soviet Post-Cold War Testimonial Evidence* (hereafter cited as *Vol. II*), p. 100. Dr. Kataev served as Senior Advisor to the Chairman of the Central Committee Defense Industry Department from 1967 to 1985.

⁴ Soviet interview subjects acknowledged that U.S. upgrades were largely qualitative while Soviet improvements were related to quantitative increases, some improvements in quality, and considerable improvements, by the late 1970s, and early 1980s, in protection of strategic systems.

balance to be stable. Despite the fact that the U.S. had repeatedly and publicly declared its nuclear strategy to be based on deterrence, virtually all interview subjects stressed that they perceived the U.S. to be preparing for a first strike. The indicators of this posture most frequently cited by the interviewees included: the development in the mid-1960s of the highly accurate, multiple-warhead MX missile⁵ followed in the late 1960s by the very accurate MIRVed⁶ warheads for existing and new delivery systems which put Soviet land-based ICBMs and control nodes at great risk; the relative vulnerability, by Soviet criteria, of U.S. missile silos and control centers to ground bursts; the large and varied arsenal of tactical nuclear weapons fielded by NATO forces in Europe; the consistent rejection by the U.S. of the doctrine of no first use of nuclear weapons; deployment in the early 1980s of Pershing II theater ballistic missiles, ground-launched cruise missiles (GLCMs) and sea-launched cruise missiles (SLCMs) capable of destroying command and control targets deep inside Soviet territory while providing very little warning time to the Soviet leadership. In addition, in PD-59 the Soviets saw a deliberate policy for launching a surprise decapitating first strike against the Soviet leadership. The Soviets found this policy, backed up in the early 1980s by the technical capability to execute it, extremely threatening, especially in light of the pervasive memory of the June 1941 surprise attack, an experience which colored all Soviet strategic planning throughout the Cold War period.

Strategy

The Soviet nuclear strategy relied heavily on deterrence. The Soviet concept of deterrence was based on the premise that an aggressor would receive crushing punishment in case of an actual or imminent nuclear attack in the form of strikes against strategic targets. These strikes would be preemptive, "retaliatory-meeting" (equivalent to the U.S. launch-on-warning posture) or purely retaliatory, and targeting both military and civilian installations. Unlike their U.S. counterparts, the Soviets did not develop an elaborate doctrine of deterrence enhanced by various strategies of nuclear use, selective targeting, planned and deliberate escalation, etc. However, the logic of deterrence

⁵ Dr. Kataev, when challenged that the U.S. MX program did not get under way until much later, in the 1970s, replied that the senior author was wrong. He argued that Soviet intelligence reporting indicated the use of the expression MX in U.S. research and development circles possibly as early as 1963. The acronym, according to Kataev, was associated with the U.S. decision to invest in accuracy and counterforce capability. This early association is clearly established in his mind.

⁶ MIRV—Multiple Independently Targeted Reentry Vehicles.

exerted a profound influence over Soviet leaders, who intuitively acted to avoid nuclear war and to prevent the U.S. from using any nuclear weapons against Soviet forces and territory.

From the Soviet perspective, the concepts of deterrence and warfighting were not mutually exclusive, as the authors of the Team B report observed.⁷ However, the Soviets did not subscribe to the concept of nuclear warfighting, as conceived by U.S. strategists. They neither embraced nor ever really accepted the possibility of fighting a limited nuclear war (confined to Europe, for example), or of managing a nuclear war by climbing a ladder of escalation, so they did not build weapons specifically for these purposes. Nor did the Soviets build weapons principally with the aim of maintaining a stable strategic balance, because they considered the strategic competition to be inherently unstable and dynamic. They did, however, build weapons that credibly could and would be used in the event nuclear war actually were to occur. In this sense, the ability to fight a war was an integral part of the Soviet deterrence strategy, despite the fact that the leadership was not sanguine about the possibility of a meaningful victory, nor even of the survival of a Soviet state. In a sense, the Soviets relied even more heavily on the logic of pure deterrence than did the U.S., because they did not seriously explore options for intermediate levels of nuclear warfare outside of the theater of strategic military operations (*Teatr Voennykh Deistvii* - TVD) and instead relied purely on the *threat* of massive retaliation. As several of the Soviet interview subjects confided, in practice, the decision to retaliate would not have been made automatically. Their responses made it clear, for example, that if the U.S. launched a limited intercontinental strike against one or several marginal installations on Soviet territory, the Soviet response would have been determined *ad hoc* by the top leadership.

While the Soviets rejected limited nuclear use and escalation strategies and relied instead on the threat of massive nuclear use, their operational military were still faced with the task of finding a concrete operational solution to the problem of winning a general war in Europe. Throughout the period in question, the Soviet military's confidence in the utility of nuclear weapons for securing this objective declined steadily. By the late 1970s, this

⁷ Central Intelligence Agency. *Intelligence Community Experiment in Competitive Analysis: Soviet Strategic Objectives. An Alternative View: Report of Team "B."* December 1976 (hereafter *Report of Team B*), p. 2. Team "B" was formed by the U.S. Director of Central Intelligence specifically to evaluate the charge that National Intelligence Estimates of military intentions and capabilities of the Soviet Union were too lax or generous in their judgments of Soviet forces and objectives. As acknowledged in the introduction of the report, the team, headed by Professor Richard Pipes of Harvard University, was comprised of members chosen specifically for their reputations of taking "a more somber view" of the Soviet strategic threat than did key members of the U.S. intelligence community.

gradual change in mind-set found doctrinal reflection in the "New Periodization of War," a shift in military doctrine which emphasized a prolonged conventional phase in a European conflict. At the same time, the Soviets assumed that the war in Europe could not be kept conventional for long and expected NATO to initiate nuclear use on the battlefield after initial losses. This set of circumstances drove the most creative of the General Staff military strategists to develop the conceptual framework that would enable the Soviets to win in Europe. One element of the emerging strategy was the development of new operational concepts, such as the Operational Maneuver Group (OMG) and a preemptive conventional air operation in the context of a significantly enhanced theater-level strategic operation. Another essential element consisted of using the Soviet threat of launching the SS-20s based in the European Soviet Union as a nuclear shield behind which the Warsaw Pact forces could hope to achieve a quick victory using only conventional forces. By giving the Soviets, in effect, escalation dominance in Europe, this nuclear umbrella was expected to serve as a highly effective deterrent against NATO's initiation of nuclear use.⁸ Relying on this strategy, by the mid-1980s, the Soviet General Staff considered it possible that Warsaw Pact forces could reach the English Channel quickly, while avoiding a massive theater nuclear war.⁹

Factors in Force-Building and Strategic Decision Making

The interviews strongly confirm recent research indicating that military acquisition was dominated by the producers, rather than by the MoD customers. While it has been commonly assumed by Western observers that the military, as the consumer of defense-industrial products, was the senior partner in the relationship with industry, the opposite was true. The uniformed military had never been a traditional part of the Soviet ruling elite. While the professional military enjoyed almost mythic popular prestige as a legacy of its victory in the Great Patriotic War, it was an instrument of the Communist Party leadership, which, according to Leninist principles and Soviet practice, was made up of professional party cadres. These professionals often attempted to exploit the mystique of

⁸ As explained by various Soviet sources but especially by Gen.-Lt. Gellii V. Batenin, August 6, 1993, *Vol. II*, p. 8, the SS-20 was seen by the General Staff as the factor that could neutralize the NATO TVD nuclear threat in Europe thereby allowing the Soviets to exercise their advantages in conventional forces, *should there be a war*. The existence of the SS-20, he implied, did increase the appetite of some officers for warfare. Some Soviet planners believed that Soviet advances vis-à-vis NATO in conventional forces peaked in 1987, when ironically, the SS-20 was given up in the INF agreement. Gen.-Lt. Batenin worked for the Marshal of the Soviet Union Sergei F. Akhromeev in various roles when the latter was chief of the General Staff Main Operations Directorate and then as First Deputy Chief of the General Staff under Marshal Nikolai Ogarkov.

⁹ Appendix A: A Chronology of Soviet Strategy, reconstructs, based on the literature and on the interviews conducted during this research, the general evolution of Soviet strategy from the end of World War II to the end of 1991.

the uniform to enhance their own prestige. Both Brezhnev and Ustinov, for example, held the rank of Marshal of the Soviet Union, despite the fact that both were essentially administrators throughout their careers.

During the course of the period under study, relative power and influence within the state military and force-building policy apparatus shifted away from the uniformed military further in favor of the civilian defense-industrial establishment, which mushroomed under Brezhnev. The following factors may in part explain this trend:

- The power of industrial institutions within the state apparatus was greatly strengthened by the restructuring of the defense-industrial bureaucracy beginning in 1965. Specialized ministries involved in defense production proliferated. These 8 to 10 (depending on the time) industrial ministries came to monopolize information and expertise. Each technically coequal to the MoD, these numerous, large ministries increased the representation of the industrialists in the Defense Council. Also as a result of the restructuring, the main design bureaus lost some of the flexibility, autonomy, and control over funding that they enjoyed during World War II and into the 1950s and became less responsive to the demands of the military consumers.
- Brezhnev himself came from the ranks of the defense industrialists and therefore tended to promote his industrialist cronies to important state positions. Among his high ranking protégés were: Minister of Defense (MoD) Dmitrii Ustinov; Minister of General Machine Building S. A. Afanas'ev; and L. V. Smirnov, the director of the Iuzhnoe missile plant in Dnepropetrovsk, whom Brezhnev promoted to head the VPK and to serve as deputy head of the Council of Ministers.
- In 1976 Dmitrii Ustinov, the single most influential military industrialist in Soviet post-war history, was appointed to head the Ministry of Defense. According to one very senior General Staff officer, with this appointment, the military realized they "had been taken over by the enemy."¹⁰

¹⁰ Interview with Gen. Makhmut A. Gareev, June 20, 1993, *Vol II*, p. 75. Gen. Gareev served as Chief of the Tactical Training Directorate of the General Staff, 1974-77; Deputy Chief of the Main Operations Directorate of the General Staff for Training and Readiness, 1977-84; and Deputy Chief of the General Staff for Scientific Work and Operational Readiness, 1984-89.

- In contrast to his predecessor, Brezhnev was indecisive and given to appeasement. Khrushchev would often cancel systems in early development stages and would sometimes eliminate or reduce entire classes of weapons, as he did with artillery and surface ships in 1959 and 1960. Brezhnev, on the other hand, led by consensus and tended to avoid decisions and policy changes that would alienate one group and advance the interests of another. This led to situations where the USSR was developing 12 ICBM programs simultaneously¹¹ or continuing to produce obsolete or low quality versions of a tank at the same time that more modern, effective variants were coming on line. Production lines were kept open to satisfy the producers without consideration either of the economic consequences or of the true needs of the military customer.

- Military technology, particularly missile and strategic weapons technology, was rapidly evolving and becoming increasingly complex, requiring greater specialization, technical knowledge and new ways of thinking about strategic and operational use. The uniformed military was often slow to grasp the significance of new technological developments. For example, debates in Soviet theoretical books and journals indicate that as late as the early 1970s, some Soviet military commanders continued to think of nuclear weapons as a kind of super-artillery whose role was to support the infantry and tanks. Especially during Grechko's tenure as Minister of Defense (1967-1976), the findings of competent specialists within the MoD often were ignored or suppressed by the generals, who not infrequently lacked the education and intellectual faculties to understand the analysis and appreciate fully the implications of the military-technical revolution of the 1950s and 1960s. In contrast, industrialists and designers who produced the new weaponry often monopolized information and expertise. Many of these military-industrial experts and specialists were concentrated in the design bureaus and NPOs within the Ministry of General Machine Building.

These new findings concerning the role of the industrial sector in Soviet defense procurements have important implications for revising our understanding of Soviet strategic intentions during the Cold War. Much of the U.S. assessment of Soviet "grand strategy" and plans for general war was drawn from observation of military hardware

¹¹ Interview with Gen.-Lt. Nikolai V. Kravets, June 22, 1993, *Vol. II*, p. 109. Gen.-Lt. Kravets served for 30 years in the Strategic Rocket Forces, where he worked on force design, systems acquisition, testing and evaluation.

development and deployments. This method of analysis assumes implicitly that the uniformed military played the lead role in determining force requirements, while the Soviet industrial sector, like its American counterpart, played a secondary role in the process and acted primarily as an obliging supplier. This often unexamined assumption led U.S. analysts to attribute greater significance to the great variety and absolute number of weapons systems in the Soviet arsenal and to exaggerate the aggressive intentions of the Soviets.

The interviews suggest that the arms buildup on the Soviet side was stimulated by both external and internal factors. Qualitative technological advances and R&D efforts were largely conditioned by competition with the U.S. and, in the eyes of the Soviets, were reactive and imitative in most instances. The Soviets responded to U.S. development of MIRVs with rapid development of their own MIRV systems in the early 1970s. Against the objections of the MoD, they developed the Buran shuttle as a response to the U.S. Space Shuttle on the assumption that it was a military system. By contrast, the quantitative arms buildup was driven primarily by the internal dynamics and needs of the vast, civilian-dominated defense-industrial establishment, where stability and continuity of production were imperative. In many cases technological advances were achieved *despite* the tendency of the defense-industrial establishment to resist any changes which threatened to disrupt this continuity. The bureaucracies of the defense industrial ministries were generally reluctant to introduce innovations into industrial production and thereby disrupt established manufacturing processes and risk political fallout from failure.

Personalities were as important, if not more important, than institutional or bureaucratic competition in determining Soviet military and force-building policy and clearly played a more immediate and decisive role than did expert analysis. The character of the relationship between the uniformed military and the defense industrialists was often determined by the personal relationships between the leading representatives of the two camps. For instance, when Ustinov became the MoD, his relationship with Chief of the General Staff Marshal Ogarkov drove the relationship between the military and industry, degenerating from one of mutual respect in 1977 to outright confrontation by 1984. Individuals such as MoD Andrei Grechko, described by many interview subjects as a saber-waving horse soldier of limited intellect, had great discretion to accept or suppress the analysis and recommendations of technically competent researchers, analysts, and advisors. In the case of Grechko, he seemed to have overruled much of the considered

advice he received between 1967 and 1975 with respect to the nuclear force posture and the strategy it implied. He chose reliance on large numbers and first-strike over survivability and investment in accuracy despite strong private counsel and public pronouncements to the contrary.

II. SOVIET VIEW OF THE STRATEGIC RELATIONSHIP

Parity

U.S. analysts differed on whether the USSR accepted strategic parity. The Director of the State Department's Bureau of Intelligence and Research argued that Soviet improvements in strategic forces were intended above all to avoid falling behind the United States in a strategic environment increasingly characterized by qualitative competition.¹² By Raymond L. Garthoff's assessment, the Soviet political leadership had disavowed the objective of military superiority.¹³ Some observers agreed but added that the Soviet Union still made preparations to fight a nuclear war.¹⁴ Others remained skeptical about the USSR's acceptance of parity. Soviet military planning, the latter argued, provided no measure for strategic adequacy and allowed for an open-ended process of arms accumulation constrained only by domestic resources and U.S. forbearance.¹⁵ National Intelligence Estimates, by the mid-1970s, suggested that the persistence and vigor of Soviet weapons programs might indicate that the Soviet Union was trying to achieve strategic superiority.¹⁶ Several U.S. analysts stated bluntly that the USSR was striving for strategic nuclear superiority,¹⁷ indeed for the maximum attainable measure of strategic superiority,¹⁸ and had made great strides toward achieving general military superiority.¹⁹

Disagreements also arose in identifying the stimulus for Soviet force modernization. Some experts emphasized external causes, depicting the USSR's weapons programs as

¹² *National Intelligence Estimate 11-3/8-76*, p. 4.

¹³ Raymond L. Garthoff, "Mutual Deterrence and Strategic Arms Limitation in Soviet Policy," *Strategic Review*, Vol. 10, No. 4, Fall 1982, p. 47.

¹⁴ David Holloway, *The Soviet Union and the Arms Race*, 2nd ed., (New Haven, CT: Yale University Press, 1984), p. 167; see also Fritz W. Ermarth, "Contrasts in American and Soviet Strategic Thought," *International Security*, Vol. 3, No. 2, Fall 1978, pp. 152-153.

¹⁵ Benjamin S. Lambeth, *How to Think About Soviet Military Doctrine*, (Santa Monica, CA: RAND Corporation, P-5939, February 1978), p. 7; see also Thomas W. Wolfe, *Worldwide Soviet Military Strategy and Policy*, (Santa Monica, CA: RAND Corporation, P-5008, April 1973), p. 17.

¹⁶ *National Intelligence Estimate 11-3/8-76*, p. 3. *Report of Team B*, p. 12, complained that before 1974, National Intelligence Estimates did not seriously consider the possibility that the USSR might be seeking strategic superiority.

¹⁷ Harriet Fast Scott and William F. Scott, *The Armed Forces of the USSR*, 2nd ed., (Boulder, CO: Westview Press) p. 77; and Joseph D. Douglass Jr. and Amoretta M. Hoeber, *Soviet Strategy for Nuclear War*, (Stanford, CA: Hoover Institution Press, 1979), p. 55.

¹⁸ *Report of Team B*, p. 46.

¹⁹ Comment by Air Force Intelligence in *National Intelligence Estimate 11-3/8-76*, p. 5.

responses to perceived threats, particularly to the development of U.S. weapons technology.²⁰ Others stressed the internal stimulus of nuclear doctrine,²¹ specifically the Soviet view that deterrence required formidable military capabilities.²²

U.S. officials expressed contrasting opinions on the question of Soviet acceptance of strategic parity. Harold Brown, President Carter's Secretary of Defense, believed that Soviet leaders accepted parity. They did not think it feasible to gain a significant edge, because larger numbers of weapons did not necessarily provide greater capabilities and one side's advantages in particular weapons categories were offset by advantages on the other side.²³ James Schlesinger, Director of Central Intelligence and Secretary of Defense in the early 1970s, disagreed. He concluded that the USSR was exceeding parity by acquiring counterforce capabilities through deployment of SS-18s and SS-19s. Parity was incompatible with the development of Soviet warfighting capabilities, Zbigniew Brzezinski, President Carter's National Security Advisor, argued. The Soviets did not accept parity because they regarded the nuclear relationship as dynamic. At any given time, one of the two sides was either ahead or moving ahead.²⁴ Fred Iklé, Undersecretary of Defense for Policy under President Reagan, expressed the view that Soviet force deployments created the impression that the Soviet Union wanted more than parity. President Reagan himself expressed the belief that the USSR rejected parity until Mikhail Gorbachev became General Secretary and began to change the Soviet position.²⁵

Soviet decisions on arms procurement, according to the consensus in Washington, were influenced by U.S. weapon programs,²⁶ but the extent of that influence was a subject of debate. Schlesinger asserted that the USSR did not imitate American force modernization, but U.S. programs did stimulate Soviet efforts. The Carter

²⁰ Garthoff, "Mutual Deterrence and Strategic Arms Limitation in Soviet Policy," p. 49; Robbin F. Laird and Dale Herspring, *The Soviet Union and Strategic Arms* (Boulder, CO: Westview, 1984), p. 106; Michael McGuire, "Commentary: Soviet Intentions," *International Security*, Vol. 4, No. 1, Summer 1979, p.141; and citations in Stephen M. Meyer, "Soviet National Security Decisionmaking: What Do We Know and What Do We Understand?" in Jiri Valenta and William C. Potter (eds.), *Soviet Decisionmaking for National Security* (London: George Allen & Unwin, 1984), p. 257.

²¹ *Report of Team B*, p. 15.

²² Stanley Sienkiewicz, "SALT and Soviet Nuclear Doctrine," *International Security*, Vol. 2, No. 4, Spring 1978, pp. 93, 98.

²³ Interview with Harold Brown, November 8, 1991, *Vol. II*, p. 14. Mr. Brown was Secretary of Defense throughout the Carter Administration.

²⁴ Interview with Zbigniew Brzezinski, November 20, 1991, *Vol. II*, p. 16. Mr. Brzezinski was the Assistant to the President for National Security Affairs throughout the Carter Administration.

²⁵ Interview with Rod McDaniel, November 19, 1991, *Vol. II*, p. 120. Mr. McDaniel served on the NSC staff from 1985 to 1987 after working on a strategic planning project for the U.S. Navy.

²⁶ Brzezinski, November 20, 1991, *Vol. II*, p. 16; and McDaniel, November 19, 1991, *Vol. II*, p. 120.

Administration was split between optimists, who expected American restraint to encourage moderation on the part of the Soviet Union, and pessimists who thought that the Soviet arms buildup would persist even if U.S. modernization stopped.²⁷ Harold Brown interpreted the continued Soviet deployment of strategic forces as an attempt to offset growing U.S. technological advantages.

Other U.S. policy makers focused on the internal factors behind the Soviet arms buildup. Soviet deployments, argued Ambassador Robert Komer, a senior Pentagon official in the Carter Administration, were intended to strengthen deterrence but also to gain leverage over the United States.²⁸ Soviet weapons programs were influenced in part, but not much, by U.S. force deployments, Iklé concluded, because the USSR had its own seven-year cycle and track for arms procurement.²⁹ President Reagan reportedly believed that the Soviet leadership wanted a first-strike potential, not to use militarily but instead to surpass American capabilities.³⁰

By the Soviet accounts, the Soviet arms buildup was not based on careful analysis of force requirements but rather took place in the context of the arms race. The perception of the USSR falling behind in the arms race stimulated the rapid development of Soviet ICBMs.³¹ The Soviet military leadership was particularly intent on responding to technological advances in U.S. weaponry. Gareev reported that Marshal Ogarkov wanted to modernize the Armed Forces to make them more competitive on high-technology battlefields. Ogarkov first proposed to professionalize the armed services, to reduce spending on infantry, civil defense, and strategic air defenses located far from the USSR's periphery, and aircraft carriers, and to close some military academies. Dr. Vitalii Tsygichko of the GRU's NII-6, related that Marshal Ogarkov circulated a position paper to this effect around the Ministry of Defense in the summer of 1984, shortly before he was replaced on order of Minister Ustinov.³² The resulting savings would be allocated to

²⁷ Interview with Andrew W. Marshall, October 22, 1991, *Vol. II*, p. 118. Mr. Marshall has been the Director of Net Assessment, Office of the Secretary of Defense, since 1972.

