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Soviet military doctrine and strategy shifts: Principal dynamics and implications for conventional warfare. (Volumes I–III)

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The Ohio State University, 1990

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SOVIET MILITARY DOCTRINE AND STRATEGY SHIFTS: PRINCIPAL DYNAMICS AND IMPLICATIONS FOR CONVENTIONAL WARFARE

VOLUME I

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in the Graduate School of The Ohio State University

By

Howard Ezra Frost III, B.A., M.A., S.M.

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The Ohio State University

1990

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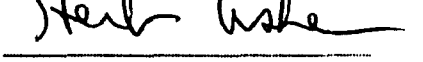

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"Non-Communist Parties and Mass Organizations in the German Democratic Republic," Potomac Review 8 (Spring 1979)

FIELDS OF STUDY

Major Field: Political Science
Minor Fields: Soviet studies, security policy, comparative politics, international law

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CHAPTER I

AN OVERVIEW OF THE PROBLEM

Background

What drives Soviet military doctrine? Is Soviet military doctrine influenced more by factors internal or external to the USSR? Which specific factors are most important, and why?

The formulation of military doctrine and strategy in the Soviet Union, as in the West, takes place in a political and military context. When strategic planners decide how to structure and use military forces, these leaders take into account both their foreign policy goals and their country's physical resources. Both internal and external factors can have an effect on this process. Getting inside the "black box" of high level Soviet decisionmaking to chart exact paths of doctrine and strategy change is impossible; examining key internal and external factors for possible links to such change is not.

Western analysts who have examined the development of Soviet military doctrine and strategy since World War II have usually noted stages in that development, but there have been no studies that tried to determine in a

systematic manner the likely causes of shifts in doctrine and strategy. Scholars such as Raymond Garthoff (1962, 1966), Herbert Dinerstein (1962), Thomas Wolfe (1964, 1971), Yosef Avidar (1983), Michael Checinski (1984), Alfred Monks (1984), John Adelman (1985), Ken Booth (1987) have authored interesting historical accounts about the development of Soviet doctrine, but often such studies offer only parenthetical or anecdotal reasons for why that doctrine changed in the periods they discuss or what the factors leading to those changes may have been.a

Sometimes studies such as these deal with such factors as the importance of the General Secretary or the Minister of Defense for Soviet military policy, or they discuss the roles of U.S. policy initiatives, such as Massive Retaliation or Flexible Response, on the development of Soviet doctrine. Sometimes authors choose to focus on economic constraints and defense spending issues or weapons technology developments. While such focused studies may treat their subject thoroughly and provide useful insights, these discussions often encounter the problem of being almost monotonic (implicitly, if not explicitly) in their assessment of possible causal factors for the development of doctrine, in addition to the lack

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aMichael MccGwire (1987) takes a serious systematic approach to his examination of a Soviet doctrinal change in the mid-1960s, but his analysis is highly inductive, and he does not examine change in other periods.

of systematic analysis over time. Alternatively, they are sometimes indiscriminant in their assessment of cause (i.e., positing that a whole set of factors were potentially important for a doctrine or strategy shift). Almost all of these studies are atheoretical, in that changes in doctrine and strategy are not evaluated in terms of their implications for models of Soviet leadership politics and decisionmaking processes.

Among the few exceptions to this literature that are more sensitive to systematic and theoretical concerns are assessments by Benjamin Lambeth and James McConnell. Lambeth (1974) delineates a set of "sources" for doctrinal developments that include both "objective" and "subjective" factors. Among the objective factors he cites are the move to strategic parity with the U.S., the growth of NATO conventional forces with the implementation of Flexible Response, the availability of various types of weapons and possible uses, the degree of East-West tensions, and the perceived stability of deterrence. Among his subjective factors are ideology, general leadership predispositions, specific leadership preferences, historical experiences, ritualized ways of doing things, and the closed, authoritarian nature of the society.

Lambeth notes that these subjective factors are usually more significant than the objective ones and that

the process of doctrinal development is therefore more appropriately viewed in a bureaucratic politics-type model and an action-reaction one. However, while he provides some useful insights into how each of these factors came into play in the development of doctrine from the late Stalin to the early Brezhnev periods, he was not able in a chapter-length study to be systematic in his analysis or to examine why certain factors were more important at some stages in doctrinal development and not at other stages.

McConnell (1985) looks systematically at the interaction of US and Soviet strategic doctrine over several decades and posits a certain asymmetry of response, in which one side chooses its doctrines through an evaluation of the weaknesses, rather than the strengths, of the other side. Thus, he finds the frequently postulated competitive symmetry between the two superpowers to be an inadequate explanation for doctrine and strategy development. His article, therefore, is helpful for refining theory on U.S.-Soviet strategic doctrine interaction, but he does not examine other external factors, nor any domestic factors.

In addition to the usual lack of systematic and theoretical analysis in Western literature on Soviet doctrine and strategy, one of the other principal characteristics of this literature has been the extensive focus on strategic nuclear concerns. Because the issue of

the strategic nuclear relationship between the two countries has been the major issue to occupy policymakers since the end of World War II, it has been that dimension which has received the predominant amount of attention by analysts of US-Soviet military affairs to the virtual exclusion of conventional conflict. Even the discussion of NATO's tactical nuclear weapons in the mid-1950s and early 1980s was primarily tied to the strategic question because of the focus on the "coupling" of those weapons with the US strategic deterrent.

My study will address these problems by filling three gaps. First, I will present a systematic analysis of the principal factors affecting the development of Soviet military doctrine and strategy with the goal of demonstrating whether internal or external factors have been more important over time for this development. This study is not a case-based decisionmaking analysis; what I will do is relate a set of independent variables to the dependent variable of doctrine and strategy change, with the aim of demonstrating key correlations. My basic hypothesis for the internal-external issues is as follows:

If, during the periods studied, change in doctrine and strategy moves more frequently at the same time and in the same general direction as predicted from changes in internal as opposed to external variables, the internal variables may be considered more important over time as an influence upon doctrine and strategy.

Second, I will attempt to explain why different factors have been important at different stages in the development of Soviet doctrine and, for particular stages, why some factors were more important than others (see Table One). I will offer conclusions about the conditions under which certain factors can be expected to have greater weight than other factors.

Third, I will focus on the implications of developments in doctrine and strategy for Soviet views on conventional warfare involving the superpowers, since it is that topic which first occupied NATO planners and which has again become important for NATO planners in an age of strategic parity between the superpowers. I will need to discuss the relationship between nuclear and conventional warfare since the two are closely related, but I will focus on the latter.

Additionally, I will speculate about the theoretical significance of my conclusions both for the formation of Soviet doctrine and strategy and for the formation of military doctrine and strategy in general.
Obviously, it will be impossible to describe exactly what the causes for changes in Soviet doctrine have been, since one cannot interview decisionmakers there and since research on this topic relies heavily on published Soviet sources. In this study, therefore, I will be clear about

areas of uncertainty as I examine the selected group of factors affecting doctrine and strategy change.

Showing why Soviet doctrine has changed and what the factors in those changes have been is important for several reasons. First, with an understanding of principal factors in Soviet doctrine and strategy change, one can develop a more complete understanding of how major military developments evolve in the Soviet Union and potentially predict how change may occur in the future. Second, an understanding of Soviet doctrine and strategy change can benefit US and NATO leaders as they plan future military policy and arms control measures. An understanding of how Soviet doctrine and strategy change takes place enables one to address better how or if the Soviets may respond to policy changes contemplated by US and NATO leaders.

Doctrine and Strategy as Foreign Policy: Implications for Policymaking Models

The need to understand the hows and whys of Soviet doctrine and strategy development seems clear enough from the standpoint of implications for Western defense and arms control policy, but what re the sorts of implications one could expect for theory about doctrine and strategy development?

It is a commonplace that military doctrine and strategy are generated to guide one of the important

instruments of foreign policy--a nation's military establishment. As such a tool, doctrine and strategy can be viewed in the context of the development of a country's foreign policy, in that they are subject to many of the same influences, policymaking processes. Clausewitz, for example, notes that "[at the highest levels], strategy borders on politics and statesmanship, or rather becomes both itself..." (1950: 118). Raymond Aron offers a similar observation with his comments that strategic thought both "draws its inspiration each century, or rather at each moment in history, from the problems which events themselves pose" and is "never separate from political thought" (1970: 25, 44).

Various scholars have attempted to construct models of the elements and processes of foreign policy formulation.b John Collins, focusing on the military dimension of foreign policy, specifically the development of strategy, notes four major aspects of grand strategy--the sum of the highest political-military concerns of the state: interests, objectives, policies, and commitments (1973: 1-7, 14-21).

Interests Collins defines as generalized abstractions that reflect each state's basic wants and needs. These

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bSee, for example, Rosenau (1971: 94-149), Brecher (1972: 1-22), Rummel (1977: 199-255), and Wilkenfeld, Hoppel, Rossa, and Andriole (1980: 41-107). See also Posen (1984) on military doctrine formulation.

wants and needs derive from inputs, which Collins indicates comprise political, military, economic, social, psychological, and technological factors. The first three inputs could conceivably have sources both external and internal to the country itself, while the last three arguably have only internal sources. The only truly vital national security interest Collins recognizes is survival, which he defines as "survival of the state, with an 'acceptable' degree of independence, territorial integrity, traditional life styles, fundamental institutions, values, and honor intact."

Objectives derive from interests, he states, and are the goals, aims, or purposes of the country's leadership and may be short-, mid-, or long-range. National security objectives, like national security interests, may have political, military, economic, or other subdivisions. Collins notes that interests and objectives, taken together, comprise strategic requirements. From his discussion, one infers that strategic requirements may be thought of essentially as a state's objectives as ordered by its interests. Military doctrine can then be understood as the ordering principal of those objectives involving the military aspect of foreign policy. As these strategic requirements are operationalized, they first are done so as basic policies, which, in a general sense, relate the requirements to areas of the world or

particular issue-areas and tie the requirements (ends) with resources (means). Policies, as Collins therefore remarks, are ground rules derived from interests and objectives.

Military strategy may therefore be thought of as coming into play at this point, as the assumptions that are formulated about how those general means and ends are to be related in the military arena. Questions of the appropriateness of using land, sea, or air forces in problem areas of the world and the relative usefulness of nuclear or conventional weapons for conflicts in those areas are among the issues of basic policy strategy helps resolve. As Collins notes, strategy basically evolved in the modern world to manage military forces when, in warfare, time-distance relationships shrunk, politico-economic factors grew in importance, communications improvements facilitated force dispersal, and relationships between power and personnel vastly increased (Collins, 1973: xx-xxii). Therefore, as doctrine serves to order the ends of policy, so strategy orders the means.

Finally, Collins comments on the existence of specific commitments, which he defines as pledges to take actions at certain time and places. As these specific commitments are formulated and implemented, ends and means are matched at their most detailed level.

Toward the goal of extracting lessons on the theory of doctrine and strategy formulation from the conclusions I will draw from the Soviet experience, I will essentially interpret how changes in the inputs affect the development of strategic requirements. I assume a model of the process, based upon Collins' formulation (see Figure 1).

What I will endeavor to show are how changes in one or several of the inputs affect the formulation of doctrine--the ordering principles of strategic requirements for the military dimension of foreign policy objectives. Similarly I will try to show how changes in the inputs affect the development of strategy for issues like force posture and use for the military dimension of basic foreign policies.

As I will discuss later in the overview section, I plan to focus on leadership change, economic constraints, and technological improvements as key domestic, or internal, factors, and changes in NATO nuclear policy and in military tensions along the Sino-Soviet border as the principal external factors. Related to the inputs in Collins' schema, these factors would be more or less synonymous with political inputs (a change in leadership political perceptions because of a change in leaders), economic developments, and technological improvements. The NATO and Sino-Soviet border issues could be considered as both military and political inputs. I will not address

sociological or psychological factors because these, being deeply rooted in political culture, are fairly constant over time. Change in these factors and the effects of such change would therefore be difficult to evaluate. This assumption is not to suggest, however, that these factors are not important for doctrine. Indeed, these cultural factors do provide an important filter for leadership perceptions of a variety of inputs.

As I have suggested, a principal focus for the conclusions I will draw will be the relative weight of internal versus external factors.

The question of internal vs. external determinants of foreign policy has been a topic of debate both for political science theorists and for scholars of Soviet policy.c Alexander Dallin, in his 1981 essay on conceptualizing the interrelationship of internal and external factors in Soviet foreign policy, comments that such interrelationships have become increasingly important for understanding Soviet foreign policy in the post-Stalin period as the Soviet Union, as a world power, has become less isolated.

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cScholars who have studied the issue in general terms include Rosenau (1971), Brecher (1973), McGowan and Schapiro (1973), Cottam (1978), and Snyder and Diesing (1978). Scholars of the Soviet Union who have looked at the question include Asparturian (1966), Ploss (1971), Schwartz (1975), and Bialer (1981, 1987).

Dallin (1981: 340-343) discusses linkages between external and internal factors as including both structural and cognitive elements. Structural elements in Soviet foreign policy formulation he suggests include the centralization of decisionmaking within the Politburo, the relative unimportance of lower level bodies, and the absence of public debate on foreign policy issues. Cognitive factors include the mind sets and belief systems of the leadership, plus the learning processes and interactive dynamics of the elite policymaking organizations (1982: 341-2). Dallin discusses some patterns among these linkages that he asserts vary over time,d though he does not explain how the external and internal factors interact through the structural and cognitive elements to produce the foreign policy patterns he observes.

As I investigate the issues I proposed about internal and external variables and the conditions under which the independent variables have their effect on doctrine and strategy in the Soviet case, I will endeavor to generalize my conclusions to the formation of military doctrine and strategy in general. Without a thorough knowledge of the perceptual bases of Soviet leaders about particular

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dHe focuses mostly on "transformation" vs. "stabilization" in basic foreign policy orientations of decisionmaking elites (Dallin, 1982: 344-345).

military problems or an awareness of how the decision process actually works, the best one can really do is assess the capabilities, foreign policy objectives, and presumptions the Soviet leadership is likely to make about the roles of the armed forces and of military doctrine and strategy in foreign policy.e

It is partly because of this lack of specific knowledge about such perceptions and the precise functioning of the decisionmaking process, that the present analysis is not a case-based decisionmaking study. Instead, this analysis works at a level of abstraction above that of decisionmaking in that it attempts to relate a set of factors to shifts in doctrine and strategy with the aim of demonstrating key correlations. It tries to suggest, in essence, what may be important necessary (not sufficient) conditions for doctrine and strategy change.f

The Variables

As the dependent variable I will use pronouncements by member of the Soviet political and military elite on doctrine and strategy to construct a chronology of its

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eOn the problems of the complexity of distinguishing among potentially influential factors on such decisions, see Evangelista, 1988: 14-21, especially on the Eigendynamik.

fFor decisionmaking analyses involving Soviet security issues, see studies such as Alexander (1978/79), Checinski (1981); and Valenta (1979). Meyer (1984) presents a useful categorization of decisionmaking research on Soviet security issues.

developments, particularly those developments dealing with conventional warfare. As the internal independent variables, I will use Soviet leadership change (primarily on the Defense Council and General Staff), economic constraints, and important Soviet military technological advances. As the external independent variables, I will examine changes in the development of NATO and US Army doctrine on ground warfare and the implication of military tension in the Sino-Soviet dispute in the late 1960s and early 1970s.

For both sets of independent variables, I will construct chronologies to identify the key change points and compare that evidence with the chronology of doctrine and strategy developments. While these independent variables often operate simultaneously, I hope to find occasions when some of these factors are clearly more important than others. To the extent such situations occur, I will be able to describe patterns in the importance of the variables and comment upon the overall weight of each.

Basic Organization

Although in the study I will develop a continuous chronology for the dependent variable running from 1946 (the beginning of the post-war period) to the present, I will offer the overview of this development in terms of the stages most often postulated for it by Western

analysts. Basically those periods cover 1946-1955, 1956-1965, 1966-1976, and 1977-1989. Each of these stages I will discuss in terms of the principal factors that were important for how doctrine and strategy had been modified or redefined by the end of the period.

The first time period involves primarily the initial post-Stalin reevaluation of military doctrine in light of Soviet advances in nuclear weapons. The second involves the growing focus on strategic nuclear weapons as the principal element of Soviet force posture. The third period concerns a general renewed interest in capabilities for conventional conflict, while the fourth focuses on revisions in basic assumptions in doctrine in the late Brezhnev and the Gorbachev periods.

Soviet writers on military affairs are fairly precise in the terminology they use to frame their discussions. I will delve into definitional issues more fully in the next chapter, but I will note here that the Soviets consider military doctrine is that part of military thought which takes place at the highest level of political-military decisionmaking and concerns major decisions, principals, and norms about force use and force development. Among the principal components of military doctrine are the relationship between war and politics, the type of war anticipated, the origin and duration of war, the nature of deterrence, the role of preemption, and targeting

issues.g Military doctrine is the prerogative of the highest levels of the USSR's leadership and is primarily formulated in the Politburo and its subgroup, the Defense Council.

Military strategy, the next level, comprises the broad military plans developed to implement military doctrine. While military doctrine would address questions such as when the Soviet Union would declare war and whether that war would be nuclear or conventional, military strategy would involve such issues as which branches of the Armed Forces would see action and where major campaigns would be fought.

Synopsis of the Stages: The Post-War Years and Early Post-Stalin Period

To establish the general parameters of the study, I present here some of the major doctrinal developments of each period and indicate the common wisdom about the reasons for those changes.

The period 1949-1957 saw quite a bit of change in Soviet doctrine and strategy. From 1953 to spring 1956, Soviet military and political elites were largely concerned with breaking out of the regimen of thought imposed by the structure of Stalin's permanently operating factors. Significant changes had been taking place in military technology in the post-war years--most

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gSee Monks (1984).

importantly, the development and testing of the atomic and hydrogen bombs--but the implications for nuclear and conventional conflict of these and other changes had not been taken into account by Soviet strategists because of constraints on the debate of such topics.

The dominant feature of Soviet military policy from the end of World War II until Stalin's death in 1953 was the primacy of the corpus of doctrine developed during the war with Germany. Chief within this corpus were the permanently operating factors propounded by Stalin in 1942, when it had become apparent that the Germans had not been successful in their initial campaign (Dinerstein, 1962: 6). Because of the emphasis Stalin place upon these theses, they were considered incontrovertible until after his death.

Stalin's position was that war was a massive social phenomenon--a contest between societies--where the strengths of one and weaknesses of the other would be determinative. Viewed in this way, Stalin argued that war between socialist and non-socialist systems would demonstrate the superiority of the former. He considered that in the special social context of war, the following factors would be crucial: the stability of the rear, the morale of the army, the quality and quantity of divisions, and armament of the army, and the organizational ability of the army commanders (Dinerstein, 1962: 6).

As one may readily conclude, for a conflict of the type the USSR faced in World War II, these factors are self-evident and not particularly original. Moreover, when related to the changing technology of warfare and the most likely scenarios for war in the nuclear age, clear deficiencies arise, primarily because the permanently operating factors assigned little weight to surprise and did not take into account the destructiveness of nuclear weapons.

As the permanently operating factors were applied to Soviet military doctrine in the post-war world, the most important determination was that nuclear weapons would be important for a major conflict but not decisive--that regardless of the destruction that might be wreaked, even in a surprise attack, the country that had more unsuccessfully implemented the guidelines of the permanently operating factors would be the victor. To the extent a Soviet conflict with the West was envisioned, the strategy was that the Soviet army would be strong enough to occupy Europe regardless of the use of nuclear weapons by either side. Soviet military strategists in the post-war period envisioned the most likely conflict to be one with the West in which after a beginning conventional engagement, the Soviets would use nuclear weapons to destroy the most important targets or forces not

destroyed or captured during the initial advance (Meyer, 1983/84a: 7-12; Dinerstein, 1962: 7-9, 34-36).h

Such a plan for victory complemented Soviet ideology, which assumed that in any conflict between socialist and capitalist countries, the socialist ones would be victorious on account of their superior social system (Dinerstein, 1962: 7-8, 33). There were many questions the this doctrine and its implications for strategy raised that were not addressed during Stalin's time, since the permanently operating factors could not be challenged.i

Stalin's death facilitated this debate, and over the next several years there were discussions in the military press about a wide range of topics and applications of same for Soviet military doctrine and strategy. The first breath into this stagnant military doctrine occurred six months after Stalin's death in March 1953 when Maj. Gen. N. A. Talenskiy published the article "On the Question of the Character of the Laws of Military Science" in Military Thought, the chief theoretical journal of the Ministry of Defense. In his article, Talenskiy argued that a decisive

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hWolfe (1971: 32-35) also mentions Stalin's continued strong public emphasis on conventional forces as part of his effort to deter a perceived NATO threat to the political changes he was pursuing in Eastern Europe.

iThis shortsighted approach to nuclear warfare did not affect Stalin's interest in developing the atomic and hydrogen bombs. The research on these weapons proceeded apace during and after World War II (Holloway, 1983: 15-28).

defeat could very probably be inflicted in a limited amount of time. While Talenskiy did not assert that a single campaign with nuclear weapons would be decisive, or that a defense could not be undertaken against such a campaign, his article was instrumental in stimulating the latent if not suppressed debate among the Soviet officer corps on nuclear weapons (Dinerstein, 1962: 9).

Over the next two years, ten articles and 40 letters of comment appeared in Military Thought. Especially important were the concepts that the same laws of war that applied to capitalist countries applied to socialist countries, so that socialist countries were not necessarily fated to win a major war simply because socialism was a "better" system. A nuclear attack by a capitalist country was argued to be just as destructive as one by a socialist country.

Detractors of the permanently operating factors therefore concluded that Soviet leaders must attend to developing nuclear capabilities. These proponents also argued that since with nuclear weapons war could be won in a limited amount of time, that development of the strategy of preemption and surprise in a superpower conflict needed to be emphasized (Dinerstein, 1962: 10-15, 48-55). Much of the focus during this period was naturally on the significance of nuclear weapons for modern conflict, as the Soviets realized it would be several years before they

could deploy nuclear weapons in significant quantity. The editors of Military Thought provided a summation of the debate and an official resolution in April 1955. The new line characterized the doctrine of permanently operating factors as inadequate on the whole, yet valid in a few contexts (Dinerstein, 1962: 10).j

Internal Factors

Domestic politics in the years immediately after Stalin's death had an important impact on the USSR as a whole, including its military policy. One of the important issues in the post-Stalin leadership struggle concerned the inevitability of war with the capitalist system. In his final theoretical work, the 1952 Economic Problems of Socialism, Stalin asserted that war would be inevitable as long as imperialism existed. To eliminate war, he argued, one had to eliminate imperialism. Although he discussed war explicitly in terms of conflict among capitalist countries, it was understood that this war would involve the Soviet Union (Ulam, 1975: 730-731; Dinerstein, 1962: 66).

Beginning in November 1953, there were a number of articles in the Soviet press that raised questions about whether the concept of the inevitability of a conflict with capitalism was as immutable as had been thought. The

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jThe doctrine of permanently operating factors had been explicitly abandoned in its entirety by 1957 (Dinerstein, 1962: 10).

argument on imperialist aggressiveness was carried further in March 1955, when a Kommunist article argued that the existence of nuclear weapons as a limiting factor on nuclear war was a deception perpetrated by capitalist countries. Arguments about deterrence were a ruse, it stated, in order to convince "the masses" not to struggle for communism (Dinerstein, 1962: 75-76, 98-104, 119-120). As the Soviets did not yet have an arsenal of nuclear weapons, it is understandable that they continued to emphasize the importance of conventional forces for a major war, at the same time disparaging the US strategic nuclear capability as well as the doctrine of Massive Retaliation. In February 1955, primarily because of differences with Khrushchev's group in the Presidium on this issue and others, Malenkov was forced to resign from this body (Dinerstein, 1962: 138-144).

Concerning the issues of leadership change, many scholars, including Dinerstein, Garthoff, Wolfe, and Meyer, argue that Stalin's death was important in opening real discussion on issues of doctrine and strategy. Dinerstein and Holloway (1983: 31-32) also argue that the Khrushchev-Malenkov debate was as important for Soviet doctrine and strategy as is was for general Soviet domestic and foreign policy.

Different views on economic priorities played an important role in the leadership struggle at this time,

and probably also in deliberations on the military budget. Malenkov argued beginning in the fall of 1953 on that investment in heavy industry and the military had reached a satisfactory level and that more capital could be directed to the consumer sector. Khrushchev and his supporters firmly disagreed in their published articles. After Malenkov was moved out of power in early 1955, military expenditures increased that year after having dropped slightly during the previous three years. The importance of these political and economic issues is elaborated by Bloomfield, Clemens, and Griffiths (1966: 52-53, 185-190).k GNP grew during the 1950-1955 period by an average of 6.1%, while investment grew by 12.4% and consumption by an average of 4.9% (Rosenfielde, 1987: 319; reporting CIA data). These growth rates were probably high enough not to have created any major economic constraints on the leadership, with the exception that some leaders thought the consumption rate should be higher with respect to investment.

Weapons technology developments were certainly important for some of the revisions of doctrine in the immediate post-Stalin period. The Soviets exploded an

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kSnyder (1987/88: 98-104) provides an interesting discussion of the debates during that time, categorizing viewpoints of key leaders by conditionality of Western hostility and the relative merit of an offensive or defensive Soviet foreign policy strategy.

atomic bomb in 1949 and a hydrogen one in 1953, and, as indicated earlier, open discussion began on nuclear weapons just upon Stalin's death. Research on tactical nuclear weapons was underway, but successful testing and deployment was still some time away. Virtually all Western and Soviet analysts on Soviet military developments cite the importance of the advent of nuclear weapons for Soviet doctrine developments during this period.

External Factors

NATO's stationing of tactical nuclear weapons with NATO forces beginning in 1952 (and especially after 1954) was a source of additional alarm for the Soviets because of their lack of a corresponding capability. Moreover, the growing debate in the US about the use of tactical nuclear weapons in Europe, including the "substitution" of nuclear weapons for troops, no doubt also caused concern for the Soviets in the area of doctrine and strategy development and general military preparedness to meet the perceived threat from NATO deployments (on these deployments, see Legge, 1983: 2-7). Among those who have drawn attention to this issue are Schwartz (1983b: 22-26, 31-34) and Dinerstein (1962: 107-108).1

1Dinerstein (1962: 107-110) also mentions as possible reasons heightening Soviet interest in nuclear weapons their concern about application of the policy of Massive

U.S. Army officials during this period were in the early stages of defining how to incorporate nuclear weapons into Army force structure. Through most of the 1940s, detailed information from U.S. nuclear tests was not available to Army planners, so early efforts [in the late 1940s] by such organizations as the Command and General Staff College tended to treat nuclear weapons as just extensions of conventional firepower. The Army-Air Force joint Southern Pine exercise in 1951 consequently revealed no clear procedures either for integrating nuclear fires in the conventional campaign or for coordinating activities of the two services. The dual-capable 280 mm. howitzer and the Corporal missile were added to Army force structure in the same year, but no revisions in force structure were made to accommodate them [Midgley, 1986: 17-21].

After the passage of NSC-162 in late 1953, the Army endeavored to acquire more nuclear weapons, realizing that planning based on nuclear, rather than conventional, capabilities would receive a much favorable reception in the new administration. As the Army War College and other institutions in 1954 tried to develop strategies and force structures to accommodate nuclear weapons. The first attempt, the Atomic Field Test Army [AFTA], while not

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regarding possible nuclear use in the Korea and Indochina conflicts.

realistically tested in the 1955 Follow Me, Blue Bolt, and Sagebrush exercises, seemed to be too vulnerable to those nuclear strikes that were actually simulated (Midgley, 1986: 46-57). Although there were other studies on force restructuring underway as the AFTA concept began to be discredited, these efforts were still under way at the end of 1955.

Therefore, one assumes that the Soviets realized that the U.S. Army was focusing on implementing an increasing number of nuclear weapons in its force structure and on approaches toward building dual-capable ground forces. At the same time, the Soviets probably were not able to develop in operational terms a clear perception of the threat they would face on the battlefield.

Sino-Soviet relations were relatively friendly during the early to mid-1950s. Therfore, it would appear that this factor was not important during this period of development in Soviet military doctrine.

The Primacy of ICBMs

In his 20th Party Congress speech in February 1956 Khrushchev argued that the growing strength of the socialist countries, particularly the USSR, invalidated the long-standing socialist tenet about the inevitability of war with capitalist countries. At the same time, however, the Soviets continued to devote substantial resources to improving their arsenal of nuclear weapons.

During these next few years, political and military elites maintained their support of a combined arms strategy, arguing that reliance on a single weapon was foolish. Sudden destruction of an opponent's military capability continued to be an unaccepted argument, and military writers contended that the Armed Forces would continue to need a wide range of weapons (and appropriate doctrine and strategy) to achieve the necessary goals here (Dinerstein, 1962: 79-80; Garthoff, 1962: 76-87).

This thinking, however, began to change with the success of the Soviets' development of their ICBM capability, making the 1956-59 period a sort of transitional one to Khrushchev's 1960 assertion on the primacy of nuclear weapons. Starting in the autumn of 1957, when the Soviets began to test ICBMs. Military writers began to remark that ballistic missiles would improve and would become a more important component of force posture (Garthoff, 1962: 103-136, 134-138, 227, 255). Khrushchev had been convinced for quite a while of the overwhelming importance of ballistic missiles in contemporary warfare, and when the USSR could demonstrate and deploy such a capability, he sought to focus on it. One of his early steps in this direction was to create the Strategic Rocket Forces in late 1959 (Holloway, 1983: 35).

In 1960 Khrushchev asserted that the USSR's ICBM force would serve as the pillar of the country's strategic force

posture. He now maintained that any conflict between West and East would only last a few hours or days, since even a superpower conflict that began in a theater would quickly escalate. Consequently, he was able to assert that the Strategic Rocket forces should become the main branch of the Armed Forces (Garthoff, 1962: 103-126, 134-138, 254-261; Monks, 1984: 32-39).

Furthermore, as he had argued for several years, a global war with capitalism could be avoided if the USSR's opponents could be convinced of their ultimate destruction should they initiate such a conflict. The possibility of constraining the West from initiating such a conflict was an additional incentive to increase Soviet ICBM forces (Garthoff, 1962: 254-261, Monks, 1984: 32-39; Lockwood, 1983: 58).m Some Western scholars not that the Soviets favored nuclear preemption to effect this constraint because of the U.S. superiority in nuclear forces (Dinerstein, 1962: xix).

As Khrushchev was propounding his views, there were at the same time a number of military officials who thought that Soviet conventional capabilities should not be

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mOn the relationship between Soviet strategic thinking and strategic force procurement policy in the 1960s and 1970s, see Almquist, 1984. Beginning in 1956, Khrushchev occasionally noted an important complementary assumption for the point about the destructiveness of nuclear weapons: this destructiveness made war not a rational instrument of state policy (Monks, 1984: 19).

deemphasized as much as Khrushchev intended. Since the Soviets had already cut some 30% of the Armed Forces' manpower in the mid-1950s, Khrushchev's proposal in the early 1960s for even further cuts generated a significant amount of resistance, especially within the more conventionally armed services (Holloway, 1983: 40; Lockwood, 1983: 67; Erickson, 1971: 7-10; Garthoff, 1966; 255-259).

Internal Factors

Some of this opposition would prove to be Khrushchev's undoing, but after vanquishing the Anti-Party group in 1957 and Zhukov in October of
that year there was little in the way of serious leadership conflict that threatened Khrushchev in the next five years or so. Khrushchev did face problems connected with the U-2 incident and the Summit collapse, as well as with the Cuban Missile Crisis the subsequent year, but these problems came after the 1960 speech on ICBMs and concerned more disagreement with Khrushchev's foreign policy initiatives rather than with his thinking on military doctrine.

Leadership change and struggle during this period, apart from Khrushchev's strengthening of his power (see Wolfe, 1971: 131-136), seemed not to be too important for Soviet doctrine and strategy development. Indeed it seems to be the case that most Soviet elites and military

analysts agreed with Khrushchev's basic position about the importance of the Strategic Rocket Forces for a future war with capitalist countries. Furthermore, the fact that there were no major changes in doctrine, strategy, and procurement patterns in the area of nuclear weapons in the first couple of years after Khrushchev's demise suggests a general consensus within the Soviet leadership about the importance of building up the ICBM force (Monks, 1984: 49-56; Lockwood, 1983: 81-96; Almquist, 1984). The story for conventional forces was a little different, but I will address that in the next section.

Apart from the importance of the destructive power of ICBMs, some Western analysts have thought that Khrushchev's advocacy of strategic nuclear weapons may to a degree be similar to Eisenhower's elaboration of Massive Retaliation. Pointing to the domestic economic constraints Khrushchev faced around the turn of the decade, some analysts think that budget constraints may have been an important factor in the emphasis to develop a force posture cheaper and more destructive than general purpose forces (Wolfe, 1970: 101-102; Evangelista 1988: 215, 228-235; Douglass, 1980: 76-77; Dinerstein, 1962: xv-xvii). The troop cuts in 1956 and the proposed cuts in 1960 (not fully implemented) lend credibility to this interpretation, as does the knowledge of Khrushchev's

concern to raise the standard of living within the country.

At the same time that military personnel expenditures were decreasing however, weapons expenditures were increasing, and it is likely that most of these funds were going to nuclear production (Bloomfield, Clemens, and Griffiths, 1966: 52-53). Soviet GNP growth was decreasing in the early 1960s (from about 9% to 4%, according to Lee, 1987: 97; or 6.5% to 5%, from Rosenfielde, 1987: 319), so it is likely that Soviet leaders would have perceive particularly strong constraints from supporting a strong missile procurement program plus heavy expenditures on conventional forces.

As indicated above, Soviet weapons technology made a particularly important stride during this period in the successful testing of an ICBM and the launching of Sputnik. By the late 1950s, they also were able to reduce the size of the warhead to be carried in the ICBM. They did encounter some developmental problems with their ICBM; deployments were delayed longer than many in the West thought likely, but the technology itself was key for Khrushchev's military and economic strategy (See Evangelista, 1988: 182, 229-231; Holloway, 1983: 84-85; Meyer, 1983/84a: 14-17). Western analysts, therefore, have noted that technological developments during this period seem particularly important for facilitating

Khrushchev's interest in substantially augmenting Soviet nuclear capabilities while trimming general purpose forces.

External Factors

NATO deployed its Thor and Jupiter IRBMs in the late 1950s, but there were no significant public NATO structure or deployment battles for the Soviets to try to interpret and react to until the middle of the decade. The Soviets were, of course, concerned with these deployments, and no doubt took them into account in their military planning (Holloway, 1983: 67; Meyer, 1983/84a: 14-17, 1983/84b: 8-11; Evangelista, 1988: 234). NATO's discussion of the Flexible Response strategy was getting underway, but it would not be until the mid-1960s that Soviet discussion on this NATO policy flourished. The NATO experiment with the MLF did not generate too much concern for the Soviets (except for their worries about German access to nuclear arms, and it was a fairly short-lived program. France's withdrawal from NATO occasioned dismay in the West and satisfaction in the East but there seem to have been no clear effects of it on either NATO doctrine or on WTO doctrine.

In the area of Army doctrine, the next attempt following AFTA was the Pentagonal Atomic Non-Atomic Army (Pentana). This structure concept was based on small divisions with five battle groups and designed to have the

mobility and dispersal capability a dual-capable force should have. Although Pentana was approved in July 1956 as a basis for Army restructuring, none of its major constituent concepts had been field tested by that time (Midgley, 1986: 60-61).

The Army began restructuring in 1956 as the Pentagonal Atomic (Pentomic) army, based on the five battle group idea. What tests that were done on the basic Pentana concept after the restructuring had taken place showed that it had little military advantage in terms of effectiveness or casualty reduction over the unmodified 1956 division. A particular problem the Pentomic army faced involved its unsuitability to conventional conflict (Midgley, 1986: 66-74, 93-96).

Dissatisfaction continued to grow with the Pentomic division in the late 1950s. After spending part of the late 1950s and early 1960s discussing the Modern Mobile Army concept (MOMAR--basically a plan to provide an enhanced dual capability and to expand the Army's battlefield nuclear capability), the Army in 1961 began to restructure forces based on the Reorganization Objectives Army Division (ROAD) (Midgley, 1986: 97-110). This plan called basically for the maintenance of the perceived nuclear capabilities of the current division but improving its conventional capabilities. Critics charged that this organization scheme did not resolve some of the basic

problems apparent since the 1950s involving plans for a dual-capable force, and the Oregon Trail exercise, completed by 1965, seemed to confirm these doubts (Midgley, 110-121).

Therefore, the general changes the Soviets probably perceived in U.S. Army doctrine during the 1956-1965 period were a greater orientation toward the use of nuclear warfighting in the mid-1950s and somewhat of a shift toward a conventional warfighting orientation during the early 1960s as Flexible Response was being discussed. Whether these Army shifts were clearly interpreted by the Soviets in this way is uncertain, but the general modifications they perceived probably reinforced their perceptions of the overall NATO move toward greater options in force use, particularly in the conventional/tactical nuclear area.

The Post-Khrushchev Decade

Although Khrushchev throughout the last years of his tenure continued to emphasize the importance of nuclear weapons, the military occasionally expressed disagreement about the value of such a policy. Defense Minister Malinovskiy, for example, argued in 1962 that if war between the superpowers becomes a fact, that the USSR must have sufficient capability "'to decisively route the aggressor'" (quoted in Monks, 1984: 45-46). Echoing this idea that a combination of nuclear and non-nuclear forces

was the best way to ensure victory regardless of the challenge that the "imperialists" might pose the Soviet Union were some members of the military leadership who argued that a local war might not inevitably escalate into a global one (Monks, 1984: 33).

Concomitantly with this line, while recognizing the SRF as the primary service branch of the Soviet Armed Forces, the leadership in 1966 officially confirmed the importance of maintaining non-nuclear as well as nuclear forces (Monks, 1984: 52).n It is this confirmation I will use to mark the beginning point of this period. I suggest 1976 as the close of this period because of the Tula speech (see next section) in 1977, which seemed to show a shift in thinking to deemphasize the appropriateness of nuclear weapons.

The line of thinking on local wars and possibly limited escalation that began in the early 1960s was pursued more intensively by some military thinkers in the several years following Khrushchev's demise. Some of these analysts argued that a local war would more likely escalate if tactical nuclear weapons were used,o while a smaller minority asserted that a local war could possibly

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nSee similar comments by Cherednichenko, Sokolovskiy, and Kulikov during this period (Peterson and Hines, 1983: 704).

oNote the difference with contemporary NATO thinking on this issue (Monks, 1984: 50).

be kept limited to conventional or tactical nuclear weapons (Monks, 1984: 50). On the assumption that some sorts of wars might be protracted, the argument was made that the USSR should continue to maintain a high morale and of political, and military effectiveness in the Armed Forces (Monks, 1984: 51).

Part of this concern about local wars may have been due to the Soviet interest in increased involvement in the Third World, particularly in Vietnam and the Mideast (Wolfe, 1971: 38, 270-272). As the Soviet Union was growing in nuclear parity with the US, it was also seeking a sort of political parity--the "right" to be involved--in parts of the world where it earlier had not directed much effort. Indeed, one of the interesting arguments advanced during this period was that the Soviet Armed Forces had an "international duty" to help "progressive forces". This duty was one given official sanction in 1966 by both Brezhnev and Malinovskiy. Included in this duty were the tasks of deterring global war, protecting socialism from attack, and aiding the demise of the colonial system (Monks, 1984: 51-52).

Indeed, Grechko in 1968 spoke about both global nuclear or conventional war as possible and indicated that the Soviet military was devoting attention to the mix of weaponry that would enable the Armed Forces to succeed in either type of combat (Monks, 1984: 78-79). As the Soviet

navy developed a blue-water capability, its supporters foresaw an increased role for it in support of local conflicts. Admiral Gorshkov commented in 1976 that Soviet experience in limited conflicts shows that the navy can play a "vast role" in them and is capable of a full range of conventional support (quoted in Monks, 1984: 80).

As the Soviets considered the likelihood of a regional conflict in the Third World remaining conventional, there were obvious implications in such discussion for a Soviet views about a conflict in Europe. When Soviet writers dealt specifically with Europe, though, one occasionally finds some discussion that a regional war where Western forces introduced tactical nuclear weapons might not escalate. Most Soviet military writers during this period, however, asserted that escalation to a central exchange was the most likely outcome of such a conflict (Douglass, 1980: 168-170).

Some Western analysts believe that Grechko's emphasis on the international capabilities of the Soviet Armed Forces contributed to the emphasis on regional conflicts remaining conventional. Hints during Grechko's tenure (1967-1976) that a tactical nuclear war might remain localized may have represented a new development in Soviet military thinking, but they may have been part of an effort to increase the deterrent capability of Soviet

tactical nuclear forces by adding an element of ambiguity to Soviet military doctrine (Monks, 1984: 98-100).

Internal Factors

Given the apparent importance to Khrushchev on cutting general purpose forces expenditures and freeing up military manpower for participation in the civilian economy, it is understandable why there was not more extensive debate within the military or political leadership about non-nuclear forces. Khrushchev did not exercise the same extent of control over military doctrine and strategy debate as Stalin had, but the change in leadership in 1964 clearly seemed to facilitate an expanding debate on nuclear vs. non-nuclear forces. While there was not an extensive security issues debate surrounding the power struggle within the leadership--Khrushchev's Politburo opponents quietly deposed him at a convenient time--the leadership change itself did seem to have an important effect on the discussion of key doctrine and strategy issues (See, e.g., Holloway, 1982: 85-86,

There were not many leadership changes in defense-related positions during this period. Brezhnev solidified his position as General Secretary in the late 1960s and early 1970s, Defense Minister Grechko was appointed in 1967, and he and Minister of Foreign Affairs Andrei Gromyko received full Politburo status in 1973. Monks

(1984: 73-101) attributes much of the emphasis during this time on conventional warfare and local wars to Grechko's appointment, but it is likely that another important dynamic was the growing sense within the Soviet leadership (in this case, the Defense Council) that greater Soviet military and political activity in the Third World was facilitated by the attainment of "parity" with the U.S. Numerous analysts of Soviet-U.S. relations have commented that the Soviets considered their participation in the ABM Treaty and the Basic Principles Agreement as an acknowledgment by the West that the Soviets could now play as active a role as they wished in world affairs.p

In the area of economics, it seems unlikely that fiscal constraints had much to do with developments in doctrine and strategy. GNP grew by 5.0% for 1960-1965, down from 6.5% to 5.0% from 1955 to 1960. (Rosenfielde, 1987: 319). Defense spending as a share of GNP had been increasing fairly steady from the early to mid-1960s at about 10% (Lee, 1977: 102). Given the awareness that conventional forces are more expensive to procure than nuclear ones, the expectation that growing economic constraints might have precluded such a shift in doctrine

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pSee the discussions of divergent U.S.-USSR views on detente in Garthoff (1985: 1068-1069), Blacker (1987; 99-130), and Gelman (1984: 19-50).

and strategy is not met. For this period, the decision to enhance conventional force structure was apparently made despite the economic cost.

Indicators of economic constraints were mixed in the latter half of this decade. GNP growth continued from 1965-1970 but dropped for the 1970-1975 period.q Investment grew slowly, as did consumption. Defense spending, however, grew at a constant 4%-5% rate for the entire period (Rosenfielde, 1987: 319).

The basic conclusions one would draw from this data, especially comparing GNP growth and defense spending, is that arguments for greater spending on defense could have been much more easily made in the 1968-1970 period than from 1970-1976. A constant 4%-5% growth rate in defense spending would be far more easily born with an increasing, rather than declining, GNP growth rate, especially considering how low this rate had dropped by 1975. Therefore, one may suppose that there were far fewer economic constraints on planning for the augmentation of

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qMonks (1984: 220-221) argues Soviet interest in developing a strong economy and expanding their trade ties with the developing world may also have been important economic goals (to compete with defense spending) during this period.

conventional force posture into the early 1970s than into the mid-1970s.r

It is hard to characterize the importance of technological developments for the changes in doctrine and strategy because little at present is known about Soviet advances in conventional warfare technology during this time. One Soviet source cites developments in tank armor, anti-tank weapons, rear service logistic systems, small explosives, and troop communication systems as important advances during this time (Kir'yan, 1982: 275-282, 308-311). Many of the Soviet military articles written during this period discussed an expanded role for conventional weapons from the standpoint of policy rather than new weapons that augment the effectiveness of Soviet conventional warfare capability, it may initially seem a safe assumption that technology advances were not a key factor. However, several Soviet volumes in the 1980s that look back on this period suggest that technological advances were especially important for the implementation of doctrine and strategy during this period, so technological advances were probably important during this time (Odom, 1985: 6; see also Douglass, 1980: 33-55).

External Factors

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rOne should, of course, keep in mind that Soviet strategic force procurement was still a very strong program into the mid-1970s.

Looking at external factors, it seems likely that part of this concern for improved conventional doctrine, strategy, and forces may have been due to NATO's discussion and implementation of the Flexible Response doctrine. I digress for a while here on the development of Flexible Response because of its importance.s

Critics of the Eisenhower Administration's policy of "Massive Retaliation", articulated in 1954, began to grow in number in the late 1950s. These critics included a growing number of Democrats, Army and Navy representatives, and defense intellectuals, who argued that a more refined nuclear-use policy would provide a more credible deterrent than Massive Retaliation. In spite of some confusion in their position as to whether the tactical nuclear weapons were to be employed as a "war-fighting" instrument like conventional weapons or to serve primarily as a deterrent, the critics of Massive Retaliation presented a coherent case that a doctrine relying on conventional forces supplemented by "limited use" of tactical nuclear weapons could enable the Government to base its foreign policy on something other than bellicose threats to wreak total devastation upon an enemy. The concept of graduated nuclear use was basically

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sMost of the historical record I will recount here is generally known, but among the sources particularly good on this period are Schwartz (1983b), Legge (1983), Freedman (1983), and Kahan (1975).

a pre-World War II concept of warfare, but it resonated positively with a growing number of supporters who sought a doctrine that called for multiple options--i.e., less than total destruction of the enemy--but at the same time made use of weapons of current technology.

The concept of multiple options found expression in the concept of "flexible response", which Secretary of Defense Robert McNamara brought with him to the Pentagon in 1961. McNamara's thinking placed greater reliance on conventional weapons. Knowing that the US could not afford to threaten escalation of a regional conflict in Europe to a central exchange when the Soviets had roughly similar types of strategic and theater nuclear weapons, McNamara was concerned about providing the President with a sufficient menu of options in any given crisis. In a strategic context, this doctrine found expression in the "city avoidance" or counterforce ideas he expressed in speeches in Ann Arbor and Athens in 1962.

For the West European context, this doctrine found expression in the flexible response concept. Although there was extensive debate on the best means of employing such an approach, the main idea, as expressed by General Maxwell Taylor in 1960, was that NATO forces in wartime

> must cover the vital ground areas in which they are deployed and hold the enemy at arm's length while we punish him with our heavy weapons of great destruction. Thereafter they mush have the residual strength to occupy his lands and claim

> whatever may be called victory for limited war, they must be strong enough to turn back infiltrations, raids and border forays and gain the necessary time to make sure of an enemy's intentions (Freedman, 1983: 292).

In contrast to earlier thinking that a strong conventional defense in Europe would be impossible if only because of the cost to the US and to its allies, US military officials developed different evaluations of the NATO-WTO balance. Studies in the Pentagon, such as those done by Alain Enthoven and Wayne Smith (e.g. How Much is Enough), indicated that NATO forces were qualitatively better than those of the Pact and, in some facets of the force structure, were also more numerous. Convinced that conventional defense was not out of the question because of cost, McNamara began to sell the Flexible Response idea to NATO leaders beginning with his 1962 Athens speech.

McNamara, over the next five years, marketed his Flexible Response idea to NATO leaders and along the way attempted to share with them the data and arguments behind the counterforce doctrine to reassure them of the US commitment. This new openness manifested itself most directly in the establishment of the NATO Nuclear Planning Group, designed to work out NATO nuclear policy by consultation among the Allied powers. With the reassurance that McNamara's new openness and the consultation

opportunities the Nuclear Planning Group provided, plus the withdrawal from NATO military affairs of France, a vigorous opponent of flexible response, the policy of Flexible Response was passed by NATO's Military Committee as MC 14/3 in 1967.t

Several Western analysts have noted the potential importance of Flexible Response for the resurgent Soviet interest in doctrine and strategy on conventional capabilities (Monks, 1984: 50-51, 220, 263; Douglass, 1980: 80-82; Wolfe, 1971: 210-211). Although the doctrine was not officially confirmed until 1967, the Soviets were certainly aware of it during the years the NATO allies were debating its merits and probably gave serious thought the doctrine's implications for theater conflict.

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tAs Flexible Response was implemented, one may note the following developments. McNamara, beginning in 1963, directed the Pentagon to bring the active unit strength of the Army from 11 to 16 divisions; to increase tactical fighter strength from 16 to 21 wings; to improve the combat readiness of active duty units; and to improve the Army's logistical networks. Other measures he pursued were to improve reserve structure to permit rapid mobilization in time of crisis; to increase the airlift capacity of the US in order to be able to reinforce rapidly the central European front with American troops; and to pre-position equipment in Europe two US division sets (POMCUS) to aid in rapid reinforcement. Also to bolster theater capabilities, the US during the 1960s deployed additional nuclear submarines to the European theater as well as new systems such as the Pershing-I, the A-6, A-7, F-4, FB-111, and several types of dual-capable howitzers. Finally, it was decided that Jupiter and Thor IRBM bases, established in Europe from 1959-1961, would be maintained until the mid-1960s (Schwartz, 1983b: 150; Record, 1981: 42-44; Meyer, 1983/4b: 12-14).

After the passage of MC 14/3, there were no major changes in NATO policy during the decade or so after Khrushchev's ouster. During the late 1960s and early 1970s there was discussion on the use of ADMs, and there was some debate on the extent to which NATO nuclear forces should be held in reserve (a question which dealt in part with European "decoupling" concerns)(Legge, 1983:23-25), but no major doctrinal issues were addressed. Apart from these issues, the Flexible Response doctrine continued in effect.u In NATO force posture itself, there were adjustments in aspects such as the combat-to-support manpower ratio and in the level of mechanization of some units (Schwartz, 1983: 16-18), but few other important changes. Peterson and Hines (1983: 700), perhaps bolster the implied point here--that there were no NATO develpments in the early to mid-1979s that caused the Soviets much concern--with their contention that as the Soviets perceived themselves attaining strategic parity, they may even have thought themselves better able to deter NATO from using nuclear weapons.

By 1967, principal questions on nuclear and conventional force use in U.S. Army doctrine in the early

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u Schlesinger's articulation of the Limited Nuclear Options strategy in 1974 no doubt engendered discussion in NATO on U.S. tactical nuclear policy. Schlesingers remarks, however, were intended not as reflection of U.S. strategy for NATO but rather of U.S. efforts for selective counterforce targeting of its strategic weapons.

1960s were still unresolved. The impending passage of MC 14/3, in fact, had brought additional uncertainty into the debate because the NATO document introduced a deterrence function for tactical nuclear weapons which had not up to that point been a concern for the Army (Midgley, 1986: 131-2). The Transition Study, done in 1966 and 1967 by the Army's Combat Development Command, agreed with the Oregon Trail findings that the dispersal approach for a nuclear engagement would not work successfully against a conventional attack. While this conclusion basically reconfirmed the same constraints Army planners had been facing over the past decade, it was probably the first official recognition that the Army's strategy of trying to win a ground conflict with nuclear weapons was flawed (Midgley, 1986: 132).

Within U.S. Army doctrine after 1967, there was discussion of "packaging" of limited nuclear options, and a key study of the Combat Development Command on this topic was approved in 1970 as FM-100-30 Tactical Nuclear Operations. This study, assuming geographic limitations to a potentially nuclear conflict, argued that release authority should be given to commanders at lower levels (brigade or battalion) than had earlier been considered appropriate and advised that dispersion rather mobility was the key to survival on a nuclear battlefield (Midgley, 1986: 138-141). While this study displayed greater

sensitivity than previous efforts to the political problems inherent in the use of nuclear weapons, it continued the trend of many Army studies to overlook essential differences between a nuclear and conventional battlefield (Midgley, 1986: 141).

Tank warfare during the 1973 Arab-Israeli conflict had a major impact on Army strategy in the area of increased emphasis on maneuver tactics on the conventional battlefield. Many of these concerns were incorporated in the guidance of FM 100-5, issued in 1976. The Army's current goal, the document's chief editor stated, was to optimize a conventional army for nuclear operations, not to design a force for both nuclear and conventional operations. Nuclear weapons did not receive much attention in Army planning in the mid-1970s after the publication of FM 100-30 (Midgley, 1986: 146-149).

Therefore, while the Soviets probably took note of the continuing discussion within the Army on nuclear and conventional force use on the battlefield in the late 1960s and the early to mid-1970s, it seems unlikely that Army doctrine developments had any real impact on Soviet thinking during this period. Apart from the incentive this thinking may have generated for the Soviets to recognize the importance of developing suitable doctrine and strategies to deal with tactical nuclear weapons, the uncertainty in the Army about many of these basic issues

could hardly have constituted a coherent problem for the Soviets to face.

Additionally, it is very likely the case that the Soviets, like U.S. military analysts, were very interested in the developments of the conflicts in the Mideast in 1967 and especially in 1973. These conflicts provided one of the few proving grounds for modern weapons, especially weapons of U.S. and Soviet manufacture. Furthermore the conflicts, especially the October war, involved frequent tank engagements, and these battles, plus combined arms engagements, provided useful lessons for tactics and military hardware assessment. Although it would be difficult to prove and to cite the effect, it is very likely that the Soviets were interested in the lessons from these engagements the U.S. was trying to learn.

Tensions on the Sino-Soviet border were also nascent during the mid-to late 1960s. After border talks had broke down in October 1964, and after the Chinese sought unilaterally to impose further control over navigation of the Ussuri in 1966, the number and severity of border incidents grew. Many of these incidents (which were not unlike incidents occurring on the border with Hong Kong) may have been instigated by the Red Guards to dramatize the "foreign threat" as part of their radical efforts to reshape Chinese society during the Cultural Revolution (Robinson, 1972: 1181-2).

In terms of border defenses, the Soviets and the Chinese maintained roughly equivalent forces. The Chinese had about 380,000-480,000 troops in 35-40 divisions in the military districts along the border, and the Soviets some 250,000-350,000 in 20-24 divisions. This apparent imbalance was offset by the significantly better Soviet logistical support for the border region and the superior quality of military equipment the Soviets possessed (Robinson, 1972: 1184-5).

Interestingly, the increasing problems on the border did not lead to significant augmentation of forces by either side, at least before 1967. The Soviets, for example, upgraded their forces and established a new military district in Central Asia (Baker and Berman, 1982: 12), but there was no significant change in force levels until 1969. It seems, therefore, that in spite of the growing tensions in the Far East that the Sino-Soviet military tensions had no major impact on Soviet military planning until the 1969 border clashes.

The two March 1969 clashes were indeed very important for Soviet military developments in the Far East, and these incidents were probably also important for thinking on doctrine and strategy. Soviet troop strength on the border continued to grow, and although the two sides had negotiated some of the most serious aspects of the problem by October 1969 (Robinson, 1972: 1196-1198), the military

threat the Soviets had there continued for the next several years. By the end of 1969 Soviet forces on the border had grown to 30 divisions and by 1972, to 44 divisions (Military Balance, various years). Still, what particular influence the border tension may have created for doctrine or strategy developments will be difficult to assess, but several possibilities will be explored.

Developments in the Past Decade

While there has been much continuity in Soviet doctrine and strategy since the mid-1970s, there have been a few very significant revisions, and debate on certain aspects of Soviet doctrine that developed in the early 1980s has flourished since Gorbachev's appointment. I will outline a few of these developments.

The first notable event occurred in January 1977 with Brezhnev's speech at Tula, where he said that the USSR was not seeking military superiority with the goal of delivering a first strike. As one Western analyst noted, Brezhnev seemed to be acknowledging that neither the U.S. nor the USSR could achieve a unilateral damage-limiting capacity (FitzGerald, 1987: 4). This assertion by Brezhnev, which essentially implies Soviet concurrence with the U.S. doctrine of Mutual Assured Deterrence, was echoed by Brezhnev himself and by various Soviet military analysts and commentators in subsequent years (FitzGerald, 1987: 7-11).

Second, while many Soviet military authorities continue to talk about the impossibility of limiting a nuclear war, there is also discussion that nuclear war is no longer a potentially useful instrument of policy. This concept has been repeated by Gorbachev (FitzGerald, 1987: 17-20, 52-54). At the same time, the Soviets have remarked upon the concept apparent in the U.S. that a protracted war between the superpowers could be waged with conventional weapons and have acknowledged its possibility. Some have even said that new types of conventional weapons could be used in the early stages of the war against the opponent's most important state and military targets (FitzGerald, 1987: 24, 41-42, 46-49).

General N.V. Ogarkov, beginning in the late 1970s when he was chief of the General Staff and continuing through the 1980s, has commented on the relative escalation stability of conventional war, as compared to nuclear war (FitzGerald, 1987: 26-27).v Similarly, Ogarkov has talked about the importance of a strong domestic economy necessary to support a war effort (See Herspring, 1987: 44-46). Obviously, if he were emphasizing nuclear conflict, there would clearly be insufficient time for even a mobilized economy to contribute to the war effort.

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vFor more information about Ogarkov's contribution on these issues, see FitzGerald (1986a, 1986b) and Herspring (1987).

The Soviets have also discussed the possibility that a coalitional war, which in the past had always been associated with a global nuclear conflict, could remain limited (Monks, 1984: 128-129). There was also less being said since the late 1970s about the "international duty" of the Soviet Armed Forces. Articles on the Soviet military's responsibilities seemed to focus more on protecting socialism at home, with the suggestion that important international responsibilities be shared with the Warsaw Pact countries (Monks, 1984: 132-133).

Last, but certainly not least, Gorbachev's calls in the late 1980s about "reasonable sufficiency" and "defensive defense" have been of great interest (Meyer, 1988: 150-155). One of the principal implications of this doctrine is that changes would be made in Warsaw Pact deployments to emphasize a defensive rather than offensive orientation.

There seem to have been two stages in the debates on doctrine and strategy since the mid-1970s, or perhaps a transition period during the late Brezhnev and Andropov-Chernenko tenures before a clear developmental stage began with Gorbachev. The earlier time frame would include the Tula statement, the views on the international role of the Armed Forces, and some of the initial discussion of the possibility of superpower conflict using only conventional weapons. Debate on many of these ideas, including an

emphasis on developing better conventional weapons (discussed in a subsequent section) continued without much resolution through the mid-1980s, but seemed to come into focus within a year or so after Gorbachev's accession to the General Secretary position. Such seemed the case particularly when he began elaborating various arms control proposals for nuclear and conventional weapons. During the Gorbachev period, then, doctrinal debate clearly seems under way, though there has been little resolution in key areas.

What I will do for this period is assess the implications of discussion from 1976 to 1986 about doctrinal concepts for conventional warfare, then the implications for military doctrine and strategy of the discussion since 1986 about new assumptions such as "mutual security". I will endeavor to fit the assessment of the entire period into the historical context I will lay out for doctrine and strategy change. Particularly, I will suggest how the internal and external parameters I have used up to that point for assessing doctrinal developments may affect on the future direction of the debate.

Internal Factors

Leadership change, with the possible exception of Grechko's death and Ustinov's promotion, was probably not too important for the transition stage here as I have

called it. It seems likely that the Soviet leadership during the last Brezhnev years and during the interregna of Andropov and Chernenko, would not have been inclined toward making major changes in doctrine and strategy. Debates within the leadership do not seem to have been salient, as the Brezhnev, Andropov, and Chernenko successions were accomplished relatively quickly and without public discussion. There may be some differences worth exploring surrounding the Ogarkov dismissal, but that assessment will have to await further investigation. Leadership debates surrounding some of Gorbachev's ideas on defensive defense probably have been and continue to be significant for this doctrinal concept.w Economics certainly seems to have been a key factor in doctrine and strategy developments since the mid-1970s. Numerous authors have called attention to Soviet domestic and foreign economic problems,x and it seems to be the growing consensus among Western analysts that Soviet interest in concluding the INF treaty, and in the settlement of conflicts in Afghanistan, Angola, and Southeast Asia all point to a desire to reduce foreign

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wSee Phillips and Sands (1988) for a discussion of high-level debate on this topic.

xSee, for example, Bialer (1987), Goldman (1983), Colton (1982), and Wolf, Yeh, Brunner, Gurwitz, and Lawrence (1983).

expenditures because of the major need to improve the functioning of the domestic economy.

One needs only a brief look at domestic economic statistics to see the trends that concern Soviet leaders. From 1975-1980, GNP grew at 2.8%, the lowest level of growth in at least 30 years. During the same period, consumption grew at 2.6% and investment at 3.7%, also the lowest levels in these categories in 30 years. Defense spending, however, continued to grow at 4%, the same level as since 1960 (Rosenfielde, 1987: 319). These downward trends continued into the 1980s. One of the Soviets' choices to deal with these problems seems to be to reduce defense spending, but in a way they think will improve their overall security. One might expect a county's leaders to cut back on defense spending by allocating more for nuclear weapons than for general purpose forces, since nuclear forces are cheaper. Gorbachev seems to want to cut back spending across the board, but at the same time, to give more emphasis to conventional warfare capabilities, because of its perceived greater stability over nuclear weapons. The upshot of these developments for doctrine and strategy developments seems to be a greater focus on the importance of conventional warfare but a lesser focus on the role of military power in foreign policy.

Developments in technology also seem to have been important to the Soviets in the past decade. Ogarkov since at least 1971 has been an advocate for the incorporation of the latest technology developments into Soviet military theory and practice, but in several publications in the early 1980s, he discussed specifically the importance of incorporating developments in precision conventional weapons and "reconnaissance-strike complexes". He emphasized this point with the argument that these technology developments made conventional weapons nearly as effective as certain types of nuclear weapons (FitzGerald, 1987: 27-33).y Other key Soviet military officials have also discussed these developments, noting that the Warsaw Pact should devote significant attention to these weapons, particularly since NATO was equipping its troops with them (FitzGerald, 1987: 33-35). Although the potential relationship of these technological developments to doctrine and strategy is complex and will have to be elaborated in some depth, it does appear that technology is important for current modifications in doctrine and strategy.

External Factors

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ySee also Herspring (1987) and Odom (1985) on Ogarkov's concern for application of military technology advance

There have been several important developments in NATO military affairs since the mid-1970s of potential interest to the Soviets. As Schwartz notes, NATO leaders, as they contemplated the Long Range Theater Nuclear Force Modernization Program in the late 1970s, decided to leave the doctrine of Flexible Response basically intact, in part because of the anticipated difficulty in reaching an acceptable compromise on some other formulation (1983: 223-249; see also Record, 1981: 54-79). The Pershing-IIs and the GLCMs were added to NATO force structure, but there were apparently no real modifications in NATO planning as to the conditions under which these forces would be used. NATO leaders saw the addition of these weapons more as an enhancement of existing force posture rather than as a change in force posture emphasizing earlier or broader use of nuclear weapons.

NATO strategy was modified in the late 1970s and the 1980s with the introduction of the Rogers Plan, the AirLand Battle, and the Follow-On Forces Attack (FOFA) that originated with the U.S. Army (see U.S. Army, 1982; Starry, 1981). These plans were primarily constructed around the strategy of stopping a Soviet armor advance into Europe with precision-guided munitions and attacking Soviet rear echelons. Although not concepts which

eschewed the use of nuclear weapons,z one of the underlying supports of these strategies is the development of sophisticated conventional munitions that, over time, are anticipated to serve a purpose similar to that of battlefield tactical nuclear weapons in Europe--to halt a major WTO armor offensive. The Soviets have discussed both NATOs nuclear modernization program (extensively) and the AirLand Battle/FOFA (less extensively),aa so it is likely that these developments have had an effect on Soviet thinking in the past decade about doctrine and/or strategy issues in Europe. Odom (1985: 9) argues that the new conventional technologies planned for use in the AirLand Battle have been of especial concern to the Soviets.

The Chinese problem is one that has become less salient for the Soviets in the past decade. Relations between the two countries distinctly worsened with the 1979 Chinese invasion of Vietnam, and by the end of that year, the Soviets had created the Far Eastern Theater of Miltiary Operations, a major new command in that part of the country (Berman and Baker, 1982: 12-13). After the

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zMidgley (1986: 152-158) argues that in the 1970s, as in earlier years, the Army's strategy modifications never really addressed the effectiveness and survivability problems inherent in designing dual-capable ground forces.

aaFor a summary of Soviet responses to the NATO INF modernization program, see Wettig, 1983, 1984. For a summary of Soviet responses to AirLand, FOFA, and PGMs, see Eastman, 1986; and FitzGerald, 1987: 42-54.

early 1980s, though, as Brezhnev and his successors tried to rebuild good relations with China, political and military tensions began to subside. Soviet agreement in the mid-1980s to begin reducing the number of troops in the border area and their agreement to remove SS-20s from the Far East helped improve the situation there. One could probably argue, then, that reduced tensions on that border may have provided the Soviets with a little additional "breathing space" as they reconsidered aspects of their doctrine and strategy.

Summary

In lieu of a lengthy summary of the developments in Soviet doctrine and strategy that this book covers, I have provided Table 1 in the appendix (see Table 1).

This table suggests that leadership change is probably the most consistent factor affecting doctrine and strategy, with the proviso that leadership change is not necessarily dependent upon any other variable. That is to say that there may be certain economic, technological, or foreign affairs developments that leaders face, but none of those developments has a clearly determinative effect on the leaders' decisions, either in general or in specific as those developments may favor a nuclear-based or conventional-based doctrine. Leaders make up their own minds about how to develop and interpret doctrine and strategy.

Economic constraints are frequently important because of the parameters they provide leaders for the evaluation and development of policy. Sometimes, however, leaders decide to accept major economic costs in the pursuit of important domestic or foreign policy goals.

Technological advances can facilitate changes in doctrine or strategy if those developments are consequent with leaders' basic outlook on a particular doctrine or strategy. Technology may aid, but does not drive, doctrine and strategy developments.

External factors, particularly doctrine and strategy shifts of the USSR's principal adversary--the U.S. and its allies in NATO--can lead to changes in Soviet doctrine and strategy. Soviet leaders choose to react to NATO changes in their own ways and times. Soviet leaders naturally are inclined to respond to newly perceived threats from NATO, but those responses may or may not entail shifts in Soviet doctrine and strategy. NATO and the WTO interact with one another on a variety of levels, as one would expect opposing alliances to do, but the relationship does not reveal a mirror-image action-reaction dynamic in the area of doctrine and strategy development.

Similar conclusions may be drawn about military dimensions of the Sino-Soviet relationship. The Soviets and Chinese see a need to respond to perceived military threats from one another, but there is an extensive amount of variation in the interaction.

The overall conclusion hypothesized for the study is that internal variables are more important than external ones in the development of Soviet doctrine and strategy, and that it is hard to predict from the independent variables what their effect will be on the dependent variable.

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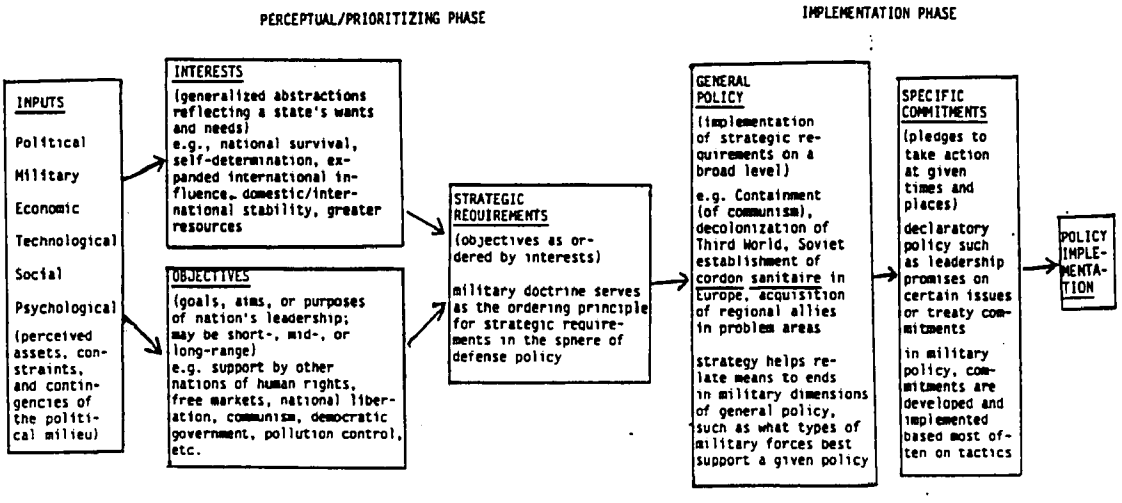
APPENDIX

Table 1.1: Factors Affecting Doctrine and Strategy Change--Anticipated Findings

Time Period	1946-1955	1956-1965	1966-1975	1976-1986
Basic Doctrine	More focus on nuc. weapons	Nuc. weapons are key for war	Nuc. and conv. weapons are both impt.	Decreased emphasis on nuc. weapons
Variables:	**Hypothesized Connection with Dependent Variable and Likely Affect On Doctrine and Strategy Development**			
Internal				
Leadership Change	strong (1953); aids shift from conv. focus	moderate; aids nuc. focus	strong; aids conv. focus	strong (last part); aids focus shift
Economic Constraints	no major constraints, Malenkov's arguments to contrary	somewhat; aid nuc. focus	constraints are present, but no apparent effect	major constraints; probably aid focus shift
Technology Advances	yes, aid nuc. focus	yes; aid nuc. focus	no apparent impact	yes, aid conv. focus
External				
Shift in US/NATO strategic policy and U.S. Army doctrine	US/NATO discussion of nuc. weapons probably influences Soviet shift to nucs.	same as previous period, 1st half; 2nd half, no effect of growing conv. emphasis in NATO	yes; Flex. Response probably aids conv. focus for Soviets	AirLand aids Sov. conv. focus, but LNO plans and P2/GLCM deployment reinforces nuc. focus
Sino-Soviet Relations	no real military tensions	no real military tensions	major tension; probably aids	less tension, esp. 2nd half;



Source: Based on Collins (1973: 2)

Figure 1.1: National Security Process Schema

CHAPTER II

CONSTRUCTING THE VARIABLES

As indicated in the first chapter, the principal issues to be investigated are the relative weights of internal vs. external factors on the development of Soviet doctrine and strategy and, within the internal and external categories, why some factors have been more important than others over time. Establishing causal relationships and determining which factors are more important than others is a highly speculative endeavor, as scholars do not have access to the minutes of meetings where such decisions were made. However, since causal relationships are what are of the greatest interest analytically, I will try to postulate some with this study as I discuss the relative importance of the various factors.

The study will proceed in two stages. As indicated in the previous chapter, I will employ changes in Soviet military doctrine and strategy on conventional warfare as a dependent variable and a variety of potentially influential external and internal factors as the independent variables. As I describe later in this

chapter, the issues I examine in Chapter Eight focus on hypotheses concerning a Soviet shift to a nuclear-oriented strategy beginning after Stalin's death, and a shift to a more conventionally oriented strategy, beginning in the mid-1960s. Having presented a basic chronology of those shifts in Chapter One, I will in the subsequent chapters construct more detailed chronologies of both the independent and dependent variables and then compare change in the two sets of variables.

These independent variables include, among the internal factors, Soviet leadership changes and the views on doctrine [to the extent known] of the leaders involved in those shifts, important advances in weapons technology, and economic constraints. Among the external variables are changes in U.S./NATO policy on conventional warfare, and major military tensions on the Sino-Soviet border. With appropriate account for lags in the relationship of independent and dependent variables, I will hopefully be able to demonstrate some of the postulated connections.

For the dependent variable, I will construct in Chapter Eight a more detailed chronology than presented in Chapter One of shifts within a series of important categories related to doctrine and strategy. This chronology will be based on speeches and articles by principal members of the political and military elite.

However, since Soviet doctrinal development from the end of World War II to the mid-1970s has been covered in great detail by many Western scholars, I will use articles from these scholars' works that basically represent a consensus on the issues I have selected to examine. These scholars have examined the development of doctrine and strategy using a variety of analytical categories. Some of these sets of categories are generally relevant to my examination. However, as I use the research of these scholars to examine doctrinal change, I will propose my own set of criteria that specifically focus on conventional warfare.

In Chapter Nine, I will examine changes in Soviet force posture and organization, changes which will serve as indicators for the doctrine and strategy shifts noted in leaders' publications and speeches. In that chapter I will evaluate the fit between indications of doctrine and strategy change in the Soviet military literature and actual changes in force posture. There has been substantial agreement among Western scholars as to the nature of the principal changes and the dates of the stages, so problems of interpretation based on secondary sources are not extensive. However, I will include an Appendix in Chapter Nine which evaluates the few

differences of opinion that exist within the Western academic community on these changes.

After ascertaining carefully the nature of the shifts in doctrine and force posture from 1946-1975, I will then compare this chronology with those of the independent variables to see what connections exists in time and substance. From an assessment of how these independent variables correlate with and potentially affected change in the dependent variables for the 1946-1975 period, I will draw conclusions about why and how Soviet doctrine and strategy changed during this period. I will present some propositions about how understanding change during the 1946-1975 period may help the assessment of change during the second stage of the study. I will also propose some theoretical constructs as to how understanding factors affecting doctrine and strategy change in the USSR during the 1946-1975 period may be helpful for understanding doctrine and strategy formulation in a comparative foreign policy sense.

In the second stage of the study, I will examine speeches and articles of the Soviet political and military elite from 1976 to the to the present to assess the possibility of further doctrine and strategy change. The discussion in the Gorbachev period on "mutual security" has suggested a possible doctrine change to many analysts,

so one purpose of this part of the study will be to evaluate the substance of key decisionmakers' comments on mutual security and examine why those officials who speak about possible changes think those changes should occur. As I will assert in Chapter Thirteen, there were really not improtant changes in doctrine on conventional warfare until the mid-1980s, so the analysis of this second stage will basically fall into two time periods, the post-1975 decade and the period thereafter.

Another purpose of this second stage of the study will be to relate the conclusions about doctrine and strategy change in the past fifteen years to the conclusions about doctrine change in the first part. The goal here is to develop further theoretical implications about why doctrine changes, both in the Soviet case and in general. Finally in the second part of the study, I will address the relevance of the conclusions I draw about Soviet doctrine change in light of the continuing domestic political changes in the USSR and the recent developments in Eastern Europe, particularly involving the two Germanies.

This second stage of the analysis relates closely to the first in the following ways. First, the understanding gained in the first part as to why changes may have occurred in the past will provide a rich background for

evaluating why present leaders may see the need for further change. In examining post-war developments in the first part, I will have assessed the principal concerns the Soviets had in doctrine and strategy for approximately 30 years, and this context will be helpful in understanding similar concerns in the past 15 years. While the methodology for selecting speeches and articles for review will be somewhat different between the two, the strong consensus among Western scholars for the 1948-1975 period provides an interpretive foundation that could not be significantly improved upon if I were to reexamine the same materials these scholars did for the same time period.

Additionally, as part of this second stage, I will continue tracing the independent variables I observed in the first part to see whether the reasons contemporary elites cite as grounds for change are really plausible or are more likely window-dressing. Finally, the some categories I will use for the current period are basically conceptual extensions of the categories I use in the first stage. Some of the categories I will use for the current period are identical to those used earlier.

Constructing the Independent Variables

As independent variables potentially affecting changes in doctrine and strategy, I will evaluate a set of internal and external factors. Internal factors I will assess include leadership change in the Defense Council and Minstry of Defense, important advances in weapons technology, and domestic economic constraints [see Table 1]. These factors are often noted by Western and Soviet analysts who write about military doctrine, and my study will subject the speculation on such factors to a systematic examination. To do this, I will track key developments for each of these factors for the time period of the study and will examine whether the timing and nature of the changes in these areas may plausibly have had an impact on important developments in doctrine and strategy on conventional warfare.

If any one of these factors did have a plausible impact on the development of doctrine, it is my hypothesis that it is the internal factors that were more often key in the development of doctrine, rather than the external ones. I would also argue that among the internal factors, it is first leadership change, then technological breakthroughs, that have been most important, while economic constraints have been relatively unimportant until the recent past.

Of the external factors, I argue that NATO doctrine and US Army strategy during the period studied have been a more consistent influence on Soviet military doctrine and strategy than military tension between the Soviets and the Chinese. The 1969 border clash had a clearly observable impact on Soviet force deployments in the Far East and on the structure of theaters of military operations, but in terms of significance over time, the potentially hostile situation in Europe has been a longer-term concern to the Soviets. Additionally, it would appear that most of the hostility on the border occurred after the principal shift in Soviet military doctrine in the mid-1960s.

The impact of the set of internal factors is obviously difficult to observe separately from that of the external factors, and the relative weights of intra-set factors are similarly difficult to differentiate. Such is the case in part because there is no access to minutes of decisionmaking sessions were the relative weights of internal or external factors would have been discussed. Second, it is not improbable that public Soviet leadership discussions about doctrinal issues dealing ostensibly with military problems or developments in Europe or the Far East might be occasioned more by internal developments such as leadership changes. If Soviets discuss external changes at a time when internal factors seem quiescent,

then one could argue that it was truly the external factors that were more important for the given doctrinal change. I will try to speculate in such cases from trends in the evidence what the more important factors may have been.

Internal Factors

I will provide specific hypotheses for evaluating each of the independent variables in their respective chapters. Here, therefore, I will only briefly review the principal concepts involved. I will assess leadership change by looking at two principal components: 1) changes in membership in the Defense Council, Ministry of Defense Collegium, and General Staff and 2) the nature of debates on military issues which sometimes surround a leadership change. If, during the period of a doctrine and strategy shift, there is a leadership change among the selected positions, the leadership change will be considered potentially significant for the shift in doctrine and strategy. If the leadership change seems to have been accompanied by a significant debate about military doctrine issues, such controversy will be taken as further evidence of the possible connection between the leadership change and the doctrine change. If, however, the leadership change has not significantly dealt with U.S.-Soviet political/military relations, the leadership change

can be considered to be only part of the struggle within the Politburo, rather than as one that may have had any real substantive effect on doctrine or strategy.

Secondarily, I will also examine the number of changes over time in key positions in the Defense Council, Ministry of Defense Collegium, and General Staff. The assumption for this part of the analysis is that if there are more changes in these positions at times of doctrine shifts that at other times (particularly if the changes basically occur before the doctrine shift), there will be good reason for asserting leadership changes as a precursor to doctrinal development.a

The second internal variable I will consider will be major new technological advances for Soviet weapons systems. As I will discuss below in the section on Soviet definitions of doctrine and strategy, both of these aspects of military thought have a reciprocal influence relationship with military science. Soviet military science responds to research guidance and funding levels as provided by high-level policymakers, and advances in military R&D provide new capabilities for policymakers to contemplate as they evaluate the effectiveness of existing military doctrine. On occasions the successful

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aSee Chapter Three for the methodological connections on this point.

development and testing of new military technologies will lead to reevaluations of military doctrine.

Therefore, in examining this variable, I will trace important developments in Soviet military technology during the time frame of the study and, where feasible, attempt to relate those advances both in chronological and in substantive terms to the changes I note in military doctrine and strategy. Among such advances in nuclear technology would be the atomic and hydrogen bombs, tactical nuclear weapons, and ballistic missiles. Such advances the Soviets note in conventional weapons have been in anti-tank technology, self-propelled artillery, and aircraft engines. As I will note in Chapter Four, the analytical focus for this variable will be on technological developments that appear as parts of complete weapons systems, not just as basic laboratory subsytems.

I will assume that important advances in nuclear technology will facilitate development of doctrine favoring nuclear weapons and that developments in conventional warfare technologies will have a corresponding effect. I do not, of course, assume here that technological advances necessarily drive doctrine, since leaders would not be expected to modify doctrine or

strategy simply because a certain new type of weapon has been successfully tested and is ready for development.

Indeed, as noted earlier, the Soviets themselves have said that military-technical aspects of doctrine are subordinate to political aspects. One would therefore expect advances in weapons technologies to be incorporated into doctrine and strategy if leaders deem the application of these advances consonant with current thinking among elites about warfare.

A third important factor for Soviet leaders in establishing military doctrine and strategy are the economic constraints of maintaining and improving the military establishment. These concerns would arguably influence thinking on military doctrine and strategy through two principal channels. One is the relative amount of GNP spent on the military, an amount which traditionally has been closely associated [through the Soviet defense industry] with investment in the industrial [Group B] sector, as opposed to the non-industrial and consumer good [Group A] sector. The other is the rate of growth in GNP. The Soviets have normally considered substantial military and Group B expenditures acceptable costs. Sometimes, however, they have cut back on military manpower in order to reduce military spending, and they have tried to boost industrial and non-industrial

investment.b Other indicators I will use for the health of the economy include investment trends in Group A and Group B industries, GNP per capita, agricultural production, R&D investment, and factor productivity.

Given that conventional forces are more expensive to procure than nuclear forces, I will argue that strong economic performance could support either a conventional or a nuclear posture but that a steady downturn over time in economic performance might well precede a shift to a nuclear posture. If such a downturn occurs before a shift to a nuclear posture, then I will draw the conclusion that economic constraints were probably an important factor in the leadership's thinking on the changes in military doctrine. I will also hypothesize--by extension--that a downturn in economic performance should not likely proceed a shift to a conventional posture.

External Factors

One external factor I will examine comprises the key developments in U.S. doctrine and strategy for a war with the Soviets and the intersection of these developments with similar developments in NATO. There is a fairly

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bThere has been much controversy on estimating Soviet defense expenditures, so I will use a range of estimates in discussing this variable. However, since I am more interested in trends rather than in actual expenditures, the variation in estimates will be less problematic, since there is some agreement in trends among those analysts who disagree about the actual allocation levels.

substantial amount of information on the development of U.S. strategic plans, but tracing doctrine and strategy for NATO is more difficult because NATO officials have rarely been explicit about the organization's policy on how it would prosecute a war with the Warsaw Pact. Indeed, analysts of the history of NATO's doctrine and strategy have often noted the political problems within the principal military planning bodies both in coming to an agreement about the timing and length of conventional or nuclear phases of the conflict and in making such an agreement public. Such policymaking is difficult in part because of the variety of views on such issues held by the member governments.

In a manner similar to that used here in the study of Soviet doctrine, I will look at speeches, articles, and documents authored by important U.S. and NATO leaders and organizations. Because the U.S., at least through the 1960s, has been the most important single member of NATO, I will incorporate a discussion of the development of US Army approaches to fighting a ground war in potentially nuclear conditions. While European armies were not compelled to implement the same strategies, the preponderance of the U.S. influence in NATO, plus the weakened condition of West European armed forces in the post-war period, led essentially to a situation in which

the European allies trained with the U.S. Army in Europe using U.S. Army strategy.

Concerning the more general issues of doctrine as to how NATO would prosecute a war with the Warsaw Pact, the principal issue of the emphasis on conventional vs. nuclear warfare is clearly salient. Such emphasis will be expressed, for a given period in NATO's history, in terms of a greater or lesser interest in relying on nuclear weapons as part of NATO operational strategy and procurement patterns. Most of these points in the NATO chronology I will construct derive from such developments as the Lisbon goals, MC 14/2 and MC 14/3, and the Long-Range Theater Nuclear Force Modernization Program. Such policy initiatives and the pronouncements and speeches that surrounded them I will place in the substantive context of the NATO debates contemporary to those events. More specifically the criteria I will use for this general level concern whether NATO leaders thought a conflict with the Warsaw Pact was likely to have a brief or extended conventional phase and, if the conflict became nuclear, the degree to which NATO forces would plan to employ nuclear weapons.