²⁸ Interview with Robert W. Komer, October 22, 1991, *Vol. II*, p. 105. Mr. Komer served as Advisor to the Secretary of Defense for NATO Affairs from 1977 to 1979, and then as Under Secretary of Defense for Policy until 1981.

²⁹ Interview with Dr. Fred C. Iklé, December 11, 1991, *Vol. II*, p. 77. Dr. Iklé was Under Secretary of Defense for Policy, 1981-88.

³⁰ McDaniel, November 19, 1991, *Vol. II*, p. 120.

³¹ Interview with Gen.-Col. (ret.) Andrian A. Danilevich, December 18, 1990, *Vol. II*, p. 22. Gen.-Col. Danilevich served as Deputy Director of the General Staff's Main Operations Directorate until 1977 and then as Special Advisor for military doctrine to the Chief of the General Staff until 1988.

³² Interviews with Gareev, April 30, 1993, *Vol. II*, p. 72; Tsygichko, March 30, 1991, *Vol. II*, p. 149; and Gen.-Maj. Iurii A. Kirshin, January 9, 1990, *Vol. II*, p. 102. Tsygichko was a former head of Theater Forces Modeling at the

development of modern high-precision weapons. Critics of Ogarkov replied that the Soviet Union lacked the technological base required to compete with the U.S. Gareev favored development of cheap strategic and operational countermeasures, such as the Operational Maneuver Group (OMG). The OMG was introduced on the assumption that high mobility would render less effective the enemy's precision weapons, because he would not know with certainty the position of Soviet forces.³³

Notwithstanding their concerns about U.S. force building, former Soviet officials now admit that the Soviet Union was trying to gain strategic superiority. When parity was reached in the early 1970s, Tsygichko believes, the Soviet political leadership, with support from the Military-Industrial Commission (VPK), set out to attain nuclear superiority. The aim of achieving superiority was reflected in Soviet military programs and military doctrine. The concept of parity was officially adopted only after 1985.³⁴ The USSR, Danilevich acknowledged, strove to achieve superiority, "just as the U.S." did, but admits that its drive for superiority manifested itself more often in terms of quantity than quality of weapons.³⁵ Kalashnikov pointed out that the Soviet Union eventually even attained superiority in some areas, such as number of launchers, silo protection, warhead yields, and missile ranges.³⁶

Many U.S. analysts and policy makers recognized that the Soviet Union was seeking strategic superiority. They cited as evidence Soviet ICBM deployments, which, Tsygichko acknowledged, were indeed part of the USSR's drive for superiority. Some U.S. observers emphasized the incompatibility of parity with Soviet nuclear warfighting capabilities, although remarks from the Soviet sources suggest that the USSR was trying not only to acquire specific military capabilities but also to move ahead of the United States, as a matter of competitive necessity. Failure to strive for superiority would quickly result in a serious negative gap in capabilities. The Soviet leadership, Danilevich's comments imply, regarded the nuclear relationship not as a stable balance, with one side's advantages offsetting advantages on the other side, but rather as a

General Staff's Center for Operational and Strategic Research (TsOSI). Gen.-Maj. Kirshin served as Chief of the Strategy Department of the Military Science Directorate of the Soviet General Staff.

³³ *Ibid.*, pp. 72-73.

³⁴ Tsygichko, *Kommentarii k interv'iu V.N. Tsygichko v 1990-1991 godu*, unpublished comments, December 10, 1991, see Appendix E in *Vol. II*.

³⁵ Danilevich, September 21, 1992, *Vol. II*, p. 33.

³⁶ Interview with Aleksei S. Kalashnikov, April 1993, *Vol. II*, p. 91. After working for more than 25 years on missile and nuclear weapons testing, Kalashnikov served as Head of the Strategic Rocket Forces (SRF) Committee on Science and Technology (5 years), then as Chairman of the State Commission on Nuclear Testing at Semipalatinsk (10 years).

dynamic process in which one side or the other was always taking the lead. Thus, while many U.S. experts and officials reached accurate assessments of Soviet intentions, a number of others were mistaken in believing that the Soviet Union accepted nuclear parity to be an acceptable, stable condition of the strategic relationship.

Some U.S. observers overemphasized the internal factors stimulating Soviet force modernization. Others overestimated the influence of U.S. weapons programs on Soviet arms procurement decisions. The group of observers in the middle seemed closest to the mark. According to the Soviet officers, the arms race did contribute to Soviet force building, but the quantitative expansion of the Soviet nuclear arsenal was driven mainly by internal political and defense-industrial processes. The USSR would not necessarily temper its weapons deployments in response to U.S. moderation, because the Soviet Union did not plan to stop at parity. Moreover, persistent internal pressure to maintain or increase military production (discussed at greater length in Section IV) was relatively insensitive to events in the external environment. If the U.S. had curtailed its modernization programs, the USSR probably would have forged ahead in the hope of attaining superiority.

Soviet military industry would have continued to produce, because uninterrupted production itself was the underlying and driving force that justified the existence of the massive force that, in turn, legitimized the existence of the massive military-industrial sector. At the same time, security through strategic superiority was the overriding goal of the political and operational military leadership, although the latter group would have much preferred an approach to competition that placed far more stress on quality and less on large-scale production—even of obsolescent weaponry.

Deterrence

Most U.S. observers recognized that the Soviet leadership believed in nuclear deterrence in the broad sense of maintaining a nuclear arsenal primarily to discourage the United States from employing nuclear weapons. By the interpretation of the majority of U.S. analysts, the Soviet Union relied on counterforce capabilities (rather than on the potential for destroying only cities) to provide the most credible deterrent.³⁷ Team B, in contrast,

³⁷ Garthoff, "Mutual Deterrence and Strategic Arms Limitation in Soviet Policy," p. 42; Lambeth, *How to Think About Soviet Military Doctrine*, pp. 6-7; *National Intelligence Estimate 11-3/8-76*, p. 18; Stanley Sienkiewicz, "SALT and

argued that Soviet leaders regarded nuclear weapons as a means of coercion, which would be employed or not employed as the situation dictated.³⁸

Sharp disagreements arose over interpretations of the Soviet attitude toward mutually assured destruction (MAD). Raymond Garthoff asserted that in the view of Soviet political and military leaders, a strategic balance based on mutual deterrence was basically stable and provided the best means to avert nuclear war.³⁹ Others countered that the USSR considered the nuclear balance to be unstable⁴⁰ and rejected the concept of MAD as neither realistic nor desirable.⁴¹ The Soviet Armed Forces, by the assessment of another expert, were deeply suspicious of ideas to keep Soviet society vulnerable and especially to cooperate with the adversary in preserving vulnerability.⁴²

The consensus among U.S. officials of successive administrations held that the Soviet leadership accepted nuclear deterrence.⁴³ The Soviets, Brzezinski explained, practiced deterrence from the late 1950s to offset what they perceived to be significant U.S. advantages in strategic forces.⁴⁴ They believed that the U.S. would not attack without provocation, Schlesinger pointed out.⁴⁵ Policy makers differed on how Soviet leaders and military planners understood nuclear deterrence. Harold Brown expressed the conviction that the Soviet deterrent rested on a capacity to inflict unacceptable damage on the United States. In Brzezinski's judgment, the Soviets considered their warfighting capability a means to enhance deterrence.

In Brown's opinion, Soviet leaders accepted the concept of mutual deterrence, but they did not embrace MAD to the extent of renouncing efforts to limit damage or of relying entirely on a capacity to kill only civilians in order to deter the United States. Brzezinski

Soviet Nuclear Doctrine," *International Security*, p. 95; and Wolfe, *Worldwide Soviet Military Strategy and Policy*, pp. 6, 16.

³⁸ *Report of Team B*, p. 14.

³⁹ Garthoff, "Mutual Deterrence and Strategic Arms Limitation in Soviet Policy," p. 37.

⁴⁰ *National Intelligence Estimate 11-3/8-76*, p. 18, and *Report of Team B*, p. 14.

⁴¹ Scott and Scott, *Armed Forces of the USSR*, p. 89.

⁴² Sienkiewicz, "SALT and Soviet Nuclear Doctrine," p. 90.

⁴³ Interviews with Brown, November 8, 1991, *Vol. II*, p. 13; Iklé, December 11, 1991, *Vol. II*, p. 77; McDaniel, November 12, 1991, *Vol. II*, p. 120; and James Schlesinger, October 29, 1991, *Vol. II*, p. 128. Mr. Schlesinger was CIA Director in 1973 and later served as Secretary of Defense, 1973-1975.

⁴⁴ Brzezinski, November 20, 1991, *Vol. II*, p. 16.

⁴⁵ Schlesinger, October 29, 1991, *Vol. II*, p. 128.

disagreed. He argued that the USSR did not accept the logic of mutual deterrence as a substitute for developing credible warfighting capabilities.⁴⁶

Other officials treated the question of Soviet adherence to MAD as largely academic, because they were mainly concerned with strengthening U.S. capabilities and thereby enhancing the credibility of deterrence.⁴⁷ Increasingly in the late 1970s, Soviet actions suggested that the USSR was setting targeting priorities and pursuing weapons programs to acquire a nuclear warfighting potential. Pentagon officials during the Carter Administration therefore saw a need to reinforce deterrence by placing at greater risk the things that the Soviet leadership valued most. The essence of Presidential Directive 59 (PD-59) was leaked in order to let Soviet leaders know that all three of what was believed to be the Soviet leadership's highest political priorities (to ensure their personal power, to preserve the structures of the Soviet state, and to hold on to Eastern Europe)⁴⁸ were selectively targeted by U.S. missiles (although Politburo members themselves were far down on the target list).⁴⁹ One of Schlesinger's greatest worries was the apparent growing Soviet belief that U.S. tactical nuclear forces in Europe were separate from the strategic arsenal, that tactical nuclear weapons would be used to defend Western Europe but U.S. strategic systems would not. So, he wanted publicly to back away very deliberately from the concept of MAD (in his discussions of limited nuclear options) in order to reestablish the linkage of the U.S. deterrent in Europe to the strategic arsenal. Credible MAD undermined extended deterrence, thereby increasing the likelihood of Soviet initiation of conventional war, which could lead to a NATO nuclear response and a general nuclear exchange.

By the account of Marshal Akhromeev, the Soviet Union had accepted nuclear deterrence by the late 1960s.⁵⁰ It had accumulated enough ICBMs, Mozhorin added, that it did not expect a U.S. attack. Brezhnev supported deterrence, despite opposition from Defense Minister Grechko. The principles of deterrence were in effect adopted as doctrine,

⁴⁶ Brzezinski, November 20, 1991, *Vol. II*, p. 16. Fred Iklé, in his interview with the authors, observed that the Soviet Union did not share the U.S. view of mutually assured destruction, December 11, 1991, *Vol. II*, p. 77.

⁴⁷ McDaniel, November 19, 1991, *Vol. II*, p. 120.

⁴⁸ Personal power, the Soviet state, and control over Eastern Europe represented the Soviet leadership's three highest political priorities in the judgment of U.S. intelligence.

⁴⁹ Marshall, October 22, 1991, *Vol. II*, p. 118. The reasoning behind PD-59 was explained in the interview with Harold Brown, November 8, 1991, *Vol. II*, pp. 13-14.

⁵⁰ Interview with Marshal Sergei F. Akhromeev, the late Chief of the General Staff and Advisor to President Gorbachev, February 8, 1991, *Vol. II*, p. 6.

Mozzhorin stated, at a July 1969 meeting of the Defense Council,⁵¹ which decided to manufacture survivable missiles rather than produce vulnerable missiles in large quantities.⁵²

Soviet experts described deterrence in different terms from their U.S. counterparts, but the concept was, in many respects, similar. Gen.-Maj. Vladimir Dvorkin, Director of TsNII-4, the Central Scientific Research Institute of the Strategic Rocket Forces, reported that Soviet experts did not use the word "deterrence" (*sderzhivanie*) to describe Soviet doctrine. They used *sderzhivanie putem ustrasheniia* (deterrence through terror) to describe U.S. deterrence doctrine). Instead, they consistently used the expression, "not to allow" (*ne dopustit'*) the United States to believe that it could strike the Soviet Union without incurring a devastating retaliatory blow and "not to allow" U.S. leaders to feel such a sense of security and superiority that they would try to exercise their will in Europe with impunity. Finally, the Soviets would not allow the U.S., on a global scale, to perceive such a sense of overall military or nuclear superiority that U.S. leaders would pursue adventurist policies in the Third World.⁵³ Gen.-Maj. Dvorkin recited these objectives so matter-of-factly and with such almost weary familiarity that it appears that he was repeating a verbal formulation widely held and understood in the Soviet strategic nuclear community. The concept accommodated both basic intra-crisis deterrence against a nuclear attack in the USSR as well as a two-layered concept of extended deterrence, focused first on U.S. actions in Europe and the rest of the world.

Soviet strategists recognized that deterrence was, to some extent, mutual, because each side was capable of launching a retaliatory strike⁵⁴ and of inflicting unacceptable damage on the other.⁵⁵ They, nevertheless, considered their nuclear power the only guarantee of security from war, and they never examined the question of mutually assured destruction

⁵¹ The July 1969 Defense Council meeting is described in Section IV on Struggles Among the Princes.

⁵² Interview with Iurii A. Mozzhorin, April 14, 1993, *Vol. II*, p. 125. Mozzhorin served for 30 years as Director of the Central Scientific-Research Institute of Machine Building (TsNIIMash).

⁵³ Interview with Gen.-Maj. Vladimir Z. Dvorkin, June 24, 1993, *Vol. II*, p. 70. Gen.-Maj. Dvorkin is Director of TsNII-4, the Central Scientific-Research Institute of the Strategic Rocket Forces.

⁵⁴ Tsygichko, December 20, 1990, *Vol. II*, p. 145.

⁵⁵ Danilevich, September 21, 1992, *Vol. II*, p. 28.

as a condition they should accept, much less pursue (officially, the USSR did not threaten anyone, Tsygichko explained).⁵⁶ Danilevich asserted that the Soviet Union never embraced vulnerability as desirable.⁵⁷

Soviet strategists considered the nuclear balance to be unstable, because technological advances and increases in the size of the arsenal could significantly augment the power of one side relative to the other, thereby upsetting the balance. The Soviets assessed overall nuclear power (*iadernaia moshch'*) to be a function of yield, total number of weapons, and accuracy. Accuracy had a particularly decisive effect as a multiplier of the overall nuclear power of a missile. By the early 1980s, greater accuracy, in combination with other factors, increased the effective power of the U.S. nuclear arsenal by a factor of 3, according to Soviet estimates.⁵⁸ Such great fluctuations in the relative power of the two sides made the balance extremely unstable and induced both the United States and the USSR constantly to upgrade their nuclear forces.⁵⁹

Danilevich explained that, given military uncertainties, mutually assured destruction was only a *theoretical* conclusion. There was no guarantee in practice that a retaliatory strike would be launched and would inflict unacceptable damage on the enemy. If military art could be reduced to arithmetic, there would be no need for wars. One side would simply assess the correlation of forces and then tell its opponent, "we outnumber you 2-to-1; victory is ours; please surrender." In reality, however, one side can outnumber the other even by 3-to-1 and still suffer defeat, because actual fighting produces different results from what was calculated and planned.⁶⁰

In the event of nuclear war, according to Danilevich, the Soviet Union planned to strike a mix of cities, industrial centers and military targets. The mix of military and industrial targets would depend on whether the USSR tried to preempt or launched second.⁶¹ A preemptive Soviet strike would target the enemy's retaliatory forces, including ICBM

⁵⁶ Tsygichko, *Kommentarii k interv'iu*.

⁵⁷ Danilevich, March 5, 1990, *Vol. II*, p. 19.

⁵⁸ Kataev, June 23, 1993, *Vol. II*, p. 101.

⁵⁹ Soviet interview subjects acknowledged that U.S. upgrades were largely qualitative while Soviet improvements were related to quantitative increases, some improvements in quality, and considerable improvements, by the late 1970s, and early 1980s, in protection of strategic systems.

⁶⁰ Danilevich, September 21, 1992, *Vol. II*, p. 30. This comment seems to reflect the Soviet preoccupation with the effect of technological and operational surprise and command competence.

⁶¹ *Ibid.*, p. 31.

silos, airfields, command centers, and naval bases.⁶² A retaliatory strike, Tsygichko explained, would be aimed at soft military targets (such as airfields and C³ facilities) and at U.S. infrastructure, including transportation grids and fuel supply lines.⁶³ Danilevich was much more direct. In a retaliatory strike, Soviet missiles would be retargeted against "cities." By the mid-1970s, such retargeting, he asserted, could be accomplished "within minutes."

Soviet military planners were concerned that weaknesses in their command and control systems might prevent timely and effective launches of retaliatory strikes. Aleksei Kalashnikov, a former chairman of the Strategic Rocket Forces (SRF) Committee on Science and Technology, complained that the USSR *never* managed to create an integrated C³ system that was both sophisticated and survivable. Poor survivability was partly the result of inadequate cable communications. There was, for example, only one military communications cable linking Moscow with the Far East. Kalashnikov examined data from several scientific-research institutes (NIIs) and calculated that after sustaining a full-scale nuclear attack, the Soviet Union would be able to launch only 2 percent of its missiles. TsNIIMash had reported a figure of 6 percent and TsNII-4, the institute of the Strategic Rocket Forces, estimated that 10 percent of Soviet retaliatory weapons could be launched. Kalashnikov summarized these findings in a report to the General Staff which was very critical of Soviet C³ systems and generated some movement toward C³ modernization.⁶⁴ In follow-up questioning, he volunteered that, even in 1993, the improvements made in the Central System's survivability were not sufficient to reduce significantly the loss of ability to retaliate after absorption of a first strike.

The General Staff, Akhromeev recounted, undertook the task, in the early 1970s, of ensuring absolute control over nuclear weapons in order to prevent unauthorized use. He stated that, by the mid-1970s, the USSR had introduced command and control systems that gave the General Staff confidence in centralized control over Soviet nuclear forces.⁶⁵ Danilevich reported that after strengthening the command and control system's capacity to prevent unauthorized employment of nuclear weapons, the USSR turned its attention

⁶² Danilevich, September 24, 1992, *Vol. II*, p. 40. The same targets are listed in Turbiville, *The Voroshilov Lectures*, p. 71.

⁶³ Tsygichko, December 21 and 23, 1991, *Vol. II*, p. 157.

⁶⁴ Kalashnikov, April 1993, *Vol. II*, p. 90.

⁶⁵ Akhromeev, February 8, 1991, *Vol. II*, p. 5.

to the problem of guaranteeing release of a retaliatory strike. It created a system for automated transmission of commands that was made redundant across several means of communication, including telephone, radio, and multi-channel systems.

The next step in enhancing the Soviet command and control system was the creation of a system of command missiles (*komandnye rakety*) that, even if launched late under attack, could help to ensure launch of the USSR's strategic missiles in a retaliatory strike. This system was similar in concept to the U.S. Emergency Release Communications System (ERCS) missiles designed to be launched to transmit nuclear release messages under various exchange scenarios. The command-missile system was comprised of a command missile or missiles deployed near, but outside of, clusters of silos. The command missiles were well concealed, housed in specially hardened silos capable of withstanding overpressures of up to 240 kg/cm² (3,412 pounds per square inch - psi), and were especially well protected against damage from electromagnetic pulse (EMP).⁶⁶ Each command missile was linked in its communications package with a specific set of launch platforms. Upon command, it would be launched into near space whence it would transmit launch orders to the cluster of ICBMs to which it was linked. According to Vitalii Kataev, initial design of the system began some time in the mid-1960s, and the missiles were operational by the mid- to late 1970s.⁶⁷

The last step, which Kataev implied may have been undertaken concurrently with the command missiles, involved development of an automatic trigger mechanism which would ensure launch of the command missiles, even if positive human control had been rendered impossible. According to Kataev and other sources, the automated launch system, which became operational by the late 1970s, was known as the Dead Hand (*Mertvaia Ruka*).⁶⁸ Gen.-Col. Varfolomei Korobushin, who served for 10 years as First Deputy Chief of Staff of the SRF and was in charge of control systems, stated that the Dead Hand was designed to foil any attempt on the part of the U.S. to launch an unanswered decapitating strike against the Soviet leadership. It would ensure that a retaliatory strike would be launched under almost any circumstances. The Dead Hand trigger was not completely automatic. It had to be activated manually, presumably

⁶⁶ EMP is a pulse that is transmitted by a nuclear detonation and which tends to render inoperative solid-state electronics, thereby threatening unbuffered modern military communications systems.

⁶⁷ Kataev, June 23, 1993, *Vol. II*, pp. 100-101. Kataev assured the author that the development cycle for similar weapons systems was between 10 and 15 years.

⁶⁸ *Ibid.* See also Bruce G. Blair, "Russia's Doomsday Machine," *The New York Times*, October 8, 1993, p. A35.

during a crisis. Once activated, however, the system made Soviet nuclear retaliation automatic, eliminating the need for any living hand to push the nuclear button.⁶⁹

There were two means by which each command missile might be launched to transmit its message to the ICBMs, Kataev continued. The first was under positive control from the central control system. The decision would be made to launch, and the time before impact of the enemy's strike would be considered insufficient to permit normal launch procedures. The second was the Dead Hand launch mechanism, whereby the decision maker would unblock (*razblokirovat'*) the central no-fire mechanism and, thereby, would release launch control to local automatic triggers associated with each command missile. The triggers, tied to numerous sensors, would launch their local command missile once the command missile was unblocked, which in turn, would transmit a launch order to its associated cluster of ICBMs. The triggering sensors were to launch the command missiles when excited by the *light, or seismic shock, or radiation or atmospheric density* resulting from an incoming nuclear strike. Unblocking of the Dead Hand, Kataev stressed, would be carried out on the assumption that the situation was extremely threatening to the political and military leadership and in the expectation that all decision makers would be dead when the command missiles automatically fired.⁷⁰ All of the interview subjects stressed the system's relationship to land-based ICBMs, although none ruled out involvement of SLBMs.