At a level dealing more directly with strategy, the principal question will concern whether contemporary trends in U.S. Army organization and strategy anticipated

a primarily conventional or nuclear engagement. U.S. Army planning and organizational design for fighting a ground forces engagement with nuclear weapons has differed clearly over the years from similar planning anticipating a conventional conflict. Projected division size, dispersal and massing plans, and attack/defense plans have differed in important ways, depending on whether Army planners at a given period were planning for a more nuclear or more conventional engagement, and these will be the criteria I will use in assessing strategy developments.

There were quite a number of U.S. Army studies done in the 1950s and 1960s on the question of the best organization and strategy for a potentially nuclear ground force engagement, but a fairly accurate assessment of the principal developments can be made by focusing on those studies actually used as bases for Army warfare planning and structural reorganizations. Where useful, implications from the NATO and U.S. Army literature will be presented with changes in NATO force posture.

A second important external factor I will assess concerns the extent of military tensions on the Sino-Soviet border. The Sino-Soviet conflict had primarily political throughout the fifties and most of the sixties. Talks on border problems between the two countries broke

down in 1964, but tensions on the border did not really begin to rise until 1966, when there were clashes involving Chinese fishermen and Soviet troops along the Ussuri and Amur rivers. The disputes in the area actually did not take on a military character until a clash in early 1967 involving troops on each side.

Both the Soviets and the Chinese had fortified this border by the late 1960s, and after the clash in March 1969 fortified it even further. The Soviets eventually stationed both conventional and nuclear weapons in the border region. Within several years after the border talks had begun, military tensions in the are began to drop, although the Soviets continued to maintain a fairly significant military presence on the border. I will assume that whatever effects the military tensions on the border had on Soviet doctrine and strategy development would have occurred within five years after the main conflict there, since tensions there did not again flare as high.

The criteria I will use here are changes in the levels of Chinese troop concentrations in the area and the level of border clashes for six-month periods extending from 1966-1970, when border talks began to make progress. The assumption underlying these criteria are that the greater the amount of Chinese troops and equipment on the border

and the higher the frequency of clashes, the greater the Soviet concern with ensuring they had adequate forces and an adequate strategy for successfully managing low-level conflict near their borders.

The Dependent Variable:
Establishing the Conceptual Framework

To construct the chronology of the dependent variable, I will first discuss the conceptual context for Soviet discussions of doctrine and strategy, then examine the particular dimensions of doctrine and strategy I will use in the study. Next I will discuss the principal Party and military organizations involved in the development of doctrine and strategy from which I will select the individuals whose speeches and articles I will follow.

The Terminology of Military Thought

The Soviets are very discriminating about the terminology they use to address different aspects of military thought. It is important to keep this taxonomy in mind because it has important implications for the decisionmaking structure and process. I will first discuss the taxonomy of military thought, then turn to the issue of the military decisionmaking structure.

The most important distinction Soviet leaders make concerns the difference between military doctrine and

military policy. For the Soviets, these concepts have conceptual as well as organizational implications for the proper development and conduct of military activities. Although its individual facets may be formulated by a diverse group of lower officials, military doctrine as it is formulated by the Politburo is the sum of authoritative concepts of military policy (Sokolovskiy, 1968: 62-63; Ogarkov 1983: 240; Zemskov, 1967: 2-3). The distinction drawn here is that military doctrine consists of policymakers' most fundamental perspectives and guidelines in the area of military affairs, while military policy is formulated in response to specific situations. Military doctrine, based upon a military-political calculus, has by its nature much more continuity and authority in decisionmaking than military policy, which is based on political calculus and is designed to respond to specific situations. Military policy may be based on military doctrine and may in turn contribute to it, but Soviet discussions of military policy always assume the pre-eminence of military doctrine in decisionmaking.

According to the Soviet Military Encyclopedia of the USSR Ministry of Defense, military doctrine has two aspects: political and military-technical, with the political dimension being the more important of the two (Doktrina Voyennaya, 1977: 225). Military doctrine

comprises the beliefs held and actions taken on military policy by the most powerful authority in the Soviet Union--the Politburo.

According to the Soviets, the political dimension of doctrine deals with political objectives, the influence of these objectives on the structure of the Armed Forces, the character of war, and military preparedness. Citing M.V. Frunze, a principal founder of the modern Soviet military, the Military Encyclopedia notes that the "'basic aspects of the vitality of military doctrine include the tight coordination of the general goals of the state and the management of its material and spiritual resources'" (Doktrina Voyennaya, 1977: 225). At a time in history when war can involve large numbers of forces around the world, the Soviets note that the preparation for military conflict demands the "implementation of systems of coordinated and goal-directed measures, which draw together all the spheres of the social life of the state, its politics and economics". The Soviets state that their military doctrine flows from the policy of the CPSU, created and coordinated in accordance with the political, and socio-economic growth of the USSR, all the while taking into account international developments (Doktrina Voyennaya, 1977: 228).

Some historical examples of Soviet understanding military doctrine may provide useful elaboration. Commenting upon Germany during World War II, the Soviets note that the Nazis had established the doctrinal goal of achieving world hegemony. This objective of military doctrine, directed first toward the Soviet Union but also toward the United States, England, France, Poland, and other countries, involved surprise attacks on other countries without the declaration of war, "'lightning'" conduct of military operations, an unprecedented fierceness, the massive destruction of the civilian population, and the capture of valuable military objectives. For the United States, England, and France, on the other hand, military doctrine during World War II reflected the interests of "monopoly capitalists" and was focused on the destruction of their economic rivals Germany and Japan and the weakening of the Soviet Union, with the overall goal of achieving a dominant position for themselves in the world [Doktrina Voyennaya, 1977: 226].

In the post-war period, posit the Soviets, the political goals of the "imperialist states'" military doctrine consisted of the liquidation or weakening of the socialist system, the suppression of national liberation movements, and neocolonialism [Doktrina Voyennaya, 1977: 227].

The military-technical side of doctrine, in conjunction with the political dimensions, concerns means of waging war, military construction, technical supply of the armed forces and support for their military preparedness. Just as military doctrine is defined by the political goals of the country's leaders, so also is it affected by the conclusions and state of development of military science and its most important constituent part--the theory of military art. In turn, military doctrine directs the application of military science toward the resolution of important issues for doctrine objectives [Doktrina Voyennaya, 1977: 225].

Historically, the Soviets note that military-technical developments within capitalist countries were particularly important during the inter-war period, when there occurred intensive development of weapons and military technology, large-scale construction of tanks, planes, submarines, increases in the levels of motorization and mechanization of forces and in the sophistication and reliability of communications systems for troop control. All these developments, comment the Soviets, had important implications for thinking on how war is waged. The Soviets remark that in the post-war period, the development of nuclear weapons and missiles had an important effect on the development of military doctrine,

both in capitalist and socialist states [Doktrina Voyennaya, 1977: 226-229].

In summary, the Soviets comment that their current military doctrine consists in the "leading principles, the scientifically based views of the CPSU and the Soviet government on the essence, character, and means of conducting war, which would be instigated by the imperialists on the Soviet Union, and also on the military construction, preparation of the Armed Forces and the country for the defeat of the aggressor" [Doktrina Voyennaya, 1977: 228].

Military Science and Military Strategy

Another important facet of military thought is military science. Military science, which constitutes a part of military doctrine, is the system of knowledge from which the military-technical aspects of doctrine are derived. Concerned with the study of operations, military science includes a number of different approaches concerning the preparation needed for the state and its armed forces to conduct major military operations. According to Soviet sources, military science comprises not only military art, but also military-historical research, the physical and natural sciences [e.g. physics and aerodynamics], Marxist-Leninist methodologies, and other approaches considered useful in the study of

military operations [Ogarkov, 1983: 136-137; Sokolovskiy, 1968: 287-288; Warner, 1977: 120].

Military art, the most important of these elements, includes military strategy, operational art, and tactics, military strategy "comprises the theory and practices of preparing the country and the Armed Forces for war, the planning and direction of strategic operations of the Armed Forces as a whole" [Ogarkov, 1983: 711; Sokolovskiy, 1968: 15]. Examining and determining the means for the direction of war, military strategy involves the study of

> the conditions and factors that determine, at any given historical moment, the nature of a future war, the distribution of military and political forces, the quality and quantity of the mans of waging war, the military and economic potential, the probable composition and strength of the opposing coalitions and their geographical arrangement [Sokolovskiy, 1968: 18].

As a guide to dealing with practical and operational issues, strategy is involved with defining in concrete terms

> the tasks of the armed forces and the necessities for the complete provision of forces and means; the working out and realization of measures for the preparation of the armed forces, of the theaters of military operations, of the economy and the population of the country for war, the planning of war and strategic operations; the organization of the deployment of the armed forces and of the leadership for them in the conduct of strategic operations, and also for ascertaining the likelihood of the enemy's conducting war and strategic operations [Ogarkov, 1979: 556; italics in original deleted].

The Soviets note that doctrine and strategy are closely related. They comment that doctrine directs strategy, primarily because the formulation of political goals defines the means of waging war, establishes the strategic tasks and creates the conditions for their fulfillment, and generates the mobilization of the necessary material and human resources [Ogarkov, 1979: 556].

The development of military strategy is also affected by other important connections. The Soviets note that the economy and social-political level of the country have an important bearing on strategy. Of particular importance in this area, are the level of scientific and technological development of the country's productive forces and the character of productive relations within the state or a coalition of states [Ogarkov, 1979: 556].

As historical examples of the development of strategy, the Soviets cite their development of the concept of breaching positional defenses in World War I, and the concepts of massing of forces and means and of maneuver warfare in the post-war and Civil War periods. During World War II, Soviet note the development of strategies involving deep operations, tank warfare, "lightning war", zonal defenses, and operational groups of fronts [Ogarkov, 1979: 560-562].

The Soviets then note that during the first eight years after the end of World War II they were occupied with further development and application of lessons from the war. Beginning in 1954 and especially afterwards, however, they note that work began on new strategic concepts to take into account the development of nuclear weapons and missiles. These concepts involved security against a massive nuclear attack by an aggressor, support for a high level of military preparedness and plans for pursuing military objectives under a variety of conditions in the initial period of war [Ogarkov 1979: 563].

Operational art, the next important aspect of military art after military strategy, concerns the direction of large units on the front, while tactics involves the movement of smaller combat units on the battlefield [Ogarkov, 1983: 711, 514-515, 723-724]. Generally, while the tenets of military art are supposedly scientifically based, developmental guidelines for military art research and design are formulated in response to the requirements of military doctrine. Military art, as well as the other aspects of military science, contributes to military doctrine as a type of feedback mechanism, enabling the adaptive evolution of doctrinal concepts [Tyuskevich, Shushko, and Dzyuba, 1968: 357; Kozlov, 1966: 91].

While military science is the tool employed by officers and institutions of the defense and defense industry establishments to provide input into military doctrine, it is just one of several tools used by high-level political bodies in the development of military doctrine. Just as military science includes a variety of components, so also dies military doctrine. When the Party formulates military doctrine, it is concerned not only with military science, but also with economic political, and moral aspects of doctrine. According to Soviet sources, this approach combines analyses of the nature of future military conflicts, the resources and capabilities of the opposing sides, and the current military posture of the opponents [Skirdo, 1970: 105, 123].c

As a rule, the Party's primacy in the formulation of military doctrine is never questioned, but the relative weights for the components of military policy, such as military as opposed to non-military [economic or sociological] factors or past military practice as opposed to future projections on the nature of war have occasionally been topics of debate within elite decisionmaking circles. For example arguments in military

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cFor a good explanation of the interrelationships of military doctrine and the various components of military science, see Grechko [1974: 112-118].

journals that focus on the important of taking into consideration new technological developments in the formulation of modern doctrine may indicate disagreement on the relationship of conventional to nuclear warfare and which capabilities or strategies should receive the most emphasis (Ustinov 1979a: 2-3; and Ogarkov, 1978: 112-118).

Applying this assessment to what is known about Soviet political-military decisionmaking, one may conclude that the military has a voice in the formulation of military doctrine and military policy, while the Party has supervisory input into military operations and research. With this framework, one can also infer that military policies that have a significant political or foreign policy component are resolved only at the highest levels of national leadership.

Conceptual Framework for the Variable: Doctrine

Military doctrine is the principal part of the dependent variable I will use in both stages of this study; military strategy is the other part. To trace changes in aspects of doctrine most suggestive of leadership thinking on conventional warfare, I will focus in the first part of the analysis on the following aspects of doctrine: the type of war the Soviets expect to fight with the West, the character of the war's development, and the likely outcome of such an engagement (see Table 2).

As I trace changes in the second part, I will add to these doctrinal aspects the issues of "reasonable sufficiency" and the value of enhancing security by political vs. military means (see Table 3).

For the first stage of the study, the first principal hypothesis will be that the leadership perceived it more likely for the Soviet Union to become involved in conventional rather than nuclear warfare if a certain series of criteria about pronouncements and force structure are met in a consistent way suggestive of a conventional warfare orientation. A corollary hypothesis would be that the leaders saw the Soviet Union more likely to be involved in a nuclear war if a set of doctrinal criteria elaborating a nuclear orientation is met in a consistently. The second principal hypothesis would be that a certain independent variable(s) is important for doctrinal change if a major change in the independent variable occurred not long before a change in the dependent variable.

The first principal hypothesis for the second section is that "mutual security" is characteristic of Soviet leaders' view of USSR security policy if a certain set of criteria tieing policy pronouncements and force structure can be met, but is not characteristic if those criteria cannot be met. A second principal hypothesis will be that

the reasons Soviet supporters of change adduce as the need for that change can be considered candid if these reasons correspond with historical reasons for such changes and if these reasons are ones we in the West understand as important for the Soviet leadership. Both of these hypotheses I will discuss in Chapter Thirteen, where I examine thematic issues in the doctrinal debate since 1975.

Doctrine and Strategy on Conventional War

In the following discussion, I will clarify how the Soviets seemed to understand aspects of doctrine related to nuclear war, conventional war, and "mutual security" and how I intend to used these aspects as criteria in the study. I will do the same for the criteria for military strategy, and show how the aspects of strategy I choose relate to the aspects of military doctrine I discuss. For most of these doctrine and strategy categories, I present the criteria I will use as essentially dichotomous to facilitate analysis of what the basic message of a speech or article is, whether the article is one drawn from Western scholarship (in the first part) or from my own bibliography (in the second part). With this "check list" of sorts for doctrine and strategy for the articles and speeches I review, it may even be possible in the

second part to summarize the analysis in a quantitative format.

In the first stage of the study, I will show with the speeches and articles cited in the secondary source literature how the perspective of Soviet leaders changed on the viability and likelihood of conventional warfare. In the second stage, I will use speeches and articles of certain leaders--members of organizations discussed later in this chapter--to assess with my criteria the expositions of doctrine and strategy these leaders provide.

After constructing a basic consensus on the given criteria for the beginning period of the analysis, I will assume changes in doctrine or strategy to have occurred if a majority of the leaders from the elite group I have chosen express similar views over a period of two to three years on an aspect of doctrine or strategy, and if these views stand in contrast with the baseline perspective [see Tables 1-3]. This majority must include the General Secretary and the Minister of Defense.

If it appears, from an understanding of the general discussion of military issues during a certain time frame, that these high-level views are arguably affecting objective indicators such as force structure, deployment patterns, or exercises, such evidence will add weight to

the assertion of a doctrine or strategy change. If views on these categories of doctrine and strategy do not seem reflected in objective indicators, I will assume that a doctrine or strategy change has not taken place.

I will discuss briefly the problem of propaganda in the second stage of the analysis, but my basic assumption is that while one needs to be careful about the factual bases and interpretation of articles in the general press, such as Pravda or International Affairs, articles from the military press may normally be treated with a fair amount of credibility.d This is the approach taken by most analysts of Soviet declaratory policy. Meyer [1983/84a: 6-7], for example, discusses the problems inherent in dismissing views expressed in the military press as propaganda.

Criteria for Doctrinal Assessment

In Tables 2 and 3, the "type of war" criterion concerns the basic political orientations of the parties involved in the conflict. Soviet military doctrine has usually recognized four types of war: 1] conflicts between socialist and capitalist states, 2] civil wars within capitalist states, 3] national liberation wars involving

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dI will assume that material I use from Western scholars in the first part was originally selected for its substantive value and that, for the most part, these earlier scholars have largely sifted out obvious propaganda on military doctrine and strategy.

capitalist states and peoples of less developed countries, and 4) wars between rival capitalist states [Monks, 1984: 37, n30]. Most of the discussions of contemporary warfare in the post-World War II period have focused on the first and third categories, since it is those kinds of struggles in which the Soviets are more likely to be involved. Such is the case for several reasons.

The Soviets, of course, see their rivalry with the West, and the U.S. in particular, as one that involves the world's two major socioeconomic systems. Since they perceive such a war as potentially being the "decisive conflict" between those systems [Ogarkov, 1979: 564], they have usually written about this conflict as one that would be conducted with a massive use of nuclear weapons. Therefore I will posit that one useful criterion will be the frequency that Soviet leadership writings on military doctrine focus on this final conflict, particularly whether a direct conflict with the U.S. or Western Europe is the only one likely to involve the Soviet Union, or if is possible for the Soviet Union to become involved in a less important non-European or national liberation struggle. I consider it a logical assumption that if writings on military doctrine begin to focus less on this "final conflict" than on other types of military

engagements, that a shift in emphasis toward conventional warfare may be suggested.

The Soviets have focused more on national liberation wars as developing countries sought their independence. These conflicts were most frequently conventional, and the Soviets have often written about them in terms of the lessons they may provide for conventional warfare in the nuclear age. Additionally, because the Soviets have provided political, economic, or military assistance to some of those liberation efforts, they have often had a stake in the outcome of the conflict. I will posit that a greater frequency of discussion of national liberation or regional conflicts in the Third World is suggestive of generally increased interest by the Soviet leadership in conventional warfare.

In the past few years, some Soviets have talked about "mutual security" as implying the importance of becoming involved neither in a major conflict with the West nor in a non-European conflict. When I examine the current period, I will add this concept to those above for this category.

The character of the war's development concerns how a war starts and how the conflict is likely to progress. The Soviets have usually discussed war in two stages: the initial period, and the subsequent/concluding period

[Peterson and Hines, 1983: 731-732, n100], and they have expressed different opinions over the years as to the length of those periods and whether those periods are more likely to be fought with nuclear or with conventional arms.

Most of the debate about the character of the war's development has involved the length and character of the initial period of war. Since a war that started as a conventional war might possibly conclude before it escalated to a nuclear one, whereas one that started as a nuclear one is less likely to conclude without escalation [because an important "firebreak" has been crossed], I will posit that the more the Soviets discuss the initial phase as a conventional rather than a nuclear one, the more emphasis given in Soviet doctrine to conventional warfare. I will also position that the more the Soviets discuss the initial period as being longer, the more emphasis is being placed on conventional warfare.

While the debates about the subsequent/concluding period have not been as extensive in Soviet military literature as those about the initial period, one can apply the same approach to this criterion. If there is a change in perspective on the character of this phase of the war favoring conventional warfare, I will interpret

that emphasis as indicative of greater interest in the possibilities of conventional warfare.

As indicated above, a war involving the superpowers has generally been characterized as being short, primarily because of the anticipated decisiveness and quickness of a massive nuclear exchange. Therefore, if Soviet leaders appear to be focusing more on the possible protracted nature of the subsequent/concluding period, one can assume that more emphasis is being given at high levels to conventional warfare.

Another important aspect of the war's development is whether it would more likely start as an engagement involving the superpowers directly at the beginning of the conflict or whether it would being in a region of the world where both superpowers would not be directly involved at the beginning of the conflict. In the latter case, especially if the position taken was that escalation to direct superpower involvement was not inevitable, one could argue that more emphasis was being given the potential for conventional warfare.

For the analysis of the current period, these categories of the character of the war's development will remain essentially the same. However, one would expect these particular issues to receive less extensive

treatment than in the past if the debate on security policy in the Soviet Union has really undergone change.

A third important aspect of doctrine concerns the likely outcome of a conflict with the West. During most of the first two decades after Stalin's death the Soviets usually argued that the socialist bloc would be the inevitable victor of an East-West conflict. While part of that reasoning was basically Marxist-Leninist ideology, this conclusion seemed closely tied to Soviet intentions to mount as quick and as massive a nuclear attack as they could with the available force structure.

When the Soviets begin to approach what they considered nuclear parity with the West, this "inevitable victor" concept began to be reconsidered. The resultant concept that neither side would be a victor seemed in Soviet literature to be closely tied with the concern to renounce (at least publically) the first use of nuclear weapons. I will posit therefore that the less this idea of socialism as the "inevitable victor" appears in commentaries on military doctrine, the more emphasis is being given conventional warfare.

A set of issues related to the outcome of war concern various means of security policy. One of these aspects involves whether war is treated as an appropriate instrument of policy. When the Soviets have discussed

this issue, it has usually been in terms of a major conflict with the West. If war does seem to be treated in a speech or article as an instrument of policy, I will assume the author is emphasizing nuclear warfare. If the author suggests that war is not an instrument of policy, I will assume the author is basically not in favor of a doctrine oriented toward nuclear warfare. In some cases, Soviets have made specific reference to conventional war as a tool of policy in the case of a national liberation struggle. I will note such opinions in the analysis.

In the current period, the Soviets have talked about "reasonable sufficiency" as a tool of security policy. "Reasonable sufficiency" is the concept that the Soviets need not strive for continued military expenditures or even for parity in military hardware with the U.S.--that only a "reasonably sufficient" investment in military goods is necessary for the Soviet Union. Another security policy tool involves political vs. military means of security--the idea that one's opponent's perceptions of its security need to be taken into account. Advocates of political means of security often argue that the Soviet Union should spend less on defense if the U.S. considers current levels or possible increases as clearly provocative.

As I evaluate speeches and article for both stages of the analysis, I will assess how the authors approach these issues to determine what the consensus is [in the first stage] on the possibilities of nuclear or conventional war and [in the second stage] on mutual security in lieu of any kind of war.

Criteria for Strategy Assessment

The criteria I will examine for evidence of a change in strategy favoring conventional warfare are three: the principal forces to be used in a major conflict with the West, the importance of nuclear weapons for achieving key military goals, and the importance of preemption and surprise in prosecuting a conflict with the West. The implications of these criteria in the area of conventional warfare are fairly straightforward, but I will discuss them briefly for the sake of clarity.

I will make the assumption that the more the selected elites focus on the importance of the Ground Forces for an engagement with the West, the greater the emphasis placed on conventional warfare than if the Strategic Rocket Forces are emphasized as the principal service. The Soviet Ground Forces have certainly become equipped with nuclear weapons, but these troops have a conventional capability while the SRF does not.

If elites significantly emphasize the importance of conventional weapons rather than nuclear ones for achieving key military goals, I will assume a greater emphasis on conventional weapons. It is true that in the early years of Soviet nuclear weapons deployment that conventional forces were envisioned to be used in mop-up operations after a nuclear strike, but it was the nuclear weapons that were considered the most important.

The frequent discussions in the post-war Soviet military literature about preemption and surprise have largely been based on assumptions about the primacy of nuclear weapons in a conflict with the West. Concomitantly with preemption and surprise was an emphasis on having sufficient forces in order to prosecute the conflict with the forces in being. It was assumed that a conflict with ballistic missiles and other nuclear weapons would occur much too fast to mobilize the economy to a war footing. As time passed and the possibility of the use of conventional weapons developed, the possibility that the USSR may be able to mobilize in a war did as well.

Later, as consideration was given to the possibility that a war might be conventional for a period at the beginning, discussion about opportunities for mobilization was renewed to an extent. Therefore, I will posit that the less often arguments for preemption and surprise are

adduced and the more often emphasis is given economic mobilization capabilities, the greater the emphasis in the leadership on conventional warfare.

In the past decade, as the Soviets have reconsidered further the primacy of nuclear weapons in a conflict with the West and as they have taken stock of their economic problems and technological lags in relation to Western countries, that economic mobilization issues began to creep back into the political military literature. In some recent discussions, military elites have commented that the civilian economy needs to be strong technologically to support the Soviet military. In the second part of the study, then, I will assess the degree to which political and military elites perceive that significant improvements and mobilization of the civilian economy are important tools to implement "mutual security".

Another aspect of strategy I will add in discussing the current period is that of "defensive defense". Simply put, this concept has been introduced by officials in the Soviet Union and in various parts of Europe that the two alliance systems need only be structured and deployed defensively to guarantee adequate security for the two sides. It is commonly understood NATO's deployment has been defensively oriented since the organization's

inception, but that the Warsaw Pact's deployment has been offensively oriented. Some Soviet officials have begun to admit this offensive orientation and argue that a more defensive structure would not only guarantee adequate security but would also be much less expensive to maintain.

With regard to the relationships with doctrinal concerns, how these strategy issues fit in should be fairly clear. Ground troops cannot perform missions in a short amount of time, whereas the SRF can. Therefore these former two forces are only likely to be employed (at least using their conventional armaments) if a war is protracted. If nuclear weapons are thought to be the key instruments against military targets, planners are likely to have a short rather than long war in mind and a war predominantly nuclear rather than conventional. If economic mobilization capability is stressed, the assumed war would be protracted, if not both protracted and non-nuclear. If development of the civilian economy is stressed, one might draw the conclusion that "mutual security" in the sense of avoiding any kind of war--conventional or nuclear--is the Soviet goal.

With regard to the doctrinal issue of the type of war as it relates to the consideration of doctrine in the first part of the analysis, it is very unlikely to expect

discussions of the SRF, the use of nuclear weapons against key targets, and the importance of preemption in articles on national liberation conflicts. It is far more likely to expect discussion of conventional weapons and conventionally armed services such as the Ground Forces in such articles. For reasons discussed earlier, it is unlikely to expect discussions of conventional strategies in articles which promote the idea of the socialist bloc as the inevitable victor.

In a similar vein, advocates of "defensive defense" are not likely to envision the Soviet Union's becoming involved in either nuclear or conventional conflict. Furthermore, it is unlikely that advocates of "defensive defense" would 1) see either capitalist or socialist countries being the victor of a nuclear war and 2) perceive the Soviet Union's involvement in any kind of war as an acceptable policy tool.

Objective Indicators

It is obviously difficult to be confident in tieing changes in Soviet doctrine and strategy to actual changes in force structure. Such is the case because of the lack of information about specific military decisions in the Soviet leadership. Someone could always make the counter argument that the Soviets had planned to make such force structure changes even before the noted shift in doctrine

or strategy. Nevertheless I will observe developments in a variety of objective factors to see if one can construct a plausible connection between changes in doctrine and strategy and these particular factors.

For the first stage of the study, I will focus on differences over time in manpower and structure of the Ground Forces, changes in the development and role of artillery, and changes in aircraft for support of ground troops. I will also examine the history of TNF developments, changes in allocations for the various Soviet Armed Forces, and changes in Warsaw Pact military exercises. I will develop these indicators, explain why I have chosen them, and elaborate their relevance to shifts from conventional to nuclear strategy [or vice versa] in Chapter Nine.

For the second stage of the analysis, I will use these indicators, plus major unilateral changes in Warsaw Pact deployments and arms control treaties which the Soviet Union signs that entail significant changes in Pact force posture in Europe. I will elaborate these indicators further in Chapter Fourteen.

Key Participants in Doctrine and Strategy Development

The Party/Government Hierarchy

The main group responsible for military policy and the formulation of military doctrine is the Defense Council [Sovet oborony]. Although this body is technically subordinate to the Council of Ministers and the Central Committee, its members serve the Politburo. Usually the members of the Defense Council include the General Secretary, the Chairman of the Council of Ministers, the Minister of Defense, the Minster of Foreign Affairs, and the Chairman of the KGB [the USSR's border troops are under the KGB] [Warner 1977: 46, Teague, 1981; Pafenberg, 1975].

Since the chairman of the state planning committee of at least one East European country serves on the country's defense committee, the Soviet Defense Council may also include the Gosplan chairman [Verbitsky, et al., 1985: 132-133].e It has been argued that the two highest ranking Central Committee Secretaries serve on the Defense Council [Gelman, 1984: 63-70], as may the Central Committee Secretariat responsible for defense industry. The chief of the General Staff may be a member, and there

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eThe only country where the participation of the Gosplan chairman is specifically mentioned is Rumania, so the likelihood of the Soviet Gosplan chairman's participation on the Defense Council is hard to assess accurately. One surmises that Gosplan chairman of other countries may participate in their respective defense councils as well, in spite of the fact that Rumania is not a typical Warsaw Pact country.

has been speculation that the Minister of Internal Affairs and the commander-in-chief of the Warsaw Pact may be invited to attend meetings (Verbitskiy, 1985: 15-16; Scott, 1977a: 53; Gelman 1984: 63-70).

This body, therefore, includes the highest ranking Party and military officers among its members and consultants. The integration of Party and military elites within this body probably facilitates cooperation between the two institutions. Functions of the Defense Council appear to be numerous , though the Soviets have published only very little information on this organization. From her analysis of the functions of the predecessors of the current Defense Council, Scott argues that the Council takes responsibility to ensure that

> there are standby plans for mobilizing industry, transport, and manpower to meet the requirements for possible war at various levels of intensity. It has the power to form new staffs, create new military districts, or change the entire structure of the Soviet Armed Forces. The Council examines proposals, makes its judgment, and issues decrees (1977a: 53).

The Defense Council probably also has responsibility for defense budget plans, major weapons programs, and major shifts in military doctrine. It may monitor the status of defense programs initiated by the full Politburo as well as approve lesser defense policy questions, such as the conduct of major training exercises (Warner, 1977: 46-47;

Pafenberg, 1975: 12-13; Deane, Kass, and Porth, 1984: 56-59].

In wartime, this body would probably perform functions similar to those of the World War II State Defense Committee [Gosudarstvenny komitet oborony-GKO]. The GKO, during its existence from 1937-1945, controlled and directed military planning during the war [Ustinov, 1979b: 23-25; Skirdo, 1970: 137-139]. As Marshal V.D. Sokolovskiy notes,

> All leadership of the country and the Armed Forces during wartime will be carried out by the Central Committee of the Communist Party of the Soviet Union with the possible organization of a higher agency of leadership of the country and the Armed Forces. This higher agency of leadership may be given the same powers and the State Committee of Defense during the Great Patriotic War [1968: 434].

The second highest decisionmaking body concerned with military affairs in the government's structure is the Military Industrial Commission [Voyenno-promyshlennaya komissiya--VPK]. Essentially a working commission of the Council of Ministers, this body, the chief governmental organization dealing specifically with military technology developments and applications, serves to coordinate requirements of the Ministry of Defense with defense production industries. It is also thought to coordinate defense research and production activities that cut across individual ministerial lines, determine whether existing technologies are adequate to support particular programs,

and distribute resources among defense programs (Pafenberg, 1975: 18; Wolfe, 1977: 17-18). Almost all the major "interest groups" of the defense industrial sector are found on this commission (Pafenberg, 1975: 18, 20; Scott, 1977b).

The VPK is essentially subordinate to the Presidium of the Council of Ministers and its chairman. Because of its responsibility to the chairman, the Commission probably makes its influence felt on the Politburo through his participation.

The Military Hierarchy

Within the military branch of the chain of command, the organization directly subordinate to the Defense Council is the General Staff (General'nyy shtab). Originally modelled after the pre-World War I German General Staff, the Soviet General Staff is composed of the First Deputy Minister of Defense and officers who have come either from the Academy of the General Staff or from the various services and branches. When these officers transfer to the General Staff, they are responsible only to it and not to their previous branch or unit. Often these officers are General Staff Academy graduates who have served an apprenticeship in a major military command. Upon finishing their service on the General Staff, they sometimes return to the Academy of the General Staff to

become faculty members (Spahr, 1979: i-iii, 10; Skirdo, 1970: 155; Deane, Kass, and Porth, 1984: 60-61).

The General Staff, which serves as the executive body of both the Ministry of Defense and the Defense Council, is a powerful body in its own right. Not only are the officials of the organization full Party members and important decisionmakers in high-level military bodies, they also have important influence on policies affecting the various branches of the Armed Forces, the military districts, and operational forces (Wolfe, 1977: 20). However, even though its officers come from various branches of the Armed Forces, the General Staff is not in competition with the five Soviet Services; it allocates roles and missions to these services, but its officers do not represent service interests (Warner, 1977: 25; Scott, 1977a: 55).

Broadly, the responsibility of the General Staff is to develop a "unified military strategy" based upon military doctrine as established by the Defense Council and Politburo. The General Staff

> thoroughly analyzes and appraises developing military-political conditions, determines the tendencies of development of the means of waging war, the methods of their application, organizes the training of the Armed Forces, and implements the necessary measures to guarantee their high combat readiness to repulse any possible aggression (Kulikov, 1976: 513).

The General Staff in addition directs military operations, develops strategic concepts, targeting and war plans, and assists in the formulation of general military policy by providing advice to the Ministry of Defense Collegium and the Defense Council (Warner 1977: 25; see also Scott and Scott, 1981: 102-112). The General Staff is charged with coordinating the activities of the main staffs of the Armed Forces, the Rear Services, and the Civil Defense forces of the USSR as well as superintending the military districts, Soviet forces abroad, and the air defense network. Because of its responsibilities for the service branches, the General Staff is a focal point for the resolution of inter-service rivalries. As the largest of the three primary bodies of the Soviet high command and as an experienced group of military professionals, the General Staff is a very important link in the decisionmaking chain (Scott, 1977a: 54-56; Warner, 1977: 25).

Also important in the military chain of command is the Collegium of the Ministry of Defense. This organization has as its main responsibility the strategic direction and the leadership of the Soviet Armed Forces during peacetime (McDonnell, 1975: 83). The Minister of Defense chairs the body, whose principal members are the deputy ministers of defense, the chief of the Main Political Administration,

and certain other officials of the Ministry of Defense (Scott, 1977a: 53; 1977b; and "Kollegiya Ministerstva Oborony SSSR", 1978: 235).f Various additional military officers may participate n its meetings, but regardless of who may be regularly present in addition to those mentioned here, it is safe to assume that all participants would be Party members, since military officers above the level of colonel are virtually without exception CPSU members.

The functions of the Collegium are to assist in developing the Armed Forces, to handle professional matters of ministry-wide significance, and to provide recommendations on such issues as the allocation of manpower and financial and material resources. This body probably also advises the Minister of Defense and develops unified military positions on issues to be reviewed by the Defense Council and Politburo. Although it has no clear statutory decisionmaking authority, its recommendations

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fThe Collegium may be the successor to the Main Military Council (Glavnyy Voyennyy Sovet) that existed from 1953 until possibly as late as 1967. In wartime, many of the Collegium's members would comprise the Stavka of the Supreme High Command (Stavka Verkovnogo Glavnogo Komandovaniya). In some Western analyses of Soviet military organization, "Main Military Council" is occasionally used interchangeably with "Collegium of the Ministry of Defense". A more frequently encountered understanding is that the Main Military Council is a significantly large body than the Collegium that is not involved in as much day-to-day policymaking as the Collegium.

are often issued as decrees through the Ministry of Defense by the General Staff, which serves the Collegium as a type of secretariat. In addition, this body has also been said to be the organization in which latent rivalries are resolved between the General Staff and other parts of the Ministry of Defense concerning the management and use of the Armed Forces [McDonnell, 1975: 84; Wolfe, 1977: 21; Deane, Kass, and Porth, 1984: 61-62].g

Organizational Summary

From this discussion of the table of organization of strategic decisionmaking bodies, one can infer that both the structure for decision flow among these organizations and these organizations' relatively well-defined responsibilities are designed to facilitate efficient decisionmaking. It is also apparent that for the development of issues dealing with doctrine and strategy, plus decisions about service budget allocations and major weapons procurement, one can confidently look to these organizations rather than to lower level ones. Because of the high levels at which discussions on doctrine and strategy take place, it is probably also the case that the differences in elite views that develop on these topics

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gOn the functions and the development of the Collegium and the Main Military Council, see also "Glavnyy Voyenny Sovet", 1976: 566-567; "Kollegiya Ministerstva Oborony SSSR", 1978: 235-236; Kozlov, 1970: 127-128; and Zheltov, 1967: 146.

are not primarily the product of lower level bureaucratic politics and organizational squabbles.

For the current study, I will focus on speeches and articles from 1953-1982 by members of the Defense Council, the chiefs and deputy chiefs of the General Staff, heads of the five major services, and the chairman of the Military Industrial Commission. I will track these speeches and articles by following the authors in the various Letopis indexes, as well as in translation indexes when such are available. For the period after 1970, I will also use Philip Stewart's database of leadership speeches. With the criteria discussed above, I will determine when and in what direction important doctrine and strategy shifts occurred. With that information I will compare the resultant chronology with the chronologies I develop for the independent variables.

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APPENDIX

Table 2.1: Synopsis of Criteria for the Independent Variables

Internal	Nature of connection with change in dependent variable
Leadership change In Defense Council	Probably will precede a doctrine shift (more likely related if General Secretary or Minister of Defense changes)
In General Staff	May precede a doctrine shift (more likely the case if Chief of General Staff changes)
Among Deputy Ministers of Defense	May precede a doctrine shift
Technology advances	Successful demonstration of new conventional technologies may facilitate a greater emphasis on conventional warfare; likewise for nuclear technology
Economic constraints	Strong growth permits either conventional- or nuclear-oriented force posture; reduced growth over time may lead to interest in less military spending and a shift to a nuclear-oriented force posture (such will be presumed as the principal dynamic until the mid-1980s)
External	
Change in U.S./NATO doctrine or strategy	Greater focus on conventional warfare may generate a similar interest in USSR; vice versa for emphasis on nuclear weapons
Change in U.S. Army doctrine	Greater focus on conventional warfare may generate a similar interest in USSR; vice versa for emphasis in nuclear engagements
of which:	
Division size	Lighter divisions indicate interest in nuclear engagements
Focus on maneuverability and dispersion rather than conventional firepower	Indicates interest in nuclear engagements
General focus on nuclear or conventional weapons	Greater interest in nuclear weapons indicates interest in nuclear engagements
Tension on Sino-Soviet border	Greater military tension leads to more concern about conventional capabilities

Table 2.2: Criteria for Doctrine and Strategy Shifts, 1946-1984

Doctrine	Conv. War Emphasis	Nuc. War Emphasis
Type of War		
Socialist-capitalist	less	more
National lib./regional	more	less
Character of War Devel.		
Initial period		
Length (short or long)	longer	shorter
Nuc./Conv.	conventional	nuclear
Immediacy of direct superpower involvement	no	yes
Subsequent/Concluding Period		
Length (short or long)	protracted	short
Nuc./Conv.	conventional	nuclear
Outcome (which socioeconmic system is the victor)	neither (or socialism)	socialism
War as a policy instrument	possibly (only conv.)	possibly
Strategy		
Primary service involved	Ground Forces	SRF
Importance of nuclear weapons for achieving military goals	less	more
Focus on existing forces or importance of economic mobilization capacity	mobilization capacity	existing forces

Table 2.3: Criteria for Doctrine and Strategy Debate, 1985-Present

Doctrine	Conv. Focus	Nuc. Focus	Mutual Security
Type of War			
Socialist-capitalist	less	more	
National lib./regional	more	less	
Neither of above			X
Character of War Devel.*			
Initial period			
Length (short or long)	longer	shorter	longer
Nuc./Conv.	conventional	nuclear	conventional
Immediacy of direct superpower involvement	no	yes	no
Subsequent/Concluding Period			
Length (short or long)	protracted	short	protracted
Nuc./Conv.	conventional	nuclear	conventional
Outcome (which socioeconmic system is the victor)	neither (or socialism)	socialism	neither
Means of conflict			
War as a policy instrument	possibly (only conv.)	possibly	no
Reasonable sufficiency (vs. parity or continued increases)	parity or increases	parity or increases	reasonable sufficiency
Political vs. military means of enhancing security (imptc. of adversary's perceptions)	primarily military	only military	primarily political
Strategy			
Primary service involved	Ground Forces	SRF	Ground Forces
Importance of nuclear weapons for achieving military goals	less	more	less
Focus on existing forces or importance of economic mobilization capacity	mobilization capacity	existing forces	mobilization capacity
Focus on CBMs, crisis reduction centers	yes, for certain types of security problems	no	yes

*In accordance with their concern for political vs. military means of enhancing security (see below), supporters of Mutual Security will probably not discuss the characteristics of war in much detail.

CHAPTER III

THE ROLE OF LEADERSHIP CHANGE

To determine the effect of the role of leadership change on doctrine, I will first discuss the academic context in which I address the topic of leadership change. I will then specify the hypotheses and criteria I will use for the current study. Most of the work done on Soviet leadership change is from a case-study perspective. My approach is longitudinal and more quantitative.

Assessing Soviet leadership politics has been a long-term interest of Western scholarship on the Soviet Union.a In the post-World War II period as Western societies began to profit from information provided by emigres from the Soviet Union, Western scholarship began to reflect Kremlinological methods. These approaches attempted to characterize the relative political power of key leaders in relation to their colleagues. Western scholarship on the Soviet Union in the 1950s and 1960s was influenced by the behavioral movement in American political science, which led to assessments of governments

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aSee Tarschys, 1977 and Zimmerman, 1980 for overviews of Western scholarship on the U.S.S.R.

as systems with "inputs" and "outputs" like those of a machine or a living organism (see Zimmerman, 1980).b

With the growth of interest in comparative politics (particularly dealing with the developing world) and the interest in seeing how policymaking operates in different cultures, there was also a growth in interest in leadership politics and how the people and organizations at the top of the governmental and Party hierarchies interact and make policy (see Tucker, 1961). Within Soviet studies, these interests, plus growing evidence in the late 1950s that the Soviet elite was becoming less monolithic than had once been thought, led to studies on Soviet leadership patterns.

Among these were ones by scholars such as Linden (1966) and Ploss (1965) that focused on the conflictual interaction of policy elites. Other scholars, such as Golan (1977) and Valenta (1979) pursued studies of high-level decisionmaking in foreign policy issues. Other approaches to leadership politics have been pursued by Bunce (1983), who has looked at Soviet leader interaction as a corporation, and Hough (1972, 1979) and Skilling and

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bWestern scholarship at this time also had a tendency to typologize governments. In the case of the Soviet Union, the government was considered totalitarian, in part because that label was reasonably accurate and in part because of a Cold War tendency that may have led scholars to compare it with the defeated Axis powers.

Griffiths (1971), who have looked at elite policymaking in terms of how a similar viewpoint or organizational membership among leaders affects the policy process. This focus on the interaction of leaders at various levels as policy issues are pursued has also been shared by Stewart (1966, 1984), Frolic (1972), and Breslauer (1984), who have looked at political interests and policy preferences of regional elites.

This chapter, combining Kremlinology and decisionmaking analysis, will focus on the possible effects of changes in leadership politics on the formation on military doctrine and strategy. As indicated in Chapter Two, the present analysis is not a combination of decisionmaking case studies, but rather one that correlates changes in developments in the Soviet political system with known shift points in military doctrine. Consequently, this part of the analysis will have a more quantitative focus, in that I will deal more with the number and level of positions that changed hands at important times, rather than on how individuals in the leadership pursued their preferences for policies dealing with military doctrine and strategy.

Of course, leadership change in the Soviet Union (particularly after the Stalin period) are very much influenced by the political stands and policy preferences

of the contenders for power. Because of this relationship, leadership changes cannot be artificially disengaged from policy preferences. Therefore, while I focus in this chapter basically on the changes themselves, I will try to discuss briefly how the views of various leaders on doctrinal issues may have affected why they were appointed to or dropped from their positions.

Methodology and Approach

As the time frame for this study, I will use one that I present in Chapters One and Eight. While it is clear, as I note in those chapters, one cannot with available information point to specific dates when doctrine changed, I will need to approximate those dates to develop the time frame for this part of the analysis.

Consequently, I will assume that the post-Stalin reconsideration of military doctrine really developed its momentum with the publication of the Talenskiy article in September 1953. Discussion on these issues no doubt occurred prior to the actual writing and publication of the article, but its publication could clearly be taken as a signal to political-military leaders and scholars that there was currently sufficient openness to begin debate the issues the article addressed.

Khrushchev's statement at the February 1956 20th Party Congress that war with imperialism was no longer

inevitable set the stage for further reconsideration of doctrine. Together with the developments in nuclear technology up to that point, plus the debate over the previous few years on the roles of surprise and of nuclear weapons in a future war, that speech would have lent momentum to an expanded debate on those and related issues.

Additionally, Khrushchev's Secret Speech at the Party Congress criticizing Stalin and the problems of rigidity of government he created helped begin loosening the strictures on political discussion and activity in various sectors of the society. This speech, also in February 1956, would have created additional impetus to debate on military doctrine inter alia.

Khrushchev's articulation in January 1960 of the reliance on strategic nuclear missiles as the chief branch of the Soviet Armed Forces served as a capstone of sorts for the doctrinal directions he had favored, at least in terms of force posture orientation. This speech does not represent as much a shift in policy as a codification of direction that Khrushchev wanted to pursue.c However, it still seems like a worthwhile point at which to make an assessment in this chapter.

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cAs one should remember, this orientation, as laid out by Khrushchev, was not without opposition.

The timing of the doctrinal shift in the mid-1960s is harder to specify exactly. Several analysts have tried, as mentioned earlier. Alfred Monks has remarked that the shift favoring the possibility of extended, if not exclusively, conventional war occurred at the March 1966 23rd Party Congress, while MccGwire places that basic decision in December 1966 (Monks, 1984: 56; MccGwire, 1987: 29). I note in Chapter Nine on force posture development that the final principal decision certainly had to have come by November 1967, when a new deputy minister of defense for the Ground Forces had been appointed. One can speculate that if the appointment had been made by November, the central decision was possible made several months earlier, since the leadership would need a while to find a suitable candidate to develop and implement their views and to arrange for his transfer.

However, while the date of the final decision on the reestablishing the Ground Forces command could have been before mid-1967, using November of that year as the later bound for this period and March/April 1966 as the earlier bound seems like a reasonably safe approach. The period May 1966-November 1967 I therefore will consider to be a transition period.

With the dates for these periods, one arguably then works backward to construct a time period for personnel

changes that possibly had an influence on these policy shifts. Establishing a time period to evaluate prior to the actual shift is useful because of the possibility of lags between changeovers in personnel and the articulation of new policy lines by these several leaders or others. A few assumptions here need to be clarified before proceeding with the analysis.

Key Methodological Assumptions

One assumption is that changes in military and political leaders are usually thought necessary by the very top elites in order to pursue new directions in policy. Rightly or wrongly, leaders often think that important new policy directions involving important organizations (e.g., the Ministry of Defense or General Staff) are not best implemented by heads of organizations that have held their posts for a lengthy period while they have implemented previous policies.

Second, depending on the issue, it might take a little while for there to be an adequate number of the right people in the right positions to elaborate sufficiently a new orientation initiated by a few core leaders. In this sense, some changes in personnel are a result of the upper leadership's policy preferences, particularly as the shifts in personnel involve people at the levels of deputy minister of defense or deputy chief of the General Staff. These people may not be the initiators of the shift, but

they are central participants in determining its key lines of development.

There is certainly an interactive element in personnel shifts and policy perceptions, in that changes in policy can lead to personnel shifts, rather than flow from them. Because I am only surveying political-military officials at the highest levels, I will assume that most of the people at these levels would be far more involved in developing the broader dimensions of policy (viz., doctrine and strategy) than working out the details.d

Consequently, I will assume that this interactive dimension, as a potentially confounding factor for my results, is not operating to any significant degree. It may have been the case that it was not actually until a General Secretary attained his position that one should begin accounting for personnel changes before a major doctrine change, but it seems to be a more appropriate course to use a consistent time period before the actual policy change itself. Still, while I will concentrate on leadership change before the doctrine shift seems to occur, I will also look at changes in the leadership

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dIn the case of the appointment of a General Secretary, my assumption is that the collective leadership that brings about such a change does so at least in part because thye would like to see a change in some aspects of overall military policy, and usually the General Secretary is among those who want such a change.

during a period subsequent to the initial articulation of the shift.

Mechanics

How long a period of time for surveying personnel shifts would be appropriate? Such a determination is unavoidably arbitrary, to a degree.e Given the constraints on policy changes characteristic of the Soviet Union as a large, modern, socialist bureaucracy, it seems that such a period would be at least a year long. Political forces leading to a doctrinal shift would need time to build momentum. Leaders seeking some eventual change in doctrine would need time to try to move opponents aside and place supporters into key positions. Such changes would not all need to occur before the doctrine shift began, but some of these changes would indeed be necessary.

While one year seems a bit short for such developments to occur within the Soviet leadership, two years seems a bit too lengthy, as it would be increasingly more difficult to tie to a doctrinal shift a personnel shift that occurred two years earlier. Not all the personnel shifts that occurred within even one year of a policy shift could be accurately related to that shift, so expanding the period to two years seems too problematic.

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eNote to my readers: I would welcome any advice on better ways to define the length of this period.

Therefore, I have settled on a period of eighteen months as the cutoff point for tracking relevant personnel shifts. For personnel shifts in the period subsequent to the initial articulation of the doctrine shift, I will use a time span of a year. The assumption here is that a year would be sufficient time for most of the high-level officials important for shaping a doctrine and strategy change to have been brought in to the new leadership. A related assumption is that these people, on account of the high level of their positions, are worth tracking because of their influence on the shaping and elaboration of the doctrine shift over the next several years.

The next methodological question to address covers the positions I have chosen to track for personnel shifts. In Chapter Two I discuss the individuals whose speeches and articles I track for the final section of the project, and it is basically those same positions I track for this chapter. These positions encompass the suspected members of the Defense Council, the Minister of Defense and his collegium, the Chief and Deputy Chiefs of the General Staff, and a few key industrial managers.f Sometimes the

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fFor this part of the methodology, the controversy over the members of the Defense Council is not a concern that affects the inquiry. My purpose is to track probable military and foreign policy leaders, not just those in the Defense Council. Where information is available on the chairman of the Military-Industrial Committee and on the chief of the Central Committee Department for Defense Industry, I have included those positions as well.
See Rahr, 1989 for a discussion of how the Defense

information on the dates of the position changes of these individuals is contradictory in the sources providing the information (there are even disagreements as to the year of appointment or release), so I have tried to verify conflictual dates as well as possible.

Having established which positions are covered, it is important to ask which position changes for the current study are the most important and why, and what the different implications may be for policy shifts of promotions, simple releases from positions, or death. Since the First Secretary of the CPSU is the highest political authority in the country, it seems wise to consider changes in this position as especially significant, as well as changes in the Minister of Defense (even if he were not a Politburo member) and the Chief of the General Staff. Since the Minster of Foreign Affairs is also a major figure influencing foreign and military policy (and hence doctrine), shifts in this position are arguably on a similar level of significance.

Other principal Party and/or government officials, such as the Chairman of the Council of Ministers, the chairman of the KGB, and the Politburo head for industrial policy are potentially important for doctrine and strategy change, but arguably not as much so as those in the first

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important aspect of Soviet defense policymaking.

group. On a third tier would be the deputies to the Minister of Defense and to the Chief of the General Staff. These officials would arguably have less an influence on instigating doctrine and strategy change than on implementing such change. Given that the focus of the current study is on conventional warfare, possible exceptions to this assumption might be the deputy ministers heading the Ground Forces and the Strategic Rocket Forces. Accordingly, I will consider those two positions part of the second group.g

Promotions I will basically interpret as reflecting that the individual is in general agreement with those in the core of the elite on doctrine and strategy issues. I will assume with simple releases from a position that such was not the case. The possibility does exist that someone could be released from or promoted to a position within the political-military elite for a reason other than agreement or disagreement on doctrine and strategy. However, since I am not reviewing every change in the Soviet political-military leadership, but only those that

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gI note in passing that adding evidence change in these positions as criteria for an assessment of "moderate likelihood" is probably the only measure I would take differentiating an assessment of doctrine change in general from an assessment of doctrine change specifically in the area of conventional war. It would generally be quite difficult to relate changes in specific types of doctrine to changes in particular Party or government positions.

occurred at periods of doctrine and strategy shifts, I think I can safely assume that this possibility--that vies on doctrine and strategy were not a part of the reason for a change in position--is slim. I therefore will not try to speculate on exact reason for dismissal, unless there is substantial existing evidence that the change was made for a reason other than disagreement on issues of doctrine and strategy.h

Retirement (where I can be reasonably sure such was the case as opposed to death or reappointment) I will interpret as possibly suggestive of disagreement with policy directions of the core elite. I take this approach because until recently, Soviet officials in political favor have usually served until death or incapacitation. At the same time, in drawing such an inference, I will note the caution one need employ in doing so. Death I will interpret as indeterminate for the analysis of the position holder's vies on doctrine or strategy.

Relating the leadership change to the shifts in doctrine, I offer the following hypotheses:

1) If there is a change in the positions of either First Secretary or the Minister of Defense in the 18-month period before the doctrine and strategy

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hStill, the fact that changes even in the positions I track here may possibly be made for other than military purposes will make the significance of my conclusions more purely historical than predictive.

shift, leadership change can be assessed as having an impact on doctrine. In the case of changes in these two particular positions, I will consider there to have been a "strong likelihood" that the changes were important in the subsequent shaping of doctrine and strategy. If there are changes in both the First Secretary and Minister of Defense in the 18-month period prior to the doctrine and strategy change, I will consider there to have been a "definite likelihood" such changes had an effect on subsequent doctrine and strategy shifts.

2) If there is a change in either the Minister of Foreign Affairs or Chief of the General Staff in the 18-month period before the doctrine shift, one can also conclude that leadership changes were important for doctrine change. In the case of these changes, I will consider there to have been "moderate likelihood" such change had an effect on the subsequent shaping of doctrine and strategy. Because of the importance of the Minister of Foreign Affairs and Chief of the General Staff for issues of military doctrine, if there were changes in either (or both) the Minister of Foreign Affairs or Chief of the General Staff as well as either the General Secretary or Minister of Defense, then I will assume there was a "definite likelihood" such changes had an effect on subsequent doctrine and strategy shifts.

3) If there were changes in deputy ministers of defense, deputy chiefs of the General Staff, or other officials (such as Chairman of the Council of Ministers or Chairman of the KGB) in the 18-month period before a doctrine and strategy shift, then there is a plausibility that these changes had an important effect on that shift.

4) In the case of a doctrine shift that involves a lengthy transition period, changes in key positions (General Secretary, Minister of Defense or Foreign Affairs, Chief of the General Staff) that occur before the conclusion of the transition period, though after the principal initial indication of the shift in doctrine, will also be considered as indicative of the importance of leadership change on doctrine shifts. Such changes, regardless of the level of the key official, will be taken as evidence that leadership change has had only a "moderate effect" on doctrinal development. If

changes occur among the other positions during this time, leadership changes will be considered to have had only a "plausible" influence on the doctrine shift.

5) If any changes in the surveyed positions (regardless of the level) occur in the one-year period following the doctrine shift, leadership change will be considered to have had a "plausible" influence on the doctrine shift.

6) If a doctrine and strategy shift occurred with no changes in the surveyed positions, although there may have been changes in other positions in the leadership, then there is "no likelihood" that leadership changes were important for the doctrine and strategy shift.

Interpretation

In order to evaluate these hypotheses (see Table 1), in addition to tallying which leaders changed when, I will also note, as information is available, what the views were of individuals who were promoted or released. Where possible, I will also try to comment upon how these individuals fit into the political constellation of the elite. There is no real need to delve into this history in great depth, so I will basically just highlight the principal dimensions of interest here and refer the reader to more detailed works.

Clearly, leaders are changed because of their perceptions and how much they may agree with certain colleagues on certain issues. Doctrine and strategy change is not principally a function of momentum in leadership change. Indeed, I am narrowing the question

even by trying to tie leadership change to doctrine on conventional war. The effect of leadership change on doctrine would be rather difficult itself, not to mention on doctrine dealing with conventional war. Therefore as I briefly mention these Soviet officials' viewpoints, I will frame these comments as much as possible in the context of the interpretive framework presented in Chapter Eight on thematic doctrine change.

If changes in particular leadership positions do often occur when doctrine and strategy seem to have changed, what it may allow me to say is that if certain conditions are ripe for a change in doctrine, a leadership change may be a key facilitating factor for this change to occur. From strong evidence of the connection of leadership change with doctrine change, one could speculate that a change in certain leadership positions may lead to a change in military doctrine or strategy, but this prognostication would necessarily be tenuous.i

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iIt is interesting to note, of course, that from 1950-1970, the shifts in General Secretary and most of the shifts in Minister of Defense, Commander-in-Chief of the Ground Forces and Strategic Rocket Forces, Chairman of the Council of Ministers, and a few other positions, almost all occurred at the time of principal shifts in military doctrine and strategy (see Tables 2-5).

The Developments in 1953

As one reviews the table of changes that occurred in the eighteen months prior to the Talenskiy article, it is not surprising that many of the changes occur in March 1953, the month of Stalin's death. This period prior to revisions in military doctrine evidences personnel changes in the First Secretary, Minister of Defense, Minister of Foreign Affairs, chief of internal security. The principal officials release from their positions at this time were considered allies of Stalin, and as most of the Soviet leadership did not want to perpetuate his mode of governance, they expectedly began to remove his supporters.

Stalin's views about doctrine are well known (see Chapter Eight). The fact that he died rather than being replaced is significant for the current analysis, because those who disagreed with his ideas on various aspects of governance of the Soviet Union (among such issues being military doctrine and strategy) had not been strong enough to unseat him. Stalin's ability to stay in power manifested not only the appeal to many leaders of his ideas but also his firm political strength in keeping himself and his supporters in key positions in the leadership. Few opponents were really able to challenge his authority.

Khrushchev's views on war, and in particular their differences from Stalin's at this point in time, have been thoroughly documented as well.j On most occasions in the two years after Stalin's death, Khrushchev pursued a fairly conservative line about the likelihood of conflict with the West and the preparations for it, and indeed, these comments continued on frequent occasion into the late 1950s. The line Khrushchev seemed to follow after Malenkov was dropped as Chairman of the Council of Ministers in February 1955 was basically the one he formally articulated in early 1956--that some accommodation with the West could be obtained because of the growth in Soviet military might (Holloway, 1983: 32; Dinerstein, 1959: 73ff).

Vasilevskiy, Stalin's last Minister of War, was considered capable, articulate and well-educated, but one whose ideas by the early 1950s belonged "to a bygone age" (Seaton and Seaton, 1987: 167). Not unexpectedly, he was also an advocate of the permanently operating factors (Dinerstein 1959: 48). Bulganin, his replacement as Minister of Defense, had held the post in the late 1940s, though his credentials were more political than military (Seaton and Seaton, 1987: 150). Bulganin's views on

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jSee Richter (1989: Chpt. 1) for a thorough discussion of elite foreign policy perceptions at this time.

Soviet-U.S. relations were basically similar to Khrushchev's. Khrushchev, though, comments that Bulganin was not well versed in foreign policy issues (Khrushchev, 1970: 394).

Malenkov's views about the lessening of the conflictual relationship between imperialism and capitalism are well-known (see the Chapter Eight and Dinerstein, 1959: 13-18, 71-77). His more sanguine attitude toward Soviet relations with the West brought him serious opposition in the upper leadership.

Vyshinsky was closely tied to Stalin as a prosecutor in the purge trials, and as foreign minister was known even in Soviet circles as an "ardent dogmatist" (Shevchenko, 1985: 195). His replacement Molotov was fairly conservative in his views on Soviet-Western relations (Dinerstein, 1959: 73, 81). As Minister of Foreign Affairs from 1939-1949, Molotov had had extensive experience at the post, and this experience no doubt compensated for whatever little amount of discomfort his foreign policy conservativism might have caused his colleagues. Molotov also had had close ties to Stalin, but there were suggestions that Stalin in his last years had turned against Molotov (Seaton and Seaton, 1987: 60, 169; Khrushchev, 1970: 553).

Beriya took over the MVD from Kruglov, who had headed it since 1946. Beriya apparently tried in June 1953 to seize power for himself, so within in five months, Kruglov received the position back after Beriya was demoted.k Little information is available about Beriya's or Kruglov's views of military affairs, but Beriya's intimidating presence as head of the secret police is well documented (Mackintosh, 1967: 287; Dinerstein, 1959: 133; Khrushchev, 1970: 322-333). Members of the High Command played a role in his Beriya's arrest (Holloway, 1983: 15; Seaton and Seaton, 1987: 178; and Garthoff, 1962: 22), probably in part because of their dislike of KGB informants in the Armed Forces.

Along with these officials, I have included in the list of new governmental appointees L.K. Kaganovich and K.E. Voroshilov, two officials whose positions (that of first deputy chairman of the Council of Ministers and chairman of the Presidium of the Supreme Soviet, respectively) would not ordinarily have led to their inclusion on the list of tracked positions. They have been included here because of their tenure during World

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kScott and Scott (1981: 218) provide a helpful chart to track the organizational development of the organizations now known as the Ministry of Internal Affairs and the Committee for State Security.

War II on the State Committee for Defense, the highest Soviet defense policymaking body during wartime.

Kaganovich was known as a strong conservative on Soviet-Western relations, and he maintained this position (Richter, 1989; Monks, 1984: 11; Dinerstein, 1959: 15, 73, 81). There was also some indication he had supported Malenkov against Khrushchev (Khrushchev, 1970: 545). Voroshilov, although not a military man (and never possessing a reputation as such), had extensive experience as a political commissar in the military. He shared the conservative foreign policy views of Khrushchev, Bulganin, and Kaganovich during the early post-Stalin period (Dinerstein, 1959: 73, 98, 103; Seaton and Seaton, 1987: 144).

Concerning military appointments other than those above, it is important to note that M.I. Nedelin, as head of the Main Artillery Directorate from 1948-1950, was intimately involved with the development of the first Soviet rocket troops.1 In his new position as deputy minister of defense for armaments, he had oversight responsibility for the further development and deployment of Soviet missiles and associated troops (Scott and Scott, 1981: 135).

1These troops had been formed from guards units in 1946 and assigned to the artillery reserves of the Supreme High Command (Scott and Scott, 1981: 135).

Sokolovskiy was appointed Chief of the General Staff in June 1952, replacing General Shtemenko. Some Western analysts think that Stalin replaced Shtemenko with Sokolovskiy because of a possible interest on the dictator's part in pursuing war with the West (Seaton and Seaton, 1987: 170; Garthoff, 1962: 20). Interestingly, Sokolovskiy, who had stronger ties to Stalin and Zhukov than to Khrushchev, was allowed to keep his position upon Stalin's demise (Tatu, 1972: 72). It could, therefore, be that Sokolovskiy's views on doctrine were important for his appointment under Stalin, though these views may not have been necessarily in accord with the shifts and transitions of the next two years. Further information would be needed to make a determination on the significance of his initial appointment and his retention of the position after March 1953.

Apart from Vershinin's appointment to head the air defense forces and Ustinov's to head the Ministry of Defense Industry, there were no other noteworthy secondary military appointments made during this period.

In the year following the publication of the Talenskiy article, the only interesting appointment was Serov's. Serov had been a supporter of Khrushchev's, having worked together with him closely in the Ukraine (Tatu, 1972: 190, 245). Little is known about Serov's military views;

he apparently had little experience in military affairs (Penkovskiy, 1965: 80).

In sum, given the extensive number of major posts that changed hands after Stalin's death and the involvement of many of these individuals in the debate on military relations with the West that was to follow in the next few years, it seems a very strong conclusion that these leadership changes had a impact on the reconsideration of doctrine that got underway after Stalin died (see Table 2). As the template of evaluations suggests, the fact that the First Secretary and the Minister of Defense were involved in the leadership changes means there is a "definite likelihood" that these changes affected the subsequent development of military doctrine and strategy. The fact that these major personnel shifts were accompanied by changeovers in other important positions during the same period adds weight to this conclusion.

Several of the leaders in their new positions were intimately involved in doctrinal controversy on military relations with the West, among other issues. Direct participation in the debate by some of the officials listed here, in terms of articles and speeches authored, is well documented. Given the basic transitional character of the immediate post-Stalin period in the development of military doctrine, perhaps the most

important impact of these particular leadership changes was their support for a reconsideration of military doctrine and strategy. The new appointees were committed to initiating a debate on military doctrine and strategy in order to reinvigorate thinking in these areas and bring doctrine and strategy up to date.

The position changes after the Talenskiy article are such as would fall in the "Plausibility" category of influence on military doctrine. Since the responsibilities involved with these positions were not particularly related to the central issues being debated in military doctrine, the real potential influence of these changes on doctrine was probably low.

Events Surrounding the 20th Party Congress

The period before and including the 1956 20th Party Congress provides interesting material for speculation about the influence of leadership politics on military doctrine because while there were two key changes in the political leadership, most of the changes during the 18 months prior to the Congress were in the Ministry of Defense. The principal change within the Party and Government structure during this period was Malenkov's demotion as Chairman of the Council of Ministers in

February 1955, a result largely of a basic power struggle within the Politburo.m

At the same time, the struggle was clearly manifested in different declaratory policies on East-West relations and on domestic budgetary issues. The debate involving Malenkov (sometimes joined by Mikoyan), on one side, and Khrushchev, Bulganin, Kaganovich, and Voroshilov, on the other, has been well documented. Malenkov had been arguing that potentially improving relations with the West meant that some funds could be channeled from the military and defense industry to the consumer sector. His opponents thought otherwise (see Dinerstein, 1959: 66ff; Breslauer, 1983: 24-31).

Although Khrushchev had been among the foremost of Malenkov's critics, it was Khrushchev who in February 1956 proclaimed that war with capitalism is no longer necessary (Dinerstein, 1959: 80-81, 152; Monks, 1984: 18-19, 35). Bulganin, with whom Khrushchev shared close views on political-military issues, was given the position of Chairman of the Council of Minsters. Zhukov replaced Bulganin as Minister of Defense, allegedly giving a report at the plenum that strongly criticized the permanently operating factors and stressed the need for a new look at

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mSee Richter, 1989: Chpt. 2, pt. III-Chpt. 3, p. II for a thorough examination of elite foreign policy views during this period.

military policy (Scott and Scott, 1981: 40).n In particular, he offered a number of important ideas about the necessity of combining approaches to conventional and nuclear war, and Khrushchev says he recognized the importance of the mid-1950s troop cuts (Monks, 1984: 18; Khrushchev, 1974: 13). Zhukov is known to have disagreed strongly with Malenkov's views on investment (Mackintosh, 1967: 289).

Pervukhin, who had significant Politburo responsibility for industrial management, was appointed first deputy chairman of the Council of Ministers. Pervukhin strongly favored centralized planning (Linden, 1966: 240, 243). Little is known about his foreign or military policy views, except that by 1957 he seemed to support a position opposed to the expansion of the Armed Forces or increase in military strength (Dinerstein, 1959: 100-101). If his views were similar in the year or so previous, they were probably consonant with Khrushchev's position on

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nScott and Scott (1981: 265) provide a list of Zhukov's policy initiatives, that included a significant reduction of political officers in army.

East-West relations.o There were few other government changeovers necessary to discuss here.p

Within the Ministry of Defense, the most interesting appointment, apart from Zhukov's, was I. S. Konev's appointment in March 1955 to head the Ground Forces. Konev was then transferred from this position to Commander-in-Chief of the Warsaw Pact a year later as R. Ya. Malinovskiy took responsibility for the Ground Forces. Konev, who had held the Ground Forces post in the last half of the 1940s, had originally achieved prominence on account of Stalin himself, who allegedly saw Konev as a counterweight to Zhukov (Seaton and Seaton, 1987: 167-168).q Little is known about Konev's views on military issues. He, along with Sokolovskiy, was known to be opposed to the demobilizations of the mid-1950s (perhaps the reason for his transfer), and later he was known to be

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oPervukhin was also involved in managing early Soviet work on the development of the atomic bomb (Holloway, 1983: 17, 22).

pS.N. Kruglov, a Beriya associate, was dropped as head of the MVD in favor of N.P. Dudorov. However, the KGB, which had been the organization with traditionally more external duties, had been reestablished since his 1953 promotion to head the organization that incorporated its responsibilities. The new KGB was established in March 1954 under the leadership of I.A. Serov (Crowley, Lebed, and Schulz, 1969: 99).

qKhrushchev is also said to have favored Konev and seen Konev in as a counterweight to Zhukov (Garthoff, 1962: 21, 26; Seaton and Seaton, 1967: 182).

opposed to the emphasis Khrushchev placed on missiles to the detriment of conventional forces (Tatu, 1972: 70; Penkovskiy, 1965: 221-222).

Kuznetsov was dismissed in 1955 apparently because he favored a conventional surface navy as well as ballistic missile submarines. This point of view was opposed by Zhukov and particularly by Khrushchev (Garthoff, 1962: 37, 200; Wolfe, 1970: 188; Khrushchev, 1974: 19-28). Gorshkov, of course, was a very strong advocate for the navy. Apparently, though, his views differed less with Khrushchev's than Kuznetsov's did, and Gorshkov was advocate his positions more effectively than Kuznetsov (Garthoff, 1962: 216). Nedelin was probably moved to give him charge once again over development of Soviet rocket forces.

The year following the 20th Party Congress witnessed several changes in the Minister of Foreign Affairs. Molotov had been a fairly effective manager at the Ministry of Foreign Affairs, but he had had occasional disagreements with Khrushchev (Shevchenko, 1985: 248; Tatu, 1972: 16; Khrushchev, 1970: 553). Molotov, who would later participate in the conservative anti-party group, was replaced as minister by Shepilov. Shepilov apparently attracted Khrushchev's favor in part because Shepilov emphasized the role of economics in foreign

affairs. Shepilov had a reputation as a political hardliner, and he had supported Khrushchev against Malenkov in the previous year (Shevchenko, 1985: 109, 145; Tatu, 1972: 140; Kolkowicz, 1967: 110n). It was perhaps these views but, if not, certainly his association with the anti-party group that brought about his downfall.

Gromyko had had extensive experience as the Soviet ambassador to the UN prior to his appointment, and he had developed a reputation as a conservative on East-West relations. Little additional information is available about his views on political or military issues before his appointment (see Whitney, 1989).

Of the military changes after the Party Congress, probably the most important was Malinovskiy's. Malinovskiy has been characterized as "capable" but "dull and uneducated...without political pretensions" (Seaton and Seaton, 1987: 168, 181; Penkovskiy, 1965: 146-147). Apparently he was agreeable to most of the changes in military organization and procurement that Khrushchev wanted to make, both in the mid-1950s and later (Penkovskiy, 1965: 153-154, 216; Shevchenko, 1985: 111; Tatu, 1972: 78; Khrushchev, 1974: 15).

Kurasov had joined Khrushchev in criticizing Malenkov's relative lack of support for defense spending (Kolkowicz, 1967: 110). Rokossovskiy had been brought

back from Poland to a post as deputy minister of defense. Rokossovskiy, also a conservative, had been serving as Minister of Defense in Poland at the time of the political crisis there. His service as Minister of Defense had much annoyed the Poles (Scott and Scott, 1981: 201). Rokossovskiy was known as a protege of Zhukov, and Zhukov may have been an important factor in Rokossovskiy's move back to the Ministry of Defense hierarchy (Kolkowicz, 1967: 234).

For this period, one finds changes in the Minister of Defense, the Chairman of the Council of Ministers and several different service commands, including the Ground Forces. The basic similarities among these changes are that the individuals had similar views on the positions Malenkov was advocating, and, as one might expect, they were also Khrushchev supporters. It would be difficult to suggest precisely what the overall effect of these changes might have been on the development of military doctrine and strategy, except that most of the important individuals were probably supportive of continued strong investment in R&D for strategic systems. They were probably also in favor of continued revision of Soviet doctrine in order to integrate nuclear weapons more effectively.

It seems that the conclusion from the quantitative analysis is that changes in the 18-month period prior to the Party Congress had a strong likelihood of affecting the subsequent development of doctrine, particularly in the areas of force structure and procurement for the army and navy. On the military side, Zhukov's, Gorshkov's and Nedelin's promotions could have had particular relevance for the development of a nuclear-oriented doctrine.

Promotions after the Congress arguably had a moderate likelihood of affecting doctrine and strategy. Appointments that most clearly could have shaped doctrine and strategy were Gromyko's (not to mention Molotov's and Shepilov's dismissals) and Malinovskiy's. Gromyko may have been important eventually for the development of potential modus vivendi with the West, and Malinovskiy's for the continued diminution of the Ground Forces.

January 1960 Support for Strategic Rocket Forces

As indicated earlier Khrushchev's January 1960's speech indicates less a change in doctrine than a capstone for the directions in which doctrine had been heading for the previous five years or so. Although in mid-1957 there had been a major political shakedown with the defeat of the conservative anti-party group (Malenkov, Molotov, Kaganovich, Bulganin, Saburov, Pervukhin, and Voroshilov), there were no other significant changes in the upper

leadership until the 22nd Party Congress in October 1961.r

In the eighteen months before Khrushchev's January 1960 speech the only defense-related change in the upper leadership was A. N. Shelepin's replacement of I. A. Serov as chairman of the KGB. As indicated earlier, Serov served with Khrushchev in the Ukraine, and he had joined Zhukov in supporting Khrushchev in June 1957 (Tatu, 1972: 245; Seaton and Seaton, 1987: 180). Serov's departure was somewhat of a demotion (he lost his ministerial status as KGB head) but not too much of one. When Shelepin came to the KGB, Serov left to head the GRU (Tatu, 1972: 325).

Shelepin had primarily had been involved in Party management before he was given the KGB post (Tatu, 1972: 554). Shelepin was known as a conservative; some, in fact, have labelled him a "neo-Stalinist" (Wolfe, 1970: 240). Shelepin has also been considered to have been very accommodating to Khrushchev (Penkovskiy, 1965: 190; Tatu, 1972: 198). Little is known about his military views.s

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rSee Richter, 1989: Chpt. 6, pts. I-II.

sIt is potentially interesting that Frol Kozlov was appointed first deputy chairman of the council of ministers. Although in this position it would seem that he would not necessarily have defense responsibilities, Penkovskiy comments (1965: 146) that he sometimes chaired meetings of the Politburo's Supreme Defense Committee in Khrushchev's absence. Kozlov had a strong reputation as a hardliner in domestic and foreign affairs. He supported Khrushchev in June 1957 but generally did not share

There were also few important changes in the military hierarchy. It was no surprise that Nedelin was moved from responsibility for armaments to head the SRF; this development was a logical outgrowth of his earlier work. Konev was moved from the Warsaw Pact to the Main Inspectorate, most likely, as mentioned before, because of his opposition to Khrushchev's troop cuts.

Appointments in the Party and Government structure in the year after the January 1960 speech were arguably important for the development of Soviet domestic and foreign policy. The impact of these changes on military doctrine is much less certain, given the responsibilities involved with the positions where the changes occurred. Brezhnev had been the Politburo member chiefly responsible for heavy industry and had taken over the responsibility for cadres after the dismissal of A.I. Kirichenko in January 1960. By late spring 1960, Brezhnev was Frol Kozlov's principal rival for the "second secretary" position, especially because at that time he shared responsibility for cadres with Kozlov. Brezhnev's position in this rivalry was weakened with his move to the Presidium position in June, for that left the more important cadres post solely with Kozlov (Tatu, 1972: 87-

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Khrushchev's views on the need to improve relations with the West and with Yugoslavia (Linden, 1967: 50-51, 175-178, 236-237; Tatu, 1972: 332-336).

89). Little is known about Brezhnev's foreign and military policy views at this time. Kozlov, however, had earned a strong reputation as a conservative and was a frequent ally of Suslov (Tatu, 1972: 79, 88-92).t Voroshilov by 1960 was in declining health because of his age. Perhaps more importantly for his release was the fact that he had been a participant in the anti-party group (Tatu, 1972: 90-91).

Within the military hierarchy, there were several important developments tied with Khrushchev's continued emphasis on missiles and deemphasis of the Ground Forces. Sokolovskiy was dropped as Chief of the General Staff because of his opposition to further troop cuts, and Zakharov was brought in to fill his position (Penkovskiy, 1965: 152; Tatu, 1972: 72). Khrushchev notes that Zakharov was thought of as someone well experience but "out of step with the times" (Khrushchev, 1974: 17).

For sharing Sokolovskiy's views on this issue, Konev was dropped from Warsaw Pact CinC, and Grechko was brought in (Penkovskiy, 1965: 153, 221-222). While little is known about Grechko's ideas on nuclear or conventional

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tKozlov had a significant amount of power by this time within the central leadership, although his post as 1st Deputy Chairman of the Council of Ministers was not that significant. I have included him here in the leaders I assess because Penkovskiy (1965: 146) notes that he often chaired meetings of the Politburo's "Supreme Military Council" in Khrushchev's absence.

forces, he had fairly negative views about possibilities of cooperation with the West (Tatu, 1972: 72-73).

Grechko's move to the Warsaw Pact necessitated a replacement for his position as head of the Ground Forces, and Chuykov was brought in for that slot. While little is known about Chuykov's views on doctrine prior to that time, it is known that Chuykov, a veteran of the Stalingrad campaign, had been a close associate of Khrushchev's since the war. Chuykov had worked after the war in the Ukraine, where Khrushchev had also had served (Kolkowicz, 1967: 248n; Mackintosh, 1967: 298; Scott and Scott, 1981: 126).

After Nedelin's death in November 1960 at the Turyatam test range, Moskalenko was brought from his position as chief of the Moscow Military District to head the SRF. Little is known about Moskalenko's political or military views; like Chuykov, he was a participant at Stalingrad and an associate of Khrushchev (Kolkowicz, 1967: 248n, 255). He has been characterized as not being especially capable, and Khrushchev notes he was occasionally very temperamental (Penkovskiy, 1965: 217; Khrushchev, 1974: 15).

From the quantitative as well as the qualitative data for the period prior to the January 1960 speech, it appears that leadership succession did not play an

important role in the development of the policies Khrushchev articulated (see Table 4). As indicated earlier, this set of circumstances is not surprising, as the policies Khrushchev articulated then were largely an outgrowth of ones he and others had been developing for several years.

At the same time, one must note the obvious fact that if Khrushchev had been unseated in June 1957, he would not have been able to pursue his plans for the development of the Soviet Union's strategic nuclear forces. In this way, leadership succession was important, but in the narrow interpretation I am using for the concept, one cannot draw such a conclusion for the policies approach articulated in 1960.

For the changes after the January 1960 speech, especially the ones in the Ministry of Defense hierarchy, there is a "plausible influence" of these changes on doctrine as it developed over the next several years. While these changes, particularly those of the Chief of the General Staff and the Commanders-in-Chief of the Ground Forces and SRF occurred after the Khrushchev's initial public articulation of the emphasis on ballistic missiles, it is certainly the case that these officials

were in positions to be useful to Khrushchev in shaping further developments of doctrine and strategy.u

The Decisions of 1966 and 1967

Methodological concerns

Debate and decisionmaking for new directions in doctrine, strategy, and force posture in the mid-1960s may have extended over a lengthy period of time. Even if the time period was actually short, it is difficult with currently available information to label the publication date of a particular speech or article as the date for the authoritative explication of the whatever changes in doctrine and strategy may have been occurring. One will recall that the mid-1960s period covers the period from the 23rd Party Congress in March/April 1966 to the point several months before Pavlovskiy's appointment as head of the Ground Forces by December 1967.

This ambiguity creates a methodological problem, for allowing for a spread of twenty months (March/April 1966-December 1967) for the period when the principal indicators appeared means that the spread of months covered for changes in leadership positions is

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uKolkowicz (1967: 265) notes that, in actuality, some of Khrushchev's military appointees continued to agree with him on doctrine and strategy issues while others did not. According to Kolkowicz, those who continued in agreement included Biryuzov, Moskalenko, Chuykov, and Sudets. Those who later disagreed included Malinovskiy, Zakharov, Grechko, and Krylov.

approximately double that of the earlier periods. This development means that there would inevitably be more changes in a period of this length than one of eighteen months, a problem which potentially inflates the role of leadership change for the mid-1960s doctrinal shift in comparison with earlier shifts.

At the same time, one must note the possibility that the debate involved with this shift may indeed have extended over a long period of time and that there simply were more changes in leadership positions during this shift than there were earlier. As it turns out, there is a large group of changes--mostly of Party and civilian sector officials--that did occur in a eighteen-month period from late fall 1964 through spring 1966, and there is another group of changes--mostly of military officials, that occurred in 1967. What may have transpired is that the Party and government took time to "sort itself out" after Khrushchev's ouster. Then, after some of the larger issues of foreign and military policy had been resolved, people were moved around in the Ministry of Defense as resolution of lower-level substantive and personnel issues was pursued. To deal with the ambiguity of this period, I will report the data in these two groups and draw conclusions accordingly and with appropriate caveats.

A less troublesome problem with the data is that beginning in the early 1960s, the information on ministerial appointments becomes more substantial. Particularly at the level of deputy minister of defense and deputy chief of the General Staff, the greater amount of information than in the 1950s leads to a greater number of people to track. This greater amount of information affects the number of people included on the mid-1960s list, but since the level of coverage remains fairly constant after the increase, this change does not corrupt the base of data from which this or future chapters' conclusions are drawn.

People and Issues in the 18-Month Period Prior to March/April, 1966

The reasons for Khrushchev's fall are well documented, as is the criticism by the military of Khrushchev's policies.v The military had been disappointed by the way Zhukov had been treated in 1967, but the far more significant problem bothering them were Khrushchev's proposed cuts in conventional forces in the early 1960s (that added to his cuts of the mid-1950s, and his focus on strategic nuclear forces, which left conventional force

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vOn general issues of criticism, see Linden, 1967; Tatu, 1972; and Breslauer, 1983. On criticism by the military, see Kolkowicz, 1967; Wolfe, 1964, 1970; Seaton and Seaton, 1987: 191. For a thorough general survey of differences in foreign policy perceptions, see Richter, 1986 and 1989: Chpt. 6, pt. V.

commanders perceiving themselves and their troops neglected. There seemed to be little disagreement at the time within military circles that the Soviet Union needed to build up its strategic nuclear capability, but military power in the Soviet Union had traditionally emphasized combined arms, so there was a sense that the development of no one service should clearly outstrip the development of the others.

While Brezhnev was basically a conservative in his ideas about East-West relations, he was interested in expanding Soviet influence in various parts of the world through military assistance and other means, and he was also interested in having the U.S. recognize the Soviet Union as an equal superpower which needed to be taken into account in most or all aspects of world affairs. While these concerns led him to increase the budget for the Soviet military, it also led him to pursue detente with the U.S. and recognition from U.S. leaders of the U.S.S.R.'s military power and consequent legitimacy as a world actor (Monks, 1984: 52; Shevchenko, 1985: 272-274; Wolfe, 1970: 427-458; Bunce, 1983).w

While Kosygin was not heavily involved in defense issues, he was generally supportive of increases in

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wShevchenko notes (1985: 197) that much of Soviet foreign policy during the Brezhnev years was actually shaped by Gromyko.

defense spending, while concerned at the same time about sufficient investment in the civilian side of the economy (Breslauer, 1983: 279; Linden, 1966: 228; and Wolfe, 1970: 431). Kosygin was particularly interested in improved trade and economic relations with the U.S., most probably in order that Soviet industry could profit from U.S. technology (Shevchenko, 1985: 180).x

Although Mikoyan had been extensively involved in Khrushchev's foreign policy, was often instrumental in Soviet-U.S. relations and had a reputation as a reformer, his appointment in 1964 as head of the Presidium of the Supreme Soviet and his release from that position (because of health problems related to age) the following year probably did not have much bearing on defense policy at that time (Linden, 1966: 239).y Podgornyy, in any case, was not considered to be in the Brezhnev-Kosygin inner circle (Linden, 1966: 241; Shevchenko, 1985: 237).

Little is known about the views on defense issues of Dymshits, Novikov, and Zverev. Little is known prior to the 1970s about Ustinov's views, except that he had been a substantial Brezhnev supporter (Shevchenko, 1985: 240).

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xKosygin was not interested in selling extensive Soviet natural resources to the West and wanted the U.S.S.R. to be as self-sufficient as possible (Shevchenko, 1985: 284).

ySee also references to Mikoyan's basically hopeful views of U.S.-Soviet relations in Dinerstein (1959).