Although both Vitalii Kataev and Gen. Korobushin asserted that both the command missiles and the Dead Hand mechanism were, and continue to be deployed, the evidence for this is mixed. Viktor Surikov, the former deputy head of TsNIIMash, confirmed in detail the development of the Dead Hand system, claiming that he was personally involved in its design and presentation to the Soviet military leadership. He stated that the concept had been accepted by Iurii Mozzhorin, then director of TsNIIMash, and Oleg I. Baklanov, then Central Committee Secretary responsible for Military Industry. He claimed, however, that the concept was rejected by Marshal Akhromeev on advice of Gen.-Col. Korobushin, who had been the first interviewee to "reveal" to the authors, somewhat spontaneously and with anger, that the system existed and was still operational. As a consequence of this rejection, Surikov asserted, the Dead Hand trigger

⁶⁹ Interview with Gen.-Col. Varfolomei V. Korobushin, December 10, 1992, *Vol. II*, p. 107. Gen.-Col. Korobushin served for 10 years as First Deputy Chief of Staff of the SRF, then as Director of the General Staff's Center for Operational and Strategic Research (TsOSI).

⁷⁰ Kataev, June 23, 1993, *Vol. II*, p. 101. This scenario assumes that the ICBMs would be retargeted from counterforce to countervalue targets before they are launched.

system "was never realized."⁷¹ Surikov's assertion is supported by Gen.-Col. Danilevich, who stated that, although both sides explored the possibility of such automatic trigger systems, the Soviets considered them too dangerous and unreliable and halted their development.⁷²

Two conclusions may be made regarding this system. First, the Soviets were very concerned about the responsiveness and survivability of their command, control, and communications system and built redundant backup systems in order to ensure that a retaliatory strike could be launched. To this end, a command missile system, similar in many characteristics to the U.S. ERCS,⁷³ very probably was deployed by the mid- to late 1970s and subsequently upgraded. Second, TsNIIMash, the research arm of the Ministry of General Machine Building (MOM), probably took the concept of an automatic trigger mechanism for launching these command missiles to a level of development beyond basic research to design and, possibly, to prototype testing. It is not clear that this system, called the Dead Hand by the Soviets, was ever deployed and activated.⁷⁴

Much of the U.S. analytical and policy community achieved an accurate understanding of Soviet thinking. Soviet leaders understood and applied the logic of nuclear deterrence, which, in their view, rested on the credibility of their potential to effectively counter-strike and inflict catastrophic damage on the enemy in the event of a nuclear attack. They rejected the desirability of mutual vulnerability, so they attempted to acquire the capacity to limit damage. U.S. officials probably were prudent to conclude that since the USSR was developing counterforce capabilities, the U.S. needed a response to those capabilities in order to preserve the credibility of its deterrent. A few U.S. analysts and officials probably overemphasized the USSR's acceptance of mutual deterrence, but they were careful to point out the Soviet attachment both to damage limitation and to counterforce capabilities.

⁷¹ Interview with Viktor Surikov, September 11, 1993, *Vol. II*, pp. 134-135. Mr. Surikov was Deputy Director of the Central Scientific Research Institute for General Machine Building (TsNIIMash), 1976-1992. SSBN tied to the pier but not under repair could be integrated into the system without difficulty.

⁷² Danilevich, December 14, 1992, *Vol. II*, pp. 62-63.

⁷³ Emergency Release Communications System.

⁷⁴ Bruce Blair, "Doomsday Machine."

III. EVOLUTION OF SOVIET STRATEGY

Utility of Nuclear Weapons

Almost all U.S. experts believed that the USSR had no desire to precipitate a nuclear war, but if deterrence failed, then the USSR planned to fight in the hope of emerging victorious.⁷⁵ In contrast, a small number of analysts observed a certain Soviet confidence in victory and, by implication, a greater Soviet willingness to initiate nuclear war. These analysts argued that the USSR approached nuclear war with the aims of fighting and winning, of defeating capitalism. According to their reading, Soviet writings set out specific conditions that would constitute victory, and Soviet military strategy rested on the belief that under favorable circumstances the USSR could indeed win.⁷⁶ Team B, the outside experts assembled to examine highly classified Central Intelligence Agency information on Soviet strategic forces and to prepare a threat assessment in competition with the official National Intelligence Estimates, concluded that the Soviet leadership believed that "nuclear war could be fought and won."⁷⁷ Prominent Team B members, including Paul Nitze, Richard Pipes, and Paul Wolfowitz, later joined the Reagan Administration.

The majority opinion among Soviet specialists was shared by senior U.S. government officials. The prevailing view in the Carter Administration held that the Soviets were not anxious for nuclear war, but if war broke out, they would be serious about fighting. In fact, they had made provision for actual nuclear warfighting, for example building extensive facilities to protect the Soviet leadership from intercontinental U.S. nuclear strikes.⁷⁸ The Soviets, former National Security Advisor Zbigniew Brzezinski explained, were not preparing to start a war, but they were planning to win if war broke out.⁷⁹ In the early 1980s, the Joint Chiefs of Staff reportedly concluded that the Soviet High

⁷⁵ Ermarth, "Contrasts in American and Soviet Strategic Thought," pp. 143-144; Field Manual 100-2-1, *The Soviet Army: Operations and Tactics* (Washington: Headquarters, Department of the Army, July 1984), p. 2-1; Garthoff, "Mutual Deterrence and Strategic Arms Limitation in Soviet Policy," *Strategic Review*, Fall 1982, p. 44; Laird and Herspring, *The Soviet Union and Strategic*, p. 66; Lambeth, *How to Think About Soviet Military Doctrine*, pp. 8-9; McGuire, "Commentary: Soviet Intentions," p. 142; and Wolfe, *Worldwide Soviet Military Strategy and Policy*, p. 6.

⁷⁶ Douglass and Hoerber, *Soviet Strategy for Nuclear War*, pp. 10, 14-15.

⁷⁷ Central Intelligence Agency, *Competitive Analysis, Report of Team B*, p. 6.

⁷⁸ Marshall, October 22, 1991, *Vol. II*, p. 118.

⁷⁹ Brzezinski, November 20, 1991, *Vol. II*, p. 16. The view expressed by Fred C. Iklé on December 11, 1991, *Vol. II*, p. 77, was almost identical.

Command was risk averse and was not eager to fight. Despite mischief making in the Third World, it was not seriously contemplating any unprovoked use of force against the United States or against NATO. However, the High Command was determined, if there was a war, not to lose.⁸⁰

From the interviews with Soviet General Staff officers, a picture emerges of a military command that understood the devastating consequences of nuclear war and was genuinely intent on preventing war. Inside the General Staff, beginning in the early 1970s, the idea matured that while nuclear weapons might serve as a political tool, they had very limited military utility.⁸¹ By 1981, the General Staff had reached the conclusion that nuclear use would be catastrophic as well as counterproductive to combat operations in the European theater.⁸²

The employment of nuclear weapons had to be avoided if at all possible, asserted the late Chief of the General Staff Sergei Akhromeev.⁸³ Vitalii Tsygichko, former head of conventional and nuclear theater forces modeling at the Scientific Research Institute NII-6 of the Main Intelligence Directorate (GRU) of the General Staff, expressed the belief that the Soviet political leadership, with backing from the military leadership, would probably have entered negotiations in order to avert an outbreak of nuclear war.⁸⁴ Gen.-Col. Andrian Danilevich, a special advisor on military doctrine to the Chief of the General Staff, explained that even though some theoretical writings, plans, and exercises included a first strike against the United States, the Soviet political leadership never discussed the possibility of launching a first strike. When Politburo members did examine contingencies for nuclear use, they shied away from authorizing nuclear use.⁸⁵

Danilevich witnessed a military exercise in 1972 at which Soviet General Secretary Brezhnev, Prime Minister Kosygin, and Defense Minister Grechko were presented with the results of a simulated U.S. first strike that killed 80 million Soviet citizens, destroyed 85 percent of the USSR's industrial capacity,⁸⁶ and decimated Soviet ground forces and

⁸⁰ McDaniel, November 12, 1991, *Vol. II*, p. 120.

⁸¹ Akhromeev, February 8, 1991, *Vol. II*, pp. 5-6.

⁸² Danilevich, December 18, 1990, *Vol. II*, p. 24.

⁸³ Akhromeev, February 8, 1991, *Vol. II*, p. 6.

⁸⁴ Tsygichko, December 20, 1990, *Vol. II*, p. 145.

⁸⁵ Danilevich, December 14, 1992, *Vol. II*, p. 62.

⁸⁶ *Ibid.*, September 21, 1992, *Vol. II*, p. 27.

non-strategic aviation.⁸⁷ Brezhnev was given an actual button and asked to push it to authorize a retaliatory strike. Gen. Danilevich reported that the General Secretary was pale and perspiring and that his hand trembled visibly. He asked Grechko several times for assurances that the button would not set off real missile launches. "Andrei Antonovich," he repeatedly asked Grechko, "this is definitely an exercise?"⁸⁸ After 1972, the political leadership did not participate in even a single military exercise involving nuclear weapons. The General Staff was left entirely on its own to develop scenarios for nuclear war.⁸⁹

Another example, described by Danilevich, of Soviet aversion to nuclear war occurred in the early 1980s. Cuban leader Fidel Castro pressed the USSR to take a tougher line against the United States, including possible nuclear strikes. The Soviet Union, in response, sent experts to spell out for Castro the ecological consequences for Cuba of nuclear strikes on the United States. Castro, according to the General, recovered from his nuclear fever rather quickly.⁹⁰

The Voroshilov lectures reflect the lack of Soviet confidence in winning a nuclear war.⁹¹ Nevertheless, they make clear that if deterrence failed, Soviet forces were trained to fight.⁹² The Soviet Union was prepared for nuclear war. The country had established special stocks of food and other provisions and had built shelters and infrastructure in the hope of allowing a new life to begin after nuclear exchanges. Even though scientists pointed out that nuclear fallout would destroy whatever life remained following a nuclear conflict, Brezhnev's High Command still invested enormous amounts of resources in an attempt to ensure its survival. This indicated to Tsygichko that, under certain circumstances, the political leadership was prepared to enter a nuclear war.⁹³

The majority of U.S. officials and experts were correct in noting both the Soviet intention to avoid nuclear war and Soviet plans to fight if deterrence failed. Neither the military nor the political leadership of the USSR had any desire to precipitate a nuclear war. Soviet provisions made for nuclear war, such as the network of well-hardened shelters,

⁸⁷ Ibid., December 13, 1992, *Vol. II*, p. 56.

⁸⁸ Ibid., September 21, 1992, *Vol. II*, p. 27.

⁸⁹ Ibid., December 9, 1994, *Vol. II*, p. 69.

⁹⁰ Ibid., September 21, 1993, *Vol. II*, p. 28.

⁹¹ Turbiville, *The Voroshilov Lectures*, p. 72.

⁹² Ibid., pp. 82-83.

⁹³ Tsygichko, *Kommentarii k interv'iu*.

suggest much less an eagerness for armed conflict than pessimism about successful preemption of the U.S. and an expectation of the need for readiness to ride out a nuclear attack, as well as the vain hope of Politburo members to preserve their own lives and power. Among U.S. analysts, only a small, though vocal and sometimes influential, group mistakenly believed that the Soviet Union was willing to initiate a nuclear war and expected victory in such a war in a form that was in any sense meaningful.

Outcome of Nuclear War

Many U.S. analysts expected the Soviet Union to try to emerge from a nuclear war less devastated than the United States.⁹⁴ Other observers held that the USSR really did consider a meaningful victory possible.⁹⁵ The National Intelligence Estimate of Soviet strategic forces issued in December 1976 argued that there was a consensus among Soviet leaders on the need to assure the USSR's survival in a nuclear war and that Soviet military doctrine maintained that a nuclear war could be won.⁹⁶ The Defense Intelligence Agency and the intelligence branches of the Army, the Navy, and the Air Force went further. They affirmed the belief that the Soviet Union saw as attainable its objective of achieving the capability to wage nuclear war and to survive with sufficient resources to dominate the postwar period.⁹⁷ The State Department's Bureau of Intelligence and Research (INR), however, refused to characterize Soviet objectives as a "war-winning" or "war-survival" posture.⁹⁸

James Schlesinger, U.S. Defense Secretary from 1973 to 1975, was unsure whether Soviet leaders believed their own "pep talk" of winning a nuclear war. He, nevertheless, saw a need to communicate to them the danger of a nuclear conflict.⁹⁹ President Carter's Secretary of Defense, Harold Brown, concluded that the Soviet civilian leadership did not believe that the USSR could fight and win a nuclear war. Top Soviet military officials, Brown argued, did not really expect the USSR to survive a nuclear war, but they still

⁹⁴ Ermarth, "Contrasts in American and Soviet Strategic Thought," pp. 144-145; Garthoff, "Mutual Deterrence and Strategic Arms Limitation in Soviet Policy," p. 44; Laird and Herspring, *The Soviet Union and Strategic Arms*, p. 66; Lambeth, *How to Think About Soviet Military Doctrine*, pp. 8-9, and Nathan Leites, *Soviet Style in War* (Santa Monica, CA: RAND Corporation, R-2615-NA, April 1982), p. 379.

⁹⁵ Douglass and Hoeber, *Soviet Strategy for Nuclear War*, pp. 10, 14-15.

⁹⁶ Central Intelligence Agency, *Soviet Forces for Intercontinental Conflict Through the Mid-1980s*, *National Intelligence Estimate 11-3/8-76*, December 1976, p. 18.

⁹⁷ *National Intelligence Estimate 11-3/8-76*, p. 4.

⁹⁸ *Ibid.*

⁹⁹ Schlesinger, October 29, 1991, *Vol. II*, p. 129.

tried to improve Soviet chances for survival.¹⁰⁰ President Reagan reportedly believed that the USSR accepted his view, enunciated in 1985, that nuclear war cannot be won and should not be fought.¹⁰¹

Akhromeev expressed the conviction that in practical terms, neither side would win a nuclear war.¹⁰² According to Tsygichko, the General Staff understood the scale of devastation that would result from a nuclear war and therefore did not develop a working definition of victory. Military planners instead focused on the amount of destruction that they could inflict on the enemy. They hoped that if there were a nuclear exchange, some “pockets” of civilization inside the Soviet Union would survive. At a June 1968 meeting of the Defense Ministry’s Scientific-Technological Council, which Defense Minister Grechko attended, Iurii Mozzhorin, Director of TsNIIMash, the USSR’s leading research institute of missile technology, presented results of TsNIIMash’s modeling that showed that the Soviet Union, whether it launched a first strike or a retaliatory strike, could not win a nuclear war.¹⁰³

The Soviet political leadership, Danilevich observed, did comprehend the catastrophic consequences of nuclear war, though studies of those consequences were suppressed or modified in order to maintain morale. The results of the 1972 study of the likely consequences of a U.S. nuclear attack on the Soviet Union were never circulated, and subsequent models used coefficients that artificially reduced the level of predicted destruction—for instance, a certain percentage of warheads would fail to explode or would miss their targets—and thereby presented a more acceptable picture of nuclear use. The possibility of survival, Danilevich admitted, was accepted until the early 1980s.¹⁰⁴ Tsygichko explained that, for ideological reasons, the USSR needed to maintain the official belief that it was possible to win a nuclear war.¹⁰⁵ This was, Tsygichko explained, a “theoretical” concept.

Many U.S. observers appreciated the deep Soviet pessimism regarding the possibility of surviving a nuclear war in any meaningful sense. Relatively few analysts took at face

¹⁰⁰ Brown, November 8, 1991, *Vol. II*, p. 13.

¹⁰¹ McDaniel, November 19, 1991, *Vol. II*, p. 120.

¹⁰² Akhromeev, February 8, 1991, *Vol. II*, pp. 5-6.

¹⁰³ Mozzhorin, April 1993, *Vol. II*, p. 124.

¹⁰⁴ Danilevich, September 21, 1992, *Vol. II*, p. 28.

¹⁰⁵ Tsygichko, *Kommentarii k interv'iu*.

value the ideological pronouncements on socialism emerging victorious from a nuclear exchange or interpreted the Soviet strategic buildup as an effort to gain the capacity to survive and win a nuclear war. Nevertheless, U.S. policy makers of successive administrations had sufficient doubts about Soviet rationality to continue to bolster the U.S. deterrent by placing Soviet political and military assets at greater risk. American concerns were ill founded. Soviet political leaders appeared to grasp the danger posed by nuclear use, and they showed little real confidence in the USSR's ability to survive a nuclear war.

Preemption

The Soviet Union considered surprise attack to be potentially decisive and was thus inclined to preempt against a U.S. nuclear strike according to the common perception in the analytical community. An attack that achieved surprise, Soviet military planners believed, could determine the outcome of a nuclear war.¹⁰⁶ They, therefore, were determined to prevent a surprise attack by the United States.¹⁰⁷ Some U.S. experts believed that in the event of war, the USSR hoped to preempt U.S. strategic forces.¹⁰⁸ According to Ermarth, the Soviet planner's sensitivity to operational uncertainties and aim of achieving a favorable outcome in war appeared to generate a strong Soviet tendency to preempt.¹⁰⁹ Nathan Leites, in contrast, concluded that Soviet authorities doubted their capacity to preempt effectively and were inclined to launch under attack.¹¹⁰

U.S. decision makers were quite evenly divided in interpreting Soviet intentions. Schlesinger saw Soviet preemption as a remote possibility. He could envisage the Soviets striking preemptively only if they undertook a conventional probe that met unanticipated NATO resistance and if they believed that NATO was about to go nuclear. Brown reached a similar conclusion. According to Soviet military doctrine, he argued, the Soviets would preempt only if they were convinced, based on their reading of

¹⁰⁶ Laird and Herspring, *The Soviet Union and Strategic Arms*, p. 69; Sienkiewicz, "SALT and Soviet Nuclear Doctrine," pp. 88-89; Douglass and Hoerber, *Soviet Strategy for Nuclear War*, pp. 35, 38; and *Report of Team B*, p. 14.

¹⁰⁷ Scott and Scott, *The Armed Forces of the USSR*, pp. 44, 77.

¹⁰⁸ Laird and Herspring, *The Soviet Union and Strategic Arms*, p. 71; and Lambeth, *How to Think About Soviet Military Doctrine*, pp. 10-11.

¹⁰⁹ Ermarth, "Contrasts in American and Soviet Strategic Thought," p. 152.

¹¹⁰ Leites, *Soviet Style in War*, p. 376.

American intentions, that the U.S. was going to launch a nuclear strike. Even then, the political leadership may have decided not to follow military doctrine and instead may have refrained from preempting.¹¹¹

Other U.S. officials perceived a greater likelihood of Soviet preemption. Brzezinski expected the Soviet Union, in the context of on-going hostilities, to respond to U.S. tactical nuclear use with tactical preemption. Iklé believed that the USSR was geared to preempt under certain extreme contingencies, such as a NATO decision to employ nuclear weapons first during a war in Europe. The Joint Chiefs, in the 1980s, did not expect the Soviet Union to absorb a large U.S. nuclear strike without responding. Instead, they thought, Soviet forces would probably launch on tactical warning and might preempt strategically.¹¹²

Interviews with former Soviet officers and missile designers suggest a deep duality in Soviet thinking about their strategic strike posture, a duality fostered by doubt and uncertainty about what was technically and institutionally possible in a crisis situation. Soviet military leaders relied on preemption throughout the 1960s because they had concluded that Soviet silo vulnerability and the prolonged time required to prepare and launch ICBMs would render impossible an effective Soviet retaliatory strike. These concerns, compounded by serious pessimism regarding the survivability of their command and control system, also gave Soviet military leaders strong incentives to preempt strategically. By the early 1970s, however, the Soviet political leadership, sobered by a growing awareness of the consequences of nuclear war, began to move away from preemption in favor of a launch-under-attack posture and for the first time considered retaliation. Convinced that the U.S. would strike first, the military leadership prepared for all three possibilities—preemption, launch-on-warning, and retaliation—but clearly disliked retaliation and doubted that the Soviet strategic arsenal had sufficient technical “reliability” (*ustoichivost*) to ensure an effective counterstrike. The military also seriously doubted that the political leadership could react in a timely and decisive manner to a detected U.S. launch. However, the military acceded to pressure from the political leadership and prepared for the possibility of launching a retaliatory strike by hardening ICBM silos, resuming the mobile ICBM programs, reducing missile launch times, decreasing its reliance on ground bursts and developing redundant command and

¹¹¹ Brown, November 8, 1991, *Vol. II*, p. 14.

¹¹² McDaniel, November 19, 1991, *Vol. II*, p. 120.

control systems such as the Dead Hand.¹¹³ By the mid-1970s, the USSR had acquired the missiles and command and control capabilities necessary to execute a launch-on-warning. Despite these measures, however, and even though the Soviet political leadership officially renounced preemption around 1981 and adopted a retaliation posture by the mid-1980s, the military apparently never completely abandoned preemption as an option.