This support, and his extensive experience in defense industry, were probably what brought him the spot as Chairman of the Supreme Council of the National Economy in 1965. He was later in 1965 moved from this post to the Central Committee Secretariat, most likely to deal with defense industry (Wolfe, 1964: 43; Scott and Scott, 1981: 120).

Zakharov was known to some as a "tired and narrow person," as well as an unimaginative thinker, though he has also been characterized as "astonishingly energetic and vastly experienced" (Shevchenko, 1985: 271; Erickson, 1974: 14). He had been known as someone not much interested in further ties with the West (Tatu, 1972: 73-74). He was a firm supporter of the concept of combined arms and opposed to the concentration of defense efforts in favor of a single service. He was a strong critic of Khrushchev, and this orientation probably helped his appointment (Penkovskiy, 1965: 144; Erickson, 1974: 14). Among the other military officials who were appointed or released during this period, little is known about the views of Batitskiy, Chetverikov, Gerasimov, Gorbatov, Ivanov, Kurasov, and Sudets.

As was the case in 1953, one finds for this period that there was a "definite likelihood" leadership change had an effect on doctrinal shifts in the mid-1960s (see

Table 5). There was a change in the CPSU First Secretary and in the Chief of the General Staff. There were also important changes in various high-level civilian Government officials, such as the Chairman of the Council of Ministers and several chief economic and industrial managers. Additionally there were some changes in the General Staff during this period.

The Transition Period,
May 1966-November 1967

There were several important appointments during the transition period of May 1966 through November 1967. I will turn first to the main transitions in the political leadership in 1967. Those were only two--the release of Semichastnyy as KGB head and the promotion of Andropov to that position.

Semichastnyy had been a key supporter of the effort to oust Khrushchev and remained in his KGB post until removed by Brezhnev in 1967. Little is known about Semichastnyy's military views, although he did have a reputation as a political hardliner (Wolfe, 1970: 249). His removal seems to have been largely a political move, since 1) he was a protege of Shelepin, whom Brezhnev seems to have perceived a major threat and 2) since he was a relatively youthful KGB leader (43 years old in 1967) and possibly also seen as a threat to Brezhnev (Tatu, 1972: 420, 537-539; Wolfe, 1970: 240).

Little is also known about Andropov's military views prior to his appointment. Andropov had served in the foreign service (he was the Soviet ambassador to Budapest in the mid-1950s), and he and Gromyko apparently were on good terms with one another (Shevchenko, 1985: 197-198). Andropov had a reputation as being conservative politically, but also of being well-educated, intelligent, and a good organization manager. Andropov was also viewed by KGB employees as a strong leader, and they welcomed his appointment in 1967 (Shevchenko, 1985: 197, 314-315).

It was in 1967 that most of the military personnel transitions in the mid-1960s occurred.z Malinovskiy died in April 1967, and after a short delay, Grechko--known as a Brezhnev supporter--was appointed his successor (Shevchenko, 1985: 240).aa Grechko was generally skeptical about the possibility of good relations with the West except through significant Soviet military strength.

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zErickson (1974) discusses many of the changes in the military hierarchy in the mid-1960s in terms of improvements in professionalism and competency of the leadership, and in capabilities to conduct conflict at a variety of levels of intensity.

aaThere is some indication that Grechko was a compromise candidate between military and Party officials, who supported Ustinov. The speculation is that there would have been extensive reorganization of the Armed Forces if Ustinov had been given the position then. Military officials were apparently successful in pressing their objections on this line with the Party (Wolfe, 1970: 430n).

By no means a supporter of major change in military policy, he had nevertheless criticized excessive conservatism in military planning. He was considered to be a strong supporter of defense budgets, and he was opposed to, and allegedly tried to create many obstacles to, Soviet participation in the SALT talks (Tatu, 1972: 72-74; Monks, 1984: 163-164; Wolfe, 1964: 81; Shevchenko, 1985: 216, 269; Erickson, 1974: 19). Later on he articulated strong support for the use of Soviet military power to further Soviet interests abroad (Monks, 1984: 182, 218, 235).

Little is known about Pavlovskiy's views prior to his tenure as commander of the Ground Forces. Pavlovskiy had been brought from the Far Eastern Military District in April 1967 to become a deputy minister before he was given the Ground Forces command in November of that year (Scott and Scott, 1981: 192). Since Pavlovskiy's byline was not accompanied the title of "Commander-in-Chief of the Ground Forces did not appear until December, it is likely that the Ground Forces was not reestablished as a service until shortly prior to that month occur (Army General, 1968).

Little also is known of the views of Yakubovskiy, except for his July 1967 statement that the Soviet Armed Forces need to be able to conduct operations without nuclear operations. He apparently was one of the first

marshals during this period to make this assertion (Monks, 1984: 78). This statement is particularly significant, given he had moved that same month to be commander-in-chief of the Warsaw Pact.

Changes during the transition period, particularly that of the Minister of Defense, probably had an important impact on the continued development of the new doctrine. The change in this position by itself fulfills the criteria for assigning a "Moderate Likelihood" that leadership shifts during the transition period affected doctrinal development. Indeed, while the appointment of the Minister of Defense may not have been instrumental in effecting the changes underway by mid-1967, the fact is that he later expounded at significant length upon the value of the Soviet military for various foreign policy initiatives around the world (and the inherent need in such initiatives for sufficient conventional forces and commensurate strategy). For similar reasons, the appointments of the commander-in-chief of the Ground Forces and the commander-in-chief of the Warsaw Pact were also important for the further development of doctrine.

Post-November 1967 Shifts

There were several noteworthy post-November 1967 changes. Shtemenko was moved in to take over Kazakov's

position, and Ogarkov was appointed first deputy chief of the General Staff.

Shtemenko was moved into the position as Chief of Staff of the Warsaw Pact forces in August 1968, replacing M.I. Kazakov during the period that the Soviets were considering the invasion of Czechoslovakia. The chief reason for this shift was apparently to post as WTO Chief of Staff someone who had had the sufficient experience handling an operation as large as the Czech invasion.bb Therefore, although Shtemenko was known as a supporter of the initiative to reinvigorate the officer corps by retiring older officers, his move seems significantly more tied with the invasion than with the doctrinal shift of the mid-1960s (Erickson, 1974: 15-16).

Ogarkov, who had had extensive engineering training and experience, seemed to have been moved into his position to manage the General Staff's military and scientific work and coordinate R&D for weapons and other systems (Erickson, 1974: 16). Not much is known about Ogarkov's views on military and political issues before his selection. One observer has noted that Ogarkov was one of a group of military men with a "broadened view and

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bbKazakov was probably thought not to have had such experience. He was retired from his position for health reasons but continued to be active in the Ministry of Defense (Erickson, 1974: 16).

inquiring minds" on such issues and SALT and that he was able to see military matters in a "sophisticated political framework" (Shevchenko, 1985: 271). There is evidence that he has been a long-term supporter of the implementation of new technologies in the military and awareness of the application of these technologies for conventional warfare (Fitzgerald, 1986: 8). There is also evidence that while he countenanced the possibility of a war beginning with conventional weapons, he shared many of the same views as his predecessors about the centrality of nuclear weapons in war and about nuclear war as the decisive conflict between East and West (Scott and Scott, 1981: xix-xxiii).

Given the post-October 1967 changes, there is arguably a "plausible" influence of these personnel shifts had an effect on doctrine. In reality, since the more important appointments during this period were involved with the invasion of Czechoslovakia, the actual significance of the effect on doctrine seems low. Furthermore, given the uniqueness of the periodization of leadership change for this doctrine shift, it would seem difficult to separate the potential effect of these changes as different from that of the other military appointments in 1967. Therefore, these later appointments, to the extent they may have had an effect on

doctrine, could arguably be considered as part of the evidence for the overall "definite likelihood" assessment the effect of leadership change on doctrine and strategy for the mid-1960s.

Conclusions

The overall conclusions for the time periods examined in this chapter are summarized in Table 7. The basic conclusion is that leadership change most likely did have a significant effect on the development of doctrine and strategy for the period covered. Still, as mentioned before, the effects of leadership change on doctrine and strategy shifts clearly cannot be viewed in isolation from leadership perceptions and from current political, military, and economic trends.

Considering the evidence for this chapter in conjunction with the chapter on thematic change, it appears that leadership changes themselves basically serve as a sort of "gate" for doctrine and strategy shifts. Such is the case because those shifts are fundamentally the result of political-military calculus within the high-level leadership rather than of where or in how many places leaders are replaced. This conclusion obtains because there do seem to be key changes in the leadership changes near the time of the doctrine and strategy change, and the major leadership changes occur before, rather than

after the main shifts in military policy begin to appear. Furthermore, these changes in doctrine also occur soon after, rather than a long while after, the leadership changes occur.

What probably happens is that, over a period of a few years, ideas on doctrine and strategy become choate for individual leaders, then develop into policy preferences as they are discussed with colleagues. If those who share similar preferences on doctrine and strategy are successful in a period of leadership change (which would involve a cluster of factors in addition to an individual's views on doctrine and strategy), those leaders and their subordinates in their new posts would then probably shape those policy preferences into doctrine and strategy. Because this policy process for doctrine and strategy development is complex and would occur in several stages, each of these succession could clearly be the subject of a book-length study of its importance for the definition of military policy.

Basic leadership changes, however, cannot be ignored for an analysis of doctrinal shift over time, since the evidence for their significance is too compelling. Because of the need to consider the leadership change along with the other factors important for doctrine, further conclusions based on this chapter will be

developed in the integrated assessment of the independent variables in Chapter Ten.

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APPENDIX

Table 3.1: Conditions for Hypotheses Concerning Doctrine Change on Conventional Warfare

Evaluation	Conditions
Definite Likelihood	Change in CPSU First Secretary and Minister of Defense; change in First Secretary or Minister of Defense, plus Minister of Foreign Affairs and/or Chief of the General Staff
Strong Likelihood	Change in CPSU First Secretary or Minister of Defense
Moderate Likelihood	Change in Minister of Foreign Affairs or Chief of the General Staff; changes in several of the other civilian leaders; changes in the CinC Ground Forces or CinC Strategic Rocket Forces
Plausibility	Changes in several of the Deputy Ministers of Defense or Deputy Chiefs of the General Staff
No likelihood	No changes in officials at the levels tracked

Table 3.2: Leadership Changes for the 18-Month Period Prior to September 1953

Name	Position	Date Appt'd./Elected	Date Released/Died
Party/Government			
L.P. Beriya	Chrmn., MVD	3/53	7/53
N.A. Bulganin	Min. Defense	3/53	
S.D. Ignat'yev	Chrm. MGB		3/53
N.S. Khrushchev	1st Secy. CPSU	9/53	
L.M. Kaganovich	1st Dep. Chrmn., CM	3/53	
S.N. Kruglov	Chrm., MVD	8/53	
G.M. Malenkov	Chrmn., CM	3/53	
V.M. Molotov	Min. For. Affairs	3/53	
I.V. Stalin	1st Secy. CPSU		3/53 (died)
D.F. Ustinov	Min., Def. Industry	3/53	
K.Ye. Voroshilov	Chrmn., Presid., SS	3/53	
A.Ya. Vyshinskiy	Min. For. Affairs		3/53
Military			
L.A. Govorov	DMin. War	7/52	4/53
	(Military Training) Main Inspectorate	4/53	
N.G. Kuznetsov	Minister of Navy		3/53
	1st DMin. Defense (CinC Navy)	3/53	
M.I. Nedelin	DMin. Def. (Armaments)		4/53
	Commander, Artillery	4/53	
V.D. Sokolovskiy	Chief, GS	7/52	
A.M. Vasilevskiy	Min. War		3/53
	1st DMin. Def.	3/53	
K.A. Vershinin	Commander, PVO Strany	/53	

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ccThe following abbreviations are used in this and subsequent tables:
CM: Council of Ministers
COS: Chief of Staff
CinC: Commander-in-Chief
CPSU: Communist Party of the Soviet Union
Def.: Defense
GS: General Staff
KGB/MGB: Committee/Ministry for State Security
MVD: Ministry of Internal Affairs
Presid.: Presidium
SRF: Strategic Rocket Forces
SS: Supreme Soviet
WTO: Warsaw Treaty Organization

Table 3.2:(cont'd): Leadership Changes for the 18-Month Period Prior to September 1953

G.K. Zhukov	1st DMin. Def.	3/53

Leadership Changes for the 12-Month Period Following September 1953

Name	Position	Date Appt'd./Elected	Date Released/Died
Party			
A.I. Serov	Chrmn., KGB	3/54	
Military			
A.I. Berg	DMin. Def.	10/53	
L.A. Govorov	DMin. Def. (PVO Strany)	5/54	
K.A. Vershinin	Commander, PVO Strany		/54

Source: Table 3.6 .

Table 3.3: Leadership Changes for the 18-Month Period Prior to February 1956

Name	Position	Date Appt'd./Elected	Date Released/Died
Party/Government			
N.A. Bulganin	Min. Defense		1/55
	Chrmn. CM	2/55	
S.N. Kruglov	Chrmn., MVD		1/56
G.M. Malenkov	Chrmn., CM		2/55
M.G. Pervukhin	1st. DChrmn., CM	2/55	
Military			
A.I. Antonov	COS, WTO	/55	
S.S. Biryuzov	DMin. Def. (PVO Strany)	/55	
S.G. Gorshkov	DMin Def. (Navy)	1/56	
L.A. Govorov	DMin. Def. (PVO Strany)		3/55 (died)
I.S. Konev	1st DMin. Def. (Ground Forces)	3/55	
	CinC WTO	5/55	
V.V. Kurasov	DChief GS	/56	
N.G. Kuznetsov	1st DMin. Def. (Navy)		/56
M.I. Nedelin	Commander, Artillery		5/55
	DMin. Def. (Armaments?)	/55	
K.A. Vershinin	DMin. Def. (PVO Strany)		/54
G.K. Zhukov	Min. Def.	2/55	

Table 3.3(cont'd.)
Leadership Changes for the 12-Month Period Following February 1956

Party			
A.I. Gromyko	Min. Foreign Affairs	2/57	
V.M. Molotov	Min. Foreign Affairs		3/56
D.T. Shepilov	Min. Foreign Affairs	6/56	2/57
Military			
I.S. Konev	1st DMin. Def. (Ground Forces)		3/56
	DMin. Def. (not Ground Forces)	3/56	
V.V. Kurasov	DChief, GS	8/56	
R.Ya. Malinovskiy	DMin. Def. (Ground Forces)	3/56	
K.K. Rokossovskiy	DMin. Def.	11/56	
A.M. Vasilevskiy	DMin. Def.	4/56	
K.A. Vershinin	DMin. Def. (Air Forces)	2/57	

Source: Table 3.6

Table 3.4: Leadership Changes for the 18-Month Period Prior to January 1960

Name	Position	Date Appt'd./Elected	Date Released/Died
Party/Government			
I.A. Serov	Chrmn., KGB		12/58
A.N. Shelepin	Chrmn., KGB	12/58	
Military			
I.Kh. Bagramyan	DMin. Def. (Rear Services)	6/58	
V.D. Ivanov	DCinC WTO	/59	
I.S. Konev	1st DMin. Def. CinC WTO		4/60
	DMin. Def. (Main Inspectorate)	4/60	
M.I. Nedelin	DMin. Def. (Armaments)		12/59
	DMin. Def. (SRF)	12/59	
A.I. Shebunin	DMin. Def. (Construction and Billeting Troops)	7/58	
N.I. Vinogradov	DChief GS	8/59	

Leadership Changes for the 12-Month Period Following January 1960

Party			
L.I. Brezhnev	Chrmn., Presid. SS	5/60	
F.R. Kozlov	1st DChrmn., CM		5/60
K.Ye. Voroshilov,	Chrmn., Presid. SS		5/60
Military			
V.I. Chuykov	DMin. Def. (Ground Forces)	4/60	
A.V. Gerasimov	DMin. Def (Radioelectronics)	6/60	
A.A. Grechko	DMin. Def. (Ground Forces)		4/60
	1st DMin. Def. CinC WTO	4/60	
I.S. Konev	1st DMin. Def. CinC WTO		4/60
K.S. Moskalenko	DMin. Def. (SRF)	10/60	
M.I. Nedelin	DMin. Def. (SRF)		10/60
V.D. Sokolovskiy	1st Dep. Min. Chief, GS		4/60
	DMin. Def. (Main Inspectorate)	4/60	
M.V. Zakharov	1st DMin. Def. Chief GS	4/60	

Source: Table 3.6

Table 3.5: Leadership Changes for the 18-Month Period Prior to March/April 1986

Name	Position	Date Appt'd./Elected	Date Released/Died
Party/Government			
L.I. Brezhnev	1st Secy. CPSU	10/64	→
	Chrmn. Presid. SS		10/64
V.E. Dymshits	Chrmn., Coun. for National Economy		10/65
N.S. Khrushchev	1st Secy. CPSU		10/64
A.N. Kosygin	Chrmn., CM	10/64	
A.I. Mikoyan	Chrmn., Presid. SS	10/64	/65
V.N. Novikov	Chrmn., Supreme Coun. for National Economy	3/65	10/65
N.V. Podgornyy	Chrmn., Presid. SS		/65
L.V. Smirnov	Chrmn. State Comm. for Defense Tech.		3/65
D.F. Ustinov	Chrmn. Supreme Coun. for National Economy		3/65
S.A. Zverev	Min. Def. Industry	3/65	
Military			
P.F. Batitskiy	1st DChief GS	8/65	10/66
S.S. Biryuzov	1st DMin. Def.		10/64 (died)
	Chief GS		10/64
N.I. Chetverikov	DChief GS		/66
A.V. Gerasimov	DChief GS	/65	
A.V. Gorbatov	DChief GS	2/65	
V.D. Ivanov	1st DChief GS		/65
A.N. Komarovskiy	DMin. Def. (Construction and Billeting Troops)	12/63	
M.I. Povaliy	DChief GS	2/66	
M.V. Zakharov	1st DMin. Def	11/64	
	Chief GS	11/64	

Table 3.5 (cont'd.): Leadership Changes for the Period May 1966-November 1967

Name	Position	Date Appt'd./Elected	Date Released/Died
Party/Government			
V.Ye. Semichastnyy	Chrmn., KGB		5/67
Yu.V. Andropov	Chrmn., KGB	5/67	
Military			
P.F. Batitskiy	1st DChief GS	8/65	10/66
	DMin. Def. (PVO Strany)	10/66	
A.A. Grechko	CinC WTO		7/67
	Min. Def.	4/67	
R.Ya. Malinovskiy	Min. Def.		3/67
I.G. Pavlovskiy	DMin. Def. (Ground Forces)	11/67	
S.L. Sokolov	1st DMin. Def.	4/67	
V.A. Sudets	DMin. Def. (PVO Strany)		/66
I.I. Yakubovskiy	1st DMin. Def.	4/67	
	CinC WTO	7/67	

Leadership Changes in the 12-Month Period Following November 1967

Party			
no significant changes			
Military			
M.I. Kazakov	COS WTO		8/68
G.S. Maryakin	DMin. Def. (Rear Services)	4/68	
N.V. Ogarkov	1st DChief GS		
S.M. Shtemenko	DChief GS		8/68
	COS WTO	8/68	

Source: Table 3.6

Table 3.6: Changes in the Soviet Political Leadership, 1950-1989[a]

Party/Government

Abakumov, V.S.	3/46- /51 Chrmn, Min./Comm. State Security
Andropov, Yu.V.	5/67-5/82 Chrmn., KGB
	4/73-2/84 Gen. Sec., CPSU (CM/P 6/67; FM/P 4/73)
Beriya, L.P	3/53-7/53 Chrmn., NKVD & 1st DC Coun. Min. (FM/P 3/46)
Brezhnev, L.I.	5/60-10/64 Chrmn., Presid. SS
	10/64-11/82 1st Sec. CPSU (FM/P 6/57)
Bulganin, N.A.	3/53-1/55 MOD & 1st DC Coun. Min.
	2/55-3/58 Chrmn., Coun. Min.
	3/47-3/49 Minstr. Armed Forces (FM/P 9/58; GKO)
Chebrikov, V.M.	12/82-10/88 Chrmn, KGB (FM/P 4/85)
Chernenko, K.U.	2/84-3/85 Gen. Sec. CPSU (FM/P 11/78)
Domrachev, A.V.	12/57-2/58, Chrmn., State Comm. Def. Tech.
Dymshits, V.E.	11/62-10/65 Chrmn, Coun Nat'l. Econ.
Fedorchuk, V.V.	5/82-12/82 Chrmn., KGB (not FM/P)
Gorbachev, M.S.	3/85- Gen. Sec. CPSU (FM/P 10/80)
	10/88- Chrmn., Presidium, SS
	/89- President, U.S.S.R.
Gromyko, A.A.	2/57-7/85 MFA (not CM/P; FM/P 4/73)
	7/85-10/88 Chrmn., Presid. SS
Ignat'yev, S.D.	/51-3/53 Chrmn. Min./Com. State Sec.
Kaganovich, L.M.	3/53-6/57 1st DC Coun. Min. (FM/P -6/57; GKO)
Khrushchev, N.S.	9/53-10/64 1st Sec'y. CPSU;
	3/58-10/64 Chrmn., Coun. Min. (FM/P 1939-64)
Kirilenko, A.P.	(FM/P 4/62; Sec'y. CC)
Kosygin, A.N.	5/60-10/64 1st DC Coun. Min.
	10/64- 10/80 Chrmn., Coun. Min. (FM/P 5/60)
Kozlov, F.R.	3/58-5/60 1st DC Coun. Min. (FM/P 6/57-11/64)
Kruglov, S.N.	8/53-1/56 Chrmn., NKVD (includes KGB 3/53-3/54?)

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aDates are appointments or first identification in position, where appointment date is unavailable. Where a release date is unavailable, that date is assumed to be the appointment date of the successor. In some of these cases, the actual release date may be the previous month. Where no clear successor is apparent, the release date is the date of the first publication in which the individual's name is no longer listed in the position. Note that more positions are tracked for this table than are actually included among the top-level positions elaborated in Chapter Two.

The following abbreviations are used to identify appointments.

CinC: Commander-in-Chief
COS WTO: Chief of Staff, Warsaw Treaty Organization
Coun. Min.: Council of Ministers
CM/P: Candidate Member, Politburo
DC: Deputy Chairman
DMin.: Deputy Minister of Defense
FM/P: Full Member, Politburo
Gen. Staff: General Staff
MFA: Minister of Foreign Affairs
MOD: Minister of Defense
Presid. SS: Presidium, Supreme Soviet

Table 3.6 (cont'd.)

Kryuchkov, V.A.	10/88- Chrmn., KGB (not CM/P)
Kuzmin, I.I.	5/57-3/58 1st DC Coun. Min. (not CM/P)
Ligachev, Ye.K.	(FM/P 4/85; Sec'y. CC)
Malenkov, G.M.	3/53-2/55 Chrmn., Coun. Min. (FM/P 1946-6/57; GKO)
Mikoyan, A. I.	/55- /64 1st DC Coun. Min.;
	7/64-12/65 Chrmn., Presid. SS (FM/P 1935-66; GKO)
Merkulov, V.N.	4/43-3/46 Chrmn, Min/Com State Security
Molotov, V.M.	5/39-3/49 MFA
	3/53-6/56 MFA (FM/P 1935; MFA 39-49)
Novikov, V.N.	3/65-10/65 Chrmn., Sup. Coun. Nat'l. Econ.
Pervukhin, M.G.	2/55-7/57 1st DC Coun. Min. (FM/P 10/52)
Podgornyy, N.V.	12/65- /77 Chrmn., Presid, SS (FM/P 60; CC Sec'y for gen'l econ under Khrushchev)
Rudnev, K.N.	3/58-6/51 Chrmn., State Com. Def. Tech.
Ryzhkov, N.I.	4/85- Chrmn., CM (FM/P 4/85)
Semichastnyy, V.Ye.	11/61-5/67 Chrmn, KGB (not CM/P)
Serov, I.A.	3/54-12/58 Chrmn., KGB (not CM/P)
Shelepin, A.N.	12/58-11/61 Chrmn., KGB (not CM/P; FM/P 11/64)
Shepilov, D.T.	6/56-2/57 MFA (CM/P)
Shevardnadze, E.A.	7/85- MFA (FM/P 7/85)
Smirnov, L.V.	6/61-3/65 Chrmn., State Comm. Def. Tech
Stalin, I.V.	5/41-3/53, Chrmn. Coun. Min. (General Secy.) (died)
	5/41-9/45, Chrmn., Def Comm.
	2/46-3/47, Chrmn., Min. Armed Forces
Suslov, M.A.	(Sec'y. CC; FM/P 7/55)
Tikhonov, N.A.	10/80-10/85 Chrmn., Coun. Min. (FM/P 79)
Voroshilov, K.Ye.	3/53-7/60 Chrmn., Pres. Sup. Sov. (FM/P 1926-7/60; GKO)
Vyshinskiy, A.Ya.	3/49-3/53 MFA (CM/P)

Military (except those individuals listed above)

Abolins, V.Ya.	7/75- /86 DC Gen. Staff
Akhromeyev, S.F.	8/74- /79 DC Gen. Staff
	1/79-9/84 1st DC Gen. Staff
	9/84-12/89 1st DMin. & Chief, Gen Staff
Alekseyev, N.N	10/70- /78 DMin. (Armaments)
Altunin, A. I.	10/72- DMin. (Civil Defense)
Amel'ko, N.N.	8/78- DC Gen. Staff
Antonov, A.I.	2/45-3/46 Chief. Gen. Staff (ukwn 46-48)
	4/54- /55 1st DC Gen. Staff
	/55-6/62 COS WTO (died)
Arkhipov, V.M.	5/88- DMin. (Rear Services)
Bagramyan, I.Kh.	6/58- /68 DMin. (Rear Services);
Batitskiy, P.F.	8/65- /66 1st DC Gen Staff
	10/66- /78 DMin. (PVO Strany)
Batov, P.I.	10/62- /65 COS WTO; 12/62- DC Gen. Staff
Belov, A.I.	10/77- DC Gen Staff
Berg, A.I.	10/53-11/57 DMin. (Radioelectronics)
Biryuzov, S.S.	/55- /62 DMin. (PVO Strany)
	4/62-3/63 (SRF)
	4/63-10/64 1st DMin. Def., Chief, Gen. Staff (died)

Table 3.6 (cont'd)

Chabanenko, A.I.	5/64- /75 1st DC Gen. Staff
Chekov, N.V.	11/88- DMin. (Construction and Troop Billeting)
Chernavin, V.N.	12/85- DMin. (Navy)
Chetverikov, N.I.	5/62- /66 DC Gen. Staff
Chuykov, V.I.	4/60-7/64 DMin (Ground Forces)
	7/61- /72 (Civil Defense; simultaneously with Ground Forces until 7/64)
Dikov, S.A.	6/88- DC Gen. Staff
Druzhinin, V.V.	12/70- /79 DC Gen. Staff
Gareyev, M.A.	4/85- DC Gen. Staff
Gerasimov, A.V.	2/57--4/64 DMin Radioelectronics
	4/64-10/70 DC Gen. Staff
Gelovani, A.V.	3/74-2/79 DMin. (Construction and Troop Billeting)
Gorbatov, A.V.	2/65- /70 DC Gen Staff
Gorshkov, S.G.	7/55-1/56 1st DCinC Navy
	1/56-7/85 DMin. (Navy)
Govorov, L.A.	7/48- CinC PVO Strany
	5/50-4/53 DMin. War (Military Training, from 7/52)
	4/53-5/54 Chief Inspector (not DMin.)
	5/54-3/55 DMin. (Commanded PVO Strany; separated from Ground Forces 1954) (died 3/55)
Govorov, V.	6/84-7/86 DMin. (Main Inspectorate)
	7/86- DMin. (Civil Defense)
Grechko, A.A.	11/57- 4/67 1st DMin. Def.
	4/60- 7/67 CinC WTO;
	4/67- /76 MOD; (not CM/P; FM/P 4/73)
Gribkov, A.I.	10/76- 1st DC Gen Staff & COS WTO
	11/76- 1st DCinC WTO (also COS WTO and 1st DC Gen Staff)
Ivanov, S.P.	/59- /62 DC Gen. Staff
Ivanov, V.D.	/59- /65 DC, then 1st DC Gen. Staff
Ivanovskiy, Ye.F.	2/85- DMin. (Ground Forces)
Ivashutin, P.I.	3/66- /89 DC Gen Staff
Kazakov, M.I.	11/65-8/68 COS WTO
Kobets, K.I.	1/88- DC Gen. Staff
Koldunov, A.I.	7/78-6/87 DMin. (Air Defense)
Komarovskiy, A.N.	12/63-11/73 DMin. (Construction and Troop Billeting) (died)
Konev, I.S.	3/55-3/56 1st DMin. (Ground Forces)
	3/56-4/60 1st DMin (not w/GF) & CinC WTO (5/55-4/60)
	/60- /61 Main Inspectorate
	/61- /62 CinC GSFG
	4/62-5/73 (with Main Inspectorate) (died)
Kozlov, M.M	2/70-5/74 DC Gen Staff
	5/74-4/79 1st DC Gen. Staff
Krivosheyev, G.F.	9/87- DC Gen. Staff
Krylov, N.I.	3/63-2/72 DMin. (SRF)
Kulikov, V.G.	9/71-2/89 1st DMin. & Chief, Gen. Staff
	7/77-2/89 CinC WTO
Kurasov, V.V.	8/56- /61 DC Gen. Staff
Kurkotkin, S.D.	7/72-5/88 DMin. (Rear Services)
Kutakhov, P.S.	3/69-12/84 DMin. (Air Forces)
Kuznetsov, N.G.	7/51- 3/53 Minister of Navy
	3/53- /56 1st DMin. Defense (Navy)

Table 3.6 (cont'd)

Lobov, V.N.	3/87- 1st DC Gen. Staff
Lushev, P.G.	7/86- 1st DMin.
	2/89- CinC WTO
Malinovskiy, R. Ya.	3/56- /57 DMin. (Ground Forces)
	10/57-3/67 Min. Def. (not CM/P)
Maksimov, Yu.P.	7/85- DMin. (SRF)
Maryakhin, S.S.	4/68-6/72 (Rear Services)
Morozov, G.A.	10/84- DC Gen. Staff
Moskalenko, K.S.	10/60- /62 DMin. (SRF)
	/62-4/85 (Main Inspectorate)
Moiseyev, M.A.	12/88- 1st DMin & Chief, Gen. Staff
Nedelin, M.I.	/50- /52 Commander, Artillery (not DMin.)
	1/52-4/53 DMin. (Armaments)
	4/53-5/55 Commander, Artillery (not DMin.)
	3/55-12/59 DMin. (Armaments)
	12/59-10/60 (SRF) (died)
Omelichev, B.A.	1/89- 1st DC Gen. Staff
Ogarkov, N.V.	8/68- /74 1st DC Gen. Staff
	5/74-1/77 DMin.
	1/77-9/84 1st DMin. & Chief, Gen. Staff
Pavlovskiy, I.G.	11/67-12/80 DMin. (Ground Forces)
Penkovskiy, V.A.	7/64- /70 DMin.
Petrov, V.I.	12/80-2/85 DMin (Ground Forces)
	2/85- /87 1st DMin
Povaliy, M.I.	2/66- /75 DC Gen. Staff
Rokossovskiy, K.K.	11/56-7/57 DMin. Def. (Main Inspectorate)
	/58- /62 DMin. Def. (Main Inspectorate)
	4/62- General Inspector of Group of General Inspectors (died 8/68)
Shabanov, V.M.	7/78- DMin. (Armaments)
Shebunin, A.I.	7/58- /63 DMin. (Construction and Troop Billeting)
Shestapalov, N.F.	2/79- DMin. (Construction and Troop Billeting)
Shkadov, I.N.	2/82-7/87 DMin. (Personnel)
Shtemenko, S.M.	11/48-6/52 DMin. Armed Forces (War, 1950-)
	11/48-6/52 Chief, Gen. Staff
	/52- /62 GS
	7/62-4/64 1st DCinC Ground Forces
	4/64-8/68 DC Gen. Staff
	8/68-4/76 1st DC Gen. Staff & COS WTO (died)
Sokolov, S.L.	4/67-12/84 1st DMin.
	12/84-5/87 MOD (CM/P 4/85-)
Sokolovskiy, V.D.	3/48-2/50 1st DMin Armed Forces
	2/50-3/53 1st DMin War
	3/53-4/60 1st DMin
	7/52-4/60 Chief Gen. Staff
	4/60- Main Inspectorate
Sorokin, M.I.	7/87- DMin. (Main Inspectorate)
Stepanyuk, I.V.	5/70- /78 DCinC WTO
Sudets, V.A.	4/62- /66 DMin. (PVO Strany)
Sukhorukov, D.S.	7/87- DMin. (Personnel)
Sysoyev, Yu. A.	12/86- DC Gen. Staff
Tolubko, V.F.	4/72-7/85 DMin. (SRF)
Tret'yak, I.M.	7/86-6/87 DMin. (Main Inspectorate)
	6/87- Dmin. (Air Defense)

Table 3.6 (cont'd)

Ustinov, D.F.	3/63-3/65 Chrmn, Sup, Coun. Natl Econ
	3/53-12/57 Chrmn Min. Def. Indust.
	4/76-12/84 MOD (FM/P 3/76)
Varennikov, V.I.	11/79- 1st DC Gen. Staff
Vasilevskiy, A.M.	3/49-2/50 Min Armed Forces
	2/50-3/53 War Min
	3/53-4/56 1st DMin Def.
Vershinin, K.A.	/46- /49 CinC Air Forces
	/53- /54 Commander, PVO-Strany (part of Ground Forces until 1954)
	1/57-3/69 DMin. (Air Forces)
	3/69- Main Inspectorate (died)
Vinogradov, N.I.	1/51- /58 DMin. (Rear Services)
	8/59- DC Gen Staff
Volkov, A. V.	12/71- /86 DC Gen. Staff
Yakubovskiy, I.I	4/67-11/76 1st DMin. Def. (dies)
	7/67-11/76 CinC WTO
Yazov, D.T.	2/87-5/87 DMin.
	5/87- MOD (CM/P 6/87)
Yefimov, A.N.	12/84- DMin. (Air Forces)
Yevstigneyev, Ye. A.	8/86- DC Gen. Staff
Zakharov, M.V.	4/60-3/63 Chief, Gen. Staff;
	4/60-3/63 1st DMin.
	11/64-9/71 Chief Gen. Staff
	11/64-9/71 1st DMin.
Zhigarev, P.F.	/49- /57 Commanded Air Forces
Zhukov, G.K.	3/53-2/55 1st DMin Def.
	2/55-10/57 MOD (FM/P 6/57)
Zverev, S.A.	3/65- Min. Def. Indust.

Sources: Crowley, Lebed, and Schulz, 1969; U.S. Central Intelligence Agency, various years; U.S. Department of State, Bureau of Intelligence and Research, various years; Scott and Scott, 1981; Garthoff, 1962; Tatu, 1972; Sovetskaya Voyennaya Entsiklopediya, 1976-1980; and Zakharov, 1968.

Table 3.7: Summary of Leadership Change Effects

Date of Initial Signal of Doctrine Shift	Evaluation of Effect of Leadership Change Prior to and Following Initial Signal of Doctrine Shift	Basic Reasons
September 1953:		
Prior Changes	"Definite Likelihood"	Changes occurred with 1st Secy., Min. Defense, Min. Foreign Affairs, Chrmn. Council of Ministers, other civilian government officials and Deputy Mins. Defense
Subsequent Changes	"Plausibility"	Changes in several Dep. Mins. Defence, one civilian Government post
February 1956		
Prior Changes	"Strong Likelihood"	Changes occurred with Min. Defense, Chrmn. Council of Ministers, CinC Ground Forces, other civilian government officials and Deputy Mins. Defense
Subsequent Changes	"Plausibility"	Changes in Min. Foreign Affairs, CinC Ground Forces, other Deputy Mins. Defense
January 1960		
Prior Changes	"Plausibility"	Changes in CinC SRF, other deputy Mins. Defense, other civilian Government officials
Subsequent Changes	"Plausibility"	Changes in Chief GS, CinC SRF, CinC Ground Forces, Party and Government changes
March/April 1966		
Prior Changes	"Definite Likelihood"	Changes in 1st Secy., Chief GS, Chrmn. Council of Ministers, other government officials, Deputy Chiefs, GS; Deputy Mins. Defense
Transition Period Changes	"Moderate Likelihood"	Changes in Min. Defense, Deputy Mins. Defense, Deputy Chiefs, GS Chrmn., KGB
Subsequent Changes	"Plausibility"	Changes in COS WTO, Deputy Mins. Defense, Deputy Chiefs, GS

CHAPTER IV

MILITARY TECHNOLOGY DEVELOPMENTS, 1946-1975

As indicated in Chapter Two, there is a close connection between military doctrine and military science in the USSR. One would expect such would be the case in any country, especially one with the scientific and industrial base that the USSR possesses. One of the more important parts of military science is research and development for new weapons systems, and this chapter will be the first of two parts of an investigation into how new weapons concepts and processes in the Soviet Union may have affected doctrinal developments on the role of conventional warfare.

The issue of innovation in Soviet civilian and military sectors is a broad one that takes in the development and operation of science policy, industrial innovation, and ties between the military and civilian sectors. These issues have all been subjects of numerous studies which, since the 1970s, have examined in depth the nature of innovation in the civilian and defense sectors. In a later part of this chapter, I will discuss some of the findings of this research in order to develop a

context for understanding the nature of progress in Soviet military technology. This context is important for one to assess effectively the significance of military technology progress and develop reasonable expectations about how it may affect force posture and doctrine.

The principal goal of this chapter is to develop a chronology of important advances in military technology, which I will later compare with the chronology established on military doctrine and strategy change. To compose this chronology of key advances in military technology since the end of World War II, I will focus on those innovations which Soviet military analysts have noted led to changes in military force posture and operations. I will add a few additional developments noted by Western analysts but will basically adhere to Soviet sources, treating their notation of important technologies as a useful way to screen the more important developments from the less important ones. There are some problems in interpreting the significance of these developments, which I will also address later in the chapter.

As I develop this chronology, some discussion of the significance of particular changes will be necessary, but I will generally not digress into the development and application of specific military technology advances, since the principal goal is constructing a chronology.

Further discussion of these specific advances may be found in the case study literature.a Following Joseph Berliner [1976: 4] and others who have looked at innovation issues, I will define an innovation in technology as a product or a process which has appeared for the first time in the Soviet Union.

The term "technology" itself can have various definitions, as can the concept "technological advance".b As the main focus of the current analysis is not to assess the level or potential of military technology development in the Soviet Union but rather to identify changes in technology that found application in weapons systems, the straightforward definition of "technological innovation" used here will suffice. This definition is comparable to that used by some analysts in assessing civilian technology for the point in time of the first appearance of a prototype or of the first application of an innovation in commercial production [especially if the innovation is not initially observed in a prototype]

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aNotable examples are Kramish [1959], Spielman [1978]; Alexander 1970, 1976, 1978/79], Berman and Baker [1982], Holloway [1977, 1982b], Kocourek [1977], and Evangelista [1988]. Most of these studies note Soviet sources, such as memoirs, which provide additional details on particular weapons systems.

bOn this point, see Alexander, 1972: 3-24; Perry, 1973: 24-34; Amann, 1977: 32; Davies, 1977: 38-39; and Berry, 1982: 40.

[Davies, 1977: 38-39]. A new prototype of even the most innovative weapon system will contain a certain percentage of old or previously demonstrated technologies. As I discuss new weapons systems in the period in which they first appeared, I will report those which included at least one important type of technology that had not been characteristic of previous weapons systems of the same type.

In this chapter I will first discuss some general theoretical perspectives Soviets have offered about the role of military science in a country's defense posture, then I will turn to some specific means by which the Soviets perceive changes in military science as affecting military planning. Next, I will provide some historical background on how Soviets have understood changes in military science to affect force posture and doctrine from the founding of the Soviet state through World War II. I will then present the chronology of important developments in military science from the end of World War II to the mid-1970s and conclude with a discussion of the Soviet military R&D sector.

I will first present two general hypotheses to establish the context for interpreting the historical developments in military technology. I will then offer

hypotheses tailored to particular periods of doctrinal development. The general hypotheses are as follows:

> If there is at least one major new development in nuclear technology during a certain time period and if it can be shown that (1) this technology was later incorporated into the force posture on a broad scale and (b) was considered in doctrinal writings during that subsequent period as an important development effecting change in thinking about doctrine or strategy, that development can be considered to have shaped significantly subsequent thinking on the nuclear orientation of doctrine and strategy.
>
> If there is at least one major new development in conventional technology during a certain time period and if it can be shown that (1) this technology was later incorporated into the force posture on a broad scale and (b) was considered in doctrinal writings during that subsequent period as an important development effecting change in thinking about doctrine or strategy, that development can be considered to have shaped significantly subsequent thinking on the conventional orientation of doctrine and strategy.

Concerning specific developments in technology, Table 1 at the end of the chapter summarizes these developments during the years covered by this assessment and the potential relevance of these developments for doctrine and strategy. Given the nature of the innovations listed as major (very innovative) or incremental and their assessed usefulness for nuclear or conventional war, the chronology of innovations suggests the following hypotheses:c

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cThese hypotheses may appear rather post_hoc, but such is the way they should be framed for the analysis.

1] By the end of the first post-war decade, the development of nuclear weapons had progressed such that they clearly could be an important addition to the Soviet armed forces. Incorporation of these weapons into the force structure and subsequent doctrine changes to account for these weapons would suggest that military technology developments can have a significant effect on doctrine and strategy.

2] In the second period, the development of staged intercontinental rockets and small warheads seemed to be important military technology developments. Incorporation of these weapons into the force structure and subsequent doctrine changes to account for these weapons would suggest that military technology developments can have a significant effect on doctrine and strategy.

3] Since in the third post-war decade, there were no significant technologies developed that could have a major affect on either conventional or nuclear warfare, one anticipates that any doctrinal changes that occurred during or subsequent to this period were not significantly influenced by military technology developments. [NB: This statement is not a hypothesis but rather an observation to be used in conjunction with hypotheses developed involving the other independent variables.]

The overall lesson one suggested by this chronology of military technological advances and the context in which they took place is that military technology will sometimes play a key role in opening new areas of doctrinal development, but this role is not a frequent one. Technological improvements occur continuously and probably shape doctrine on an incremental basis [such as in areas like operational art and tactics], as scientists develop new technologies in response to requirements from the armed forces. However, the development of new

technologies that have clear an unambiguous effects on doctrine have been and will be infrequent.

Role of Military Science

Soviet writers discussing the role of science in military doctrine have been fairly explicit about the connections and interdependence of the two. As presented in the section on the dependent variables, military science is a constituent part of military doctrine and serves as the basis from which the military-technical aspects of doctrine are derived. While military science does comprise such disciplines as military art [e.g., tactics], military-historical research, and military training, it is the other components such as the physical and natural sciences [e.g., physics, chemistry, and aerodynamics] that served as the focus of this chapter ["Voyennaya nauka," 1983: 136-137; Sokolovskiy, 1968: 287-288; Warner, 1977: 120]. While development guidelines for research in various aspects of military science are formulated in response to the requirements of military doctrine, developments in the various aspects of military science provide a "feedback loop" to facilitate the adaptive evolution of military doctrine ["Doktrina Voyennaya," 1977: 225].d

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dSee Head's [1978: 545-546, 559-560] comments on this issue.

The Soviets note that the level of military science changes with the level of science in general at any given period in history and with the level of scientific potential in a specific community of scientists (Lomov, 1973: 31-32). One Soviet author notes that specific effects of science and technology on military affairs occur in three areas: the influence of science and technology on the development and the means of waging war, on the preparation of people for combat, and on the means for conducting combat (Lomov, 1973: 33-39).

The Soviets note that one of the most important aspects of progress in the natural sciences in the past several hundred years is the acceleration of its development at a virtually exponential rate (lomov, 1973: 15-16). In the recent decade, this growth rate in science has led to an important increase in the complexity of weapons, the creation of new weapons and the improvement of old ones, the broadening of the scope of militarily relevant science, and a decreasing time lag between discoveries and their implementation in Armed Forces' weaponry (Lomov, 1973: 29-30).

In addition to enumerating the aspects of military affairs on which science has an impact, Soviet authors have also attempted to explain the process by which advances in military technology have affected doctrine and

strategy. Former Minister of Defense Andrey Grechko in The Armed Forces of the Soviet State reports Lenin's comments that modern warfare requires a highly developed economy which can produce weapons and military equipment in "enormous amounts." Lenin, reports Grechko, observed that history teaches that the victor in combat is the one "'who has the greatest technology, organization, discipline and the best machines.'" Improving a country's science and technology base, continued Lenin, would be the only adequate way to meet its economic and defense needs [Grechko, 1974: 163].

The Soviets have noted as well that changes in the means of conducting war do not follow immediately upon the development of new technology, but only after the introduction in large numbers of weapons or equipment utilizing that technology [Kir'yan, 1982: 7]. As examples of this phenomenon, one author cites the changes in the role of tanks from the first World War to the second and the increased production of various types of nuclear weapons in the 1950s. Tanks, Kir'yan notes, were not introduced in large enough quantities in World War I to transform methods of combat. By the early years of the Second World War, the introduction of tanks in large quantities in the forces of the combatants brought about important changes in the nature of combat, the means of

conducting combat, and the organization of the armed forces, among other aspects [Kir'yan, 1982: 7].

Similarly, nuclear weapons, after they were introduced on a mass scale, transformed traditional calculations of military power and affected all aspects of military affairs, particularly the organization of forces and the means of conducting combat [Kir'yan, 1982: 7].

Other aspects of change that can be affected by the introduction of new military technologies are the relations between offensive and defensive forces, the relations of men and equipment [especially with regard to the specialized training necessary to use the weapons], and a clear understanding of these new means of combat by the military leaders, particularly in the areas of effects on missions, rates of attack, and maneuvers [Kir'yan, 1982: 8-11].

Historical Background

As the Soviets traced the impact of new technologies on the Armed Forces from the beginning of the Soviet state through the end of World War II, there were a number of useful lesson they developed. After World War I, the Soviets noted that improvements in the number and quality of tanks and troop-carrying vehicles as well as in communications gear, pointed toward the growing importance of mobility and maneuver for offensive and defensive

actions, an important change from the trench warfare of the First World War. These improvements also led to an awareness of the importance of quickly massing for an offensive, and of improving the firepower of the ground forces as the most important part of an offensive [Kir'yan, 1982: 39-40, 49-51, 56-64, 72-76; Lomov, 1973: 114]. For a decisive offensive, noted Frunze, "the first and most important [element] is the preparation and training of an army for maneuver operations of large mass" [Kir'yan, 1982: 73].

Soviet weakness in military technology and in the production and supply of military equipment during World War I and Civil War convinced the country's leaders of the importance of a strong military-technical base for support and development of the Armed Forces. This need was perceived not only in terms of having an adequately supplied logistics system, but also of developing the country's economic base as a whole [Kir'yan, 1982: 83, 85; Tyushkevich, 1980: 87-90, 129]. The Soviets realized they would like have to fight a war on several fronts at once, so probably for logistical as well as manpower reasons, they developed a strategy during the post-World War I period that some of these fronts would have to go on the defensive for a while until major offensive campaigns could be mounted in those areas [Kir'yan, 1982: 73-81].

During this time, there developed a growing awareness among Soviet political and military leaders of the importance of firepower support for the ground forces because of new weapons available to the ground forces and artillery, and an understanding of the need for greater efficiency in and improved mobilization capacity for ground forces [Tyushkevich, 1980: 161-163]. Technology improvements in the airplane led to the expanded role of airpower for intelligence and combat support of the ground troops [Kir'yan, 1982: 77-8; Tyushkevich, 1980: 128-129, 161-163].

The Soviets continued improving military equipment in a variety of ways in the 1930s. Mechanized units developed from the cavalry, and firepower was added to these units by mounting guns on trucks and troop carriers [Kir'yan, 1982: 73-75; Tyushkevich, 1980: 127-133]. This greater firepower, particularly as provided by the tank, led to a greater degree of tactical independence of units, a greater differentiation in the types of combat troops, and changes in administrative organizations [Kir'yan, 1982: 111-115; Tyushkevich, 1980: 185-190]. To attack an army successfully in depth, observed Soviet military leaders at the time, the infantry, aided by other forces, plays a decisive role. The infantry, noted these leaders, needs to exercise surprise and quick action, aided by the

mobility and firepower capabilities of tank forces, and it was these aspects that were aided by the technological developments [Kir'yan, 1982: 116-117; Tyushkevich, 1980: 212-213].

Similar improvements in quality and firepower led to more independence for air force units, including bombers and paratroops, though, of course, air units remained under the control of the Ground Forces Front commander [Kir'yan, 1982: 121-123, 139-144; Tyushkevich, 1980: 190-191, 242-243]. As the military-technological base was improved during the 1930s, military leaders acknowledged the need to formulate military requirements in the framework of the five-year plan [Kir'yan, 1982: 112; Tyushkevich, 1980: 182-184]. Also occurring during this time was a growing awareness among military leaders and scientists of the importance of the basic sciences, such as physics, propulsion theory [thermodynamics, mechanical engineering, etc.], and atomic theory [Kir'yan, 1982: 86-87].

In World War II, Soviet experience with weapons technology, combined with the particular characteristics of the combat environment and the tactics they faced from the Germans, brought a variety of important lessons. Among the important technological developments for the Ground Forces were improvements for the self-loading

carbine, machine guns, anti-tank weapons, rifling of artillery barrels, and reactive artillery shells [Kir'yan, 1982: 158-160; Tyushkevich, 1980: 268-269, 341-342]. Improvements in traction, turret casting, and armor for tanks and the development of self-propelled guns were among the many other developments which improved the fighting capacity of the Soviet Ground Forces during the war [Kir'yan, 1982: 161-163; Tyushkevich, 1980: 228-230, 270, 342; Lomov, 1973: 114].

With these advances and others, the Soviets developed concepts of mobile echeloned Front groups, maneuverable anti-tank formations, and effected reorganizations with mixed tank armies and large artillery formations [Kir'yan, 1982: 147-148, 173-177; Tyushkevich, 1980: 238-239, 296-298]. Improvements in aviation technology led to the production of better planes with higher firepower, and air force units were reorganized and used for more independent missions [Tyushkevich, 1980: 230-231, 241-242, 271; Lomov, 1973: 114]. At a higher level of military organization and management, improvements in firepower and the mobility and efficiency of forces in the campaigns against the Germans confirmed Soviet thinking on deep, fast strikes and led to an awareness of the need for well-defined strategic goals and better coordination of forces at high command levels [Kir'yan, 1982: 144-146, 200-202].

Additionally, the need for better weapons and training in their use was seen as a continuing requirement for offensive and defensive operations (Kir'yan, 1982: 155-157, 194, 206-209).

Changes in Military Technology, 1948-1975

By the end of World War II, the Soviets had come a long way in the 27 years in the development of military technology, the military-economic base, and in their strategy. The Ground Forces and military aviation had made significant strides, though somewhat more than the navy, which saw less action in the war. At the end of the war, the Soviet Union still lagged behind most Western nations in some aspects of conventional technology and particularly behind the U.S. in terms of nuclear capabilities. It was to these areas that Soviet science would focus its attention in the immediate post-war years.

I will present in the following section what the Soviets consider to have been the main advances in the periods of doctrine and strategy change I discussed earlier. These advances are summarized in Table 1. I will note briefly in a subsequent section why Soviet analysts consider these developments important, but larger questions of lags and impacts on strategy I will discuss in Chapter Ten. After elaborating the chronology, I will

conclude with a discussion of how the Soviet military R&D system works.

As I suggested earlier, the technological advances I recount seem to be noted by the Soviet authors at the point when they first became available to the Armed Forces either as a prototype or when introduced on a mass-production scale. These points are clearly different in the R&D process and have different significance (not all prototypes are put into production). However, I have not endeavored, except where specifically noted, to distinguish between these two points in developing the chronology. Since Soviet authors are reporting important advances in technology for the Armed Forces, I make the assumption that even if an author is referring to a prototype, that the system being mentioned was later introduced on a mass scale.

For similar reasons, I have not tried to isolate when the R&D process for these technologies began for several reasons. First, Soviet sources do not usually provide this information. Next, as mentioned earlier, the Soviets reasonably argue that new technologies cannot have much effect on doctrine before they are introduced on a broad scale to the Armed Forces. Therefore, trying to project when R&D actually began on these systems is not that important.

Given the greater importance of the date the technology is introduced as a prototype or in mass production, I have also chosen to report the developments noted by the Soviet authors in basically the same time framework as that used for the doctrine and strategy changes. Since these time frameworks are fairly lengthy, I am assuming that if a technology is to have a major effect on doctrine and strategy, that effect will principally occur in the same time frame the technology is introduced on a mass basis.

It is also worthwhile to note that improvements in technology are continually occurring, so differentiating between incremental and major developments is somewhat subjective. The preceding section on technological developments up to 1945 provides a context to help understand which technologies in the later periods are incremental and which non-incremental. Additionally, Soviet authors commenting on developments in these recent periods sometimes provide helpful insights to evaluate the significance of individual developments--in this case, incremental or major new innovations--for the Soviet military establishment.

The Post-War Decade

Within the Ground Forces, tank technology developments include a larger caliber barrel able to support a high

muzzle velocity, underwater crossing capability, and improvements in armament, the engine, and gun sights. In a related area, air-droppable capability was developed for self-propelled guns. Troops were supplied with armored transports [the BTP-40 and -152] and transports that were amphibious [Kir'yan, 1982: 222-223; Lomov, 1973: 75; Zakharov et al., 1968: 483-484]. Recoilless anti-tank guns had been developed by the early 1950s, as had shaped charges and fragmentation shells for artillery. [Tyushkevich, 1980: 381].

Bridging technology was improved for the engineering corps. Communications technology was advanced: better radio and telegraph equipment was developed, and multichannel systems were introduced. Additionally, better radio relay equipment and mobile communication node systems were developed, as were better shortwave and ultrashort wave radio transmitters and receivers [Kir'yan, 1982: 222-223; Lomov, 1973: 75].

In airplanes, the creation of reactive [jet] engines provided much greater thrust than piston engines. Improvements were made in aerodynamics for near-sonic and supersonic speeds, and planes capable of travelling at those speeds were developed by the late 1940s. The Mig-9 and Yak-15 jets were both flown for the first time in 1946; later in the decade appeared the La-15, Yak-23, Su-

9, and Mig-15 and -17. The Mig-15 was an important advance in that it incorporated swept wings and was the first jet put into series production [Kir'yan, 1982: 224-225]. Turboprop and turbojet technology was also improved in the late 1940s, and the Central Committee and the Government passed a number of resolutions to support the use of this technology for airplanes [Tyushkevich, 1980: 383; Zakharov, et al., 1968: 485-486].

Pressurized cockpits were designed, as were pneumatically operated landing gear [Gunston, 1982: 57, 142]. Auxiliary technology for these planes, particularly optical sights and radio rangefinders, furthered the development of night and all-weather capability. Better rockets and cannon and fire control systems for these improved the firepower available to these planes [Tyushkevich, 1980: 383; Zakharov, et al., 1968: 486]. Versions of these planes, armed with improved electronics, as well as rockets and torpedoes, were added to Naval Aviation [Kir'yan, 1982: 227].

Some of these fighters were assigned to the PVO-S [national air defense forces]. PVO troops also received automatic and semi-automatic anti-aircraft artillery and anti-aircraft guns with larger calibers. PVO units were provided integrated and more efficient anti-aircraft systems, and in 1952, PVO troops received rockets

[Kir'yan, 1982: 227; Tyushkevich, 1980: 381; Zakharov, et al., 1968: 488].

For bombers, technological problems were resolved concerning payload and range, and solutions were incorporated in the IL-28, which had its first flight in 1948. This plane, which formed the basis of the early bomber fleet, also included improved navigation and bombing technology for night and all-weather operations [Kir'yan, 1982: 226; Tyushkevich, 1980: 383; Lomov, 1973: 75].

Air-transportable forces got a boost with the creation of the first helicopters, the Mi-1 [1951] and the Mi-4 [1954]. The Mi-4 had an improved engine which enhanced its payload capacity [Kir'yan, 1982: 227].

In the post-war decade, the Soviets indicated that the most significant military technology developed for "restraining the imperialists" was the development and initial equipping of the Armed Forces with nuclear weapons. The Soviets note that they were the first in Europe and Asia with an atomic reactor [1946], and they observe that their explosion of an atomic bomb in August 1949 and a hydrogen bomb in 1953 were key steps for the development of the Soviet Union as a nuclear power

[Kir'yan, 1982: 229].e Nuclear powerplants were developed for naval ships, and as applied to submarines greatly increased their range and endurance [Tyushkevich, 1980: 384; Zakharov et al., 1968: 487].

The Soviets also decided during this period that ballistic missiles were the best means of delivering nuclear warheads, and consequently vigorously pursued the development of these missiles. Liquid-fueled rocket engines reached a peak of development from 1947-1949.f The R-1 [SS-1] rocket, with a range of 150 km, was successfully flight tested in October 1947; the R-2 [SS-2], with an approximately 300 km range, in 1950, and the SS-3, with a 600 km range, in 1953 [Kir'yan, 1982: 229; Tyushkevich, 1980: 379-380; Berman and Baker, 1982: 82, 96-97; Holloway, 1977: 457-458]. As I note in Chapter Nine, such missiles [most notably the SS-3, SS-1b, and SS-1c] were not deployed until the mid- to late 1950s. Additionally, the first generation of electronic guidance equipment for missiles was put into series production in 1953 [Kir'yan, 1982: 263].

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eThe "bomb" exploded in 1953 was probably actually a "device", since it was not for a year or more later that weapons suitable to be dropped from planes were available to the air force [Holloway, 1982: 391].

fSee Kocourek [1977: 492-497] for a history of Soviet rocket technology developments pre-1945.

Computer technology was also perceived by the Soviets an important area of work during this time, in part because of its military applications. Research on computers, and cybernetics in particular, did not begin to flourish until after Stalin's death, but the Council of Ministers passed a resolution in early 1949 to support the development of computer technology, and the first high-speed computer (the M-1) appeared in 1952. Research on large computers, conducted in the Academy of Science's Institute for Precision Mechanics and Computer Engineering, led to the development of a large computer in late 1952 (Tyushkevich, 1980: 380).

Military Technology, Mid-1950s to Mid-1960s

An important development for the ground forces during this period was the appearance in the mid-1950s of the 7.62 mm AKM assault rifle. This gun, similar to a German rifle of World War II, was lighter, more accurate, and more reliable than current Soviet rifles and, in subsequent years, developed a good reputation among users (Kir'yan, 1982: 269-270; Bonds, 1981: 134-137). Further standardization in artillery led to the development in the mid-1950s of an 85 mm cannon mounted on a chassis for a 100 mm self-propelled gun for airborne divisions (Kir'yan, 1982: 271-272). Another important development for the troops during this period was the anti-tank rocket.

Initial development of these had been pursued in the 1940s, but it was not until the mid-1950s that rockets were developed with effective armor-piercing capability, accuracy, and range. These rockets, deployed in 1962 as the AT-1 Sagger, were mounted on a armored vehicle. This technology was important for the capability it provided, both of mobile firepower and for the protection of ground forces [Kir'yan, 1982: 273; Hoffman, 1977: 1059]. Missiles for air defense systems were made lighter during the early 1960s with the result that by the mid-1960s, they were being deployed on self-propelled launchers [Krylov, 1967: 15].

There were a variety of improvements in tank technology noted by the Soviets with the T-55, which appeared in 1960. These improvements included, on a tank of similar weight, armament, and size as its T-54 predecessor, capabilities for underwater fording, night fighting, and radiation and fire protection systems [Kiry'an, 1982: 275]. Soviet tank designers in the mid-1950s fitted heavy tanks with new systems such as a 122 mm cannon, fin-stabilized shells, gyrostabilizers for better accuracy while firing under way, and better shielding from nuclear weapons. These capabilities were embodied in the T-10 Stalin tank, which first appeared in 1956. In 1957 and amphibious tank [the PT-76] was deployed with a 76 mm

cannon and fin-stabilized rounds. [Kir'yan, 1982: 275-276; Bonds, 1981: 36-37; Tyushkevich, 1980: 414].

Other ground forces developments during this period included technology for decontamination, degasification from chemical and nuclear fires, increases in technology for cross-country capability of vehicles, particularly armored vehicles, payload capacity, amphibious capability, air-transportable and air-droppable capability, and better protection from weapons of massive destruction [Kir'yan, 1982: 280].

Beginning in 1958, communication troops began to receive significantly modernized, lighter weight radio communication equipment that provided a wider channel range and greater power. By the early 1960s, there was further improvement in communication systems, including advances in enciphering devices, telephone and telegraph systems, and phototransmission systems. There were also advances in automated switching technology, multichannel transponders, electronic counter-measures, and cybernetics for force-use planning [Kir'yan, 1982: 280-281; Zakharov et al., 1968: 509; see also Lomov, 1973: 166ff].

In aviation, turbojet engines were improved, as were airplane designs, and avionics, range and payload capacities for long-range bombers. Speed, avionics, radar, air-to-ground, and air-to-air missiles and

corresponding fire control systems were developed for fighters, as were variable geometry airfoils [Kir'yan, 1982: 283-285; Tyushkevich, 1980: 414; Gunston, 1982: 115]. Air-to-surface missiles were developed and began to be deployed on bombers in the early 1960s [Center for Strategic Studies, 1967: 45]. Helicopter technology was improved through the 1950s, so that they could provide a greater range of missions, included intelligence, communications, troop transport, and anti-submarine warfare [Kir'yan, 1982: 286-287]. Airborne surveillance and command and control capabilities were also developed [Gunston, 1982: 136].

The first successful launching of a ballistic missile [intermediate-range] from a submarine was conducted in 1955, and surface-launched cruise missiles were deployed on submarines as early as 1961 [Kir'yan, 1982: 267; Center for Strategic Studies, 1967: 47]. The first intercontinental multistage ballistic missile was successfully tested in 1957. ICBMs and SLBMs were being deployed by the early 1960s.g ABM technologies were developed beginning in the mid-1950s and rudimentary systems were deployed in 1962 [near Leningrad; based on

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gA solid-fueled, inertially guided SLBM, the first long-range SLBM the Soviets were known to have capable of being launched under water, was first displayed in 1964 [Center for Strategic Studies, 1967: 47].

the Griffon] and 1964 [near Moscow; the Galosh system]. The successful orbiting of a satellite in 1957 indicated the uses of satellites for broad range of military applications [Kir'yan, 1982: 267, Tyushkevich, 1980: 407, 413-415, 457-458; Berman and Baker 1982: 148; Center for Strategic Studies, 1967: 60-62]. FOBs were first deployed on the SS-9 mod 3 in 1965 [Bermann and Baker, 1982: 99-100, 104-105].

In the navy, nuclear power plants were improved for ships; the icebreaker Lenin had been built by 1959, demonstrating the possibilities of reactors for naval vessels [Tyushkevich, 1980: 407; Lomov, 1973: 76]. By the 1960s, speed, depth, and armament were improved for submarines, both for ballistic-missile launching versions and for those designed for ASW missions [Kir'yan, 1982: 289-290]. Sonar technology was also significantly improved, and catapult technology was developed. Gas turbine propulsion systems were developed that enabled ships to perform their ASW role more effectively. Self-guided torpedos were developed for submarines [Jordan, 1982: 8, 13, 30, 44; Zakharov, et al., 1968: 513].

Military Technology, Mid-1960s to Mid-1970s

For the Ground Forces, research in field artillery in the late 1960s and early 1970s led to the development of new self-propelled 122 mm and 152 mm howitzers in 1974 and

1975. Both of these guns were important because of their greater firepower, mobility, range, lower weight and transportability, as compared to previous artillery pieces. The 122 mm howitzer was particularly important because it was the first self-propelled gun to have full turret rotation, and it could be easily transported and camouflaged [Kir'yan, 1982: 272; Tyushkevich, 1980: 454-455].

Laser range-finders were developed for tanks, anti-tank gun designs were improved, and muzzle velocity and armor-piercing capability was increased. Rocket artillery was improved by adding rails per unit, closely grouping the salvo, and increasing the rate of fire [Tyushkevich, 1980: 454-455; Bonds, 1981: 30]. Ground Forces' air defense capabilities were improved as well through the addition of better automated command and control for those units [including microwave target acquisition and fire control] and self-contained radar and computers [Tyushkevich, 1980: 455; Bonds, 1981: 120].

Communication technology was improved through the development of more reliable mobile radios, tropospheric stations, television and facsimile equipment, and HF telephone and telegraph equipment [Tyushkevich, 1980: 455]. MRVs were first deployed on the SS-9 mod 4 in 1968, and MIRVs on the SS-17 in 1972 [Berman and Baker, 1982:

99-100, 104-105]. Research on high-energy beam technology had begun on a significant scale by the late 1960s, but systems were still in the R&D stage by the 1980s [Alexander, 1978/79: 37-39; U.S. Department of Defense, 1987: 50; see also Gervasi, 1987: 50].

Airplane technology was advanced through the further development of variable geometry wings and by VTOL technology, which was first demonstrated in 1967. Development of rapid-fire cannon, ATGMs, machine guns, and bombs for helicopters improved the ground support capabilities helicopters could offer [Tyushkevich, 1980: 455-456].

New naval developments during this period included the deployment of vessels using hovercraft and hydrofoil technologies [1967 and 1977, respectively] [Tyushkevich, 1980: 457; Jordan, 1982: 100, 134].

Soviet Assessments of the Impact of Technology Advances

As described by Kir'yan, developments in the thirty years following the end of World War II have had important effects on Soviet military force posture and strategy. These issues are discussed in Chapter Nine, but Kir'yan offers a several specific connections between technology and force posture developments that bear noting here. Effects of technology developments in the early post-war period confirmed previous thinking on the offensive, as

this technology, together with the force reorganizations that took place, helped to increase the speed and power of an attack and to improve the ability to attack and pursue in depth. The air offensive was thought to be an important facet of the offensive by covering the ground attack (Kir'yan, 1982: 239-242).

The scientific-technical revolution of the 1950s, notes Kir'yan, was important because of its effect on the entire sphere of economic and social life, particularly on the production level of society. Nuclear weapons, as mentioned earlier, were a key facet of this revolution. Nuclear weapons for the ground forces led to smaller numbers of troops higher firepower in existing motorized rifle regiments. One of the important roles for troops in a nuclear environment is to cover the large gaps between forces which cannot be filled with troops because of the target they may present to conventional fires, and increased ground forces firepower helps accomplish this mission (Kir'yan, 1982: 265-268). Soviet forces were thought able to obtain strategic objectives in very short periods of time and that troops had to be very prepared for sudden attacks (Kir'yan, 1982: 311-314; see also Cherednichenko, 1970: 24-26). Also during this time grew the concept that using nuclear weapons necessitated particularly good intelligence to locate key targets and

fast action on the part of the ground forces because of the need to exploit the gaps created by using nuclear weapons against the enemy's lines. There was also the concept that with nuclear weapons, attacks could be made at the strongest point in the enemy's lines rather than the weakest (Kir'yan, 1982: 314-315, 319; Cherednichenko, 1970: 26).

In the more recent period Soviet have noted the lesson that the Armed Forces need to be prepared and ready to fight in conventional as well as nuclear environments and the importance of having sufficient equipment for both. Another important factor in the more recent period has been the emphasis on the value of World War II lessons for conventional combat situations (Kir'yan, 1982: 320-326). Cybernetics developments have been increasingly applied after the Khrushchev period for "more rational" force structure and troop control decisions (Holloway, 1971: 11-25).

In reviewing the history of technology developments and their general impact on military thought, Gen. Lomov in his volume on scientific-technical progress and military affairs offers an assessment worth quoting at some length. Lomov notes that concerning developments in the methods of military operations,

> it is sometimes felt that the methods of conducting combat change most rapidly, and then the methods of

conducting operations, and that under the influence of new weapons, tactics change first and the strategy. However, such a view must be recognized as obsolete. This was actually the case in the past when new weapons were found in the tactical subunits, units, and formations, on aircraft and ships, and were used only in close combat, while the operational and strategic successes in the war were formed out of the quantity and quality of tactical successes.

The situation is different now when the powerful and far-reaching means of armed combat used in a mass quantity, are able in the shortest time to carry out strategic missions on a scale which could only be dreamed of by military leaders of the past. The new means of armed combat at the same time have brought about a complete change in all areas of military art, and there is reason to assert that in the strategic formes and methods of combat these changes occur even sooner than in tactics and operational art.

The essence of the changes in strategic forms and methods of armed combat consist chiefly in the fact that now the military leadership possesses the forces and means the use of which can, in the shortest time, determine the outcome of the war.

* * * *

In examining the question of the effect of new weapons on the methods of armed combat, the other side of this question must not be forgotten. The developing methods of military operations place constantly new demands upon weapons, and upon improving their technical specifications, and in doing so they set the pattern for the further development.

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On the basis of scientific forecasting, we can establish the direction of development for the nature of modern combat and the operation....

Thus, here we can see the inverse effect of the methods of armed combat on weapons and military equipment. Possibly, this effect is less clearly expressed than the direct effect of weapons on tactics, operational art, and strategy, but it, this inverse effect, does exist and must be taken into account (Lomov, 1973: 131-132).

The Weapons Procurement Context

In advance of drawing conclusions in Chapter Ten about the nature of the effect of these technology advances on the changes in doctrine and strategy discussed in Chapter Eight, it would be helpful for interpretive reasons to develop a more in-depth understanding of the nature and significance of the innovation process in the Soviet military sector. Such an understanding is needed for a context in which to form expectations about how progress in military technology would affect doctrine and strategy.

How does the innovation process work in the Soviet military sector? What is the likelihood of technologies developing that could have major effects on doctrine and strategy, particularly dealing with conventional war? How is a new innovation likely to be assess by Soviet military leaders as they consider its potential value for series production?

Questions such as these are important to address as one evaluates the role of military technology innovation in the USSR. Applications of new military technology occur within the broad sectors of Soviet science and industry, so to pursue these issues I will outline the basic structure of the defense industry and describe briefly how it can be affected by Soviet science policy and innovation practices of the civilian industrial

sector. Then, I will look at how the sources of military requirements are generated and processes through which innovations develop. Next, I will discuss some of the conclusions Western analysts have developed in doing case studies on the development of Soviet military technology.

A principal conclusion one derives from this literature is that innovation in the Soviet military sector tends, as it does in the civilian sector, to be incremental and that major technological developments that have had an impact on procurement patterns and force posture have occurred only at the intervention of high-level political elites. Furthermore, since one observes that innovation in Soviet military technology is normally both state sponsored and incremental, one could argue that it is not likely there would occur major technological breakthrough without the involvement of high-level officials. While Soviet scientists may occasionally achieve unexpected advances in military technology, it is more likely that they will develop evolutionary, rather than evolutionary, advances. Because of the time factor involved in synthesizing evolutionary breakthroughs in an area of technology to constitute a revolutionary breakthrough, it is more likely than not that government officials would be able to get involved and exercise control over how that synthesis proceeded.

Importance of General Science Policy and the Structure of Civilian Industry

A number of important studies since the early 1970s have examined in depth the structure of Soviet military R&D.h Most of the organizations involved in the management of Soviet military R&D were discussed in Chapter Two, but I will briefly recapitulate this discussion with a focus on research. The Defense Council, composed primarily of a group of Politburo members with national security responsibilities, superintends the Ministry of Defense with its Collegium and General Staff. Subordinate to the Ministry of Defense are its main and central administrations and the various Armed Forces branches, all of which have connections with or responsibilities involving defense research institutes and the defense industry ministries. The Defense Council also directs the work of the Military Industrial Commission, a Government body subordinate to the Council of Ministers. The Military Industrial Committee sets specific priorities for procurement of military hardware and has general responsibility for guidance to the defense industry ministries. The Military Industrial Commission has ties with the Ministry of Defense, its Collegium and General

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hSee, e.g., Gallagher and Spielmann [1972], Alexander [1976, 1978/79], McDonnell [1979], Holloway [1977, 1980, 1982], Checinski [1981], and Woods [1986].

Staff, and, as mentioned earlier, the defense industry ministries have links to the Ministry of Defense by way of its main administrations and the Services [Holloway, 1982a: 294-331; McDonnell, 1979; Gallagher and Spielmann, 1972]. Within these organizational structures, Gen. M. Cherednichenko, a well-known and authoritative commentator on military affairs, notes that the process of developing a weapon occurs in four stages--research, development, production, and assimilation.i He notes that

> the creation of new weapons systems includes: scientific research--the appearance of the idea, the formulation of system requirements, analysis of the economic and scientific-technical feasibility of creating it; experimental-design work, the manufacture of an experimental model, testing; the organization of mass production, and assimilation into the armed forces [Cherednichenko, 1968: 13].

Within this general structure [see Figure 1], the sources for innovation are several. Requirements for new military systems are provided by the Military Industrial Commission [and sometimes the Services or Ministry of Defense through the Military Industrial Commission] to the institutes affiliated with the defense industry [see Woods, 1986: 214-215]. Such requirements can lead to innovation as the scientists at those institutions work to find solutions to

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iDzherman Gvishiani, deputy chief of the State Committee for Science and Technology, has noted three main aspects of Soviet R&D: basic research, applied research, and development. Each of these aspects has subcategories [See Kassel, 1974: 25-30].

these problems. Given the growing emphasis on science, one Soviet author noted in 1971 that sometimes the scientists at these institutes find ways of raising the combat capability of the Armed Forces and forward their ideas to the military officials to consider [Bondarenko, 1971: 15; see also McDonnell, 1979: 185-190].

Ideas for exploration could also come from the scientific-technical councils attached to the defense industry ministries and also from the design bureaus, organizations attached to the scientific research institutes or production plants whose task it is to work on designs for particular systems or system subcomponents. Occasionally these design bureaus have been headed by famous engineers and inventors, such as Korolev, Tupolev, Kalashnikov, and Mikoyan [Holloway, 1982a: 316-317].j Various institutes of the USSR Academy of Sciences do research on military technology, and the State Committee for Science and Technology, though having no direct role in military procurement, may provide suggestions on promising areas of military research and information on foreign scientific developments and trends [Holloway, 1982a: 319-321, 334; see also Kassel, 1974: 4-11; Woods, 1986: 219-220].

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jFor a discussion of individual ministries and production enterprises as potential sources of innovation, see Berliner [1976: 48-58].

There are, then, a variety of areas where ideas could develop for new military systems, but the general trend in military technology advances has been incremental. It is, of course, normal to expect that most innovations would be incremental rather than significantly disjunctive from directions of contemporary R&D. However, new Soviet military systems have made much more use of proven or off-the-shelf technologies than, for example, US military systems. Why has this been the case? Although more detail is provided later to explain this phenomenon, part of the reason has been that the Soviet system generally does not encourage the development and pursuit of major new departures in technology from the tried-and-true.

Two general aspects of this system are Soviet science policy and the economic structure of Soviet industry. Although the military science and industrial sectors operate somewhat differently [some Western analysts would say "better"] than their civilian counterparts, general characteristics Western analysts have used to describe overall Soviet science policy and industrial innovation are frequently just as applicable to particular parts of the scientific and industrial sectors, in this case the military R&D and defense industry institutions.k

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kThere is body of evidence that suggests that the military R&D sector is, in a number of ways, less efficient than its civilian counterpart. Agursky and

Furthermore, the military science and, particular, industry sectors are separate in a number of important organizational ways from the civilian sector, they are often linked to the civilian sector in terms of resource supply, through the country's central planning mechanisms, and in other ways. Hence, there are inevitable ties between the military and civilian sectors which make assessments of the latter often applicable to the former.

In terms of science policy, the state-directed nature of Soviet science and the frequent reliance of some of its branches on technology from the West have jointly retarded innovation, so that innovation is Soviet science is in many areas not as frequent and as significant as in the West. As one Western analyst notes, while the state contributes to the promotion of science, its historical use of administrative and bureaucratic controls weakens incentives and initiative for innovation. The conflict "between such controls and the innovation initiatives between central direction and individual entrepreneurship creates conditions inimical to technological innovation"

Adomeit point to problems in incentives, personnel, operations, management, and secrecy [1979]. See also Perry 1973: 81], Head [1978: 554], and Maddock [1988: 71-72, 187-188].

and often results in the need for addition technology imports [Labedz, 1976: 148].1

Fragmentation of the scientific community has been another problem. Soviet science is divided among the Academy of Sciences, the State Committee for Science and Technology, and many of the 60-plus ministries, and each of these groups has developed entrenched bureaucracies that compete with and often frustrate one another. Not only does this fragmentation occur between different umbrella institutions, research at institutions within one of these larger bodies is often compartmented so that scientists working on related technologies do not have contact with one another. The Communist Party has made frequent use of this fragmentation to maintain its own control [Thomas, 1976: 63, 66-68; Holloway, 1982a: 339-340; McDonnell, 1979: 197; Agursky and Adomeit, 1979; 110-114; Parrott, 1976: 305-318].

Analysts of innovation in Soviet industry have noted similar problems. Joseph Berliner, in his The Innovation Decision in Soviet Industry, notes that industrial innovation at the enterprise level is plagued by key systemic problems: organizational structure, prices, decision rules, and incentives. He notes how

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1On the management of Soviet science and its interconnection with industry, see also Zalecki [1969], Amann, Berry, and Davies [1969], and Evangelista [1988: 25ff.].

uncertainties in supply and accounting practices have led to a devalued role for R&D in the overall organization of industry [1976: 29-234]. He provides examples to show how centrally determined prices hamper innovation by constraining competition, and how quotas, instead of consumer satisfaction and profits as targets, entail a set of market rules and incentive structures which are dysfunctional to innovation [1976: 235-502]. Most of these difficulties he summarizes as due to the producer, rather than consumer, sovereignty in the Soviet Union and the result that there is little initiative for competition, which he considers probably the main stimulus to innovation in Western countries [1976: 503-538].

A later assessment of industrial innovation, Ronald Amann notes that Berliner does not assess non-systemic factors such as historical problems with innovation tied with the relatively recent founding of the Soviet state or the possible decision of Soviet leaders to concentrate resources in particular parts of the economy [1982: 9-10, 24]. Studies specifically focused on military R&D note that the consumer--the Armed Forces--has a much more powerful role in the procurement process that the institutional or private consumer in the civilian sector, primarily because of the prerogative to refuse products or designs which do not meet assigned specifications, as well

as the institutional supervisory role the military plays through the voyenpredy [military representatives] at defense production facilities [Holloway, 1982a: 311-312, 325].

Still, Berliner's comments about the systemic obstacles to innovation in the Soviet system do help frame the context within which the arguably more efficient military R&D process operates.m Obviously, if the civilian economy is structured in a manner dysfunctional to innovation, it would be unlikely to expect that the military sector, even with greater institutionalized support for innovation, could operate in a much different way.

Military R&D Processes and Problems

Turning then, to the military sector, what are the ways in which innovation is achieved, and how successful has the sector been at innovating? What are the conditions under which one could anticipate successful military R&D?

The military sector of the Soviet economy has enjoyed significant state support over the decades because of a need to "catch up an overtake" Western powers, a perceived need that long pre-dates the founding of the Soviet state

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mSee Holloway's [1982: 341-344] discussion of these systemic criticisms of the economy as they are specifically relevant to the defense industrial sector.

[Holloway, 1982a: 287]. A number of important characteristics of Soviet military R&D have been highlighted by Western analysts. The development of the Armed Forces, and the defense sector as a whole, takes place in the context of long-term planning--of five-year plans, primarily, but also of plans extending up to 15 or 20 years [see Zaleski, 1969: 79-81 and Parrott, 1983: 261-263, 283-286]. Hence, political and military bodies responsible for the defense industry coordinate plans for defense R&D and procurement with the plans for deliveries of resources to those facilities by other industries in the military and civilian sectors. Military officials accommodate this system by gearing military requirements to this schedule, by presenting orders to the national economic planners in good time, and by supervision the fulfillment of these plans [Holloway, 1982a: 301].

The implication for defense R&D of this dimension is the need to schedule modernization of equipment and efforts to bring new equipment into the force posture. This need for scheduling and fitting in military R&D plans helps sustain the defense R&D effort but can stifle innovations that cannot be fit into the five-year plan, which is known for its tautness [Berliner, 1976: 89-92; Alexander, 1976: 49].

The Soviet defense industry has high priority on investment and machinery, as well as wages and employee benefits such as housing and medical care. Its funding sources have also been stable (especially when compared with those of U.S. defense contractors). Therefore, compared with the Soviet civilian sector, the military sector's infrastructure is in some ways more attractive financially to workers and better able to avoid problems of the materiel and equipment supply (Holloway, 1982a: 311-312; Perry, 1973: 5-6; but see Agursky and Adomeit, 1979: 108-110, 122-124). Next, as indicated earlier, much military R&D at defense industry institutes are responses to design requirements for systems or for improvements in a area of military hardware that are sent down from the Services, General Staff, and Military Industrial Commission through the defense industry ministries to the appropriate institute. The institutes help the Armed Services decide on their operational requirements, the institutes monitor weapons development, and they test prototypes (Holloway, 1982a: 315).

The design bureaus work with the material and norms for its usage provided by the ministries, and within the guidelines of design handbooks provided by the institutes for particular systems. With this institute/design bureau process applied research is largely separate from design

and development, and the restrictions imposed by the ministries and by the handbooks supplied by the institutes significantly fosters a priority on commonality of the use of standardized parts and subsystems. This focus on commonality helps to resolve some of the obstacles created by the compartmentalization of the R&D process, and it also provides advantages to the Services, since the smaller the number of component subsystems [especially new and unfamiliar component subsystems] to be services, the easier training, operation, and maintenance for the new equipment will be. This concern for commonality encourages incremental, evolutionary development, since evolutionary development is essentially commonality over time [Holloway, 1982a: 318; Alexander, 1976: 44-48].

Sometimes design bureaus have been given specifications for the same systems and will compete to develop an acceptable prototype. These prototypes are then field tested thoroughly before selection is made [McDonnell, 1979: 188-190; Woods, 1986: 225].n In the 1930s, there were sometimes three prototypes for each system chosen; by 1970 there seems usually to have been two [Alexander, 1970: 21]. This practice has contrasted

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nAmann, Berry, and Davies [1969: 437] note that, unlike the case in the civilian sector, design bureaus in the Soviet defense sector often have their own experimental factory for prototype construction.

with the practice in the U.S., where contracts are let based on bids with paper designs. More recent analyses suggest that most competition in the Soviet Union now also ends with paper designs, primarily because prototypes earlier though to be competitive may actually have had different missions [Holloway 1982a: 319]. Concluding the competition at the paper design stage may also be a function of the growing costs of advancing technology, which would make construction of multiple prototypes not economically feasible for the R&D system in general. This competitive dimension is indeed helpful for innovation, and the design bureaus need to convince the military that the model, while not overly difficult to operate and maintain, would not only meet its military specifications but would also operative favorably in a combat situation in comparison with foreign military equipment [see Holloway, 1980: 152-154; Woods, 1986: 224].

Related to the issue of meeting military requirements, another important factor affecting design innovation are the operational parameters established for it and how it is expected to fulfill its military mission. It has been suggested that ease of operation, training, and maintenance are important considerations of the Armed Forces in determining whether to accept weapons design or a prototype. Some analysts of Soviet procurement

practices have noted that such concerns, while generally true of procurement processes in most countries, are particularly important for the Soviet Union. Such is the case because the army has traditionally been composed of conscripts who may not have high levels of education. This educational level issues, combined with the well-known challenges the Soviets have had in building its armed forces from a multilingual population, would make reliable, simple, easy-to-use weapons much more advantageous to procure than more complex weapons. One may note that there are increasingly difficult tradeoffs between sufficiently simple and sufficiently effective weapons in an increasingly technological age, but the fact remains that historically, Soviet military and defense industry officials have concentrated on new technologies that are relative easy to operate and maintain. Obviously, such requirements can provide a damper to innovation directed toward more sophisticated systems.o

At the same time, another factor to keep in mind in understanding the Soviets' development of military requirements and their evaluation of competing designs is that the Soviets have traditionally been more inclined to

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oThere is some contrary evidence, beginning in the late 1960s concerning the BMP, new ICBMs, and new tactical aircraft that the Soviets may be using a higher ratio of new technologies in weapons prototypes, but Alexander [1978] considers the overall evidence for this argument weak.

evaluate new systems with regard to how they contribute to the overall achievement of military mission. U.S. procurement officials, on the other hand, have sometimes been inclined to focus on "total system" approaches rather than the ones which use more off-the-shelf technologies, on the basis that the latter is a "more effective hedge against an uncertain technological future" [Perry, 1980: 98-99].p

Additionally, U.S. defense customers have tended to evaluate a system's performance on the effective functioning of its various parts, while the Soviets more often ask how well the weapon will function in a battlefield environment [Alexander, 1978: 30; Head, 1978: 556]. Indeed, it is more appropriate to ask how procurement choices with various weapons systems have affected the military value of a force--how well the force can achieve its overall mission. As one Western analyst notes, "a superior force can be created from equipment that is inferior in quality if that equipment is available in larger quantities or is organized or used more effectively" [Holloway, 1980: 138; see also Head, 1978: 545, 553].

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pFlax [1978] notes that the U.S. weapons procurement on many occasions has been characterized by incremental technology improvements.

Therefore, while Soviet weapons procurement decisions may make sense as less complex technologically and based on designs largely using proven technology advances, it would be worthwhile to note the results of Soviet military R&D which has not be evolutionary to understand why these technologies were pursued and how they were managed. Among those programs identified by Western analysts that have been successful are nuclear weapons, including small nuclear warheads [Alexander, 1978/79: 35-36; Evangelista, 1988: 187-215], jet engines [Holloway, 1980: 353], VTOL [Alexander 1976: 53], ICBMs and SLBMs in general [Perry, 1980: 92-93].

Among those weapons programs that have used particularly advanced technology that have not fared so well have been the SS-10, the high-bypass turbofan engine, the Tu-144 SST [Perry, 1980: 93],q the Galosh ABM system, early ICBMS [the SS-6], the Mya-4 [Bison], and the first MIRVs [Holloway, 1982a: 152-153].

One interesting conclusion is that virtually all these technologies are in the aerospace field. This is probably not too surprising, in that aerospace is clearly a high-technology area which would require substantially more

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qPerry argues that the Tu-144, although a civilian craft, is a legitimate example to prove his point. He bases his argument on the reasonable assumption that all Soviet aerospace developments can be treated as extensions of military R&D [1980: 92-93].

"revolutionary" than "evolutionary" technologies for any country. This fact also suggests that ground force and conventional weapons technologies would probably be largely incremental in design.

Another interesting conclusion is that most of these Soviet developments were arguable responses to Western technology developments, at least such is very probably the case with nuclear weapons, ICBMs, SLBMs, MIRVs, the Tu-144, the Mya-4 and the Galosh system [Holloway, 1977: 451-455, 459-468, 1980: 152-153, 1982b: 394, 404; Evangelista, 1988: 157-175]. If one reflects on the U.S. R&D process as one that focuses on the use of state-of-the-art technologies in new weapons systems and on the US position as leading the Soviet Union in many advanced technologies dealing with electronics and other aerospace-related fields. one would anticipate that the U.S. would continue to spur such Soviet advances in the future.r

An additional key observation from those aspects of military technology advances is the key involvement of high-level leaders to support these programs in their early development stages. There are numerous accounts of

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rHolloway [1982: 405] argues that this U.S. lead--Soviet response pattern in advanced technologies is an important stimulus to continued arms competition between the two countries.

Stalin's personal involvement in weapons procurement, including aircraft machine guns, artillery systems, aircraft engines, nuclear weapons, and the Mya-4. The Politburo as a whole was also involved in a number of key weapons technology decisions, such as those in the pre-World War II years concerning anti-aircraft guns and tank turrets [Holloway, 1982a: 301-302; 1982b: 389-390, 395; Alexander, 1978: 18-19; Spielmann, 1978: 118-119, 124-129; Gunston, 1982: 88].

Although less is known about Khrushchev, his involvement in cancelling warships, terminating the Mya-4 and the nuclear powered bomber, and his support of ICBM programs, to mention a few examples, are well documented [Holloway, 1982: 302, 395-397; Alexander, 1976: 53; McDonnell, 1979: 195-196].s During the Brezhnev period, the Politburo continued to play a vital role in many weapons programs and in issues closely related to weapons procurement, such as the strategic arms negotiations [Holloway, 1982b: 401-403]. High-level leadership also seems to have been key for Soviet research in particle

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sLower-level officials have also been involved in supporting new technologies, including Kurchatov and Korolev for nuclear weapons and Alexandrov for nuclear ships [Holloway, 1980: 153]. The concept here seems to be that people with greater political prestige can afford to support pet innovation projects because they are relatively safe from a major career setback if the project fails [Holloway, 1982: 407].

beam technology, which first reached a "sizable scale" about 1967 [Alexander, 1978].

From the case study literature, it seems rather difficult to judge whether the "discovery-pull" or "demand-push" phenomenon is the more important, though the latter appears to carry somewhat more weight. In several key weapons technology areas, including nuclear weapons, ballistic missiles, ICBMs, MIRVs, and guidance systems, Soviet scientists became aware of their importance and presented their concerns to the leadership, which then proceeded to fashion major development programs to pursue these technologies [Holloway, 1982b: 404, 408].

Noting the consistent importance of high-level Soviet leadership for the promotion of major new military technologies, one Western analyst notes that the key input the leadership provides are organization and management techniques to bring the scientific research closer together with potential military applications [Alexander, 1978]. While one might anticipate the leadership of any country to use control and influence over organizational links within science, industry, and the government to foster practical applications of important scientific discoveries [cf. MITI in Japan], the fact that the Soviet leadership has taken this course of action in military

technology so consistently suggests that this pattern will obtain for the foreseeable future.

Conclusions

What conclusions for the continuing role of military technology on force posture and doctrine do these observations about the Soviet R&D process suggest? One conclusion is that if new technology does affect doctrine in some significant way (an issue that will be explored in Chapter Ten), that technology is more likely to be in a high technology area than a lower one.

At least through the mid-1970s, this conclusion would mean that new technologies that might affect doctrine would likely be in a particularly "high-tech" field, such as aerospace. Not only would such areas of research be where more advanced technologies would be likely to appear, it would also be the area where applications would be less problematic. By this I mean that it would be easier for Soviet forces to use new technologies where weapons employing those technologies were not produced on a mass level. Having to supply weapons with new technologies to vast numbers of troops creates at least two major problems. One would be training a large number of troops to use the weapons; the other would be dealing with repairs. It is obviously easier to train small numbers of troops to use new advanced weapons, such as

ICBMs, in part because one can be selective about the troops for that branch.

Second, "mean-time-between-failure" problems are heightened exponentially [not in small part because of the Soviets' poor maintenance capabilities] if one talks about introducing a new weapon into the Ground Forces, such as a rifle or tank, than if one talks about introducing a smaller number of weapons, such as a new ICBM, for the Strategic Rocket Forces. Keeping in mind the systemic difficulties of dealing with a conscript army and the Soviet preference, in light of Service missions, to have reliable, lower-technology weapons rather than less reliable, higher-technology ones, it seems inappropriate to anticipate doctrine-changing technologies to be developed for the Ground Forces. This conclusion suggests that technology developments, at least through 1975, probably have not been important factors driving preferences for conventional warfare. There is always the issue, of course, of which technology changes are of sufficient magnitude to be considered "doctrine-changing." However, if one considers doctrine change, as I do in this study, to be the change of even one facet of the doctrine under examination, this projection appears solid.

Furthermore, while one need not expect that the Soviets would have to follow the US practice of using

state-of-the-art technology in new systems to have an effective military, the technology of contemporary warfare is becoming increasingly advanced. Therefore, even apart from the question of the Soviets' "keeping up" with their Western opponents' technology, one finds here additional reason to expect that Soviet technology advances will probably not be a major factor driving their conventional warfare doctrine.

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APPENDIX

Table 4.1: Major Developments in Soviet Military Technology, 1946-1975

Period	Technology Changes	Type of Innovation: Major/Incremental	Type Warfare Favored: Nuc./Conv./Either
1946-1955	Tanks: higher muzzle velocity, underwater crossing, armament, engine	incremental	either
	Amphibious transports, recoilless anti-tank guns, new artillery shells	incremental	conv.
	Bridging technology, communications equipment	incremental	either
	Airplanes: jet engines avionics, airframes for supersonic flight, better rockets and cannon, improved range	major incremental	eithera either
	Helicopters	major	eitherb
	Nuclear bomb	major	nuc.
	Nuclear power plants for ships	major	eitherc
	Ballistic missiles	major	eitherd
	Early computers	major	either

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aAs suggested in Chapter 4, a key role envisioned for early Soviet fighters was the intercept of U.S. bombers with nuclear weapons.

bHelicopters in their early stages were designed for transport rather than ground support weapons platforms. Therefore, they were not originally designed for a primarily conventional environment.

cA key motivation for developing nuclear powerplants were for submarines which were probably anticipated to be equipped with nuclear weapons in the not-distant future.

dWhile missiles can have nuclear or conventional warheads, it is appropriate to note that the key military motivation for ballistic missiles were to mate them with nuclear warheads.

Table 4.1 (cont'd)

Period	Technology Changes	Type of Innovation: Major/Incremental	Type Warfare Favored: Nuc./Conv./Either
1956-1965	Lighter, more accurate rifles	incremental	either[e]
	Self-propelled gun for airborne divisions developed; anti-tank rockets improved with more armor-piercing capability, accuracy, and range; anti-tank rockets mounted on armored chassis; missiles for air defense systems mounted on self-propelled chassis; fire control systems for air defense weapons improved	incremental	either
	Tanks improved with capabilities for underwater fording, night fighting, heavier armor, better guns	incremental	either[f]
	Decontamination, degasification processes improved	incremental	nuc.[g]
	Telephone and telegraph systems improved, switching systems, phototransmission	incremental	either
	Turbojet engines improved on airplanes, as was payload capacity, avionics, air-to-ground and air-to-air missiles	incremental	either

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[e]As will be discussed in Chapter Nine, infantry is of somewhat less use in a nuclear than a conventional environment, but one would expect improvements to be made in infantry equipment regardless of the battlefield environment anticipated.

[f]A key reason for increasing tank armor was protection against radiation.

[g]I take some liberty here with the evaluation that these technologies favor nuclear warfare, but since the Soviets were probably most concerned in developing these processes for radiological decontamination, and since the Soviets have considered all NBC weapons as "weapons of mass destruction," my approach here seems appropriate.

Table 4.1 (cont'd)

Period	Technology Changes	Type of Innovation: Major/Incremental	Type Warfare Favored: Nuc./Conv./Either
	Variable-geometry wings	major	either
	Helicopter engines, payload increased	incremental	either
	Small nuclear warheads developed for ICBMs, SLBMs, IRBMs, and tactical missiles	major	nuc.
	Staged missile technology demonstrated for ICBMs, and IRBMs; underwater lauch ability demonstrated for SLBMs	major	nuc.
	ABM systems developed and deployed	major	nuc.
	Satellites developed and orbited	major	eitherh
	Nuclear powerplants improved for ships; submarine technology improved	incremental	nuc.
	FOBS technology deployed	major	nuc.
1966-1975	Development of new self-propelled artillery with improved firepower; improved anti-tank guns and ATGMs improved ground air-defense; laser range-finders developed for tanks	incremental	eitheri
	VTOL technology demonstrated	major	eitherj

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hWhile satellites may peform a variety of roles, a clear motivation for the early satellite development involved various concerns about the opponent's nuclear capabilities.

iAs will be discussed in Chapter 9, self-propelled field guns have a more useful application on a conventional rather than nuclear battlefield.

jAs is the case with Western forces, the Soviets will probably use VTOL technology in aircraft for ground-support roles. VTOL craft, because of their increased weight, do not make good interceptors. Furthermore, the only Soviet fighter to employ VTOL technology, the Yak-36 Forger, cannot

Table 4.1 (cont'd)

Period	Technology Changes	Type of Innovation: Major/Incremental	Type Warfare Favored: Nuc./Conv./Either
	Rapid-fire cannon, ATGMs, bombs developed for helicopters	incremental	conv.
	Hovercraft and hydrofoil technology developed for navy	major	eitherk
	MRV technology deployed	incremental	nuc.
	MIRV technology deployed	major	nuc.

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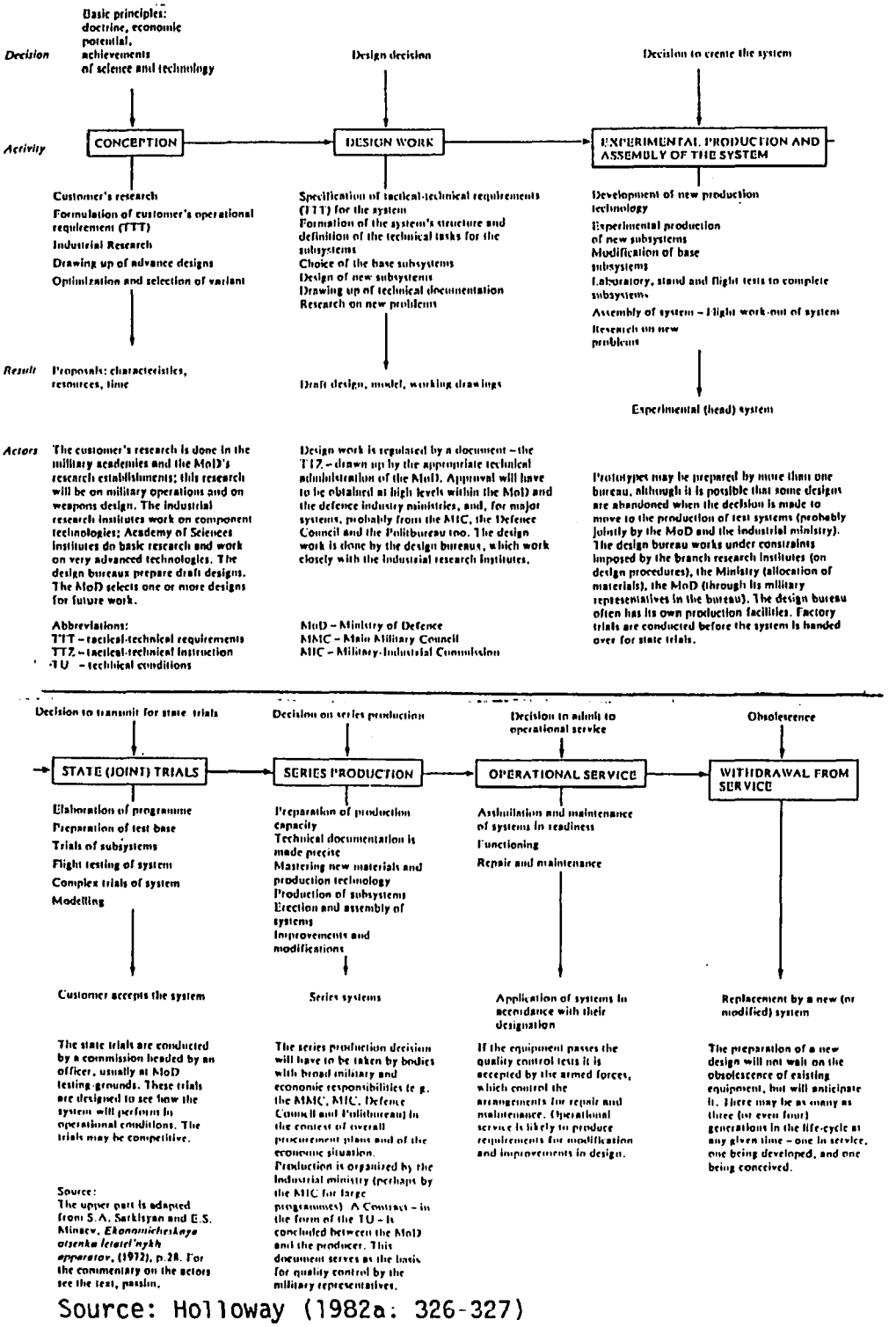
operate in the STOL mode because of its vertical lift jets, thus limiting its payload and usefulness in an interdiction role (Gunston, 1982: 150-151). These characteristics suggest the more likely use of VTOL technology in aircraft for conventional engagements. One may also note that the Soviets themselves have not rated the Yak-36 as a particularly good airplane (Inteview, 1989). This evaluation makes it even more unlikely the plane would be used for nuclear ordnance.

kSince most of these craft are for coastal defense, one imagines their more likely involement in a conventional rather than nuclear environment.



Source: Holloway (1982a: 326-327)

Figure 4.1: Soviet Defense Procurement Cycle

CHAPTER V

SOVIET POST-WAR ECONOMIC DEVELOPMENT AND MILITARY DOCTRINE

Soviet economic development is an important factor to explore in an assessment of the development of military doctrine because of the numerous ways economics can affect doctrine. The industrial base provides the capital and labor for supplying weapons to the Armed Forces, and, as noted in the chapter on military technology, an economy whose infrastructure functions well will be better able to facilitate and support new developments in weapons technology. Just as important is the health of the non-industrial sectors of the economy, for in a planned economy, the health of those other sectors can have a significant impact on how planners allocate resources to the defense sector or to the industrial branch of the economy.

The Soviets are clear about the important role they assign to economics in military affairs. The Soviet Military Encyclopedia notes that the level of development of a country's productive forces and their character, along with the level of science and technology, have an important influence on the content of military strategy.

Military economics, the Encyclopedia notes, are "closely connected with civilian economics." Military economics exerts its influence through the organization of the armed forces and capabilities to prepare and supply them for combat. Quoting Engels, the Soviets remark that "'[e]verything depends on economic conditions, particularly the army and navy. Forces, staffs, organizations, tactics, and strategy depend first of all on the level of production at a given point in time and on the means of communication.'" In peacetime, economics creates the military-technical base for the conduct of a possible future war. In wartime, economics defines the character and scale of the tasks assigned to the armed forces ("Voyennaya strategiya", 1979: 556-557; "Voyennaya ekonomika," 1980: 567-568).a

In a 1967 Voyennaya Mysl' article entitled "Economic Aspects of Soviet Military Doctrine,'" Maj. Gen. A. Korniyenko and Capt. V. Korolev note that military doctrine reflects changes in the economic development of the state. According to the authors, both aspects of military doctrine--the socio-political and military-technical--are related to economic conditions in a state.

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aCooper (1989) provides a interesting and useful historical discussion of the connection of Russian military thinking and economic policy from the pre-Soviet period until the present.

The socio-political aspect, because it involves the evaluation of the character of military goals in a conflict, ties doctrine to the economic development of the state and the economic interests of the ruling elite. The military-technical aspect of doctrine is important for economics because of the issues this aspect covers dealing with the "special features" of combat and the military-technical tasks of the Armed Forces (Korniyenko and Korolev, 1968: 28).

To interpret developments in Soviet doctrine from the end of World War Two through 1975, one needs to consider how the development of the USSR's socialist economy during that period may have affected decisions of the leadership about how best to design and support the Soviet Armed Forces. Such an examination needs to take into account the tradeoffs these leaders perceived involving how the military policy alternatives would effect the civilian economy and planning preferences in that area.

In the Soviet industrial base, for example, the country was still in the early stages of modernizing its industrial base and improving its infrastructure in many areas of the economy when World War II erupted. After the war, Soviet leaders not only had to rebuild after a conflict that had devastated the western part of the country, but the leadership also sought to continue

extending the economic development it had begun prior to the war. There were, therefore, a great many demands Soviet leaders faced on raw materials and productive capacity in the post-war period which undoubtedly made decisions difficult about how to use those economic resources. The Soviets typically solved lesser economic problems in part by deemphasizing the consumer sector of the economy, but the post-World War II decision environment was difficult even when a low priority for consumer items was factored into the planning.b

As one ties these issues of military doctrine and defense spending more closely to the issue of economic tradeoffs, there are several assumptions that need to be made clear. Some of these are discussed more fully in Chapter Nine, but they bear noting here. First, the project of developing a basic nuclear capability, including small warheads and a variety of delivery vehicles, entails a significant R&D and procurement effort. Later, though, countries that deploy nuclear weapons can benefit from significant military economies of scale. Such is the case in part because of the tremendous power of nuclear weapons, together with the fact that maintenance of delivery vehicles--generally missiles and

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bSee Skurski's (1981) assessment of consumption in the USSR since the beginning of the Soviet period.

bombers--is less expensive than the maintenance of conventionally armed forces.c Therefore, while procuring an ICBM force or equipping bombers or submarines with nuclear weapons is costly, those individual weapons systems are still relatively cheap, in terms of cost per unit firepower, when compared with conventional weapons. For example, as the procurement of a nuclear weapons capability was debated in the United States in the late 1940s and early 1950s, one of the important conclusions reached was that some of the traditional expenses of maintaining a strong military--outlays for weapons as well as manpower--could be reduced through a reliance on nuclear weapons.d

Conversely a second important assumption is that improving conventional forces normally necessitates a substantial commitment of financial resources in the procurement process as well as in the personnel area, since very large numbers of troops and weapons would be needed to approximate the firepower that could be obtained with nuclear weapons.e

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cThis statement is less true for submarines, though it remains accurate for the overall assessment.

dThis topic is discussed in the chapter on NATO.

eOne might argue here that the problem of the relatively limited utility of nuclear weapons may overshadow the advantages of the economies of scale in their procurment. A country's leaders who were

Therefore, to relate economic development to military doctrine and posture, I would offer the following observations and hypotheses:

> Given the lesser overall expense, past the basic R&D phase, of equipping and maintaining a military armed with nuclear weapons rather than conventional ones, the leaders of a country whose force posture has been based on conventional weapons will, if facing a period of extended economic difficulties, give increasing attention to reducing the advantages of equipping their forces with nuclear weapons and may opt for a nuclear-oriented posture.f
>
> One corollary hpothesis is that in the case of a country's whose basic military orientation is already grounded on nuclear weapons, this orientation and capability will be maintained or perhaps even strengthened in periods of economic difficulty. A second corollary hypothesis is that since an important objective in a period of economic constraints is to reduce government outlays, a country's leaders faced with such a situation may also decide to reduce military expenditures across the board. One decision the leadership is not likely to take in such circumstances is the continued acquisition of conventional weapons.
>
> Although it would be difficult analytically to separate an interest primarily in the economic advantages of nuclear weapons from an interest primarily in their military advantages (especially

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considering the development of a nuclear force posture would certainly recognize the relatively limited value of nuclear weapons in many types of military conflicts, particularly those with non-nuclear opponents. The obvious underlying assumption made regarding this point is that a principal goal driving Soviet military planning since the end of World War II has been the deployment of military capabilities to oppose successfully those of the United States. A central implication of this goal has been the concern to develop a nuclear posture on a scale approximately equal to that of the U.S.' strategic force posture

fThis hypothesis assumes the country has a basic nuclear weapons capability.

> when examining the decision process for a superpower with a closed society), the economic advantages of nuclear weapons would be an important factor in decisionmaking nonetheless.
>
> In the case of a country whose posture is based on conventional forces, economic difficulties should compel the leadership to consider a posture based on nuclear weapons. Such economic constraints would certainly not be a sufficient condition for such a reconsideration of military posture, but they may very arguably be a necessary condition for such rethinking. As noted earlier, an important corollary hypothesis is that while a result of the reconsideration of military posture could be a reduction in Armed Forces spending, one would not--in the condition of major economic constraints--expect an increase in conventional forces.
>
> To posit these hypotheses, obviously, is not to imply one should necessarily expect a government to pursue a conventionally orientated force posture or major improvements in conventional capabilities in a period of economic stability or growth. Barring the development of a major external threat, though, it does seem reasonable to argue that a country would have to have a healthy, or at least stable, economy for its leaders to consider emphasizing a doctrine based on a conventional force posture.
>
> Stated more simply, the hypotheses are that leaders of a country may pursue a conventionally oriented military doctrine and force posture if the economy is stable or growing, but they will not pursue such a doctrine and force posture if the economy is declining. If the economy declines, the leadership may try to reduce the military drain on the economy, possibly by emphasizing a nuclear posture or by cutting military expenditures in general.

Indicators

There are a number of indicators one can use to investigate the health of an economy. Since the country of interest here is the USSR, one appropriately discusses indicators useful for a planned economy. For most economies, GNP growth is an important indicator to watch,

as are industry, agriculture, and consumer good production, the principal sectors of modern economiees.g For a planned economy, performance in these sectors is worthwhile to follow primarily in terms of production achieved, but also in terms of investment channeled to these areas. Industry and agriculture are obviously basic dimensions of a country's economic life, and the Soviets historically have been concerned about developments in both these sectors, particularly in industry.h Although the consumer sector has definitely been of secondary

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gSee Figures 1-3 for an overview of growth in several sectors of the economy from 1950-1980. These charts may also be read in conjunction with the analysis in the subsequent pages.

hSome additional comments on agriculture may be helpful at this point. Soviet agricultural production has been a constant problem for the Soviets as well because of the instability of the weather, poor infrastructure in the sector, and inefficient production means. While agricultural production has been improved through greater free market opportunities, such as the markets to sell private plot produce, the Soviets have usually sought to solve agricultural problems by greater investments in infrastructure. While improving incentives might be the best single way to improve agricultural production (about 30% of the countries agricultural production comes from the 3% of the land that constitutes private plots), improvements in storage facilities, equipment, etc., can and does help to resolve some of these difficulties. Unfortunately, the systemic problems with agriculture have not been entirely responsive to continued infusions of investment. Still, because increased agricultural investment has been an important tool for the Soviets to make improvements in this sector, such investments remain one of the elements in the tradeoff with defense when allocation decisions are made.

importance to planners in the Soviet Union, its contribution to GNP (as well as what it reveals about the standard of living) still makes it useful to track. If production in these sectors drops, assuming such a decrease has not been preceded by a decrease in investment in those sectors, one could assume the existence of important economic problems. Performance of the industrial, agricultural, and consumer sectors provides useful indicators to note, though GNP performance is a more comprehensive indicator.

One would anticipate that after a drop in GNP growth or in the growth of these other sectors over a period of years, Soviet leaders would try to improve GNP as well as to ease the burden of allocations to certain sectors of the economy, principally defense. Such is the case because investment in defense would not stimulate economic growth as much as investment in other sectors.i For a country whose leaders want to maintain a healthy GNP growth rate while at the same time maintaining a strong

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iWhile some analysts have reasonably argued that moderate decreases in defense spending growth would not have a significant ameliorative effect on factor productivity or GNP growth in the short term (Byrne, 1970: 6; Cohn, 1970: 178-179), my frame of reference is definitely the long term. Basic military doctrine is not revised every five years; military doctrine changes are not frequent and take several years to develop. Therefore, a relationship between GNP and defense spending which is more easily argued in the long term (Cohn, 1970: 180-181) is the relationship of greater interest here.

military, an emphasis on establishing a nuclear force posture would probably be appealing, assuming the country had a basic nuclear capability. Additionally, for a country with near full employment, channelling significant resources to the defense sector would, over time, create an important drain on human resources that could be used *elsewhere* (Becker, 1986: 171).

Other key economic indicators to observe would be factor productivity for GNP and industry and the level of gross fixed investment. The factor productivity indicators, because they measure output in relation to the factor inputs of capital, labor, and land, is important because a decrease in these indicators would suggest that productivity overall needs to be boosted.j

One of the acceptable ways in the Soviet Union to improve productivity is to increase wages or allocations to consumer goods and services, thereby providing the worker with more to buy if he or she works harder to earn more money.k On the management side, another way to

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jSee Tables 1-4 on Soviet factor productivity and how it compares with productivity in the West.

kOn the tradeoffs of Soviet defense spending and the consumer sector, see Maddock (1982: 66-76, 94). Maddock argues (pp. 89-91) that defense spending, at least during most of the 1970s and early 1980s, was not a large enough portion of the budget that changes in it in any given year would have significant effects on the GNP for that year. However, he argues that over the long term, consistent heavy spending in defense has clearly weakened the

improve productivity is to increase the technology or productive capability of the capital stock. Such an improvement could come with through imported technology or by boosting support for indigenous technology through greater investment in R&D. The available indicators for areas of possible investment to improve factor productivity are allocations to the consumer and agriculture sectors, and to R&D. Short of modifying the economic system in some way toward a market or profit-oriented system, which theoretically could benefit factor productivity in the areas of both labor and management, there have been few alternatives available to Soviet managers to increase factor productivity, other than diverting investment to R&D.

Factor productivity should remain constant or increase with increases in factor inputs, such as labor, capital, and land. If joint factor productivity decreases as gross investment or factor inputs increase, one expects greater problems in economic performance. Because declining joint factor productivity is a warning sign of future economic trouble, leaders of a country whose factor productivity is decreasing are wise to pursue measures to remediate this development.

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consumer sector of the economy. On this issue see also Skurski (1981: 260-264).

In tracking the performance of joint factor productivity, one conjectures, as suggested earlier, that if policymakers are dealing with significant economic constraints, it is unlikely that they would seek to invest heavily in defense or to pursue an expensive force posture. For countries with a basic nuclear capability, an "expensive" force posture would signify conventionally oriented armed forces.l Procurement of nuclear weapons can also proceed at a rate that would entail significant constraints for other sectors of the economy, but, again, conventional forces are more costly over time to procure and maintain.

Methodology, Data, and Approach

To examine the relationship of economic developments to decisions on military doctrine, in this chapter I will trace the development in Soviet economic policy along the indicators I have mentioned above, and, along the way, try to explain some of the political and economic background to the changes I note.m In a concluding section I will

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lSuch would also be the case for a full-scale nuclear development program that would have to start from only the initial R&D stages. Since the Soviet Union was well on the way to developing a nuclear capability by the time this study begins, the "full-scale-development- from-basic-R&D" condition is not relevant for the main hypotheses.

mThe purpose of this chapter is not to present a detailed economic history of the post-war Soviet Union, but rather to examine a series of factors important for defense decisionmaking. For economic histories, one may

summarize the implications for the assessment of these trends for developments in doctrine during the period. I will also offer comments about what the economic developments of the first three post-war decades might suggest to policymakers about implications of how tradeoffs in allocation preferences among the various sectors could affect defense spending decisions in the future.

There has been much debate in the West about the best ways to assess the tradeoffs between the civilian and military sectors in the Soviet Union and the subsequent burden that defense spending creates for the Soviet economy. Rush Greenslade, for nearly three decades one of the foremost Western analysts of Soviet military spending, assessed the tradeoff problem thusly:

Rubles, dollars
Computer, collars,

Engineers, chemists,
Male or femist,

Capital and labor
For plough or saber,

Opportunity cost,
Steel capacity lost;

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turn to Byrne (1970), Breslauer (1983), Maddock (1988), Munting (1982), and Nove (1975, 1977). Jones (1987) provides a useful military economic history of Russia and the Soviet Union from the nineteenth through the early twentieth centuries.

> We'd choose a measure if we knew how!
> Burden, burden, who's got the burden now?
> (Cited in Becker, 1979: 354)

Because the focus of this paper is on the long-term relationship of economics to doctrine change, I will be able to ignore some of the problems associated with fine-tuning the short-term implications of defense spending on the civilian economy. These problems include valuing Soviet defense expenditures in U.S. dollars, estimating military production capacity and production costs for the Soviets, etc. At the same time, it is still important to note that these longer-term developments are rooted into a complex set of domestic economic interrelationships.n

Before reviewing and assessing the series data on economic performance, a few comments need to be made about the methodology, data and the approach used for this investigation. First, while data on various aspects of the Soviet economy is available in the annual publication Narodnoye Khozyaystvo 19--, I will take my data from Western revisions of the Narkhoz figures, specifically those revisions prepared on a regular basis for the Joint Economic Committee of the U.S. Congress by the Central

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nSee Tables 6-7 for estimates of Soviet defense spending. For the "defense spending" category of Tables 5.2 and 5.3, I use a series of high and low estimates as developed for the CIA to cover the probable range of annual military expenditure.

Intelligence Agency. Soviet economic data, while useful to investigate many aspects of the Soviet civilian economy, has several flaws that need to be mentioned here. (Soviet data is nearly useless to assess defense spending.)

One problem is that the Soviet accounting term "net material product," frequently used in Narkhoz, does not reflect the contribution of services or depreciation, and the Soviets do not provide an explicit methodology as to how they collect data for this accounting category. In addition, the Soviet data, reported in constant prices, is subject to major distortions, in part on account of the overstatement of sectoral output and input because of the turnover tax included for industrial goods. The CIA estimates take these concerns into account and are explicit about how this data is aggregated. The CIA data is based, not on stated prices, but on factor costs estimated with input-output tables constructed for the Soviet economy (Pitzer, 1980; Converse, 1980; Severin and Hughes, 1980).

Next, as suggested earlier, the most reliable, consistent, and extensive data on the Soviet economy has been developed by the U.S. Central Intelligence Agency, and except where noted otherwise, the information in the following figures is taken from the 1982 volume USSR:

Measures of Economic Development, 1950-1982. The data in this volume are based on 1970 factor-cost prices based on 1970 input-output tables, and monetary values are expressed in 1970 rubles. Earlier reports produced by CIA analysts, even as far back as the early 1960s, only report data beginning with 1950s, so the conclusions I will draw are essentially based on a time frame that starts in the 1950s.

Data before this period do exist (see, e.g., Bergson, 1961 and Clarke, 1972), but there are two main problems with it. One is that this data is incomplete. For example, Bergson for the 1940s reports information for only four years (1940, 1944, 1948, and 1949). The other problem is that where it overlaps with the CIA data, there is only rough compatibility (cf. Table 5.1 for the late 1940s and Tables 5.2-5.4 for subsequent years). There are often even marked discrepancies in the directionality and amount of change year to year listed for similar accounting categories in volumes by different authors, not to mention discrepancies in the actual basic ruble or dollar values for any single category.

Overall, however, the lack of data for the second half of the 1940s is not too problematic, as it is well-known that the Soviets, in the wake of World War II, were principally concerned with reconstruction of industry,

agriculture, and housing (see Block, 1976: 251-253). Table 5.1 provides data based on Soviet sources that can serve as a rough background for budgetary trends more thoroughly investigated in the CIA analyses.

Another point about the analysis in this chapter is that since the data covers basically only 35 years, statistical assessment through an interrupted time series design is not feasible. It would be nice to be able to check the reported series for statistical dissimilarity around the change points noted earlier in doctrine, but at least 30 years of data are needed before and after the change points to employ statistical analysis that would yield useful results (McCain and McCleary, 1979: 235n).o

Last is the question of lags between economic trends and their impact on decisionmaking. Soviet political and military leaders, particularly the former, would certainly be aware of the country's economic performance on an ongoing basis. Annual performance in comparison with plan figures is usually tabulated, and officials often discuss these in journals, newspapers, and in speeches at Party plenums and congresses and Supreme Soviet sessions.

Much of this information, however, is aggregated and interpreted by the leadership in preparation for the five-

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oFor further discussion of the role of regression analysis in quasi-experiments. see McCain and McCleary (1979) and McDowall, McCleary, Meidinger, and Hay (1980).

year plan, which normally falls on the decade and half decade. It seems a reasonable assumption to make that the most likely occasion for data on economic performance to have a significant effect on policymakers is while the current five-year plan's performance is being interpreted for the next five year program. At that time, projections would be made about military procurement levels, new technology research to be funded, etc.

The development of military doctrine and strategy is an on-going process operating on its own schedule, and its changes are obviously not a function of the five-year plan. At the same time, it is with the five-year plan that political leaders are likely to implement changes in defense spending and other accounts relevant to defense issues and production. Therefore it makes sense, in assessing the likely impact of economic conditions on military strategy, to investigate the trends in the Soviet economy by five-year periods. That is, I will assume a lag of up to five years in connecting economic developments and military planning. Economic constraints can affect military doctrine decisions at a variety of time, but these constraints are probably most recognizable

to military planners at the opening and closing of the five-year plans.p

In this chapter, then, while I will trace various economic series over the whole time frame (1946-1975), I will focus my evaluation of trends in five-year periods basically coterminous with the five-year cycle. I will examine the economic developments of these periods seriatim and offer speculation as to what Soviet planners may have been thinking about future economic objectives and how those objectives would fit with military posture and doctrine.

Five-Year Cycles, 1951-1975

1951-1955

From economic data from the early 1950s, Soviet planners, as they prepared and executed the Fifth Five-Year Plan, clearly wanted to maintain the growth that they had supported in the years after the end of World War II. In the latter half of the 1940s, investment grew an average of 17.5% while industrial production grew at a strong 14.7%. Agricultural production grew at a strong rate (except for 1949 and 1950), as did support for the consumer sector. In the early 1950s, investment continued strongly in industry, agriculture, and housing. Soviet

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pSee Ninic (1983) on defense spending and the planning cycle.

GNP during the early 1950s grew at an average of 5.5% a year (Pitzer 1982: 20, 65-71; Cohn, 1970: 170; see Tables 5.1-5.3).q

This rate of growth was fairly substantial, but it was similar to those of the OECD countries during the same period which, like the Soviet Union, either had experienced much destruction on account of the war (West Germany, France, the Netherlands, Japan) or were still in the process of political development and industrial modernization (Turkey) (see Table 8; Pitzer, 1982: 20). During this period, investmentr grew an average of 12.7% per year and industrial productions grew at an average

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qThe GNP growth rate had been even higher during the late 1940s (see Bergson, 1961: 300-301).

rInvestment (an end-use GNP sector) covers new fixed investment for machines, equipment, construction, and additions to livestock, as well as capital repairs (Pitzer, 1982: 47-48).

sIndustrial production (a GNP sector of origin) includes ferrous and non-ferrous metals, fuel, electric power, machinery, chemicals, wood and paper, construction materials, and light and food industries (Pitzer 1982: 48-49).

annual rate of 10.2%. Agricultural productiont grew at 3.5% per year and consumptionu at 4.9%.

Factor productivity (see Tables 1, 5.1) grew moderately during this time, averaging 1.4% for overall GNP and 3.6% for industry. Inputs to GNP as well as to industry, however, were growing at an average of two to three times that of the corresponding productivity ratios. In terms of capital inputs, growth in factor productivity was negative for both GNP and industry (Greenslade, 1976: 279). While industrial growth was only slightly behind investment growth during this period (10.2% vs. 12.7%), productivity was probably of some concern to the leadership at this point. Defense spending during this time was growing at about the same rate as GNP, within a range of 2.6% to 6.4% per annum (Cohn, 1970: 10; Pitzer 1982: 23).v

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tAs mentioned earlier agriculture is a continual problem for the Soviet Union. Agricultural production, as a fraction of GNP by origin, regularly varies three times as much as it does in the United States, and it can cause swings of a percentage point or more in annual GNP (Pitzer, 1982: 15-17).

uConsumption here includes durable goods, non-durables (primarily food products), and services (Pitzer, 1982: 46-47).

vBecause of the difficulties in estimating defense spending, throughout the paper I will report a range of expenditures, drawn from a "high" and a "low" series reported by Pitzer (1982: 123). Defense spending growth during the 1950-1955 period has been reasonably argued as a response to the conflict in Korea (Cohn, 1970: 167-168).

Given what the investment patterns indicated for the 1950s as well as the evidence from the previous two decades, it is clear that the Soviets wanted to continue industrial growth but also improve the availability of consumer goods and services (see Tables 5.1-5.3). Agricultural investment had been somewhat unstable during this period (especially for 1953 and 1955), and there was a concern for improving this sector as well.w In addition to these choices, there was also the problem with factor productivity, which one imagines the Soviets would have wanted to improve by a combination of steps such as increasing consumer goods and devoting more investment to R&D.x Indeed, for the next five years, the consumer sector as an end use for GNP grew by 5.7% per year during this period (vs. 4.9% for the previous five years), and investment in R&D grew by 12.5% (vs. 7.6% for the previous period) (Pitzer, 1982: 65-71). Given the Soviets' continual interest in a strong military as well as the budget limitation (assuming the Soviets wanted to maintain or improve the GNP growth rate), one expects that

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wThis concern was, in part, later manifested in Khrushchev's Virgin Lands scheme, an effort primarily directed at getting the Central Asian republics to grow more wheat so that farms in the Western USSR could be used for feed grains.

xSee Bornstein (1981) on the issue of tradeoffs between defense spending and factor productivity in the USSR.

the leadership's economic preferences would have pointed toward improving the military by the most cost-effective means. Given the availability of nuclear weapons by this point in time, one expects that this option was appealing to the Soviets and that they chose it in part because of its ramifications for the domestic economic situation.

The 1956-1960 Period

As suggested above, the Soviets, by the end of the Sixth Five-Year Plan (1960), had been successful in achieving growth in most of the areas where they sought it. GNP grew (by 5.9% per annum); industrial production grew, though not quite as strongly as in the previous five years (8.3% vs. 10.2%); construction grew at a higher rate, as did agriculture (even with its usual fluctuations (see Tables 4.2 and 4.3). Factor productivity grew for GNP, a very positive sign, but it dropped some for industry. More importantly, though, the production growth rate of inputs to productivity dropped for both GNP and for industry during this period, which further demonstrated an improvement in production efficiency. As one might have expected, military spending dropped (within a range of -1.42% to -.72% by 1960). Growth in industry trailed investment by about two points (8.3% to 10.6%).

It seems, generally speaking, that the combination of inputs to the economic process developed for the Sixth

Five-Year Plan worked reasonably well, particularly with regard to GNP growth and factor productivity. Agriculture did not grow as fast as investment in agriculture, but that growth was still more than had been registered the previous period. Growth in allocations to the consumer sector was strong during the Sixth Five-Year Plan.

Regarding military spending, it seems that 1960 could have been a year when decisionmakers might have been willing to incur the expense of making significant additions to the Soviet Union's conventional posture during the next five-year plan. In taking such a decision, planners would not have wanted to put off track the general improvement of the economy, which had been making strong progress along a number of important indicators. However, the economy could arguably have borne a higher level of spending on defense than it had during the previous period without jeopardizing other areas of the economy. As matters turned out, there was a sharp rise in defense spending during this period, though the procurements undertaken were for nuclear weapons. As indicated in the following section, the reverse actually occurred.

The 1961-1965 Period

Compared with the economic improvements of the 1950s, the indicators for 1960-1965 show a significantly

different picture. During this period, average annual GNP growth dropped by 15% (to a level of 5.0% per year), and this decrease was reflected in other important indicators. The years 1962 and especially 1963 were bad ones for agriculture (and consequently for GNP growth), and although the situation had improved and stabilized in 1964 and 1965, the drop in those earlier years had been precipitous. Industrial growth in the 1960-1965 period had continued fairly steadily at 6%-7%, in spite of a significant drop in investment in 1963. However, there were sharp drops in factor productivity for both industry and GNP, and not only did these values decrease from the 1955-1960 averages, but inputs during 1960-1965 for both GNP and industry grew at a higher rate, than during 1955-1960. This development increased the input-to-productivity ratio markedly. Average annual consumption grew by 40% less and average annual investment by 24% less, in comparison with the previous five years.

Apart from the agricultural problems in 1962 and 1963, the poorer performance along these indicators was no doubt affected by the increase in military spending, which (for either the high or low series) grew at a faster rate than GNP for most of this period. As I will note in Chapter Nine, some of this military growth was tied to the ballistic missile R&D and procurement program, while

another important part was a Soviet reaction to the Kennedy defense budget (Tyushkevich, 1980: 411-412; see also Morozov, 1967: 7).y

As planners were considering the extent and duration of current trends in military spending into the next five-year period, one would surmise that they gave some thought to reducing the level of military expenditures on account of the poor economic performance. One would think that although the economy had stabilized somewhat in 1964 and 1965, Soviet leaders may have seen a need for consolidating that stability. Factor productivity had dropped significantly during this period, as had investment in the consumer and R&D sectors (two accounts that theoretically could increase productivity). Consequently, measures to improve this indicator may have seemed important to pursue for the benefit of the economy as a whole.

Therefore, one might have expected restraint in military spending for the next five-year plan. Restraint, as it would relate to the choice of investment in nuclear or conventional weapons, would not suggest the latter.

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yThere is some disagreement about the nature of the increase in the military budget in the early 1960s. Some analysts believe that there was not so much an increase as there was a declaration of movement of defense funds from a hidden part of the budget to the public figure for defense (Cohn, 1970: 168).

Even given the traditionally strong support for the military, one would expect that planners at this juncture would 1) not continue to channel resources into a heavy military procurement program and 2) would invest in sectors of the economy to improve agriculture and factor productivity. One might argue that avoiding a heavy procurement program for the upcoming five-year period would logically point toward supporting a nuclear-oriented posture rather than a conventional one. More specifically, the conjecture would be that economic constraints would lead to a reduction in the growth of military spending for the Eighth Five-Year Plan (1965-1970) and that there would be a greater focus on nuclear rather than conventional doctrine and procurement.

The 1966-1970 Period

Over the next five years, Soviet leaders were successful in mitigating some of these negative trends. GNP grew somewhat, agriculture improved and was stable, industrial production dropped only slightly, and consumption grew. Industrial growth even slightly exceeded growth in investment instead of trailing it by the usual 2%.

These trends were generally reflected in factor productivity, which grew by 67% for GNP and over 100% for industry. With such growth, the inputs-to-productivity

ratio dropped significantly. R&D expenditures dropped by about 30% during this period, which is unfortunate given its beneficial effect on GNP. Defense spending did decrease some (by 40% or 47%, depending on the defense spending series one uses), but was increasingly only a little less slowly than GNP. Cumulatively, these indicators by 1970 indicate some leeway was possible for defense spending, but not an extensive amount. Economic performance needed to be stabilized and improved, so a heavy military investment program for the Ninth Five-Year Plan would not have seemed a likely option. Consequently, a stronger emphasis on nuclear than conventional forces wold have been expected.

Defense spending growth did continue strongly during this period, though a little slower than for the previous period. From available information on procurement trends, this spending not only continued a fairly substantial levels but was heavily focused on conventional weapons procurement.

The 1971-1975 Period

Economic problems seemed to continue unabated in the Ninth Five-Year Plan. While defense spending did drop in the next period (to an amount between 4.2% to 4.7%), factor productivity dropped strongly, as did the ratio of factor inputs to productivity, industrial production, and

consumption. The growth of agriculture was substantially negative, owing to bad harvests in four of the five years. As the 1970-1975 period developed, it seemed as if the USSR would continue to face major economic constraints and that its leaders might not be disposed to spend a large amount on the military--that a significant interest in a defense procurement would focus on nuclear weapons but only modestly on procurement.

Conclusions

The relationship of economic trends to military doctrine will be examined in Chapter Ten. Some preliminary conclusions can nevertheless be drawn here about trends in the indicators chosen for this variable, especially about how trends in the development of the civilian economy relate to trends in defense spending. Aspects of the individual periods noted in Tables 5.1-5.4 are summarized in Table 5.5.

First, the Soviets have continued their strong investment in industry and agriculture since World War II, except for the post-1970 period, when economic problems have seriously affected economic performance and productivity, thus leading to a cutback in investment levels. These allocation trends have been consistent in spite of the general drop in factor productivity from 1945-1975. These trends have also been consistent in

spite of the arguably better choices that could have been made in the pre-1975 five-year plans to channel more of those funds to consumer products and R&D to ameliorate the fairly strong decline in factor productivity. In the Sixth Five-Year Plan (1956-1960), investment in consumer goods and R&D were increased, and factor productivity made reasonable progress.z Factor productivity also improved in the Eighth Five-Year Plan, when consumer investment was also increased (though not R&D allocations).

Purely in economic terms, defense spending decisions for the Sixth Five-Year Plan made sense, as did those for the Seventh. However, as economic problems became significant in the Seventh Five-Year Plan, one would have expected Soviet planners in the Eighth Five-Year Plan to cut back significantly on defense and channel funds to help factor productivity. One would make the same supposition for the Ninth Five Year Plan. The Soviets, however, did not follow this course. Defense spending continued strongly, though dropping a little, and declining factor productivity could arguably have been

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zSome of the benefit of R&D funding for factor productivity would appear in the next five-year plan, but it would be difficult to evaluate its effect.

attributed in part to the continued strong investment in defense.aa

The Soviets have a strong and consistent set of defense priorities. Even taking these priorities into account, the Soviets did not make some of the adjustments in allocation decisions one would have expected to keep the economy running smoothly. The fact that these decisions were not made as expected suggests that defense allocation decisions are often driven by factors other than domestic economic performance and productivity.

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aaThe fact that these trends continued into the late 1970s adds weight to the supposition.

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APPENDIX

Table 5.1: Soviet Factor Productivity Trends

U.S.S.R.: AVERAGE ANNUAL RATES OF GROWTH OF TOTAL GNP PRODUCTION, FACTOR INPUTS, AND FACTOR PRODUCTIVITY, 1951–75[1]

[Percent]

	1951–55	1956–60	1961–65	1966–70	1971–75
Total GNP	6.0	5.8	5.0	5.5	3.8
Inputs:					
Labor (man-hours), capital, and land [2]	4.5	3.9	4.1	3.9	4.1
Man-hours	1.9	.6	1.6	2.0	1.9
Capital	9.0	9.8	8.7	7.5	7.9
Land	4.0	1.3	.6	−.3	.9
Factor productivity:					
Labor (man-hours), capital, and land	1.4	1.8	.9	1.5	−.2
Man-hours	4.6	5.1	3.4	3.4	1.8
Capital	−2.7	−3.6	−3.3	−1.9	−3.8
Land	1.9	4.4	4.4	5.8	2.9

[1] The GNP growth rates are taken from table 4 (including weapons.)
[2] Inputs have been combined using a Cobb-Douglas (linearly homogeneous) production function with weights of 60.2, 36.7, and 3.1 percent for labor, capital, and land, respectively.

U.S.S.R.: AVERAGE ANNUAL RATES OF GROWTH OF INDUSTRIAL PRODUCTION, FACTOR INPUTS, AND FACTOR PRODUCTIVITY, 1951–75

[Percent]

	1951–55	1956–60	1961–65	1966–70	1971–75
Total industrial production	11.3	8.7	7.0	6.8	6.0
Inputs:					
Labor (man-hours) and capital [1]	7.4	5.3	6.4	5.5	4.5
Man-hours	4.2	1.1	2.9	3.1	1.5
Capital	12.0	11.3	11.2	8.7	8.7
Factor productivity:					
Labor (man-hours) and capital	3.6	3.2	.6	1.3	1.5
Man-hours	6.9	7.6	4.0	3.6	4.5
Capital	−.6	−2.3	−3.8	−1.8	−2.4

[1] Inputs have been combined using a Cobb-Douglas (linearly homogenous) production function with weights of 57 and 43 percent for labor and capital respectively.

Source: Greenslade (1976: 279)

Table 5.2: Global Factor Productivity

COMPARATIVE RATES OF INCREASE IN FACTOR INPUTS[a] (ANNUAL AVERAGES)

	U.S.S.R.	Japan	Northwest Europe	U.S.A.	France	Germany	Italy	United Kingdom
Total Factor Input	3.99	4.2	1.67	1.71	1.20	2.71	1.65	1.16
Labor	2.13	1.9	1.08	1.42	0.58	1.84	1.32	0.77
Employment	1.80	1.5	0.93	1.14	0.11	2.00	0.56	0.65
Hours of work	−0.68	−0.1	−0.18	−0.21	−0.03	−0.36	0.07	−0.19
Age-sex composition	0.06	0.3	0.04	−0.13	0.13	0.05	0.13	−0.05
Education	0.99	0.2	0.30	0.62	0.37	0.15	0.55	0.37
Capital[b]	8.90	10.5	4.53	3.58	4.17	6.37	3.50	3.35
Non-residential fixed	9.57	9.6	4.55	3.74	3.99	6.17	3.78	3.58
Inventories	7.06	12.4	4.47	3.00	4.77	7.05	2.66	2.56
Land	1.74	0.0	0.00	0.00	0.00	0.00	0.00	0.00
Output per Unit of Input	1.70	5.5	3.04	1.36	3.65	4.43	4.25	1.18

[a] Years of coverage: U.S.S.R.: 1950–70. Japan: 1955–68. United States and Northwest Europe: 1950–62.
[b] Housing stock excluded.
Sources: U.S.S.R.: See appendix note, and appendix "Sources of Estimates." Japan: Kanamori [10], p. 158. United States and Northwest Europe: Denison [7], p. 190.

Source: Cohn (1976: 52)

Table 5.3: Factor Productivity, Selected Countries

RATES OF INCREASE IN PRODUCTIVITY OF CAPITAL AND LABOR AND THE CAPITAL-LABOR RATIO (ANNUAL AVERAGE RATES)

	Labor Productivity[a]	Capital Productivity[b]	Total Productivity[c]	Capital-Labor Ratio[d]
U.S.S.R.	3.5	−2.6	1.6	6.4
Japan	8.0	−2.4	5.5	8.4
Northwest Europe	3.7	0.3	3.0	3.4
United States	1.9	−0.3	1.4	2.1

[a]Rate of increase in national income ÷ rate of increase in labor input.
[b]Rate of increase in national income ÷ rate of increase in capital input.
[c]Rate of increase in national income ÷ rate of increase in combined inputs.
[d]Rate of increase in capital input ÷ rate of increase in labor input.

Source: Cohn (1976: 56)

Table 5.4: Soviet Growth Rates and Contributions

U.S.S.R.: PERIOD GROWTH SOURCES AND CONTRIBUTIONS

	Growth Rates		Growth Contributions	
Sources	1950–62	1962–70	1950–62	1962–70
National Income	6.03	5.37	N.A.	N.A.
Total Factor Inputs	4.35	3.69	4.25	3.70
Labor	2.43	1.80	1.63	1.20
Employment	1.63	2.06	1.09	1.38
Education	1.19	0.71	0.80	0.47
Hours of work	−0.55	−0.87	−0.37	−0.58
Age-sex composition	0.16	−0.10	0.11	0.07
Capital	8.78	8.40	2.61	2.50
Output per Unit of Input	1.73	1.67	1.78	1.67

Source: Cohn (1976: 57)

Table 5.5.1: Annual Growth Rates of Selected Accounts (in percent, based on 1940 ruble values)a

Year Account	'46	'47	'48	'49	'50	'51	'52	'53	'54	'55
NMPb	-6.0	NA	NA	NA	20.6	12.2	10.9	9.8	12.1	12.0
Investmentc	19.7	8.5	21.2	22.3	15.9	11.3	12.3	5.0	16.8	10.3
Indus. Prod. (Producer goods)	-16.3	20.8	26.9	19.5	22.7	16.8	11.4	12.0	13.1	12.3
Agriculture by origin	13.3	27.9	11.5	2.1	0.0	-6.1	8.6	3.0	4.8	11.0
Consumption Goodsd	13.6	22.3	20.7	8.1	15.0	16.3	10.5	12.0	13.0	8.5

	Average Annual Growth Rates (in percent) 1946-1950	1951-1955e
NMP	NA	11.4
Investment	17.5	11.1
Indus. Prod.	14.7	13.1
Agriculture	11.0	4.3
Consumption	16.0	12.1

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aData for this table is based on Clarke, 1972: 6, 9, 11, 13. Soviet sources on which Clarke bases his data are Bol'shaya Sovietskaya Entsiklopediya, 2nd ed, Istoriya Velikoy otechestvennoy voiny, 1941-45, Narodnoye Khozyaystvo, Sel'skoye Khozyaystvo SSSR, and Kapital'noye stroitel'stvo v SSSR.

b"Net Material Product" does not include services.

cBased on 1955 rubles. This accounting category here includes investment for state farms but not for collective farms (Clarke, 1972: 12).

dClarke's table lists simply "Production of Consumer Goods," so it seems reasonable to treat this category as an end-use account.

eThis column is presented only to provide some comparison between the data in this table that in the CIA tables.

Table 5.5.2: Average Annual Growth Rates of Selected Accounts (in percent, based on 1970 ruble values for individual years)a

Period / Account	1951-55	1956-60	1961-65
GNP	up well (5.5)	up less (5.0)	constant (5.0)
GNP per cap.	up some (1.7)	up some (1.8)	up less (1.5)
Investment	up strongly (13.7)	up strongly (10.6)	uneven (8.0)
Indus. prod.	up strongly (10.2)	up less (8.3)	up less (6.3)
Total Consumpt.b	up some (4.9)	up moderately (5.7)	up less (3.9)
Agriculturec			
as origin	up some (3.5)	uneven (4.2)	uneven (2.8)
as end use	declines much (-4.5)	up strongly (9.7)	down (-1.3)
Factor prod. of which:			
GNP	up slowly (1.4)	up slowly (1.8)	down (-.9)
GNP inputs	up well (4.5)	up less (3.9)	up more (4.1)
Industry	up well (3.6)	up less (3.2)	slower (0.6)
Indus. inputs	up strongly (7.4)	up moderately (5.3)	up more (6.4)
R&D invest.	up moderately (7.6)	up strongly (12.0)	up less (9.0)
Defensed	up some (2.6-6.4)	down (-1.4--.7)	up strongly (6.8-8.8)

	1966-70	1971-75	(1976-80)
GNP	constant (5.0)	up less (3.7)	up less (2.7)
GNP per cap.	up less (1.0)	up less (0.9)	up less (0.8)
Investment	uneven (6.0)	up less (5.4)	up less (4.3)
Indus. prod.	up less (6.3)	up less (5.9)	up less (3.4)
Total Consumpt.	up more (5.3)	up less (3.5)	up less (2.6)

aData for this table is based on Pitzer, 1982: 55, 68, 72-73, 123, except for the factor productivity data, which is based on Greenslade, 1979: 279. Greenslade uses the same basic data series as Pitzer. Values assigned to trends compare the growth rate in that period with the growth rate in the previous period.

bConstitutes allocations to both goods and services.

cOrigin signifies actual production; end use signifies investment allocated to the sector.

dThe first number in each pair is the five-year average for the "high" series; the second number is the five-year average for the "low" series.

Table 5.5.2 (continued)

Period Account	1966-70	1971-75	1976-80
Agriculture			
as origin	up some (3.5)	uneven (-2.3)	uneven (.3)
as end use	uneven (4.8)	stronger (4.8)	up more (5.4)
Factor prod. of which:			
GNP	up some (1.5)	down (-.2)	
GNP inputs	up less (3.9)	up more (4.1)	
Industry	up more (1.3)	up more (1.5)	
Indus. inputs	up less (5.4)	up less (4.5)	
R&D invest.	up less (6.7)	up less (6.0)	up less (3.2)
Defense	up less (4.3-4.7)	moderate (4.2-3.8)	moderate (4.3-3.2)

Table 5.5.3: Annual Growth Rates of Selected Accounts (in percent, based on 1970 ruble values)a

Year Account	'51	'52	'53	'54	'55	'56	'57	'58	'59	'60
GNP	3.1	5.9	5.2	4.7	8.6	8.4	3.8	7.6	5.8	4.0
Invest.	18.9	0.3	15.5	7.5	21.2	13.8	11.8	11.0	11.0	5.3
Indus. prod.	12.2	8.5	9.1	10.1	11.0	8.2	7.7	9.0	9.3	7.2
Agriculture										
by origin	-8.0	5.1	6.0	2.0	13.3	14.7	-1.5	8.4	2.1	-2.0
by end use	8.4	7.5	-8.5	3.7	-27.9	9.0	-4.1	18.7	5.5	21.5
Consumptionb										
Total	0.7	6.0	6.7	5.6	5.6	4.7	6.9	7.0	4.5	5.3
Goods	-0.7	7.5	8.4	5.9	5.7	5.4	8.3	7.9	3.9	5.1
Services	3.1	3.6	3.7	4.9	5.4	3.5	4.3	5.4	5.8	5.5
Non-durables	16.1	7.7	10.2	9.5	8.2	9.3	5.6	7.7	9.0	5.2
R&D invest.	9.9	8.2	5.0	5.3	9.0	17.2	10.8	13.3	10.9	14.4
Defense										
High series	n.a.	0.0	-9.1	3.3	16.1	-5.5	-11.8	0.0	3.3	6.9
Low series	n.a.	5.3	-5.0	5.3	20.0	-4.2	-8.7	4.8	0.0	4.5

	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70
GNP	5.6	3.8	-1.1	11.0	6.3	5.1	4.6	6.0	2.9	7.7
Invest.	11.2	4.1	-7.7	23.3	9.3	0.9	3.7	6.5	6.4	12.7
Indus. prod.	6.7	7.4	6.0	6.4	6.5	5.6	6.9	6.5	5.4	7.0
Agriculture										
by origin	6.9	-3.0	-20.8	32.1	5.8	4.0	-1.6	6.3	-4.4	14.4
by end use	-9.7	-1.4	-1.4	3.7	2.9	5.9	9.4	7.5	1.5	-0.1
Consumption										
Total	2.9	4.0	4.7	1.4	5.4	5.5	5.8	6.0	4.8	4.6
Goods	1.8	3.3	4.5	-0.9	5.4	5.9	6.4	6.7	5.2	4.8
Services	4.8	5.3	5.1	5.5	5.3	4.8	4.7	4.9	4.1	4.2
Non-durables	5.5	4.9	2.9	4.2	6.8	5.8	7.8	6.7	6.0	6.0
R&D invest.	11.8	11.1	7.9	8.8	5.4	6.6	4.2	6.9	6.9	8.7

aData for this table is based on Pitzer, 1982: 55, 68, 72-73, 123, except for the factor productivity data, which is based on Greenslade, 1979: 279. Greenslade uses the same basic data series as Pitzer.

b"Total" is the total yearly allocation to the entire consumer sector. "Goods" includes both food and consumer durables. "Non-durables" are primarily food products.

Table 5.5.3 (continued)

Account \ Year	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70
Defense										
High series	9.7	1.7	2.6	7.7	2.4	2.3	6.8	6.4	4.0	1.9
Low series	13.0	11.5	6.9	9.7	2.9	2.9	8.3	7.7	2.9	2.3

	'71	'72	'73	'74	'75	'76	'77	'78	'79	'80
GNP	3.9	1.9	7.3	3.9	1.7	4.8	3.2	3.4	0.8	1.4
Invest.	4.8	4.2	9.2	6.6	2.2	8.0	5.1	3.7	1.7	3.0
Indus. prod.	6.1	5.0	5.8	6.5	6.2	3.9	4.0	3.5	3.0	2.9
Agriculture										
by origin	-1.7	-8.5	16.7	-2.2	-13.3	11.4	3.5	3.5	-8.3	-7.3
by end use	6.8	4.5	4.0	4.1	4.6	9.1	2.3	6.2	3.9	5.6
Consumption										
Total	3.6	2.4	4.1	3.7	3.9	2.3	2.9	2.9	2.8	2.3
Goods	3.6	1.9	4.5	3.7	4.2	1.8	3.2	2.6	2.7	1.9
Services	3.6	3.3	3.4	3.8	3.6	3.1	2.3	3.4	3.0	2.9
Non-durables	3.4	2.1	1.7	5.5	4.1	1.2	3.3	0.6	2.6	0.1
R&D invest.	6.7	7.4	6.8	4.4	4.9	1.4	2.6	2.5	4.3	4.3
Defense										
High series	1.9	3.7	3.6	6.9	4.8	6.2	1.4	4.3	4.2	5.3
Low series	2.3	2.2	4.3	6.2	3.9	5.7	0.0	1.8	3.5	5.1

Table 5.5.4: Average Annual Growth Indices for Selected Accounts Not Included in Table 5.3 (in percent, based on 1970 ruble values)

Account \ Period	1950-55	1956-60	1961-65	1966-70	1970-75	(1976-80)
Disposable Income[a]	9.0	4.3	4.7	5.4	3.2	
Consumer Non-durable Investment[b]	10.3	7.4	4.8	6.4	3.4	1.6
Consumer Services[c]	4.2	4.9	5.2	4.5	3.5	3.0
Construction Investment[d]	11.6	9.7	5.1	6.4	5.1	1.7

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aFrom Schroeder and Severin, 1976: 631.

bFrom Converse, 1982: 195.

cFrom Pitzer, 1982: 68.

dFrom Pitzer, 1982: 68.

Table 5.5.5: General Summary of Tables 5.1-5.4 for the Issue of Force Posture Orientation[a]

Period	Evaluation
1946-1955	No major economic constraints, except for the usual problems with agriculture, that would have affected continued reliance on a conventionally oriented posture; growth is strong among virtually all indicators.
1956-1965	No significant constraints in the first part of the period, except that GNP growth declines, as does factor productivity. By second half of the period, noteworthy problems have developed with agriculture, overall investment, and factor productivity; consumption has been uneven, and R&D investment has dropped. Economic conditions would suggest a move to a less costly military posture.
1966-1975	In first part of period, most accounting categories show uneven, though moderate, growth; agriculture fluctuates significantly and consumption drops; R&D drops as do some aspects of productivity; arguably the constraints that appeared in the 1961-1965 period have not abated, suggesting a less expensive military posture would still be wise. In second half, performance falls off in almost all categories; GNP per capita is low, and agriculture and factor productivity are negative for the first time since World War II. These trends should suggest more reliance on a less expensive, nuclear force posture.

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aThis table is primarily based on Table 5.2. I offer overall assessments here, based largely on GNP, Factor Productivity, and R&D investment, is my own interpretation of the implications of Table 5.2 for the conventional/nuclear issue. Some may find other accounts more useful in determining the extent of budgetary constraints on military investment. One must note that in providing these overall assessments, no attempt is made to suggest a mimimum average growth rate below which a decisionmaker would invariably prefer a nuclear to a conventional posture. Furthermore, no attempt is made to suggest what the "appropriate" ratio of defense spending to GNP should be.

Table 5.6: Soviet Defense Spending Estimates

Soviet Military Expenditure, Various Estimates, 1955–1983
(billion rubles)

	Soviet Official Defense	*1979 SIPRI*	*1980s SIPRI*	*Lee Current Prices*	*Lee 1970 Prices*[b]	*Rosefielde 1970 Prices*	*DIA Reconstructed Current Prices*	*CIA 1970 Prices*
		current prices						
1955	10.7		23.3	14.0				30
1956	9.7			12.5				29
1957	9.1			12.5				26
1958	9.4	17.0		13.5(14.0)				26
1959	9.4	18.4		15.0				26
1960	9.3	18.3	21.8	16.0(16.5)		14.3(22.5)		27
1961	11.6	22.8		18.5		15.5		30
1962	12.6	24.9		21.0		16.9		34
1963	13.9	27.3		23.0		18.3		35
1964	13.3	26.1		24.5		19.8		38
1965	12.8	25.1	30.0	26.0(26.5)		21.7		39
1966	13.4	26.3		28.0	29.2	23.7		40
1967	14.5	28.5		32.5	33.0	26		43
1968	16.7	32.4		38.5(41.0)	38.5	28.7		46
1969	17.7	34.6		42.0	42.2	31.6		48
1970	17.9	35.2	42.0	46.0(49.0)	46.5	43.5	50	49
1971	17.9	35.7	42.7		52.0	46.7	53	50
1972	17.9	36.3	43.3		56.5	50.2	56	51
1973	17.9	36.9	44.0		63.5	55	60	53
1974	17.7	37.4	44.7		69.0	59.7	64	57
1975	17.4	38.0	45.4	71.5[a]	77.0	64.7	70	59
1976	17.4	38.5	46.0		83.5	70.5	74	63
1977	17.2	39.1	46.7		89.0	75.4	79	63
1978	17.2	39.7	47.4		98.0	82.5	85	65(64)
1979	17.2		48.0		107.0	91	90	67(66)
1980	17.1		48.7		117.0		96	71(67)
1981	17.1		49.5				100	(68)
1982	17.1		50.2					(70)
1983	17.1							

Sources: Official "defense" 1955–1980: Ministerstvo finansov SSSR, *Gosudarstvennyi biudzhet SSSR i biudzhety soiuznykh respublik*, (Gosfinizdat, 1962); "Finansy" 1966, 1972, 1976; "Finansy i statistika," 1982. 1981–1983. TsSU, *Narodnoe khoziaistvo SSSR v 1983 g.* (Moscow: Finansy i statistika, 1984), p. 547.

SIPRI: 1979: *World Armaments and Disarmament SIPRI Yearbook 1979* (New York: Crane Russak, 1979), pp. 38–39. SIPRI Yearbooks: 1980, p. 25; 1981, p. 102; 1982, p. 146; 1983, p. 167. The 1980 yearbook was published in the United States by Crane Russak, the 1981–1982 Yearbooks by Oelgeschlager, Gunn and Hain in Cambridge, Mass., the 1983 by International Publication Service, Taylor and Francis, New York.

Lee, Current Prices: William T. Lee, *The Estimation of Soviet Defense Expenditures 1955–1975. An Unconventional Approach* (New York: Praeger, 1977), p. 97. These are midpoints of ranges, rounded. The estimates in this source refer to national security expenditures, but in later work Lee reverted to the more conventional term *defense expenditures*. Figures in parentheses are from Lee's submission in *CIA Estimates of Soviet Defense Spending*, Hearings before the Subcommittee on Oversight of the Permanent Select Committee on Intelligence, House of Representatives, Washington, D.C., 1980, p. 21.

Lee, 1970 prices: *CIA Estimates of Soviet Defense Spending*, p. 22. The figures in the table are midpoints of ranges presented in the source.

Rosefielde: Steven Rosefielde, *False Science: Underestimating the Soviet Arms Buildup* (New Brunswick, N.J.: Transaction Books, 1982), p. 186.

CIA: *USSR: Measures of Economic Growth and Development, 1950–80*, Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, (Washington D.C., December 8, 1982), p. 123. The figures are midpoints of ranges presented in the source. The figures in parentheses are my crude estimates of the revised CIA figures, assuming a constant 2 percent per year growth rate. CIA has stated that this was the average annual rate of increase in the late 1970s and early 1980s. *Allocation of Resources in the Soviet Union and China—1983*; Hearings before the Subcommittee on International Trade, Finance, and Security Economics of the Joint Economic Committee, Congress of the United States, pt. 9, Washington, D.C., 1984, p. 230; Statement by Robert Gates, deputy director for intelligence, CIA, on the Allocation of Resources in the Soviet Union and China—1984, before the Subcommittee on International Trade, Finance and Security Economics of the Joint Economic Committee, U.S. Congress, November 21, 1984, pp. 11–12.

DIA reconstructed: DIA's estimates assume "that defense has absorbed a constant share of the state budget since 1970. Based on this assumption and other evidence, Soviet military spending in current rubles rose from about 50 billion in 1970 to roughly 100 billion in 1981 or at a nominal rate of 6 to 7 percent annually." DIA, *USSR: Military Economic Trends and Resource Allocation—1983*, DDB-1900-59-83 (August 1983), p. 12. (This statement is repeated verbatim in the written submission by Major General Schuyler Bissell, deputy director, DIA, in *Allocation of Resources in the Soviet Union and China—1983*, p. 94.) These figures correspond to about a third of state budget expenditure. According to "Soviet Defense Trends: A Staff Study Prepared for the Use of the Subcommittee on International Trade, Finance, and Security Economics of the Joint Economic Committee, Congress of the United States," September 1983, the share is that reported "by knowledgeable sources" for the 1960s and 1970s—31–34 percent. The DIA estimating procedure is therefore taken to be multiplication of state government expenditures by 0.325, with the results rounded to the nearest billion rubles. For total budget expenditures, see the sources already cited for the official defense series.

[a] Projection.

[b] "'. . . as the Soviets reckon constant prices"; however, "R&D estimates are mostly in current prices because a satisfactory method of converting R&D outlays to constant prices is lacking."

Source: Becker (1986: 174-175)

Table 5.7.1: Soviet Military Budget Components and Developments

		1950					1955					1960					1965					1970					1975	1976	1977	1978
1. Soviet defence budget (official figures); bn. of current roubles		8·3	9·3	10·9	10·8	10·0	10·7	9·7	9·1	9·4	9·4	9·3	11·6	12·6	13·9	13·3	12·8	13·4	14·5	16·7	17·7	17·9	17·9	17·9	17·9	17·7	17·4	17·2	17·2	17·2
2. Science allocation in government budget (bn. current roubles)		0·5	0·5	0·6	0·6	0·7	0·8	0·9	1·3	1·7	2·0	2·3	2·7	3·0	3·4	3·9	4·3	4·6	5·0	5·5	5·9	6·5	7·0	7·3	7·5	7·9	7·9	7·9	8·2	8·8
3. Science allocation from all sources (bn. current roubles)												3·9	3·8	4·3	4·7	5·2	6·9	7·5	8·2	9·0	10·0	11·7	13·0	14·4	15·7	16·5	17·4	17·7	18·3	19·3
4. Cohn, total Soviet defence outlays (1955 roubles, billions)	A	7·6	8·5	10·8	10·6	10·1	11·5	10·6	10·6	12·3	12·7	13·2	16·4	20·4	20·6	20·9	22·5	24·7	28·2	30·7										
	B	7·4	8·4	10·9	10·6	9·9	11·1	10·2	10·2	11·1	11·3	11·5	14·4	16·2	17·8	17·8	17·6	18·8	18·8	20·5	23·3									
5. SIPRI (1979) (bn. current roubles)										17·0	18·4	18·3	22·8	24·9	27·3	26·1	25·1	26·3	28·5	32·4	34·6	35·2	35·7	36·3	36·9	37·4	38·0	38·5	39·1	39·7
6. W.T. Lee (bn. current roubles)							13·5} 14·5}	12·0} 13·0}	12·0} 13·0}	13·0} 14·0}	14·5} 15·0}	15·5} 16·5}	18·0} 19·0}	20·5} 21·5}	22·5} 23·5}	24·0} 25·0}	25·5} 26·5}	27·0} 29·5}	30·0} 34·5}	35·5} 41·0}	39·0} 44·5}	42·5} 49·0}	46·5} 53·5}	51·0} 58·5}	56·5} 64·5}	60·5} 69·5}	66·5} 76·0}			
1955 roubles							13·5} 14·5}	12·0} 12·0}	12·0} 13·0}	13·0} 13·5}	14·0} 14·5}	15·5} 16·0}	17·5} 18·5}	20·0} 20·5}	22·0} 23·0}	23·5} 24·5}	25·0} 26·0}	27·5} 28·5}												
1970 roubles																		27·0} 31·0}	30·5} 35·5}	36·0} 41·0}	39·5} 45·0}	42·5} 49·0}	48·0} 55·0}	52·5} 60·0}	59·0} 67·5}	64·5} 73·5}	71·0} 81·0}			
7. CIA (1974)												18·0								21·0		24·0					25·0			
8. CIA (1976 and 1978)												27·0 (implied) 30·0										40·0 50·0					50·0 60·0		53·0 63·0	

Sources:

Row 1. *Narodnoe Khozyaistvo SSSR* (various years).
Row 2. *Ibid.*
Row 3. *Ibid.*
Row 4. S. Cohn in *Soviet Economic Prospects for the Seventies. A Compendium of Papers submitted to the Joint Economic Committee, U.S. Congress*, Washington DC (1973), p.158.
Row 5. *World Armament and Disarmament, SIPRI Yearbook 1979*, Stockholm (1979), pp.38-39.
Row 6. W.T. Lee, *The Estimation of Soviet Defense Expenditures 1955-75*, New York (1977), pp.78, 115.
Row 7. See (Eds.) W. Schnerder Jn. and F.P. Hoeber, *Arms, Men and Military Budgets*, New York (1976), p.266.
Row 8. *CIA: Estimated Soviet Defense Spending in Rubles, 1970-75*, SR 76-10121U, Washington DC (May 1976); *CIA: Estimated Soviet Defense Spending: Trends and Prospects*, SR 78-10121, Washington DC (June 1978).

Source: Holloway (1982a: 358-359)

Table 5.7.2: Defense as a Share of GNP

		1950	1955	1960	1965	1970	1975
1. Cohn (1973) (constant 1955 roubles)	A	11·6	12·3	9·7	11·7	12·8	
	B	11·4	12·3	8·6	9·9	10·0	
(current roubles)	A	12·6	12·3	9·2	10·7	10·4	
	B	10·8	12·3	8·4	9·1	10·1	
2. SRI (current roubles)			11·3		9·5	10·4	
3. ACDA					6-10		
4. Becker				not more than 10%			
5. Mark						10·0	
6. CIA (1974)				10·0		7-8	
7. CIA (1976)							11 – 13
8. Lee			11·5	9·0	10·0	11·5	14 – 15
9. Bergson (current rouble factor cost)		10·9	10·3				
(1955 rouble factor cost)		10·9	10·7				

Sources:
These estimates of the proportion of Soviet GNP spent on defence are of course based on Western estimates of Soviet GNP, since the concept of GNP is not employed in Soviet national income accounting. The estimates of GNP vary.

Row 1. S. Cohn, *loc.cit.*, pp.159-60.
Row 2. Quoted by H. Block, *loc.cit.*, p.178.
Row 3. U.S. Arms Control and Disarmament Agency, *World Military Expenditures 1971*, Washington DC (1972); quoted by H. Block, *loc.cit.*, p.178.
Row 4. A. Becker, *Soviet National Income, 1958-64*, Berkeley and Los Angeles (1969), pp.164-5.
Row 5. D. Mark, in *The Military Budget and National Economic Priorities, Hearings before the Subcommittee on Economy in Government of the Joint Economic Committee, U.S. Congress*, Part 3, Washington DC (1969) p.962.
Row 6. *Allocation of Resources in the Soviet Union and China – 1974, op.cit.*, p.25.
Row 7. *CIA: Estimated Soviet Defense Spending in Rubles, 1970-1975*, SR 76-10121U, Washington DC (May 1976), p.16.
Row 8. W.T. Lee, *op.cit.*, p.98.
Row 9. A. Bergson, *The Real National Income of Soviet Russia since 1928*, Cambridge, Mass. (1961), p.245; for comparison, the GNP proportion devoted to defence in 1937 was 7·9 per cent (at current rouble factor cost) or 6·7 (at 1950 rouble factor cost); in 1940 – 16·1 and 14·5 per cent; in 1944 – 36·8 and 39·8 per cent. See *ibid.*, p.237.

Source: Holloway (1982a: 358)

Table 5.8: Global GNP Growth Rates

Average Annual Rate of Growth of National Product for Selected OECD Countries (GDP) and for the USSR (GNP)

	1951-55*	1956-60	1961-65	1966-70	1971-75	1976-79	1951-79*
Total OECD	NA	NA	5.2	4.8	3.1	4.0	NA
Of which							
Canada	5.2	4.0	5.7	4.8	5.0	3.7	4.8
United States	4.2	2.3	4.6	3.1	2.3	4.4	3.4
Japan	7.2	8.6	10.0	12.2	5.0	5.9	8.3
Australia	3.8	4.0	4.8	6.0	3.5	2.4	4.2
New Zealand	3.8	4.0	4.9	2.7	4.0	0.3	3.3
Finland	5.0	4.1	4.8	4.8	3.9	2.5	4.2
France	3.7	5.0	5.8	5.4	4.0	3.7	4.6
West Germany	9.2	6.5	5.0	4.4	2.1	4.0	5.1
Italy	5.6	5.5	5.2	6.2	2.4	3.8	4.8
Netherlands	5.9	4.0	4.8	5.5	3.2	3.1	4.4
Norway	3.8	3.3	4.8	3.7	4.6	4.2	4.1
Spain	5.2	3.2	8.5	6.2	5.5	2.5	5.3
Sweden	3.4	3.4	5.2	3.9	2.7	1.1	3.4
Switzerland	4.9	4.3	5.2	4.2	0.8	0.9	3.5
Turkey	8.1	4.6	4.8	6.6	7.5	4.1	6.0
United Kingdom	3.9	2.6	3.1	2.5	2.0	2.4	2.7
USSR	5.5	5.9	5.0	5.2	3.7	3.0	4.8

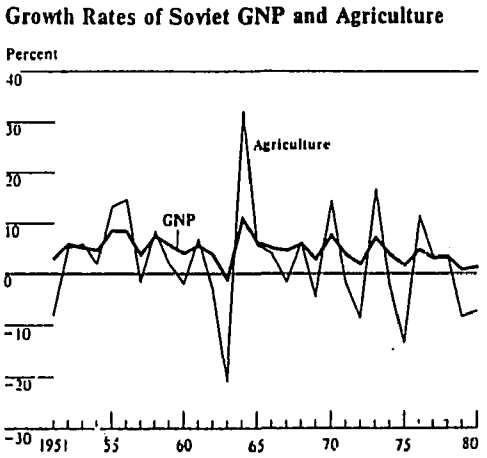
* Data in column 1 for Japan and the United Kingdom are for 1953-55; for Finland, France, West Germany, Italy, and the Netherlands—1952-55; and for New Zealand and Spain—1955 only. The corresponding data in column 7 are for 1953-79, 1952-79, and 1955-79, respectively.

NA = not available.