The USSR, in the view of former Soviet officers, relied on a doctrine of strategic nuclear preemption in the 1960s to prevent a successful attack from being launched against Soviet territory. Military commanders who were World War II veterans tended to view retaliation as a passive anticipation of attack, analogous to the Soviet Union's exposure to surprise attack in 1941. They were determined never to cede the initiative to the enemy and thereby to risk a disaster similar to Hitler's invasion. Grechko reportedly said that he wanted to avoid repeating the mistakes of 1941 by waiting to be struck on the head, as the proponents of retaliation suggested.¹¹⁴

Gen.-Col. Igor' Illarionov, an aide to Ustinov for almost 20 years, reported that he and others had concluded that Grechko did not really believe in retaliation. Grechko had no interest in ICBM survivability. He prevented the hardening of silos beyond 2 kg/cm² (28 psi) and canceled the mobile ICBM program in 1968. He seemed to favor a first strike strategy, even though it violated the USSR's official military policy (*voennaia politika*) of not initiating nuclear use.¹¹⁵ Soviet modeling and testing, Dvorkin states, was based on the assumption that the United States would strike first. On one occasion, in the early 1980s, however, Defense Minister Ustinov asked Dvorkin's institute, TsNII-4, to model a depressed trajectory launch of Soviet ICBMs against U.S. silo fields to determine the probable destructive effect. TsNII-4 found that a Soviet depressed trajectory strike over the pole would prove ineffective, because the angle of attack would so reduce accuracy and reliability as to make the uncertainties of an effective strike unacceptably high. The institute recommended against planning for such a strike.¹¹⁶

Danilevich explained that Soviet nuclear doctrine throughout the 1960s prescribed strategic preemption, because the long time required to prepare missiles for launch left

¹¹³ See discussion under previous section on deterrence beginning on p. 13.

¹¹⁴ Mozzhorin, April 1993, *Vol. II*, p. 123.

¹¹⁵ Interview with Gen.-Col. Igor' V. Illarionov, June 23, 1993, *Vol. II*, p. 84. Illarionov was an Aide to Ustinov in the Central Committee Secretariat (1965-1976), and later an Assistant to Ustinov for special assignments (1976-1984).

¹¹⁶ Dvorkin, June 24, 1993, *Vol. II*, pp. 70-71.

only a small possibility of retaliating effectively. Five to 6 hours were needed to fuel Soviet missiles, and another 2 - 3 hours to mate their warheads. By the time they were ready to be launched, the Soviet Union would have sustained an incoming U.S. strike. Soviet military planners expected a U.S. nuclear attack to cause extensive damage to Soviet missile silos and command and control systems, and therefore, they believed that a Soviet retaliatory strike was unlikely to prove effective.¹¹⁷

Soviet missiles inside the earliest silos were particularly vulnerable to attack. In September 1958, Kalashnikov was instructed to draft a report on alternative silo designs. He presented three options: (1) single launch dispersed silos; (2) clusters of 4 silos; and (3) single silos containing a missile drum with a refire capability. The first option was selected for prototype testing using an R-12 (SS-4) missile. A test launch took place in the spring of 1959.¹¹⁸

Under the code name "*SHEKSNA*," [acronym-expansion unknown] a draft project for a missile complex was completed in May 1960, representing the first-generation silo, according to Irukhim Smotkin, who worked on silo design from 1960 to 1975 and served as head of the mechanical design department of the Design Bureau of Mechanization Devices (KBSM), located in Leningrad, of the Ministry of General Machine Building.¹¹⁹ In 1962, Smotkin reported, KBSM began to develop the second-generation silo for a new missile complex named Individual Launch (*Odinokhnyi Start*).¹²⁰ Whereas the first generation of silo-based missiles could only be fueled for a period of two days, after which it had to be drained and refurbished before it could be operational again, the second-generation missile could be kept fueled for six months.¹²¹

Beginning in 1965, Tsygichko was personally involved in a series of tests carried out by the General Staff at Semipalatinsk on an annual basis between 1964 and 1966 to measure the vulnerability of silo-based intercontinental ballistic missiles (ICBMs) to ground-burst attack. Missiles identical to those in operation were put in silos built to actual operational specifications. High-explosive conventional charges were placed in the ground at various distances (from 20 meters to over 1 kilometer) from the silos to simulate and measure the

¹¹⁷ Danilevich, September 24, 1992, *Vol. II*, p. 39.

¹¹⁸ Kalashnikov, April 1993, *Vol. II*, p. 91.

¹¹⁹ Irukhim Smotkin, *Hardening Soviet ICBM Silos* (Falls Church, VA: Delphic Associates, 1991), p. 74.

¹²⁰ *Ibid.*, p. 78.

¹²¹ Peter Shugart, Memorandum on "Silo Vulnerability," May 14, 1993.

effects of nuclear ground bursts. The charges did not exceed the blast energy effect of a 500 kiloton (kt) nuclear warhead. The tests took geological conditions into account and tried to approximate the impact of an actual U.S. nuclear attack on Soviet ICBM silos.¹²²

The measure of effectiveness for a missile kill was the ability of the missile, after an enemy attack, to be launched in the prescribed time (a matter of hours) and to destroy its target. A jammed silo door, ruptured fuel system, disoriented missile guidance system, or disrupted launch control system would constitute a missile kill. The actual damage from ground-burst simulations was normally far more extensive and required days, weeks, or even months to repair. The test data showed that ground bursts were very effective in destroying silo-based ICBM systems. Silo doors often jammed, even from distant strikes. Under certain geological conditions, a ground wave from a strike as far away as 1 km was powerful enough to drive the entire silo 3 meters out of the ground, causing extensive damage to the missile system inside. A ground burst closer than 1 km was highly likely to destroy (achieve a "mission kill" of) a silo-based ICBM. If two silos were less than 2 km apart, typically the missile systems in both would be disabled by a single incoming strike.¹²³

Tsygichko was given the task of creating models to compare the effects of ground bursts and air bursts. He used data collected before the 1963 signing of the Limited Nuclear Test Ban Treaty from tests at Semipalatinsk on the impact of nuclear explosions on structures and silos. The models indicated that an air burst (80 or more meters above ground) was 15 to 25 percent as effective as a ground burst of the same yield going off at an equal distance from the target. In 1966, Tsygichko took part in briefing the General Staff on the tests and modeling of silo vulnerability.¹²⁴

The Soviet military leadership assumed that U.S. scientists had conducted similar experiments and discovered the effectiveness of ground bursts relative to air bursts. When Soviet satellite photography showed U.S. missile silos relatively poorly protected by overhead cover and grouped rather close to each other and to the cluster's launch control center, the General Staff became convinced that U.S. ICBM fields were not designed to ride out an attack and that U.S. land-based systems were first-strike weapons

¹²² Tsygichko, December 21 and 23, 1991, *Vol. II*, pp. 150-151.

¹²³ *Ibid.*

¹²⁴ *Ibid.*

(*oruzhie pervogo udara*).¹²⁵ U.S. ICBMs were routinely referred to as such in internal Soviet military and political discussions and written communications for the following two decades.¹²⁶ According to Dr. Viktor Surikov, this assessment of the U.S. strike posture was informed not only by indirect evidence obtained through satellite intelligence but also by direct intelligence about the U.S. SIOP. According to this intelligence information, the U.S. planned to launch on strategic warning against Soviet strategic forces.¹²⁷ In response, the Soviet Union examined the problem of silo vulnerability, developed solid- and liquid-fueled missile systems that could be launched within minutes of a launch order, and moved toward adoption of a launch-under-attack doctrine.

Concern about silo vulnerability led some Soviet experts in the mid-1960s to seek improvements in silo protection. Iurii Mozzhorin, then Director of TsNIIMash, argued strongly in favor of hardening ICBM silos. His argument was opposed by the Defense Ministry and the Ministry of General Machine Building, which wanted to avoid the expense of hardening silos and to spend those resources instead to build more missiles. In 1966, Ustinov, who at that time was still a Central Committee Secretary, held a meeting of senior officials from the Ministries of Defense and of General Machine Building to discuss silo protection. The Deputy Defense Minister for Construction asserted that for the cost of enhanced silo protection, the USSR could produce an additional 72 missile launchers. Why stop there, Mozzhorin retorted, when you can use wood to build even more? After heated debate, a decision was made to develop reinforced missile launchers. Enhancement of silo protection went forward only because of support from Ustinov, Brezhnev, and Smirnov, the Chairman of the Military-Industrial Commission (VPK). Soviet silos eventually were improved and, in Mozzhorin's opinion, made superior to U.S. silos.¹²⁸

¹²⁵ The United States continued to rely on air bursts because it set a higher measure of effectiveness (MOE) for a missile kill than the Soviet Union did. Whereas the Soviet MOE could be achieved by temporarily disabling an enemy missile system, the U.S. MOE required permanent damage, observable from satellites, of silo-based ICBMs. The United States wanted visible evidence that Soviet missiles could not be launched. U.S. forces therefore were expected to demolish the doors of Soviet silos, which was best accomplished through air bursts.

¹²⁶ *Ibid.*, p. 152.

¹²⁷ Surikov, September 11, 1993, *Vol. II*, p. 134.

¹²⁸ Mozzhorin, April 1993, *Vol. II*, p. 124. Boris A. Strogonov, an expert on missile technology who worked from 1955 to 1987 in the Defense Industry Department of the Central Committee, confirmed that Ustinov was a proponent of survivable missiles. Most of the Defense Ministry, and Grechko personally, was opposed to silo protection, according to an interview with Strogonov, March 1993, *Vol. II*, p. 132. Several sources, including Dvorkin, June 24, 1993, p. 70; Illarionov, June 23, 1993, p. 84; and Gen.-Lt. Nikolai V. Kravets of the Strategic Rocket Forces, June 22, 1993, p. 110, confirmed that in the 1960s, Soviet ICBM silos could withstand only 2 kg/cm² overpressure. Strogonov asserted that hardening increased silo protection to 50 kg/cm². In the 1970s, Dvorkin claimed, some Soviet ICBM facilities could withstand 400 kg/cm².

Hardening of ICBM silos, along with the growing size of the Soviet nuclear arsenal, improvements in command and control systems that enabled a decision from Moscow to reach all launch sites on Soviet territory in just 13 seconds,¹²⁹ development of the capability to retarget missiles within minutes,¹³⁰ and a sharp decrease in launch times allowed the Soviet Union to begin to move away from preemption in the early 1970s. Improvements in the fueling capacity and in the instrumentation of Soviet missiles reduced the launch time (between receipt of a launch command and the actual missile launch) from 20 - 30 minutes, for first-generation missiles, to around 1 minute by the mid-1970s.¹³¹ Retaliation thus became a credible alternative to preemption for the Soviet leadership.¹³²

A July 1969 Defense Council meeting,¹³³ which both Mozzhorin and Illarionov attended, gave impetus to the shift toward a strategy of retaliation. The participants discussed a 15-year plan for weapons production and tried to decide which of two recently developed ICBMs—the SS-17 or the SS-19—to put into production. Professor Mstislav V. Keldysh, President of the USSR Academy of Sciences, argued that the choice between the SS-17 and the SS-19 was, in essence, a doctrinal question and that the Soviet Union should acquire an effective second-strike capability in order to deter U.S. first use. The Defense Council participants failed to choose between the two ICBMs, opting instead to manufacture both, but resolved the doctrinal debate in favor of a second strike, which led to the adoption of a launch-on-warning doctrine.¹³⁴

The Voroshilov lectures, which present the established Soviet military doctrine from 1973 to 1975, leave open the possibility of nuclear preemption at the tactical level and the theater level¹³⁵ but rule out strategic preemption. They indicate that the Soviet Union

¹²⁹ Korobushin, December 10, 1992, *Vol. II*, p. 108.

¹³⁰ Danilevich, September 21, 1992, *Vol. II*, p. 31.

¹³¹ According to an interview with Korobushin, December 10, 1992, *Vol. II*, p. 108, the earliest Soviet missiles required 20 minutes preparation time. Smotkin, as cited in Pete Shugart, Memorandum on "Silo Vulnerability," May 14, 1993, stated that the launch time of 30 minutes for first-generation missiles was reduced, in second- and third-generation silos, to 8 - 10 seconds after the silo cover opened. The reduction occurred partly because on-board instruments of later generations of missiles could begin to operate before receiving the launch command. Danilevich (September 24, 1992, p. 39) asserted that pre-fueled (*ampulizirovannye*) ICBMs were ready for launching within minutes. By the mid-1970s, Korobushin (December 10, 1992, p. 108) explained, the USSR had deployed missiles with launch times of 60 seconds.

¹³² Danilevich, September 24, 1992, *Vol. II*, p. 41.

¹³³ For a detailed description of the July 1969 Defense Council meeting, see Section IV on Struggles Among the Princes.

¹³⁴ Illarionov, June 23, 1993, *Vol. II*, p. 84. The July 1969 Defense Council meeting near Yalta was the first occasion on which a launch-on-warning strategy was seriously discussed.

¹³⁵ Turbiville, *The Voroshilov Lectures*, pp. 248, 312.

intended to prevent a surprise intercontinental U.S. attack not by preempting but rather by releasing a retaliatory strike before U.S. forces hit their targets. The Voroshilov lectures appear to prescribe a launch-on-warning doctrine instead of strategic preemption. They state that in the event of an enemy nuclear attack, the warning system should inform the Soviet High Command "within 3 to 4 minutes" in order to leave time for a decision regarding retaliation.¹³⁶

By the middle 1970s, the Soviet Union acquired the capacity to execute a launch-on-warning, termed a retaliatory-meeting strike (*otvetno-vstrechnyi udar*), whereby Soviet missiles would be released upon detection of a U.S. missile launch and would pass U.S. missiles in mid-air on the way to targets on U.S. territory.¹³⁷ A retaliatory-meeting strike became possible after the creation of an automated control system and the deployment of over-the-horizon (*zagorizontnye*) radars and space-based systems for early warning. The USSR adopted a strategy of flexible use of nuclear weapons based on three options—preemption, retaliatory-meeting strike, and retaliation¹³⁸—but preferred, in the event of a conflict, to launch a retaliatory-meeting strike.¹³⁹

The increased size of nuclear arsenals and growing Soviet awareness of the consequences of nuclear use led the USSR to renounce preemption by 1980, according to Danilevich. The USSR was then left with the two options of retaliation and retaliatory-meeting strikes.¹⁴⁰ Surikov asserts, however, that the General Staff never really accepted the possibility of a purely retaliatory strike because of continued pessimism regarding the survivability of the command and control system, and continued to plan to launch either on strategic or tactical warning.¹⁴¹

The Soviet Union, during the 1970s, also reduced its reliance on ground bursts. Kalashnikov was in charge of missile testing on the commission that organized tests in 1972 at Semipalatinsk to determine the vulnerability of existing silo and command center

¹³⁶ *Ibid.*, p. 246.

¹³⁷ Tsygichko, December 21 and 23, 1991, *Vol. II*, p. 151. Illarionov, reported in his interview that development of the retaliatory-meeting strike doctrine began in the late 1960s, although the Defense Ministry and chief designers had reached the conclusion that the USSR was unable at that time to launch a retaliatory strike before an incoming U.S. strike had already detonated on Soviet territory. See Illarionov, April 1993, *Vol. II*, p. 80.

¹³⁸ Danilevich, September 24, 1992, *Vol. II*, p. 40.

¹³⁹ Korobushin, December 10, 1992, *Vol. II*, p. 108; Illarionov, April, 1993, *Vol. II*, p. 80; and Tsygichko, December 21 and 23, 1991, *Vol. II*, p. 151.

¹⁴⁰ Danilevich, September 24, 1992, *Vol. II*, p. 39.

¹⁴¹ Surikov, September 18, 1993, *Vol. II*, pp. 134-135. See "Deterrence" above for a more extended discussion of perceived vulnerability of Soviet command and control systems.

designs to nuclear strikes. In addition to underground nuclear tests, above-ground tests using conventional explosives equivalent to 10 kt were carried out against mobile missile platforms, planes, tanks, and other targets. The tests showed that ground bursts were generally, but not always, effective at disabling silos, while air bursts proved very effective against planes and tanks.¹⁴²

Danilevich confirmed that Soviet forces intended to employ air bursts against unprotected targets. Moreover, he explained, the proportion of ground bursts declined as the USSR planned to launch increasingly massive nuclear strikes and the consequences of those strikes became less predictable. The Soviet military made computer calculations of fallout zones to forecast the spread of radiation following a nuclear exchange and then tested the calculations during several exercises. The tests showed that when massive explosives were detonated, the actual shock wave often deviated from the predicted one. The proportion of ground bursts, which was about 80 percent in the 1960s, declined until the late 1970s, when the USSR stopped employing ground bursts.¹⁴³

The Soviet watchers in the United States emphasized that the USSR was determined to keep any U.S. nuclear attack from achieving surprise. U.S. officials, on the other hand, saw little probability of Soviet preemption, or else they expected Soviet forces to preempt in the European theater rather than at the strategic level. The actual Soviet strategic posture was ambiguous. By the late 1970s and early 1980s, when the cited U.S. studies came out, the Soviet Union had adopted a clear preference, at least at the policy level, for retaliatory-meeting strikes and then renounced preemption altogether. Doubts persisted, however, especially among the technically sophisticated members of the military, regarding the possibility of carrying out a successful retaliatory or retaliatory-meeting strike. In a crisis, especially without the guidance of strong political leadership, preemption would not have been ruled out.

Limited Nuclear Options

In the judgment of numerous U.S. analysts, the Soviet Union eschewed limited nuclear options. Intra-war bargaining ran counter to Soviet doctrine,¹⁴⁴ because once the nuclear

¹⁴² Kalashnikov, April 1993, *Vol. II*, p. 91.

¹⁴³ Danilevich, December 14, 1992, *Vol. II*, p. 60.

¹⁴⁴ Ermarth, "Contrasts in American and Soviet Strategic Thought," p. 149.

threshold was crossed, half-measures would weaken the USSR's initiative and prospects for victory.¹⁴⁵ U.S. observers were nevertheless suspicious of public Soviet denunciations of the limited nuclear war concept.¹⁴⁶ The Soviet argument on the inevitability of escalation was intended to strengthen deterrence by persuading the United States that nothing could be gained from limited nuclear strategies.¹⁴⁷

Some experts in Washington pointed out that Soviet force modernization provided a broader array of employment options and thereby increased the USSR's potential to set conflict limitations. The Soviet Union, in Fritz Ermarth's view, probably conducted some contingency planning for limited nuclear options at the theater and, perhaps, at the strategic level.¹⁴⁸ Notra Trulock concluded that Soviet political and military leaders had strong incentives to develop means to control the course of a nuclear conflict¹⁴⁹ and almost certainly envisioned the conduct of limited nuclear operations in the event that a theater conflict escalated to the nuclear level.¹⁵⁰ The risks inherent in all-out nuclear war, Trulock continued, probably were highly unpalatable to the Soviet leadership,¹⁵¹ and selective strikes offered an alternative to either all-out nuclear war or termination of the conflict short of Soviet victory,¹⁵² so the USSR developed both operational concepts and capabilities to fight a limited nuclear war.¹⁵³ Soviet strikes could be limited in terms of the number or types of weapons, geographic area, or targets.¹⁵⁴ Robbin Laird and Dale Herspring argued that through its buildup of the 1970s, the Soviet Union developed a capacity to wage nuclear war in Europe.¹⁵⁵ In the event of conflict, they suggested, the USSR might pursue a limited nuclear warfighting strategy, deterring U.S. escalation to the strategic level while negotiating a favorable end to hostilities in Europe.¹⁵⁶

¹⁴⁵ Lambeth, *How to Think About Soviet Military Doctrine*, p. 12.

¹⁴⁶ Leites, *Soviet Style in War*, pp. 377-379.

¹⁴⁷ Sienkiewicz, "SALT and Soviet Nuclear Doctrine," p. 88.

¹⁴⁸ Ermarth, "Contrasts in American and Soviet Strategic Thought," p. 149.

¹⁴⁹ Notra Trulock III, "Soviet Perspectives on Limited Nuclear Warfare" in Fred S. Hoffman, Albert Wohlstetter, and David S. Yost (eds.), *Swords and Shields: NATO, the USSR, and New Choices for Long-Range Offense and Defense* (Lexington, MA: Lexington Books, 1987), p. 55.

¹⁵⁰ *Ibid.*, p. 76.

¹⁵¹ *Ibid.*, p. 54.

¹⁵² *Ibid.*, p. 55.

¹⁵³ *Ibid.*, p. 76.

¹⁵⁴ *Ibid.*

¹⁵⁵ Laird and Herspring, *The Soviet Union and Strategic Arms*, p. 21.

¹⁵⁶ *Ibid.*, p. 75.

U.S. officials tended to agree that the Soviet Union probably did not develop an array of limited nuclear options.¹⁵⁷ It had no need to, because it had conventional predominance, as Harold Brown pointed out. Furthermore, Soviet leaders seemed genuinely skeptical about the possibility of limiting a nuclear war.¹⁵⁸ Though American limited nuclear options were based on the expectation that the USSR would act rationally and respond in kind, there was little evidence one way or the other indicating how the Soviet leadership would respond to a limited U.S. strike.¹⁵⁹ Schlesinger hoped that the USSR would refrain from escalating after selective U.S. nuclear strikes but, he added, even if the Soviets refused to believe in the possibility of limiting a nuclear war, they would still be deterred by the belief that selective U.S. strikes would lead to an all-out nuclear war.

Soviet officials, as they now confirm, wanted the U.S. to believe that they would respond on a massive scale to any U.S. employment of nuclear arms. Exchanges of even tactical nuclear weapons, they feared, might hit Soviet territory.¹⁶⁰ To strengthen deterrence, they threatened to respond with full force to the employment of even one U.S. nuclear weapon, but if the U.S. had in fact launched a selective strike, the Soviet political leadership simply would have gathered together to decide how to respond.¹⁶¹

Interviews with Soviet military planners revealed that the General Staff, by the late 1970s, did contemplate limited nuclear options and evaluate the possibility of intra-war bargaining.¹⁶² It introduced gradually, beginning in 1976, a new periodization (*periodizatsiia*) of war. Until that time the dominant, although not the only, scenario envisaged by the General Staff was that of a major war divided into two periods—a massive nuclear exchange followed by land operations that would exploit the results of nuclear strikes. The new periodization added a phase of limited nuclear operations. War

¹⁵⁷ McDaniel, November 12, 1991, *Vol. II*, p. 120. The exception was Fred Iklé, who argued that the Soviet Union, due to its growing strength, was moving toward acceptance of limitations on nuclear war.

¹⁵⁸ Schlesinger, October 29, 1991, *Vol. II*, p. 129.

¹⁵⁹ Marshall, October 22, 1991, *Vol. II*, p. 118.

¹⁶⁰ Danilevich, March 5, 1990, *Vol. II*, p. 19.

¹⁶¹ Interview with Kataev, June 23, 1993, *Vol. II*, p. 101. Kataev confirmed that the Soviet declaratory policy of retaliating on a massive scale to any employment of nuclear weapons was intended primarily to enhance deterrence. If deterrence had failed, and NATO had launched 7 to 20 tactical nuclear strikes, the Politburo would have faced a very difficult decision. Kataev, who worked very closely with Communist Party national security decision makers at the highest level for the 18 years in the defense department of the Central Committee (essentially inside the "black box" the authors so longed to uncover and understand) admitted that he simply did not know how the Politburo would have responded.

¹⁶² Danilevich, December 18, 1990, *Vol. II*, p. 25.

was expected to consist of four periods: (1) conventional operations; (2) limited nuclear strikes; (3) full-scale nuclear exchanges; and (4) concluding period.¹⁶³

From 1978, the General Staff discussed available responses to selective U.S. nuclear strikes in Europe, debating the relative merits of precise reciprocity versus escalation.¹⁶⁴ It examined the possibility of dosage use (*dozirovannyye startyy*), which might be confined to Europe or to targets in the United States¹⁶⁵ or might be limited to military targets.¹⁶⁶ Soviet military planners developed scenarios for responses to U.S. selective strikes. Some scenarios envisioned proportional retaliation; others involved Soviet escalation or de-escalation. If the U.S. launched 20 strikes, for example, Soviet forces might have retaliated with 15 or, alternatively, with 30 strikes. The best response, in the Soviet view, would be an equal number of strikes against analogous targets, mainly against military targets such as troop formations, airfields, control centers, and missile fields.¹⁶⁷

Discussion of limited nuclear options, by all accounts, was restricted to the General Staff. Dvorkin stated that to his knowledge, the Strategic Rocket Forces institute TsNII-4 never examined scenarios involving selective nuclear strikes.¹⁶⁸ Former First Deputy Chief of Staff of the SRF Korobushin denied that the SRF either planned selective strikes or conducted exercises employing selective strikes.¹⁶⁹ Although the General Staff analyzed the possibility of limited nuclear use, Kataev insisted, no decision was made to change Soviet military doctrine. Kataev attended several meetings at the highest level where force structures and employment options were discussed, including those that considered selective use options. The Party and military leadership at these meetings, according to Kataev, never accepted selective use, even at a tactical level.¹⁷⁰

¹⁶³ Ibid., September 24, 1992, *Vol. II*, p. 41.

¹⁶⁴ Danilevich, March 5, 1990, *Vol. II*, p. 19.

¹⁶⁵ Ibid., September 24, 1992, *Vol. II*, p. 40. According to Gareev (June 20, 1993, *Vol. II*, p. 75), the USSR might have considered launching selective strikes at the global level, but the context in which dosage use was given serious thought was the TVD (Theater of Military Operations).

¹⁶⁶ Danilevich, December 14, 1992, *Vol. II*, pp. 58-59.

¹⁶⁷ Ibid., p. 60.

¹⁶⁸ Dvorkin, June 24, 1993, *Vol. II*, p. 70.

¹⁶⁹ Korobushin, December 10, 1992, *Vol. II*, p. 107.

¹⁷⁰ Kataev, June 23, 1993, *Vol. II*, p. 101. At this particular interview, Dr. Kataev, somewhat exasperated, invoked the Party precept that even a single nuclear warhead against the USSR would have elicited a "full response." The U.S. could not have presumed to make a limited strike without catastrophic consequences. The follow-up question proved more productive: "Vitalii Leonidovich, you worked closely with the Politburo security decision group for many years including the old group of five [*piaterka*: Brezhnev, Gromyko, Andropov, Smirnov, Ustinov]. I understand the Party's official position on responses to U.S. limited use. My question is more specific. If as General Korobushin commented, the U.S. actually had struck the Soviet Far East and Siberia with three nuclear missile strikes against discrete military targets with limited collateral damage, as he claimed the U.S. practiced in the mid-1980s, how would 'the five' react?"

The Soviet Union was technically capable of launching selective strikes. In the early 1970s, it replaced its "all or nothing" command and control system, which was designed to release only massive strikes, with a system that could carry out launches from individual sites, according to Gen. Makhmut Gareev, who was in charge of training and doctrine in various positions in the General Staff from 1974 to 1988.¹⁷¹ Available documents from the Potsdam archives show that certain Warsaw Pact exercises included selective nuclear strikes,¹⁷² though exercises involving the East German military usually went only as far as the launch of the second salvo of the first strike at a tactical or operational-tactical level.¹⁷³

Although the USSR developed limited nuclear options, it neither discussed nor conducted exercises in which it initiated selective use.¹⁷⁴ Soviet military leaders remained very skeptical about escalation control.¹⁷⁵ The period of limited nuclear exchanges was expected to last several days at most.¹⁷⁶

Some U.S. officials mistakenly discounted Soviet development of limited nuclear options, and a couple of analysts overemphasized Soviet interest in pursuing a limited nuclear warfighting strategy. Otherwise, most policy makers and experts in Washington were largely correct in their interpretations of the Soviet position on limited nuclear options. The General Staff did in fact examine the possibility of selective strikes. It was inclined to make a proportionate response to an initial U.S. limited strike. There is no evidence to suggest, however, that the General Staff planned to trade a series of selective nuclear strikes with U.S. forces. Soviet military strategists seriously doubted that a nuclear war could remain limited for long, and they were loath to let U.S. generals think that the USSR would follow U.S. scenarios of extended exchanges of selective strikes and would allow the U.S. to achieve escalation dominance.¹⁷⁷

Would they just have pushed the button to launch the whole Soviet nuclear arsenal as they had promised? Think about that group and how they behaved under stress. What would they *really* have done?" Kataev stopped, stood up, struggling with his answer. After a still longer pause, he answered. "I just don't know."

¹⁷¹ Gareev, April 30, 1993, *Vol. II*, p. 72; and June 20, 1993, *Vol. II*, pp. 74-75.

¹⁷² Beatrice Heuser, "Warsaw Pact Nuclear and Conventional Strategy in the 1970s and 80s: Findings in the East German Archives," *Comparative Strategy*, Vol. 12, No. 4, November 1993, pp. 437-457.

¹⁷³ *Ibid.*

¹⁷⁴ Danilevich, December 14, 1992, *Vol. II*, p. 58; and Gareev, April 30, 1993, *Vol. II*, p. 72.

¹⁷⁵ *Ibid.* The Voroshilov lectures warn that the limited employment of nuclear weapons will not last long. Turbiville, *The Voroshilov Lectures*, p. 248.

¹⁷⁶ Danilevich, December 13, 1992, *Vol. II*, p. 57.

¹⁷⁷ Gareev, April 30, 1993, *Vol. II*, p. 72. Gen. Gareev specifically rejected the Soviets' willingness to participate in the tit-for-tat theater-level exchanges he believed were envisioned by NATO commands.

Escalation

Some Western analysts expected the Soviet Union, in a conventional conflict, to resort to nuclear weapons. They argued that, in a major war, the USSR would conduct conventional operations with the transition to nuclear use as the dominant concern. The nuclear phase would be considered decisive.¹⁷⁸ Soviet forces would employ nuclear weapons, even if NATO did not, at an early stage of an offensive campaign in Europe.¹⁷⁹ Other observers, in contrast, stressed the Soviet Union's reluctance to initiate nuclear use¹⁸⁰ and to expand the scope of a nuclear conflict. Laird and Herspring believed that the USSR wanted to control the process of escalation and to minimize collateral damage.¹⁸¹

By the assessment of U.S. officials from successive administrations, the Soviet Union preferred to wage a war in Europe employing only conventional forces.¹⁸² After the 1961 Berlin Crisis, Schlesinger explained, the Soviets began to think that a conventional phase in a major war was possible. They later came to hope that in practice NATO would not resort to nuclear weapons, but U.S. limited nuclear options diminished Soviet confidence in the possibility of averting U.S. first use.¹⁸³ Brzezinski had a gut feeling that the Soviets would not employ nuclear arms first. The USSR sought superiority at different rungs of the escalation ladder in order to inhibit the U.S. from escalating and thereby to gain a strategic advantage.¹⁸⁴ The Soviets, Brown pointed out, would probably not escalate in Europe because, even though they might not win a conventional war, they would never lose. Iklé concluded that the Soviet Union could win a war with limited objectives using only conventional forces backed up by unused nuclear strength to coerce a settlement.

Soviet escalation of theater nuclear exchanges was considered unlikely by most Washington policy makers. The USSR would probably not escalate in response to a

¹⁷⁸ Joseph D. Douglass, Jr. and Amoretta M. Hoeber, *Conventional War and Escalation: The Soviet View* (New York: Crane Russak, 1981), p. 7.

¹⁷⁹ Lothar Ruhl, "Offensive Defence in the Warsaw Pact," *Survival*, Vol. 33, No. 5, September/October 1991, p. 446.

¹⁸⁰ Field Manual 100-2-1, *The Soviet Army*, pp. 2-9.

¹⁸¹ Laird and Herspring, *The Soviet Union and Strategic Arms*, pp. 71-73.

¹⁸² Brzezinski, November 20, 1991, *Vol. II*, p. 17; Komer, October 22, 1991, *Vol. II*, p. 105; Marshall, October 22, 1991, *Vol. II*, p. 118; McDaniel, November 12, 1991, *Vol. II*, p. 120; and Schlesinger, October 29, 1991, *Vol. II*, p. 128.

¹⁸³ Schlesinger, October 29, 1991, *Vol. II*, p. 128.

¹⁸⁴ Brzezinski, November 20, 1991, *Vol. II*, p. 17.

small-scale U.S. employment of tactical nuclear weapons along the flanks.¹⁸⁵ The Soviet military might recommend escalation in the European theater if convinced that the U.S. would escalate, but the political leadership might turn down the military's recommendation.¹⁸⁶ If the United States launched nuclear strikes, the Soviet Union probably would match the U.S. action and might jump to a higher level of nuclear use.¹⁸⁷ Only members of the first Reagan Administration judged Soviet escalation to be likely. In their opinion, the USSR would probably retaliate against NATO's first use with hundreds of nuclear weapons.¹⁸⁸

Over the years, the U.S. government was divided on whether the Soviet Union would expand a theater nuclear war into a global nuclear war. Brown, Brzezinski, and Iklé doubted that during nuclear exchanges in Europe the USSR would strike preemptively at American strategic forces in the continental United States. Schlesinger expressed the opposing view that the Soviet Union might expand a total theater war into a global nuclear conflict. Top U.S. military commanders in the early 1980s expected the USSR, in a theater nuclear war, to make quick recourse to global nuclear strikes.¹⁸⁹

Soviet officers asserted that the Soviet Union never intended to initiate the employment of nuclear weapons.¹⁹⁰ The Soviet rejection of first use was serious and was based on research.¹⁹¹ Since 1975, the Soviet military has been "guided by instructions" of the political leadership not to employ nuclear weapons first.¹⁹²

Materials from the East German archives have been used to suggest that Warsaw Pact forces were inclined to employ nuclear arms to advance across Europe. The official report by the German Defense Ministry on the records from the East German National People's Army asserts that use of tactical nuclear weapons formed an integral part of Warsaw Pact personnel training. Those weapons, the report claims, would serve primarily as a means of breaking through enemy defenses. Furthermore, nuclear

¹⁸⁵ Schlesinger, October 29, 1991, *Vol. II*, p. 128.

¹⁸⁶ Brown, November 8, 1991, *Vol. II*, p. 14.

¹⁸⁷ Brzezinski, November 20, 1991, *Vol. II*, p. 17.

¹⁸⁸ McDaniel, November 19, 1991, *Vol. II*, p. 120.

¹⁸⁹ *Ibid.*

¹⁹⁰ Akhromeev, February 8, 1991, *Vol. II*, pp. 5-6.

¹⁹¹ Danilevich, March 5, 1990, *Vol. II*, p. 19.

¹⁹² *Voennaia mysl'*, January 1975, p. 66, quoted in Garthoff, "Introduction: U.S. Considerations of Soviet Military Thinking," p. 13. This might be more credible, in practice, in that Marshal Grechko, reputed by Soviet political and military leaders to be a convinced "first-striker," died in the spring of 1976.

weapons were employed, according to the report, either in a surprise first strike or in a counterstrike, in numerous Warsaw Pact exercises, which were led by Soviet commanders, during the late 1970s and early 1980s.¹⁹³ The report apparently fails, however, to distinguish a Soviet first strike (initiating the use of nuclear weapons in the absence of indications of nuclear initiation by the enemy) from preemption (attempting to strike an enemy *that is preparing to launch a nuclear* strike before he is able to launch in order to eliminate his capability to execute nuclear strikes) and therefore has created the misleading impression that the USSR intended to initiate nuclear use. In fact, as an independent scholar concluded after examining the same material as did the German Defense Ministry, these exercise descriptions in the Potsdam archives *invariably* assumed that NATO would be the first to prepare for nuclear use, and Soviet preemption would then occur in response to observations of NATO preparations for a nuclear launch.¹⁹⁴

The East German archives provide largely tactical training and planning data that do not necessarily explain how the Soviet Politburo would have chosen to wage war in Europe. Gareev, who was in charge of training in the General Staff from 1974 to 1988 and therefore was responsible for all exercises from a tactical to operational-strategic level, insisted that the Soviet Armed Forces did not plan to resort to the use of nuclear weapons first and were forbidden to exercise initiation of nuclear use. The USSR conducted exercises, he added, not only to prepare forces for execution of war plans but also to test new operational concepts and to train commands, staff, and troops for all sorts of contingencies. Training often included nuclear strikes, because the General Staff assumed that NATO would resort to nuclear weapons and wanted to be prepared to

¹⁹³ German Defense Ministry, *Military Planning of the Warsaw Pact in Central Europe: A Study, Based On Records from the East German National People's Army (NVA)*, translated by Mark Kramer, *International History Project Bulletin*, Issue 2, Fall 1992.

¹⁹⁴ Heuser, "Warsaw Pact Nuclear and Conventional Strategy in the 70s and 80s: Findings in the East German Archives," pp. 438, 439, 443-444. Ms. Heuser summarized her findings thus: "Drawing on recently opened East German military archives, this article traces the evolution of Soviet military doctrine through Warsaw Pact training and maneuver documentation. Paradoxically, while the USSR was deploying more usable and survivable nuclear weapons (the SS-20), it was developing a strategy which attempted to win a limited war in Europe with conventional weapons only. Pact records do show planning for preemptive nuclear strikes in response to observation of NATO preparations for nuclear launches. Great care was taken not to proceed to a nuclearization of the conflict unless the enemy was about to do so." p. 437.

NATO's practices and procedures in the 1960s and 1970s, tend to confirm two aspects of the Soviet declarations. NATO routinely assumed in its exercises that superior Warsaw Pact conventional forces would push NATO armies to the Rhine River within days after the inception of hostilities, forcing NATO to resort to nuclear weapons first in order to avoid total catastrophe. Second, NATO forces routinely practiced use of and defense against nuclear weapons in its exercises in order to maintain proficiency in a critical area of warfare for which officers and troops must be trained on a continuous basis. Failure to have done so would have been irresponsible and misguided.

respond and to continue operations under conditions of nuclear use.¹⁹⁵ Decisions concerning employment of nuclear weapons were, without exception, reserved for the highest political leadership in Moscow.

The General Staff expected the battlefield employment of nuclear weapons to have a devastating impact. Tsygichko was aware of tests conducted in the late 1950s and early 1960s on the effects on animals from conventional and nuclear explosives. According to the tests, as well as to pre-1946 German data, a dog's response to overpressure most closely resembled that of humans, and 7 psi overpressure was sufficient to kill people.¹⁹⁶ In contrast, U.S. scientists calculated the average lethality threshold at 40 psi.¹⁹⁷ Therefore, Soviet military planners predicted much higher rates of attrition on the battlefield resulting from nuclear and conventional bombardment than did their U.S. counterparts.

The USSR, the Soviet sources contend, also had no intention of climbing up the rungs of the escalation ladder in a nuclear conflict. Soviet modeling predicted that the use of 20 to 25 percent of the nuclear weapons in Europe would completely destroy operational groupings and would throw millions of tons of toxic material into the atmosphere, causing an ecological disaster.¹⁹⁸ Before the 1970s, the General Staff expected the rate of advance to increase from 20 - 30 km per day with only conventional forces to 40 - 50 km with the introduction of nuclear weapons. The modeling effort conducted in the early 1970s concluded that if nuclear weapons were used, all significant movement would cease for several days.¹⁹⁹ Nuclear strikes on all of NATO's airfields would contaminate Eastern Europe and parts of the Soviet Union.²⁰⁰ The findings from the modeling effort, which undermined the rationale for modernization of theater nuclear forces, were reported to the head of the General Staff's Main Operations Directorate, Gen. Kozlov, and summarized in a five-page document for Marshal Viktor Kulikov, who was then serving as Chief of the General Staff. They were accepted by the General Staff and then

¹⁹⁵ Gareev, June 20, 1993, *Vol. II*, pp. 74-75.

¹⁹⁶ Tsygichko, December 21 and 23, 1991, *Vol. II*, p. 152.

¹⁹⁷ Samuel Glasstone and Philip J. Dolan (eds.), *The Effects of Nuclear Weapons* (Washington: U.S. Department of Defense and U.S. Department of Energy, Third Edition, 1977), p. 552. Terry A. Purnell, in *Comparative Study and Analysis of U.S. and Soviet Air Blast Injury and Incapacitation Criteria* (Army Research Laboratory, ARL-TR-6, November 1992), suggests that Soviet lethality overpressures might be much lower than lethality overpressures under U.S. direct blast criteria (p. 28) and that injury from direct blast occurs at much lower overpressures under Soviet criteria than under U.S. criteria (p. 1).

¹⁹⁸ Tsygichko, December 17, 1990, *Vol. II*, p. 142.

¹⁹⁹ Gareev, June 20, 1993, *Vol. II*, p. 74.

²⁰⁰ Tsygichko, December 17, 1990, *Vol. II*, p. 142.

sent to the Central Committee, which rejected them. The Central Committee ordered modernization of theater nuclear forces to proceed. The political leadership instructed the General Staff to plan for war with tactical nuclear weapons even though the General Staff reached the judgment that those weapons had little military utility in combat operations.²⁰¹

The Soviet Union never prepared in any detail for extended combat on a nuclear battlefield, Tsygichko stated.²⁰² The General Staff did not conduct any actual planning beyond an initial exchange of nuclear strikes on a tactical/operational scale. Nor did the General Staff have a plan for a massive response to a limited strike by NATO tactical nuclear weapons against a Warsaw Pact member country.²⁰³ Tsygichko explained that the Soviet buildup of theater nuclear forces in Europe during the late 1970s and early 1980s was intended, in large part, to reduce the probability of NATO's first use and thereby to keep the war conventional, so that outcomes would be relatively more predictable and the USSR might enjoy an advantage.²⁰⁴

The Voroshilov lectures and testimony of Soviet officers corroborate Tsygichko's assertion that the Soviet Union did not intend to initiate escalation to nuclear use nor to strategic nuclear use from theater use. The lectures make clear that if NATO turned to limited use of nuclear weapons in the European theater, Soviet forces would respond in kind. The USSR would not initiate escalation beyond the theater.²⁰⁵ If NATO launched a conventional attack that put Soviet silos or tactical nuclear weapons in danger of being overrun, the USSR would, as standard operating procedure, destroy them rather than use them.²⁰⁶

The General Staff's deep pessimism regarding the utility of nuclear weapons in theater-strategic operations encouraged strategists inside the Main Operations Directorate to refine existing operational concepts and develop new concepts of structuring conventional forces that would allow them to be used to maximum effect. By the late

²⁰¹ Tsygichko, *Soviet Use of Mathematical Methods To Support Strategic Decision Making: A Model of Strategic Operations in Continental Theaters of Military Action*, translated and edited by Matthew Partan, unpublished manuscript, January 1993.

²⁰² Tsygichko, December 21 and 23, 1991, *Vol. II*, p. 157.

²⁰³ *Ibid.*, December 20, 1990, *Vol. II*, p. 144.

²⁰⁴ *Ibid.*, December 21 and 23, 1991, *Vol. II*, p. 157.

²⁰⁵ Garthoff, "Introduction: U.S. Considerations of Soviet Military Thinking," p. 14.

²⁰⁶ Korobushin, December 10, 1992, *Vol. II*, p. 108.

1970s, the General Staff saw a possibility for war in Europe to begin with a long conventional phase, and in the early 1980s, for an entire war to remain conventional, without escalation to nuclear use.²⁰⁷ This change in strategy, characterized on the “new periodization of war,” also was encouraged by changes during the 1960s and early 1970s in the balance of forces, both conventional and nuclear, in favor of the Warsaw Pact. As a result of Soviet tactical nuclear weapons deployments, the deployment of the intermediate-range SS-20, and the Soviet achievement of strategic parity, NATO lost escalation dominance in Europe and seemed to grow more cautious about nuclear weapons, in the General Staff’s view.²⁰⁸ Also during this period, the Soviet bloc increased its superiority in numbers, and lethality and mobility of its conventional weapons systems. The military leadership believed that conventional superiority provided the Warsaw Pact with the means to approximate the effects of nuclear weapons and achieve victory in Europe without resort to those weapons,²⁰⁹ and therefore, that the burden of initiating nuclear use would lie with NATO.²¹⁰

The Soviet strategy for keeping a strategic offensive in Europe at the conventional level and winning it, known as the Strategy of Deep Operations (*Strategiia Glubokikh Operatsii*), was encapsulated in a three-volume work, which carried the power of a directive (*nastavlenie*), produced inside the Main Operations Directorate of the General Staff, under the direction of Danilevich.²¹¹ This strategy, developed in the late 1970s and refined in the early 1980s, foresaw an offensive all the way to the Rhine using only conventional forces.²¹² Quick success was critical to the Soviet plan. Warsaw Pact forces had to achieve decisive breakthroughs against NATO forces and come into possession of the bulk of NATO’s tactical nuclear weapons in the first few days of the offensive, before NATO could overcome initial confusion and expected political rifts and come to an agreement on nuclear release. The Soviets needed to deliver a knockout blow to NATO before reinforcements could arrive in sufficient numbers from the U.S. Decisive success was also necessary because the Soviets expected to lose up to half their

²⁰⁷ Danilevich, December 18, 1990, *Vol. II*, p. 25.