Source: Pitzer (1982: 20)

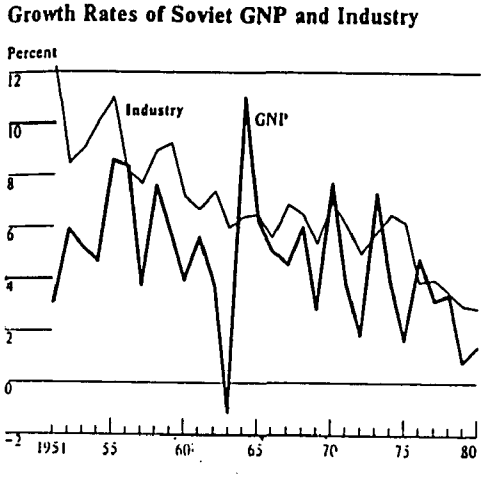
Source: Pitzer (1982: 16)

Figure 5.1: Soviet GNP Trends



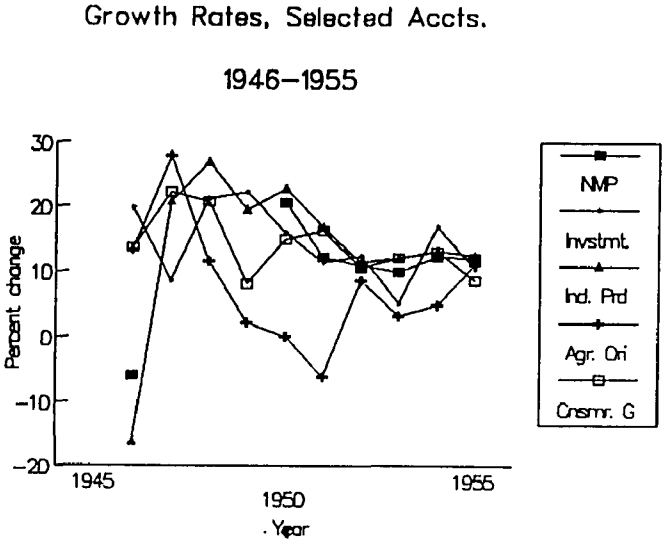
Source: Pitzer (1982: 16)

Figure 5.2: Soviet GNP and Agriculture



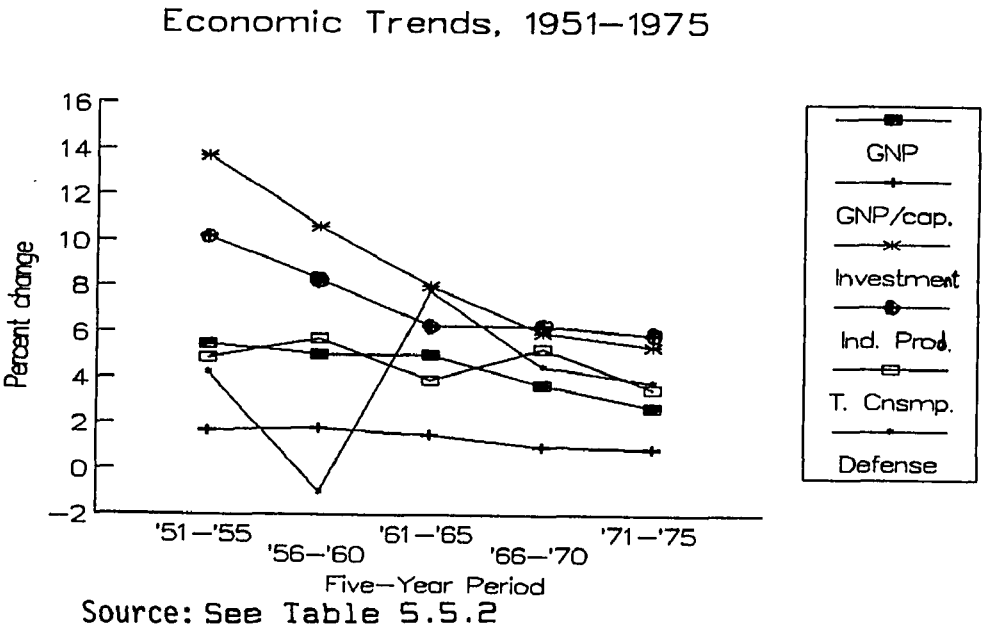
Source Pitzer (1982: 17)

Figure 5.3: GNP and Industry



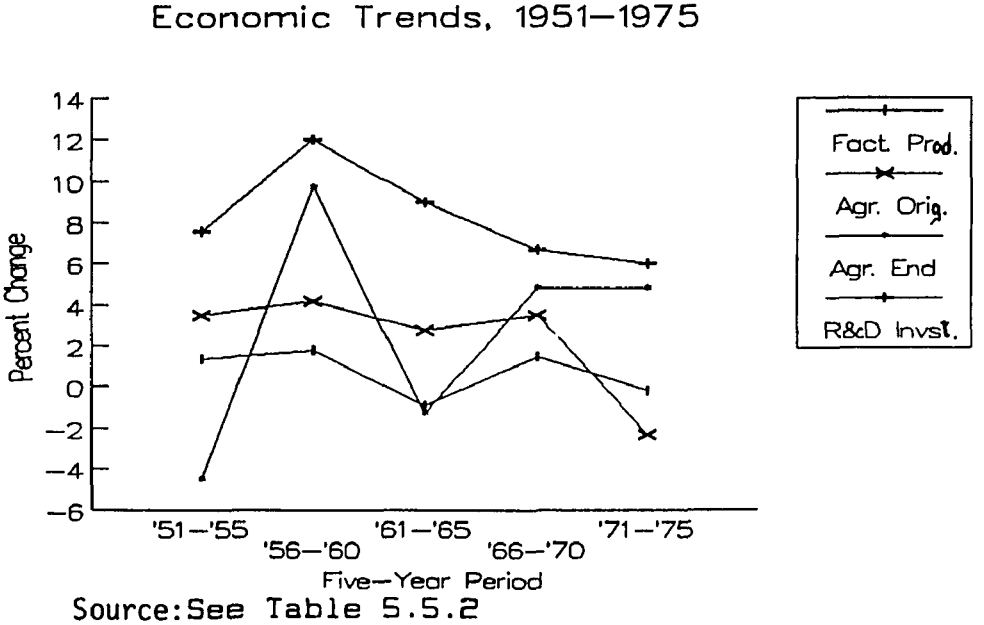
Source: see Table 5.1, this chapter

Figure 5.4: Growth Rates, 1945-1955



Source: See Table 5.5.2

Figure 5.5: Soviet Economic Trends, 1951-1975 (1)



Source:See Table 5.5.2

Figure 5.6: Soviet Economic Trends, 1951-1975 (2)

SOVIET MILITARY DOCTRINE AND STRATEGY SHIFTS: PRINCIPAL DYNAMICS AND IMPLICATIONS FOR CONVENTIONAL WARFARE

VOLUME II

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in the Graduate School of The Ohio State University

By

Howard Ezra Frost III, B.A., M.A., S.M.

* * * * *

The Ohio State University

1990

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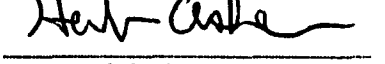

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CHAPTER VI

THE DEVELOPMENT OF U.S. THINKING ON CONVENTIONAL WARFARE, 1946-1975

In the post-World War II era, the business of formulating military doctrine in the United States and integrating conventional warfare strategy with the developing strategy for nuclear conflict was difficult and complex. The literature on the development of strategic thought during this period reflects the tensions and uncertainty in the defense community as analysts tried to grapple with and integrate a wide range of conflicting issues and preferences in the areas of nuclear and conventional warfare. As political leaders and military planners were unsure about how a nuclear war would unfold and whether there would even be occasion for conventional warfare. Changes in the basic military technology during the first ten years added to this uncertainty. In the United States, furthermore, there was little popular support, at least until the Korean War, in channelling material or human resources to rebuilding the armed forces.

In this chapter I will elaborate the principal factors affecting the development of US doctrine and strategy on

conventional war from the early post-war period through the final stages in the mid-1970s of the articulation of the doctrine of Flexible Response. I will endeavor to point out why particular influences have been important at particular times and what the pattern of these factors over time suggest about the significance of conventional warfare.

The U.S. Army defines military doctrine as the fundamental principals of military planning to guide forces in support of national objectives (Dictionary of Army Terms, 1972). Similarly, strategic doctrine in the U.S. has been described as those operative beliefs, values, and assertions that serve as the principal guidance for official policymaking on strategic research and development, weapons choice, forces, operational plans, arms control, etc. (Ermarth, 1978: 138).

The Soviet definition of doctrine, however, is more inclusive and more precise; it comprises both military and political dimensions of warfare.a To the Soviets, doctrine covers questions such as the likely nature of war and the key political goals in prosecuting it. The Soviets define military doctrine as the highest level of military-political thought in the U.S.S.R. and consider

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aI examine this issue in Chapter Two. For additional discussion, see Scott and Scott, 1981: 59-81.

its specification the prerogative of the top political leadership. Strategy, in this context, comprises the high-level plans for how the armed forces are to be used to achieve these political and military goals. Strategy also provides direction for the development of operational art and tactics--how Soviet forces plan to fight in different theaters and in different battlefield conditions.

Because the Soviet definitions of doctrine and strategy establish a more comprehensive and more detailed conceptual basis for evaluating change, it is this approach I will use in the examination of U.S. military doctrine. Although U.S. planners do not organize military thought in this way, U.S. approaches to conflict and war can be understood in this analytic framework without misconstruing basic concepts of U.S. military policies. Additionally, framing the assessment of U.S. military thinking in this way will facilitate comparisons with Soviet doctrine and strategy developments.

In trying to understand how U.S. doctrine and strategy toward the Soviets has shifted and what the implications of those shifts are for U.S. views on conventional warfare, it makes sense to examine the U.S. leadership's approach to the Soviets from perceptual as well as policy levels. Therefore, I will examine the development of U.S.

doctrine and strategy about conventional warfare within a series of levels, extending from the more abstract to the more specific, in each of the time periods [defined below] of U.S. doctrinal development.b

First in each phase, I will look at the U.S. leadership's perspective of U.S.-Soviet relationship and about NATO's role in that relationship. Indicators of these changes will be statements by government leaders and reports by government institutions responsible for political and military aspects of U.S.-Soviet relations.

Second, I will look at the basic changes in U.S. strategic thought from 1946-1975 and discuss these changes with reference to developments in military thought and in the technology of nuclear weapons and delivery systems. Indicators for this type of change will be shifts in U.S. planning for large-scale war with the Soviet Union. I will also use procurement trends in such hardware as strategic delivery systems as indicators. However, since there has been so much academic literature produced on this topic, there is enough of a consensus on the principal change points that extensive documentation of procurement trends is not necessary.

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bFor an exploration of theoretical implications of the linkages among similar levels of analysis, see Herrmann, 1987.

Third, I will look at the expected role of the U.S. Army in conventional conflict and how planning for that role developed in the post-war period. Indicators for change in this area will be shifts in views, policy prescriptions, and operational doctrine concerning warfare on a nuclear or conventional battlefield.

Fourth, I will address how U.S. Army planning has fit into U.S. ground force planning for NATO by comparing concurrent shifts in the policies of each as those shifts occur. Finally, after reviewing the historical developments from 1945 to 1975, I will offer conclusions about the development of U.S. doctrine and strategy and discuss the important aspects of change in these areas in the first three decades after World War II. As I elaborate the principal shifts over time within the three main analytical areas, I will try to explain why the shifts occurred and how the shifts within each analytical area relate to one another.

The objective of this chapter is to provide an overview of the development of U.S. thinking about conventional war in a NATO/WTO engagement as a precursor to assessing the impact of these developments on Soviet doctrine. Therefore, time and space will not permit an intensive examination of each of these facets. There is a fairly substantial corpus of secondary literature that

traces in depth most of the important developments in U.S. military thought through the early 1980s.c Therefore, it seems unnecessary to recover this ground at the same amount of detail. The aim of this study will be to integrate evidence provided by the literature on U.S. doctrine into a broad synthetic view of U.S. military doctrine change and its potential effects on Soviet doctrine and strategy and its potential effects on Soviet doctrine and strategy change.

For an examination such as this one, one of the important concerns is dealing with the conjuncture of planning for nuclear and conventional warfare.d

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cMuch of the evidence on U.S. Army doctrine has been published by scholars who had access to classified information. As it turns out, many of the original documents from which that information was taken remain classified, so a review of those primary sources is largely impossible. In one case, it appears that the author had the text of the analysis reviewed for declassification, but not the sources on which the analysis was based. In some cases, even the card catalogues where those sources are identified are classified, making it impossible to identify unclassified documents on the same topic as the unavailable classified information. For these reasons, many of the U.S. Army studies used in the sections on operational doctrine will be cited as they appear in the secondary literature.

The discussions herein of U.S. Army doctrine will therefore depend heavily on one source--Midgley's Deadly Illusions. Unfortunately, there is no other source in the periodical or book literature that even approaches the thoroughness of this volume.

dThis tradeoff, especially as it would involve planning for ground force engagements, is examined in detail in Chapter Nine.

Determining the relative weights of emphasis on nuclear or conventional war is always difficult, so here I will offer the following hypotheses:

> Nuclear weapons can be considered a preeminent part of doctrine and strategy if political and military leaders refer to them as central to meeting threats to that country, particularly during times of crises. Such emphasis must also be reflected in strategic policy developed and implemented for these leaders and by procurement patterns that emphasize building or increasing the size of the nuclear force. A nuclear focus would also be reflected in operational doctrine for a country's army. If a country's military posture had been based on conventional weapons, one would expect a reorganization of ground forces in order to fight more effectively on a nuclear battlefield. These changes would include lighter, more mobile divisions, and less firepower and close air support for army units.
>
> A move to a doctrine and strategy based more on conventional weapons can be said to have occurred if political and military leaders seem to emphasize more the relative importance of conventional forces in meeting threats to that country, while they ad earlier been emphasizing nuclear weapons. In the case of the U.S. vis-a-vis the Soviets, I will argue, as I do in the chapter on Soviet doctrinal developments, that a perception that a major war is less likely would suggest a move away from nuclear weapons. This orientation would also be reflected in strategies that provided for something other than a full-scale nuclear response to military aggression by the other side. Such strategies may also focus less than previous ones on exclusive role of nuclear weapons. A conventional emphasis [new or renewed] would also be reflected in procurement patterns that emphasize substantial improvements in conventional weaponry. Such a change would also be reflected in U.S. Army strategy and operational doctrine, in that divisions would be larger and have greater firepower attached to them.

For its time frame, this study will build upon one used by John Midgley [1986] in Deadly Illusions, his examination of the development of nuclear operational doctrine in the U.S. Army. Midgley discusses Army doctrine during the 1946-1976 period as it developed from 1946-1952, 1953-1960, 1961-1965, and 1967-1975. Most of these turning points he ties to policy or program shifts authorized by the Army Chief of Staff. These shifts have usually involved differences in views within the Army leadership and the national political leadership about the nature of a superpower engagement in Europe, how soon that engagement will escalate to the use of nuclear weapons, and how the Army can best be prepared for such a conflict.e

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eAlthough I will not assume ab initio that the conclusions Midgley offers are valid, the basic time dimensions of his study provide a good starting point for dealing with the topic.

Midgley's time frame is useful as well because it also captures important turning points in the U.S.-Soviet strategic relationship. These points separate the periods when the U.S. had a usable nuclear capability but the Soviets did not [1945-1952], when both countries had a strategic bombing capability but no ICBMs [1953-1959], and when both had a strategic nuclear capability in ICBMs, as well as SLBMs and bombers [1959-present]. As one might expect, developments in the U.S.-Soviet strategic relationship are closely tied with developments in conventional warfare planning.

Furthermore, as one can see, these breaks fall roughly with the changes in U.S. administration, and the correspondence of these changes was not unimportant for the development of U.S. strategy. I will return to this point in the section on strategic war planning.

For the purposes of the current study, I will combine the first two periods Midgley uses. These two periods are merged because developments occurring within them with regard to the relative emphasis on nuclear or conventional weapons proceed along similar directions within the most abstract level of analysis here--that of leadership perceptions of the animosity of the other side. I will preserve the other two time periods Midgley uses because there is more disjuncture between the periods at the highest levels of military planning.

The basic conclusions I reach are several. First, changes in U.S. doctrine and strategy on conventional warfare seem to be strongly influenced by 1) changes in the world view of the U.S. leadership on the issue of U.S.-Soviet conflict and 2) changes in the nature military technology, particularly changes involving warhead yields and Soviet deployment of weapons with military technology similar to that of the U.S. Second, these shifts in perception that developed over a decade or so among U.S. leaders had primarily two aspects. One was the awareness that the U.S.-Soviet relationship was becoming characterized less intensely bilateral conflict and more by competition for influence with third countries in various regions of the world. Part of this awareness was the growing notion that the Soviet Union was not

preparing to launch an attack against the U.S. The second aspect of the shift in perception among U.S. leaders was that, because of developments in the nature of nuclear technology and delivery systems, the U.S. could not threaten nuclear destruction of the Soviet Union without expecting the same in return. These shifts in perception seemed to play the key role in the emphasis accorded conventional capabilities and planning.

Other factors were also important for these shifts in perceptions, such as the relative costs of certain types of force postures, bureaucratic politics among the U.S. armed forces, differences between the U.S. and its allies on the nature of deterrence, ignorance about the military utility and collateral destructiveness of nuclear weapons, and uncertainty about the character of the Soviet nuclear and conventional capabilities. The two major factors mentioned here, however, seem to subsume most of these secondary areas.

Third, U.S. military doctrine was primarily conventionally oriented until the late 1940s and early 1950s, as nuclear weapons became more available. It was predominantly nuclear in the mid- to late 1950s with the articulation of Massive Retaliation. U.S. doctrine began to incorporate a more significant conventional component in the 1960s with Flexible Response. There was also an

emphasis at this time on tactical nuclear weapons, but the more fundamental shift in declaratory policy from a massive nuclear to a graduated conventional/nuclear response to aggression was the important dynamic during these years. The conventional component of Flexible Response grew in significance in the [illegible]fter NATO initially agreed upon the doctrine, and these modifications constitute the important dynamics of the last eight to ten years of the period covered here.

Fourth, shifts in the approach of the U.S. leadership concerning the relative emphasis on nuclear or conventional force posture were, in general terms, reflected in changes in U.S. Army doctrine. There was no exact correspondence in the substance or timing of the shifts within these two areas of policymaking, but there was a rough connection in the dynamics affecting the two.

THE 1946-1960 PERIOD

U.S.-Soviet Relations: The U.S. Leadership's World View

The Early Post-War Years

A key factor in the development of U.S. doctrine and strategy on conventional war was understanding view among U.S. policymakers of U.S.-Soviet relations. The basic perception among these policymakers about the nature of U.S.-Soviet antagonism did not change dramatically in the

two decades after World War II, however, but the concern about an outbreak of hostilities from this antagonism did change over time, It is important in understanding U.S. conventional doctrine to note how and when this concern shifted.

U.S. leaders' perspectives of U.S.-Soviet relations in the post-war world have been thoroughly examined in the scholarly literature. As I trace themes of U.S. attitudes toward the Soviets, however, I will restrict my coverage to the literature of officials at the top levels of U.S. military and political leadership, since it is at this level that policy was made and guidelines for dealing with the Soviets were set. Since U.S. perceptions of the Soviet Union in the post-war period has received such extensive coverage, I will primarily highlight the important perceptions during this time that concern the likelihood of conflict with the Soviet Union and use these perceptions as the focus of my discussion of military doctrine on nuclear of conventional war. Since much of the historical development of perceptions of the U.S. and the Soviets on the Cold War has been extensively examined in the scholarly literature, I will just cite major developments.

In the early post-war years, underlying the difference of views within the U.S. leadership on the issue of how to

deal with the Soviets was the fact that Truman himself did not have a firm policy on this issue until 1946. A significant change in U.S. policies and attitudes towards the Soviet began in 1946 and garnered strength over the following years.f

As World War II drew to a close, and in the early post-war weeks, Truman appeared interested in working toward accommodation with the Soviets in important political matters. This inclination was buttressed by early studies by the JCS and other U.S. military organizations that the Soviets were not militarily capable of mounting an attack in the late 1940s. James Reston noted that a division formed within the U.S. government in the fall of 1945 between those officials who perceived the Soviet Union wholly committed to an expansionist policy and those officials who thought that in spite of problems with the U.S.S.R., that some sort of agreement on security issues could be reached if both sides were willing to negotiate [Reston, 1945a: E5, 1945b: E3].

Truman, as of mid-fall 1945, still perceived that important differences between the countries could be settled. In a conversation with his former secretary of

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f In tracing U.S. perceptions of the U.S. relationship with the Soviet Union, I shall, apart from the primary documentation offered, draw extensively for my discussion on John Gaddis, Origins of the Cold War, 1941-1947 [1972] and Gregg Herken, The Winning Weapon [1982].

state Edward Stettinus in October, Truman noted that some disagreements with their former wartime ally were "inevitable" but should not be taken "too seriously", as these difficulties could be worked out in time. Stalin, Truman is reported as saying, was a "'moderating influence in the present Russian giant'" and that it "'would be a real catastrophe if Stalin should die at the present time'" (Stettinus, 1945).

Some officials of the U.S. military establishment thought that Soviet military adventurism would not be too likely in the early post-war period. A JCS memorandum of February 1946 entitled "Capabilities and Intentions of the U.S.S.R. in the Postwar Period" and a Naval Intelligence memorandum on the same topic a month earlier concurred in suggesting that the Soviet Union had been too strained by the war to mount any significant aggression in the near term (JCS, 1946b). The Naval Intelligence report specifically commented that Russian policy in foreign affairs was defensive and was aimed only "'to establish a Soviet Monroe Doctrine for the area under her shadow, primarily an urgently for security'" (Forrestal, 1946).

Certainly, U.S. officials of various sorts were encountering significant obstacles in dealing with the Soviets. Among these hurdles was the dissension between the British and the Americans, on the one hand, and the

Soviets, on the other, in September 1945 meetings in London about implementation of the Yalta and Potsdam accords. Congressional tensions arose in the fall of 1945 concerning stipulations for a U.S. reconstruction loan to that country and in the spring of 1946 over the extension of Soviet political control in Eastern Europe [Gaddis, 1972: 254-267].

Soon, though, affairs took a serious turn for the worse. Stalin's boast in February 1948, along with his announcement of Soviet Five Year Plans for post-war recovery, that Russian industrial capacity and scientific achievements would equal that of the United States in the not-distant future seemed to U.S. leaders as a far-from-peaceful challenge. Stalin's refusal to evacuate Soviet troops from Iran and continued domination in Eastern Europe and intransigence on elections there was perceived by many U.S. leaders as evidence of Soviet malfeasance sufficient to warrant strong mistrust of soviet interest in building a peaceful post-war order. The Canadian uncovering in early 1948 of a Soviet espionage ring directed at purchasing processed uranium from some U.S. nuclear facilities exacerbated tensions even further [Herken, 1982: 139-142].

These activities by the Soviets elicited a series of commentaries by U.S. leaders that communism was a movement

the U.S. needed to "counter." Both Senator Arthur Vandenberg and Secretary of State James Byrnes in late February gave speeches that advocated a tough line with the Soviets (Vandenberg, 1946: 4; Byrnes, 1946: 10). Late February was also the occasion the U.S. ambassador to the Soviet Union George Kennan sent his "long telegram" back to Washington. Kennan's presentation of the Soviets as bent on undermining American values and "committed fanatically to the belief that with the United States there can be no permanent modus vivendi" had a powerful impact, first upon those who were cleared to read the cable, and then to the U.S. public after it was released to the press (Kennan, 1967: 547-549). Churchill's speech at Fulton, Missouri the next month echoed many of the same themes as Kennan's telegram. Churchill's remarks about Russia's "'expansive and proselytizing tendencies'" galvanized further the sentiments current in the Truman Administration about the need to "get tough" with the Soviets (Morray, 1961: 43-52).

The "Cold War" Acknowledged

This apprehension with the Soviets became exacerbated over the next two years. The Soviet rejection of the Baruch Plan in late 1946 disappointed many in the Truman Administration, and the issue of Soviet control in Eastern Europe was a continuing thorn. U.S. leaders' concern

about this latter problem was only heightened by the March 1947 crisis in Czechoslovakia and the Berlin crisis the following month (Herken, 1982: 171-191, 250-251). The increasing wariness about the Soviets was reflected in NSC-7, one of the earliest position papers of the newly-created National Security Council. NSC-7, the first official document to refer to U.S.-Soviet tensions as the "Cold War," compared Stalin's interest in territorial conquest to that of Hitler and argued that the U.S., through universal military training and other measures, needed to mount a broad counteroffensive against communism ("The Position of the United States," 1948).

Five months later, NSC-20, though not as strident a call to action as NSC-7, advocated prosecution of the Cold War by non-military means. Noting that the Soviet threat to U.S. security was both "'dangerous and immediate'", NSC-20 suggested that the desired fundamental change in Soviet policies could be effected "'by means short of war'" and that the U.S. needed to develop a state of military and psychological preparedness "'which can be maintained as long as necessary as a deterrent to Soviet aggression'"("U.S. Objectives," 1948).

Although the U.S. and the U.S.S.R. were not involved in direct confrontations in the few years following the standoff over Berlin, U.S. concern about expanding Soviet

military capabilities and political influence continued. The Soviets detonated their first atomic bomb in September 1949, a year or two sooner than many in the Truman Administration expected, and the spy trials of Alger Hiss and Klaus Fuchs in late 1949 and early 1950 fueled suspicions about Soviet expansionism and the Soviet military threat (Herken, 1982: 300-303, 322-323).

A number of intelligence and planning studies by the Joint Chiefs, the AEC, and the State Department in the months after the Soviet detonation addressed that development with much alarm. While estimations prior to fall 1949 had forecasted Soviet ability to explode a bomb as occurring only in the early to mid-1950s, several of these early 1950s studies suggested that the Soviet Union might even be ahead of the U.S. in production of atomic bombs at that time (Herken, 1982: 323-326). Some of these studies saw the Soviets as able to bomb the United States and mount simultaneous campaigns against Europe, the Middle East, and Asia, as well as against U.S. naval targets, while still having an adequate number of forces in reserve (Untitled Joint Intelligence Committee Study, 1950; Condit, 1979: 537). The predictions and tone of these studies reflected a significant level of perceived Soviet hostility toward the U.S. and the continuing need to be prepared for a military confrontation.

Reflecting the assessment that would be characteristic of much of the thinking about Soviet military capabilities in the coming years was a 1950 State Department study written to critique a CIA report alleging no evidence that the Soviets desired to pursue a military drive to the Atlantic either before the U.S. had used its bomb against Japan or subsequently. The State Department study, while accepting the CIA evidence, contended that "'lack of evidence of a Soviet intention to use military force on the U.S. [cannot] be taken as evidence of the absence of such an intention'" [emphasis in original]. With this kind of logic that provided ample basis for worse case analysis, the State Department study argued that continued concern about the Soviet threat was thoroughly warranted ["Appendices," 1950].

NSC-68, issued in April 1950, was the landmark study on the Soviet threat that provided the conceptual and theoretical underpinning for much of U.S. defense policy and strategic thought in the early 1950s. NSC-68 argued that Soviet possession of an atomic bomb and the capability in the near future of detonating a hydrogen weapon had "'greatly intensified the Soviet threat to the security of the U.S.'" The Soviet Union, it asserted, "'unlike previous aspirants to hegemony, is animated by a new fanatic faith, antithetical to our own, and seeks to

impose its absolute authority over the rest of the world.'" These intentions, suggested the report, posed the prospect that the Soviet Union might initiate a nuclear war "swiftly and with stealth'" as early as 1954 ["A Report to the National Security Council," 1950].

While NSC-68 had recommended a U.S. military buildup over the next few years with 1954 in mind as the period of maximum danger, the invasion into South Korea in June of that year and the Chinese entry in November exacerbated growing apprehensions about Soviet intentions. Most activities by Communists around the world were perceived as being orchestrated by Moscow; indeed, the CIA thought the invasion in June was "'undoubtedly taken at Soviet direction'" ["The U.S.S.R. and the Korean Invasion," 1950]. As one commentator on the period noted, the Korean invasion was no doubt taken by some officials as a possible "harbinger of more sinister Soviet designs" [Poole, 1980: 48]. The Security Council, in a December follow-on report to the original NSC-68 document, argued that instead of occurring in 1954, the period of maximum danger was "'directly before us'" [NSC 68/3, 1950; NSC 68/4, 1950].

This concern about Soviet perfidy continued through the end of the Truman Administration. In a special estimate the CIA prepared in the fall of 1951, the Soviet

Union was considered to have through 1954 "military strength of such magnitude as to pose an constant and serious threat to the security of NATO powers, especially in view of the aggressive nature of Soviet objectives and policies" [CIA, 1951].

In NIE-48 of January 1952, commissioned to forecast the likelihood of a full-scale Soviet attack on the U.S. by the end of the year, the intelligence community noted that the Soviet Union would probably not deliberately initiate a war with the United States, but that there was a "continuing grave danger" that war might be initiated by the Soviets because of an insufficient understanding of the consequences of their provocation. Observing that the Soviet leaders perceived that "no permanent accommodation is possible" between the U.S.S.R. and the U.S., the report noted that the Soviets would "provoke and exploit" revolutionary situations around the world, even with the use of military forces. As part of their overall plan to weaken the West, the report noted that the Soviets would "maintain an advanced state of war-readiness" [CIA, 1952].

Aftermath of Korea: The Economic Interpretation of the Challenge

As the Korean conflict drew to a close, it was apparent, at least to the more moderate leaders of the Eisenhower administration, that Korea was not the beginning of a Soviet drive for world domination. Korea

had indeed provided the impetus not only for a buildup of U.S. forces, but also for the 1952 decisions among NATO planners in Lisbon for increases in the forces of NATO's European members.g The goals the U.S. and its European allies had established in Lisbon in terms of manpower and equipment caused a significant strain on the economies of NATO countries, and by mid-1953, most of the European allies had recognized that continued improvements would need to be stretched out over a longer term [Osgood, 1962: 39-40, 87-88; Poole, 1980: 299].

Hand-in-hand with the perceived attenuation of the immediate threat from the Soviet Union was Eisenhower's concern about the economics of the Korean mobilization effort. There was a sense among Eisenhower's group of advisers in early 1953 that continued defense spending at current levels would create undesirable inflationary pressures on the economy and that the more appropriate U.S. response to Soviet expansionism would be to deter

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gSee Secretary Lovett's comments in Secretary of Defense [1953: 4]. The best piece on the major impact of the Korean War on NATO organization and preparedness is Kaplan, 1975. Kaplan argues that the Korean War, rather than the signing of the NATO Treaty, may be the real "watershed of American isolationism" [1975: 53]. Poole [1980: 71] comments that the effect of Korea on the U.S. debate on rearmament was "decisive" and "incontestable."

On the budgetary impact of the rearmamemt effort see Poole, 1980: 52-73. Also see Admiral Radford's [1957a] views on the lack of concern for careful budgeting that developed within the armed services in the wake of the mobilization for Korea.

these endeavors rather than to try to contain them all around the world [Brown, 1983: 69].h

The U.S. leadership's concept of Soviet-U.S. hostility changed as a result of the reconsideration of the U.S. stance vis-a-vis the Soviets, and in the initial period of the Eisenhower administration, that modification occurred in two directions. First, there was a concern that the Soviet threat was one that needed to be addressed over a longer period of time rather than focusing on a "year of maximum danger" as had been the case in the Truman Administration. Second, there was a perception, articulated by Eisenhower in March 1953, that the Soviets had "'coldly calculated...by their military threat to force upon America and the Free World and unbearable security burden leading to economic disaster'" [Eisenhower, 1953: 24]. In responding to this threat, it was Eisenhower's perception that the challenge was more long term than had been previously understood. The Free World defense rested on its economic strength; building a huge defense establishment at the sacrifice of a strong domestic economy was foolhardy in the view of Eisenhower and his administration.

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hSee also Andrew Goodpaster's summary of the Solarium study in his oral history [1982: 13-14].

As Eisenhower's advisers worked during the summer of 1953 to revise strategic concepts, they considered the options of continuing with containment, pursuing a policy of global deterrence to thwart Soviet aggression, or of trying to accomplish the liberation of communist-held areas [see NSC-158, 1953]. The result of this examination, NSC-162, basically called for containment as the centerpiece for the Administration, with somewhat more reliance on strategic airpower for deterrence. The Soviet threat pictured in NSC-162 was just as vivid as it had been portrayed by the Truman National Security Council, so there was little justification provided for reduction of military expenditures [Brown, 1983: 70-71; Watson, 1986: 21-26].

At the same time, however, the JCS, chaired by Admiral Radford, had been doing its own assessment of the threat, keeping in mind Eisenhower's preference for cutting military expenditures. As the JCS paper was coming together, Admiral Radford argued to the NSC that there would be little way to counter Soviet aggression and at the same to reduce outlays, except by redefining the type of war that was projected to be fought. The Joint Chiefs asserted in their study, known as JCS 2101/113, that reductions in expenditures for conventional forces could only occur if the services were allowed to use nuclear

weapons whenever it was deemed militarily advantageous to do so [JCS, 1953; Brown, 1983: 71-72; Watson, 1986: 26-34].

Eisenhower went along with this logic, and the appearance of the resultant document, NSC-162/2, as a formal statement of policy guidance heralded the move to deterrence by a massive retaliatory capability, a capability largely based on strategic airpower [see Watson, 1986: 35-37]. Korea and Germany were considered important lines of defense, but they were to be lines manned by indigenous forces supported by U.S. sea and airpower.i

The important point to note with NSC-162/2 is that, while reflecting the shift away from a "year of maximum danger," it did not attenuate the perception of Soviet hostility earlier propounded in NSC documents. Perceptions of the basic incompatibility of the U.S. and the Soviet Union remained about the same. It was the U.S. attitude toward conducting the relationship that shifted. The strategy for dealing with the Soviet Union was seen to involve a longer-term focus on non-military strength rather than a shorter-term focus on preparedness for military conflict with the U.S.S.R.

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iOn NSC-162, see Glenn Snyder, 1962: 406-438.

U.S. leaders at this point in time perceived that thwarting Soviet expansionism was better accomplished by building domestic economic and political infrastructure of the West and threatening military responses to Soviet adventurism rather than procuring military forces to meet those forays in various parts of the world. As Dulles cast that attitude in his famous January 1954 address to the Council on Foreign Relations, "[l]ocal defense will always be important. But there is no local defense which alone will contain the mighty land power of the Communist world. Local defense must be reinforced by the further deterrent of massive retaliation" [Dulles, 1954: 107-110;].j

Local Defense at the Perimeter

This concern with "local defense" and containing "communist expansion at the perimeter" manifested itself in several ways. In the wake of the invasion into South Korea, concerns mounted about a world-wide security perimeter against communism. Dulles, in notes he made on an NSC meeting in March 1953, observed that the group had observed that the greatest danger of war from the Soviets, apart from their miscalculation or impending "economic collapse", resulted from further successes in their attempt at "encirclement through political warfare." To

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jSee also Nitze's [1954] critique of the speech.

stave off this encirclement, the group concluded that the U.S.

> must hold the present outpost position [i.e., Korea]. There is no place around the orbit of the Soviet world which we can now afford to lose because further losses cannot now be insulated and will inevitably set up a chain reaction [Dulles, 1953].

In addition to holding this security perimeter, the group decided that the U.S. should "subject the presently over-extended Soviet orbit to strains incident to stimulating the spirit of nationalism." Aid, particularly military aid, to U.S. allies in NATO and the Far East was considered important at the meeting for this objective, as were general aid programs worldwide.k

During the next several years of the Eisenhower Administration, U.S. leaders' perceptions of the U.S.-Soviet relationship underwent several additional subtle changes. One of these concerned the likelihood that Soviet aggressiveness would lead to a major conflict between the superpowers. Although Dulles certainly had a great distrust of the Soviets and was apprehensive about their military intentions, he commented to Churchill during the 1955 Quemoy-Matsu crisis that the Soviet Union

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kOne can note Dulles' and Eisenhower's comments on a similar vein about economic aid for foreign countries in "Discussion at the 229th Meeting," 1954.

would not go to war over the islands (Eisenhower, 1963: 476-477; Brown, 1983: 84-85).

Similarly, when the NSC met a year and a half later to consider what to do about the Soviet invasion of Hungary, the decision was to avoid doing anything that might provoke the U.S.S.R. into an irrational overreaction (Genco, 1974: 301). Dulles reportedly said at a private meeting during that time that a U.S. intervention in Hungary "would risk a nuclear war with the Russians, and the American government was not prepared to take this risk on the Hungarian issue" (Genco, 1974: 305).

The concept of adapting to changes in Soviet foreign policy in various parts of the world that might lead to better bilateral relations was a concern that continued to be important for the Eisenhower Administration throughout its tenure. In a late 1957 NIE, the intelligence community noted that both Soviet internal and external policy "continue to be strongly marked by change and innovation. The ascendance of Khrushchev has further accentuated the flexibility and pragmatism of the post-Stalin leaders' approach to their major problems." Noting a consensus within most of the intelligence community that the Soviets probably perceive that its increasing nuclear missile capabilities give it "greater freedom for maneuver in local situations," the report comments that

the Soviets will try to further "blurring of the lines between Communist and non-Communist worlds" and "retraction of Western, especially U.S. strength" by goodwill visits, expanded foreign trade, long-term credits, etc. to countries "around the periphery of the Bloc" ["Main Trends," 1957; see also Wilson, 1956].1 Such "local nibblings", Dulles remarked to a group of U.S. Congressmen a few weeks later, must be resisted through economic aid ["Bipartisan Congressional Meeting," 1957].

Military officials noted the importance of this approach also. Admiral Arthur Radford commented in late 1957 after leaving the JCS that it was foolish to dismiss the importance of foreign aid program and retreat to the "Fortress America" concept. Preventing the Communists from achieving their goal of "world domination" necessitated continued military and economic aid to our allies and other countries [Radford, 1957b]. A key national security planning document in 1958 noted that the ability of the West to compete successfully with Communism would in the long term

> depend in large measure on demonstrated progress in meeting the basic needs and aspirations of Free World peoples. In helping to remedy conditions through the Free World which are readily susceptible to Communist exploitation, the United

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1On the very extensive Soviet economic activity among less developed countries in the 1950s, see Brown, 1983: 100; and Graebner, 1981: 42.

> States should take timely action... [NSC 5810/1, 1958: 9].m

A similarly important document the following year made much the same argument, noting that the U.S. must make a major effort to "promote sound economic growth and acceptable political development" throughout the non-Communist world [NSC-5906/1, 1959].

Less Cause for Worry?

As the dynamics of superpower tension began to shift during the mid-1950s, there had also developed a number of arms negotiations with the Soviets. While there was little hope within the Administration, particularly among conservatives of Dulles' ilk, about the eventual success of arms control talks, the negotiation process did force policymakers to focus on the reality and value of trying to find a modus vivendi with the Soviets in the effort to construct a less hostile and tension-permeated relationship. Soviet acceptance of U.S. proposals for an Austrian peace treaty and their interest in a summit enhanced the idea that there was indeed room for negotiation. Eisenhower, it is clear, saw more potential in these events than Dulles, but the overall effect created by the occasional coming to an agreement with the

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> mThere was even some discussion of coordinating such policy through NATO [Montgomery, 1958; Nicholl, 1958].

Soviets about a major element of tension in the U.S.-Soviet relationship was an important one for administration officials (Brown 1983: 92-95).n

Negotiations during this time, to be sure, did proceed on a fairly rocky road, but the continuing efforts on both sides, even though considered insincere by some officials, were not viewed by the administration as a sham. Eisenhower was committed to trying to make these work, and his special assistant for disarmament, Harold Stassen, was certainly was certainly inclined in that direction (Frost, 1987).

Two developments in 1957, however, created a slight shift in U.S. perceptions of the healthy aspects of this developing relationship with the Soviets. One was the test launching of a Soviet ICBM in September, and the second was the launching of Sputniks in October and November. Both the missile firing and the Sputnik launches caused a great deal of concern within the U.S. about competitiveness with the Soviets in the technological realm. There were few implications for the actual U.S.-Soviet relationship. For example, in Eisenhower's speech to the nation after Sputnik II, there was no suggestion that with the launching of the two

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nSee also "Discussion at the 229th Meeting," 1954; and Dulles, 1955.

satellites, the Soviets had become more aggressive [Brown, 1983: 117].

It was the report of the Office of Defense Mobilization's Security Resources Panel under H. Rowan Gaither in November 1957 that caused the greatest amount of concern in U.S.-Soviet relations. While not providing evidence directly for increased Soviet expansionism and aggressiveness, the Gaither report did create great alarm in the U.S. on account of its estimates of Soviet military spendingo and the projected increases in strategic forces the Soviets were likely to have in the future.p While the Gaither report did not engage in the level of speculation characteristic of proponents of the "bomber gap," the year previous or that which would be characteristic of the "missile gap" in the several ear following, the report did recommend that significant funds [over $44 billion in the next five years] would need to be spent to shift the U.S. strategic forces toward a reliance on ICBMs rather than bombers. Assuming that the Soviets were indeed planning to have an ICBM force in several years and realizing that the same would not be true of the United States in an

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oSaid in the report currently to be on a par with that of the US, given relative GNP, but growing.

pOn the Gaither Committee's report, see Morton Halperin, 1961.

equivalent amount of time, the Gaither report urged that the gap be closed soon.

The Security Resources Panel had originally been convened to investigate the feasibility of a series of civil defense measures, and although spending for civil defense came out relatively low in the committee's list of recommendations, the committee still slated $25 billion over the next five years for those purposes.q As suggested earlier, the Soviet threat that was of the greatest concern to the Gaither Committee was not based on perceptions of increased Soviet hostility, but on what Soviet military capabilities would develop in the next five to ten years and what the U.S. should be doing to protect itself against this problem [Kaplan, 1983: 149-152].

Eisenhower's somewhat negative reaction to the report had been anticipated by committee members, given the level of its spending recommendations. While committee members had hoped Eisenhower would be interested in the report's conclusions in part as a focus for U.S. assertiveness in security policy in the wake of Sputnik, the President thought such endeavors were more suitable for the long-term than short-term and believed that it would be

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qSee the report of the Security Resources Panel, quoted in Kaplan, 1983: 145.

endangering and unnecessarily frightening to the public to say anything different [Kaplan, 1983: 147]. As he commented in Waging Peace in reflecting on his thinking at the time of the Gaither report, "Our security depended on a set of associated and difficult objectives: to maintain a defense posture of unparalleled magnitude and yet to do so without a breakdown of the American economy." "We could not turn the nation into a garrison state" [Eisenhower, 1965: 222; Brown, 1983: 119].

Eisenhower did agree with the committee that the country would have to start investing to start investing more in military technology within five years and that the people would need to be educated to support this additional burden. He also agreed that development of the IRBM, ICBM, and SLBM and space projects needed to be supported strongly [Kaplan, 1983: 146; Brown, 1983: 115, 119-120]. Nevertheless, Eisenhower's overall doubts about the recommendations of the committee reflected his general orientation on defense spending to counter the Soviet threat was to make marginal improvements in existing programs and to be even more selective in the choice of programs to be funded [Brown, 1983: 118].r

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rDulles agreed with this basic approach. He noted, for example, at an important policy meeting that the Gaither Committee had focused on military problems. However, he continue, the "international struggle" was not just military, so the US must also vie in the economic

Both the President and Dulles thought that accepting the recommendations of the Gaither Committee would be putting too much emphasis on the military dimensions in the struggle against Communism and would be ignoring vital aspects of security, such as foreign aid (Eisenhower, 1965: 221-222; Brown, 1983: 118).

Perceptions of the Role of NATO

The difference involving, on the one hand, Eisenhower and the members of his Administration, and on the other, members of Congress who advocated greater defense expenditures provides a useful point at which to introduce the role of NATO in the U.S.-Soviet relationship. One of the key underlying factors differentiating Eisenhower and those who emphasized increased military preparedness to meet the Soviet threat was the nature of the threat envisioned. Eisenhower, Dulles, and others saw the threat as broader, both geographically as well as conceptually. Advocates of the Gaither report's conclusions and, more generally, of significantly higher defense expenditures, saw the threat as primarily a function of a disparity in military capabilities.

This difference of opinion was symptomatic of a broader difference within the defense community, and this

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realm and not squander its money on military procurement (see Eisenhower, 1965: 221-222).

difference was also manifested in the perceptions of the role that NATO played in the Western alliance. NATO was founded in 1949 in the wake of the Czech crisis and, more generally, in response to the concern that the Soviet Union might mount an invasion into Western Europe. The alliance was designed to tie the U.S. with its allies in Western Europe to contain and repel such an invasion.

This fear of Soviet aggression into Western Europe was indeed one of the principal motivations that drove the institution of the Lisbon goals in 1952. As the Korean crisis waned and East-West tensions began to diminish somewhat in the mid-1950s, subtle transformations began to occur in the perceived role of NATO, transformations which were similar to those occurring in views of America's own role vis-a-vis the Soviets. In spite of the concern expressed in the Republican platform in 1952 and during the first two years of the Eisenhower Administration of "liberation of captive peoples," NATO's European members began to develop a preference for deterrence of Soviet aggression, rather than deploying forces that could contain an invasion near the border between Western and Eastern Europe.s The seeming reasonableness and validity

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sOn the Republican platform and the "liberation of captive peoples," see Graebner, 1981: 38-43 and Brown, 1983: 107-112.

of this perception was enhanced by the increasing availability of nuclear weapons with low yields.

As has been suggested for the U.S. leadership in the 1950s, deterrence was becoming more commonplace in the thinking on the central U.S.-Soviet relationship and as this relationship involved Europe. The sense that conflict--specifically conventional war--would not occur in Europe complemented the growing perception that the principal areas with the U.S.-Soviet conflict was played out as being among less-developed countries. As the perceived intensity of the threat in Europe diminished, differences developed among the allies as to how best to meet the threat at this level. To the extent the threat seemed less overtly military, there was further concern about the form the response should take. These questions involved such issues as how important the military dimensions of NATO should be, what military policy in general should be developed, and what types of weapons should be emphasized. These questions generally led to a decreased emphasis on the feasibility and likelihood of conventional war.

Conclusions on Perceptual Change in the U.S.-Soviet Relationship

As one looks back over the first fifteen years at U.S. leaders' handling of the U.S.-Soviet conflict, one can note a distinct progression in the U.S. leadership's doctrine of potential conflict with the Soviet Union. In the post-war years, the perception was that conflict with the Soviets was most likely to occur as a result of a war

started by the Soviets, and that the U.S. must prepare to fight this war or preempt its adversary with superior U.S. strategic forces. In the 1950's, the doctrine of conflict seemed to be that the Soviets were not necessarily intent upon initiating a war with the United States in order to conquering the Western world. The Soviets, perhaps perceived by U.S. policymakers as deterred from overt military aggressiveness by U.S. strength, were thought to be carrying on the conflict with the West by undermining the power of the Free World in various places around the globe (see Lukes, 1988; Weapons Systems Evaluation Group, 1960). Still the Soviets were seen as potentially aggressive enough that the specter of a U.S.-Soviet conflict still demanded a sufficiently high level of expenditures to for strategic forces to ensure deterrence.

As previously mentioned, the sense within the U.S. leadership of the level of hostility of the conflict and where it was most likely to be played out had a significant impact, as will be seen, on how U.S. military leaders approached the issue of the best strategy to deal with this threat and on how they approached the issue of force posture expenditures. As I explain these factors in the next section, I will emphasize the nature of the potential conventional engagements envisioned with the Soviets.

Strategic Thought

As is the case for shifts in U.S. leaders' images of the Soviet Union during the Cold War, changes in U.S.

strategic thought since the end of World War II and the development of strategic war plans have also been well documented.t For the purposes of this chapter, I will review the development in these two areas with attention to the role that conventional warfare was assigned to play. Several natural breaks appear in this development, and I will use these breaks as points about which to focus the discussion. As mentioned earlier, those breaks separate the periods when the U.S. had a usable nuclear capability but the Soviets did not (1945-1952), when both countries had a strategic bombing capability but no ICBMs (1953-1959), and when both had a strategic nuclear capability in ICBMs, as well as SLBMs and bombers (1959-1970).u

Early War Plans

In the early post-war years, U.S. strategists perceived it most likely that a major conflict with the Soviet Union would open as an air war led by U.S. bombers, some equipped with nuclear weapons and some not.v As Friedberg (1984: 569) notes, the strategic bombing experience of World War II convinced many experts that air power could be used most effectively to attack an

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tSee, for example, Freedman, 1981; Herken, 1983; Kahan, 1975; Kaplan, 1983; and Trachtenberg, 1988/89.

uA helpful study that unites developments at the strategic plans level with the previously discussed perceptual level is Williamson, 1975.

vFor a comprehensive history of the early war plans, see Condit, 1979: 283ff.

opponent's industrial base, and the demonstrated capability of the atomic bomb reinforced this notion.w

Furthermore, military planners were concerned with avoiding another Pearl Harbor-like situation. With the Air Force providing some of the most trend-setting ideas on strategic campaigns, these planners began to consider the possibilities of preventive and preemptive war in case of growing hostilities with an adversary. Hypothesizing that a future major conflict would be initiated by an adversary who might try to "achieve the effects of Pearl Harbor on a vast and relatively complete scale," the JCS argued in 1945 that

> we cannot afford, through any misguided and perilous idea of avoiding an aggressive attitude, to permit the first blow to be struck against us. Our government...should press the issue to a prompt political decision, while making all preparations to strike the first blow if necessary [JCS, 1945a: 27].

The JCS concluded in this report that the atomic bomb and other new weapons place "'a greater premium than ever before on the value of surprise in the initiation of war'" and thus "'emphasized the importance [of] striking first'" [JCS, 1945b: 4-5]. The JCS, for several more years, continued to propound the concept that "the best defense is a good offense." In a 1947 report entitled "Atomic Warfare Policy," they argued that "'forbearance in the future will court catastrophe. Offensive measures would be the only generally effective means of defense, and the

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wSee Norstad's 1946 briefing for President Truman on the Soviet military threat [Norstad, 1946].

United States might be prepared to employ them before a potential enemy can inflict significant damage upon us'" [JCS, 1947].x

In the early post-war years, the bomb was assessed as a weapon that could not and should not replace conventional forces, since doing so was considered by the JCS as "'prejudicial to national security'" [JCS, 1945c: 7; Girrier, 1985: 76]. "Destructive though it may be," noted the Air Force,

> the atomic bomb is in many respects comparable to the effects of a World War II type bombing attack. The possibility of the total destruction of a nation by mass atomic bombing attacks does not by any means imply that such destruction will occur. The degree of demolition desired rightly belongs in the realm of war aims. [T]he atomic bomb could prove more humane than conventional bombing [since recovery and continued ability to wage war would be greatly degraded at the outset] [U.S. Air Force Field Office, 1948].

Nevertheless, as more information about the bomb and its capabilities became known, various services began increasingly to see applications for the bomb in their service's strategy [JCS, 1945b: 7].

A variety of different plans were developed in the second half of the 1940s for the use of the bomb.y With

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xThis concern about taking advantage of nuclear weapons in the struggle with Communism is reviewed nicely by Trachtenberg, 1988/89.

yFriedberg reports a comment by David MacIsaac that during the late forties, "'both the air staff and joint planners continued work on a whole series of so-called war plans whose only long-range significance would be to provide historians the problem of trying to sort them out...'" [1984: 574].

these plans, the U.S. military was seeking ways to defeat perceived superior Soviet ground forces as quickly as possible. Friedberg comments that the most effective means to accomplish this goal was thought to be the destruction of cities with critical war-supporting industries. As nuclear weapons became more available, planners basically sought to unleash the largest air offensive possible in the shortest period of time (Friedberg, 1984: 574; see also Joint Intelligence Committee, 1945). I will outline these briefly to provide a basis for later interpretation of conventional doctrine.

Among the first plans was Pincher, a June 1946 scheme which envisioned the outbreak of hostilities occurring between mid-1946 and mid-1947 as a result of a deliberate but limited Soviet provocation, where the Soviets misjudged the U.S. resolve and inadvertently precipitated a major war. The air offensive in Pincher would commence after a period of protracted conventional combat (U.S. Joint War Plans Committee, 1946). It was predicted that U.S. occupation troops in Europe and Asia would withdraw to rear areas or be evacuated altogether (except for those in England), since most of Western Europe, the Mideast, and Asia would be overrun by the Red Army. Defensive bases would then be established in the "'British Isles, Egypt, and if possible, India, Italy, and China'" from which to launch air attacks against some 20 Soviet cities. This provocation was projected to occur with no more than

three months advance warning. The number of atomic bombs the U.S. forces would drop on Russian targets was said to be "limited", as the JCS did not know at that time the extent of the U.S. arsenal of nuclear bombs (U.S. Joint War Plans Committee, 1946; and "Enclosure B," 1946).

Two years later the JCS developed the "Broiler" plan.z Broiler, a revision of "Pincher", foresaw a similar initial U.S. force withdrawal but differed in incorporating a much earlier use of the bomb (Condit, 1979: 285-286). The air offensive was foreseen to stabilize the Soviet offensive in the first months of the conflict. The air offensive would also aid the allies in recapturing lost territory by disrupting Soviet war production in the following six months (JCS, 1947a, 1947b). Furthermore, Broiler envisioned the possibility that the liberation of Eastern Europe and the surrender of Russia might ensue "'immediately following the initial atomic bomb campaign.'" In this context, Broiler was predicated on the hope of inducing an early surrender by the use of the bomb, rather than by gradual destruction of the Soviet Union's war-making capacity (Herken, 1982: 227; JCS, 1947b).

In these early campaign plans, one can see that conventional warfare played a prominent role. Conventionally armed forces would be active both in the

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zBroiler was the first plan developed under the National Security Act of 1947; earlier plans had been products of individual offices and joint committees.

early stages as well as in the effort to recover territory after the nuclear air campaign against Soviet industrial areas.

The next major war plan was Frolic/Grabber, devised in the wake of the communist coup in Czechoslovakia. The Joint Chiefs met in Key West in mid-March, 1948 to decide what to do about U.S. force planning in light of serious limitations on U.S. ground forces. These limitations had occurred, of course, because of the demobilization and the lack of Congressional support for Universal Military Training.aa In contrast with some previous plans that assumed warning of up to a year before a Soviet attack, Grabber assumed that attack could come at any time and with little or no warning. In response, U.S. forces would be immediately withdrawn west from Germany, Austria, and Trieste to defend a line West of the Rhine. Allied forces would also would also be withdrawn from the Mideast in order to be better prepared to recapture that area and its oil reserves in the early part of the war's second year (JCS, 1948c; Condit, 1979: 286-288).

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aaSecretary of War Henry Stimson, who had supported Universal Military Training during the war as a solution to the administrative and other problems caused by conscription, promoted it afterwards as a surer deterrent against aggression than the bomb. Congress and the public found this argument particularly unappealing (N.B.: the popular pressure for demobilization). Even Truman's personal attempts to promote the program to the American public were unsuccessful, largely on account of the notion that the US should focus its resources on the capability where it had the greatest advantage--the bomb. On these points, see Herken, 1982: 206, 247-248 and Girrier, 1985: 84.

The air-atomic offensive in Grabber would begin "'as early as practicable'" (probably within two weeks of the outset of hostilities) from bases in England, Pakistan, India, and Okinawa. The JCS stressed this was only a temporary plan, and indeed, one member of the planning committee said that this was the only condition under which all the services could agree to it. The plan, among other things, highlighted the deficiencies in conventional forces and the lack of military control over the bomb (JCS, 1948c; see also Girrier, 1985: 79).

Initially because the custody question was still unsettled and because the negotiations in the United Nations for international control were still under way, Truman in May 1948 asked the JCS to prepare a plan not predicated on the use of nuclear weapons. The JCS consented and began planning Intermezzo; however, just as planning got underway, the Baruch Plan and other schemes for international control of nuclear weapons foundered in the UN Atomic Energy Commission. The Commission adjourned its deliberations sine_die, and Intermezzo was therefore stillborn (JCS, 1948d).

What replaced it in the fall of 1948 was Halfmoon/Fleetwood, a plan officials from the U.S., Canada and Britain began formulating in the spring. Halfmoon was an abbreviated version of Broiler, in which the few principal changes concerned assumptions about countries that would be allies against the Soviet Union (Condit, 1979: 288).

The war objectives stated in Broiler remained the same for Halfmoon.bb Fleetwood [as Halfmoon was renamed in mid-1948 called for U.S. forces to hold the Soviets at the Rhine, while the Navy blockaded the Soviet coast and bombed Soviet cities. Although the prosecution of the war was envisioned as likely to go into a second year so that the Mideast oilfields could be retaken, the plan asserted that a short, decisive nuclear attack on the Soviet Union would not only be desirable, but a requirement for victory. Whereas Pincher called for an attack on 20 Soviet cities with 50 bombs, the two variants of Fleetwood called for destroying 70 cities with 133 bombs in a single, massive strike or in stages during the first month of the conflict. In the case of the single, massive strike, the evacuation of U.S. troops would be delayed or deferred pending the outcome of the air-atomic offensive [Condit, 1979: 288-293; JCS, 1948d].cc

Over-Reliance on Nuclear Weapons?

Some U.S. officials, such as Secretary of Defense Forrestal, AEC Chairman David Lilienthal, George Kennan, head of the State Department's Policy Planning Staff, Chief of Naval Operations Louis Denfield, and a handful of others, were becoming concerned about a too-extensive

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bbThese were to compel the Soviet Union to withdraw to its earlier boundaries and to cease aggression [Condit, 1979: 289].

ccAlso see Girrier, 1985: 79-80. Halfmoon/Fleetwood also bore the name "Doublestar" over the course of its lifetime.

reliance by the U.S. on nuclear weapons, but their concern was not significantly reflected in the plans continuing to issue from the Pentagon (Herken, 1982: 276-282).

In early 1949, for example, the JCS began work on Dropshot, a plan for war with the Soviet Union beginning as late as 1957. The authors of this plan envisioned a war that could either end after two to four weeks of nuclear raids or continuing up to three years. The plan also called for a land invasion of the Soviet Union, depending on whether the air offensive was decisive. Like Fleetwood, Dropshot called for a "'strategic offensive'" in Europe, a '"strategic defensive'" in the Far East and an immediate and widespread employment of the bomb as essential for the plan's success. Charioteer, the Air Force's annex to this plan, called for a ten-to-one numerical superiority over the Soviet Union in nuclear weapons by 1957 (the Soviet Union was forecasted to have 250 bombs "at most" at that time). The architects of Dropshot basically envisioned the destruction of the enemy by nuclear weapons in the shortest time possible (JCS, 1949a; see also Brown, 1978). This trend acknowledging the potentially predominant military role of nuclear weapons was characteristic of both Fleetwood and Dropshot, though both plans also incorporated ground offensives with conventional forces.

Following Dropshot came Trojan. Trojan, an Air Force plan implemented in January 1949 for war in the 1950s, was

basically an update of Fleetwood. It differed from Fleetwood by the addition of an annex outlining a proposed atomic offensive, as well as some assumptions about allies. The annex on the atomic offensive called for 300 bombs to be used in an initial strike, plus 70 more in a second wave [Condit, 1979: 292-294; NSC--Atomic Folder, 1949].dd While Dropshot and Trojan were being designed as more long-range war plans, the next emergency war plan--the successor to Fleetwood--was Offtackle. Offtackle, a plan for war in the middle or end of 1949, was composed on the order of the Joint Chiefs of Staff because of their conclusion that their current strategy could not be implemented with the budgetary constraints suggested by the President. Offtackle provided for an almost sole reliance on the Air Force and its nuclear weapons. According to Offtackle, the bomb would be used both against Soviet industrial and military facilities in the U.S.S.R. itself as well as against troop advances in Western Europe. According to the plan's framers, the U.S. would try to hold the oil fields in the Mideast, then in the third through twelfth month of the war would mount a largely conventional reentry into Western Europe. Offtackle officially superseded Trojan in December 1949 [Condit, 1979: 294-297; Poole, 1980: 161-167; JCS, 1949b].

In mid-1950, the JCS developed the "Reaper" plan, based on a nuclear war beginning in 1954. This plan,

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dd370 bombs were anticipated to constitute the entire U.S. stockpile in 1950 [Herken, 1982: 286, 291].

designed for coordination with the NATO allies and approved in November 1950, assumed a Soviet nuclear attack on the West and a Western response of a "strategic offensive" in Europe and a "strategic defense" in the mideast. It also assumed the use of nuclear weapons by both sides from the beginning but recognized that conventional forces would have to engage in delaying action until a major offensive of nuclear and conventional forces could be mounted (JCS, 1950; Poole, 1980: 170-172).

At an operational level, the war plans drafted from the mid-1940s reflected the limitations created by the small arsenal of bombs and the perceived manpower differential between the Soviet and U.S. armies. A war with the Soviet Union, one infers from Pincher, Broiler, and Grabber, would have been prosecuted much like World War II, with a bombardment campaign before important areas could be retaken by U.S. forces. Conventional warfare certainly remained an important facet of the conflict, though there was clearly an inverse relationship developing between the size of the nuclear stockpile and the length and importance of the conventional phase of the war. In these early post-war years, one imagines that military leaders would have sought to augment existing conventional forces with a major mobilization effort, if not a draft, after the conflict had begun.

The Growing Emphasis on Nuclear Weapons

As the stockpile grew, however, the JCS, particularly chief of staff of the Air Force, apparently thought it

best to make use of the entire quantity of nuclear bombs in the U.S. arsenal in order to conclude the conflict. There was no apparent limitation for political reasons, such as to facilitate war termination, on the quantity of nuclear weapons or the timing of their use. Wreaking as much destruction as possible on the Soviet Union in the shortest amount of time seemed to be the underlying objective. As will be explained later, this concept remained fairly constant until the early 1960s. It was only then that defense analysts and military officials, who in the early 1950s had begun to question the value of plans for an all-out nuclear assault on the U.S.S.R., found themselves in public office at high enough levels that they could influence key policy on these issues.

It was likely that there was similar concern among U.S. allies in Western Europe about the wisdom of the U.S. use of nuclear weapons in conflict with the Soviet Union. It was indeed about the same time that Dropshot, Trojan, and Offtackle were being formulated that the Western allies were negotiating the NATO treaty. However, although NATO's principal function was to defend Western Europe from a Soviet attack, and hopefully to deter that attack from even beginning, there was no mention in the NATO treaty of the U.S. strategic arsenal or of the extensive use of nuclear weapons that were thought in the U.S. the greatest barrier to the Soviets. One of the principal reasons for this omission was the extensive political controversies that would have resulted if the

nature and breadth of the U.S. "nuclear umbrella" had been spelled out in the treaty (Herken, 1982: 292). While the absence of more specific plans does not mean that NATO leaders had not thought about this question, the lack of specificity in part reflects a lack of consensus among the allies as to how the next war should be prosecuted and what the probable nuclear threshold would be for either tactical or strategic weapons.

Even in the U.S., there were questions raised in the late 1940s about the wisdom of planning a massive air attack against the Soviet Union. There were two major reports underway in the late 1940s in the U.S. to evaluate U.S. force structure and the use of nuclear weapons. The two reports, by the Harmon and Hull committees, both criticized the extent of U.S. emphasis on the bomb in military planning. The Harmon Report, issued in May 1949, questioned the effectiveness of the air-atomic strategy and asserted that the U.S. Air Force with this strategy would probably not have the effectiveness it wanted to bring about an offer of surrender from the Soviets (Condit, 1979: 312-315; JCS, 1949; see also Herken, 1982: 290-296). The Hull report, issued in January 1950, questioned the advisability of an air-atomic strategy given the likelihood of the Soviets to match the U.S. nuclear capability (Weapons Systems Evaluation Group, 1950).

By the time NSC-68 was underway by spring 1950, even the JCS was convinced that the bomb could be militarily

indecisive because of the potential growth in the Soviet nuclear stockpile. Truman, in fact, rejected the Air Force's argument (advocated by Secretary Stuart Symington) during the NSC-100 deliberations for nuclear strikes against the Soviet Union whenever there was a "'moral justification'" for doing so, i.e. for offensive as well as defensive purposes (NSC-100, 1951). Truman's decision reflected the growing consensus that the unilateral military advantage possessed by the U.S. was waning and that U.S. war plans could not be based on the assumption of nuclear superiority.

Still, a massive attack against the Soviet Union remained the order of the day. As David Rosenberg notes in an analysis of targeting policy during that period, the list of Soviet targets grew along with the U.S. nuclear stockpile, so that from 1947 to 1952, the list of Soviet targets the U.S. Air Force estimated would need to be attacked grew from 100 to 5,000-6,000 (see Table 1).ee An attempt had been made in the late 1940s to prioritize targets, such that by 1950 a priority list existed. However, uncertainty about the location of important Soviet targets plus operational limitations on bombardment plans led to a rejection of the priority list (1986: 38-42).ff Given the relatively small size of the nuclear

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eeProcurement of medium and long-range bombers had also been growing during these years (see Tables 2 and 3).

ffRosenberg notes that there were 13 (unassembled) bombs in the stockpile in mid-1947 and approximately 1000 in 1953.

stockpile and delivery force in the early 1950s, the Air Force had concentrated its targeting on urban industrial centers, and President Truman had essentially concurred with this approach [Rosenberg, 1986: 43].gg

In the first half of Eisenhower's presidency, SAC's control of and approach to strategic war plans remained essentially unchanged. Indeed, since Eisenhower, unlike Truman, considered the bomb as a weapon of first rather than last resort,hh the targeting plans Eisenhower inherited fit in well with his "massive retaliation" policy.ii In the war plans developed in the early 1950s, this influence made itself felt in the Air Force's argument that peacetime military plans should focus on the development of forces for D-day and the following six months, while the other services argued that mobilization reserves for D plus six months were also important. While the final document reflected the longer-term perspective, it also assumed that the opposing sides would both employ nuclear weapons from the beginning of the conflict [Watson, 1986: 95-101].

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ggRosenberg, p. 43. Rosenberg notes that Truman may not have fully understood JCS and SAC targeting plans or the continuing possibility of a preemptive strike against the Soviet Union implicit in those plans.

hhRosenberg notes [p. 43] that it was Eisenhower who superintended the transfer of nuclear weapons from civilian to military control.

iiIt was NSC-162/2 of October 1953 that established nuclear weapons to be "as available for use as other munitions." On this point see Rosenberg [1986: 44].

In 1954 and 1955, attempts were made to reduce the duplication in targets that had occurred [U.S. Air Force Strategic Air Command, 1956]. Proposals resulting from some of this consultation among the services employed a more counterforce approach to targeting, focusing more on Soviet nuclear and conventional forces than on urban/industrial areas. While some of these efforts attracted Air Force attention, they were not implemented because of the perceived inabilities 1] to determine the location of all the important counterforce targets and 2] to attack them successfully [Friedberg, 1984: 570].jj

As U.S. war planning continued, the targeting debate began to play a role in the inter-service rivalry in nuclear weapons planning. Interestingly, though, it was not until late 1956 that the Army and Navy, which had since the 1940s contested the Air Force's predominance in strategic target planning, prepared a study that demonstrated the high redundancy in targeting and the very great amount of fallout and radiation that would result from SAC's existing plans [Rosenberg, 1986: 50]. There was also some discussion in U.S. military planning circles about the relative unlikelihood of all-out war and the importance of a graduated deterrent [see Naval Warfare Analysis Group, 1957; Burke, 1959]. However, until the

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jjSee also Watson's [1988: 101-109] more extensive discussion of strategic planning during these years. See also NSC-5501, 1955 and JCS Joint Strategic Plans Group, 1955 that discuss the growing strategic arsenals of the two sides in the context of their continued mutual hostility.

Kennedy Administration came into office, SAC's emphasis on utilizing all available forces to achieve maximum damage of the Soviet Union as soon as possible remained the basic principle characterizing U.S. strategic nuclear policy [Rosenberg, 1986: 50-55; see Twining Memo, 1960].kk

For example, at a 1957 conference of key military leaders, an Air Force official commented that a future nuclear war would begin by a Soviet attack on the U.S., with the initial air battle lasting 36-48 hours, until the nuclear capability of one side was exhausted. The Army and Navy would then conduct mopping up operations, if the air battle had been successful; if the initial conflict had not gone in the U.S.' favor, the Army and Navy effort would be fruitless. Asked if the Army should be prepared to fight local wars, the briefer commented that it would

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kkNathan Twining, air force chief of staff and chairman of the Joint Chiefs of Staff during Eisenhower's tenure, reports that Generals Maxwell Taylor and Matthew Ridgway in NSC meetings would raise the point that a massive nuclear strike against the Soviet Union would leave "such a vacuum" in the country that the Army would have no way of dealing with the situation. After several different occasions when this point had come up, Eisenhower became annoyed and responded, "Listen, I don't want to hear any more about this. Our policy is that if the Communists attack any one of our NATO countries, a big attack, not just a skirmish...we are going to attack...massively, with everything we've got, and I'm going to assure that everything we've got in this country gets off as quick and as fast and as hard as possible. Max [General Maxwell Taylor], that vacuum you're talking about will have to take care of itself. I can't be bothered" [Nathan Twining Oral History, 1967: 208].

be "difficult to believe" that the U.S. would fight local wars in the future [Rockefeller Brothers Fund, 1957].11

The key aspects for the present analysis of the development of strategic planning in the early post-war years are five. First, a major conflict with the Soviet Union in the first half-decade or so after World War II was anticipated to be primarily conventional, largely because there were not enough nuclear weapons available to facilitate a decisive nuclear campaign. As those weapons did become available, this availability solved two problems--one military and the other economic. The military problem was the means by which to wage a conflict with the Soviet Union that would not only be successful but would reduce the expenditure of troops and the length of time earlier considered necessary to defeat a major power. The economic problem was the means by which the U.S. could maintain in peacetime the capacity to defeat a country like the Soviet Union while not draining the domestic economy of human or financial resources.

A third key aspect was that since nuclear weapons until the mid-1950s were largely indiscriminate in their destructive capacity, U.S. planners had to content themselves with strategic plans that provided for widespread destruction of the Soviet Union's urban and industrial

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11One of the implications of this strategy was an effort to reduce the number of Armed Forces personnel. In the late 1950s JCS Chairman Radford sought a cut of 800,000 men in the three main services [Leviero, 1956: 1].

(not to mention social) fabric. For at least a half-decade after the war, this prospect was not unpalatable to many U.S. leaders.

Fourth, deterrence--specifically, the prospect of avoiding war altogether with the Soviet Union--did not gain currency until the early 1950s. It did so primarily because the nuclear stockpile was growing at a rate that led a number of planners and political leaders to question the appropriateness of the use of so much destructive power.

While there were no doubt many in the U.S. leadership who thoroughly wished to avoid war regardless of the primary basis of U.S. military power vis-a-vis the Soviets, the fact that it was the growth in technology and armaments that seemed to provide the momentum for the development of this concept is interesting.

Fifth, as deterrence was first developed into policy, the categorical, all-or-nothing attitude toward the concept as formulated in Massive Retaliation provides an important statement about how U.S. leaders perceived the U.S.-Soviet relationship and the possibility of conflict with the U.S.S.R. The policy in part reflects the depth of the conflict many perceived and the need to bring all of the U.S.'s most powerful forces quickly to bear to destroy completely the Soviet's war-making capability. Certainly the technology of warheads and delivery systems available at the time helped shape this perspective, and the Eisenhower

Administration on several occasions modified some of the most stark implications of Massive Retaliation as a declaratory policy. Nevertheless, the formulation of such a policy in terms of how it reflected what U.S. leaders thought of conflict with the Soviets and in terms of its unequivocal character as no doubt perceived by the Soviets is important.

U.S. Army Planning for Conventional Warfare

When examining in the early post-war period how thinking about the nature of the threat to the U.S. and the purpose of strategic forces relate to conventional forces planning in terms of deterrent and actual operational capabilities, it is not surprising to find that much of the thinking was imprecise, built on poorly founded assumptions, and driven by concerns other than military ones (i.e., political and economic factors). Then, as well as now, no one has fought a nuclear war, so data on force exchanges, not to mention the psychology of the battlefield, is unavailable. Without taking an unnecessarily revisionist approach to military planning during that time, it is still important to chart influences and problems affecting the U.S. Army's development of U.S. operational doctrine for a potentially nuclear battlefield.

Since it was in Europe that most Western leaders in the 1950s and 1960s thought that the U.S. and Soviet would come to blows first, it is there, specifically on conventional

and nuclear doctrine in Europe, that I will focus.mm First, though, I will offer a few introductory comments on the nature of conventional strategy and strategic force planning prior to NATO's formation.

As indicated in the previous sections on strategic planning, detailed information on the destructiveness of nuclear weapons and the extant stockpile was not available to JCS planners composing strategic war plans in the first post-war years. This lack of information clearly handicapped that planning and affected just as severely those planners at lower levels in the U.S. Army who were working on strategy and tactics for engagements on the ground.nn

Ground Warfare Planning, 1945-1952

Soon after the Japanese surrendered, the Army Chief of Staff ordered a board of senior officers chaired by Joseph

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mmCarter [1987] provides a good overview of this issue for the first post-war decade.

nnMost of the sources I cite are declassified Army studies or studies from which excerpts have been declassified. Although the principal significance of this discussion is to present what the Soviets may have known about Army doctrine, it is not inappropriate to proceed in this way. First, as was the case with the strategic plans, the Soviets were probably able to gain from clandestine as well as open source intelligence a significant amount of information about US war plans, certainly more than was in the media, though perhaps not in extensive detail. Second, my constructing both these sections largely from declassified material is a more efficient way of addressing change than trying to build the same arguments from a much larger set of publications taken from the media and the scholarly literature contemporary to the periods being examined.

Stillwell to examine the types of equipment the post-war Army would need. Even absent the necessary data on nuclear weapons, the Stillwell Board was strong in its recommendations of nuclear weapons for the Army and argued that nuclear weapons should figure prominently in Army planning (Report of the War Department Equipment Board, 1949: 8).

A JCS study, undertaken at about the same time to study the overall effect of the bomb on warfare and military organization, concluded that the Air Force should have priority responsibility for nuclear weapons, while the Army should concern itself only with conventional weapons in its battlefield planning (JCS, 1945c: 4, 17). This finding was based on the reasonable conclusion that the atomic bomb "'is not in general a tactical weapon suitable for employment against ground forces.'" The Army, however, not wishing to be cut out of the planning for such an important technology, resisted this conclusion and continued to try to secure a place for its representatives in planning sessions for nuclear weapons (Midgley, 1986: 8-9).

Another JCS study noted that one of the effects of the development of the atomic bomb would be that the Army for a future war would be smaller than that for World War II because there would not be enough time to mobilize a very large force. While this study noted more information was needed on the atomic bomb to make an accurate assessment of

its impact on Army planning, it did not that the Army's in the next five to ten years would have many tasks that could be done without atomic weapons, such as garrisoning overseas bases and providing a mobile U.S. security force [JCS, 1946a].

Studies done by the Army in the late 1940s continued to reveal the perhaps inevitable problems resulting from a lack of sufficient data. One study by the Army General Staff, commissioned by General Eisenhower in late 1946 to examine the nature of the new battlefield, was hindered so much by the lack of data that it was not presented to the JCS until 1950. It became a very general document in its final form, basically describing the broad outlines of a campaign using technology available in 1958. A second study, begun by the Command and General Staff College [CGSC] at Ft. Leavenworth in late 1949 and similarly suffering from a lack of data, compared the atomic bomb to artillery used for interdiction and argued that basic conventional tactics would still be used on the battlefield [War Department Advanced Study Group, 1950; and Department of Analysis and Research, 1950].

During the same period as it was advancing the concept of its role in strategy formulation, the Army was also trying to acquire long-range guided missiles with nuclear warheads on the basis that they would be needed against reserves in

the enemy's rear (see Table 2).oo Development of Corporal, begun in 1944, was approved in 1950 as the Army's first short-range surface-to-surface missile. The Honest John, a smaller and more mobile short-range missile, entered the R&D stage in 1950, though it was not deployed until 1953. The 280mm atomic cannon, which had entered R&D in 1944, began testing with conventional warheads in 1951. Nuclear artillery rounds took longer to develop, such that testing with such ammunition did not begin until 1953.pp

Nevertheless, in spite of the uncertainties among Army planners on the effects of nuclear weapons, on specific applications for the battlefield, and on the issues of moving from a conventional to a nuclear engagement in the area of a front or theater, the Command and General Staff College findings in 1950 became the basis for the 1951 manual FM 100-31 "Tactical Use of Atomic Weapons"--the key doctrinal publication on battlefield employment of atomic weapons.qq Furthermore, because the recommendations the report made presupposed no real changes in responsibility

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ooThis initiative was undertaken in part to block an Air Force monopoly on long-range missiles (see Midgley, 1986: 11-12).

ppOn these developments, see Bragg, 1966: Chapter 2; Cagle, 1964: 13-15; Mataxis and Goldberg, 1958; and Evangelista, 1988: 86-154. Evangelista notes (1988: 132) that the first tactical nuclear warhead was tested in 1951.

qqMidgley also notes a 1953 CGSC publication, Staff Organization and Procedures for Tactical Employment of Atomic Weapons, as important for the debate (Department of the Army, 1953).

or authority within command structure, the Army staff was able to approve the Leavenworth drafts relatively quickly [Midgley, 1986: 17; Department of Analysis and Research, 1950: 3; Department of the Army, 1951].

As indicated earlier, questions began to be raised in the late 1940s from such sources as the Harmon report and the U.S. Army about the credibility of that deterrent [JCS, 1949; see also Girrier, 1985: 96-97]. With the changes in nuclear technology and delivery systems at that time, not to mention developments in the nature of the threat expected from the Soviet Union, there was a clear element of inevitability at the turn of the decade of the Soviets' employment of nuclear weapons that affected U.S. strategic planning.rr

As one follows the train of the development of Army strategy for the relative emphasis of conventional and nuclear weapons, the early fifties provided several important junctures around which Army policy about how to

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rrAs one juxtaposes these developments in strategic targeting and battlefield use of nuclear weapons as they relate to a potential U.S.-Soviet conflict in Europe in the late 1940s and to the founding of NATO, it is not surprising that there was little attention given to the specifics of how the U.S. Armed Forces would come to the aid of their West European counterparts. As mentioned earlier, the NATO treaty of April 1949 does not detail a military alliance, nor does it mention the use of the bomb as either an actual weapon to be used or as a deterrent. The underlying assumption seemed be to that the U.S. air-atomic strategy would be sufficient to prevent a Soviet attack against the U.S. and that deterrent extended to Europe as well.

fight a theater war with conventional weapons formed. Several of these junctures involved exercises. The 1951 Southern Pine exercises revealed many of the differences between the Army and the Air Force on targeting strategy, particularly that part of targeting dealing with tactical nuclear weapons. In this exercise, which was the first by Army planners to integrate atomic weapons in a large unit exercise, there were no clear procedures for integrating the goals and plans of the services. The executive director established a group of two Army, two Air Force, and two civilian technical experts on nuclear weapons to perform the fire planning tasks for the nuclear weapons available to the forces. As this planning was carried out, it was not combined with conventional force or maneuver planning, and there were significant delays and inefficiencies that led to a reevaluation of nuclear fire planning [Green and Turkel, 1951: 8ff].

About the same time, another study was being undertaking on U.S. strategic nuclear policy that would also have important implications for conventional issues. In the fall of 1951 at the California Institute of Technology, Robert Oppenheimer, "the father of the atom bomb," was involved in Project Vista, whose basic conclusion was that the best military applications of atomic weapons were in lower yield

weapons suitable for battlefield use.ss The report's authors were primarily engaged in assessing the value of continuing with the H-bomb development and with the implications of nuclear weapons for West European defense. The principle cited by the authors as underlying this conclusion was that with a weapon as powerful as the H-bomb, it made little sense and was arguably immoral to plan for strategic bombing of Soviet cities [Scientific Advisory Board to the USAF Chief of Staff, 1953; Kaplan, 1985: 81n]. In the conclusions about specific problems the Army would face, the report's authors asserted that it would be particularly difficult for ground forces to defend against nuclear attack with conventional maneuver doctrine and linear deployment for attack. They also noted that it would be difficult to identify suitable targets was difficult because of the high yields and low accuracies of nuclear weapons [and resultant undesirable collateral damage] at that time [Project Vista, 1951: 5, 180-188].tt

Furthermore the report's authors suggested that apart from specific problems related to massing for a conventional attack or reconstituting after nuclear fires by the opponent, the employment of nuclear weapons by either side

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ssThe Vista authors also supported the concept of conventional forces as the foundation of Western defense [Carter, 1987: 155].

ttSee also Evangelista, 1988: 133-142 on Vista.

would entail very significant psychological problems among the troops [Headquarters III Corps, 1952].uu

Midgley argues that, in spite of these findings, the implications of VISTA were essentially nil for the Army in terms of redesign of battlefield tactics for a strategy of nuclear use. Army planners continued to move ahead with integrating nuclear weapons into force structure and operational planning with no real sense of what the feasibility or real problems of nuclear weapons would be. Additionally, most Army studies by 1952 that discussed this topic assumed that only one combatant--the U.S.--had the potential to use nuclear weapons [Midgley, 1986: 21-25].

Conventional Warfare Planning, 1953-1960

The Korean War, in a sense, provided the catalyst for a move toward a resolution of a number of these issues. It caused the U.S. leaders to face the difficult question of what to do to deter and to fight communist-backed opponents in local wars of potential importance to the U.S.; it raised vital questions of intra-war deterrence, particularly deterrence of nuclear escalation. It also made the Europeans face the question of the value of improving conventional forces in order to have more than just a superficial defense against a Soviet incursion into Western Europe; and it focused for American leaders the economic

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uuThere were really no good psychological studies on these issues.

question of how best to construct a sufficient force posture to meet aggression from conventional forces when that aggression occurs in a distant part of the world. The resolutions reached for many of these issues in the early years after Korea would be later considered inadequate as the U.S.-Soviet relationship and military technology changed, but the fact that the resolutions were based as much, if not more, on political and economic, rather than military, criteria is an important part of the story.

Changes in force use planning, however, were not long in coming to Army doctrine, but these changes would still be based more on the economic and politics of defense than on military rationale. As discussed earlier, NSC-162 had an important effect on strategic force posture and was intimately tied with the understanding of the new administration about the nature of the next war. For the realm of conventional military planning, NSC-162 posed the problem of determining whether Army doctrine should be based entirely or only in part around the use of nuclear weapons on the battlefield. It was clear, as the New Look philosophy was being developed and propagated in such documents as NSC-162, that 1) large-scale general wars like World War II or larger-scale limited wars, such as Korea, would no longer form the basis of military planning and 2) that procurement requests based on conventional warfare

scenarios would not be favorably considered (Huntington, 1961: 73-75; see also NSC-5422/2, 1954).

After Eisenhower had approved NSC-162 in October 1953 and the Joint Chiefs had developed some basic plans for implementing the concepts that were approved by the Secretary of Defense by the end of the year, the Army, headed by Chief of Staff Matthew Ridgway, continued trying to create a niche for itself in a world where nuclear weapons were accorded primary emphasis (Midgley, 1986: 33-34). In late 1953, Ridgway commissioned a number of studies in the ensuing months to explore this topic and its relevance for Army force structure. The penultimate conclusions of these studies, conducted at a number of Army institutions, essentially coalesced into two reports, one done by the Command and General Staff College, and the other by the War College. Analysts at the Command and General Staff College held that the Army should plan to be dual-capable. Analysts at the War College contended that force use planning should revolve around a solely nuclear capability.

It was the views of those at the War College that were eventually accepted by the Army Chief of Staff and came to form the basis of the Pentomic Army concept. According to the War College, the structure of this army would be based on the type of nuclear weapons that would be available in the early 1960s. The proposed force design would also

adequately incorporate cuts, mandated by the Eisenhower Administration, of some half million soldiers and $2.8 billion in Army funding [between 1954 and 1957] [Conference notes, 1954; Leviero, 1956: 1, 8]. The basic structure envisioned for the Pentomic Army was a force of five maneuver divisions capable of delivering their own nuclear weapons. The goal of this structure would be to defeat the enemy by maneuver and the use of nuclear weapons, rather than the traditional infantry-and-armor mode of closing and destroying the enemy with the goal of seizing and holding specific terrain objectives. These units, armed only with sufficient conventional weapons for local security, would be smaller and more mobile than their predecessors.

As this conceptual base for force modernization was expanded for the final report by the Combat Development Group of the Army Field Forces Headquarters at Ft. Meade in April 1954, the War College's study was defined to comprise five maneuver groups [rather than the usual three] subordinate to each headquarters unit, all of which would arguably be sufficiently mobile and flexible to exploit nuclear fires. The technology for this new army would be that available no later than 1960, as opposed to the less precise mid-1960s assumptions made in the War College's study. Additionally, the field forces staff concluded that dual capability should still be retained because of the possibility that nuclear weapons would not be used in a

conflict. In making these revisions, the commandant's conference clearly reworked some key assumptions of the War College study [U.S. Army War College, 1954].vv

This five-sided design, recommended by the Ft. Monroe group, formed the basis of the Atomic Test Field Army [AFTA], the first operational version of the Pentomic concept. As Midgley points out, most of the recommendations of the Ft. Monroe group were largely inductive and based on little or no evidence about what was actually feasible on a nuclear battlefield. These conclusions also rested on the generally accepted assumption that a major war in Europe would essentially begin as a nuclear one and not have an initial conventional phase [U.S. Army War College, 1954; and Department of the Army, 1954].

When General John Dalquist, chief of the Army Field Forces, forwarded the results of the headquarters group to Army Chief of Staff Ridgway, he noted two major problems. One was that since available material had a significant impact on the type of organization the Army could field, the Pentomic force design placed the Army in a quandary, since it called for the Army to have the nuclear resources which national strategy denied it. Second, he pointed out that an army built entirely around the use of nuclear

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vvExtracts from the study are appended to Notes of LTC Knox, 1954; and Command and General Staff College, 1954. See also Pizer, 1967: 38 on the Pentomic division.

weapons would not be wise, since there always remained the possibility that nuclear weapons would not be used. Ridgway's staff and Ridgway himself accepted the point that the Army must be capable of fighting with nuclear and conventional weapons and that the Soviets' eventual arrival at nuclear parity with the United States would confirm this philosophy (Department of the Army, 1954).

Because the Army's definition of the new direction had been based primarily on political and economic concerns, so also was the five-sided design, implemented in AFTA and eventually as part of the Pentagonal Atomic, Non-Atomic Field Army (Pentana), based more on such concerns rather than on concrete measures of military effectiveness (Department of the Army, 1954). One imagines, but cannot be sure, that Army officials realized such was the case.