²⁰⁸ *Ibid.*

²⁰⁹ Kalashnikov, April 1993, *Vol. II*, p. 90; and Danilevich, December 18, 1990, *Vol. II*, p. 24.

²¹⁰ Korobushin, December 10, 1992, *Vol. II*, p. 106; and Turbiville, *The Voroshilov Lectures*, pp. 245-247, 258.

²¹¹ Batenin, August 6, 1993, *Vol. II*, p. 7.

²¹² Danilevich, December 13, 1992, *Vol. II*, p. 56.

tanks, outrun their logistics support, and exhaust their forces in the initial push. Some optimistic assessments expected this initial operation to take 5 to 7 days and carry the Soviets some 500 km.²¹³

The interviewees' views regarding escalation and the role of nuclear weapons support the picture of Soviet strategy that emerged in Soviet military journals from the mid-1970s to the early 1980s. The Soviets expected to be able to achieve the initial breakthrough and to maintain high rates of advance by employing several independent but coordinated strategic operations. A conventional strategic air operation would serve as a substitute for a mass nuclear strike against NATO air defenses, airfields, nuclear storage facilities, and key command and control points. It would be carried out using a combination of conventionally armed missiles, aircraft, and air assault troops. Using air and air defense formations, the Soviets would then conduct a strategic anti-air operation in the attempt to suppress surviving NATO air assets and gain freedom of movement for the troops on the ground. The main forces then would use mobility, and high concentration and precise coordination of conventional fire strikes to approximate the effect of battlefield nuclear weapons along localized regions of the Forward Edge of the Battle Area (FEBA). High-speed, combined armored and airborne groupings (*operativnye manevrennye gruppy* - OMGs) would then exploit the gaps in NATO's forward defenses and advance quickly into the rear areas to disrupt C³I, destroy critical targets and defending units, and facilitate the advance of the main second echelon forces. The precise coordination of all combat activities could be achieved, because Soviet forces integrated ground, air, and fire support units under a single command structure for specific tasks.²¹⁴

The Warsaw Pact's conventional strategy against NATO was facilitated greatly by the deployment in the late 1970s of the SS-20 intermediate-range missiles in the Western USSR. According to Batenin, the SS-20's very low vulnerability, high accuracy, and great range created an umbrella under the cover of which it was possible to contemplate deep conventional operations into Western Europe.²¹⁵ The intermediate-range missiles gave the Soviets escalation dominance in the European Theater of Operations, which they hoped would deter NATO from escalating to nuclear use during the first chaotic days of the war. According to Batenin, by spring of 1987 all of the various elements of the strategy of deep operations, including the operational concepts, training and exercises,

²¹³ Batenin, August 6, 1993, *Vol. II*, p. 7.

²¹⁴ Gen. Makhmut A. Gareev, *The Cold War and the Arms Race*, unpublished manuscript, April 1993.

²¹⁵ Batenin, August 6, 1993, *Vol. II*, p. 8.

and the conventional and nuclear force structures, were in place.²¹⁶ In December of that year, however, Gorbachev signed the INF treaty, eliminating the SS-20—the key element in the General Staff's strategy.²¹⁷

Top U.S. government officials and analysts were correct to observe that the Soviet Union had no intention of employing nuclear weapons first. In fact, the USSR wanted to prolong as much as possible the conventional phase of a major conflict. A few analysts misjudged Soviet intentions, claiming that Soviet forces were poised and may even have preferred to initiate nuclear use.

U.S. assessments of the Soviet attitude toward initiation of escalation were, for the most part, accurate. They generally discounted the probability of Soviet escalation of theater nuclear exchanges, and in fact, the General Staff did not plan to escalate, because it judged that the use of relatively few nuclear weapons would cause sufficient damage to bring combat operations to a halt. The General Staff did, however, anticipate NATO escalation forced by impending conventional defeat, escalation that they would attempt to detect and preempt in order to reduce losses and limit damage. They hoped that deployment of the SS-20 would inhibit NATO escalation but were very pessimistic about control of escalation once nuclear use had been initiated.

²¹⁶ Ibid.

²¹⁷ Ibid.

IV. FACTORS IN SOVIET FORCE BUILDING AND STRATEGIC DECISION MAKING

The literature review by Stephen Meyer presented a wide range of explanations for Soviet force building.²¹⁸ Most Soviet specialists either argued that Soviet weapons acquisitions were designed to fulfill specific military missions or attributed the USSR's procurement processes to interest group politics. Among the proponents of interest group models, some emphasized the consensus among the political leadership, the Armed Forces, and the defense industry.²¹⁹ According to this interpretation, the predisposition of the Brezhnev Politburo converged with military doctrine, and a mutual accommodation was struck between the Party and the military whereby the military was granted most of its strategic program requests.²²⁰ Other experts on Soviet institutions explained the USSR's arms buildup as the result of risk aversion, particularly of the Soviet tendencies to introduce technological innovations in small increments and to produce several different types of weapons, such as ICBM models, in the same generation in order to keep competing design bureaus in business.²²¹

In trying to understand Soviet strategy and force structure, U.S. leaders and analysts have tended to focus, with little success, on the personalities of the top leadership of the Soviet system and to have given even less attention to officials at the ministry level and below.²²² This was, in great part, a function of Soviet secrecy, whereby the details of the lives, roles, and relative influence of various actors in the areas of military policy and state security have been closely held.²²³ Differences that had been observed among leaders and organizations often were discounted based on the overriding assumption that the governing Soviet system was essentially monolithic and that all apparent personal and institutional differences represented Western misunderstanding based on misguided mirror imaging of the democratic political process or deception on the part of the

²¹⁸ Meyer, "Soviet National Security Decisionmaking," pp. 261-268.

²¹⁹ *Ibid.*, pp. 262-263.

²²⁰ Lambeth, *How to Think About Soviet Military Doctrine*, p. 18.

²²¹ Meyer, "Soviet National Security Decisionmaking," pp. 263-264.

²²² See, for example, Jerry Hough, "Soviet Succession: Issues and Personalities," *Problems of Communism*, Vol. 31, No. 5 (September-October, 1982), pp. 20-40; and Victor Wolfenstein, *The Revolutionary Personality: Lenin, Trotsky, Gandhi* (Princeton, N.J.: Princeton University Press, 1967).

²²³ Dale Herspring attempted to understand, based primarily on writings, the influence of senior military leaders on Soviet strategy and security policy. See Dale R. Herspring, *The Soviet High Command, 1967-1989*. (Princeton, N.J.: Princeton University Press, 1990).

Communist Party.²²⁴ Such views were held, both inside and outside the U.S. government, by those who believed that ideology was the defining, if not exclusive, factor explaining individual and institutional behavior in the USSR.

Excessive concern by some Western analysts with Communist ideological declarations, most of them widely ignored, shop-worn platitudes generated by the Soviet propaganda machine for internal consumption, tended to obscure the underlying reality. In authoritarian, hierarchical systems (Communist or otherwise) characterized by long periods of unchallenged incumbency in key leadership positions, organizations tend to develop and defend deeply entrenched positions. At the same time, the *de facto* directors-for-life of these highly structured bureaucracies comprising the governing Soviet *apparat* were able to exert tremendous influence downward through their subordinate substructures and laterally on their peers, depending upon the power they could derive from their respective organizations. Constraints on their authority had to be imposed by their common leader, should he be able and willing to exert authority, and by their peers, should they have the collective will and stature to do so.

Soviet sources indicate that, under Brezhnev, the top layer of Soviet leadership, and especially Brezhnev himself, was largely incompetent, indecisive, self-indulgent, and lazy. Such weakness and virtual indifference to the business of governing at the top helped to create conditions in which the massive Soviet state, with its stagnating economy and compliant society, drifted heavily and dangerously for decades, plodding with slow, powerful momentum in whatever direction compromises among powerful organizational and bureaucratic interests might take it. Under these conditions, willful officers, officials, and technocrats with large captive organizational and institutional constituencies, working largely out of sight of Western observers, were able to exert tremendous influence on Soviet foreign and domestic policy and behavior. In the areas

²²⁴ For example, William and Harriet Scott long insisted that there never were any serious differences between the military and the Party and that the Party *nomenklatura* system, which included top military leaders, commanded a loyalty that always transcended that to any other institutional affiliation. It is instructive that the Scotts identified three traditional power groups within the Soviet leadership: the Communist Party apparatus, the security-intelligence community (KGB, MVD), and "the military." The military industrialists, unquestionably the most powerful (and definitely non-military) group within the Soviet ruling class under Brezhnev, were not identified as a group separate from "the military." As we discussed earlier, the industrialists, in fact, had serious and persistent differences with the "operational," uniformed military, especially the General Staff. The military wanted a mix and quantity of weapons that supported the General Staff's operational strategy, weapons that embodied the most advanced technologies with which to counter a technologically advanced Western enemy. The industrialists wanted, above all, to produce and deliver as many weapons as possible, embodying "safe" (if obsolescent) technologies, the application of which would cause as few as possible interruptions in production. See Harriet Fast Scott and William F. Scott, *Soviet Military Doctrine: Continuity, Formulation, and Dissemination* (Boulder, Colorado: Westview Press, 1988), pp. 166-168.

of military strategy and force development, the absence of firm direction from above led to the emergence and persistence of contradictory strategic postures and policies. For example, stated policy (even for internal consumption) often co-existed with contradictory planning and preparation in several areas, the most noteworthy being a policy of no-first-use of nuclear weapons (a deterrence posture) and preparation for preemption (primarily a “warfighting” posture). Not surprisingly, there also developed serious inconsistencies between strategy and the force structure created to implement it, leading to a severely overburdened Soviet economy and confusion among Western leaders trying to interpret and respond to Soviet actions.

It is probable that Brezhnev gained and held his position at the top of the post-Stalinist governing oligarchy *because* of his indecisiveness and almost obsessive concern with consensus—traits that made him accommodating and acceptable to the ruling collective of Stalinist-era aging technocrats whose objective was to satisfy their need for security, influence and, above all, stability. The collective never really gave up control to him nor to anyone else. The business of the state was dragged along in the wake of deals and favors traded among the ruling oligarchs whose ultimately destructive behavior was unquestioned by a Soviet citizenry trained under Stalin and the Tsars to follow blindly.

Ineffectual Leadership at the Top

The clearest picture to emerge of Brezhnev’s inattention and ineffectiveness and the impact of his incompetence on the governance of the Soviet state is to be found in a surprisingly revealing book by two highly placed officials from Brezhnev’s own state security apparatus. In the book, *Through the Eyes of a Marshal and a Diplomat*, Marshal of the Soviet Union Sergei Akhromeev, former Chief of the Soviet General Staff, and Gregorii Kornienko, former First Deputy Minister of Foreign Affairs, describe, in some detail, the ineptitude and mental incapacitation of Brezhnev beginning in the early to mid-1970s and the non-performance of his Politburo in the 1970s and early 1980s.²²⁵

Kornienko reported that Brezhnev’s health deteriorated badly in the early 1970s and that the last time he was able to represent the USSR as head of delegation “in more or less working form” was at the summit with President Gerald Ford in Vladivostok in 1974.

²²⁵ Sergei F. Akhromeev and Gregorii M. Kornienko, *Through the eyes of a Marshal and a Diplomat (Glazami marshala i diplomata)*, (Moscow, in Russian: Mezhdunarodnye Otnosheniia, 1992). Kornienko oversaw publication of the manuscript after his co-author committed suicide in August, 1991.

Brezhnev subsequently degenerated into such a state of mental incompetence that “he could no longer carry on a substantive conversation,” and was able to make public presentations only by reading from a text prepared by his staff. To the great embarrassment of his own ministers and staff he would, oblivious to his surroundings, comment loudly and rudely on “inappropriate subjects,” including the presentations and responses of foreign heads of delegations in the presence of the foreign officials themselves, most of whom understood Russian.²²⁶ By 1975, the General Secretary was no longer mentally competent.

Marshal Akhromeev stated unequivocally, several times, that Brezhnev *totally ceased to work* and function beginning in 1976, the year in which the General Secretary experienced a massive heart attack. The Marshal complained emphatically that “for six years,” until his death in 1982, Brezhnev chaired the Politburo but did not in any way lead it. He had fallen into a state of total “inactivity,” creating a situation in which the General Secretary of the Central Committee of the CPSU in fact did nothing to unify or coordinate the work” of the Politburo, the governing body of the Communist Party and the Soviet state.²²⁷

Both Akhromeev and Kornienko expressed considerable, apparently deeply felt, anger that the USSR was so badly led for such a long and critical period of its history. Their anger, perhaps misguided, was directed, to some extent, at Brezhnev himself. The most searing condemnation, especially on the part of Akhromeev, was reserved for the Communist Party, for failing to rectify such a harmful and dangerous situation when it first became apparent. Having pledged his loyalty to the Party, Akhromeev acknowledged that he was not blind to its shortcomings. “It was shameful,” he declared, “both for the sake of the individual [Brezhnev] and for his comrades, that they [the Party leaders] tolerated a General Secretary such as Brezhnev, who did nothing and who permitted such deception and corruption.”²²⁸

The comments of Kornienko and Akhromeev raise several questions about leadership of the Soviet state in the 1970s and early 1980s. Among the most relevant to this study: How did the leadership function at all without direction from the General Secretary? Why did the Politburo or Central Committee not rectify the situation by replacing

²²⁶ Ibid., pp. 39, 40.

²²⁷ Ibid., pp. 15, 23, 31, 32.

²²⁸ Ibid., p. 31.

Brezhnev? Most important, given that the Party leadership did not act, what were the consequences for national decision making, strategy, and military force structure?

The most direct answer to the question concerning how the leadership could function without a General Secretary is that, essentially, it did not. The Politburo was unable to serve as an effective governing organ for the CPSU and the Soviet state. In separate descriptions, Kornienko and Akhromeev characterized the Politburo as a collective of doting, ineffectual sycophants. Akhromeev observed that when Brezhnev stopped working in 1976, so did the Politburo. Stating that he frequently attended Politburo meetings during the last two years of Brezhnev's tenure, he observed that, "It was a bitter and insulting experience to watch as the [Politburo] members, for the most part senile people who had lost their capacity to work, devoted an hour and a half not to adopting but rather to rubber-stamping solutions to some of the most important issues in the lives of the people completely without substantive analysis or consideration."²²⁹ Kornienko commented independently that it was "always personally torturous" to observe the Brezhnev Politburo in session, as was often his misfortune especially beginning in 1977. He complained that, "The longer the meetings, the more painful it was to watch in that so many economic and other issues were decided incompetently and often just not seriously, while a great deal of time was devoted to compliments to the chairman and, in general, to idle gossip."²³⁰

Struggles Among the Princes

Personalities

Because the Politburo, in the absence of a functioning General Secretary, was unable to govern the Party or the state, real power, by default, devolved downward to various Party secretaries and state officials, each working independently or in issue-specific alliances with other functionaries to produce decisions for "rubber-stamping" by the senile old men at the top. After Brezhnev's 1976 heart attack, there emerged a group of leaders, each member of which was responsible to the Politburo for a specific area of work. A. A. Gromyko, D. F. Ustinov, and Iu. V. Andropov were responsible for foreign policy,

²²⁹ Ibid., p. 32.

²³⁰ Ibid., p. 39.

defense readiness, and law and order; A. N. Kosygin and K. T. Mazurov for the economy; and M. A. Suslov, B. N. Ponomarev, and M. V. Zimianin for the party and ideology.²³¹ In this division of labor, not all groups enjoyed the same level of delegated (or surrendered) authority. For example, Kosygin, according to Akhromeev, was constantly subjected to interference from the bumbling and manipulated Brezhnev in the area of economic reform—to the great detriment of the Soviet state.²³² The state security and defense group (Andropov, Gromyko, Ustinov) in contrast, rarely faced opposition and their recommendations, with very few exceptions, were accepted by the full Politburo without amendment.

Various Soviet sources, some slightly contradictory, most mutually supportive, provided other useful insights into how defense-related issues were resolved in the absence of competent guidance from the General Secretary. First, the group that exercised dominant influence in the area of defense and security varied slightly in size and composition depending upon the nature of the questions under consideration. More important, in all manifestations of the core defense issues group, certain personalities such as Grechko and, above all, Ustinov, emerge as giants who overshadowed other personalities and largely drove the decision-making process. Second, on issues of military doctrine, strategy, and force posture, Brezhnev himself was very dependent and, as his health declined, perhaps totally dependent upon an academician, President of the Academy of Sciences, Mstislav V. Keldysh, whose name had been rarely, if ever, mentioned in Western discussions of Soviet defense decision making. The professor's role as the deteriorating General Secretary's surrogate brain in the area of defense strategy was, apparently, well understood within the inner circles of the Soviet leadership, whose members accorded him respect commensurate with his influence as well as an important place at the table during key security deliberations.²³³

²³¹ Ibid., p. 15.

²³² Ibid., pp. 15-16.

²³³ Former Deputy Foreign Minister Gregorii M. Kornienko credited Keldysh, through his influence on Brezhnev and Ustinov, with virtually single-handedly putting a stop to Soviet plans to go into competition with the United States to deploy a large-scale ABM system. Kornienko went so far as to assert that, even in the 1970-1972 period, before Brezhnev's health began to seriously deteriorate, the General Secretary, "accepted as truth whatever Keldysh said, to the extent that, until the end, [Brezhnev] had not broken through to any understanding of the substance of such issues. This was for him by that time material too difficult to grasp." *Marshal and Diplomat*, pp. 40, 41. In a separate discussion, Gen.-Col. Illarionov, a special assistant for 24 years to Marshal Ustinov, stated that, "Keldysh played the most important part," at the July 1969 extraordinary meeting of the Defense Council where Keldysh and Ustinov composed what was "practically a military doctrine for the country." The new doctrine endorsed survivability as an objective to be pursued in the interest of creating a secure retaliatory capability in order to deter the United States from initiating a first strike. See interview with Gen.-Col. Illarionov, April 1993, *Vol. II*, p. 82. A further indication of Professor Keldysh's stature in national security decision making was his membership on the "Politburo Commission" formed in the 1970s to discuss and resolve U.S.-Soviet arms control issues at the highest levels. The other members of

De Facto and De Jure Decision Makers

While groups of leaders emerged to fill the vacuum left by Brezhnev's incapacitation, certain individuals were more prepared and more effective in exploiting the resultant lack of formal structure at the top, as well as the profound need of most Soviet *apparatchiki* to be led. Certain individuals stand out in this process for different reasons. Marshal Grechko (Minister of Defense, 1967-1976), essentially a field soldier and in every sense a holdover from a simpler time, embodied the most conservative attitudes of the aging uniformed military leadership. For him, nuclear missiles were, above all, military weapons, and he resisted, with considerable effect, attempts by those who thought otherwise to change Soviet strategy and force structure to fit some other, more complex paradigm. Arrayed against Grechko were two capable, very powerful people who ultimately prevailed, in part at least, because they outlived him. (Even though overruled, many of Grechko's ideas lived on in the minds and hearts of the operational military well into the 1980s.) Professor Mstislav Keldysh, mathematician, mechanical engineer, and President of the Soviet Academy of Sciences, worked for survivability and against nuclear arms racing, because he thought the latter to be wasteful, self-destructive, and unrealistic. His opinion mattered because of the tremendous influence he exerted over the apparently dim-witted and ailing Brezhnev and the clever and powerful Ustinov. Ustinov, in turn, formed alliances with everyone, including his enemies such as Grechko with whom he shared a desire to build a large arsenal of weapons for reasons that had little to do with the military defense of the Soviet state. As will be discussed, Ustinov's preoccupation with production over strategy ultimately led him to oppose and then remove in 1984 his aggressive, intelligent Chief of the General Staff, Marshal Nikolai Ogarkov. How these personalities interacted to help formulate the strategy and force structure of the USSR deserves closer examination.

Marshal Andrei Antonovich Grechko, Minister of Defense from 1967 to 1976, emerges from the research in stark, bold colors. Very much a combat commander, a cavalry officer, of the era of the Great Patriotic War, Grechko's thinking about strategy and weapons was simple and forceful. More weapons are better than fewer; overdependence on any given type of weapon is very dangerous; and any strategy that relies on any factor other than overwhelming power used massively and preemptively is misguided. By

the Commission included Ustinov, Grechko, Smirnov, Gromyko, and Andropov—all of the key Politburo members on national security issues except for Brezhnev himself. Keldysh in effect, sat in for the General Secretary on such questions. See *Marshal and Diplomat*, p. 37.

strength of his ministerial positions, his personality (especially his simplistic single-mindedness), and his bureaucratic allies, Marshal Grechko was able to stalemate, postpone, or ignore numerous decisions proposed or taken in the 1960s and 1970s by the Ustinov-dominated defense policy group described above.

Grechko's very simple approach to strategy and preparation for war led him to advocate consistently the need to be prepared to destroy preemptively the enemy's nuclear arsenal and control systems to minimize the latter's ability to inflict damage on the USSR.²³⁴ Any strategy that assumed the Soviets would ride out and retaliate or launch under nuclear attack was to be strongly opposed: first, because it was inconsistent with the basic objective of preserving the Soviet state; and second, because such a strategy imposed difficult, if not impossible, requirements on Soviet missile forces and associated control systems in terms of survivability and control responsiveness. Consistent with this view, Grechko strongly opposed investment in survivability measures such as silo hardening and mobile missile launch platforms,²³⁵ apparently because such measures took resources from the building of still greater *numbers* of missiles and warheads to cover *all* important enemy targets (the only force building posture that makes sense in an essentially pure, first-strike strategy).