Exercises to Test the Designs

As the implementation of the agree-upon AFTA division concepts were fleshed out in policy, structural modification, and military operation procedure, it turned out that the proposed division structure was no less vulnerable to nuclear attack than its predecessor. Follow Me, an exercise for the Third Army in late 1954, tested conventional capabilities but did not give much emphasis to evaluation of performance under nuclear attack, since realistic simulation strikes were not staged by either side. Similarly, troop reaction to simulated nuclear

weapons use was not tested, nor was target acquisition for nuclear weapons [Continental Army Command, 1955a: 4].

Blue Bolt, an exercise run in early 1955 for the Fourth Army for evaluation of armor capability, was characterized by the same shortcoming. Although a large number of simulated atomic weapons were available during the exercise, the exercise itself was designed to probable logistical and administrative problems, since it was primarily along these lines that the AFTA armored division differed from its predecessor. As was the case in Follow Me, neither the capabilities of reaction to nuclear strikes not acquisition of nuclear targets were ever really tested [Continental Army Command, 1955b].

A third exercise called Sagebrush, designed to take into account changes made in Army structure during 1955 in response to the previous two exercises, was run in Louisiana in late 1955 and involved over 100,000 Army troops, plus armored divisions, paratroops, and elements of the Tactical Air Command. Far more extensive use was made of simulated nuclear weapons in this exercise than in the earlier two, and it was the conclusion of most observers, comments Midgley, that the new force designs were unworkable on the nuclear battlefield. In the final report, the infantry division commander commented that the AFTA division "'operated in much the same manner as a conventional infantry division,'" and that most improvements in

effectiveness attributable to the structures were traceable to changes in communications and logistic systems (Headquarters Third Infantry Division, 1956).

Control points for troop concentrations targeted by nuclear weapons in the exercise were allowed to continue to operate, with the result that evaluators could not assess the effect of nuclear strikes on command and control capabilities. The conclusion on this topic was simply that infantry and armed units "'would appear unable to avoid destruction'" (Headquarters Third Infantry Division, 1956). As in the earlier exercises, not only the reaction capabilities of the new division design remained uncertain, but nuclear targeting and release doctrine also proved inadequate, especially in the context of providing usable nuclear firepower in a timely manner to the division commander (Headquarters Third Infantry Division, 1956).

On the basis of these results, Maxwell Taylor, who had succeeded Ridgway as Army Chief of Staff in June 1955, rejected the AFTA design. Perhaps even more important to Taylor than these problems, however, was the fact that the Army, with the AFTA design, could not successfully implement budget cuts without excessive organizational changes (Letter, Chief of Staff to General Dalquist, 1955).

Taylor wanted to avoid further budget cuts, so he turned in 1955 to the War College study on the Pentana division as his template. This concept, incorporating weapons to be

available in the 1965-1970 period, was based on a small division organized in five "battle groups" of five companies each, or about 10,000 troops altogether. The design also included organic nuclear-capable artillery units within the battle groups (Notes of LTC Knox, 1954; U.S. Army War College, 1954; Headquarters Continental Army Command, 1954: 7; Letter, Department of the Army to Chief, Army Field Forces, 1954).

The Pentana Design

Pentana had a particularly problematic existence, as it had some conceptual flaws in terms of its implementation on the battlefield. General Ridgway, before he retired, had envisioned Pentana as creating a link between improved weapons technology and the Army's actual war plans. Pentana was also formulated on the assumption that the Soviet armed forces were developing tactical nuclear weapons and that while such weapons may not be used initially in a conflict, one would expect an initial conventional engagement to lead to a nuclear one in a fairly short period of time. Furthermore, the Army's 1960 Requirements War Plan stated that its main job was to block the entry of Soviet forces into Europe, so the combination of a numerically stronger Soviet force equipped with tactical nuclear weapons would need to be met effectively (Midgley, 1986: 59-60; Headquarters Continental Army Command, 1957a).

Pentana's drafters in the War College and, secondly, in the Continental Army Command [CONARC] posited a force design both capable of nuclear and non-nuclear operations and one that would be feasible under existing budget constraints. With little thought to the inherent problems of concentration of forces and the transition from a conventional to a nuclear engagement, the architects of the Pentana concept basically just asserted that a dual-capable force could be constructed, then argued that the Army should design dual-capable units. Furthermore, as CONARC drafters commented, the deployment of units capable of both types of engagement would provide the "'finest possible indicators'" of U.S. intentions and capabilities in case of a conflict [Headquarters Continental Army Command, 1955: 18].ww The Pentana concept was adopted without wargaming or field testing. Indications, such as those provided by Sagebrush, that massed troops would be subject to devastation if deployed in a columnar or linear arrangement, or that artillery units small enough for mobile nuclear strikes could not be massed quickly and effectively for a conventional engagement, were apparently not considered [Midgley, 1986: 63].xx

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wwMidgley [p. 61] points out that the deployment of nuclear-capable QRA aircraft as a signal of nuclear capability was not mentioned in the study.

xxInterestingly, published Air Force guidance for theater air engagements during the same period do not discuss potential problems of close air support or

Pentana designers at CONARC noted that rapidly changing technologies would be occurring in guided missiles, aircraft, and communications, etc., and that these changes would revolutionize ground warfare. Pentana planners consequently acknowledged that these changes would eventually demand further fundamental alterations in Army force design, though they were not specific about the types of alterations anticipated [Headquarters Continental Army Command, 1955].

When the basic plan was sent to the various service schools for comment, the responses were almost to be expected, from a bureaucratic politics standpoint. Since the division was smaller and leaner than its predecessors, the service schools concurred in general but dissented whenever they thought their specialty was underutilized. Thus, particularly strong dissent was registered by CGSC, and by the armor, artillery, and engineering schools [Midgley, 1986: 66]. The Army staff, attempting to synthesize all this input, commented in forwarding to General Taylor the Pentana report with the schools' comments that it was impossible to make a conclusive assessment. The principal reason the Army staff noted for this problem was that two fundamental issues had not been resolved during the formulation of the Pentana study was

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interdiction campaigns in a nuclear environment [U.S. Air Force, 1954a: 7-9, 1954b: 17-20].

being formulated--whether the Pentana division was suitable for nuclear and non-nuclear operations, and what size was optimal for the division. The Army staff particularly pointed out that the Pentana division did not provide sufficient fire support for conventional operations [Presentation by the Department of the Army Ad Hoc Committee, 1956: 8].

Since mission statements had not been formulated for the Pentana division, the War College then concluded that the only reasonable course of action was to wargame the new divisions to determine their actual capability. The wargaming was conducted, however, after the Chief of Staff had approved the Pentana concept. Neither the concept as a whole nor any of the three major restructuring initiatives [concerning infantry, armor, and airborne units] were wargamed before they were instituted. Again, the principal criterion was austerity in design, and it appeared as if such were the only criterion.yy CONARC tests in 1957 showed the division would fail under nuclear conditions and would not have sufficient firepower in conventional engagements [Headquarters Continental Army Command, 1957b: 17]. When the division did fare satisfactorily in games, its performance seemed more attributable to improved equipment

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yyOn this development, see Midgley, 1986: 68-72; Letter, ATING--D&R 322/21 [Div] Headquarters Continental Army Command, 1957; Letter, ATING:--D&R 322/22 [Div] Headquarters Continental Army Command, 1957; and Transcript of Address by General Maxwell Taylor, 1957: 12.

than to an effective force design (Headquarters Continental Army Command, 1957b: 10-16).

Two major studies conducted by the War College as the poor design became apparent demonstrated its further constraints. Project IBEX of the War College argued that the Army should field nuclear and non-nuclear armies, as engagement conditions would be vastly different in the two cases. The national leadership, posited the report's authors, would establish before a war what type of war (conventional, limited nuclear, etc.) would be fought and would tailor the force sent to a particular area to those constraints (U.S. Army War College Advanced Study Group, 1957).

The CONARC Tactical Army Plenty Field Array (TAPFA) study, on the other hand, highlighted implications of differences between the environments of conventional and nuclear conflict and concluded that the Pentana concept was fatally flawed in its assertion that a dual-capable division could fight either type of war adequately. This study's authors argued that since tactical nuclear weapons were getting even smaller and more accurate to the point that there would be little distinction between conventional and nuclear weapons, the search for an improved force design should continue. The TAPFA study explicitly rejected the Project IBEX conclusions concerning pre-engagement forecasts by the national leadership about the type of war to be fought (U.S.

Army Command and General Staff College, 1958: 13]. So, even as the Pentomic army was being fielded, two major army command institutions had discredited it [Midgley, 1986: 79].

Conclusions on Army Planning in the 1950s

As one reflects on the implications of this early operational planning for the Army's use of nuclear weapons, it is important to note the conceptual development of policy attendant with the availability of nuclear weapons. Earlier on, when there were few nuclear weapons and scarce information about how to treat them, Army planners basically factored them into current plans by treating them basically as conventional weapons.

Later when more information about their destructive power and fallout was available, Army planners, in order to facilitate the incorporation of nuclear weapons into force structure, made simplifying assumptions about how a conflict on a nuclear battlefield would unfold. Additionally, since precise military information [especially in the wake of some inadequacies in field testing] on the how battlefield would develop was unavailable, factors other than military one came to be important. As suggested early, these factors included political ones like service interests and economic ones, such as budgetary concerns. Another point worth noting is the seemingly intractable nature of the problem. The use

of nuclear weapons was anticipated to effect major changes in the combat environment, and it was difficult for any official to understand fully the nature and implications of those changes.

Additionally, one can note that in the 1940s, Army operational planning seemed to fit reasonably well with overall strategic planning, since conventional forces would be a major part of the military campaign. Later on as technology and thinking about nuclear strategy developed, the two levels of planning became much less connected conceptually. This lack of connection probably facilitated the Army's inability to resolve planning problems involved with fighting on a nuclear battlefield.

U.S. Ground Forces Planning and The NATO (Dis)Connection, 1949-1960

U.S. and West European military planners in the late 1940s and the 1950s realized the importance of coordinated military activity in dealing with the perceived threat from the Soviet Bloc. In mid-1948, U.S. officials met with members of the West European Union to work out strategies for dealing with military conflict. According to the Joint Chiefs of Staff at that time, European military planners were counting on trying to hold off a WTO offensive as far east in Germany as possible while they waited for U.S. reinforcements. Guidance to U.S. officials at those meetings was that significant U.S. reinforcements were not

likely to come until later in the conflict and that the Europeans should plan accordingly [Condit, 1979: 367].

Most of the planning that took place that year in conjunction with the Europeans was at a general strategic level. British and Canadian officials had previously worked with the U.S. in developing a global war plan [Halfmoon/Fleetwood], and the military plan that West Europeans and Americans had agreed to by the beginning of 1949 [drawn up by Field Marshal Montgomery] basically set forth the objective of a defense at the Rhine and noted the numbers of divisions and equipment the opposing sides would be likely to have. [Condit, 1979: 368-373].zz

The establishment of NATO in 1949 brought somewhat closer coordination. The Standing Group of NATO's Military Committee in late 1949 developed plans for wars beginning in September 1950 [a short-range plan] and in 1954 [a mid-range plan]. The basic themes of the overall plan, known as SG 13, were to defend the treaty areas as far forward as possible and to launch air attacks on the Soviet Union with nuclear weapons. The plan was conceived in four stages listing the general objectives and the timing of the anticipated phases of the overall campaign [Condit, 1979:

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zzThe Army did instruct General Clay, commander of U.S. forces in Germany, to issue the necessary instructions to his forces to insure coordinated action in the event of war. U.S. forces, however, were to remain under U.S. command and would not function as a reserve for the allies [Condit, 1979: 371-373].

399-407].aaa The plan also listed forces and equipment available to either side, it did not deal with operational problems of the transition from conventional to nuclear war. By the early 1950s, the growing reliance among NATO countries on nuclear weapons was clearly reflected in the war plans of the Standing Group, though the issue of how ground forces would be involved does not seem to have been debated. The principal issues basically seemed to be whether nuclear weapons should be used, and if so, when and by whom. For example, the strategic review ordered by the North Atlantic Council in December 1953 posited that nuclear weapons would inevitably be used in a future war and that it was basically the initial phase of the conflict would be decisive. The final report done by the Standing Group based on this review, SG 241/3 [August 1954], argued that a future war would probably be decided in the first days or weeks by an intensive exchange of nuclear weapons [Watson, 1986: 305-306]. Obviously conventional warfare, to the extent it would develop, was not considered of great importance. Although there was reconsideration of this perspective when the European Defense Community initiative failed and West Germany [and its army] were brought into NATO, the final revision basically reflected the reliance on

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aaaSee Condit, 1979: 382-398 and U.S. Air Force Rainbow Team, 1949 on the development of the command structure of the alliance.

the early and decisive use of nuclear weapons (Watson, 1986: 306-313).

The focus on production, deployment, and control of nuclear weapons remained the predominant concern for NATO. In the mid-1950s several additional decisions were taken that re-examined NATO strategy and tactics in light of the availability of nuclear weapons both to NATO and to Soviet forces. The NATO Military Committee in November 1954 approved MC 48, which discussed readiness for NATO nuclear forces, then several concept papers (MC 48/1, 48/2, 14/2) from November 1955-April 1957 designed to implement the guidelines of MC-48. Because of member's concerns over the cost of force modernization, another study, MC 70 ("The Minimum Essential NATO Force Requirements" was approved by the Military Committee in 1957 to clarify the members' commitments (U.S. Department of State, 1957; see also Wilson, 1955).

By 1956, NATO governments had agreed on two postulates for its basic military planning: nuclear weapons would be used, if necessary, from the onset of a Soviet attack, and war in the NATO area would under no circumstances be treated as a limited war. Under this commitment, the U.S. undertook to extend its nuclear guarantee in part by development of its strategic systems but more directly by transferring nuclear-armed tactical air units there and training some European squadrons in nuclear operations. U.S. leaders also provided

additional nuclear weapons for U.S. ground units and trained some European ground units in nuclear operations (Murphy, 1962: 214). The U.S. also began to divert its first production model IRBMs (the Thor and Jupiter) to SACEUR, and these missiles were deployed in Britain, Italy, and Turkey (Murphy, 1962: 219; Schwartz, 1983: 62-81; Text of Background Briefing, 1957; see Figure 1). There was some evidence by early 1958 of U.S. support for a NATO ability to fight a limited war, but most of the force procurement during this period emphasized nuclear weapons (see Hoag, 1958; Rhodes et al., 1957).bbb Discussion within NATO on nuclear weapons in the late 1950s revolved around the deployment of the Thor and Jupiter IRBMs and the possibility of a mobile MRBM force controlled in part by European nations (Murphy, 1962: 219-220; Kohler, 1960).

One might have thought that the kind of doctrinal problems in the U.S. Army might have affected the credibility of the U.S. pledge to defend Europe. Such is not the case; virtually nowhere in the literature on NATO development from the late 1940s to the late 1950s do the U.S. operational problems with ground forces' use of nuclear weapons, AFTA, Pentana, etc. surface. There is evidence that the service of U.S. Generals Ridgway and Gruenther as SACEUR facilitated ground force doctrine development in NATO countries that was

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bbbNorstad continued to disavow belief in a limited war in Europe, as did Eisenhower (Norstad, 1958; Goodpaster, 1960).

similar to that of the U.S. Army, and that this American influence continued through the decade [Carter, 1987: 163]. Nevertheless, the principal issues of the NATO conventional/nuclear debate of the 1950s do not touch upon the problems of the transition from conventional to nuclear warfare.

There are several reasons for this absence. One is that Eisenhower [and others] espoused the idea that the tactical nuclear weapons deployed in the beginning of 1954 were suitable substitutes for soldiers, and the Europeans basically concurred with this opinion. Budget concerns during this period, as mentioned earlier, affected European nations as much or more than they affected the Eisenhower administration. With the American strategic umbrella, even with the Soviets catching up at some point, there was sufficient medium-term security for the Europeans in U.S. strategic forces that decisions about improving NATO ground forces seemed unnecessary.ccc MC-48, approved in December

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cccEisenhower noted about this time that

> "...it seemed clear that only by the interposition of our nuclear weapons could we promptly stop a major Communist aggression in [Europe].
> But I was not pessimistic [about being able to stop such aggression]. My intention was firm: to launch the Strategic Air Command immediately upon trustworthy evidence of a general attack against the West. So I repeated that first priority must be given to the task of meeting the atomic threat, the only kind of attack that could, without notice, endanger our very existence" [Eisenhower, 1963: 453]

1954, stated that NATO would respond with nuclear weapons to a conventional or nuclear attack, and in a way codified this sense of confidence (Girrier, 1985: 118-131). In the wake of the December 1954 passage of MC-48 and the stationing of tactical nuclear weapons in Europe, support of alliance members for conventional forces over the next few years decreased and NATO's conventional forces became increasingly known as the "tripwire" or "plate glass" (Osgood, 1962: 123).

As the Soviet nuclear capability grew and began generally to converge with that of NATO, some dissenting voices to the nuclear orientation were heard, but these voices were primarily of

U.S., not European, strategists. Maxwell Taylor, for one, argued that the original purpose of the deployment of NATO troops was not to serve as a trip wire, and he questioned the assumption that any war on the continent would inevitably escalate quickly to a central exchange, Criticizing what he called the "'fixation on the overriding importance of the one Big War,'" he noted that the superpowers and, in particular, other nations to whom assistance may be rendered, would want to avoid the unpredictable and grave consequences of the use of nuclear

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Eisenhower makes similar comments about "one or two" small "brush-fire wars" or a major, global war being the only types of conflicts for which the U.S. need plan (1963: 452).

weapons. For Taylor, the "trip wire" approach was insufficient to cope with a Soviet attack [Girrier, 1985: 148].

Lauris Norstad, who became SACEUR in 1956, shared Taylor's viewpoint. Norstad was a principal supporter of MC-70, the five-year plan adopted in 1957 that sought unsuccessfully to maintain within the alliance a "shield" of 30 combat-ready divisions along the central front.ddd As Norstad commented, one of the principal functions of this shield would be to provide NATO "'with an option more useful than the simple choice between all or nothing'" [Norstad, 1957: 953].

This need for something more than "all or nothing" was beginning to gain attention in various parts of NATO and the U.S. military establishment in the mid- to late 1950s. This concern, however, was still at the "conceptual" stage and was never during this period related to the operational problems the Army was experiencing in planning for the use of nuclear weapons by ground forces.

In 1957, for example, Colonel Richard Stilwell, directing the strategic studies group of the Plans and Policy Division at SHAPE, evaluated NATO's deterrent threat to Warsaw Pact aggression. The report concluded that NATO's threat was seriously eroding, primarily because of the lack of options available to its leaders. One set of options thought most lacking were those involving NATO's

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dddOsgood, p. 118, 161-2; Girrier, p. 144.

conventional forces. The report advocated shifting NATO's policy to one of flexible response, focusing on a "direct defense" based upon countering aggression at whatever level the Warsaw Pact chose to pursue it. This report was one of the first NATO efforts to investigate the concepts of "deliberate escalation" and graduated deterrence [Schwartz, 1983: 140]. These sorts of arguments met not a little resistance within the U.S. and European military establishments, and it was not until several years later that they gained wider currency with either. The larger issues of nuclear escalation--of deterrence, escalation, deployment, and control--remained the principal issues of the NATO nuclear debate to the apparent exclusion of operational issues.

Procurement Trends

The general trend toward reliance on nuclear weapons in NATO doctrine are clearly reflected in force posture and procurement trends [see Tables 2-3; Figures 1, 4-5].eee NATO manpower deployed by the allies in Europe dropped from the late 1940s until the early 1950s, when deployments were increased after the Korean War began. Deployments began to drop again significantly throughout the 1960s.fff This

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eeeThe force posture tradeoffs affecting preparations for conventional or nuclear war are discussed in Chapter Nine.

fffU.S. Army officials objected strenuously to cuts in Army manpower in the late 1950s. See, for example, the 1957 statements on the FY 1958-FY 1961 budgets by Secretary of the Army Brucker and Chief of Staff Taylor

decrease was offset by the deployment of FRG troops beginning in 1955, which held the overall manpower level constant through the 1950s.

The FRG deployment, however, does not really contradict the general trend within the alliance. Even with an acknowledged preference within the alliance to depend on nuclear weapons rather than ground forces and conventional weapons for deterrence, one can understand that the FRG would want to field a large number of troops, since it would be on FRG territory that the conflict would initially be fought. Lessened emphasis on conventional warfare is also apparent in other force posture patterns. For example, procurements of conventional weapons, such as artillery and anti-tank systems, increased only moderately during this period.

By the end of the 1950s, a variety of force posture trends reveal the shift in NATO toward emphasis on nuclear weapons. Given the earlier discussion on the importance of the medium- and long-range bomber force for U.S. war plans in the 1950s, the 1950s and early 1960s deployment dates for theater nuclear systems (which suggest the significant R&D support for those systems in the 1950s), and the manpower deployment changes, the shift in NATO force posture emphasizing nuclear weapons is clear.

(Brucker, 1957).

THE DECADE OF THE 1960s

Perceptual Issues

U.S.-Soviet Relations: The Turn of the Decade

In the late 1950s and particularly when the Kennedy Administration came into power, this concept of how and where the U.S.-Soviet conflict would be played out had important implications both for defense spending and for foreign policy in general. One principal shift concerned the importance of having usable conventional forces in an area of conflict. In three crises around the turn of the decade directly involving the U.S. and the U.S.S.R. (Berlin, 1958 and 1961; Cuba 1962), the developments of the crisis provided evidence that partly reinforced the old concept--that the U.S. needed to maintain strong strategic forces to deter Soviet aggression and, possibly, to be used in case of a conflict. These crises, however, also demonstrated that the availability of conventional forces in the specific regions of conflict would be necessary as well.

While it is difficult to sort through exactly what inspired Khrushchev to send his November 1958 note to the West that a settlement of the Berlin problem was necessary, it is likely that Khrushchev had hoped by his claims to strategic superiority in the months following the September 1957 test launch of an ICBM might have created apprehension in the West about resisting a Soviet initiative such as turning the control of Berlin over to the East Germans. The

decision taken by the December 1957 NATO foreign ministers conference to station nuclear-armed IRBMs in the FRG (potentially under German control, charged the Soviets), triggered a many Soviet complaints about "'revanchist German militarism'" (George and Smoke, 1974: 396-397).

After Khrushchev presented Kennedy the aide memoire in June about placing Berlin under East German control (followed by two speeches in July about signing a separate treaty with the GDR by the end of the year if no suitable solution were found with the U.S.), Kennedy's response was to seek authority to call up reserves, to increase U.S. conventional capabilities and to send new forces to Europe. These actions were taken in part to increase the probability of successfully dealing with any overt Soviet move and in part to deter such moves (George and Smoke, 1974: 428).ggg

That Kennedy's response was to increase the conventional capability in the area, not to threaten the use of tactical or strategic nuclear weapons, was indicative of the emphasis placed on having strong usable forces in the locality of the crisis. Although Kennedy probably did not anticipate having to make use of these additional forces, his calling up them, as opposed to some other type of force into action makes and

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gggKennedy later suggested these initiatives could have been provocative (see George and Smoke, 1974: 429).

important statement about the kind and scale of threat he expected.

The Cuban crisis brought much the same lesson. Although strategic capabilities were more clearly a part of the deterrence equation in this crisis, the most important capabilities actually debated for use were conventional--local naval and support ships for the blockade and fighter-bombers for the air strike. Although the importance of having appropriate forces available in the locality of the crisis may not have been as graphically evident because of the geographical proximity of Cuba to the U.S. as it was for the Berlin crisis, the availability of usable forces in time of a crisis was certainly a lesson the Cuban missile crisis reinforced.hhh

There also seems to have been a concern within the administration that leaders of national liberation movements would perceive from the Cuban experience that the two superpowers were loathe to use their nuclear weapons and that, consequently, there would be more opportunities for these leaders their own goals. If these goals were radical or revolutionary, thought leaders in the Kennedy Administration, the U.S. would need sufficient conventional forces to be ready to manage or suppress threats to U.S.

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hhhAlthough not a superpower conflict, the importance availability of adequate conventional forces in the appropriate local was also reinforced during the Dominican crisis in 1965.

interests in whatever regions those threats might occur (LaFeber, 1976: 231-232).

In his concern for improving conventional force levels to meet lower level conflicts in various parts of the world. Kennedy was probably influenced in his thinking here by Democrats of the Truman period, who had been urging that the U.S. to focus on conventional capabilities in the effort to minimize reliance on nuclear weapons (Brown, 1983: 150-151).

Also, it was certainly clear that Maxwell Taylor's views had an important effect on thinking on conventional warfare in the Kennedy administration. Taylor had argued that the Eisenhower administration's reliance on nuclear forces for deterrence had severely undercut preparedness for conventional conflict, both from the standpoint of deterrence as well as actual engagements. These views were similar to ones Kennedy held.iii Administration members speculated direct bilateral tension would continue, but the principal, day-to-day focus of concern was shifting from the strategic nuclear arena.

Another important shift in the Kennedy Administration on approaches to the U.S.-Soviet conflict concerned the level of hostility of the conflict. For example, in a 1961 JCS draft position statement for an NSC meeting, the Chiefs

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iii It was not surprising that Kennedy, three months into his administration, appointed Taylor his chief adviser on paramilitary activities (see Kaplan, 1983: 328).

noted that the threat from the Communist Bloc has "undergone a steady evolution". The Soviet Union has built a formidable nuclear weapons capability, the report notes, but it has also "supported para-military forces, clandestine political agitation, and Communist parties within various nations of the Free World." Instead of initially examining recent Soviet aggressiveness and the possibility that the Soviets may initiate a nuclear war, as reports to the NSC often did in the early to mid-1950s, this JCS document asserts the need for a "complex program" to support such goals as the peaceful settlement of disputes under international law, economic growth, political stability, and protection of democratic institutions. This report asserts the goal of achieving U.S. objectives while limiting the destructiveness of warfare, "whether it be nuclear or non-nuclear, local or global. The report observes that while the greatest threat to the United States is still the possibility of nuclear war, the more likely threat is that of "revolution, subversion, and local aggression" ["Military and Related Aspects," 1961].

Indeed, Kennedy's orientation on this topic was given an unexpected boost by Khrushchev, who, the same month as Kennedy's inauguration, laid out the philosophy behind Soviet support of "wars of national liberation", which, said Khrushchev, the Soviets support "wholeheartedly and without

reservation" [Brown, 1983: 153]. Foreign assistance in terms of economic and development aid would be the non-military dimension of that assistance the Kennedy Administration would pursue. The military portion would be to respond effectively at low levels of violence and to be able to assure the non-communist world that we would be able to keep those commitments to freedom that we made to them [Brown, 1983: 152-153].jjj

This interpretation of Soviet activities was buttressed by later assessments of the Soviet threat. Based on a 1962 NIE, an inter-agency committee concluded that the Soviets perceived that their growing strength would enable them to "widen the scope of actions they can undertake without substantial risk of war." The Soviets, the report noted, "have acquired a keener appreciation of the difficulties of translating gains in military power into tangible political advances." At the same time, the Soviets perceive they have "a 'right' to a voice in all international questions" and would use their military posture to continue their "aggressive political-subversive strategy" [Inter-Departmental Committee, 1962]. So, while the Kennedy Administration was alert to ways to reduce superpower tensions, they also attributed to the Soviets a strong

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jjj Even in the midst of the 1961 Berlin crisis, a CIA report noted that in spite of Khrushchev's talk that the conflict might "'inevitably grow'" into general nuclear war, it was most likely that the Soviet leadership would seek to keep the conflict limited and non-nuclear [CIA, 1961].

propensity for trouble-making, and they took steps to meet that challenge.

As the Kennedy Administration pursued its policies, it addressed the Soviet strategic threat in party by building a strategic force posture sufficient for a survivable second strike capability and continuing research on ABM technology.kkk At the same time, it devoted significant efforts to developing conventional forces to fight proxy wars where it thought communist insurgent movements involved. This concern about stemming the influence of communism was an important one that characterized both the Kennedy and Johnson administrations.lll

While the Kennedy Administration criticized Eisenhower's foreign policies, it strongly concurred with the domino theory approach to foreign affairs. Kennedy, for example, noted in a May 1961 address to Congress that the battle of "freedom versus tyranny" was being waged in various parts of the world and that the U.S. needed to be involved in these struggles. Similarly about Vietnam, he had commented in 1956 that it was "'the cornerstone of the Free World in Southeast Asia, the keystone to the arch, the finger in the dike...." Roger Hilsman, who served both Kennedy and Johnson as Assistant Secretary of State for Far Eastern

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kkkOn the Kennedy strategic force buildup, see Ball, 1980.

lllSee, for example, Brown, 1983: 278-317 and CIA, 1967.

Affairs remarked in 1965 that everyone in the U.S. leadership during the early and mid-1960s knew that the 1962 Geneva accords on Laos were just the beginning of the competition there with communism: "if we had [withdrawn from Laos], we in effect would have been turning it over to the communists'" [LaFeber, 1976: 235].

Virtually the same ethic was applied to substantiate U.S. intervention in the Congo in the early 1960s and the Dominican Republic in 1965. As President Johnson noted in May 1965 after U.S. troops had landed in Santo Domingo the month before: "'American nations cannot, must not, and will not permit the establishment of another communist government [after Cuba] in the Western Hemisphere.'" He argued that change should occur "peacefully" and that the U.S. would defend "'every free country of the hemisphere'" [LaFeber, 1976: 246-247, 251-252].

For Johnson as well as for Kennedy, the overall sense of mission they felt to subdue Communism and promote freedom bore striking resemblance to their counterparts in the administrations of the previous decade. In speaking about Vietnam in 1965, for example, Johnson explained that the U.S. was fulfilling its destiny. He observed that "'[w]e had the good fortune to grow from a handful of isolated colonies to a position of great responsibility in the world. We did not deliberately seek this position; in a real sense

the force of history shaped it for us'" (LaFeber, 1976: 242).

At the same time they were fighting Communism near and far, the Kennedy and Johnson administrations continued to develop a modus_vivendi for dealing with the Soviets. Among the important efforts in this direction were the negotiations and signing of the Test Ban Treaty, the Non-Proliferation Treaty, the Hotline Agreement, as well as the initiative for the ABM treaty. Kennedy and Johnson also continued high-level consultations with the Soviets, as Eisenhower had done. During the early to mid-1960s, then, the U.S. leadership's perception of the U.S.-Soviet conflict was that it was less overtly hostile, though it had become extended to a wide variety of locales.

The Role of NATO

What happened in NATO during the Kennedy Administration was a clear manifestation of the thinking about meeting aggression in the region where it occurs. The policy of the Kennedy Administration toward NATO has been thoroughly documented in a number of sources, so I will just review the principal issues here.mmm Early in the Kennedy Administration, partly to provide the kind of latitude in meeting a possible Soviet military challenge and partly to defray the cost of maintaining 300,000 troops in Europe,

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mmmOn NATO during this period, see Graebner, 1961: 46-54; Schwartz, 1983: 136-192; and Brown, pp. 160-180.

U.S. officials suggested to their European allies not to invest in independent nuclear deterrent forces but to help support and build up NATO's conventional force posture, European NATO counterparts did not like these suggestions principally for two reasons.

One reason for this advice was that European leaders were concerned about the sincerity of the U.S. pledge to use nuclear weapons in defense of Europe. A second reason was that they were concerned to avoid anything which appeared as if they might accept a precedent for fighting a conventional war in Germany. It was clear in the case of the U.S. suggestion for greater European support for conventional forces that the Europeans did not share U.S. concerns about how to meet the Soviet threat. Some of this difference in views had been evident since the 1950s, and more of it would be evident later. Indeed, the concern about improving NATO's conventional posture was an important one that would extend well into the 1970s.

After much lobbying and a number of concessions by the U.S. in the area of including European officials in some aspects of its strategic decisionmaking, the allies later agreed to NATO MC 14/3, the centerpiece of the Flexible Response doctrine. MC 14/3 basically sanctioned the use of tactical nuclear weapons in Europe as long as the allies consulted among themselves. Nevertheless, the difference in

the concept of how to deal with the threat posed by the Soviets was an issue over which there would continue to be strong disagreement within the Western alliance.

I will discuss the details of Flexible Response later with regard to how it fit into strategy for dealing with the Soviet military presence in Europe, but in terms of how it fit into the U.S. doctrine about a possible war with the Soviet Union, the principal points are two. One is the concern, mentioned earlier, of meeting Soviet aggression in areas where it occurs with the most suitable Force. Second is the concept of a force posture supporting a graduated deterrence policy. the important change Flexible Response entailed was the recognition of the important of a strong conventional facet of that posture and an effort to avoid the danger of immediate escalation to a strategic nuclear exchange.nnn

Conclusions on Perceptual Changes in
the Kennedy and Johnson Administrations

In the 1960s, the view of conflict was that the Soviets continued to be less directly hostile to the U.S. but that the hostility between the parties was sublimated, in a sense, to competition for influence in the Third World. This perception was an extension of one current in the late

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nnnThere are certainly controversial issues with respect to how the nuclear threshold is crossed, whether with tactical or strategic nuclear weapons. I pose the implications of Flexible Response for perceptual developments here and will discussed these operational issues later.

1950's thinking in the Eisenhower Administration, but in the Kennedy Administration the perception was more explicit conceptually and as it was manifested in policy [vide the U.S. involvement in Vietnam and Laos]. Furthermore, with Maxwell Taylor serving as Chairman of the Joint Chiefs of Staff, U.S. ground forces and U.S. preparedness for conventional warfare had a strong advocate.

To an extent, the difference in attitude on conflict with the Soviet Union from the Eisenhower to the Kennedy Administrations was a function of different world views of the presidents, their understanding of the Soviets, and their perceptions about how best to deal with the foreign policies of the Soviet leadership. Still, there were also exogenous factors, to be elaborated later, which also were influential for this perception.

Strategic Targeting in the Kennedy Administration

As indicated earlier, the Kennedy administration took a much different approach to the issue of targeting than did the Eisenhower planners. As Secretary of Defense Robert McNamara commented in a 1962 speech, when the Kennedy Administration came into office,

> [i]t was equally clear that we could not either effectively or sensibly count on the threat of massive retaliation to deter the whole range of aggression open to an ingenious and determined adversary. It is doubtful whether such a threat was ever a universal deterrent. It did not deter the attack on Korea, the pressure on Berlin, or the attempt to subvert Southeast Asia. Still less is it likely to be a universal deterrent in an age when nuclear superiority, even though substantial

> in terms of numbers, cannot produce a victory in any meaningful sense ("Remarks by Secretary of Defense Robert McNamara," 1963).

As Desmond Ball demonstrates (1986: 58-67), defense planners in the early 1960s restructured U.S. targeting plans to provide the president with a greater number of options.ooo In contrast with the first SIOP of December 1960, which has only one "plan" for U.S. nuclear forces--that all strategic nuclear delivery vehicles be launched upon initiation of war with the Soviet Union--the SIOP adopted in January 1962 offered five options (plus suboptions) for types of Soviet targets to be attacked (Ball, 1986: 62).ppp Much of this restructuring was undertaken on the basis of a counterforce targeting approach for better pre- and intra-war deterrence, as well as to facilitate the possibility within a nuclear war that cities be spared (Ball, 1986: 63-64; see U.S. Air Force, Deputy Director of Plans for Aerospace Plans, 1963). Except for some minor modifications, the strategic targeting choices made by the mid-1960s remained basically unchanged through the 1970s.

The shift during the Kennedy Administration in the approach to nuclear warfare is arguably compatible with an

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ooo See also Friedberg, 1984: 571-572.

ppp These options distinguished Soviet nuclear targets, other military targets, and urban/industrial areas (Friedberg, 1984: 571). Two useful studies on SIOP-62 are U.S. Strategic Air Command, n.d. and Sagan, 1987.

overall shift in a strategy of warfare that permits a greater role for conventional forces. Such would be the case since the goal [at least of the U.S. if it were to become involved in a ground war in Europe] would be to destroy particular sectors of the opponent's society, not the whole urban-industrial fabric.qqq It is obviously difficult, in an operational sense, to relate the level of counterforce or urban-industrial strategic targeting pursued in the U.S. to planning for the type of war most likely to develop in Europe. Indeed, ICBM procurement trends suggest a continued strong reliance on nuclear weapons [see Figure 3].rrr

Planning for U.S. strategic forces and targeting is, however, an arguably separable question from U.S. planning for the defense of its NATO allies. In reviewing the Kennedy Administration's approach to targeting, there does seem to be more room in a theoretical sense for the use of

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qqqAs Ball notes, McNamara withdrew the counterforce concept from public debate because of the first-strike aspects attributed to it by opponents and because Assured Destruction provided a better justification for McNamara to control requests from the services for greater quantities of nuclear weapons [1986: 67-70; see also Friedberg, 1984: 577-578]. See Friedberg's further comments on the role that the Soviet approach to strategic parity played in the debates on Assured Destruction, damage limitation, and counterforce targeting [1984: 578-580].

rrrThis orientation is also reflected in the development of the intercontinental bomber fleet [Chart 3], but not as dramatically as in ICBM and SLBM levels.

conventional forces in a counterforce than in a massive urban-industrial attack on the Soviet Union.

U.S. Army Planning in the 1960s

The U.S. Army in the late 1950s gave more though to the problems of the Pentomic division for fighting conventional engagements, and as the Kennedy Administration encouraged a reexamination of these issues, efforts to improve Army doctrine focused in the Reorganization Objectives Army Division (ROAD). The ROAD division actually developed from a study begun in 1959 by CONARC that focused on the Modern Mobile Army (MOMAR). MOMAR architects planned for an army with a greater balance between in nuclear and conventional capabilities by providing for a greater range of battlefield nuclear capabilities to be used in a broader spectrum of battlefield environments. Its developers sought to overcome problems noted in the Pentana by creating a lighter air-liftable division for nuclear operations and a heaver sea-liftable one for conventional operations. Artillery units were increased in size to improve performance in conventional engagements, though they were also to be dual capable where possible (Letter, ATSWD 322, 1959).

Expecting an increasing variety of nuclear weapons to be available in the 1965-1970 time frame, the period for which MOMAR was planned, its developers hoped to create a "'flexible and versatile organizational structure'" (Headquarters Continental Army Command, 1960: 1-2). MOMAR

fell by the wayside, however, because 1) like the 1954 War College study, it was based on technology available in the last half of the upcoming decade, while Army leadership wanted a design fieldable sooner, and 2) its evaluators noted it did not take into account conclusions of earlier studies that mobility offered little protection when both sides used nuclear weapons (Headquarters Continental Army Command, 1960: 2-3; and Metcalf, 1960). Indeed, the critical capability of MOMAR divisions to fight on a nuclear battlefield had not been wargamed when MOMAR plans were forwarded to the Army staff (Headquarters Continental Army Command, 1960: 2-3; and Metcalf, 1960).

When the Army Staff rejected MOMAR, this group noted improvements that needed to be made in several areas. These areas basically involved expanded conventional firepower and a greater ability to interchange and recombine battalion-sized armor, mechanized infantry and light infantry within mechanized infantry divisions, and all new units were supposed to be air-liftable (Guidance for Development, 1960: 3-9). Furthermore, as the three-division unit was seen as the basic structural framework, the new division would be more compatible with the armies of European allies which was a problem the Pentomic army (Midgley, 1986: 106).

The resultant ROAD division design was investigated over the winter of 1960-1961 and was presented to McNamara in

early 1961. In its form at this time, which would basically remain the template for the army until 1976, the ROAD resolved many of the problems of the Pentomic divisions in terms of configuration for conventional operations. The design--though maintaining dual capability--did not resolve problems in operations or surviving in the nuclear battlefield, since the constraints revealed by exercises during the 1950s were not addressed [Midgley, 1986: 109].sss When Kennedy asked why the Army was being reorganized, given the major changes that had transpired in 1956, McNamara responded that there were some structural problems involving the need for greater flexibility, and a greater emphasis on conventional warfare [Memorandum for the Secretary of Defense, 1961].

Problems concerning the greater suitability of the ROAD design for conventional rather than nuclear operations affected the staffs responsible for the development of nuclear doctrine for the ROAD division. The Army staff charged with developing nuclear operational procedures for the ROAD design emphasized that specific tactics for nuclear operations could not be developed. In particular, the Army staff noted that three characteristics of the nuclear battlefield created the planning uncertainties: ambiguities in the patterns and scales of use of nuclear weapons, the

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sssSee also Pizer, 1967: 38-47 and Rose, 1980: 97-101 on ROAD's development.

dimensions of self-imposed military and political restraints, and the strength and flexibility of the opposing side's nuclear capabilities. The staff did try to distinguish between "high" and "low" levels of nuclear usage but was not able to establish a clear boundary between these levels [Letter , ATTNG-D&R 000.9, 1961]. Indeed, the Army staff's basic definitions of maneuver doctrine for offensive and defensive operations was similarly vague, and these statements would remain basically unchanged until Ridgway's emphasis on the development of conventional forces was felt in the early 1960s [Department of the Army, 1968: 6-6; and Letter, ATTNG-D&R 000.9, 1961].ttt

Exercises and Evaluation

tttIt is interesting to compare U.S. thinking during this period on Army operations in a nuclear environment with British thinking on the topic. In a handbook on tactics, the War Office assumes an early transition to a nuclear environment and provides a number of specific suggestions as to how battle groups can prepare for this transition in order to avoid extensive attrition.

While the handbook offers advice on such matters as the mechanics of command and the degree of dispersion to implement, there is little discussion of how the shift in strategies from a conventional to a nuclear environment will be managed and of how organizational structure could best be developed to cope with the changing environment. One cannot tell from the information available in the handbook whether the problems of the transition had been wargamed any better than it had in the U.S. Army [War Office, 1960].

As Defense Minister Watkinson noted in 1961 in discussing the role of British forces in a NATO conventional or nuclear engagement, "my county is entirely opposed to any attempt to set out in public any detailed rules and instructions which would bind the NATO forces in any emergency" [Watkinson, 1961].

The problems that the ROAD division presented for nuclear operations was manifested in major study conducted from September 1963 and May 1965 by the Combined Development Command for the Army Chief of Staff. Composed mainly of wargaming exercises in which both sides used nuclear weapons, the 21-volume study concluded that the ROAD force, if conventionally deployed, would suffer more than 40% casualties in the first 31 days of a two-sided campaign. Oregon_Trail found, not surprisingly, that when ROAD forces concentrated to launch a conventional attack, they would be destroyed by nuclear strikes, yet when they dispersed to avoid nuclear attack, they would be defeated by conventional tactics. Oregon_Trail's authors concluded that a singly oriented force (like ROAD) could not fight on both types of battlefields without time-consuming major redeployments (Advanced Tactics Project, 1964; and Advisory Board to the U.S. Army Chief of Staff, 1965, C-1).

Other problems were the acquisition of enemy nuclear targets, transitioning from conventional to nuclear weapons in dual-capable units (especially the artillery), and timely dispersal (Midgley, 1986: 118-120). In the last area, Oregon_Trail evaluators found that allied troops in Europe could not survive 24 hours of unilateral nuclear use by the enemy and therefore advocated a degree of pre-delegated release. In their conclusion, the authors recommended widely-dispersed, small combat units organized in great

depth that would try to destroy the enemy with indirect nuclear fires and improved fragmentation weapons [Advanced Tactics Project, 1964, 1965; and Advisory Board to the U.S. Army Chief of Staff, 1965: C-1].

To evaluate the implications of Oregon_Trail for Army planning, the Assistant Chief of Staff for Force Development appointed Lt. Gen. Theodore Conway in May 1965 to head a study group on this topic. The Conway Board basically rejected Oregon_Trail's criticisms and said that it thought the Soviets were unlikely to build forces for protracted nuclear engagements, given their emphasis on procurement of strategic forces,their emphasis on the inevitability of escalation to a central exchange, and their comparative inattention to nuclear artillery. To the Conway Board, these factors suggested that a tactical nuclear war was a "'rather remote possibility.'" Nevertheless, it did recommend the Army continue to acquire a large range of nuclear weapons as a deterrent by increasing Army options [Report_of_the_Conway_Board, 1965: C-4-5, C-24-26]. In this sense, Army leadership, notes Midgley, continued to plan for a conventional war, yet using the nuclear battlefield as an "'abstraction'" to justify continued acquisition of nuclear weapons [1986: 122-123].

NATO_and_Conventional_Warfare_Planning In_the_Early_to_Mid-1960s

As indicated earlier, Kennedy was sympathetic to the criticism about a lack of force-use options in NATO (specifically over-reliance on nuclear weapons), and he brought into office with him many of those who had been critical of the Eisenhower policy of emphasizing nuclear forces at the expense of conventional ones. McNamara, as he entered the Pentagon, was a proponent of greater flexibility in strategic planning, and in the memorandum on basic questions in force posture and use (dubbed the "96 Trombones") he circulated soon after his arrival, he questioned issues of conventional as well as nuclear force posture (Schwartz, 1983: 143). In the early months of his tenure, McNamara discover through work done by his deputies Alan Enthoven, Wayne Smith, and Paul Nitze, that Warsaw Pact conventional forces did not so outnumber NATO conventional forces that a commensurate NATO conventional defense was unquestionably expensive (Schwartz, 1983: 148).uuu

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uuuThe MLF initiative, proposed by Secretary of State Christian Herter in December 1960 and pursued during most of the Kennedy Administration, does not gainsay the emphasis on conventional weapons. First, the MLF proposal was based on a State Department study in the summer of 1960 that emphasized the improvement of NATO's conventional capability. Second, and more importantly, the MLF was viewed as a vehicle to integrate the European allies into US strategic decisionmaking without giving up basic US autonomy over the use of nuclear weapons. In the early 1960s and especially after deGaulle's 1963 press conference in which he refused a US offer of Polaris missiles and the opportunity to participate in the MLF, the MLF basically served as a political instrument to keep Germany from pursuing its own nuclear force, whether by itself or in conjunction with the French. See Schwartz, 1983: 82-115; and Steinbrunner, 1974: 153-326.

The implication of these studies--that NATO's improving its conventional deterrent was a feasible course of action--was buttressed by a study directed by former Secretary of State Acheson that argued that the deterrent the U.S. provided for Europe could be enhanced if it were not based on an "all-or-nothing" response. To counter the argument that the U.S. would not put its major population centers at risk by responding with most of its strategic forces in the case of an attack on NATO, the report argued that conventional forces would have to be improved so that NATO would have a credible and effective response along a range of options [Schwartz, 1983: 151].

In pursuing this line of reasoning, the Kennedy Administration sought to revise the Eisenhower approach that nuclear weapons would be used from the outset in a NATO conflict and that such a conflict would under no circumstances be treated as a limited war. The Kennedy Administration took a new tack in seeking to prevent both an escalation in the theater resulting from the use of low-yield nuclear weapons and an "irrational or unpremeditated" escalation to general war arising from a nuclear clash of forces in close proximity. This approach was based on the assumption that the Soviets might be induced not to escalate to nuclear weapons if the U.S. made clear its own intention not to escalate unless defeat was imminent [Murphy, 1962: 214, 219]. While this assumption may have been

questionable, particularly given Soviet declaratory policy on nuclear weapons, it underlay the improvement of conventional forces the Administration sought with Flexible Response.

Flexible Response, as McNamara presented it during most of the 1960s, was an effort to develop the options of the Acheson paper in terms of conventional and tactical nuclear capabilities. It was also entailed effort to involve the Europeans more in planning for the use of these forces, particularly the nuclear ones.vvv Since the history and politics of the adoption of Flexible Response as MC 14/3 in 1967 has been capably chronicled,www I will simply note here that most of the debate surrounding Flexible Response dealt with the use of tactical nuclear weapons, release doctrine, and the issue of the coupling of nuclear weapons with the U.S. strategic arsenal.

In the area of the conventional dimensions of Flexible Response, there were three important concerns. One, expressed most strongly by the French, was that the U.S. sought by the doctrine to keep a conflict in Europe conventional because doing so was the best way to keep it from escalating to a level that would put U.S. cities at the risk of a central exchange. Most of the debate in the

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vvvOn U.S. conventional force increases in NATO under MC-26/4, see Schwartz, 1983: 162-163.

wwwSee Rose, 1980; Schwartz, 1983; and Legge, 1983.

years subsequent to McNamara's Athens and Ann Arbor speeches in 1962 dealt more often with nuclear issues [Schwartz, 1983: 168]. Second, the Germans in the next two years came to see the value of a graduated range of conventional and nuclear forces as a more effective deterrent than a purely nuclear force.xxx So, there was fortunately a fair amount of receptivity to conventional force improvements within the country where it would be most important to have these forces deployed. Finally, because of the expense of conventional weapons, notes Schwartz, much of the ensuing debate about Flexible Response in the mid-1960s focused on the credibility of NATO to escalate rather than to force that decision on the Soviets by improving both conventional as well as nuclear force postures in the European theater [Schwartz, 1983: 177].

It should be noted though, that there was some concern with operational tradeoffs between nuclear weapons in U.S. Defense Department analyses. In his 1965 Statement to the President, McNamara notes a number of the problems that current NATO ground forces would have in prosecuting a tactical nuclear war with the Warsaw Pact. He notes that even though the U.S. at the time had a greater strategic arsenal than the Soviets and could rely on that superiority

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xxxSee comments on the Harmel report in Schwartz, 1983: 169-170.

for a certain amount of escalation dominance, he comments that nuclear weapons "are not a substitute for manpower" [McNamara, 1965: 24]. Even if NATO used tactical nuclear weapons against Pact forces, McNamara contends in the report that without enough manpower to reconstitute the defensive line if the Pact retaliated with nuclear weapons, the Allied cause would be lost.yyy Hence, he asserts that the principal concern the NATO powers should recognize is the need to shore up conventional forces in Europe. He concludes that the "tactical nuclear option should not be regarded as a substitute for a major non-nuclear option" [McNamara, 1965: 36].zzz His 1966 report covers some of the same points and continues to stress the conventional option [McNamara, 1966].

When MC 14/3 was accepted by the NATO Military Committee in May 1967, basically what the Alliance agreed upon, in the words of U.S. NATO Ambassador Harlan Cleveland, was guidance to NATO commanders

> to provide for the employment as appropriate of one or more of direct defense, deliberate escalation, and general nuclear response, thus confronting the

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yyyHe also discusses such important issues as casualty rates and circumstances, communications problems, and target acquisition in a nuclear environment.

zzzTactical nuclear weapons, McNamara notes, do serve a deterrence function, and do constitute a low-confidence option. Furthermore, he concedes, since it was the U.S. that originally advocated dependence on tactical nuclear weapons, it would take a while to convince Europeans to shift with the U.S. to a conventional orientation [1965: 35-37].

> enemy with a credible threat of escalation in response to any type of aggression below the level of a major nuclear attack [Schwartz, 1983: 187].

It took another several years for this general guidance to be fleshed out into specifics--various scenarios for different geographic regions, etc. These studies were undertaken by individual countries which were members of the Nuclear Planning Group [NPG]. By April 1968 the first of these studies had made sufficient progress that the NPG decided to look first at issues involving initial use of nuclear weapons by NATO, then to look next at follow-on use.aaaa As the NPG planned to undertake this assessment, it divided the reports on initial use to include ones on demonstrative use [to be done by the U.S.], battlefield use [by the FRG], maritime use [by the U.K.], and ADMS [by Italy] [Legge, 1983: 17-18].

These individual analyses are discussed elsewhere [see Legge, 1983: 18-25], so I will simply note here that the basic conclusions drawn by the NPG were that, assuming a WTO conventional attack, since initial use would result in a qualitative change in the nature of the conflict, it should have a fundamentally political purpose. That purpose would be to confront the Soviet with further escalation if they continued the attack. A corollary

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> aaaa"Initial use" in NATO terminology is the first use of nuclear weapons by either side. If the Warsaw Pact were to use nuclear weapons first, and NATO nuclear response would be "follow-on," not "initial" use [Legge, 1983: 18].

conclusion was that the scale of weapon(s) used should be as low as possible while still consistent with NATO's objectives in the conflict (Legge, 1983: 19).

The follow-on use studies, begun in late 1969, were designed to consider more closely weapons effects, delivery systems, targets, and options.bbbb Eight such studies were prepared from 1971 to 1973, with a second phase commencing in 1972 of comparative analysis of the studies. This comparative analysis was designed to formulate more general policy choices from the conclusions generated by the first phase of studies.

The conclusion of the Phase I studies was basically that NATO's use of nuclear weapons could result in short-term military advantage in a particular area, but if the Warsaw Pact responded with a nuclear attack on a similar or greater scale, neither side could hope to gain significant advantage directly from the use of nuclear weapons. Since the Warsaw Pact had shorter lines of communication and greater immediately available reserves, NATO analysts noted that the conflict could actually shift in its favor after such a nuclear exchange (Legge, 1983: 26-27).

Follow-on use, as Phases I and II concluded, would serve basically serve the same function as initial use (to signal

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bbbbThe following discussion moves into a period I examine in the next section of the chapter, but it seems most appropriate to continue here rather than later with the subsequent studies tied to MC 14/3.

the Soviets to cease the attack and withdraw). It was therefore thought that follow-on use, too, should be selective and chosen primarily to meet political requirements.

As these developments relate to Army planning during this period and the larger question of the relative emphasis on conventional and nuclear weapons, perhaps the key conclusion is that the adoption of MC 14/3 and subsequent initial and follow-on use studies reflected the effort of NATO to build a credible conventional as well as nuclear deterrent. This deterrent, "graduated" through a series of levels of conventional and nuclear warfare, was perceived as a more realistic way of dealing with the perceived threat than the early escalation to nuclear weapons previously called for in declaratory policy. Arguably this change in approach to dealing with the Soviet threat in Europe fits with the modifications in general U.S. perceptions of the Soviet threat as well as with changes in U.S. strategic planning.

There is also some fit with this change and force posture developments (see Figures 4-7). NATO's total manpower did increase beginning in the mid-1960s, as did procurement of conventional weapons such as artillery and anti-tank systems.cccc While the increased manpower levels were

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ccccThe slight rise and fall in manpower levels in the early 1960s (see Chart 5) is almost certainly due to the 1961 Berlin crisis. Procurement trends in hardware (for example, as noted in Chart 8) are not as clear as those in manpower or ballistic missiles. It is possible

largely a function of FRG deployments, the shifts in manpower and procurement are noticeable enough that the connection between doctrine and force posture change is apparent.

While MC 14/3 and subsequent analyses to elaborate it may be generally consonant with U.S. Army thinking about the problems of fighting on a nuclear battlefield and the need to maintain the Army's conventional capability, there seem to be no direct ties between the problems the Army experienced in the 1960s in designing an adequate conventional/nuclear force posture and operational strategy and the decision process leading to 14/3. The reasons for this lack of linkage are probably similar to those reasons adduced for the absence of such linkages in the 1950s.

It is interesting as one looks back on the Flexible Response deliberations that, again, U.S. problems in structure its ground forces did not noticeably affect the NATO debate, with the exception of the problems noted in the McNamara reports on ground forces in NATO. It seems that such was the case in the 1960s because the issue of escalation was viewed more as a kind of ultimate political question rather than one that needed to address operational issues such as how well the U.S. Army and the armies of its NATO allies could fight in a nuclear environment.

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that levels of conventional hardware for NATO would have grown at a faster rate in the late 1960s had the U.S. not been provisioning its forces in Vietnam.

MC 14/3 was certainly strongly debated, but issues like those of "coupling" and "decoupling," "dual-key" systems, the MLF, and the tradeoffs of numbers of NATO divisions versus more nuclear weapons were the ones that dominated the discussions. The specifics of the use of nuclear weapons on the battlefield, to the extent they were discussed, were probably part of the debate on the effects of longer-range nuclear weapons used against East European countries (Legge, 1983: 21). Therefore, there may have been a tacit assumption that the use of nuclear weapons would so alter the character of war that the ground campaigns by either side would essentially come to a halt (or nor longer matter). Additionally, these operational questions may have gone largely unraised because of the political sensitivity of the issues inherent in these questions.dddd

FROM THE LATE 1960s TO THE MID-1970s

Leadership Perceptions of U.S.-Soviet Relations

With Nixon's accession to the Presidency and Kissinger's confirmation as Secretary of State, the image of the Soviet threat and of the U.S. responsibilities in meeting it began to shift again. Vietnam had continued to be a heavy drain on American human and material resources. Furthermore, the U.S. was beset by significant inflation caused by the war, together with Johnson's domestic programs. These economic

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ddddSee Schwartz, 1983: 190.

constraints were important for U.S. leaders even before one takes into account the ever-increasing balance of payments problems caused by the disparity of foreign-held dollars in relation to U.S. gold reserves. All these factors were pointing toward a less extended global presence for U.S. foreign policy.

These factors, among others, led Nixon and Kissinger to the understanding that shoring up America's political power necessitated revisions both in the perceptions of the role of the U.S. in the world and in American foreign policy commitments. Nixon and Kissinger were similar to their predecessors in perceiving the Soviet Union as the principal threat to U.S. interest, but as the economic and foreign policy power of Western Europe, Japan, and China had become significant in the previous decade, Nixon and Kissinger's attitude was to constrain Soviet influence by playing these other powers against it [LaFeber, 1976: 264-265]. The U.S., as Nixon and Kissinger perceived it, did not have the power to continue being the predominant defender of peace, freedom, and democracy in the world. Besides, many U.S. policymakers, recognizing the Soviet Union's increasing economic and technological shortcomings, perceived that these difficulties might allow the U.S. an entree to bargain U.S. assistance in those areas for

modifications in Soviet foreign policy.eeee Furthermore, Nixon and Kissinger seemed to perceive more immediate problems from revolutionary elements rather than from the Soviet Union. The latter could potentially be in favor of controlled changed, as these two U.S. leaders saw the world; the former never were.

For example, Kissinger early in the Nixon's first administration observed, "'the deepest international conflict in the world today is not between us and the Soviet Union, but between the Soviet Union and Communist China'" [LaFeber, 1976: 266, 273]. Many U.S. officials also understood that the impending Soviet achievement of nuclear parity with the U.S. would necessitate a revised view of the U.S.-Soviet relationship for the U.S. to deal most effectively with a superpower its approximate strategic nuclear equal. Kissinger, speaking in the early 1970s about detente, commented that the policies associated with this approach were "a means of controlling the conflict with the Soviet Union.'" There is a need to "'manage the emergence of Soviet power,'" he continued, since the increased in that power is inescapable, necessitating the development of naturally advantageous ties between the two countries based on interdependence [Garthoff, 1985: 30; see also Williams, 1987: 30].

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eeeeThis concern was embodied in the "linkage" approach to foreign policy. On linkage, see Garthoff, 1985: 31-33.

To put this approach into action, Nixon and Kissinger followed four principal courses of action.ffff First, they articulated the "Nixon Doctrine," which called for U.S. Allies to take more of the burden in dealing with regional conflicts, particularly in the area of manpower. This step provided the groundwork for the policy of "Vietnamization" by which the U.S. began to phase out its troop commitment through training the Vietnamese army to defend the country on its own. This policy initiative was pursued along with negotiations with the North Vietnamese in Paris for a settlement to the conflict. Disengagement from Vietnam, as is well known, proved a rocky course. The U.S. reduced its military presence drastically through Vietnamization, but the Army of the Republic of Vietnam was basically unequal to the task of self defense. The negotiations were plagued by many of their own obstacles before an accord was signed in 1973. Furthermore, to the various difficulties of these endeavors was added the domestic strife in the U.S. associated with the bombing of Cambodia, the incursions into Laos, and the mining and bombing of North Vietnam. This strife reflected a major lack of support among some sectors of the U.S. populace for the U.S. presence in South Vietnam and caused U.S. leaders to reconsider the extent of U.S. commitments worldwide.

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ffffOn these points, see LaFeber, 1976: 267-270; Brown, 1983: 328.

In 1971 Nixon moved to ease the country's balance of payment problems by floating the dollar. Although an event unwelcome to many in the international monetary market, this step put the U.S. in a stronger international economic position. Nixon and Kissinger realized the value of a strong domestic economy and the concomitant problems of a weak one. As Nixon commented in 1971, "'economic power will be the key to other kinds of power.'" For this reason, he continued, the five great economic superpowers [the U.S., U.S.S.R., Western Europe, China, and Japan] would determine the future of the world in economics and in other ways in the last part of the century [LaFeber, 1976: 271].

A third part of Nixon and Kissinger's grand strategy was initiating the process of normalization of relations with China, by means of the trips that both statesmen made to that country in 1971. This step gave the U.S. some additional leverage in dealing with the Soviet Union and in dealing with Southeast Asia. Such was the case in part because increasing strains in the Sino-Soviet relationship in the previous five years made a Sino-U.S. rapprochement of particular concern to the Soviets.

Perhaps the capstone of this effort to redirect U.S. foreign policy from the previously central objectives of opposing communism, if not the U.S.S.R., worldwide was detente and the series of treaties signed with the Soviets in the early 1970s. These treaties included agreements on

ABM systems, offensive nuclear weapons, seabed arms, prevention of accidental nuclear war, and curbs on biological weapons. Since the U.S. at this point had much to offer the Soviets in terms of possible cutbacks in strategic arms procurement, sales of technology and agricultural products, and a counterbalance in the Soviets' relations with the PRC, pursuit of a modus vivendi between the superpowers was as much or more in the interest of Soviet leaders as it was to Nixon and Kissinger. Although much has been written about the differences between the U.S. and the Soviet interpretation of the meaning of detente, one characteristic scholars would be willing to agree was demonstrated in the advent of detente was an awareness within the U.S. leadership that the Soviet Union, while still opposed to U.S. interest and political values in many facets of policy and in many regions of the world, was not the bete noire that it had been perceived to be since World War II. The U.S. and Soviet Union, for example, would continue to disagree about ways to implement the 1972 Basic Principles Agreement. At the same time cooperation the two sides pursued to bring about the signing of a wide variety of agreements in the early 1970s and to pursue these agreements, problematic as that pursuit was, signified a key transition in U.S.-Soviet relations. More importantly for the present analysis, it also signified in the U.S. a

new perceptual approach to the U.S.-Soviet relationship and the role of the Soviet Union in international affairs.

This approach Nixon and Kissinger developed pursuing American foreign policy in dealing with the Soviets had its ups and downs but remained generally intact into the mid-1970s. Part of this reason this foreign policy orientation endured was that Gerald Ford retained Kissinger as his National Security Advisor after Nixon's resignation. A leadership's approach toward dealing with its rival is not solely the product of one or two individuals, obviously, so another reason this approach endured is that if reflected what the leadership as a whole, as well as the populace, sensed about the appropriate relationship the U.S. should have with the Soviet Union. While there were several more treaties signed by the two countries during the Ford Administration [Threshold Test Ban, Peaceful Nuclear Explosions, and the Vladivostok Accord], problems developed in this relationship that some in the U.S. took as evidence that the extent of cooperation with the Soviet Union envisioned in the last 1960s and early 1970s was not longer appropriate.

Nixon's and Kissinger's perceptions of the U.S.-Soviet relationship and how to pursue it did encounter some opposition [but largely from outside the Government]. Critics of detente called attention to alleged Soviet encouragement of the Egyptians in the 1973 October War and

to Soviet involvement in political crises in Angola, Portugal, and Yemen. Critics also called attention to the continued Soviet improvement of their strategic offensive forces, which appeared to some as not in keeping with the spirit of SALT I, and to a number of alleged violations of the SALT I and ABM agreements. Additionally cited by critics was the slow pace of the SALT II negotiations and particularly the Soviets' positions on cruise missiles and the Backfire. This criticism had the effect, as Garthoff notes [1985: 548], Kissinger in a period of a year and a half [September 1974 to February 1976] had moved from labelling detente a "'search for a more constructive relationship with the Soviet Union'" to characterizing the administration's Soviet policies as basically "'designed to prevent Soviet expansionism.'" Part of this shift was clearly influenced by political dynamics within the Republican party during an election year when its conservative wing was waxing influential. At the same time, even though a Democrat was elected to the White House who had on a number of occasions confirmed his interest in detente, problems in his own administration and in the world were to continue to aggravate obstacles for detente as a foreign policy orientation [see Garthoff, 1985: 563-565]. Therefore, while the U.S. leadership in the early 1970s pursued a relatively [to previous years] accommodating attitude toward the U.S.-Soviet relationship, there were

some leaders of both parties who, by the mid-1980s, saw that relationship as more conflictual and the Soviet Union as a more hostile opponent. So while one can argue that there was some diminution in the perceived Soviet threat in the late 1960s and early 1970s, the more pessimistic assessment which came later was probably more concerned than their colleagues in government with the possibility of nuclear war.

The Detente Orientation and NATO

Getting agreement on MC 14/3 had been a task of major proportions for McNamara, and the breach in NATO's political-military solidarity caused by the French announcement in 1966 of an intended withdrawal form the military structure of the alliance added to the instability within the alliance. The rise of detente, which on the one hand facilitated Brandt's Ostpolitik, on the other caused Europeans renewed concern about the sturdiness of the U.S. commitment. NATO bonds basically remained strong in the late 1960s. The Czech invasion caused concern about Soviet aggressiveness, and the NATO allies did cooperate sufficiently to present a united front as arrangements were made for the MBFR and CSCE negotiations.

With the adoption of the Harmel Report in December 1967 and its conclusions about the need to "further detente in East-West relations," NATO began a series of studies in the last two years of the decade that laid the conceptual foundation

for MBFR. Thus, NATO's role in the relationship between the superpowers was one in which its participants affirmed that "'military security and a policy of detente are not contradictory but complementary'" [see Garthoff, 1985: 110].

Within the broader context of U.S. doctrine toward the Soviet Union during this period, NATO continued to plan an important role, but just as the U.S. view of the Soviets was changing, so also was the role that NATO played. NATO was still an instrument the U.S. Government [as well as those of its European allies] could used in pursuing its security relationship with the Soviets. At the same time it was growing in its role as an instrument to lessen, rather than reflect, the tensions of the military relationship of the superpowers in Europe.

The more accommodating attitude of the U.S. leadership in dealing with the Soviets through NATO is nicely captured in Nixon's 1970 report to Congress, U.S. Foreign Policy for the 1970s. Noting that by the late 1960s, potential growth in military strength of the two superpowers "outweighed rational objectivity," Nixon commented that "[p]rofound changes in the world called for a fresh approach to defense policy, just as they required a new approach to foreign policy" [Nixon, 1970: 111]. Then, after discussing the need for greater U.S. efforts for cooperation with its European allies and the importance of both military strength and arms

control for the alliance, he remarked that NATO should be prepared to negotiate. He stated that NATO's efforts "to pursue genuine relaxation of tensions between East and West will be a test of the new trans-Atlantic partnership" [Nixon, 1970: 28-29].

He amplified these remarks by a later reference in the report to Eastern Europe. The U.S., he said, is "aware that the Soviet Union sees its own security as directly affected by developments in this region;" it is "not the intention of the U.S. to undermine the legitimate security interest of the Soviet Union." "Our pursuit of detente is meant to reduce existing tensions, not stir up new ones," he added [Nixon, 1970: 138-139].

The U.S.-NATO relationship in the late 1960s and early 1970s was not without its problems, though. Nixon annoyed West European allies with his decision in 1971 to float the dollar. Also, by the end of 1973, differences over how to handle the Arab oil embargo, not to mention European disappointment with Kissinger's calls for unity within the alliance under U.S. leadership [the U.S. had "global interests and responsibilities" which the Europeans had "regional" ones, he said], caused some ill will between the U.S. and its partners. Kissinger's proposal in an April 1973 speech on "Year of Europe" further troubled U.S.-European relations [Garthoff, 1985: 321-322; Brown, 1983: 423].

Overall, though, NATO remained an important part of U.S. doctrine vis-a-vis the Soviets and one through which U.S. leaders could effectively pursue U.S. security interests. While U.S. difficulties with NATO allies created some strains in the U.S.-NATO relationship, U.S. leadership perceptions on the role of NATO did seem to shift during the late 1960s and early 1970s on account of a partial relaxation in U.S. [and West Europeans] perceptions of the Soviet threat.

Strategic Targeting

The interest in a greater variety of options for U.S.. strategic targeting, together with the realization that the Soviet nuclear arsenal was reaching parity with that of the U.S., led the Nixon administration to reconsider the SIOP. Kissinger in 1969 initiated a study of the SIOP, and over the next several years more flexibility was built into the plan, particularly in the are of avoiding urban-industrial areas and providing greater selectivity among military targets.

One of the major resulting concepts was that of limited nuclear options [LNOs]--sets of pre-planned targeting packages directed particularly at "'political, economic and military resources critical to the enemy's post-war power, influence and ability to recover...as a major power.'" NSDM-242 of January 1974, which articulated the LNO concept, emphasized the importance of escalation control utilizing

"withholds", or "non-targets," such as some heavily populated areas and centers of political leadership and control [Ball, 1986: 73; Friedberg, 1984: 572]. Noting that the Soviet Union by the early 1970s had the capacity to undertake selective attacks against targets other than cities, Secretary of Defense Schlesinger explained that the U.S. needed a comparable capability. This capability would be important, planners noted, not only for the U.S. deterrence of the Soviets but also to enhance the graduated deterrent capability of NATO [Friedberg, 1984: 583].

The various options LNOs made possible were spelled out in the Nuclear Weapons Employment Policy [NUWEP-1], which was provided as policy guidance in April 1974 and which led to a new SIOP [SIOP-5] that took effect in January 1976 [Ball, 1986: 74]. As was the case with SIOP-62, nuclear deterrence and intra-war concerns had been the issues driving the effort to revise nuclear targeting. but these revisions continue to complement an approach to warfare that aimed at avoiding escalation and reducing death and destruction where possible [see Friedberg, 1984: 584]. Although strategic and tactical nuclear weapons were still an important part of U.S. force posture and of allied force posture in Europe, these revisions were also compatible with an approach to warfare that acknowledged the efficacy of conventional weapons in theater engagements.

U.S. Army Conventional Warfare Planning

Although NATO planners in the mid-1960s had apparently not been to affected in drawing up MC 14/3 by the turbulence in Army doctrine during the 1960s, the Army post-1967 did try to respond to MC 14/3. As Midgley notes, and important facet of MC 14/3 was the use of nuclear weapons for political purposes--primarily how to deploy battlefield nuclear weapons for their maximum deterrent effect. Previous Army doctrine and not been concerned with the possibility that these weapons could accomplish their purpose without being fired. Furthermore, the absence in MC 14/3 of guidance for force design left the Army with no firm directions for force structure or equipment configuration. The guidance 14/3 did provide--a three-part recommendation that involved the use of nuclear weapons for shock effect as well as for demonstrations of selectivity and restraint--was problematic to Army planners, who had never considered the use (or non-use) of nuclear weapons as a way to signal the opponent (Midgley, 1986: 130-131).

The Army did indeed attempt to deal with these issues. The Combat Developments Command from January 1966 to April 1967 conduct a Transition Study in which it dealt with problems in tactical dispersal and nuclear strike detection and reporting. This report basically only acknowledged the results of Oregon Trail and Frontier Shield--that a force dispersed for nuclear battle could only delay (not defend

against) conventional attack--and emphasized the importance of predelegated release authority (see GRC, 1973).

Several other studies were pursued in the new few years that attempted to deal with the political aspects of the deployment and use of nuclear weapons--the Combat Developments Command's Synthesis_of_High-Intensity_Conflict study and the Army War College's Tactical_Nuclear_Operations Concept_Study The former, however, was basically a bibliographical collection, and the concepts in the latter were largely abstract and not oriented toward providing guidance for force design and use (see U.S. Army Combat Developments Command, 1969; and U.S. Army War College Institute of Advanced Studies, 1970).

The conceptual developments of the Concept_Study in the area of political implications of nuclear weapons use did serve as the basis for a similar study by the War College's Strategic Studies Institute in 1972-1973 and to the 1973 Nuclear_Doctrine,_Organization,_and_Equipment (NUDORE) study by the Training and Doctrine Command (TRADOC, formerly Combat Development Command). The former study attempted to relate various force designs to deterrence capabilities and to articulate the Army's understanding of the political relevance of nuclear weapons short of general nuclear war (U.S. Army War College, 1973). The latter study examined the problems of the timeliness of release authority and the need to provide theater commanders and political leaders

with continuously updated lists of alternative options for the battlefield (U.S. Army Training and Doctrine Command, 1973: 1-3).

With the post-mid-1960s emphasis on the political use of nuclear weapons and the various assessments during the same period of battlefield problems of the Vietnam War, for which nuclear weapons were never seriously considered by the Army leadership, Army institutes during these years devoted little attention to military analysis of the nuclear battlefield. One of the few such studies was the Nuclear War Program (NUWAR) study, which the Combat Developments Command pursued beginning in 1967. NUWAR, completed in August 1970 and approved in February 1971, became Field Manual FM 100-30 (Test) Tactical Nuclear Operations. FM 100-30 (Test), which presented nuclear war basically as high-intensity conventional war, discussed the use of tactical nuclear weapons in a conflict situation that assumed away the possibility of a strategic nuclear exchange. The Field Manual, therefore, avoided dealing with the thorny problems of escalation control and restraint. Interestingly, the Army Staff accepted the NUWAR proposals on the ground that they be confirmed in field tests. The field tests for NUWAR, however, were cancelled for lack of funds (Midgley, 1986: 139-141; U.S. Army Combat Developments Command, 1970; Department of the Army, 1971; Rose 1980: 115-121).

Circumstances facilitating a more careful assessment of the nuclear battlefield were not to occur, as matters progressed, for by the beginning of 1974, the Army's attention had become absorbed in the results of the 1973 October War. As Midgley notes, virtually every aspect of the war was examined by Army analysts, from the rapid tempo of operations to the lethal environment for tanks, to the role of PGMs. One of the first studies of the war was completed by TRADOC in July 1974.gggg This TRADOC report focused on a conventional battle dominated by accurate long-range tank fires and ATGMs. The study argued that units exposed to enemy conventional fires would suffer unacceptable losses in a short period of time if they utilized maneuver doctrine based on simplified geometric formations, rather than extensive fire suppression and protective use of terrain [Midgley, 1986: 148-149; Letter, General Dupuy to General Abrams, 1974].hhhh

Analyses of the 1973 war were incorporated into the next revision of FM 100-5 Operations, which appeared in July 1976. For this revision of FM 100-5, General William Dupuy had directed a wholesale revision of the field manual to incorporate assessments of the October War. The final

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ggggTRADOC was organized from the former Combat Developments Command.

hhhhMidgley comments [p. 143] that similarities of this battlefield to the nuclear one were not acknowledged by Army analysts.

version of the manual emphasized winning the first battle of the next war, on the assumption that the increased lethality of conventional weapons would force a battlefield decision in a short period of time. However, throughout the field manual, the nuclear battlefield was neither described not distinguished from conventional operations as the conflict was analyzed. The only part of the study dealing with nuclear operations was a short section on tactical nuclear weapons that did not include any guidelines on their use to support maneuver units (Department of the Army, 1976; see also Herbert, 1988).

Analysis done during the same period on force design headed in similar directions. A Division Restructuring Study was undertaken in the mid-1970s as an outgrowth of the doctrinal revisions in the wake of the October War. The thrust of the recommendations were to build upon the ROAD design by restructuring armored divisions into smaller maneuver battalions, adding firepower (particularly artillery) to the divisions and integrating combined arms at the battalion rather than company level. This increase in firepower did add more nuclear capability only because of the dual use possibilities of the additional tubes. Also, since the revised division was intended to be more agile and responsive,it was assumed to be more capable on the nuclear battlefield (Midgley, 1986: 150-151; Training and Doctrine Command, 1977).

Midgley notes that when the text of the new FM 100-5 was distributed for comment to the Army staff and the major commanders, the brief section on nuclear weapons was omitted. General Dupuy recognized this problem but in an assessment of the omission commented that TRADOC did not "'intend to reorganize the Army for nuclear operations, but rather to optimize its use of the conventional Army in that environment'" [Midgley, 1986: 148-149; Letter, ATTNG-UTDD-DOC, 1976].

The upshot of these developments, Midgley observes, was that by the mid-1970s, maneuver doctrine for the nuclear battlefield had basically disappeared from official Army doctrine. For example, he notes that in a 40-week course offered to field-grade officers at the Command and General Staff School in 1977, only four hours were allocated to nuclear operations, and that mostly on targeting exercises to familiarize students with procedures for using a corps nuclear package [Midgley, 1986: 148-149].

By the mid-1970s, then, Army planning for nuclear operations was more or less relegated to the periphery. Practical aspects of how such a conflict would be fought was not significantly clearer than in years past. While some aspects could have been worked out better through exercises, it is very arguable the case that one cannot plan satisfactorily to deal well with both conventional and nuclear battlefields. In this context Dupuy's concept--that

the Army would plan for a conventional battlefield but try to optimize that structure for nuclear operations if the situation arose--makes sense as a reasonable way to approach the problem. As has been the case in military campaigns historically, when there is a major change in the combat environment, the tempo of the battle slows markedly as the opposing sides determine how best to deal with these changes [Ritter, 1989]. Such would probably be the initial outcome of a conflict in Europe where tactical nuclear weapons are used; the forces on the field would regroup and perhaps resume the battle at least somewhat redeployed.

For the assessment of where Army planning was in the mid-1970s, it seems pretty clearly the case that the major effort was geared to fighting a conventional rather than a nuclear engagement and that while preparedness to fight in a nuclear environment was important, such preparedness could not be pursued to the point it would detract from the Army's conventional capabilities.

NATO Strategy Developments and the Connection with U.S. Army Planning

Subsequent to the Phase I and II studies where operational implications of MC 14/3 were worked out for NATO politicians and commanders, the NPG was challenged anew by some critics who saw the use of TNF as more appropriate for warfighting than for political objectives. This time the critics argued that the NPG should examine the advantages of PGMs for NATO's military strategy. There was also some concern voiced

by the U.S. Congress that there were too many U.S. nuclear weapons in Europe.

The result of the study of PGMs, which the NPG examined both in terms of its political and its military implications, was that there were some areas, such as improved detection, reduction of collateral damage, and avoidance of the use of nuclear weapons, where NATO could gain some advantage. While the report in general suggested that there were no military benefits that would accrue to attacker or defender with the introduction of these weapons, the report concluded that it would be wise for NATO countries to continue developing PGMs, since the alliance would not want the Soviets along to deploy such weapons (Legge, 1983: 28-31).

The report on the number of nuclear weapons in the alliance, while it did not discuss the size and mix of the systems in the stockpile, did seem to satisfy Congress with its discussion of strategy, the composition of the stockpile, C-cubed, etc. The report also suggested further analysis of NATO's nuclear capability was warranted. The studies on PGMs and nuclear weapons, presented in November 1976 and June 1977 respectively, also confirmed the findings from the Phase I and II studies that if TNF were used, the primary objective should be political (Legge, 1983: 32-33).

The report on nuclear weapons, because of its call for further analysis of NATO's nuclear capabilities, led to a

paper by Secretary of Defense Rumsfeld on the effectiveness of NATO's INF. This assessment itself to led to the development of NATO's Long Range Theater Nuclear Force Modernization Program, discussed in Chapter Twelve [Legge, 1983: 33].

As one relates these NATO developments to developments in U.S. Army planning, there were several notable linkages. Both NATO and the Army continued to have problems specifying the role of nuclear weapons. NATO's problems were more political in nature, while the Army's were more operational. Additionally, NATO continued to see theater nuclear weapons as serving to signal the Soviets [in a political sense] or for interdiction [in a military sense].

The Army, to the extent it concerned itself during this period with nuclear planning, continued to focus on nuclear weapons in their battlefield or tactical applications. There was during this period, a continued, if not greater awareness of the role of conventional forces in NATO [even if, arguably, a continued neglect of the operational problems]. Secretary of Defense James Schlesinger commented in a 1974 press conference on NATO nuclear weapons that each leg of the NATO triad--conventional forces, tactical nuclear forces, and strategic forces--had a unique role to play, and that he realized conventional forces had not gotten as much emphasis as they should have. Consequently, he commented, he with the other participants in NATO had spent much time

determining how to improve that leg of the triad. Yet, he noted there was "no separation" between the two legs of conventional and tactical nuclear forces; the two were mutually enhancing (News Conference, 1974).

The Allies basically concurred with this position. In a year-end review for 1974 drafted by U.S. NATO Headquarters, there seemed to be agreement that NATO needed a new targeting doctrine on account of its strengthened conventional forces and a consensus on a continuing need to improve conventional forces (NATO Headquarters, 1974).

Finally, the development of PGMs presented both NATO and Army planners with a capability that needed to be assessed and potentially integrated into allied forces. Therefore, while NATO and Army planners were still basically considering nuclear weapons at different levels of analysis, PGMs provided an issue at which the levels of analysis were closer.

In the formulation of FM 100-5, Dupuy did make use of German battle planning, particularly the concepts of the Panzergrenadier and some of the concepts of highly active forward defense promulgated in the 1973 German training manual HDv 100/100. The Panzergrenadier concept involved integrating mechanized troops with tank regiments to make the troops more mobile and give them protection. The second involved ways to enhance defensive strength through a focused emphasis on forces at the brigade level. Depuy

did not apply these concepts in quite the same way the Germans did, but the German influence on Depuy's operational planning was nevertheless significant [Herbert, 1988: 63-67].

The consultations with the Germans were largely at the operational level and did not affect the relative emphasis FM 100-5 gave to conventional as opposed to nuclear weapons. If there was any impact here, the effect was probably to strengthen the focus of FM 100-5 on conventional warfare.

CONCLUSIONS

The 25-year period following World War II was clearly the formative one for current U.S. conventional warfare doctrine. From the aspects of U.S. doctrine examined here, one may note five major developments.

First, the distrust and fear of the Soviets that informed much of Western thinking during the Cold War also underlay key assumptions of U.S. security policymakers about the aggressiveness of Soviet intentions in the decade after the war ended. These key assumptions basically led to the conclusion that since the Soviet Union was an aggressive power bent on world domination, any war with the U.S.S.R. would be total, and the chief U.S. goal would be to destroy as much of Soviet industry and military potential as possible in the shortest amount of time. This basically military conclusion was buttressed by the perceived economic

imperative that deterring Soviet aggression could not be accomplished by keeping U.S. armed forces at anywhere near the manpower level at the end of the war.

What this thinking, in conjunction with the development of nuclear weapons, meant for conventional warfare was that from the late 1940s into the 1950s, the concept of a conventional period of war was gradually phased out of U.S. war plans. As the U.S. nuclear stockpile developed by the end of the 1940s and early use of ground troops was no longer a necessity, the air-atomic attack was seen as the principal strategy to support U.S. doctrine on a conflict with the Soviets. Nuclear weapons were cheap, the Air Force thoroughly supported their deployment and their use in a major conflict with the Soviets, and the President of the United States endorsed them as the nation's principal deterrent.

Second, not until the U.S. was faced with a growing Soviet nuclear capability and the strong likelihood that any major nuclear conflict might easily lead to the destruction of both U.S. and Soviet societies was the primacy of a singularly nuclear strategy questioned. Concomitantly with the growth of their nuclear arsenal, the Soviets also moderated their strident anti-American rhetoric and began to engage in serious arms-limitation agreements, thus contributing to a shift in U.S. doctrine on the likelihood of war resulting from Soviet aggression. These developments

together led to a shift in the anticipated nature and venue of conflict. Instead of a nuclear war resulting from a direct U.S.-Soviet military engagement or hostilities involving allies in Europe, tension between the superpowers was anticipated to be played out in proxy conflicts in developing regions of the world. The weapons of these conflicts would be political and economic assistance, or--if warfare became unavoidable--conventional rather than nuclear hardware. While the Eisenhower Administration began to take account of this change by dispensing economic and military aid to developing countries, it was not until the Kennedy Administration took office that U.S. leaders seriously addressed these conflicts by developing strategies--Flexible Response and counterforce targeting--and military capabilities to meet these challenges.