Most important, perhaps, investment in survivability promoted the kind of cautious, non-provocative mind-set that led to the horrible events following Hitler's attack on the Soviet Union in June of 1941.²³⁶ Predictably, Grechko generally opposed arms control measures, probably because they never would produce the asymmetrical Soviet advantages that would satisfy his sense of security against U.S. technological superiority. More important, perhaps, successful arms reduction agreements would tend to strengthen the position of advocates for limiting production and deployment of armaments—something to be opposed at all costs.

Finally, in both external and, more significantly, internal audiences, Grechko was the most outspoken opponent of any compromise of the Soviet declaratory position that *any* nuclear use against the USSR, its forces, or allies would result in a massive nuclear response from the USSR. As Gen. Danilevich explained Grechko's position, "He rejected all variants for limited use of nuclear weapons, and asserted that we would

²³⁴ Mozzhorin, April 1993, *Vol. II*, p. 123.

²³⁵ Illarionov, June 23, 1994, *Vol. II*, p. 84.

²³⁶ Mozzhorin, April 1993, *Vol. II*, p. 122.

respond to any use, in any geographic region, even if only tactical nuclear weapons, with a full-scale use of our nuclear potential, both strategic and tactical.”²³⁷

It is not surprising that an officer of Grechko's background and wartime experience held such extreme views. It is important to note, however, that he was able, for several years, both to dilute decisions and to reverse or postpone implementation of weapons and infrastructure programs that contradicted his position, even though such initiatives were supported by the Politburo.

A number of Soviet sources reported that defense and security issues typically were decided by a Politburo group slightly larger than the “troika” of Gromyko, Ustinov, and Andropov identified above. The composition of the core group varied slightly depending upon whether the issues under consideration related to specific weapons programs or to broader questions of strategy and policy. Sources from the Central Committee Defense Industry Department commented that a formal “structure” for political-military decision making *did not exist* but that real power in this area belonged to the “*piaterka*,” (the five), comprising for most of the 1970s and early 1980s: Marshal Dmitrii Ustinov (the informal chairman and dominant force) in his capacity as Secretary of the Central Committee for Defense Industry and, beginning in 1977, also as Minister of Defense; Andrei Gromyko, Minister of Foreign Affairs; L. V. Smirnov, Chairman of the State Military Industrial Commission (VPK); Iurii Andropov, Chairman of the State Security Committee (KGB); and Leonid Brezhnev, the General Secretary. While Brezhnev tended *not* to contribute in a substantive or constructive fashion, the General Secretary's position often was represented by his strategist-surrogate, Keldysh, regardless of whether Brezhnev was physically present.²³⁸ The membership of “the five” is virtually identical to that of a special group, called the “Politburo Commission,” formed in the early 1970s to support Soviet-U.S. arms control negotiations.²³⁹ The few differences are instructive. “The Politburo Commission” included: Ustinov, the commission chairman; Grechko, then Minister of Defense; Andropov, Smirnov, Gromyko, and Professor Keldysh. “The five” was then six, because Ustinov, Central Committee Secretary for Defense Industry, had not yet added control of the Defense Ministry to his portfolio, something which occurred in 1976 upon Grechko's death. Second, it is noteworthy that even though two

²³⁷ Danilevich, September 24, 1992, *Vol. II*, p. 40.

²³⁸ Illarionov, April 1993, *Vol. II*, p. 82.

²³⁹ Kataev, June 23, 1993, *Vol. II*, p. 99; and Summary of Narrative from Boris A. Strogonov, formerly of the Central Committee Defense Industry Department, March 1993, *Vol. II*, p. 132.

ministers, Grechko and Gromyko, and the chairmen of the powerful VPK and KGB were on the commission, Ustinov, neither minister nor state committee chairman, was at the helm of the core defense-policy decision-making group for resolution of arms control and related issues. Finally, Brezhnev himself was not even on the commission, his place, in effect, entrusted to Professor Keldysh.

A second group with a similar name but responsible for oversight of missile technology development and production shared members with "the five" and the arms-control "Politburo Commission." The collective, literally "the commission subordinated to the Politburo" (*Kommissiia pri Politburo*), formed in the late 1960s, was officially chaired by Brezhnev. His deputy chairman on the commission was Dmitrii Ustinov. The members included Minister of Defense Grechko; Vasilii M. Riabikov, Deputy Director of GosPlan for Defense; all of the ministers of defense-related industries (at least nine); and general designers and members of the Academy of Sciences from the various institutes involved in work for the defense industries.²⁴⁰ This commission served as a *de facto* political-military-industrial review committee, led by the most senior members of the Soviet Defense Council and composed of leaders of the industries and institutes over which they were to exercise oversight. As a Central Committee insider reported on the process, the decisions of the commission "were passed on for *pro forma* approval by the Defense Council, but were never amended by it. Issues were always debated in the commission and decisions made by a few individuals."²⁴¹ In Western parlance, the commission constituted a missile industry lobby in which the petitioners and government decision makers were on the same team.

Soviet testimony on political-military and military-industrial decision making reinforces the earlier observation *that no formal defense decision-making mechanism was operating in the Brezhnev era*. Soviet interview respondents, nevertheless, referred regularly to the "Defense Council" (*Sovet Oborony*), a state organization with formal authority to evaluate and make judgments on defense issues.²⁴² The Council met approximately three times a year.²⁴³ Its membership included at its core "The Five": General Secretary Brezhnev, Minister of Defense and Central Committee Secretary for Defense Ustinov, KGB Chief Andropov, Foreign Minister Gromyko, Military-Industrial Commission

²⁴⁰ Strogonov, March 1993, *Vol. II*, p. 132.

²⁴¹ *Ibid.*, p. 132.

²⁴² Danilevich, September 24, 1992, *Vol. II*, p. 52.

²⁴³ Kravets, June 22, 1993, *Vol. II*, p. 109.

(VPK) Chairman Smirnov, (and until his death in 1976, then Defense Minister Grechko). The basic membership of the Council, "8 to 10 people," also included the Minister of Internal Affairs and the Chief of the General Staff, the Chairman of the Council of Ministers (Kosygin for much of Brezhnev's tenure) and "several major military industrialists."²⁴⁴ It is worth noting that the Defense Council was the *only* defense decision-making group where the operational military was routinely represented by an operational uniformed officer, the Chief of the General Staff. (After Grechko's death, Ustinov, a life-long civilian military industrialist, was the only member of "the five" to represent the military, even though, as Gen. Gareev commented, he was far from being an Army person.²⁴⁵ Akhromeev matter-of-factly observed that, in 1976, "a civilian became defense minister.")²⁴⁶ The Defense Council, in other words, was *not* a *military* decision-making body. Until 1976, only two of its approximately 10 members were truly military; after 1976, only one. The chiefs of the five services, for example, did *not* normally sit on the Council. Even when the Defense Council's membership was expanded to support evaluation of special questions as occurred in June of 1969 when "50 - 60 people" participated, "top ranking military men" were invited, but they were far outnumbered by ministers of the branches of defense industry (at least nine), ". . . general and chief designers (no less than six), heads of the Central Committee and Council of Ministers apparatuses (possibly 20), and academicians from the Academies of Science of the USSR and the Ukrainian SSR."²⁴⁷

The General Staff then had a seat at the table in military policy making and force development only in the Defense Council, which, if some Soviet sources are to be believed, was simply a "rubber-stamping" military-political manifestation of the "rubber stamping" Party Politburo. The issues were worked out and the real decisions taken long before they reached the Council itself.²⁴⁸ In the June of 1969 meeting of the expanded Defense Council, Brezhnev was very disturbed that Grechko and Ustinov brought an issue to the Defense Council session (survivable missiles versus larger numbers of missiles) that had *not* been resolved in advance.²⁴⁹

²⁴⁴ Tsygichko, December 21 and 23, 1991, *Vol. II*, p. 153.

²⁴⁵ Gareev, *The Cold War and the Arms Race*, unpublished manuscript, April 1993, p. 16.

²⁴⁶ Akhromeev, *Marshal and Diplomat*.

²⁴⁷ Illarionov, April, 1993, *Vol. II*, p. 80-81.

²⁴⁸ Strogonov, March 1993, *Vol. II*, p. 132.

²⁴⁹ Illarionov, April 1993, *Vol. II*, pp. 81-82.

The real function of the Defense Council was essentially to advance and protect the interests of the military industrialists at the highest levels of the state and party leadership. A former director from the Aviation Ministry (and hence himself a military industrialist) expressed his conviction that the Defense Council was, in fact, “an instrument of the VPK [the Military-Industrial Commission of which Smirnov was Chairman].”²⁵⁰ A senior analyst and department head in the principal analytical institute for the General Staff Main Intelligence Directorate (GRU) observed that American analysts generally underestimated the Military-Industrial Department of the Communist Party Central Committee, which, in his experience, “functioned as the *de facto* sitting Defense Council, setting military policy (*voennaia politika*)—which governed military doctrine and force development—and supported the formal Defense Council” Conversely, he believes that U.S. analysts generally overestimated the influence of the General Staff in military planning and force development.²⁵¹

Rule of the Industrialists

Soviet sources emphasized the power of the defense industry, particularly in the late 1970s and early 1980s, in determining weapons acquisitions. They affirmed the view that the MoD, and in particular the General Staff, exerted relatively little control over the R&D and production processes.²⁵² The Military-Industrial Commission (VPK), in contrast, dominated the Defense Council²⁵³ and virtually dictated the types and numbers of weapons that the MoD and the armed services would receive.²⁵⁴ The Central Committee relied heavily on the VPK for technical expertise. The VPK conducted preliminary studies on weapon systems and coordinated military production.²⁵⁵ It prepared for decisions on weapons development and procurement by the Council of

²⁵⁰ Interview with Vladimir Rubanov, May 6, 1991, *Vol. II*, p. 127. Rubanov was an official in the Aviation Ministry.

²⁵¹ Tsygichko, December 21 and 23, 1991, *Vol. II*, p. 153.

²⁵² Interview with Col. Petr M. Lapunov, May 5, 1991, *Vol. II*, p. 117. Col. Lapunov was a Department Chief in the General Staff's Center for Operational and Strategic Research (TsOSI).

²⁵³ Rubanov, May 6, 1991, *Vol. II*, p. 127.

²⁵⁴ Batenin, August 6, 1993, *Vol. II*, p. 9; and Illarionov, June 23, 1993, *Vol. II*, p. 83.

²⁵⁵ Strogonov, April, 1993, *Vol. II*, p. 133.

Ministers, playing a substantial role in directing new R&D efforts,²⁵⁶ and defined what weapon systems and quantities of equipment were required and which production facilities would manufacture them.²⁵⁷

Promotion of the VPK's interests, in a series of cases, became an end in itself, Gareev remarked.²⁵⁸ Other former Soviet officials complained that as a result of VPK influence, obsolete weapons systems, including many obsolete missile systems, were kept in production and development of advanced systems was retarded.²⁵⁹ Soviet force building promoted production stability instead of innovation or fulfillment of the General Staff's operational requirements.²⁶⁰

Industrialists shaped decisions on weapons procurement primarily through the Defense Industry Department of the Central Committee. The Department comprised, according to Tsygichko, mainly defense industrialists, both chief designers and ministers responsible for arms production, and also political officers who served the Communist Party's interests inside the Armed Forces. A former senior official in the Central Committee Defense Industry Department, Vitalii Kataev, explained that the Department worked on the development of new weapon systems and organization of their series production. It had the largest say over decisions related to weapons procurement, and inside the Department, the interests of the defense industry carried more weight than those of the General Staff or the Ministry of Defense.²⁶¹ The Defense Industry Department constantly aimed to increase the output of weapons factories. When Kataev brought evidence of waste to the attention of the Department's leadership, he was told not to concern himself with those matters.²⁶²

Soviet arms production became even more supply-driven after Ustinov was promoted to the position of Defense Minister. Prior to 1976, the General Staff Directorate for Armaments Orders (*Upravlenie zakazov*) played a central role in shaping weapon programs. It made recommendations on the basis of which the General Staff allocated

²⁵⁶ Illarionov, April 1993, *Vol. II*, p. 80.

²⁵⁷ *Ibid.*, June 23, 1993, *Vol. II*, p. 83.

²⁵⁸ Gareev, June 20, 1993, *Vol. II*, pp. 75-76.

²⁵⁹ Strogonov, March, 1993, *Vol. II*, p. 133.

²⁶⁰ Interview with General Staff Col. Petr Lapunov, May 5, 1991, *Vol. II*, p. 117. Col. Lapunov is director of a department for force analysis, Center for Operational-Strategic Research (TsOSI) of the General Staff.

²⁶¹ Kataev, May 1993, *Vol. II*, p. 98.

²⁶² *Ibid.*

funding to the services and placed orders for weapons. In 1976, with Ustinov's approval, the directorate was taken out of the General Staff and reconstituted as an independent directorate of the Ministry of Defense. The VPK was allocated funds directly, and the services thereafter appealed to the MoD or directly to the VPK for funding.²⁶³ Disagreements between the VPK and the General Staff were constant, but the VPK almost always won the decision.²⁶⁴

Senior General Staff officers complained bitterly of Ustinov's tendency as Defense Minister to side with the military-industrial complex against the Armed Forces.²⁶⁵ Danilevich recounted that Grechko resisted pressure from the defense-industrial sector to procure certain weapon systems before they were fully developed, or if they failed to meet specifications. Ustinov, in contrast, would scold industrialists but in the end would give in to them. During Ustinov's tenure as Defense Minister, Danilevich asserted, strategic objectives often were subordinated to, and built around, weapon systems.²⁶⁶

The defense-industrial sector used its political clout to deliver more weapons than the armed services asked for and even to build new weapon systems that the operational military did not want. Efim Liuboshits, an analyst with over 30 years experience in the Strategic Rocket Forces' main institute [NII-4], wrote in *Krasnaia zvezda* that studies conducted in 1979 showed that the large number of missiles in storage exceeded by tenfold the number required for alert duty. Stocks of missiles reached surplus levels, he continued, because additional missiles were delivered at the initiative of industry even though the Ministry of Defense had not placed orders for them.²⁶⁷

In some instances, Kataev recounted, directors of production facilities approached Defense Minister Ustinov directly in an effort to sell their weapons. The Director of IuzhnoMash, Aleksandr Maksimovich Makarov, once visited Ustinov to ask him to take a few dozen more missiles. Ustinov replied, "What will we do with them, Aleksandr Maksimovich?" to which Makarov answered, "But if you don't, how will we feed the workers?" In the end, Ustinov took the missiles, even though the army did not really

²⁶³ Tsygichko, *Soviet Use of Mathematical Methods*.

²⁶⁴ Tsygichko, *Kommentarii k interv'iu*.

²⁶⁵ Danilevich, September 21, 1992, *Vol. II*, p. 36; and Gareev, June 20, 1993, *Vol. II*, p. 75.

²⁶⁶ Danilevich, September 21, 1992, *Vol. II*, p. 37.

²⁶⁷ *Krasnaia zvezda*, July 9, 1991, translated in JPRS-UMA-91-022, August 21, 1991, p. 35.

need them.²⁶⁸ Kataev asserted that the ongoing efforts of defense plants to expand production generated large stockpiles of military equipment. There were at different times, for instance, up to 4, 5, and, in the case of particular systems, 8 nuclear basic loads (*boekomplekty*) of naval strategic missiles. Submarines carried approximately 0.7 nuclear basic loads, and 1.5 nuclear basic loads per submarine would have sufficed.²⁶⁹

The defense complex developed several new weapon systems for which there was little demand, as illustrated by two examples. First, construction of aircraft carriers was opposed by many General Staff officers.²⁷⁰ Second, the Defense Ministry under Grechko resisted the development of mobile ICBMs, which Ustinov was pressing for.²⁷¹ The Iangel' design bureau in the early 1960s proposed development of mobile missiles as a response to the increasing accuracy of U.S. weapons. When the science committee of the Strategic Rocket Forces endorsed that proposal, Grechko disbanded the committee and stopped development of a rail-mobile missile complex.²⁷²

Retired Gen.-Lt. Nikolai Kravets, who worked for over 30 years on force design, systems acquisition, and testing and evaluation in the Strategic Rocket Forces, said that the Chelomei design bureau began to develop operational-tactical mobile missiles in 1964. Iangel' designed a longer range mobile missile that combined a liquid-fueled first stage with a solid-fueled second stage.²⁷³ He tested it in 1968 with terrible results—there was a massive explosion—and the program was canceled.²⁷⁴ Another mobile ICBM program was initiated in 1968 as Soviet scientists improved their competence with solid fuel.²⁷⁵

The military tried unsuccessfully to reduce the number of different types of missiles. The Soviet Union had a much greater variety of missiles than it needed. Kravets complained that in the internal competition among various chief designers and industrialists, each designer and industrialist ultimately had his own way. After development and testing, all

²⁶⁸ Kataev, May 1993, *Vol. II*, pp. 96-97.

²⁶⁹ *Ibid.*, pp. 97-98.

²⁷⁰ Gareev, June 20, 1993, p. 75.

²⁷¹ Strogonov, March 1993, *Vol. II*, p. 132; and Gareev, June 20, 1993, *Vol. II*, p. 75.

²⁷² Kataev, May 1993. *Vol. II*, p. 98.

²⁷³ Kravets, June 22, 1993, *Vol. II*, p. 110. NATO never had a designation for either the Chelomei or the Iangel' mobile missiles because these programs were very closely guarded and were successfully concealed from NATO.

²⁷⁴ Illarionov confirmed that the mobile ICBM program was canceled in 1968. See Illarionov, June 23, 1993, *Vol. II*, p. 84.

²⁷⁵ Kravets, June 22, 1993, *Vol. II*, p. 110.

competing missile systems, usually two but sometimes more, were put into production and then deployed. As a consequence, the USSR fielded up to 12 types of ICBMs simultaneously.²⁷⁶

In order to avoid slighting design bureaus, Kataev explained, missiles of the same class that were developed by different design bureaus were put into series production simultaneously. The SRF at one time had 10 different missiles serving the same mission. Kataev characterized this process as a kind of *internal arms race* carried out inside the defense sector.²⁷⁷ Kalashnikov repeatedly proposed a reduction in the number of different types of missiles to two or three, but his proposal was rejected by Ustinov, who was concerned about the unemployment such a measure would generate.²⁷⁸

When the Soviet leadership gathered in 1969 to choose whether to put the SS-17 into production or to build SS-19s, it ultimately produced both. Gen.-Col. Igor' Illarionov, a personal assistant to Ustinov from 1965 to 1984, recalled that the task of developing a second-generation MIRVed ICBM to counter Minuteman II was assigned to two design bureaus—Chelomei and Iangel'. Both designs were completed and ready for production by mid-1969.²⁷⁹

Soviet leaders, Illarionov continued, were interested in reducing the time required to launch Soviet ICBMs. Defense Minister Grechko and chief designers in the late 1960s reached the conclusion that the USSR lacked the capability to release a retaliatory strike before incoming U.S. weapons had already detonated. At the same time, Brezhnev was intent on increasing the time available for discussion and decision making by the Politburo during a crisis, because he wanted to avoid taking personal responsibility for issuing a launch order.²⁸⁰

A special meeting of the extended Defense Council, described by both Mozzhorin and Illarionov, was convened near Yalta in July 1969 to draw up a 15-year plan, or at least guidelines, for weapons procurement and, thereby, to establish central direction over a

²⁷⁶ Ibid., p. 110.

²⁷⁷ Kataev, May 1993, *Vol. II*, p. 97.

²⁷⁸ Kalashnikov, April, 1993, *Vol. II*, p. 92.

²⁷⁹ Illarionov, June 23, 1993, *Vol. II*, pp. 83-84.

²⁸⁰ Illarionov, April 1993, *Vol. II*, p. 80.

force building process that had become unguided (*nepravliaemyi*).²⁸¹ The meeting, chaired by Brezhnev, involved 50 to 60 participants, including general officers, Defense Ministry officials, ministers responsible for industry, chief designers, officials of the Central Committee apparatus, and academicians.²⁸²

Both Chelomei and Iangel' made presentations. The R-37 [almost certainly the SS-19] missile developed by Chelomei received support from Grechko, the Defense Ministry, the operational military, and Minister of General Machine Building Afanas'ev.²⁸³ Iangel' emphasized the innovations, particularly the survivability, of the MR-100 [presumably the SS-17] ICBM that he had designed. Chelomei apparently did not consider the protection of ICBM launchers to be worth the cost.²⁸⁴ The military officers paid little attention to the presentations and instead focused on the quantitative characteristics of the two missiles. The Chelomei missile had six warheads; the Iangel' missile carried four.²⁸⁵

The R-37 designed by Chelomei had a low survivability (*zashchitnost'*) rating and a low stability (*ustoichivost'*) rating, Kataev explained. Its overall reliability (*obshchaia nadezhnost'*) was rated at 90 percent. (The U.S. Minuteman missile, by comparison, was rated between 70 percent and 80 percent.) The overall system reliability rating in the Soviet rating scheme was the product of several factors—the missile's inherent stability, the hardness of onboard control and launch systems, silo design, the local and central control systems, and its vulnerability to nuclear attack (including to electromagnetic pulse - EMP)—that would affect a missile system's ability to launch and to strike its target in the aftermath of a nuclear attack. Kataev made clear that, by Soviet criteria, the Minuteman was systemically less reliable than the R-37 (even though, in the late 1960s, Minuteman was hardened to 20 kg/cm² (284 psi) versus the 2 kg/cm² (28 psi) of Soviet silos).²⁸⁶

²⁸¹ Kravets, June 22, 1993, *Vol. II*, p. 109. Kravets did not attend the July 1969 meeting but had staff responsibility for implementing its decisions in the SRF.

²⁸² Illarionov, April, 1993, *Vol. II*, pp. 80-81.

²⁸³ *Ibid.*

²⁸⁴ *Ibid.*

²⁸⁵ *Ibid.*, p. 82.

²⁸⁶ Kataev, June 23, 1993, *Vol. II*, pp. 99-100. Tsygichko's comments about Soviet military intelligence estimates of the overall vulnerability of U.S. land-based missile systems in the late 1960s suggest that silo, EMP, and control vulnerability were the primary factors contributing to the Minuteman's low rating. The Soviets seemed to have had great deal of respect for the Minuteman's accuracy and reliability, once launched. See Tsygichko, December 21 and 23, 1991, *Vol. II*, p. 151.

The MR-100 missile by Iangel' was favored mainly by proponents of ICBM survivability²⁸⁷—Ustinov; most of the chief designers; Mozhorin, Director of TsNIIMash; Ivan Serbin, Head of the Central Committee's Defense Industry Department; Professor Keldysh, President of the USSR Academy of Sciences; and other academicians.²⁸⁸ Keldysh argued that the choice between the two ICBMs stemmed from the doctrinal question of first- versus second-strike and that the USSR should acquire an effective second-strike capability in order to deter U.S. first use of nuclear weapons. Brezhnev instructed Ustinov and Keldysh to prepare a draft decision (*proekt resheniia*), and they worked out a compromise whereby both the SS-17 and the SS-19 entered production. The compromise reflected Brezhnev's indecisiveness²⁸⁹ but, in the view of Soviet experts, was costly and militarily unnecessary.²⁹⁰ The Defense Council agreed to manufacture both ICBMs but adopted Keldysh's proposal, which in practice amounted to a military doctrine,²⁹¹ outlining the requirements for strategic missile systems. When the signatures were collected, Grechko tried to delay the decision by hiding from Serbin when Serbin arrived at Grechko's dacha. Grechko left his dacha through the back door and did not return for several hours.²⁹²

Strategic Consequences

The volume of arms production in the USSR was conditioned by the internal dynamics and logic of the vast, civilian-dominated defense-industrial establishment. By contrast, qualitative advancements in technology and weapons systems seem to have been more directly products of confrontation and competition with the U.S. During the 1950s and early 1960s, the Soviets invested heavily in the research and development of new technologies, including ballistic missile submarines and SLCMs. However, many of these programs were curtailed in the early 1960s when heavy emphasis was placed on the production of land-based ICBMs.²⁹³ Beginning in the early 1960s, emphasis began to shift away from design and development of systems to production. There is evidence that the VPK and the Central Committee's Defense Department began to stress copying of

²⁸⁷ Illarionov, June 23, 1993, *Vol. II*, pp. 84-85.

²⁸⁸ *Ibid.*, April 1993, *Vol. II*, pp. 81-82; and June 23, 1993, *Vol. II*, p. 85.

²⁸⁹ *Ibid.*, April, 1993, p. 82. General Danilevich observed, with a certain frustration and black humor, Brezhnev's indecisiveness and timidity when required to launch a scripted nuclear strike in the course of a major exercise in 1972. See Danilevich, September 21, 1992, *Vol. II*, p. 27.

²⁹⁰ *Ibid.*, p. 83; and Kalashnikov, April 1993, *Vol. II*, pp. 93-94.

²⁹¹ Illarionov, April 1993, *Vol. II*, p. 81.

²⁹² *Ibid.*, p. 82.

²⁹³ Danilevich, December 18, 1990, *Vol. II*, p. 21.

foreign technologies and systems, rather than supporting domestic R&D.²⁹⁴ Almost all sources stated that during the period in question, new systems were developed primarily in reaction to developments in the U.S. The Soviets followed the U.S. lead in many technological areas, including MIRVs, missile accuracy, SLCMs, and other types of cruise missiles, intelligence systems, early warning systems and command and control, neutron weapons, low frequency, enhanced EMP, and other exotic weapons.²⁹⁵ SDI was often cited by sources as a prime example of the Soviets being forced to play technological catch-up. An important exception to this pattern was the development during the late 1970s of the SS-20 IRBM, a mobile, solid-fuel, multiple warhead missile that was a strategic and technological breakthrough for the Soviets which gave them a significant advantage in Europe. Another exception was the eventual development and deployment of the SS-25 mobile ICBM, which gave the Soviets a survivable land-based nuclear force.

The industrialists' domination of the force-building process seems often to have worked against innovation and qualitative improvement of weapons. Because stability and continuity of production were the governing imperative, the defense-industrial establishment resisted changes which threatened to disrupt this continuity. The bureaucracies of the defense industrial ministries were generally reluctant to introduce innovations into industrial production, thereby disrupting established manufacturing processes leading to production downtime and risking political fallout from failure in the attempt. Kalashnikov recalled many "titanic battles" between the military and the VPK and industrial ministries over the quality of weapons and related systems. For example, the Ministry of Radio Industry strongly resisted the introduction of signal scrambling (*shumoobraznye signaly*) devices for Soviet naval communications. Kalashnikov became convinced of the need to introduce these devices in the early 1980s after talking with Admiral Lobov, then commander of the Northern Fleet. Lobov described shadowing a U.S. fleet on maneuvers and not being able to pick up any radio traffic. A tremendous battle ensued between Mozhorin and the MoD on the one hand, and the Minister for Radio Industry, Kolmykov, on the other. The dispute was resolved in favor of creating

²⁹⁴ Almquist, Peter. *Red Forge: Soviet Military Industry Since 1965* (New York: Columbia University Press, 1990), p. 79.

²⁹⁵ Danilevich, September 21, 1992, *Vol. II*, p. 33.

the new technology only after proponents won support from the Soviet chief arms negotiator, who argued that introduction of such a capability would strengthen the Soviet negotiating position.²⁹⁶

The Soviet interviews portray the VPK pursuing its own interests rather than servicing the military's needs, and thus, they contradict the "military missions" interpretation of Soviet weapons acquisitions. The interviews do support interest group models. One interest group model overemphasizes agreement between the Armed Forces and the defense industry but accurately notes the general convergence in the aims of the Politburo and the military-industrial complex. Another interest group model corresponds most closely to the new information coming out of the Soviet interviews. The efforts of the VPK, particularly the designers, to ensure stable weapons development and production processes appear to have been the primary cause of the USSR's arms buildup.

²⁹⁶ Kalashnikov, April, 1993, *Vol. II*, pp. 88-89.

V. CONCLUSIONS

The accounts by former Soviet General Staff officers and government officials of their experiences in helping to formulate and implement defense policy during the Cold War, when compared to U.S. assessments of that time, suggest that U.S. analytical efforts correctly identified basic Soviet military aims but in some cases seriously misjudged Soviet intentions. The analytical errors arose partly from a misunderstanding of the bureaucratic forces at work in the decision-making process in Moscow or from differences between the U.S. and the Soviet uses of quantitative analysis. Inaccuracies in U.S. assessments tended to exaggerate Soviet aggressiveness, but they probably exerted little influence in stimulating the arms race, because the Soviet strategic weapons buildup most likely would have proceeded apace regardless of whether or not the U.S. increased its nuclear forces. The U.S. probably exercised greater influence over the qualitative aspect of the arms race. The Soviet economic capacity to sustain the competition was greatly strained by attempts to keep up with U.S. modernization of weapons and introduction of new technologies through increases in production of weapons systems.

Most policy makers and analysts in Washington correctly identified the fundamental tenets of Soviet nuclear doctrine. They recognized the Soviet leadership's doubts about surviving nuclear exchanges and its interest in avoiding nuclear war. They understood that in the event of an East-West conflict, the USSR would try to keep hostilities at the conventional level for as long as possible. The primary military purpose of Soviet nuclear forces was to deter a U.S. attack. The Soviet High Command developed nuclear warfighting capabilities in preparation to fight if deterrence failed. Many U.S. officials and experts also noted that the Soviet Union was striving for strategic superiority.

In some cases, U.S. observers seriously misjudged Soviet intentions. A few U.S. assessments underrated the assertiveness of Soviet behavior. They argued that the USSR accepted strategic parity and mutually assured destruction.

More often, U.S. assessments erred on the side of overestimating Soviet aggressiveness. A number of officials mistakenly believed that in the event of a theater nuclear war the Soviet High Command planned to escalate to the global level. Analysts tended more than officials to exaggerate the Soviet military threat. A small but vocal group of analysts, for example, expressed the conviction that the Soviet Union was prepared to initiate nuclear use and to fight a nuclear war with the expectation of winning. They justified their views

largely based on the activities and pronouncements of an influential element in the Soviet leadership (to include the Minister of Defense Grechko) that ultimately did not dominate the Soviet decision process.

Virtually every U.S. observer underestimated the influence of the Soviet defense industry, particularly the Military-Industrial Commission (VPK) and the Defense Industry Department of the Central Committee. As a result, U.S. analysts perceived greater military planning and design behind the USSR's arms buildup than probably was justified. Missile deployments in the 1970s, for instance, gave the impression to some of the most astute U.S. experts that the Soviet Union was developing the ability to initiate limited nuclear strikes, when in fact, missiles continued to roll off Soviet production lines largely to satisfy the interests of the defense industry. The military-industrial sector typically manufactured a larger number and wider variety of weapons than requested by the General Staff and Ministry of Defense. Although the Soviet attempts to outpace U.S. strategic deployments naturally preoccupied U.S. observers, most officials and analysts failed to seriously consider the possibility that the USSR might be significantly more aggressive in its force building than in its nuclear strategy.

Underestimation of the power of the defense industry contributed in some measure to inaccuracies in U.S. assessments of Soviet strategy. Analysts who overlooked the VPK's influence, for example, were more likely to conclude that the USSR sought strategic superiority largely for military reasons, including to enhance its capability to wage nuclear war.²⁹⁷ Similarly, the Soviet buildup of theater nuclear forces, particularly of tactical nuclear missiles, was considered by a significant part of the U.S. analytical community to be an indication of Soviet development of limited nuclear options, when in fact, the General Staff had generally opposed deploying tactical nuclear missiles and had very little interest in initiating limited nuclear strikes.

Misunderstanding of Soviet military intentions was also the result, to a certain extent, of differences between the U.S. and Soviet conclusions drawn from similar quantitative analysis regarding the effects of nuclear weapons. U.S. scientists, for instance, calculated less lethal effects from blast overpressure than their Soviet counterparts did, and

²⁹⁷ The *Report of Team B*, pp. 2-3, seems to associate the USSR's efforts to acquire nuclear superiority with a Soviet aim to develop the capability to fight and win a nuclear war. This, of course, left the *fact* of the massive Soviet capability, regardless of its origins, as the main threat, a capability, which in the hands of a malevolent or irrational leadership could, in any case, destroy the Western world.

therefore, they failed to recognize the Soviet expectation of high fatalities and slow rates of advance in a Soviet offensive in Europe. Different U.S. and Soviet views on the use of ground bursts against missile silos also helped to skew U.S. assessments of Soviet strategy. While the U.S. chose a measure of effectiveness that favored air bursts, the USSR preferred to rely on ground bursts to destroy silo-based ICBMs, and each side seemed to have assumed that the other adopted the same measure of effectiveness. As a consequence, most U.S. observers failed to appreciate the depth of Soviet concern about silo vulnerability, and they mistakenly thought that launch times of Soviet missiles were reduced in order to carry out preemption rather than to enhance the credibility of Soviet retaliation (or launch-under-attack).

Senior Pentagon and White House officials achieved, on balance, a more accurate reading of Soviet strategic intentions than the experts did. On the one hand, some incorrectly concluded that the USSR was prepared readily to expand a theater nuclear war into a global nuclear war. On the other hand, U.S. officials accurately noted the Soviet leadership's aim to achieve strategic superiority and also understood that the Soviet Union had moved away from preemption. A few vocal analysts, not policy makers, were primarily responsible for propagating the alarmist (and false) view that the USSR was ready, if not eager, to initiate, and expected to win, a nuclear war.

Policy makers proved more successful than the analytical community in correctly identifying Soviet aims, apparently because they made selective use of the analyses available to them. Most officials considered the quality of the analysis they received to be mixed. To support their decisions, they took the time to examine data on their own, and they listened to the few Soviet area specialists who, they believed, offered the most sensible interpretations of Soviet strategic policy.²⁹⁸ Expertise in Soviet affairs was not allowed to supplant common sense and sound judgment in deciphering Soviet motivations for the purpose of making policy decisions.

The mistakes made in assessing Soviet nuclear forces and strategy apparently had little impact on the course of the arms race. The U.S. government understood the main tenets of Soviet nuclear doctrine, and partly as a result, averted both nuclear war and direct armed conflict with the USSR. In fact, U.S. observers underestimated the extent to which

²⁹⁸ Brown, November 8, 1991, *Vol. II*, p. 13-14; Brzezinski, November 21, 1991, *Vol. II*, pp. 16-17; Iklé, December 11, 1991, *Vol. II*, p. 77; McDaniel, November 12, 1991, *Vol. II*, p. 120; and Schlesinger, October 29, 1991, *Vol. II*, pp. 128-130.

the Soviet leadership was deterred from using nuclear weapons, as evidenced by the doubts of Soviet specialists about the ability of the C³ system to release more than a fraction of surviving forces after a nuclear attack or by the trembling hand of Brezhnev at the 1972 exercise which simulated nuclear war.

U.S. official and unofficial assessments tended on balance to exaggerate the aggressiveness of Soviet intentions, which helped to spur U.S. nuclear weapons procurement, but even if the assessments had been more accurate, the outcome most likely would have been much the same. No matter what military objectives lay behind the USSR's nuclear arms buildup, it was large enough to present a cause for serious U.S. concern. Furthermore, the growth of Soviet strategic capabilities seemed to embolden the Soviet Union's expansionist policies, so the United States had good reason to counter not only the USSR's expansionist moves around the world but also Soviet nuclear force deployments.

Inaccurate U.S. assessments probably did little to stimulate the arms race mainly because Soviet behavior was fairly unresponsive to U.S. actions and policy statements from the mid-1960s to the early 1980s. The Brezhnev Politburo was striving for strategic superiority, and Soviet nuclear weapons procurement was directed largely by a defense industrial class interested in keeping design bureaus and arms manufacturers occupied in an ultimately self-destructive pattern of expansion. A slowdown in U.S. deployments or a change in the U.S. nuclear force structure, therefore, was very unlikely to have altered Soviet decisions.

Appendix A: A Chronology of Soviet Strategy

Full Mechanization: 1945 - 1950

The immediate post-WWII period was devoted to completing the mechanization and modernization of all branches of the Armed Forces, absorbing the lessons of the war and consolidating them into a doctrine. Soviet strategy emphasized the use of massive conventional armored land forces to gain a threefold to sixfold advantage over the opposing forces and to defeat them with fast, decisive offensive ground actions. Air and naval forces were modernized and strengthened through the introduction of jet aviation and modern air defenses but continued to play a supporting role.

Acquisition of Nuclear Weapons: 1950 - 1960

By 1950, the Soviet Union had acquired the atomic bomb. At first, nuclear weapons were seen primarily as anti-city weapons, but their strategic and tactical importance was quickly recognized. By 1955, nuclear weapons had supplanted the tank as the central strategic weapon.

Despite the central role of nuclear weapons, their acquisition did not immediately lead to a revolution in military thought. Rather, at first nuclear weapons were absorbed into the existing structure of WWII strategic and operational thinking. Like the tank before it, nuclear weapons would be used to achieve a strategic breakthrough on the battlefield, which would be exploited by a massive conventional steamroller advancing at 20 - 30 km per day. The new doctrine was even more clearly offensive in nature. Strategic defensive plans were non-existent.

“Nuclear Euphoria”: 1960 - 1965

The revolution promised by nuclear weapons arrived with Khrushchev. A strategy emerged based on global and theater preemptive nuclear use. Nuclear weapons gained in importance almost to the point that all other weapons were seen as superfluous. The Strategic Rocket Forces (SRF) were created as a separate military branch. Aviation, especially the massive fighter force, was sacrificed, as was artillery, which was replaced by tactical nuclear forces. Khrushchev even considered reducing the armored forces,

because they were deemed unnecessary. Defensive actions, including Front- and army-level defense, were now totally and explicitly rejected. Defense was seen to be possible only on the level of tactical maneuvers.

The new thinking found its most vocal advocate in Marshal V. D. Sokolovskii, who lectured on the new strategy at the General Staff Academy in 1962 and edited the influential book, *Military Strategy*. These ideas were embraced as doctrine at a Ministry of Defense conference in the same year and were put into practice during exercises in 1962 and 1963. The core of the strategy was an attack in two phases.

The first phase involved an intercontinental preemptive strike against the U.S. The plan to use Cuba as a base for intermediate-range missile attacks on the U.S. had backfired during the "Caribbean Crisis." However, the new R-16 missiles gave the USSR a limited ability to strike U.S. territory.

The second phase involved a single, strategic offensive along the entire Front, with the use of preemptive nuclear strikes, followed by a decisive, uninterrupted land advance. R-12 and R-14 medium range stationary missiles would be used to attack strongpoints in Europe. Although their numbers were relatively small, these missiles carried powerful 1.8 and 2.4 megaton warheads. Following the nuclear strikes, land armies would sweep west, using envelopment, cleanup, and other offensive operations. The rate of advance was now planned to be 40 - 100 km/day and the entire strategic operation was expected to take no more than 10 days.

Such optimistic forecasts were made based on the assumption that the opponent would be preempted in his use of nuclear weapons. Missile technology of that era put a heavy premium on preemption because the long time required to fuel the missiles and attach their warheads made a "retaliatory-meeting strike" impossible and a purely retaliatory strike highly unlikely.

"Descent to Earth" and ICBMs : 1965 - 1975

With the ouster of Khrushchev, conservatism and realism returned to military thought. Their return was marked by the realization that the usefulness of nuclear weapons had been overestimated, and by the acknowledgment that the enemy had a large number of nuclear weapons which could cause "unrecoverable losses." The new thinking proclaimed that a single type of weapon cannot be relied upon to achieve victory and that

each type of weapon, including conventional weapons, has an appropriate role in war. Conventional forces, decimated during the Khrushchev period, began to be restored. Greater attention began to be paid to strategic theater operations, which were broken down among several Fronts and included expanded naval and air operations, as well as strategic anti-air operations. It was no longer thought possible to conduct a one-stage strategic operation. The strategic advance was divided into two operations—the advance to Germany's western border, and the advance to the English Channel. The rate of advance was scaled back, with the projected time for the conquest of Europe pushed back to 1 month. Defense was gradually revived, first on the level of army, then Front, and finally, around 1972 - 1975, on the strategic level.

Despite the changes, war was still seen to be ultimately nuclear. A purely conventional war was not seen as a realistic possibility. However, technology and experience bred a greater sophistication of thinking regarding the use of nuclear weapons. The growth in the strategic arsenal and the beginnings of a secure second-strike capability on SLBMs, made possible options for Strategic Forces operations. Instead of a single massive salvo, multiple nuclear strikes were now planned.

Also during this period, a clearer appreciation of the devastating consequences of a full-scale nuclear exchange began to emerge. At a nuclear exercise in 1972, Brezhnev, Podgornyi, and other high-ranking Politburo members were presented with the results of a simulated U.S. first strike using ground bursts against the Soviet Union. The simulated damage shocked the leadership: 100 percent of non-strategic aviation wiped out; 100 percent of ground forces wiped out; 80 percent of strategic aviation destroyed; 100 percent of naval forces destroyed; the European part of Russia suffers radiation contamination from fallout with levels of 400 - 3,000 roentgens.

Meanwhile, ferment in strategic thought in the U.S. yielded new theories of escalation, flexible response, limited use, etc. At first the Soviets considered these theories to be unrealistic and strongly rejected any notion of a limited nuclear war. Officially, Soviet policy was to respond with a full nuclear attack to even a single hit. However, from 1970 to 1975 the position shifted away from rejection toward the necessity of a "controllable conduct of nuclear war." In concrete terms, this shift manifested itself in three doctrinal changes.

A preemptive strike was no longer the only option. Retaliatory-meeting and retaliatory strikes became valid options.

Multiple-scenario strikes were developed: either global, or regional, depending on the military situation.

A "new periodization of war" was developed. The course of the war was expanded to four stages: a non-nuclear phase, a nuclear phase, follow-up actions, and concluding actions. Of these, the most important addition was the non-nuclear phase, which gradually grew in length from several hours to 7 - 8 days. Still later, it was planned that the first frontal operations would remain non-nuclear up through the advance to the Rhine. Intercontinental strategic operations, however, remained nuclear.

Strategic Balance: 1975 - 1991

This long period was characterized by rough parity in strategic systems between the two superpowers, rapid growth in both sides' nuclear arsenals and bitter technological competition. Although the Soviets still lagged behind in C³ and silo protection, a series of technological advances greatly expanded Soviet strategic capabilities. A new, more efficient method of "direct drilling" was developed, which allowed 200 silos to be built every year. Missiles with self-contained fuel tanks [*ampulizirovannye rakety*] and, later on, solid fuel missiles reduced ready times to 1 - 2 minutes. Strategic bomber aviation was advanced with the deployment of the Tu-16 and Tu-22 bombers. The Soviets very quickly matched and surpassed U.S. MIRV technology. By the end of the 1970s the development of the R-18 and R-36 gave the Soviets a throw-weight of over 20 tons, surpassing the U.S. capability.

The period can be broken down further into three parts, each of which saw profound changes in the Soviet military doctrine as a result of technological and political developments:

At first, limited nuclear war was still officially rejected, but it was now considered possible to conduct the war at the conventional level from beginning to end.

Later, limited nuclear war was now accepted in documents and planning for options presented to the political leadership. Different options became available for use of nuclear weapons during the new limited phase: only on the battlefield; only against

military targets; limited strategic strikes; proportional retaliation to limited strikes (either with escalation or de-escalation). Gradually, the projected length of the limited phase was expanded from hours to several days.

Finally, there was adoption of a defensive doctrine and realization that a nuclear war cannot be won. Preemptive strike was ruled out—only retaliatory strike remained. The new foundations of doctrine becomes: deterrence, war prevention, and limited war, if war must be fought.

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