Third, the trend that began in the late Eisenhower period toward greater optimism about the decreased likelihood of Soviet aggression leading to an all-out nuclear war clearly facilitated the development of such strategies in the decade of the 1960s and thereafter. This development continued through the period of detente and through the successful pursuit of major arms control negotiations. This trend was probably most subtly, but most significantly, shaped by changed U.S. perceptions of the U.S.-Soviet conflict and of the U.S. global role as a promoter and guarantor of freedom and democracy.

Fourth, in spite of changing perceptions on the nature and likelihood of war, neither in the 1950s, when U.S. doctrine began to deemphasize a conventional phase in a major U.S.-Soviet conflict, nor during the 1960s, when the possibility of a conventional phase did exist, did U.S. strategy incorporate the possibility of conventional warfare on an operational level. Early on, the principal problem in U.S. Army planning was ignorance of the effects of nuclear weapons, large or small, when used in conjunction with ground troops. Even later, when effects were better known, the problems of fighting a nuclear ground war, or, more precisely, transitioning from a conventional to a nuclear ground war, still loomed insurmountable.

Because of geographic distance between the superpowers and the capabilities of ICBMs, the strategic relationship between the superpowers was such that conventional warfare did not really occupy a part of the military strategy underlying the U.S.-Soviet relationship. The principal way the shift from a dependence on massive nuclear response was felt was in greater selectivity of targets. While it seemed as if strategic planners and planners in the Army were preparing for two different conflicts [or perhaps two different levels of the same conflict], many of the same generic problems that faced doctrinal and strategic planners also faced Army planners. For strategic planners, the key issue was how to plan and manage pre- and intra-war

deterrence. For the Army, the key issue was how to fight a successful conventional engagement yet be ready to shift to fight a nuclear engagement with similar effectiveness.

Fifth, for a theater engagement on the ground, questions of division size, release authority, and, most importantly, the difficulties of being able to mass for a conventional attack or disperse to defend against a nuclear one, seemed intransigent problems to any Army planner that took them seriously. As noted, the only way Army planners did deal with these problems was to ignore them. Conventional war, in a sense, seemed a chimera: introducing nuclear weapons to ground troops so altered the environment in which the troops would fight that the battle would cease to be conventional in any real sense of the word. Conventional engagements could be fought, but doing so would almost necessitate the opponents' agreeing not to escalate to the use of nuclear weapons--a risky, if not unlikely, assumption.

Regardless of the time period and weapons availability for which Army planners aimed, the AFTA, Pentana, Pentomic, MOMAR, and ROAD divisions all suffered from the same flaw: ground forces configured for traditional conventional warfare could not fight effectively in nuclear environments, and vice versa. At least up through the 1970s, what this fact meant was that if the Army were configured to fight a conventional campaign, the Army's success would rest in large part upon the political dimensions of the conflict.

Here I refer to whether the political leaders of either side decide to escalate to nuclear weapons and how far they would allow that escalation to proceed. It seems that it was not until the mid- to late 1970s, when the concept of the primarily conventional character of a theater war seemed to catch on, that Army planners could consciously deemphasize the need to plan for a nuclear battlefield.

So, while by the late 1970s conventional warfare had regained some of its pre-nuclear age importance, there were still many key problems for its prosecution that U.S. planners had yet to resolve. As indicated earlier, similar problems affected NATO planning. NATO's problems, again, were primarily political, while the Army's were primarily organizational and budgetary.

For the purpose of understanding these developments in U.S. and NATO planning as they relate to changes in Soviet military doctrine, I suggest the following summary (see Tables 4-7). From the end of World War II until the late 1940s, U.S. defense posture and planning for a conflict with the Soviets was primarily conventionally oriented. A nuclear orientation began developing in the late 1940s and was in full development in the early 1950s. This orientation continued to the late 1950s, when U.S. leaders began to discuss improving U.S. conventional capabilities to meet regional threats. U.S. Army planning reflected

this nuclear orientation in its structuring of ground forces to fight in a nuclear environment.

In the late 1950s, strategic planning and procurement remained the backbone of the U.S. military relationship with the Soviets, but the need to meet perceived Soviet aggression in the developing world--perhaps aggression that would be more likely than a global nuclear war--was perceived as increasingly important. This approach gained particular momentum in the early 1960s, as the U.S. and Soviet Union successfully resolve its standoff with the U.S.S.R. over Cuba and as it became more involved in Southeast Asia. U.S. Army planning at this time began to be more concerned about its insufficiencies for fighting a conventional war.

U.S. planners, with the implementation of Flexible Response and its focus on improved conventional capabilities, provided a further signal that the U.S. did not intend massive nuclear retaliation in the event of perceived Soviet aggression in a particular theater, particularly if the Soviet military activity were conventional. This signal was buttressed somewhat by the adoption of counterforce in lieu of Massive Retaliation as a strategic doctrine. This signal about graduated deterrence and more cautious use of military force was provided further weight by U.S. participation in detente and by planning within NATO and the U.S. Army in the mid-

1970s with the implications of the conventional battlefield of the October War and the PGMs used there.

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APPENDIX

Table 6.1: Nuclear Weapons Stockpile, 1945-1983

U.S. Nuclear Weapons Stockpile

Year	Number of Warheads
1945	2
1946	9
1947	13
1948	50
1949	250
1950	450
1951	650
1952	1000
1953	1350
1954	1750
1955	2250
1956	3550
1957	5450
1958	7100
1959	12,000
1960	18,500
1961	23,000
1962	26,500
1963	29,000
1964	31,000
1965	31,500
1966	31,500
1967	32,000
1968	31,000
1969	29,000
1970	27,000
1971	27,000
1972	27,500
1973	28,500
1974	29,000
1975	28,500
1976	27,500
1977	26,000
1978	25,500
1979	25,000
1980	25,000
1981	25,000
1982	25,000
1983	26,000

Stockpile numbers for 1945-1948 are taken from an undated State Department memorandum circulated in 1982, and David Alan Rosenberg, "U.S. Nuclear Stockpile, 1945-1950," *The Bulletin of the Atomic Scientists*, May 1982. Authors' estimates of the current size of the stockpile and historical trends are derived from SAC, FY 1981 EWDA, Part 2, pp. 798-799, 806; JCAE, *Development, Use and Control of Nuclear Energy for the Common Defense and Security and For Peaceful Purposes, Second Annual Report*, 30 June 1976, pp. 135-136; HASC, FY 1982 DOE, p. 142, DOD, FY 1984 Annual Report, p. 55. For the years 1949-1958 the estimate is rounded to the nearest multiple of 50 warheads, and for the years following 1958 to the nearest 500 warheads.

Source: Cochran, Arkin, and Hoenig (1984: 15)

Table 6.2: U.S. Tactical Nuclear Weapons in Europe

Ground-Launched TNW Deployed with U.S. Forces in Europe

Name of system	*Number deployed*[a]	*Range (nautical miles)*	*Yield (kilotons)*	*Dual-capable*	*Initial operational capability*
Honest John	36	4.5– 22.0	20.0	Yes	1953
Sergeant	36	2.4– 84.0	Low	Yes	1962
Lance	36	2.6– 70.0	1.0–100.0	No	1973
Pershing	108	96.0–390.0	60.0–400.0	No	1962
Nike-Hercules	144	1.0– 20.0	1.0	Yes	1958
M-109 155-mm howitzer	326[b]	9.0	Low	Yes	1962
M-110 8-inch howitzer	360	8.0	Low	Yes	1964
ADM	Unknown	1.0– 3.0	Low	No	1950s

Sources: Author's estimates based on data appearing in International Institute for Strategic Studies, *The Military Balance, 1972–73*, and *The Military Balance, 1973–74* (London: IISS, 1972, 1973); T. N. Dupuy and Wendell Blanchard, *The Almanac of World Military Power* (2nd ed., R. R. Bowker Company, 1972); Trevor Cliffe, *Military Technology and the European Balance*, Adelphi Papers, 89 (London: International Institute for Strategic Studies, 1972); R. T. Pretty and D. H. R. Archer (eds.), *Jane's Weapon Systems, 1971–72* (McGraw-Hill, 1972); and Richard Rhodes, "Los Alamos Revisited," *Harper's*, vol. 248 (March 1974).

a. Nominal estimates, based on the number of units deployed.

b. Combined U.S. and allied deployments.

Source: Record (1974: 22)

Table 6.3: NATO Nuclear Delivery Systems

NATO's Current Theater Nuclear Delivery Systems

Category/Type	First Deployed	Number	Range/Operational Radius	Dual Capable?
1. *Long-Range*[a]				
Vulcan	1960	56	2,800km	yes
F-111E/F	1967	156	1,900km	yes
2. *Mid-Range*				
Pershing IA	1962	180[b]	720km	no
F-4	1962	499	1,150km	yes
F-104	1958	367	1,240km	yes
Jaguar	1974	80	950km	yes
Buccaneer	1962	60	950km	yes
Mirage IIIE	1964	30	600km	yes
A-6E	1963	20[c]	1,000km	yes
A-7E	1966	40[c]	900km	yes
Super Entendard	1980	12	560km	yes
3. *Battlefield*[d]				
Lance	1973	90	115km	yes
Honest John	1953	91	38km	yes
Pluton	1974	24	120km	no
155mm gun	1962	1,081	21km	yes
203mm gun	1964	391	19km	yes

Sources: Compiled from data provided in Robert Kennedy, "Soviet Theater Nuclear Forces," *Air Force Magazine*, March 1981, pp. 78-83; W.B. Menaul, "The Shifting Theater Nuclear Balance in Europe," *Strategic Review*, Fall 1978, pp. 34-45; *Department of Defense Annual Report, Fiscal Year 1982* (Washington, D.C.: Department of Defense, 1981); and *The Military Balance 1980-1981* (London: International Institute for Strategic Studies, 1980).

[a]Excludes Polaris A-3 SLBMs assigned to SACEUR and S-2/-3 French IRBMs.

[b]Includes 72 assigned to the Bundeswehr.

[c]Assumes two U.S. carriers deployed in the Mediterranean.

[d]Excludes "defensive" systems such as atomic demolition munitions and the Nike-Hercules SAM.

Source: Record (1981: 21)

Table 6.4: The 1946-1952 Period

Orientation Favored: Conventional, Moving Toward Nuclear

Factors

US Leadership Perception

Apprehension about Soviets in first part of period, then after 1948 a strong perception that Soviets are hostile to U.S. interests; a concern about strength of the Soviet military as well as aggression, both directly in Europe and in other parts of world; Korean invasion reinforces Cold War perceptions

Role of NATO in Leadership Perceptions

Founded as a bastion against Soviet aggression in Europe; preference for deterrence rather than maintenance of conventional forces grows; NATO's military cooperation enhanced because of concern about Korean War

Strategic War Plans

Early post-war plans call for significant conventional offensive, supplemented by atomic bombs when available; an attack against urban-industrial areas;a growing sense that use of atomic bomb would bring victory U.S. desires; a concern begins to grow that an excessive number of nuclear weapons does not necessarily guarantee victor and deterrence should be the principal use for our nuclear weapons

U.S. Army Planning

In early post-war years, a belief that nuclear weapons are just more powerful conventional weapons, and no special attempts to integrate nuclear weapons by altering force posture; specific planning to integrate nuclear weapons is incomplete

Army-NATO Ties

Some coordination with allies on strategic planning, but apparently little, if any, on operation issues apart from the chain of command

Table 6.5: The 1953-1960 Period

Orientation Favored: Nuclear

US Leadership Perception

Cold War continues; "year of maximum danger" continues to be a planning concern until mid-1950s; a growing concern that U.S. should be ready to defend freedom at peripheries of U.S. interests, if not put pressure on Soviets at their own peripheries; NIEs note some moderation in Soviet behavior; a revised assessment that Soviets do not want war in near future

Role of NATO in Leadership Perceptions

NATO conventional force posture strongly increased in wake of Korean War; some nuclear weapons begin to arrive in NATO in 1953; direct threat to Europe seems to drop some in mid-1950s

Strategic War Plans

Massive Retaliation--an immediate and comprehensive nuclear response to significant Soviet aggression-- posed by Dulles as guideline for US strategic warfare policy; some concern among services and outside critics that comprehensive use of nuclear force not in U.S.'s best strategic interests

U.S. Army Planning

A move to redesign Army division structure to make units lighter and maneuverable; a concern among some, particularly European allies, that tactical nuclear forces may be inappropriate for Europe; a concern among U.S. force planners that a strong conventional posture is needed to defend U.S. interests abroad; Pentomic and Pentana divisions assessed

Army-NATO Ties

NATO since MC-48 of 1954 calls for a nuclear response to Soviet aggression, but some US planners in late 1950s express concern that this approach is not the most effective (NATO a deterrent force, not a tripwire); NATO planning in 1950s does not reflect turbulence in U.S. Army doctrine, though there is a conjuncture in NATO planning and Army planning for a nuclear battlefield

Table 6.6: The 1961-1968 Period

Orientation Favored: Primarily nuclear in the strategic realm, but strong tendency to reduce escalation possibilities by planning for an initial conventional phase; a concern to confine superpower conflict to conventional military engagements fought by proxies

US Leadership Perception

U.S. remains chief defender of democracy and freedom in the world and should get involved when those concerns are at risk.; a continued concern to fight communism and Soviet support for revolutionary movements in developing world (a "domino theory" approach to foreign policy); U.S. and U.S.S.R. at essential "nuclear standoff" after 1962

Role of NATO in Leadership Perceptions

U.S. tries to persuade European nations not to in- vest in their own nuclear deterrents but rather to improve conventional capabilities and place confidence in U.S. strategic nuclear weapons; U.S. pushes Flexible Response strategy

Strategic Planning

A move toward counterforce and increasing the options the President has available in a nuclear conflict; clear move away from Massive Retaliation

U.S. Army Planning

Continued efforts to design a force that could be effective in both conventional and nuclear battlefields; forces considered, chiefly ROAD, work better in a conventional than nuclear environment

Army-NATO Ties

NATO in consideration of Flexible Response continues to appears uninfluenced by controversy in Army about best structure and mission of ground forces in a conventional/ nuclear environment; use of nuclear weapons for NATO a sensitive political question not extensively addressed at an operational level

Table 6.7: The 1969-1975 Period

Orientation Favored: Same basic orientation as before, but a concern to reduce even conventional proxy wars where possible

US Leadership Perceptions

A concern that U.S. needs to reduce its extended foreign policy and military presence; a desire to pursue detente with Soviets; a realization that Soviet attainment of strategic nuclear parity necessitates reconsideration of earlier hostility in U.S. attitudes toward the U.S.S.R.

NATO in Leadership Perceptions

NATO remains an important frontier of U.S. security interests but serves as well as a means to pursue arms control with the Soviets and other efforts to reduce superpower tensions; Ostpolitik and 1971 Berlin Treaty help reduce East-West tensions in Europe

Strategic Planning

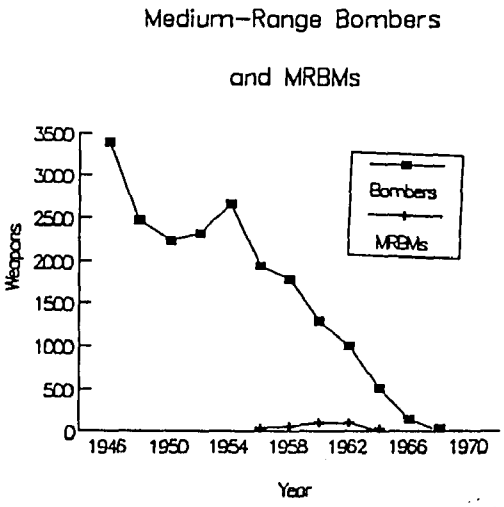
Continued emphasis on keeping strategic options available for President; part of this concern based on assumption that Soviets possess similar counterforce and selective targeting capabilities; development of LNO packages part of this continued focus

U.S. Army Planning

Little effort devoted to study of operations in a nuclear environment; Army gives additional consideration to political issues of release authority and pre-delegation; especially after 1973, a increasing focus on new lethality and rapid tempo of the conventional battlefield; a growing interest in PGMs

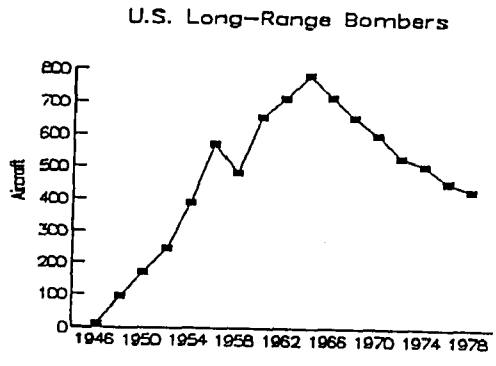
Army-NATO Ties

Some commonality in that both organizations focus less effort on continued improvements to nuclear posture--NATO's concern with nuclear weapons continues to be for their political value; some mutuality in interest in PGMs



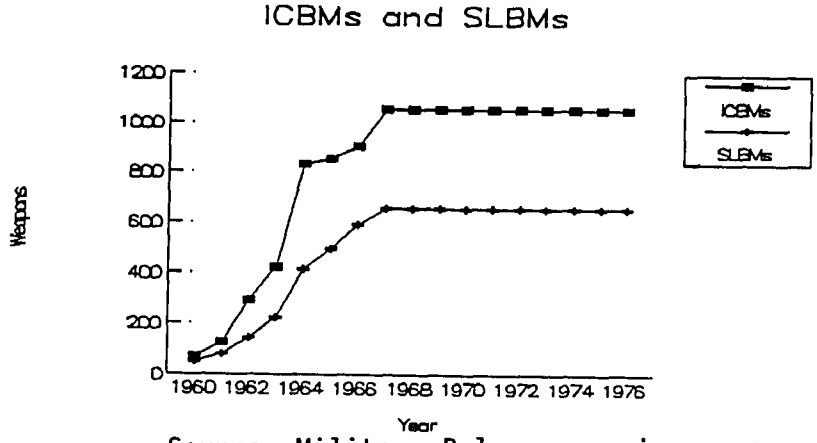
Note: Includes B-29, B-32, B-45, B-47, B-50, B-56, Thor and Jupiter.
Sources: Gervasi (1986: 409-410), Bloomfield, Clemens and Griffith (1966: 37, 94)

Figure 6.1: Medium Bombers and MRBMs



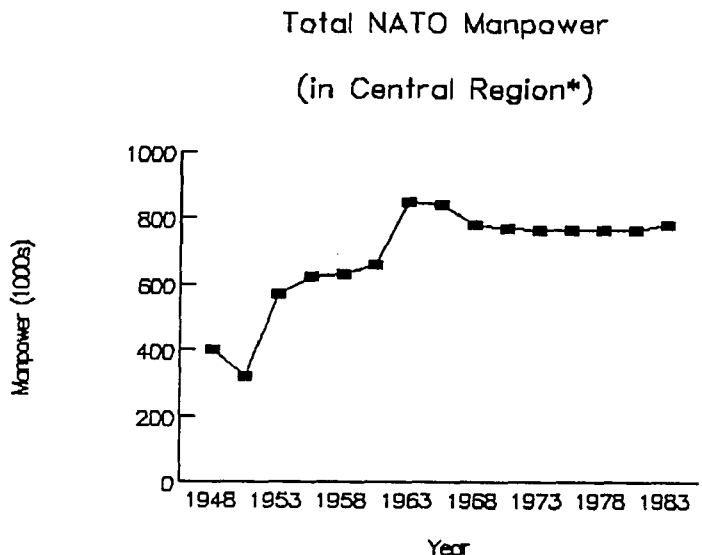
Note: Includes B-36, B-52, B-58, FB-111
Source: Gervasi (1986: 409-410)

Figure 6.2: Long-Range Bombers



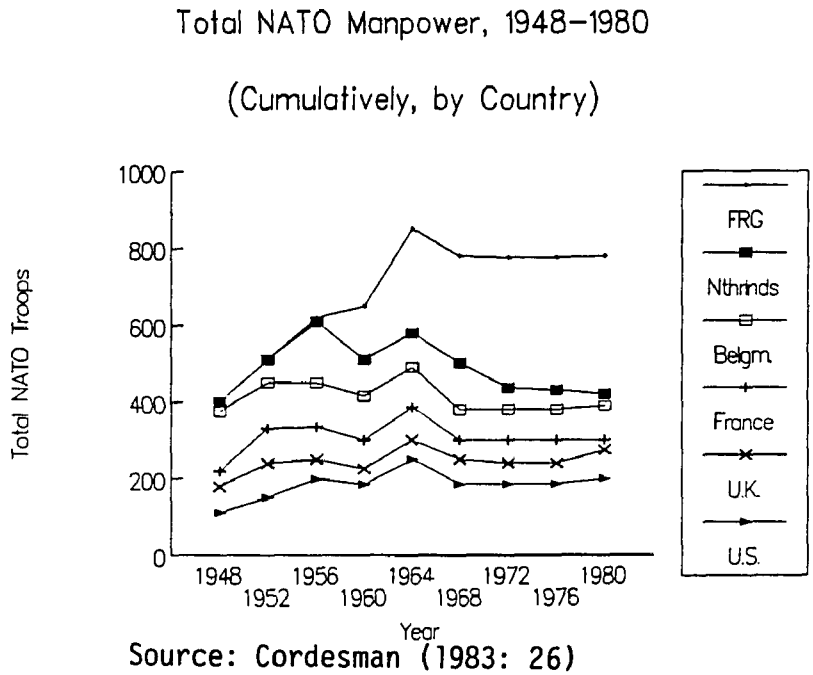
Source: Military Balance, various years

Figure 6.3: ICBMs and SLBMs



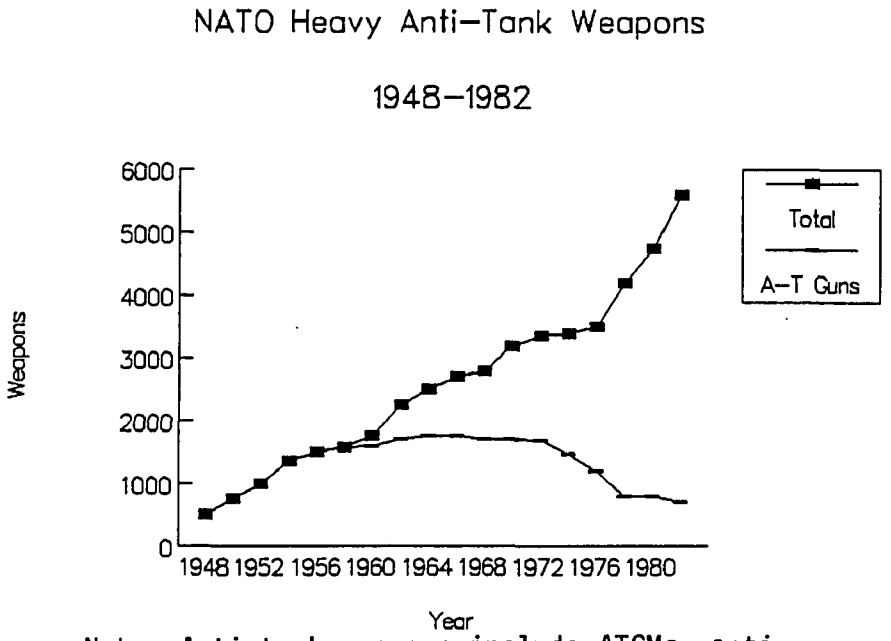
Source: Cordesman (1983: 26)

Figure 6.4: NATO Manpower Trends



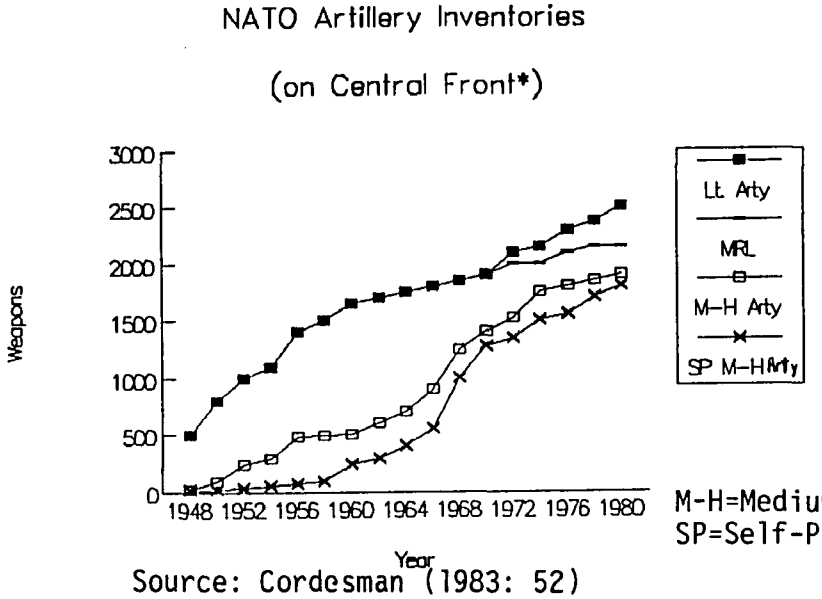
Source: Cordesman (1983: 26)

Figure 6.5: NATO Manpower by Country



Note: Anti-tank weapons include ATGMs, anti-guns, and Copperhead
Source: Cordesman (1983: 26)

Figure 6.6: Total Heavy Anti-Tank Weapons



M-H=Medium-Heavy
SP=Self-Propelled

Source: Cordesman (1983: 52)

Figure 6.7: NATO Artillery

CHAPTER VII

THE IMPACT OF MILITARY DEVELOPMENTS IN THE SINO-SOVIET CONFLICT

The Sino-Soviet dispute, like many disagreements between two neighboring powers, is one that has gestated over the decades, persisting through changes of governments and ideologies. Originally focused around border territories, the dispute from the 1950s broadened to affect many aspects of the foreign policies of both countries. In considering the role of the dispute for the development of Soviet military doctrine, it is most appropriate to focus on where the military dimension of this disagreement became the most problematic--on the Far Eastern border of the Soviet Union.

The Sino-Soviet dispute has been thoroughly chronicled and analyzed, particularly since the late 1950s, when the dispute began to wax important for relations among communist parties around the world.a Therefore, it is not necessary to retread this same ground; rather, I will examine those aspects of the relationship that most

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aSee, for example, Clemens, 1968; Clubb, 1966; Deutcher, 1970; Garthoff, 1966b; Griffith, 1964, 1967; Halperin, 1967; Hudson, Lowenthal, and MacFarquhar, 1963; and Zagoria, 1962.

arguably had a bearing on the transitions in Soviet doctrine I have suggested. For doctrinal change in the 1946-1975 period, the only really significant part of the dispute requiring attention involves the territorial clashes in the second half of the 1960s. Prior to that time, the dispute, though politically heated, had not become sufficiently hostile in the military realm to affect doctrine and strategy.

Before the late 1960s, there were several military issues that may have influenced the overall political-military calculus of the two sides in the late 1960s, viz., the interactions between the two countries involving Korea in the early 1950s, the offshore islands in the mid-1950s, and Vietnam in the mid-1960s. However, the military problems these conflicts posed were probably not sufficient to create the kind of impact necessary to generate a transition in Soviet military doctrine. Such was the case because the nature and level of the military and foreign policy involvement of the Soviet Union in those conflicts were not such as to contravene the general directions of Soviet doctrine and strategy at the time. Therefore, while I will later offer comments about these crises as a means of putting the late 1960s stage of the conflict in context, but I will not discuss these earlier disagreements in depth.

With the clashes of the later 1960s, what I plan to demonstrate is whether their timing and/or character during this period were plausibly such as to have an effect on the development of doctrine. I should note that, as with the other independent variables I review for this study, I do not expect to be able to prove whether or how military developments in the Sino-Soviet relationship affected the development of Soviet military doctrine in its mid-1960s transition period.

Constructing the Argument

To make an argument that the Sino-Soviet border dispute potentially had an effect on the development of Soviet military doctrine, one would have to show that there were exigencies in the Sino-Soviet conflict that could not be addressed adequately through existing Soviet doctrine and there these pressures developed largely before the shift in doctrine appeared in Soviet literature and force posture.

Similarly, while it would be nice, of course, to isolate the impact of the border clashes at a time prior to the doctrine shift so that doctrine would be assessed effectively at an "after" stage delineated sufficiently in time from the "before" stage to identify a point at which the Sino-Soviet dispute had its impact. History is not so accommodating, however, and in case of the Sino-Soviet

conflict as a variable, the military developments in that relationship were taking place during the same period I have identified as the transition phase for Soviet doctrine. While it may indeed be the case that the military dispute between the Soviets and the Chinese affected Soviet military doctrine from the mid-1960s into the early 1970s, the timing of this influence makes the assessment of its impact problematic. Therefore, I will endeavor to be as specific as possible with regard to the time and nature of the Sino-Soviet military relationship in assessing its effect on Soviet military doctrine. However, it will be impossible to avoid a certain amount of indeterminacy in this assessment.

The important aspects of the Sino-Soviet military conflict in the mid-1960s were that it was conventional, that it occurred between two important communist countries, both of which possessed nuclear weapons, and that there was a hint of possible escalation to nuclear weapons as the crisis continued. Taking these factors into account, I will suggest the following hypotheses:

> Generally speaking, if the Sino-Soviet military dispute developed in ways which Soviet military doctrine and strategy did not address well and if that doctrine later changed in ways which did address such developments, the one could argue that the military relationship of the Soviet Union and the P.R.C. was important for the development of doctrine.

Specifically, if Soviet doctrine and strategy did not address effectively the possibility of limited conventional engagements on or near the borders of the Soviet Union in a way that could enable the Soviets to be victorious (without leading to escalation to nuclear war) but later did treat this possibility after the developments on the Sino-Soviet frontier, then the border clashes were arguably instrumental for the development of doctrine. One would expect such influence to appear not only in new or different doctrine and strategy statements about preparedness and the conduct of conventional warfare, but also in changes in force posture, particularly in terms of an improved conventional force posture. Given what is known about the general trend in Soviet doctrine during the late 1950s and early 1960s emphasizing nuclear weapons, one would expect to see a significant increase in conventional forces in the conflict area, if there were a change in doctrine or strategy. The assumption here is that if there were no such change, one would see no increase in nuclear or conventional forces in the area (in other words, the Soviets would continue to rely primarily on their ICBM and IRBM forces to deter the Chinese) or an increase primarily in nuclear weapons in the area (the Soviets believe that deterrence in the regions would largely be enhanced by short- or medium-range nuclear weapons rather than conventional forces).

While evidence for assessing an impact on doctrine and strategy will have to wait until Chapter Ten, the basic conclusions from the historical record suggest the following conclusions about the viability of the above hypotheses:

1) While Soviet doctrine had taken a turn by the mid-1950s emphasizing nuclear weapons, preparation to deal with conventional warfare was still sufficiently a concern of the Soviets that the flareups on the Sino-Soviet border starting in 1966 did not require that much of an adjustment in thinking to handle.

2) The Soviets knew that the Chinese did not present a major strategic nuclear threat (the Chinese had only nuclear bombs, not missiles, at that time). Therefore, in Sino-Soviet military relations, the Soviets were not particularly

worried by the mid-1960s with having a large nuclear capability to deter a Chinese nuclear strike, even if they thought the Chinese were to consider a nuclear strike. Discussion in the Soviet military literature of a nuclear threat was always framed as part of the threat from the West. The Soviets since the mid-1950s had intermediate-range bombers to deliver nuclear weapons and since the early 1960s, ICBMs to do the same, and these weapons without great difficulty could be used in the Asian theater if necessary.

3) While there had been historic tensions with the Chinese, and while differences between the two countries in the areas of ideology and foreign policy (and other areas) had grown in previous years, the Soviets were very probably more loathe to initiate war against another communist power than against the West. Pursuing a large-scale military conflict against a communist power would not have been entirely out of the question for the Soviets, but there were substantial reasons why the Soviets would not have perceived the need to develop a political doctrine as a context for pursuing a military engagement with the Chinese, even given the border incidents that occurred in the mid-1960s. There is much reason to suspect that the Soviets would have seen the events leading to the March 1969 clashes as sui generis, that is, as largely a function of Chinese domestic turmoil and not likely to reoccur on anywhere near a similar scale, a calculation that would have provided further justification for not developing a political doctrine as a basis for warfare with another communist government.

4) While the Soviets by 1969 had had sufficient opportunity to see the advantages of capabilities and a doctrine to support low-intensity conflict--e.g., Vietnam or the Mideast--the flareups on the border with China, which involved significant numbers of Soviet (not client) troops very likely provided additional incentive for the Soviets to continue the evolution of doctrine under way in the mid-1960s so that if a major conflict did develop on or near its borders in the Far East or elsewhere, that it would be adequately prepared to meet escalation at most of the stages to which it might rise without having to resort to nuclear weapons. It was probably in this confirmatory

sense that the military engagements with the P.R.C. in the late 1960s had their greatest impact.

To examine these issue further, I will look first at the background to the military relationship of the mid-1960s, then at the specific foreign, domestic, and military policy aspects of the relationship until about 1963, when political aspects of the relationship take a turn for the worse. In looking at these background dimensions, I will give attention to how these developments did or did not fit into contemporary Soviet military doctrine. I will discuss the increase in hostilities beginning in 1963 in terms of their qualitative and quantitative aspects--what the actual problems and their political context were and how the growth of tensions was reflected in force posture. I will then discuss briefly the 1969 events and subsequent developments, with continued attention to the relationship of these developments to force posture. Finally I will discuss the implications of these developments for the hypotheses I have posed.

Historical Background

As mentioned earlier, the Sino-Soviet dispute goes back at least until the mid-17th century, when Russian explorers and settlers into the Amur region clashed with native tribes in areas controlled by the Manchus (An 1973: 30ff.) The most problematic historical developments

affecting current Sino-Soviet relations on the border issue were three treaties of the mid-19th century--Chigun (1884), Peking (1860), and Ili (1881)--by which Chinese emperors ceded some 850,000 square kilometers to Czarist governments. In fact, these three treaties are among a series of eight by which Chinese rulers from 1689-1884 ceded some 2.1 million square kilometers to Russia (An 1973: 36-44, 60, 74; see map at end).b

During the middle third of the twentieth century, Mao and Soviet leaders several disagreements in the military realm.c After helping the Chinese to defeat Japan, Stalin had stripped Manchuria of many of its industrial facilities as part of the compensation for the Soviet war effort, and in return for economic aid to the Chinese in the early 1950s, the Soviets sought continued rights to the naval bases at Darien and Port Arthur, a request to which the new and dependent Chinese government agreed (An

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bAn notes (1973: 60) that the Chinese have occasionally charged in the last 50 years that from 1689-1897, former Chinese rulers gave up approximately four million square kilometers of "greater China" to Russia, Japan, and England through some 22 different treaties.

cFor a review of Sino-Soviet disagreements on border issues in the first half of the century, see Clubb, 1966. It is important not to forget the early history of Soviet-Chinese Communist relations. After helping establish the Chinese Communist Party, the Soviets in 1923 signed an agreement to support the Guomindang, a decision which led to the violent suppression of the Chinese communists (see Bowden, 1966).

1973: 62-65; Gelman, 1982: 5; Garthoff, 1966a, 1966b). Furthermore, although Stalin provided military assistance to the Chinese during the Korean War, the Soviets required the Chinese to pay back this amount, even though it was Chinese troops who were fighting and dieing on the front lines (An 1973: 66-7; Baylis, 1987: 129-130).

In 1958, the Soviets sought rights for a long-range communications facility (for submarines) on Chinese territory and the establishment of a joint Sino-Soviet naval fleet, using Chinese ports but largely under Soviet command. These propositions, through which the Soviets seemed to be seeking a military relationship with China much like that with the Warsaw Pact countries, were rejected by the Chinese (Gelman, 1982: 7-8).

The Chinese and the Soviets experienced other problems in the late 1950s and early 1960s, but those that were specifically military-related were the Soviet 1959 decision to curtail aid for the Chinese development of an atomic bomb and the Soviet lukewarm support of China in its 1958 conflict with Taiwan over Quemoy and in its 1962 war with India (Baylis, 1987: 118-130; Hsieh, 1962: 134-137; Thomas, 1966).

The 1959 abrogation of the nuclear agreement was a major setback to the Chinese efforts to build nuclear weapons, and it strongly influenced a Chinese desire for

military self-sufficiency, as well as the Chinese stand on the Non-Proliferation Treaty negotiations. The support the Soviets rendered the Chinese in their struggle with the United States and with the Nationalist Chinese--lukewarm at best--was viewed by the Chinese as a near-betrayal of their interest to reunite the offshore islands with the mainland (see Thomas, 1966). Soviet aid to India and neutrality on the Sino-Indian border dispute also greatly annoyed the Chinese and tended to confirm their suspicion that the Soviet Union could not be trusted (Brzezinski, 1981: 402-403, 418; Whiting, 1972: 58-59).

Another military factor that came into play about this time were Sino-Soviet differences over the missiles in Cuba. Ever since the Soviets tested an ICBM in 1957, the Chinese had been supportive of the role they thought that nuclear weapons in the hands of the Soviets could play in the struggle against world imperialism (Hsieh, 1962: 77-108). Soviet conduct in the Cuban missile crisis seemed to the Chinese both adventurist and capitulationist (Hseih, 1966: 150; Pollack, 1972; Statement by the Spokesman of the Chinese Government, 1963: 234-235).

There are five main conclusions to be drawn from these interactions through 1962. First, there has been a long period of distrust in Sino-Soviet relations on issues such as the role of force in foreign policy, China's security

concerns, and defense industrial policy. This distrust was aggravated by a series of important disagreements in the late 1950s and early 1960s. The Soviets and the Chinese were discovering that their shared support of Communism was, in a few ways, superceded by more arguably "national" interests in regional foreign and security policy issues.

Second, because of these and other reasons, the two powers in the area of doctrine were experiencing a major difference of opinion on the role of nuclear weapons in foreign policy as well as a difference in attitudes on the degree of acceptable conflict with the West in support of national liberation movements. These differences in foreign and security policy areas aggravated the overall Sino-Soviet relationship significantly, and in polemics the leaderships of the countries elaborated on and intensified these disagreements.

These disagreements did not necessarily dissuade the Soviet leadership, and Khrushchev in particular, in his understanding that because of Soviet nuclear strength, some form of accommodation was possible with the West. At the same time, Chinese harping on Soviet lack of sufficient support (as the Chinese saw it) for national-liberation movements probably created a concern with the

Soviets to address this issued. To render such support, the Soviets would have needed to have both the resources and doctrine available with which those resources could efficiently be brought to bear.

As mentioned earlier, the Soviets had been providing such aid in various parts of the world. Therefore, one could say that, third, Chinese concern about support for national liberation movements most likely enhanced an existing Soviet orientation rather than shaping Soviet thinking in entirely new ways. To say it shaped Soviet thinking in new ways would be to suggest support for the Soviets to extend their influence by involvement in terms of sending advisors and equipment for military conflicts abroad (what we see after the mid-1960s). It is not clear that the Chinese would have preferred such a development.

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dBaylis (1987: 116-121) argues that Chinese inflammatory rhetoric about aid to national liberation movements and other potential challenges to the West need not have been understood to have been as aggressive as many thought. Baylis notes that the pattern of actual Chinese assistance to national liberation movements was fairly conservative and focused largely on the Asian continent. He also remarks that aggressive statements about pursuing conflict with the West may have been in part an effort in "calculated ambiguity"--an attempt by Chinese leaders, who knew their country to be military weak, to ward off potential Western challenges to Chinese foreign policy and security interests by creating uncertainty about the likely Chinese response.

Fourth, to the extent the Chinese endeavored to influence the Soviets to take a more directly antagonistic approach to U.S.-Soviet relations, they were largely unsuccessful, so a major difference in doctrine remained. The Soviets continued to oppose the U.S. role in Western Europe and NATO, U.S. positions at the UN, and U.S. foreign policies in Africa, Asia, and Latin America, but the Soviets were not willing to forgo such initiatives the test ban and non-proliferation negotiations. The Soviets knew the limits of their still nascent nuclear deterrent force, and appreciated the potential benefits of cooperation with the U.S. in some areas much more than the Chinese did. Fifth, not only did Chinese take a more antagonistic view of the struggle but they saw it best being carried out by themselves (should they be faced with Western forces on their borders) and by allies (especially national-liberation movements) abroad by a "peoples war" approach--an approach to war that emphasized extensive use of troops as opposed to weapons of the latest technology (see Jencks, 1982: 25-29, 54-57, 69-78). This concept was rather different from Soviet concepts of conventional warfare, even the aspects of Soviet military thought about massed force in military operations.

Therefore, by the early to mid-1960s, there were some important areas of divergence in Chinese and Soviet

military doctrine, inspired in part because of the differing approaches the leadership of the two countries had taken on a number of military crises and foreign policy disputes. It is not clear, though, that Soviet doctrine by the late 1960s was moving in directions consonant with Chinese thinking. Still the fact that some of these differences were as significant as they were would drive the two countries farther apart in the coming years.

Sino-Soviet Military Relations, 1963-1969

As is often true of border disputes in various parts of the world, the level of conflict in the border region is often fed by, and symptomatic of, the intensity of the disagreement between the two countries in other areas of their relationship. Such is also the case for the Sino-Soviet territorial dispute in the second half of the 1960s. As mentioned earlier, the border had been a problem area for many years, but there were a series of inter-related domestic and foreign policy developments in the mid- to late-1960s which contributed to further tensions in the Sino-Soviet military relationship. Most of these developments have been covered well in the literature, so I will review them only briefly for the sake of fitting the border disputes into the larger context of Sino-Soviet relations. I will then discuss

the clashes on the border and related developments in Soviet and Chinese force postures.

Significant border violations, apparently initiated by the Chinese, had occurred in the post-war period starting in 1959 and became "more systematic" (according to the Soviets) in 1962. Some accounts note that the Soviets in the spring of 1962 stirred up unrest among Moslems in the Xinjiang region (see map at end) who had suffered economically and politically during the Great Leap Forward. These Moslems--Uighurs and Kazakhs--were closely ethnically related to Soviet groups across the border, and the Chinese effort to stop their migration resulted in riots, deaths, and arrests. Apparently Soviet soldiers sometimes covered the refugees' escape and Soviet trucks occasionally picked them up (An, 1973: 73).

These violations were perhaps a prelude to a July 1963 statement Mao made to some visiting Japanese Socialists that the Chinese had not yet "presented our account" to the Soviets for territories ceded to the Czars in the previous century. In the ten months immediately prior to that statement, however, the Cuban missile crisis had occurred, and when Beijing criticized the Soviets for being "adventurist and capitulationist," the Soviets claimed that the Chinese had themselves been "adventurist and capitulationist" in dealings with their border policy

over Hong Kong, Macao, and Taiwan. The Chinese then replied in March 1963 that the Soviets were in essence opening the proverbial can of worms in bringing up unfair treaties, and the Chinese used this criticism from the Soviets to advance their own grievances with Moscow. The Soviets then charged the Chinese with Hitler-like plans for expansionism and began to strengthen their border defenses (Robinson, 1972: 1178).

Apart from the continued animosity directly related to Sino-Soviet border and foreign policy differences, one of the key factors adding momentum to the rivalry was the growth of the Cultural Revolution. This development in China is key to much of the Sino-Soviet dispute during this period, so a brief digression on it is worthwhile.e

The Cultural Revolution had its origins in the problems Mao experienced in the late 1950s as he tried to take a shortcut to modernization through the massive mobilization of manpower and collectivization of industry and agriculture. These problems led to economic hardship for the people, created disaffection among Party cadres, weakened Mao's political power, and shifted the country

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eMuch of the following discussion is taken from summaries in two sources: Jencks, 1982: 56-58, 92-104 and Nelsen, 1977: 24-26. For further reading on the Cultural Revolution, and particularly on the PLA role in it, see Lindbeck, 1971; Nelsen, 1972; Pfeffer, 1972; and Whitson, 1974.

away from a reliance on strict socialist economic policies. The Cultural Revolution was Mao's attempt to remedy these problems particularly by encouraging renewed enthusiasm for socialist ideological goals and shoring up his own power.

Mao chose to pursue these objectives basically by bringing the regional PLA military commands into the domestic policy process. The PLA, in contrast to the Party, had maintained its discipline and strong ideological orientation, in significant measure because of the efforts of its commander Lin Biao, a close Mao associate. From 1961 to 1963, various training manuals had been issued and regulations passed to ensure the consistency of this discipline and orientation, so that by the end of 1963, there were, as one analysts phrases it, essentially two Communist parties--the regular party headed by Liu Shao-ch'i and Deng Xiaoping and the army headed by Lin and Mao (Jencks, 1982: 57).

In February 1964, Mao launched his "Learn from the PLA in Ideological Work" campaign, through which "political departments" were created in Party economic and administrative structures--departments structured like political departments within the army and run by active-duty PLA officers. While the regular Party leadership was undercut by these measures, the efforts to transfer PLA

experience to Party and government organizations was not particularly successful. Apart from the resistance of the Party and government cadres to this interference, the regional civilian officials often had close ties to regional PLA commanders, and members of both groups chafed at the influence of the political commissars (Jencks, 1982: 57-58).

As this reorganization initiative seemed to be beginning to stall after a few years, Mao endeavored to strengthen the initiative in early 1966 by using the PLA newspaper to attack "bourgeois" Party members, as well as to continue attacks on "bourgeois" writers, journalists, and educators). In the summer of 1966, he established the Red Guards, and he sent this group of millions of student political activists to their home provinces to expose, criticize and eliminate "bourgeois" and "anti-revolutionary" practices wherever they may occur, including in the Party leadership. In August 1966, Mao was able to pack a CCP plenum with PLA supporters and engineer a reshuffle in the Politburo, a move which provided Lin and the PLA a much stronger political position.

The effort continued for the next several years. Faced with mounting resistance from local Party organizations, Mao in early 1967 ordered the Red Guards to

seize power in the provinces and the PLA to assist by establishing military control. Violence continued as the PLA found itself caught between mass organizations of differing political sentiments. Finally in July 1968, Mao ordered the PLA to impose order and government in the provinces, and he disbanded the Red Guards.

Even though many of the competing factions in the CCP had been eliminated by the 12th Plenum of the Eighth Central Committee in October 1968, there were still factions jockeying for power as the Party headed toward its Ninth Party Congress in April 1969 (Robinson, 1972: 1191; Nelsen 1977: 38-43). Because of the control that Lin exercised over the military and because of his own radical leanings, there has been a significant amount of speculation that Lin ordered the provocation by Chinese forces against the Soviets in March 1969 as an effort to unify the Party under his and Mao's (or simply his own) political leadership and ideology. Supporting this interpretation is the argument that there was no debate in the Party or media about a threat posed by a foreign power in the months prior, a development unlike other periods when there had been such debates, e.g. the summer of 1965 (the U.S. and Vietnam), the summer of 1958 (Taiwan and Quemoy), and the early fall of 1950 (Korea). Detracting from this interpretation is that there is no available

factual evidence to support it (Robinson, 1972: 1191-1194; An, 1973: 99-100).f

Before concluding this discussion on the various factors that potentially came to bear in the March 1969 encounters, it is necessary to note that while the Soviets and the Chinese did dispute the merits of the Cultural Revolution, they also continued their disagreements in various areas of foreign and military policy (see Brzezinski, 1981: 419-492). Most important for the 1963-1969 period were their differences over Vietnam and the Non-Proliferation Treaty negotiations.

In their debate on the Vietnam conflict. China and the Soviet Union had first clashed over the nature of support for the North Vietnamese.g After Khrushchev's ouster when the Soviets did decide to support the Vietnamese, the Chinese charged that the Soviet call for unified communist support for the Vietnamese was part of a

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fSee also Jencks, 1982: 104-105, even though Jencks' analysis is based on Robinson's data. Jencks (1982: 107-110) also has an useful assessment of Lin and his radicalism. In evaluating the possible causes of the March clashes, Robinson (1972: 1190-1191, 1194-1199) also considers, but dismisses, the possibilities that they resulted purely from local initiatives without Beijing's approval or that they were a function of current Sino-Soviet foreign policy disagreement.

gFor example, the Chinese had been critical of the Soviet initiative to have the August 1964 Tonkin Gulf crisis resolved in the UN Security Council (Edmonds, 1983: 43-45).

charade pursued with the U.S. to establish world domination. The Soviets, on the other hand, criticized the Chinese for obstructing arms shipments to North Vietnam (Edmonds, 1983: 45-47).

This debate over foreign policy had important implications for Chinese domestic politics. Those Chinese officials arguing for more involvement (especially Chief of Staff Luo Rui-qing) also had to argue for greater reliance on the Soviet Union as well as foreign acceptance of the possibility of greater conflict with the United States. Mao and his supporters sought to avoid such developments in their advocacy of a position of less involvement (Jencks, 81: 58-62, Brzezinski, 19781: 402). Lo was, in fact, dropped from his position in May 1966 (Jencks, 1982: 58).

The Chinese and the Soviets also disagreed on the value of the Non-Proliferation treaty. In particular, the Chinese criticized the Soviets for negotiating with the U.S. and trying to maintain its monopoly on nuclear weapons as the only communist power possessing them (see Clemens, 1969: 65-77, 214-246; and Pollack, 1972).

From 1963 to 1969, then, there were a variety of developments that exacerbated the overall Sino-Soviet relationship. The Sino-Soviet relationship did become more acerbic during this time as disagreements seemed to

involve an increasing number of aspects of the relationship. These growing tensions were exacerbated by (and reflected in) increasing disputes over the border territories.

The Border Dispute, 1964-1969 and Afterward

After the polemics in the early 1960s and the problems in Xinjiang, the Soviets initiated secret consultations with the Chinese in February 1964 which led to the Soviet suggestion the following September that talks begin in October. The Chinese apparently rejected this idea, and no consultations of any sort were pursued over the next several years. While it is not necessary to go into the details of the September 1964 negotiations here, I will note that the main points of disagreement were the Chinese contention that the Soviets had to admit the inequality of the old treaties before negotiations could begin, while the Soviets wanted to sign a new treaty and annul the old ones at the same time. The Chinese also claimed that according to the thalweg argument (boundaries drawn through rivers follow the deepest part of the channel) that most of the river islands of the Amur and Ussuri occupied by the Soviets belonged to China, so that the Soviet occupation was illegal (Robinson, 1972: 1180-

1181).h The Chinese publication in April 1966 of the "Regulations Governing Foreign Vessels on Rivers on the National Boundary" effectively ended the general cooperation the two powers had been pursuing since the mid-1950s (Robinson, 1972: 1181; An 1973: 84). Border difficulties became more problematic in 1966 as Soviet troops evicted Chinese squatters on some of the disputed islands in the Amur. The Soviets closed the border in that part of the country when the Cultural Revolution started. Additionally Xinjiang inhabitants, who began to suffer discrimination from the central government, began to flee to the Soviet Union, and there were reports that Soviet-based Moslem guides attacked Chinese frontier posts in Xinjiang that year (An, 1973: 85).

Further border problems flared up in early 1967, when the Soviets accused the Chinese of highly provocative behavior, such as driving vehicles onto Soviet territory, trying to run over Soviet border guards and pick fights with them (Robinson, 1972: 1182). Other incidents reports by the Russians occurred several times in December 1967

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hRobinson (1972: 1179-1180) recounts the basic positions of the two sides during the 1964 negotiations. An (1973: 92, 165-168) and Robinson (1972: 1183, 1187) discuss some of the problematic geographic aspects of constructing the river boundary.

and January 1968, and such incidents continued through the winter of 1969-69.i

The Chinese on their part, began noting serious Soviet offenses in early 1967, when they argued that Soviet troops crossed onto Damanskiy Island and several other in the area on numerous occasions from January through March. They contended that the Soviets drove tanks and armored cars onto Chinese territory, demolished Chinese houses, rammed Chinese fishing boats, kidnapped Chinese fishermen, and assaulted Chinese border guards. The Chinese, in fact, listed over 4000 border incidents between October 1964 and March 1969. It is not surprising, notes one analyst, that many of these incidents seem to have taken place at an increasing rate beginning in January 1967, since that date was a critical point in the course of the Cultural Revolution (Robinson, 1972: 1182-1183).

The border clashes at Damanskiy on March 2 and 15 have been examined in some detail; the first encounter seems to

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iRobinson notes (1972: 1182n) that many of these incidents seemed to have been perpetrated by the Red Guards, perhaps even without the knowledge of the Foreign Ministry in Beijing. One reason for such speculation is that Red Guards had also been active in provocations along the border with Hong Kong. Robinson argues that even given the possibility of Red Guard instigation of clashes prior to March 1969, the extent of the planning necessary to execute the attack on the Soviets on March 2 would have had to have had the permission, if not active involvement, of levels of command higher than at the locality itself.

have been initiated by the Chinese and the second by the Soviets. There seem to have been somewhat less than 100 killed or wounded in the first battle and somewhat less than 900 in the second (see Robinson, 1972: 1175, 1188-1190).j

The Soviets and the Chinese endeavored to reconcile some aspects of the border problem in the late spring and summer after the Soviets suggested in late March their interest in normalizing the frontier situation (An, 1973: 102-103). Negotiations on navigating the river did take place during the summer, but there were still conflict around the island: the Chinese charged the Soviet were shelling Chinese troops on Damanskiy and were overflying Chinese territory (An, 1973: 103-105). Between June and mid-August, the Chinese charged the Soviets with 429 border violations, while the Soviets alleged 488 Chinese infractions. The two sides clashed again on the Xinjiang-Kazakhstan border on August 13, where it appears the Soviets sent several hundred troops, together with tanks, armored cars, and helicopters to attack Chinese frontier guards (An 1973: 105-106).

This incident, because of its seriousness, was probably important for bringing an end to the reluctance

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jApproximately 800 of the casualties in the second engagement were Chinese (Robinson, 1972: 1190).

of the two sides to pursue strong efforts to reduce tensions. A month later, Premier Aleksey Kosygin visited with his counterpart Zhou Enlai in Beijing as the Soviet official was returning from Ho Chi Minh's funeral in Hanoi. Kosygin and Zhou agreed at the meeting to resume boundary talks and to take other steps to reduce tensions on the border. The Chinese issued an announcement after this meeting which acknowledged that while there were still "unreconcilable differences of principle" between the two countries over the border issue, there should be no resort to force to resolve their differences. The Chinese announcement also stated that the two countries should not forego "normal state relations" (An, 1973: 109, 112). According to one analyst, after this meeting, frontier incidents, which had occurred almost daily during the spring and summer of that year, virtually ceased, as did the most of the especially hostile propaganda (An, 1973: 108).k

After 1969 there were occasional problems on the border, but generally both sides tried to secure it fairly tightly--the Soviets with KGB border troops and the

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kAn notes (1973: 111) that the Chinese response to the Soviet initiative for border talks was in part to try to prevent a Soviet-American rapprochement from developing too extensively. An notes as well that it was not long after this meeting that the Chinese began to show interest in the U.S. attempts to improve Sino-U.S. relations.

Chinese with probably similar units of the paramilitary Production and Construction Corps. There were in subsequent years occasional Soviet charges of Chinese maneuvers very close to the Mongolian boundary and Chinese charges of Soviet overflights. In 1974 in particular, there were a number of incidents along the Xinjiang-Kazakhstan border as well as a few navigation incidents near Khabarovsk. However, as the periodic border talks progressed through 1975, there were no confirmed violent clashes along the border regions.1 One reason things were relatively calm on the border, no doubt, was that by late 1969 both sides had so heavily reinforced the border that provocations could easily have escalated and become very costly (Robinson, 1981: 284-285).

The Changes in Force Posture

Having now reviewed the history of the border clashes leading up to the March 1969 incidents and the efforts afterward to curtail further outbreaks, it is appropriate to turn to the quantitative military dimensions of the conflict. Here I will describe how the evidence of the time and nature of the reinforcement of the border areas confirms the impressions of the growing acerbity of the

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1All of the possible exceptions to this assessment occurred in the Xinjiang region. In December 1974 there were a number of reports in the Western press of five battles in the area, but the Soviets and Chinese both denied these clashes occurred (Robinson, 1981: 284).

military relationship in the second half of the 1960s. I will focus here on Soviet forces since it is Soviet attitudes on the military question that are of primary interest.

From the founding of the P.R.C. in 1949 until tensions developed in the Sino-Soviet relationship in the mid- to late 1950s, the border had not been an important issue for the two countries, so the forces either side maintained along the border were minimal. After the Soviets withdrew their troops from Manchuria at the end of World War II, the Soviets and the Chinese maintained roughly balanced numbers of troops. The Soviets were somewhat in preponderance in the Xinjiang area, and the Chinese in Manchuria. The Soviets in the entire area have had a significant advantage in terms of logistics support and weaponry (Robinson, 1972: 1183-1184; Military Balance, 1970-71: 99-101).

During most of the 1950s and into the early 1960s, Soviet troops were largely concentrated in Western Russian and Eastern Europe because of security concerns about Western Europe. Chinese troops were largely concentrated in the Fujian area in southwest China because of security concerns involving Taiwan (Robinson, 1972: 1183-1184).

Specifically in the border areas, the Soviets kept about 15-17 divisions east of Lake Baykal, of which about

10 divisions were in high combat readiness. Also stationed in the border area were KGB border guards and non-divisional troops. One analyst, assuming about 12,000 men per division, concludes the Soviet forces there totaled 20-24 division equivalents and 250,000 to 300,000 men. Additionally along the Trans-Siberian railway stretching through the Soviet Far East are air bases and major cities which help support the Soviet logistic and defense network in the Far East. The Chinese before the mid-1960s kept stationed some 14 divisions in Manchuria, five in Inner Mongolia, and five in Xinjiang, along with two to three division equivalents of border guards. At 11,000 to 12,000 men per division, these numbers brought Chinese forces in those areas to a total of some 35-40 division equivalents and 380,000 to 400,000 men (Robinson, 1972: 1184-1185).

While the Chinese have traditionally stationed large numbers of troops in Manchuria because of the industrial base there, and although the Beijing military district can serve as a backup for Manchuria, there were a number of constraints against deploying greater numbers to the Sino-Soviet border area. One is that much of this area, particularly in Xinjiang, is desert, mountainous, and sparsely populated (not to mention being served by poor transportation facilities), so the Chinese would need to

keep troops in major cities. Perhaps more importantly, there were the needs to keep borders manned near Taiwan and Korea, in case problems developed there, and there were concerns about deployment in the southeast connected with the assistance effort to Vietnam. Additionally, during the Cultural Revolution there was a need to have troops available to quell domestic unrest and violence (Robinson, 1972: 1184).

Neither country began to build up their shared border areas with either troops or fortifications until early 1966 when both sides increased the combat readiness of their divisions there, brought in more troops and provided them better weapons.m The Soviets in 1966 began to transfer troops from European areas to the Far East and to equip them with missiles, including surface-to-surface nuclear-tipped rockets. The Soviets also began to emphasize paramilitary training to citizens in the border regions, and they signed a new defense agreement with Mongolia in January 1966 that allowed the Soviets to station troops and maintain bases in Mongolia. Soviet deployments in Mongolia increased significantly in 1967 and 1968, so that by 1969, there were eight to ten divisions in that country alone. The Soviets also

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mWithin fairly short periods in the mid- to late 1960s, the Soviets reequipped some of their troops in the area twice over (Robinson, 1972: 1185n).

improved their military bases and rail lines in the area (Robinson, 1972: 1185-1186).

The Chinese in the mid- to late 1960s did not pursue similar measures, largely for the reasons mentioned above. Several Chinese divisions were moved from Hong Kong after the Soviets conducted maneuvers in Mongolia in the summer of 1968, and former Red Guards members were also sent to frontier areas to aid the defense effort. By early 1969, the Chinese had added four to five new divisions to the northeast region and Inner Mongolia, bringing the total there to approximately 40 divisions (Robinson, 1972: 1186-1187).

After the March 2 incident and through the following months, both sides significantly strengthened their forces along the border. As Table 1 indicates, Soviet division strength in the Far leveled off at about 30 divisions. Half of these divisions were generally at high readiness and had advanced equipment. The Soviets augmented their efforts to increase military manpower by filling out border guard divisions, augmenting civil defense preparations in cities within range of Chinese nuclear missiles, and they began a massive construction program to provide necessary logistic support for a permanent border force presence (Robinson, 1981: 287-288).

In August 1969, the Soviets also created the Central Asian Military district, comprising the Kazakh, Turkmen, and Kirgiz SSRs. This district had existed in the 1930s but since World War II had been included in the Turkestan Military District (Scott and Scott, 1981: 192). This development not only would have helped improve command and logistics functions, but it also indicated the additional military importance the Soviets assigned to the region.

The Soviets by 1975 had built up its ground forces in the Far East Military District to approximately 45 divisions, including 2 in Mongolia. The Soviets also had enhanced their divisions in the neighboring Transbaykal area for reinforcement if necessary. These divisions were composed of approximately 15 Category I divisions, 14 Category II divisions, and 14 Category III divisions. Additionally because of their extensive improvements in logistics, construction, and prepositioning of equipment, many of those divisions could be brought up to strength without much difficulty (Robinson, 1981: 289).

The Chinese endeavored to match the Soviet increase in manpower, though they were not able to do so in modernity of equipment. Beginning in 1972, the Chinese increased divisional manpower along the border, mobilized large numbers of young people to serve in the Production and Construction Corps, increased its civil defense capacity,

and reorganized the administration of Inner Mongolia. They also increased their defense budget and concentrated in their nuclear rocket program more on short- and medium-range missiles than on ICBMs. which had been the focus until the early 1970s. The Chinese also increased their nuclear delivery capability by the increased production of older jet bombers. By 1975, the Chinese had 50 mainline divisions in the Shenyang and Beijing Military Regions (67 in 1976 and stabilized thereafter), 15 in Lanzhou, and eight in Xinjiang. China also converted a number of infantry divisions to armored divisions, and between 1975 and 1978 added an additional one million men to the PLA (Robinson, 1981: 288-293).n

From the foregoing discussion on quantitative aspects of the military relationship, one can see how these developments basically corresponded to the growing tensions in the qualitative dimensions of the relationship. In the first part of the second half of the 1960s, there were obviously small lags with the Soviets as the Party and military decisionmakers readjusted to the growing tensions and formulated those aspects of their

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nOne of the areas in which China had problems in matching Soviet border deployments was that of weapons technology. One analyst makes the reasonable contention that China would have been farther along in this area had it not been for the Cultural Revolution (Robinson, 1981: 287).

response involving troop movements and defense expenditures. After the 1969 clash, efforts to reinforce the border increased ad a significant rate; although military matters were superficially quiescent, political and military tensions were high. If negotiations were to break down or the Chinese to mount additional provocations, the Soviets would need to be adequately militarily prepared.

The lag in force development on the Chinese side was greater, largely on account of the aforementioned reasons concerning the domestic strife of the Cultural Revolution, which tied up the army as an important tool of the leadership to restore order and, especially after mid-1968, to govern. Additionally there were problems in the military hierarchy. The evidence suggests that Lin Biao, who may have instigated the March 2 incident, in part to solidify his own power and that of Jiang Qing and other radicals in the Party. Added to Mao's growing support for the concept that the style of work might be as or more important than political orientation (a position Lin opposed) was the growing resistance of regional military organizations to Lin's group in the capital. Lin also opposed the growing relationship with the U.S. which Mao had initiated, and it appears that, by 1971, he was becoming more independent and more critical of Mao's

policies than Mao would have preferred. Lin allegedly was killed in September 1971 in an airplane crash on his way to the Soviet Union after an abortive coup attempt (Jencks, 1982: 103-110; Nelsen, 1977: 84-92; An, 1973: 141; Harding, 1974: 228-229). It therefore could easily have been the case that this lag in Chinese border preparations was in part a function of the turmoil in the Chinese high command.

Conclusions

Still, the qualitative and quantitative evidence for Soviet perceptions of the growing hostility on the border and the need to improve its conventional forces track well together. Having established this correspondence, one then asks if the developments of the period of hostilities up to and including the March 1969 events provide lessons in areas of doctrine and strategy which had not been addressed until that time. This question, as mentioned at the beginning of the chapter, needs to be answered in both substantive and temporal contexts.

With regard to the substantive dimensions, there are three obvious ways in which the border developments did not fit into Soviet military doctrine until that point. One is that doctrine did not countenance a major military conflict with another communist country. While much of the doctrine and strategy extant then could have been used

to deal with any opponent, the fact that the struggle was with a communist country created problems for that portion of the political aspect of doctrine that concerns war with capitalism and the main assumptions that planners might infer about the development of war, given the interpretation that the Soviet Union would be fighting a capitalist country.

This area did receive some attention in the Soviet press. The Soviet civilian press, at least as early as fall 1968, drew several unfavorable conclusions about the P.R.C. It noted that China continued to sow dissension in the socialist camp and was therefore anti-proletarian internationalist and that Maoist China was like traditional China in being imperialist and hegemonic, as well as being in collusion with capitalist countries. The military press expanded this thinking, noting that the China's actions threatened "gains of socialism." Because of this problem, some military authors observed, efforts to protect proletarian internationalism (like those pursued in Czechoslovakia in August 1968) might be appropriate for the "leftist deviation" in China (Robinson, 1972: 1195-1198).

While in this way the Soviets attempted to provide ideological justification for a military action, this line of reasoning develops relatively contemporary to the

crisis, in terms of the depth of the problems it noted in China. Particularly given that the intensity of the criticism waned significantly after negotiations were arranged in September 1969, one infers that this kind of logic was fairly ad hoc, in that it did not seem destined to become--nor did it--a permanent fixture on the landscape of the political component of Soviet military doctrine.

This justification being offered for an intervention was certainly to be taken seriously by the Chinese as well as the West, but the political and foreign policy contexts suggest that the Soviets with these remarks were probably thinking less in terms of a large-scale war with the Chinese than a military intervention. It seems rather less likely that with such an intervention the Soviets would have tried to topple the government, as they did in Hungary and Czechoslovakia, than to "teach the Chinese a lesson," such as the Chinese would try to do a decade later in Vietnam. Furthermore, the Soviets probably realized that some, if not many, of the border provocations were due to the excesses of the Cultural Revolution (even after it had officially been concluded), so one might suppose that the Soviets hoped these difficulties would be short-lived so that Sino-Soviet disagreements could return to a lower level of antagonism.

Therefore, while there was an arguable change in the political component of doctrine, this development seems too ad hoc to interpret it as other than a justification for some sort of retaliation for the border provocations, if retaliation were deemed necessary.

The second aspect is that the border clashes with Chinese troops did not constitute a war, so it is therefore inappropriate to judge how well preexisting doctrine and strategy addressed this issue of the military encounters between the Chines and the Soviets, either along the Amur and Ussuri or in Xinjiang. One could note, with a bit of extrapolation, that the border incidents, particularly those in 1969, showed that the initial period of a large conflict might start with the primary involvement of the ground forces and the use of only conventional weapons. The 1969 clashes, however, were on such a small scale in time, geography, and intensity that it would have been hard for the Soviets to infer lessons about strategy from them. Perhaps there would have been some useful lessons to infer about tactics, and maybe even operational art, but not likely about strategy.

Furthermore, the brevity of the conflict, plus the extensive period (of several years' length) for mobilization both before and after the 1969 events, really

only afforded the lesson that sufficient forces in a problem area are important. The larger question of whether Soviet society could gear up quickly enough to fight a major conflict was never tested.

The third important aspect of the substantive dimension is that the actual military clashes were not intensive enough to warrant the use of nuclear weapons. It is true that the Soviet circulated a rumor in August 1969 that they were considering a nuclear attack against China, and it has been contended that this threat was an important influence in the Chinese decision to come to the negotiating table that fall (see An 1973: 107-110; Robinson, 1981: 280-281; Gelman, 1982: 37-44).o

Still, this talk of a possible nuclear attack was a threat and not a decision reached in the middle of a military conflict; border provocations of the sort occurring during the summer of 1969 did not present the same circumstances for the Soviets as a conventional engagement where they were losing or a crisis where nuclear use by the opponent was arguably imminent. Additionally, while one cannot be sure of the number of nuclear weapons the Soviets introduced into the region

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oAn (1973: 137-138) notes an additional signal during this period of the crisis: Marshal Tolubko, commander of the Strategic Rocket Forces, was transferred to be CinC of the Far Eastern Military District in August.

which had not been there before, the evidence suggests that there was a far greater buildup in conventional than nuclear forces. Therefore, while nuclear weapons were referred to throughout the 1956-1965 period and even beyond as the chief weapons of warfare, the Sino-Soviet clashes even by the end of March 1969 were not sufficient testing grounds for existing doctrine on the role or efficacy of nuclear weapons to be challenged.

Based on this information, one is led to the conclusion that although probably were some lessons to be drawn on the development of fortifications and the use of conventional forces, there do not seem to be any major implications for Soviet doctrine and strategy on conventional war, at least not in the period in which I address doctrine and strategy change for the present study. The only really noteworthy implications would seem the increased awareness that a conventional conflict could occur with socialist countries, even neighboring ones, and the concern to work out the implications of such a military engagement if it were anticipated to take a different course than a major East-West conflict. One, then, cannot really say that the lessons from the clashes in 1969 and in the previous few years really conflicted with the tenets of doctrine and strategy during the 1956-1965 period.

The timing dimension is also germane, in part because the evaluation of timing and substantive issues here are intertwined. As one reviews the history of the border clashes, one can infer possible lessons to be derived concerning the importance of having suitable conventional forces in the conflict region and being able to fight conventional engagements well without having to escalate to the use of nuclear weapons. In these and perhaps some other sub-areas of strategy, one could imagine some useful conclusions the Soviets could have drawn from the Sino-Soviet clashes that fit in with Soviet doctrinal and strategic thinking during the 1966-1975 period.

The important aspect of the time issue, though, is that the most important time that lessons were to be learned were from the 1968-1969 clashes, especially those in the spring of 1969. This period in the military dimension of the Sino-Soviet crisis occurred after the shift in Soviet doctrine and strategy had gotten under way. Therefore, one is led to conclude that whatever lessons the Soviets might have drawn from the period of hostilities in the Sino-Soviet relationship most likely served to confirm rather than to initiate the change in doctrine toward a greater emphasis on conventional weapons.

Making such a statement is not to suggest that the military aspects of the Sino-Soviet relationship did not influence the development of Soviet doctrine and strategy, only that it most probably did not influence the initial shift from an emphasis on nuclear weapons to an emphasis on both nuclear and conventional weapons. The question of the actual influence I take up in Chapter Ten, but given the nature of the substantive issues of the Sino-Soviet clashes and their timing, one has to conclude that the hypotheses about their possible effect on the shift in doctrine and strategy cannot be framed in a way to make it testable.

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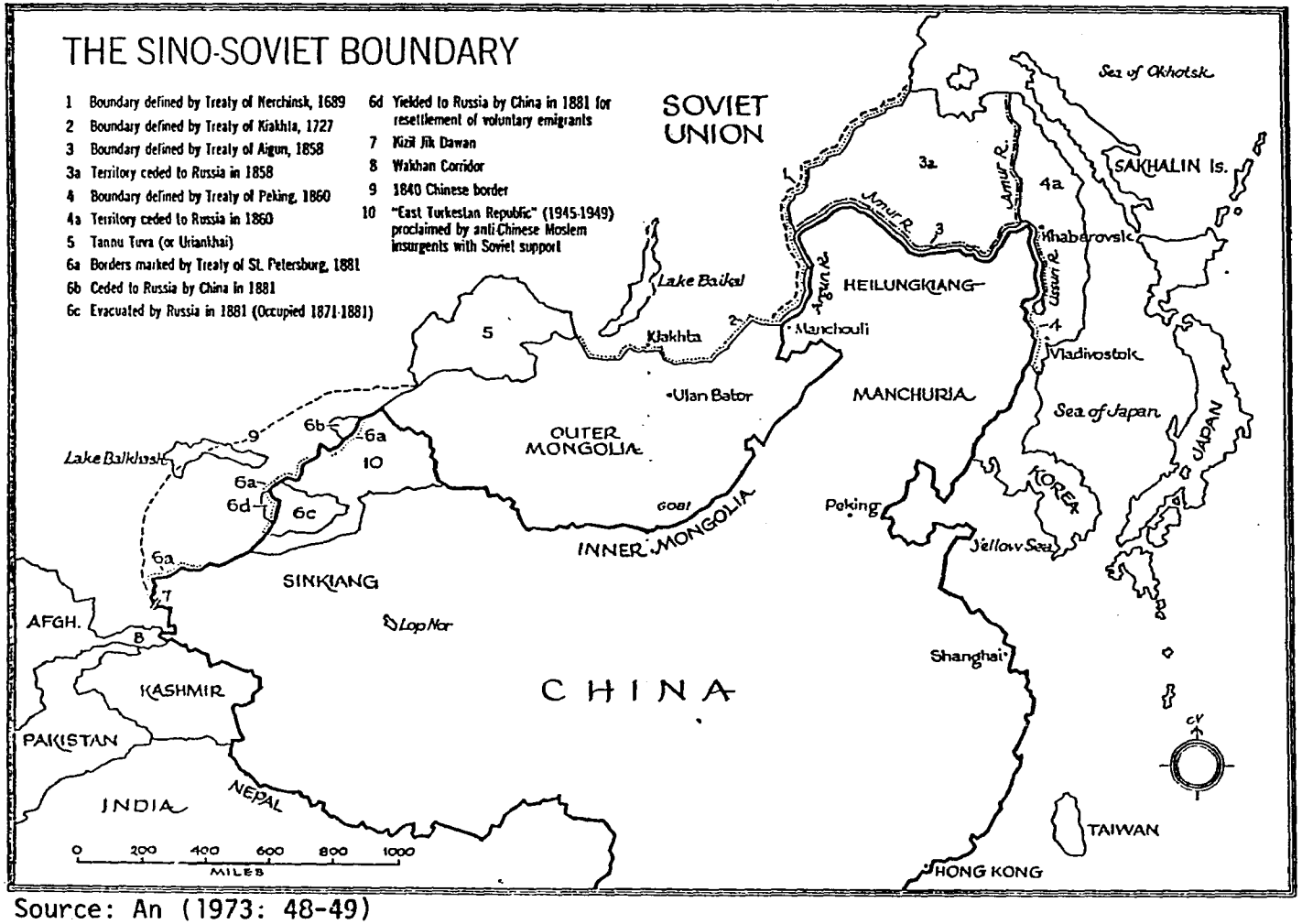
APPENDIX



Source: An (1973: 48-49)

Figure 7.1: The Sino-Soviet Border

Table 7.1: Soviet Military Manpower Trends, 1946-1975

	1948	mid-1957	1960 (pre-cut)	1965	1969	1971	1973	1975
Armed Forces Personnel	2824	3923	3623	3220	3300	3305	3375	3575
Ground Forces Personnel (in thousands)	n/a	2850	2500	1750	1750	1750	1825	1825
Divisions by Region and Category								
E. Europe	25-30 I	32 I	26 I	26 I	32 I	31 I	31 I	31 I
W. USSR MDs	12 I?	60 I-II	30 I,30 II	30 I,30 II	20 I,20 II, 20 III	20 I,20 II, 20 III	20 I,20 II, 20 III	21 I,21 II, 21 III
Central USSR MDs	n/a	30 II-III	30 II,30 III	13 II,26 III	16 II,17 III	18 II,18 III	11 II, 17 III	11 II, 18 III
Far East MDs	n/a	31 II-III	10 I,5 II	10 I,7 II	10 I,11 II	15 I,15 II	15 I,15 II, 15 III	15 I,14 II, 14 III
Total Divisions by Category	60 I	n/a	66 I	68 I	62 I	66 I	66 I	67 I
	58 II	n/a	65 II	50 II	47 II	53 II	46 II	46 II
	57 III	n/a	30 III	26 III	37 III	38 III	52 III	53 III
Total Divisions	175	175	161	142	146	157	164	164

Sources: Evangelista (1982/83: 114) for 1948; Goldberg (1985:47), Main Trends in Soviet Capabilities (1957:53-54) for 1957; Goldberg (1985:47, 120, 122-124), Military Balance, various years, for 1960-1975 (see Chapter IX).

CHAPTER VIII

SOVIET DOCTRINE AND STRATEGY FROM 1946 TO 1975

In this chapter I will trace the history of Soviet doctrine and strategy development from 1946-1975, using the same conceptual categories employed in the part of the analysis dealing with developments from 1976 to the present. This section is designed to provide a background for assessing developments within these categories over the most recent fifteen years. Since the principal changes in Soviet military doctrine have been fairly thoroughly covered from Stalin's time until the mid-1970s, this section will largely be based on previous scholarship in this area, such as works by Herbert Dinerstein, Raymond Garthoff, Thomas Wolfe, and Alfred Monks.a

These scholars have undertaken fairly broad historical surveys of the development of doctrine. My assessment, however, uses evidence from their studies to answer four basic questions about doctrine and three questions about strategy that focus attention on leadership attitudes

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aOther studies, not cited elsewhere in this chapter, that also deal with this topic are Brown (1975), Erickson (1980), McGwire (1980, 1987), Vick (1981), Checinski (1984), and Adelman (1985).

about conventional warfare. I will highlight the principal responses to these questions but will also endeavor to convey an adequate range of the subtleties involved in these responses. Partly because I use Soviet commentary from these Western sources in an analytical framework different from those of the original scholars and partly because of differences that sometimes arise in Western interpretations of Soviet military texts, I have, in every case possible, reread the original Russian sources which were cited in the Western literature.

To summarize from the previous chapter, the principal questions and hypotheses are as indicated below. One must remember that the character of these hypotheses is bound closely with the time period examined: 1946-1975. Leaders think about war in a specific political military context, and this context can change. Therefore, at different periods in history, one would probably have to develop different hypotheses to assess orientations to nuclear or conventional warfare.

Doctrine

Type of War

Is the next major war to involve the Soviet Union only likely to be directly with the West--the final conflict--or might it involve non-European regional opponents?

Hypotheses: Since the West (and the U.S. in particular) is the Soviet Union's chief rival and is the rival with the most advanced strategic nuclear systems, if the predominant opinion among

the leadership is that the next war will be the final conflict with the West, the leadership also perceives the next
conflict war is likely to be a general nuclear war. The opinion that the next war involving the Soviet Union is not likely to be with the West will reflect an orientation to conventional warfare.

Character of the War's Development

How long will the initial period be? Will it primarily involve nuclear or conventional weapons? How soon will the superpowers be directly involved?

Hypotheses: A consensus that the next war will include a short initial period, involve nuclear weapons, and witness the early direct involvement of the superpowers will suggest a nuclear doctrine orientation. A consensus that the war will not have a short initial period and will not soon witness either the use of nuclear weapons or the direct invovlememt of the superpowers suggests a strong conventional orientation among the leadership.

How long will the subsequent/concluding period be? Will it involve primarily nuclear or conventional weapons?

Hypotheses: A consensus that there will be a very short concluding period and/or that the concluding period will involve primarily nuclear weapons will reflect an orientation within the leadership toward nuclear war. A consensus that the concluding period will not be short or will involve primarily conventional weapons will suggest a conventional orientation among the leadership.

Outcome

Which socioeconomic system will be the victor?

Hypotheses: A consensus that the socialist system will clearly be the victor will suggest an orientation toward nuclear war. A consensus that neither system will be the victor will suggest an orientation toward conventional war (more precisely, an orientation away from nuclear war).

Policy Instrument

Is war an instrument of superpower policy?

Hypotheses: A consensus that this question may be answered in the affirmative as it concerns conflict between the superpowers suggests a nuclear orientation among the leadership. A consensus that war is not a policy instrument for superpower conflict or that it only may be an instrument for superpower use in the developing world will suggest a conventional orientation.

Strategy

Service Branches

What will be the principal service branches used in the next major war, and what will their roles be?

Hypotheses: A consensus that the principal services branches will be the SRF and nuclear submarines will suggest a predominant nuclear strategy. A consensus that the Ground Forces will be the primary service will suggest a conventional strategy.

Weapons to Achieve Objectives

How important will nuclear weapons be for achieving military objectives?

Hypotheses: A consensus that nuclear weapons will be the principal weapons used to achieve military objectives will suggest a nuclear posture. A consensus that nuclear weapons may be of equal or less importance than conventional weapons will suggest a conventional orientation.

Mobilization Potential

Will the next war be fought primarily with the forces in existence at the outset of the conflict, or will there be time during the conflict to mobilize troops and the economy?

Hypotheses: A consensus that the next war will not permit extensive mobilization of the armed forces will suggest a nuclear orientation. A consensus that the next war may permit extensive

mobilization will suggest a conventional orientation.

The Western analyses I use in this section often refer to comments by Soviet officials below the levels of Politburo, General Staff, and deputy minister of defense levels. While these military and civilian representatives would not be at high enough levels to be included in the group I have chosen to survey in the contemporary period, I have included their comments because of the significance the previous Western authors have assigned these remarks. Although there may be some dispute as to the importance of the views of these lower-level officials, they have been presented by the analysts of Soviet military policy cited here as sufficiently reflective of the trends these analysts have observed.

The Late Stalin Period

The half-decade after Stalin's death saw quite a bit of change in Soviet doctrine and strategy. I will discuss Stalin's approach to doctrine and strategy in order to provide a baseline to evaluate subsequent changes in these two areas.

From 1953 to spring 1956, Soviet military and political elites were largely concerned with breaking out of the regimen of thought imposed by the structure of Stalin's permanently operating factors. Significant

changes had been taking place in military technology in the post-war years--most importantly, the development and testing of the atomic and hydrogen bombs--but the implications for nuclear and conventional conflict of these and other changes had not been taken into account by Soviet strategists because the debate of such topics was constrained.

The dominant feature of Soviet military policy from the end of World War II until Stalin's death in 1953 was the corpus of doctrine developed during the war with Germany. Chief within this corpus were the permanently operating factors propounded by Stalin in 1942, when it had become apparent that the Germans had not been successful in their initial campaign (Dinerstein, 1962: 6). Because of the emphasis Stalin place upon these theses, they were considered incontrovertible during his lifetime.

Type of war

The type of war that formed the basis of Stalinist military doctrine was a potential conflict with imperialism--a large-scale operation that would be fought in much the same way that World War II had been. In fact, Stalin had ordered in early 1946 that "the whole preparation of the army" and the "further development of Soviet military science" should be based on "a skillful

mastering of the experience of the recent war" (Stalin in Krasnaya Zvezda, 1946; cited in Garthoff, 1962: 62). Publically he averred the significance of nuclear weapons. In response to a Pravda correspondents question as to whether the U.S. monopoly on the atomic bomb was a threat to peace, Stalin commented that this monopoly was "of course" a threat to peace. Nevertheless, he noted:

> I do not consider the atomic bomb as serious a force as some politicians are inclined to do. Atomic bombs are meant to frighten the weak-nerved, but they cannot decide the fate of wars since atomic bombs are entirely insufficient for that (Otvety tovarishcha Stalin, 1946: 1).

Stalin clearly saw Western "imperialist" countries as the next challenge the Soviet Union faced after defeating the fascists. Smaller scale conflicts were not of great importance to Stalin in terms of structuring the Armed Forces or developing military doctrine. The developing countries as an arena for the East-West struggle were only beginning to grow important in Stalin's last years as the decolonialization progressed. In any case, Stalin tended to see developing countries more as allies of the West than as potential targets of Soviet influence (Congressional Research Service, 1977: 18-19). This challenge provided the impetus for many of Stalin's foreign policy initiatives in Europe and elsewhere, as well as in the development of post-war military doctrine. War to Stalin was a social phenomenon, as Dinerstein

points out (1962: 6); therefore, the laws of society were appropriate to explain and interpret war. Marxism-Leninism, of course, held that the laws of history were such that socialism would be victorious over capitalism, and such "scientific" laws of history were asserted as determinative for military conflict.

As the 1951 Bol'shaya Sovetskaya Entsiklopediya noted, war is a "social-historical phenomenon, dependent upon the means of production and the class structure of society. The path to the abolition of war lies in the struggle for socialism and communism..." (Voyna, 1951: 571-572, 587). Elsewhere, the encyclopedia noted: "The laws of war grow from the laws of development of class society, therefore military science reflects social science. Military science proceeds from the views, ideas and concepts which constitute the military ideology of the governing class" (Voyenna nauka, 1951: 406).

Since Stalin's position was that war was a contest between societies, he argued that war between socialist and non-socialist systems would demonstrate the superiority of the former. He considered that in the special social context of war, the following factors would be crucial: the stability of the rear, the morale of the army, the quality and quantity of divisions, and armament

of the army, and the organizational ability of the army commanders (Dinerstein, 1962: 6).

As Dinerstein comments with respect to Soviet lessons from World War II, for a conflict of the type the USSR faced in World War II, these factors are self-evident and not particularly original. Moreover, when related to the changing technology of warfare and the most likely scenarios for war in the nuclear age, clear deficiencies arise, primarily because the permanently operating factors assigned little weight to surprise and did not take into account the destructiveness of nuclear weapons.

As the permanently operating factors were applied to Soviet military doctrine in the post-war world, the most important determination was that nuclear weapons would be important for a major conflict but not decisive--that regardless of the destruction that might be wreaked, even in a surprise attack, the country that had more unsuccessfully implemented the guidelines of the permanently operating factors would be the victor. To the extent a Soviet conflict with the West was envisioned, the strategy was that the Soviet army would be strong enough to occupy Europe regardless of the use of nuclear weapons by either side. Soviet military strategists in the post-war period envisioned the most likely conflict to be one with the West in which after a beginning conventional

engagement, the Soviets would use nuclear weapons to destroy the most important targets or forces not destroyed or captured during the initial advance (Meyer, 1983/84a: 7-12; Dinerstein, 1962: 7-9, 34-36).b The Soviets would capture the most important regions in Western Europe to undermine the enemy's military-economic potential and to force the withdrawal of the principal countries--the United States and Great Britain--from the opposing coalition (Cherednichenko, 1976: 41).

As presented above, an emphasis on a socialist-capitalist rather than a national liberation struggle would be taken as indicating a greater emphasis on nuclear as opposed to conventional war. However, since use of nuclear weapons was not considered a key dimension of military doctrine, the most one can say is that the concept of the capitalist-socialist struggle as the principal form of a future war set the stage for a discussion of that conflict in final, apocalyptic terms, once nuclear weapons were introduced.

The initial period

As one can infer from the permanently operating factors, there is little differentiation of the initial

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bWolfe (1971: 32-35) also mentions Stalin's continued strong public emphasis on conventional forces as part of his effort to deter a perceived NATO threat to the political changes he was pursuing in Eastern Europe.

period from the subsequent/concluding period, with regard either to length of the conflict or the type of weapons used. The Soviets specifically rejected surprise attack as an ultimately successful concept, so whether or not nuclear weapons were used in a surprise attack, Soviet leaders anticipated the war would continue as the forces of the two sides were mobilized and entered the conflict. Since one of the paramount emphases of Soviet doctrine at the time was the destruction of the enemy's military forces, doctrine during the latter phase of Stalin's tenure held that strikes in the initial period would be undertaken against key military targets, especially airbases and support facilities. There were no targets considered particularly time sensitive, since the targets designated for strikes in the first few days were perceived as similarly valuable constituent parts of the overall threat to Soviet forces (see Meyer 1983/4: 11 on these points).

General strikes against economic-industrial targets in the deep rear were not part of Soviet planning at that time; the Soviets had concluded from their World War II experience that strategic bombing only against military or military-industrial targets was worthwhile. Furthermore, since an important Soviet goal in Europe was to capture industrial-economic centers intact, destruction of such

areas in Western Europe in the initial or subsequent periods was most probably not a key objective (Meyer, 1983/84: 11). Perhaps in the subsequent period as a Soviet offensive progressed, "deep rear" economic-industrial sites in Britain or the United States may have been targeted because of their growing relevance to the allied war effort. The superpowers would therefore both be involved from the outset, but immediate destruction of the territory of the superpowers was not anticipated in the initial period.

Subsequent/concluding period

Just as the initial period was not emphasized as an especially important facet of a future war, so was the subsequent period seen as the key period when military initiatives would be played out. As Dinerstein notes (1962: 36), "Stalin's concept of war, with its emphasis on morale and war production, prescribed a strategy of attrition." Even with the application of nuclear weapons, the war would primarily be a ground campaign in which Soviet forces would endeavor to overrun Western bases. While the Soviets hoped that the campaign could be conducted in a timely manner, they did not anticipate the war would be over in a brief period of time. As was the case in the initial period, though, strikes against enemy military forces would be undertaken with both nuclear and

conventional weapons. Most of the nuclear weapons that would be used during this period would be delivered by squadrons of long-range aviation (Meyer, 1983/4: 11).

Missiles had been considered since the late 1940s for long-range targets, but nuclear warheads were still too heavy to use. In 1947 the Soviets were still debating the best technology--planes or missiles--for strikes against the United States, and they were still a long way from perfecting either (Tokayev, 1951: 104-106, 114-115). From what is understood about Stalin's approach to warfare, the subsequent period would be of key importance, and the fact that it was anticipated to be protracted was consonant with its projected conventional character.

The outcome of a conflict between the two socioeconomic systems was never in much doubt for the Soviets at this time. As there was an a priori assumption that the laws of history, taken together with the allegedly higher morale of the Soviet people, dictated that socialism was the superior system. As the 1951 Bol'shaya Sovetskaya Entsiklopediya article on military science states, "the military science of the Soviet government assumes the invincible superiority in economic and moral potential of the Soviet Union over any coalition of possible opponents from the imperialist camp" (Voennaya nauka, 1951: 410).

This thinking was characteristic not only of Soviet perceptions in the military sphere, but also of Soviet general political perceptions. As another Soviet author wrote in 1953,

> Soviet military science, built on the theoretical foundation of Marxism-Leninism, proceeds from the assumption that the phenomena of war, as of every other sphere of social life, are fully knowable, and that our knowledge of the rules of war, based on experience, is trustworthy knowledge which has the importance of objective truths. The knowledge of the regularity of war is a necessary condition of the scientific prediction of military events and of the successful leadership of the troops on the battlefield (Maryganov, 1953: 20).

While one may not automatically conclude that such optimism about Soviet society and the Armed Forces would facilitate a decision to initiate a military conflict, this option is suggestive of a predisposition that assumes that military conflicts would develop and conclude much more favorably for socialist than for capitalist countries. Stalin was fairly cautions in his foreign policies about letting potential military conflicts with the West escalate (e.g. Iran, the Greek Civil War, Berlin), but this ostensibly sanguine attitude toward conflict could not but have had an effect on other aspects of Soviet military thought.

War as a policy instrument

War was seen as a policy instrument to Soviet military theorists in the last years of Stalin's tenure in

particular, as an instrument of self-defense. In The Economic Problems of Socialism in the USSR, Stalin stated his long-held belief that war was inevitable as long as capitalism existed. The result of capitalist war, he implied, was that the Soviet Union would eventually be brought into that war, with the result that war between socialism and capitalism would eventually be fought. The "new thesis held by some" that the capitalist-socialist struggle was "more acute" than the capitalist-capitalist struggle was wrong, he alleged. "Capitalism fears war with the Soviet Union because it puts capitalism itself in danger," he continued; such is not the case with capitalist-capitalist wars" (Stalin, 1952: 78-86). War in this sense could be understood as an instrument of self defense, though it seems unlikely that Stalin did consider or would have considered it a viable means of pursuing policy goals in a case where the Soviet Union were not facing a direct threat.

Strategy

In the area of strategy, it is understandable that the Soviets, in seeking to implement the lessons of World War II, would emphasize a combined arms approach to warfare. Indeed, this attitude that all the service branches were important--with the Ground Forces being a sort of primus inter pares--had been characteristic of the Soviet

military thinking since the 1920s (Garthoff, 1962: 172; Meyer, 1983/4: 8). Also, as suggested above in the section on the initial period of war, since the principal thrust of the campaign was to capture important regions of Europe, it would be long-range aviation that would hit military targets in the rear of the battle area, while the Ground Forces with their air cover advanced below (Meyer, 1983/4: 9). This focus on the Ground Forces for seizing and occupying European territory reflected Soviet assumptions about the conventional character of a future war.

Nuclear weapons technology during Stalin's time was being improved, and nuclear weapons were considered useful for large, fixed military targets in the enemy's rear, but these weapons generally were considered as an augmentation of conventional firepower. Nuclear weapons were in no way considered indispensable for the attainment of military objectives. Research and development of nuclear weapons was supported at significant levels, but prospective applications for this developing technology were not discussed in the Soviet military press (Dinerstein, 1962: 5-8).

Additionally, as was indicated in the discussion on the character of the initial and subsequent periods of war, the Soviets explicitly rejected surprise as an

inevitably successful strategy for victory in war. As Stalin interpreted the lessons of World War II, surprise was disproven as a guarantor of victory. As he and other writers on military issues applied the lessons of World War II to the contemporary period, surprise was dismissed without regard to conditions under which it might be successful (Dinerstein, 1962: 33-36).

As suggested above Soviet theorists in Stalin's time saw the inherent strength of the Soviet system as an inherent guarantor of victory. Keying on the importance of the social dimensions of war, the Soviet placed principal weight on Soviet morale and the ability of Soviet society to mobilize for the war effort. Certainly an important factor in the Soviet's perception of the superior strength of their society mentioned in their press was the command nature of the political-economic structure (Dinerstein, 1962: 33-36).

The Immediate Post-Stalin Years

It is a given in political science that policy debates often accompany leadership changes, and such was the case in a variety of ways in the realm of Soviet military doctrine after March 1953. As Garthoff notes, the debate on military policy that began in 1953 after Stalin's death ended nearly three decades of silence among military professionals on basic military theory (1962: 66).

Type of war

During the few years' period following the death of Stalin, there was a significant amount of turmoil in the leadership involving succession politics and perceptions of Western hostility. I will therefore discuss the effect of such developments on views regarding the type of war in somewhat more depth for this time frame than for subsequent periods.

Regarding the anticipated type of war, most Soviet leaders continued to see the conflict with capitalist countries as being primary, but some leaders began to reconsider whether that conflict was as inevitable as had been thought. As is well known, Malenkov and Khrushchev differed much in their views on the aggressiveness of the West and the proper Soviet response. Malenkov saw the conflict between the two systems in less acerbic terms than others of his colleagues, particularly Khrushchev. In a March 1954 election speech, he commented that

> It is not true that mankind much choose only between two possibilities: either a new world war or the so-called cold war.... The Soviet government stands for further lessening of international tension, for a firm and lasting peace and decisively opposes the policy of cold war, because this policy is a policy of preparation for a new world holocaust, which with contemporary means of warfare, means the destruction of world civilization.
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> . . . .
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> Our posture is clear. We stand for peaceful economic competition of the Soviet Union with all

> capitalist countries, including, of course, with the United States of America (Malenkov, 1954: 2).

In another part of that speech he argued, speaking in reference to Europe, that it was not so much the capitalist countries per se that fueled the East-West conflict, but rather certain "aggressive circles" in capitalist countries (Malenkov, 1954: 2). Dinerstein notes that Malenkov's position was probably tied to other articles espousing similar arguments that had appeared in the previous several months. One such article appeared in January 1954, after a comment by Eisenhower in December 1953 regarding the probability that civilization would likely be destroyed if nuclear war took place (Dinerstein, 1962: 69).

Mikoyan, in an election speech given in Yerevan in January 1954, echoed some of the concern associated with Malenkov's view when he argued that US media were beginning to address the destructiveness of a war to the United States. With this point, he implied that there was a growing concern in the West about the dangers of a nuclear war (Mikoyan, 1954: 2). While one cannot conclude these possibilities raised by Malenkov and Mikoyan necessarily reflected an understanding among some of the Soviet leadership of a degree of deterrence and decreasing belligerency on the part of the USSR's principal Western adversary, the fact that these

statements did depart from the conventional Soviet wisdom on the socialist-capitalist conflict is important.

Khrushchev and others in the Soviet leadership did not share this viewpoint. In an election speech in March 1954, Khrushchev noted that reactionary capitalist forces were attempting to "aggravate tensions in preparation for a new war" (Khrushchev, 1954: 2). Voroshilov, commenting about the same time on the "extensive" military economic production in capitalist countries, remarked that the Soviet Union continued to "live in encirclement" which demands attention to the defense of the country (Voroshilov, 1954: 2). Bulganin, also in an election speech in early 1954, urged the strengthening of the armed forces because of the imperialists' "preparations for a new war" (Bulganin, 1954: 3). Molotov was similarly pessimistic (Molotov, 1954: 2).

Interestingly, Malenkov at the end of April reversed his view on the mutual destructiveness of war in a direction consonant with that of his opponents. Now affirming the importance of strengthening the USSR's defense capacity, he observed that a third world war would inevitably lead to the collapse of capitalism (Malenkov, 1954: 7). This standard view, to which Malenkov finally assented in public, was repeated by many government leaders in subsequent months (Dinerstein, 1962: 75),

though Malenkov's earlier optimistic formulation about the United States being deterred by the destructiveness of nuclear war was not specifically designated as incorrect until a year later.

After Malenkov was removed from his position as Chairman of the Council of Ministers in February 1955, a March Kommunist article noted that the formulation about nuclear war meaning the "destruction of world civilization" was a "false statement". This formulation, the article continued, constituted "atomic blackmail", designed by the capitalists to induce "fatalism" and "pessimism" among the masses to convince them not to struggle for communism. In the meantime, the article noted, the United States and other aggressive imperialist powers were directing preparations for a new world war as part of their drive for world domination (Sud'by mira, 1955: 13-16). Such unequivocal commentary in an authoritative journal reflected the strong views of the power opposition to Malenkov (Dinerstein, 1962: 76).

Through 1955, then, the struggle between socialism and capitalism remained paramount for the Soviets in their thinking about future major military engagements. There was an awareness during this time that civil wars or national-liberation conflicts could occur in various parts of the world, but there was no real likelihood

expressed that the Soviet Armed Forces might participate or could somehow become involved if the conflict spread. Anti-colonial struggles were supported rhetorically, but the possibility of a major war beginning as a result of one of these conflicts was not emphasized.c The Soviets also had good relations with their socialist allies, so a major conflict developing among the socialist bloc was also not discussed.d

The Initial Period

Although there was not much change in the conceptualization of the basic type of war in the 1953-1955 period, there were some important changes in the character of the anticipated war. Western analysts examining this period usually point to by Major General Nikolay Talenskiy's article "On the Question of the Laws of Military Science." Although there were many important issues Talenskiy discusses in this article, on the issue of the initial period, the conclusions he draws are that military victory is achieved by the use of successive

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cOn Soviet thinking about the developing nations preceding and during this period, see Kanet (1974a, 1974b) and Congressional Research Service (1977). Kubalkova and Cruickshank (1980) volume is a thorough summary by two Soviet authors of changes in ideology on the developing world from Marx through contemporary Soviet thinkers.

dThere are many useful volumes on Sino-Soviet relations during this period. Among the most useful are Zagoria (1962), Griffith (1964), and Brezinski (1981).

blows accumulating in force, and there are certain conditions under which a surprise attack with sufficient force could be successful.

While he argued that morale in socialist countries was higher than in capitalist ones because the latter never have "just" war aims, he expressed the opinion that military power could be used by either side in such a way that that side could be victorious. Asserting that there had been no previous case where a new weapon, such as the airplane or tank, had been responsible for the eventual victory of the side that introduced the new weapon, he argued that such would also be the case for nuclear weapons (Talenskiy, Voyennaya Mysl', 1954, cited in Dinerstein, 1962: 37-40). While he did suggest that there were ways the Soviet Union could frustrate a surprise attack by the United States, he admission that the war could be short was a key innovation.

Other articles on surprise began to appear in the military press as early as October 1953.e In Voyennaya Mysl', Krasnaya Zvezda, and Voyenniy Vestnik, several authors began to discuss the advantages of such "transitory" elements as surprise, and some focussed in particular on the increasing role of surprise in a period

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eFor further discussion of Talenskiy's article and its points of difference with Stalin's approach to warfare, see Avidar (1985: 241-293) and Laird (1984: 9-14).

with nuclear weapons (Dinerstein, 1962: 47-49). Still, it was not until Talenskiy's article challenged the fundamental assumption of the permanently operating factors that the issue of surprise became in important area of concern for Soviet military theorists.

One of the most important articles on surprise was one authored by General P.A. Rotmistrov. In his March 1955 Voyennaya Mysl' article, he argued that surprise attack, especially with power nuclear weapons, could have a decisive impact upon the war. One of Rotmistrov's most important conclusions was that the effects of a surprise attack could be reduced or avoided if the potential attacker was himself surprised. In making this point, Rotmistrov distinguished between a "preventive" and a "preemptive" attack, noting that a preventive attack was one made to forestall an opponent's mobilization effort, while a preemptive attack was one made on the basis of firm evidence that one's opponent intended to attack in the immediate future (Rotmistrov, Voyennaya Mysl' 1955; cited in Dinerstein, 1962: 49-51, 184-190).

Several military writers picked up on Rotmistrov's themes and discussed the issue of surprise attack in a positive light (Dinerstein, 1962: 190-192). A May editorial in Voyennaya Mysl' noted that "'the matter goes beyond the exhaustive clarification of the significance of

the surprise factor.'" The current task, the editorial stated, is the "'purposeful elaboration of all aspects of this question, especially the elaboration of ways...to deal the opponent preemptive blows on every scale--strategic, operational, and tactical'" ("On Some Questions," Voyennaya Mysl', 1958; cited in Dinerstein, 1962: 190).f

From the publication of Talenskiy's article in November 1954 through March 1955, a debate ensued in Voyennaya Mysl' on the questions that Talenskiy raised. In April 1955, the editors of Voyennaya Mysl' concluded the debated by affirming Talenskiy's basic arguments, though Stalin's permanently operating factors were not explicitly disavowed in Voyennaya Mysl' until two years later ("On the Results", Voyennaya Mysl', 1955; cited in Dinerstein, 51-52). By the close of 1954, then, there was a growing sense among Soviet military authors that the initial period of war could be both short and decisive, especially if nuclear weapons were used.

Apart from a reconsideration during this period of the importance of nuclear weapons for a surprise attack, nuclear weapons were also discussed as continuing to play a supportive role in military operations. As one Soviet

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fDinerstein argues this editorial clearly indicates the official policy of the preemptive strike (1962: 190).

writer noted, "the basic purpose in using nuclear weapons lies in stopping the enemy's attack by using nuclear counter-preparations" (Ivanov, 1967: 11). As Stephen Meyer notes, the firepower of nuclear weapons was basically perceived in terms of an artillery and tactical airpower approach to combat--that of softening up the opponent's forces so that Soviet ground forces could more effectively initiate offensive drives (Meyer, 1983/4: 13). Given this understanding of how the next war would develop, one can conclude that the superpowers would both be involved in the conflict from the start, but that direct involvement in terms of military damage done to the territory of both was not necessarily part of the Soviet understanding of how the war would develop in its opening stages.

The Talenskiy and Rotmistrov articles probably provide the best clues to understanding the nature of the Soviet views about the length of the subsequent period. Talenskiy's point about victory being brought about by successively more powerful blows is that the subsequent period could be long if the defending side presented good resistance and/or mounted a strong counterattack. The likelihood of the subsequent period being nuclear would be the likelihood of either side's deciding that nuclear

weapons provided necessary augmentation to conventional firepower.

Outcome of a war

As mentioned in the section on views on the type of war, there was a significant amount of discussion during this period on the likely outcome of a war pitting the two socioeconomic systems against one another. The standard attitude was that the scientific laws of social development forecast that the socialist system would be he victor in any conflict with capitalism. Capitalism had the seeds of its own destruction, not the least of which was its exploitation of the masses, who could not be counted on to support aggressive political and military initiatives. Socialist countries, on the other hand, had much strength and would be the inevitable victors. Malenkov and, to a certain extent, Mikoyan were aware of the problematic implications for those laws of nuclear weapons, but their views were not successful against the greater number of powerful elites whose support from the conventional understanding of this issues was predominant during this period.

War as a policy instrument

One can with relative ease tie the issue of the outcome of war, as debated during those two years, with the issue of war as a policy instrument. Malenkov would

certainly have argued that war in the nuclear age was not a useful instrument of Soviet policy. Khrushchev and his supporters might have agreed, but they emphasized the military power of the Soviet Union as an important factor in foreign policy.

Although this traditional view held sway through the end of 1955, there were a few times when key members of the leadership seemed to question the value of war as an instrument of policy. Bulganin notes in January 1956 that it was incorrect to say that the possession of nuclear weapons by both sides meant that the possibility of thermonuclear war was excluded. Yet, he added that the fact that "atomic and hydrogen weapons cannot be employed with impunity exerts a certain deterrent influence on those circles which would like to unleash war with means of mass destruction" (Otvety Predsedatel'ya, 1956: 1). Though he was obviously referring to Western statesmen, the applicability of the statement to Soviet leaders would be just as significant.

Strategy

On the strategy side, the conception that the conflict is to be a combined arms effort persists. Talenskiy in his article suggests that modern war has become so complex that it cannot be waged by one service branch alone. As was suggested in the earlier discussion of Talenskiy's

views about nuclear weapons, he communicated the concept that nuclear weapons were best viewed as an augmentation for existing firepower and not appropriate to be singled out for special emphasis. If the enemy is to be beaten by successively more powerful blows, as Talenskiy suggests, it seems clear that Talenskiy is continuing to advocate a broadly based offensive built on the combined arms concept.

A Major General Pokrovskiy, contributor to the 1955 volume Marxism-Leninism on War and the Army essentially says as much. He comments that since atomic and thermonuclear weapons at their current stage of development only supplement the firepower of older types of armament, those older types, including artillery, small arms, tanks, and aviation, "remain the basic firepower of the army" (Pokrovskiy, 1955: 168). Nuclear weapons, the article implied, would still be important for new destructive roles but would continue to be used to add firepower to conventional force missions.

In sum, the Ground Forces, supported by artillery, air, and naval forces, remained the central focus during this period. Concern about the role of surprise in a military conflict grew, but a longer war was still the conventional wisdom that included the focus on mobilization capacity. The 1953-55 period was the

beginning of a transition from an emphasis on conventional to nuclear forces. Key issues for such a transition--such as surprise and the effects of nuclear weapons--were beginning to be studied and discussed, but no implementation of doctrinal change occurred at this juncture. It would be during the next few years that some of the speculation during the 1954-1955 period about the potential value of nuclear weapons would become reality.

The 1956-1965 Period

Type of war

On the issue of capitalist-socialist war, perhaps the first key development was Khrushchev's speech at the 20th Party Congress in February 1956. It seems appropriate to consider this next period as beginning in 1956, as it was at the 20th Party Congress that Khrushchev presented a key formulation on the inevitability of war between socialism and capitalism and because it was at that Party Congress that Khrushchev is considered to have been successful in his initial effort to consolidate control over the Party.

At the 20th Party Congress, Khrushchev argued that the theory of the inevitability of war had been introduced at a time when imperialism controlled a much greater portion of the world than it did at the current time. although socialism had been weak at that time, it had grown strong in the interim and was currently capable of deterring

imperialism from war.g While noting that vigilance was still necessary, since reactionary capitalist forces would always be capable of instigating war, he argued that war with capitalism was no longer fatalistically inevitable. Khrushchev reasoned such was the case because the forces of socialism were much stronger than in years past, thus exerting a restraining effect on imperialist aggression (Khrushchev, 1956: 37-38).h

Khrushchev and Bulganin in the previous year had visited a number of non-socialist countries in the developing world, and it was probably also the case that Khrushchev was beginning to see the socialist-capitalist struggles as developing more in the quest for allies and international influence than in direct Soviet-Western military confrontation.i Furthermore, he and Bulganin had been in England only the month previous, and for a variety

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gSome authors think that comments by Soviet leaders at this time about a modus vivendi with the West were just a subterfuge for continued efforts to bring about the West's downfall. Lukes (1988: 79-83) makes this argument, and he even reports a special commission, established under the leadership of Brezhnev and Suslov in 1956, to chart a Soviet ideological and political offensive against the West.

hSome authors have tied Khrushchev's statement to an intention to focus on developing the Soviet domestic economy by presenting foreign policy realm as less hostile than before (see, e.g., Snyder, 1987/88: 104-105).

iSee the summary of Khrushchev's perceptions of and activity in the Third World in Congressional Research Service, 1977: 20-25.

of reasons, it would have been inappropriate to make a major public case at this time about increasing Western hostility (Dinerstein, 1962: 147-8).

Interestingly, there was some variation in the perspective on this question. After the problems that fall in Suez, Poland, and Hungary, which were attributed in part by the Soviet leadership to explicit and implicit Western machinations against peace and socialism, the official Soviet line about East-West tensions hardened. Khrushchev in January 1957 commented that the events in Egypt and the fascist plot against Hungary had "sharply increased the threat of a new world war" (Otvety N.S. Khrushcheva, 1957: 1). A joint Soviet-Chinese statement that same month observed that peace-loving nations should be "constantly vigilant and prepared for a persistent and prolonged struggle with the intrigues of the aggressive imperialist countries." The statement continued that the imperialist camp, headed by the United States, was pursuing aggressive policies and preparations for war (Sovmestnaya, 1957: 1). According to a speech by Molotov about the same time, the "imperialists would not be imperialists if they were not making plans for new aggressive wars and were not continuing the arms race" (Molotov, 1957: 3).

This more pessimistic attitude was in part reinforced by the events surrounding a fairly optimistic speech made by Foreign Minister Shepilov to the Supreme Soviet in February 1957. Shepilov, while noting the "aggressive activities" of the West in late 1956, emphasized peaceful coexistence and argued that there was a more sober element in Western politics that supported a relaxation of tension. Since Hungary and Suez were both "defeats" for capitalism, these events indicated that capitalism was weakening and that war was not fatalistically inevitable. Indeed, he stated that there is

> a myth, disseminated abroad by certain circles, that the normalization of Soviet-American relations is impossible because both sides are divided by insoluble problems. In actuality, it is well known that our governments have lived in peace and friendship for decades.

He noted further that the Soviet Union was "prepared, with all good will, to consider any initiative that would facilitate the establishment of mutual understanding with the USA, England and France (Voprosy mezhdunarodnogo polozheniya, 1957: 4).

Several weeks after making this optimistic speech which contradicted the more conflictual view of his Politburo colleagues, Shepilov was dropped from his post as minister of foreign affairs. At the end of 1956 and into early 1957, therefore, there was still a firm consensus among key members of the foreign policy elite

that the socialist-capitalist struggle continued unabated and that war with the West continued, at least ostensibly, as a real possibility. Comments such as those by Shepilov are important because they are statements by important elites that stand in contrast with this consensus. It is interesting to note that while Shepilov was dropped in 1957, optimistic comments similar to his would be heard from the Soviet leadership within a few years.

After June 1957, when Khrushchev had purged Malenkov as well as some of his own associates in the anti-Party group, he was able to take foreign affairs more firmly in his control. The result of this development was that there was a less wide-ranging set of views on the capitalist-socialist conflict.j Along with this greater stability in the debate was a growing confidence that the USSR was beginning to catch up to the United States in strategic military terms, and that the imposing might of the Soviet military would contribute to deterring the West from over hostility toward the Soviet Union. Khrushchev, for example, noted in March 1958 that capitalist encirclement of the Soviet Union was no longer

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jDinerstein argues that the level of hostility and threat Soviets attribute to the West was often during the mid-1950s a function of domestic politic infighting (1962: 144-147).

easy to distinguish,k and that the Soviet military would be an sufficient defense if US leaders rejected peaceful coexistence (Beseda tovarishcha Khrushcheva, 1958: 2; and Khrushchev, 1959: 2).

By 1961, Khrushchev was commenting that war was not fatalistically inevitable and that the social and political problems of the world could be solved in the context of peaceful coexistence (Khrushchev, 1961(a): 3). A year later he remarked that the international situation was "good" for the socialist countries, largely because they were able to frighten the West with nuclear weapons when the West frightens them (Remarks, 1962). During the same period, however, he also voiced the perception that nuclear war with the West would still constitute the decisive conflict between the two socioeconomic systems and that it would lead to the destruction of capitalist, not socialist, society (Khrushchev, 1961(a): 3).

During the period 1957-1962 when Khrushchev's rhetoric heated up during foreign policy conflicts with the West, Horelick and Rush (1966: 108-109) suggest that Khrushchev's posturing remained only posturing (with the arguable exceptions of the Berlin Wall and Cuban crises) because the Soviets knew that United States had a much

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kKhrushchev's specific comment was that it was "unknown who surrounds whom"--the capitalists the socialists or the reverse.

greater arsenal of nuclear weapons. In the middle part of Khrushchev's tenure, them, one perceives a lessening of the intensity of the capitalist-socialist conflict as perceived by the Soviet elite. The conflict with the West, and especially the United States, remained the primary focus of attention during this time.

As Khrushchev noted in 1961, a conflict with the West would be of a decisive nature, and the Soviet Union would use "as many atomic and hydrogen bombs as necessary to wipe the aggressors off the face of the earth" if they attempted to resolve ideological and political differences by warfare (Khrushchev, 1961(a): 3).1 At the same time, such a war was not viewed as likely as it once was. The efforts to conclude the Partial Test Ban Treaty, in a way, symbolize this perspective. Comments by Soviet leaders during the period of negotiations for the treaty reflect their view of its ameliorative significance for Soviet-US relations (see, e.g., Khrushchev: 1960, 1961a, 1964).

The centrality of the conflict with the West and the growing international nuclear capability the Soviets were building also affected leadership views about local

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1Soviet difficulties with China were beginning to build at this point, but relations between the two countries were not yet bitter (see, e.g., Zimmerman 1969: 140).

conflicts. The Soviets became more involved with the developing world during this time, and began providing military assistance to some anti-colonial movements.m This general increase in involvement, particularly as reflected in its military dimension, led the Soviets to give some attention to escalating conflicts in the developing world. Soviet relations with China during this period began to take a turn for the worse. While Sino-Soviet relations were not approaching the level of a potential military conflict, there were significant disagreements between leaders of the two countries on the use of military force in the developing world and elsewhere.n

The Soviets acknowledged the possibility of such regional military conflicts but indicated that if the West were to antagonize a Soviet military ally to the point of war, such a local war would very likely soon escalate to a global one involving the superpowers (Monks, 1981: 32). Such a position was understandable, given the type of forces (strategic) that the Soviet leadership sought to

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mSee Congressional Research Service (1977: 20-30), Kanet (1974b, and other essays in the Kanet volume) and Porter (1984).

nSee, e.g., Prybyla (1974), Griffith (1964), and Pike (1982).

procure and rely upon for deterrence of the West during the late 1950s and the 1960s.

Defense Minister Georgiy Zhukov addressed these problematic issues during a presentation at the military staff college of the Indian armed forces in early 1957. At that meeting, he commented that he had often been asked about Soviet views on the roles of nuclear and thermonuclear weapons in warfare. He observed that neither he nor anyone else "can answer with definitive completeness all these questions now because all wars, major and small, arise, are waged, and end under specific political, geographical, and economic conditions." Nevertheless, he continued, a war between two coalitions of great powers would be "a different matter" than if it arose between two individual countries. In the former case, he observed, war in the contemporary period would envelop "not only the immediate theaters of operations but the entire depths of the warring countries" (Kitayev and Bol'shakov, 1957: 4). The clear implication in this remark is that a significant quantity of nuclear weapons would be used.

Later that year, Khrushchev, expressing an opinion which probably more broadly reflected the view of the Soviet leadership, commented that the past two world wars had started as local conflicts and were difficult to

contain, so even more would local wars in an age of advanced military technology and nuclear weapons be difficult to limit (Khrushchev, 1957: 2). Bulganin in 1957 continued this theme when he noted that not only the new technology but also the extensive alliance system of the two superpowers militated against keeping a local war confined (Bulganin, 1957: 1). Garthoff notes that this hesitation by the Soviets about the possibility of containing a local conflict would also apply to proxy wars (1962: 114).

In the early 1960s, as Khrushchev enunciated his doctrine about reliance on nuclear missiles and the likelihood that the scope of any war directly involving both superpowers or their allies would be global, there were some military writers who perceived a growing possibility that small-scale wars of independence might be confined to the region in which they developed (Monks, 1984: 38). Additionally, there was a growing group of Soviets who thought that a future war could be protracted, and this difference on the length of the war was still under way when Khrushchev was dismissed (see Wolfe, 1964: 120-121). One distinction made in the effort to clarify this point on regional conflict was to differentiate the location geographically. Khrushchev, for example, noted that the likelihood of a regional engagement escalating

was much greater in Europe, where the two alliance systems faced one another, than elsewhere in the world (Khrushchev, 1964: 1-2; see also Goldberg, 1985: 59).

Tied to the issue of the likelihood and type of a future conflict, there was also uncertainty in the Soviet military press as to the extent of military aid the USSR could offer national liberation movements and how to characterize most effectively a war that might originate from such conflicts (see Wolfe, 1964: 126-128). The Soviets perceived a need to provide such aid, but they were probably not sure if they could adequately manage such a conflict to their favor if it significantly escalated.

During the part of Khrushchev's tenure after the 20th Party Congress, then, Soviet doctrine continued its focus on war between the superpowers as being the most likely kind of engagement in which the Soviets might participate. With the exceptions of a few political crises involving the two superpowers that had military dimensions, the Soviet line was that some leaders in the West were aware of the advantages of peaceful coexistence and would endeavor to push their governments in that direction. While there was some attempt to assess the potentially limited character of wars of liberation, there seemed to be a continuing consensus that wars involving the

superpowers or their alliance systems would most likely escalate into a global conflict because of the breadth of membership of these alliance systems, the availability of nuclear weapons, and the unwillingness of members of either bloc to accept defeat (Monks, 1984: 39; Wolfe, 1964: 119).

By 1964, the experience of the superpowers and their alliance systems had been that military conflicts in which one of the powers or a member of their alliance system was directly engaged (e.g. Vietnam in the 1950s, Suez, the 1961 Sino-Indian conflict) could continue without significant escalation and that proxy wars involving the superpowers (Laos, Vietnam in the 1960s) could also remain localized.o Part of the Soviet thinking underlying this assessment was the assumption that US leaders considered too risky the use of nuclear weapons in regional military conflicts in the developing world, such as wars of national liberation (Goldberg, 1985: 59). By this time, however, there was no consensus on whether the two superpowers could be directly engaged in a regional

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oKorea cannot accurately be considered a proxy war, since US troops for part of the war were directly engaged with troops from China, one of the USSR's principal allies in the early 1950s. The Korean experience no doubt suggested to the Soviets that a superpower could even be directly (though not officially) involved in combat with a member of the other alliance without the conflict escalating to a global engagement.

dispute outside of Europe that would be ultimately limited by geography and the type of weapon used.

The initial period

During the 1956-1965 period, debate on the importance of the initial period of war continued but seemed to reach something of a consensus on several aspects. In the several years subsequent to Rotmistrov's publication of his 1955 Voyennaya Mysl' article, surprise was discussed as advantageous but not decisive. Attention was given to means by which a surprise attack might be defeated.p Garthoff notes that this rejection of surprise and blitzkrieg was in large part due to the Soviet understanding that they would be unable to destroy a sufficient quantity of the enemy's forces to prevent a counter attack (See Garthoff, 1962: 85-86).q

After the Soviet's successful tests of an ICBM in the second half of 1957, articles began to appear that stressed the growing role of the strategic nuclear missile in Soviet military plans. A March 1958 article by Talenskiy, for example, makes several references to

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pIt would have been difficult, of course, for the Soviets to admit that an enemy might have the capability to halt the advance of socialism (see Garthoff, 1962: 85-86).

qDinerstein (1962: 167-212) argues that surprise attack continued as their policy from 1955, but the Soviets strongly reject this policy in public pronouncements.

nuclear missiles as the "decisive, modern weapon," with the implication that the period in the war when they are used (the initial period, most likely, given their destructiveness and short time to target) would probably be short (Talenskiy, 1958: 34-35). Khrushchev, that same year, noted that a sober and realistic assessment of modern technology would lead to the conclusion that intercontinental missiles could reach any point on the earth's surface and can "rapidly" destroy the opponent's military bases (Khrushchev, Vestnik vozdushnogo flota, 1958; cited in Dinerstein, 1958: 233).

During 1958 and 1959 the Soviet General Staff, and particularly the Soviet General Staff Academy, held a series of secret seminars and conferences to examine the implications of the development of strategic missiles for Soviet military doctrine (see Scott and Scott, 1979: 40-41). Some of these sessions included the participation of Khrushchev and other members of the Politburo. Developing a consensus on the significance of this strategic capability was not easy. As one Soviet source notes, there were many questions of military art to be decided during this period because no one had had experience with nuclear weapons in combat (Kulikov, 1976: 142-143, 157-160).

By the early 1960s with Khrushchev's speech in January, there seemed to be less doubt that the initial period would be brief, particularly given his assertion that a massive barrage of nuclear weapons would be exchanged by both sides "not only in the first days, but even in the first minutes of the war (Khrushchev, 1960: 4; Cherednichenko, 1970: 24, 29).

Malinovskiy, in a 1961 speech, charged that the imperialist nations were planning a surprise attack against the Soviet Union and that the Soviet Union must be constantly ready to thwart the imperialists' plans. He also noted during this speech that the Presidium of the Central Committee as well as the Soviet Government had asked chief military leaders to "pay special attention to the initial period of a possible war" (Malinovskiy, 1961: 4).

At the same time, there was some disagreement among the military as to the central importance of the initial period. A Lieutenant General Krasilnikov noted in November 1960 that a future military conflict would not be a "pushbutton" war. A surprise attack could have serious effects but would not be a "decisive factor," since the next war would require "massive multimillion armies" with "large reserves of commanding personnel and vast contingents of soldiers" Krasilnikov notes that some

Western military theorists propound the likelihood of a "'lightning war'" with nuclear weapons that would "not last more than 2-3 days." He argues to the contrary that if large countries are the combatants, whose territory "extend over thousands of kilometers and which have been prepared for wartime conditions," it is not possible to plan on an early conclusion to the conflict (Krasilnikov, 1960: 3).r Several years later this concern continued to be voiced. A Major-General Dzhelaukhov noted in a January 1964 article that strategic groups could not mount simultaneous or successive strikes with conventional or nuclear weapons (Dzhelaukhov, 1964: 15-27).

Nevertheless, in spite of some debate on the significance of the initial period and on the duration of war, the growing focus on ICBMs as the primary weapon of the Soviet arsenal was a principal dynamic in Soviet strategic thought in the early 1960s. This focus suggests a general assessment among Soviet military leaders that whether the Soviets mounted a preemptive or retaliatory strike, the initial period of war would probably be both short and decisive. For example, the Sokolovskiy authors in 1963 note that both the length of the war and its outcome may be determined "by the effectiveness of the

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rMalinovskiy (1961: 4) makes the same comment about expansive territory and an early conclusion.

efforts made at its very beginning." (Sokolovskiy, 1963: 500). The authors of a November 1963 article in Mezhdunarodnaya Zhizn' comment that the "[f]irst rockets and bombers of the side on the defensive [i.e., the Soviet side] would take off even before the aggressor's first rockets, to say nothing of the bombers, reached their targets" (Glagolev and Larionov, 1963: 47; italics in original deleted). Whether one interprets this last statement as reflective of a policy of pre-emption or launch-under-attack, the implication for the importance of the initial period of war is similar.

Nuclear weapons were clearly becoming increasingly important in the Soviet force structure by the mid-1950s. Zhukov in 1956 commented that a "most significant" amount of attention was being given to the development of nuclear weapons and their applications for aviation, navy, and the artillery. He argued that a future war, would be characterized by "the mass use of air forces, various rocket weapons, and a diversity of means of mass destruction" (Zhukov, 1956: 479). In 1957, Zhukov argued that since nuclear weapons would "more and more" soon replace conventional ones, nuclear weapons "in the case of a large-scale conflict" would be the "basic means" of defeating the enemy. He continues that in contrast to chemical weapons, which earlier the Soviets viewed as

"supplementary" to conventional armament, nuclear weapons were being introduced into the forces as an "organic weapon" (Zhukov, 1957: 4).

After Khrushchev's speech in January 1960, there seemed to be a consensus within the Soviet military that nuclear weapons would almost certainly be used in the early stages of a conflict with the West. As General Cherednichenko noted in an historical essay about the period, the general belief within the Soviet leadership was that the principal way a major nuclear war would begin would be by "a sudden nuclear strike by the imperialist aggressors.... It was thought that any armed conflict would inevitably develop into an all-out nuclear missile war if the nuclear powers were drawn into it" (Cherednichenko, 1970: 29).s

On a similar line, a principal reason the Sokolovskiy authors dismiss the possibility of a limited war between the superpowers is that, with limitations on the use of force, neither side would be able to achieve its principal political goals. Arguing that US military planners consider the US "not obligated to limit its military goals by the defined boundaries and political conditions" set before the war's beginning, the Sokolovskiy authors assert

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sMalinovskiy (1961: 4) also makes this point.

that a war with devastating force used at the outset is the most likely scenario (Sokolovskiy, 1963: 94).

Considering that the principal threat the Soviets sought to meet in the late 1950s and early 1960s was the threat from US bombers and ICBMs, it make sense that direct superpower involvement was envisioned as occurring early in the conflict. As Thomas Wolfe notes, the Soviets in the early 1960s, in contrast with their thinking in the early to mid-1950s, perceived that an intercontinental nuclear exchange would precede an engagement in Europe (Wolfe, 1964: 114; see also Sokolovskiy, 1963: 302-306). While the Soviets would have acknowledged at the time the low probability of immediate or inevitable superpower involvement with a war of national liberation, it was also the case that such conflicts were not the ones which most concerned the Soviets during this period.

Subsequent/concluding period

Perceptions on the subsequent/concluding period naturally changed with perceptions of the initial period, becoming less significant as the initial period waxed in importance. For example Talenskiy, in 1957, commented that it was Soviet economic and social strength that were the fundamental factors for the defeat of the German blitzkrieg. Given the significantly greater strength of

the socialist system in the late 1950s, he notes that economic and social strength would be an even greater obstacle should the West attempt a "lightning war," in the contemporary period (Talenskiy, 1957: 43-44). Colonel V.A. Zakharov, in the 1958 version of Marxism-Leninism on War and the Army, noted that the

> experience of military history indicates that for victory it is necessary to have superiority over the enemy in the quantity and quality of forces for the duration of the war.... In the strategic planning of the war, the correct employment of the troops must be estimated not only for its initial period but for its whole course. A genuinely scientific approach to the determination of the sizes of the first and succeeding strategic echelons, tempos of mobilization and strategic deployments, force levels of ready and reserve forces, reinforcements of combat regiments and divisions with fresh troops during the whole extent of the war is required" (Zakharov, 1957: 262).

In the post-1956 period, at least until Khrushchev propounded the predominance of ICBMs, the concluding period continued to be perceived as an important part of the struggle, as combined arms continued in importance.

After Khrushchev had articulated the primary role he assigned to nuclear weapons, the consensus about the length of the subsequent/con-cluding period tended to gravitate to a conditional one. For example, Khrushchev, as mentioned earlier, implied that the conflict may last several hours or several days. A number of Soviet publications argued that nuclear weapons had made ground

offensives outmoded (Wolfe, 1964: 131). There were also those writers who noted that in a local war, fought principally with conventional forces, that the war could be protracted (see, e.g. Mochalov and Danichev, 1957: 4). There were two caveats to this view, however. One was the concern that the use of tactical nuclear weapons would shorten the time span of the conflict because of the tendency of the opponents to escalate to a global engagement (Wolfe, 1965: 124; see also Sokolovskiy, 1963: 237-242). Another caveat concerned where the local war took place. Khrushchev and other writers, as indicated earlier, perceived that a regional war in Europe would be virtually impossible to keep from escalating to a global war.

At the same time there were also some military writers who envisioned the possibility that a war, even if nuclear, might be protracted. Col. Gen. Lomov, while acknowledging the primacy of nuclear weaponns, noted that elements such as the "correlation of forces" favoring the socialist camp and the socialist countries' advantage in provisioning of nuclear weapons to the armed forces would favor a short war, but added that "it cannot be concluded that under certain conditions war might take on a protracted character" (Lomov, 1963: 25-6). Krasilnikov, mentioned earlier, noted in 1960 the importance of "mass

armies" in a future conflict. Army General V. Kurasov in a 1961 article agreed with this thesis, supporting the maintenance of a strong defense economy along with large, modern armies, and by implication, a doctrine that provided for the use of such resources (Kurasov, 1961: 7-13).

Outcome of a war

The verdict on this issue is mixed. Khrushchev in 1956 indicated that both systems would suffer and in 1960 repeated much the same sentiment. Still, Khrushchev's bottom line, at least in declaratory policy, was that the capitalist system would be destroyed, while the socialist system would survive (Khrushchev, 1961b: 3). Malinovskiy, as indicated earlier, asserted that the USSR's vast territory would enable it to endure a nuclear war and survive, and both he and the Sokolovskiy authors in the early 1960s noted that higher morale in the socialist countries would enable them to endure the hardships of nuclear war (Monks, 1984: 40).

War as a policy instrument

Khrushchev in 1956 stated that war is not a good instrument of policy, as communism could not be established "in the course of the destruction of nations of people" (Khrushchev, 1962: 3; and see Wolfe, 1964: 71-72). Talenskiy basically agreed with this formulation,

commenting in a 1965 International Affairs article that "in our time nothing is a more dangerous illusion than the notion that thermonuclear war still serves as an instrument of politics." He continued that "war with the use of thermonuclear weapons has outlived itself as an instrument of politics, and has itself turned into a weapon of national and social suicide" (Talenskiy, 1965: 23). In another article, however, he added that the outcome of the war would depend on such factors as the superiority of the socioeconomic system, the political soundness of the state, etc. (Wolfe, 1964: 72-73).

Other military authors, including the contributors to the Sokolovskiy volume, noted that war could be an instrument, as Lenin suggests. According to the Sokolovskiy volume, "it is well known that the essence of war as a continuation of politics does not change in relation with changes in technology and armament" (Sokolovskiy, 1963: 25). A Colonel Rybkin, in a September 1965 article, commented that war, regardless of its destructive character, "is never a useless firework." He specifically criticized Talenskiy's views on this topic as similar to those of "reactionary-utopian pacifists" and "petty-bourgeois peace-yearners" in the West who contended that "nuclear war had paralyzed itself." Rybkin concluded his article with the assertion that saying victory in a

nuclear war is not possible "would be not only untrue on theoretical grounds but dangerous from the political point of view as well" (Rybkin, 1965: 50-56).

Marshal S. Biryuzov probably presented the most reasonable formulation of the issue when he argued that war in the contemporary period "must not serve as a means of resolving international disputes." In referring to the capitalist-socialist struggle, he remarks that nuclear war, as any war, "can be an instrument of policy, but now it would be the instrument of a rash, senseless policy, because its utterly devastating character cannot guarantee to aggressive circles the achievement of their reactionary goals" (Biryuzov, 1963: 3).t

Soviet doctrine in the 1956-1965 period integrated new developments in nuclear weapons technology by making ICBMs the principal striking force and acknowledging that with these weapons, the principal phase of combat between the two superpowers would likely be in the first several hours of the war. Some roles were still reserved for conventional weapons, but these were comparatively insignificant. The West was still envisioned as the principal enemy, though there was nascent interest in

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tMonks (1984: 33-36) examines in some detail several schools of thought on this issue in the contemporary military literature. See also Wolfe's (1964: 76) discussion of war as a policy instrument as a point of contention in the Sino-Soviet conflict.

being able to support military engagements in distant parts of the world.

Strategy

In the late 1950s, there continued to be a strong consensus among writers on military affairs that all of the services would be involved in the next war, with the Ground Forces being perhaps the first among equals. Zhukov, in his speech at the 20th Party Congress, notes that although the next war would be characterized by the extensive use of nuclear weapons, the Soviets proceed from the assumption that

> the means of massive destruction do not diminish the decisive significance of ground armies, the navy, and aviation. Without the efforts of the ground forces, without strategic, long-range, and frontal aviation and the modern navy, without their well-organized activities, it is impossible to conduct modern warfare (Zhukov, 1956: 480-481).

Major General Mil'stein and Colonel Slobodenko, in a 1957 book on military ideology, noted that wars can only be won by breaking the enemy's will to resist and that doing so is accomplished by defeating the enemy's armed forces, not by bombing strategic targets in the rear (Mil'shtein and Slobodenko, 1957: 46-47).u In a book published in 1956, General Kraselnikov noted that the use of nuclear weapons entailed not the reduction but the

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uTheir discussion (1957: 47-50) of the strategic views of Generals Matthew Ridgway and Maxwell Taylor is also worth reading.

increase of soldiers on the ground, on account of the destruction likely to large units (Krasel'nikov, Marksizm-Leninizm o Voine i Armii,1956; cited in Garthoff, 1962: 154). A tank general writing in 1958, noted that victory in situations where weapons of mass destruction have been used will depend on mobility and maneuverability of ground forces (Losik, 1957: 32).v General Kulikov, in his history of the General Staff Academy, notes the proposition current in the late 1950s and early 1960s that the ground forces, acting in conjunction with other service branches, would follow up nuclear strikes by mounting key offensives on land (Kulikov, 1976: 161).w

By the time of Khrushchev's January 1960 speech, there seemed to be a general consensus on the role of nuclear weapons, particularly ICBMs, in a future conflict. After the Soviets' successful testing of the ICBM in 1957, there were a number of statements by Khrushchev, Marshal of Aviation Vershinin, and others that ballistic missiles made bombers obsolete. In a September 1957 Krasnaya Zvezda article, Vershinin pointed out that missiles were

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vSee also Mochalov, 1956: 3 and Zhukov, 1956: 481.

wAn important dimension of Soviet strategic thinking, at least before the introduction of ICBMs, that in part explains the continuing importance assigned to conventional forces is the concept that the key Soviet threat against the United States was directed at its European allies (see, e.g., Zhukov, 1956: 480). This was the concept known in the West as "holding Europe hostage."

more reliable and accurate and could penetrate air defenses much better than bombers (Vershinin, 1957: 3). Modifying this perception only slightly, General Pokrovskiy noted in a 1957 article 1957 that ballistic missiles would be most useful against fixed, previously identified targets, while bombers would be used against mobile targets (1957: 36-37).

Khrushchev's 1960 speech officially heralded the primacy of ICBMs, and this primacy was echoed by those such as the Sokolovskiy authors, who said that the "decisive weapon in modern warfare is the strategic nuclear weapons" and that no nation can protect itself or win a conflict unless it first destroys the strategic nuclear weapons of its opponent (Sokolovskiy, 1963: 366). Major General Lomov, in a 1964 Krasnaya Zvezda article, noted that "the most important tenet of Soviet military doctrine is the recognition of rocket-nuclear weapons, and above all strategic rocket-nuclear means, as the decisive means of repelling imperialist aggression and completely crushing the enemy." He continues:

> The material basis for this is the high level of equipping the Soviet Armed Forces with rocket-nuclear weapons. These weapons have not only been introduced in all types of the Armed Forces, where they serve as the chief means of defeating [the enemy], but also the principals and methods of the conduct of military operations are defined by divisions, regiments, and ships" (Lomov, 1964: 2; italics in original deleted).

How did this approach fit in with the traditional support for continued arms offensives and for the Ground Forces in particular? Tank General Rotmistrov in a 1958 article noted that greater numbers of personnel would be needed in the ground forces because of attrition from nuclear fires (Rotmistrov, 1958 VM #2, in Scott and Scott, 1982 Soviet Art of War: Doctrine, Strategy, Tactics). In a 1963 Kommunist Vooruzhennykh Sil article, he noted that "we do not deny, but on the contrary, emphasize the decisive role of nuclear weapons." Continuing that the strategic missile forces have become the main branch of the Armed Forces, he notes that at the same time, the Soviets "do not belittle the role and significance of other types and classes of forces" (Rotmistrov, 1963: 31).x

A Colonel Krupnov, in a 1963 book on military science, noted that weapons for the traditional (conventionally-armed) services were militarily useful, not to mention being too expensive to discard at the advent of the nuclear age, and that "no matter how powerful nuclear weapons and missile may be, they cannot decide all the

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xSee Pokrovskiy's comments (1957: 37) about Zhukov's setting up nuclear weapon training exercises for ground troops when those weapons were introduced in the mid-1950s.

tasks of modern war" (Krupnov, 1963: 108-110).y Goldberg (1985: 68-72) points out that most discussions about conventional weapons among Soviet service branches in the early 1960s took a nuclear battlefield environment for granted. Conventional weapons were discussed only with regard to their importance at the tactical level; these discussions never dealt with larger issues such as the use of nuclear weapons for strategic objectives or avoiding escalation to nuclear weapons altogether.

Interestingly, one of the advocates of caution in overemphasizing nuclear weapons was Marshal Rotmistrov, who noted in early 1964 that the history of warfare teaches that new methods of conducting war do not immediately replace old ones, but do so gradually." Therefore, he asserted, in "defining the roles [of weapons and forces] in warfare, calculations based on the results of the use of a single new type of weapon can lead to erroneous conclusions" (Rotmistrov, 1964: 2).

Another important article echoing this theme was one by a Major D. Kazakov published in Kommunist Vooruzhennykh Sil in February 1964. Kazakov noted that military

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yKrupnov also discusses his understanding that military doctrine changes gradually with the introduction of new military technologies. He notes that some Western military strategists incorrectly believe that transformations in military doctrine may be abrupt (1963: 108-109).

planners should recognize that "'the imperialists, fearing an inevitable retaliatory missile-nuclear blow, might launch against use one or another form of war without employing nuclear weapons.'" From this supposition, he argued that the Soviet Armed Forces should be prepared to "'deal an appropriate rebuff with conventional means, while keeping missile nuclear weapons in the highest state of readiness'" (Kazakov, Kommunist Vooruzhennyk Sil, 1963; and Kazakov, Voyennaya Mysl', 1964; both cited in Goldberg, 1985: 77).z

Marshal Chuykov, commander in chief of the Soviet Ground Forces, published an article in 1963 that expressed a similar view. Chuykov criticized theories of victory in war that focused on a single service, advocating the use of "objective laws of harmonious development and use of all types of weapons and forces in war." While commenting on the "decisive" role of the SRF in achieving basic Soviet goals, he noted that the ground forces would still be indispensable in achieving the future goals of the war" (Chuykov, 1963: 5). Likewise, the Sokolovskiy authors note that a theater ground offensive would follow nuclear strikes and would play a decisive role in the enemy's

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zGoldberg (1985: 77) notes that this point about the possibility of conventional war as a major variant had not been argued since the USSR acquired an ICBM capability, and that Kazakov's article elicited no negative commentary.

defeat. The Sokolovskiy authors note that after the initial exchange of strategic nuclear weapons, ground force operations would initiate a rapid advance with the support of the air force, in order to complete the destruction of the surviving forces of the enemy (Sokolovskiy, 1963: 372-374).

The Sokolovskiy authors, focusing on specific missions, also noted the importance of paratroops and tanks, the former to seize or destroy enemy nuclear weapons, airfields, and naval bases, and the latter for nuclear strikes and defending nuclear weapons from a surprise strike (Sokolovskiy, 1963: 306-307). The Sokolovskiy authors note that to achieve victory in war,

> it is insufficient to destroy the military potential of the aggressor, his strategic means of combat, the main formations of his armed forces and his civil and military command. For final victory, it is absolutely necessary to defeat the enemy's armed forces and capture his military bases if, for some reason, these have not already been destroyed, and to occupy strategically important regions. In addition, one must defend one's own territory.... Only modern ground forces, adequate in size, armament and organization, can execute these and a number of other missions (Sokolovskiy, 1963: 303).

The ground forces in the theater, they asserted, should make the fullest use of the strikes by the Strategic Rocket Forces for the rapid fulfillment of their tasks (Sokolovskiy, 1963: 304-305).

General Major Kozlov, also commenting on a theater offensive, noted that the offensive would begin "with powerful missile-nuclear strikes not only against the enemy's armed forces, but also against the most important central objectives" (Kozlov et. al., 1964: 325) Another new principal was the simultaneous suppression of the entire operational and tactical depth of the defense in order to guarantee the superiority of Soviet forces engaged in "deep battles" and "deep operations." Ground forces, particularly tank and airborne forces, would quickly follow up the missile strikes (Kozlov et al., 1964: 325-326, 354-355).aa

As indicated above, nuclear weapons would be considered necessary to attain goals within the framework of the doctrine the Soviets laid out for themselves. On the theater battlefield, nuclear weapons were considered useful for breaching enemy defenses and striking threatening targets in the enemy's rear while the ground forces prepared to advance in the aftermath. In theater war, then, not to mention in an intercontinental conflict, the use of nuclear weapons remained central to the

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aaSoviet military writers have considered strategic missile-carrying submarines important, though Khrushchev deemphasized the role of surface ships in the Soviet Navy. Some Soviet authors have spoken about the importance of surface ships for ASW and for supporting landings on the shore of a foreign enemy (Wolfe, 1964: 186-188).

Soviets. The many Soviet references to the nuclear weapon as "decisive", in spite of the occasional emphasis given combined arms forces, confirms this viewpoint.

Mobilization issues

With regard to the issue of the focus on forces in being or mobilization capacity, it is understandable that the emphasis on the initial period of war would entail a greater importance for the forces in being. A Colonel Petrov, in a 1958 Sovetskaya Aviatsiya article, noted that since the outcome of a major military conflict in the contemporary period "is directly determined by the fierce clash of the armed forces of the contending sides, war potential is understood to be only that portion of the potentialities which are incorporated into the country's armed forces themselves." The armed forces, he continued, "should be ready for the immediate conduct of military operations against the ground and air forces of the enemy in case of a surprise attack" (Petrov, 1958: 3-4). Petrov here implicitly acknowledges that the war could potentially be protracted but his emphasis on forces in being illustrates the recognition among most Soviet military writers of the principal assumptions about strategy that are different from those of the previous period.

Soviet authors were aware of the problems of mobilizing after a nuclear attack and the attendant difficulties for prosecuting a protracted nuclear conflict. Generally, regardless of whether a particular author was strongly or only partly in favor of the increased emphasis on nuclear weapons, there was a consensus on the importance of peacetime preparation of the economy and armed forces so that if a conflict arose, "the full might of the state stockpiled before the war" could be brought to bear (Sokolovskiy, 1976: 276). The Sokolovskiy authors continued that

> massive armed forces, well trained in the use of modern military equipment, will be required from the very first days of the war.... Combat operations, with extensive use of nuclear weapons, will immediately develop on a tremendous scale, on land, on sea, and in the air, and these operations will have the most decisive and fierce character. In these conditions, it is not possible to count on a more or less extended period of time, as in previous wars, to mobilize fully and to deploy one's armed forces. At the same time, not even the economically strong states today can keep their armed forces fully deployed during peacetime. Obviously, the most appropriate solution of the problem would be the peacetime maintenance of such armed forces as would ensure the achievement of at least certain proximate strategic war aims while the remaining echelons were being fully mobilized and put into operation (Sokolovskiy, 1963: 300).

Marshal Malinovskiy also noted the increased importance of forces in being. He commented in a 1962 article that because nuclear missiles made possible decisive results in the initial period, the "great part of

the efforts formerly put forward by a country and army during the course of a number of years...now should be placed in the first nuclear missile strike and the subsequent coordinated operations of all forms of the armed forces" (Malinovskiy, 1962: 2).

During Khrushchev's tenure from 1956-1964, then, a shift to the primacy of nuclear weapons occurred, though there was concurrently an acknowledgement about the value of the traditional services in certain circumstances. Soviet military analysts realized that Europe was a theater of conflict where it would be hard to keep a conflict that began with conventional weapons from escalating because of the proximity of forces from the two alliances and the nuclear weapons available to these forces. There was some ambiguity about a socialist victory if a global nuclear conflict were ever to develop. It is not unreasonable to conjecture that comments by military writers asserting the likelihood of a socialist victory could have been an argument made from the standpoint of troop morale.

The Post-Khrushchev Decade

Type of war

In the decade after Khrushchev's ouster, Soviet leaders continued a trend begun in the early 1960s in which Soviet relations with the West were not viewed with the

consistent pessimism as they had earlier. The West was still perceived as the principal enemy: one Soviet General, in a 1969 Voyennaya Mysl' article, noted that the socialism-imperialism struggle is the

> chief, determining line of social struggle. The continuing process of deepening the general crisis of capitalism is causing a further increase in the aggressiveness of imperialism. Its main goal consists in destroying the USSR, eliminating the world socialist system, and gaining supremacy over the world (Zemskov, 1969a: 55).

According to Marksizm-Leninizm o voyne i armii, a key Soviet military analysis of the period, the "main, decisive line of the social struggle is the struggle between socialism and imperialism" (Tyushkevich, Sushko and Dzuyby, 1968: 85; see also chpt 1, especially pp. 42-45).bb However, during the late 1960s and early 1970s as the detente period developed, there was a sense expressed in Soviet thinking of greater possibilities than before of cooperation with the West in foreign policy interaction, particularly in the avoidance of a major war.cc

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bbGrechko (1968: 2) makes a similar observation. Grechko also notes the continuing struggles of the imperialists against national liberation movements in various parts of the world.

ccHerrmann (1985: 54-57, 78-82) and Vernon (1981: 114-128) provide interesting observations about Soviet perceptions of the United States in 1967 and 1971 that highlight the more positive assessment. Garthoff (1985, Chpts. 1-16) provides a useful chronicle of changing Soviet and US perceptions of one another during detente.

The post-Khrushchev decade also seemed to bring changes in Soviet miltiary doctrine that corresponded with the increasingly active role the USSR pursued in foreign policy, especially with developing countries.dd This interest in change is probably best reflected in the perception that the armed forces had both a domestic and an international function.ee The domestic function was to defend the socialist world from attack, while the international function was to block imperialist efforts at counter-revolution in other parts of the world. This

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ddRegarding the general issue of change at this time, Tyushkevich (1980: 471) notes that following the October 1964 CPSU Plenum, "action was taken to correct certain mistaken views held in military research circles as a result of overestimating the capabilities of nuclear weapons, their effect on the nature of warfare, and their role in the further organizational development of the Armed Forces."

eeIt was likely that the Soviet leaders' perceptions of their potential influence in international affairs, as well as developing countries' receptivity to Soviet initiatives, were aided by the Soviets' closing the gap with the United States in strategic forces (see, e.g., Samorukov, 1967 VM #8, FPD 125/68, 26 Aug, cited in Goldberg, 1985: 99). Laird (1984: 17-24) even makes the argument for a stage during the post-Khrushchev decade lasting from 1965-1971 in which the Soviets continued to focus resources on strengthening their strategic nuclear capability, with the plan of not devoting significant emphasizing military capabilities for use in the developing world until the signing of the SALT I and ABM treaties. In a sense, the Soviets probably perceived that an increasing nuclear capability had been able to pay off in terms of prestige and potential political influence in an area where conventional weapons were generally considered more important. On new approaches of the Brezhnev leadership in dealing with developing countries, see Congressional Research Service, 1977: 46-50.

modification in the perceptions of the roles of the armed forces, particularly the emphasis in support for national liberation movements, was given official sanction at the 23rd Party Congress (Monks, 1984: 52).

During the post-Khrushchev period, both capitalist-socialist and national liberation wars were discussed, but the latter were examined in more depth than previously. Such was no doubt the case, in part there were several major regional conflicts during this period, including the Vietnam War, the Nigerian civil war, the Six-Day War, the Indo-Pakistani War, and the October War.ff One Western analyst notes that the additional emphasis on national liberation struggles during this period was reflected in the fact that the 1976 Soviet Military Encyclopedia lists wars of revolutionary proletariat movements and Marxist-Leninist movements as "just" wars ahead of wars to defend socialist countries, which was the reverse of the way such wars had been listed until that time (Volkogranov and Tyushkevich, 1976: 307; see also Monks, 1984: 49-50).gg

The concept of the international duty of the Armed Forces suggest the increased importance of providing

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ffThere was also an awareness that military conflicts, not precipitated by the superpowers, could arise in various parts of the world that could draw the superpowers into war (Zimmerman, 1969: 162).

ggSuch evidence arguably be considered coincidental, but Monks (1984: 76-77) cites it as significant.

assistance to these movements and the need to have available the type of equipment (not to mention doctrine and strategy) for doing so.hh Indeed, a 1966 Kommunist Vooruzhennykh Sil article noted that the functions of the Soviet armed services, in addition to deterring global war and protecting socialism, were also to destroy the colonial system, blunt counter-revolution, and promote revolution within imperialist states (Zagorodnikov, Kommunist Vooruzhennykh Sil, 1966; cited in Monks, 1984: 52).

A 1969 Kommunist Vooruzhennykh Sil article provided a new characterization of non-global wars that included limited nuclear war, wars limited to conventional weapons, and wars limited in geographical areas and numbers of participants (Kondratkov, 1969: 26-27). Defense Minister Marshal A.A. Grechko, in his 1974 volume Armed Forces of the Soviet State, noted the wars in Korea, Vietnam, the Mideast, Mozambique and Angola and elaborated on the types of wars in a discussion which implies that local wars could be limited to geographical area and to participants. Concerning the participants in these local wars, there was

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hhRobin Laird (1984: 22-24) mentions both Soviet and Western sources that address the growing Soviet interest in power projection capability and activities during the 1960s and 1970s. Perhaps the most comprehensive source he notes is Stephen Kaplan's (1981) Diplomacy of Power.

no clear indication that they could not be the superpowers or their allies, or that such conflict would inevitably be nuclear (Grechko, 1974: 322-23). Admiral S.G. Gorshkov, arguing in the early to mid-1970s the importance of the navy to imperialists in local wars, notes that such conflicts are "a broad variety of military operations" under today's conditions. In his argument about the increasing roles of the navy in the contemporary period and its function of protecting the state but also the state's "interests at sea," he implies the possibility of small scale Soviet naval engagements to protect allies in distant regions of the world (Gorshkov, 1976: 398-403, 409-410).

In addition to conflicts in the developing world, there was also a concern among Soviet leaders about possible military conflict with China. Tensions with China continued to worsen, and although there was some respite here after Khrushchev's ouster, relations between the countries did not significantly improve. Soviet perceptions of these relations revealed their problematic character (see, e.g., Zimmerman, 1969: 182-183).ii By the early 1970s, the Soviets were charging the Chinese with the desire for Asian domination, for collusion with the

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iiGelman (1982: 16-75) provides a useful history of the military dimensions of that conflict.

U.S. against the Soviet Union and for open hostility against the Soviet Union (Herrmann, 1985: 76-78). Still, the Sino-Soviet conflict, in spite of its frequent bitterness, never occupied center-stage for the Soviets during this period as the key military conflict they faced. As indicated earlier, the capitalist-socialist struggle was always perceived as the main locus of tension in international affairs.

At the same time, while the superpower conflict remained principal concern for Soviet leaders, the attention given to local warfare in non-European parts of the world suggests a greater awareness of the possibilities, if not opportunities, of involving Soviet forces in national-liberation or other anti-imperialist struggles. These concerns were important for Soviet perceptions of the types of military engagements they were most likely to face.

Initial period

On the initial period, many Soviet analysts suggested in the immediate post-Khrushchev period that a future war would be short or protracted, depending on the conditions (Kinter and Scott, cited in Monks, 1984: 51). A November 1965 Defense Ministry order to all "officers, generals and admirals and all military cadres" noted that increased attention should be given to working out problems of

contemporary war in conventional as well as nuclear conditions (U.S.S.R. Ministry of Defense, 1966: 14-15). A March 1966 Kommunist Vooruzhennykh Sil article immediately preceding the 23rd Party Congress noted that the CPSU assigned a predominant role to nuclear weapons but acknowledged a need to combine this weapon with other types. The Soviet Armed Forces, the article stated, "'must be prepared to guarantee the destruction of the enemy not only when nuclear weapons are employed, but also when only conventional weapons are employed'" (Prusanov, Kommunist Vooruzhennykh Sil, 1966; cited in Goldberg, 1985: 82).jj While no specific mention was made at the Party Congress about conventional variants in Soviet strategy (Goldberg, 1985: 83-84), the increased attention to such concerns in the media after Khrushchev's ouster suggested that some rethinking of the nuclear-conventional emphasis in strategy and force posture was under way.

For example, several Soviet authors argued that a limited war and, hence, the initial period of that war, might not be short if only conventional weapons were used (see Monks, 1984: 81). The underlying assumption here was that avoiding the use of nuclear weapons--i.e., escalation--would be the key factor determining whether the war was short or long. Chief of the Soviet Rocket

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jjSee also Zemskov (1969b: 57-58).

Forces Marshal Krylov noted in a 1967 article commented that while the decisive conflict between the two socioeconomic systems would inevitably be nuclear, there was a possibility that military operations may begin and continue "for some time" if only conventional weapons were used (Krylov, 1967: 15, 17-18; see also comments by Sokolovskiy and Cherednichenko, 1968: 37).

Examining the conditions affecting the length of the initial period, one writer in a 1970 Kommunist Vooruzhennykh Sil article noted that the initial period could be short if the West employed a surprise attack, but in other cases, the struggle could be protracted (Sosnov, 1970: 74). In Seapower of the State, Gorshkov forecast that a conflict with the West would probably be protracted, with the implication that the initial period could be long (cited in Monks, 1984: 81).

Concerning the use of nuclear weapons in the initial period, it was suggested that the initial period could be protracted if conventional weapons were used and perhaps if the war were a local or regional, in stead of global, one. In an comment on the topic in the early post-Khrushchev period, Colonel General Shtemenko commented in 1965 that although the Soviet Union was basically opposed to the use of nuclear weapons, Soviet military doctrine "does not exclude" the possibility of conventional or

limited tactical nuclear warfare "within the framework of so-called 'local' or 'limited' wars" (Shtemenko, 1965: 10). General Lomov later that year made the same observation but specifically mentioned such a "local war" possibility as occurring in Europe (Lomov, 1965: 16, 18).

Benjamin Lambeth (1974: 204) argues that the first authoritative statement on the possibility of an entirely conventional engagement in Europe came in a July 1967 Krasnaya Zvezda article by Warsaw Pact CINC I.Ya. Yakubovskiy. In this article, Yakubovskiy comments that, while nuclear weapons remain important, "one cannot speak in absolute terms about the role of nuclear weapons" in Soviet Ground Forces operations. Soviet forces, Yakubovskiy notes, must be prepared to conduct military operations with conventional weapons only, as the Party and government continue to attach significance to the development of these means of combat (Yakubovskiy, 1967: 3). Monks notes that this statement was important because previous statements about a conflict in Europe assumed implicitly or explicitly the use of nuclear weapons from the early phases (Monks, 1984: 78).

Brezhnev made a comment along similar lines in early 1967 when he noted at the Conference of European Communist and Workers Parties that the USSR no longer considered general nuclear war to be the inevitable outcome of a

European conflict (Brezhnev, 1967: 2).kk The following year, Grechko noted the importance of developing a mix of weaponry for the Armed Forces and that it was important for commanders to learn both conventional and nuclear techniques of battle. He notes that the ground forces must be able to "conduct successful military operations in any conditions--on land, in the air and on sea, day and night, both with and without the use of nuclear weapons" (Grechko, 1968: 2).

According to Major-General Zemskov in a 1969 article, the risk of escalation to nuclear war was "undoubtedly great," but it "could hardly be considered the only possible way" that war would begin or develop, given the destruction of a retaliatory strike. Zemskov noted that the likelihood of any particular variant "will depend on the actual international situation, the characteristics of the political, economic, and military-geographic situation...and other factors" (Zemskov, 1969b: 57-60).

Use of conventional weapons on the battlefield was given further support by Grechko in 1974, when he noted that conventional weapons had improved enough that troops could "'solve very decisive battlefield tasks without resorting to nuclear weapons'" (Grechko, Seapower of the State,

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kkBrezhnev's exact comment was that a war in Europe "could become thermonuclear," which implies that it also might not so develop.

1974; cited in Monks, 1984: 80; see also Meyer, 1983/4: 22-23).

The ambiguity of some statements on the issue of a possibly entirely conventional war makes reaching a definitive general conclusion difficult, but the emphasis on the possibility of a non-nuclear initial period seems clear. Any military planner would want to hedge bets in talking about avoiding the use of weapons as decisively powerful as nuclear ones, but these statements noted here stand in sufficient contrast with earlier ones affirming the utility of nuclear weapons that the inference of a shift during this period to an initial, if not primarily, conventional approach to war is reasonable.

As one acknowledges these bits of evidence that the Soviets were giving more attention to some ways in which warfare might be limited to conventional weapons, it is important to note, as Goldberg does (1985: 107), that Soviet declaratory policy did not admit the possibility that a conflict where nuclear weapons were introduced could remain a limited nuclear engagement. As Major-General Zemskov (1969a) noted,

> In a nuclear war...the combatants will use from the very beginning all the available forces and means at their disposal, above all strategic nuclear means (p. 19). The war will immediately assume a global scope (p. 20). A nuclear fire which has begun cannot be localized by anybody (p. 23).

Finally, on the issue of direct superpower involvement, there was, as indicated above, a significant amount of ambiguity among Soviet military writing on the direct involvement of the superpowers from the outset. The discussions in the Soviet press of global and local wars suggested the strong possibility that the superpowers might not be directly involved in a conflict from the outset, especially if it were a national-liberation struggle, or some other sort of non-European local war. The United States still continued as the Soviet Union's major nuclear opponent, but direct superpower involvement at the early states of a military conflict in which the Soviet Union found itself was not a foregone conclusion.

Subsequent/Concluding period

As suggested by the section on the initial period, the factors which could lengthen the initial period--the non-use of nuclear weapons or the pursuit of a conflict in a non-European part of the world-- could also lengthen the subsequent/concluding period. Grechko in 1969 spoke of global conventional wars, as did Gorshkov in 1976 (noted in Monks, 1984: 79-82). The Sokolovskiy authors noted in 1968 that war may start from a local conflict and "acquire an exhausting and protracted character" (Sokolovskiy, 1968: 335).

As was the case with the initial period, the fact that the Soviets were even considering a lengthy subsequent/concluding period was important to note, given the previous expectations of both a short initial period and short concluding period. It is also apparent from the sources addressing the initial period that the concluding period could be either nuclear or conventional, given such circumstances as where the war was being fought and whether one of the sides perceives itself losing and decided that escalation to nuclear weapons was preferable to anticipated defeat by conventional weapons. As Colonel General Povaliy of the General Staff noted in a 1967 article, whether nuclear or conventional forces are used "depends on the military-political situation in various sequences and the most varied conditions for the beginning of war....." "It is entirely possible," he commented, "that [the war] will begin and for some time will be conducted with the use only of conventional means of struggle" (Povaliy, 1967: 61).

Similarly, Major-General Zemskov noted that the nature and location of the objectives could have an effect on a conventional subsequent/concluding period. He commented in 1969 that it is possible that a future conventional war

> can be of long duration. This is understandable if one considers that the difficulty of a constant and powerful armed effort against the deep regions permits the retention of large resources of

> manpower and material and restoration of the losses of the armed forces in manpower and equipment. As a result, more and more forces can be deployed in the theaters of military operations. This will make it possible to continue military operations for a more or less lengthy time (Zemskov, 1969a: 23).

It seems important, therefore, to note during this period 1) that the Soviets were inclined to discuss at some length the possibility that war could remain conventional and 2) that there was a greater likelihood that a war might remain conventional in a theater other than the European, where both alliances had ready access to large quantities of nuclear weapons.

Outcome of a war; war as a policy instrument

On the issue of the outcome of a conflict, Monks notes that in the post-Khrushchev period as the opposition to Khrushchev's doctrinal ideas flowered, so did the idea that a victory of socialism was a more likely outcome than mutual annihilation. There was, Monks notes, some ambiguity and difference of opinion at the time (Monks, 1984: 51). For example, Western analysts such as Douglass and Hoeber (1979: 10-33), Pipes (1977), and McConnell (1985: 324-330) provide an extensive list of Soviet citations in the 1965-1975 period that affirm the view that victory in a nuclear engagement with capitalism is possible. Arnett (1979: 175-182) presents citations

during the same period which are less sanguine about the prospects of such a conflict.

Given these differences, one might say that while some Soviet authors may be sincere in their belief that a major nuclear war can be won, it is also possible that their positive comments on this issue reflect the necessity to present an optimistic perspective on this topic to the military readership, since there is general awareness of how destructive nuclear weapons are. As Arnett suggests, acknowledging the possibility, even if slim, of victory in a nuclear war is not necessarily to assert a preference to seek victory by those means (1979: 180-183).

The concept in this period of the outcome of war can be understood somewhat better in the context of the issue of war as a policy instrument. Writers on military affairs in the post-Khrushchev decade seemed to consider war as an appropriate instrument of policy in the cases of "just" wars, and national liberation wars. One Western analyst observes that the Soviets seemed to consider "just" wars to include those in defense of socialism and struggles waged by the world proletariat. "Unjust" wars included imperialist wars against socialism, counterrevolutionary wars against worker movements, wars

against nations seeking independence, and conflicts between rival imperialists (Monks, 1984: 76-77).11

On this topic, the authors of the 1968 edition of Marxism-Leninism on War and the Army, for example, note that any war waged by a people for "freedom and social progress, for liberation from exploitation and national oppression...is a just war" (Tyushkevich, Sushko and Dzyuby, 1968: 76-77). Grechko commented in 1970 that while war can have a "repressive" effect on historical development, it can also facilitate the elimination of antagonistic class divisions (Grechko, 1970: 3). The 1976 Sovetskaya Voyennaya Entsiklopediya, which he edited, notes that for "the development of world revolutionary progress and for the victory of socialism in the entire world, war between the two social systems is not necessary (Volkogranov and Tyushkevich, 1976: 307).

Keeping in mind the inevitable, if not expected, ambiguity in statements of this kind, not to mention the semantic problems of how the Soviets would evaluate the terms "just" and "unjust" in policymaking sessions, what conclusions can be reached on this topic? It seems that the Soviets during this period did see war as a potentially useful policy instrument when in the areas of

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11Also see Monks' discussion of Grechko's ambiguity on the issue of war as an instrument of policy (1984: 74-75).

support for national liberation movements and for certain regional allies who were opposed to further Western influence in their areas. While the Soviets would also have considered a war in defense of the Soviet Union to be a just war, it is also clear that the central policy direction here in the post-Khrushchev period was perhaps even more concerned than the previous leadership had been with not pursuing policies that would clearly provoke a major military crisis with the West. This concept found its expression in the frequent statement that war was much to be avoided as a way for the superpowers to settle their differences.

Perhaps the most concise treatment of this issue in the post-Khrushchev decade is Robert Arnett's (1979) essay. Arnett marshals a variety of Soviet sources which consistently and clearly elaborate the point that while the Soviets may assent that war is a continuation of politics, they do not perceive nuclear war as a practical instrument of policy. He quotes an 1965 article in Kommunist Vooruzhennykh Sil by Lt. Colonel Rybkin: "War is always the continuation of politics, but it cannot always serve as its weapon." Rybkin remarks that war can have a "'spontaneous reverse influence'" on politics by aggravating various tensions and class contradictions

within a nation (Rybkin, 1965).mm Dziak (1981: 18-19), noting Soviet comments on the utility of nuclear weapons in the event of war, adds a further interpretation. He comments that the Soviets, by such statements, suggest that nuclear weapons have political benefits even outside of their use in warfare.

Strategy

The Strategic Rocket Forces continued to be considered the primary branch of the armed forces during this period, though at the 23rd Party Congress in March-April 1966, the concept of the mutual importance of the strategic missile forces (the SRF plus ballistic missile submarines) and conventionally armed forces was given strong emphasis. Speaking after the Congress, Malinovskiy notes that nuclear missiles are the main means of deterring an aggressor and of decisively defeating him in a war. He observes that nuclear weapons were increasing supplied in the period following the 1961 22nd Party Congress in the form of ICBMs, SLBMs and operational-tactical missiles and "in corresponding proportion grew also the equipping

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mmMcConnell (1985: 321-330) presents a somewhat different interpretation of Soviet writing on this topic during the same period. While some Soviet writers may not have judged nuclear war as a viable policy tool, he argues that they did ascribe positive meaning to "victory" in a nuclear exchange. See also Goldberg (1985: 172-186) on Soviet responses to US discussions in the early 1970s of limited nuclear options.

of conventional weapons of combat" (Malinovskiy, 1966:3).nn Grechko himself espoused this position in a 1968 statement that while the various strategic nuclear forces would be "the basic means of combat," this fact does not diminish the roles of the other branches of the Armed Forces. Soviet military theory, he notes, indicates that victory would be achieved with the "combined efforts of all forces and means" (Polveka, 1968: 1).oo

As was the case earlier, the general Soviet objective in Europe, as noted by one Soviet author in 1966, is to avoid turning

> the large economic and industrial regions into a heap of ruins...but to deliver strikes which will destroy strategic combat means, paralyze enemy military production, making it incapable of satisfying the priority needs of the front and rear areas and sharply reduce the enemy capability to conduct strikes" (Sidorov, 1966: 59).

In his 1966 book Taktika, Reznichenko indicates how the combined arms offensive should proceed:

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nnAs noted in Chapter Three, Monks (1984: 52) suggests that the 23rd Party Congress gave "official sanction" to the mutual importance of nuclear and conventional arms. MccGwire (1987: 29, 338) contends it was at the December 1966 Central Committee plenum that the Soviets decided that war would not inevitably be nuclear and would not necessarily involve massive nuclear strikes on Soviet territory.

ooThe Soviet approach to deterrence by preparing sufficient capabilities to be able to fight a war if a war broke out has been discussed in the West as an interest in war-waging rather than deterrence. The Soviets make no such distinction in their military theory (see Monks, 1984: 53-54, 93-94).

> "The main purpose of offensive combat is the complete destruction of a defending enemy, and will now be achieved, first of all, by strikes of nuclear weapons and firepower of other means of destruction, and by the growing (in force) swift actions of the motorized infantry and tank troops coordinating with aviation and with paratroop drops" (Reznichenko, Taktika, 1966; cited in Douglass, 1980: 72).

Several Soviet authors in the late 1960s and early 1970s noted that a key goal would be to avoid pitched battles between major forces but rather bypass these, advancing in depth to capture major objectives. These objectives would include nuclear weapons and their launching platforms and stores, conventional weapons, bases, and personnel (Douglass, 1980: 50, 85-86).

A Major General Shtrik in 1968 offered further details on how the conflict should be prosecuted. He notes that to execute such attacks using conventional means of warfare (under the threat of the use of nuclear weapons), combined arms units including artillery, aviation, and air defense units will have to concentrate quickly and strike deeply and forcefully to encircle and destroy the large defensive groupings of the enemy. An important part of this attack will be turning movements and envelopments using echeloned forces, artillery, and "massive" amounts of aviation (Shtrik, 1968: 53-55).

Zemskov ascribes to NATO an ability to conduct a war "by stages," and cites a non-nuclear stage, a tactical

nuclear stage, and a strategic missile stage. While he downplays the possibility of an extended tactical nuclear stage, he devotes a lengthy discussion to a conventional phase in Europe, offering many of the same prescriptions Shtrik does. He notes specifically the importance of tank forces, airborne troops, and aviation (Zemskov, 1969b: 22-25).

Interestingly, by the mid-1970s, there apparently had been some further reevaluation of the emphases given nuclear and conventional forces in a European conflict. Lecture materials from the Voroshilov General Staff Academy indicate that Soviet military scientists had determined that on normal terrain (not mountainous or jungle), rates of advance of a Front offensive would not be significantly better with nuclear than with conventional weapons. Furthermore, a nuclear conflict could be expected to produce tremendous disruption in command and control, as well as delays in offensive advance. Because Soviet planners could not be certain of destroying all of NATO's key nuclear forces in a preemptive strike, the General Staff Academy materials advised planning for identical rates of advance in nuclear and non-nuclear environments.pp Given the command and

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ppThe significance of this provision is that a nuclear offensive on the ground was not thought to be significantly more effective than conventional weapons in

force reconstitution problems in a nuclear environment, not to mention the potential threat to the Soviet homeland if nuclear weapons were employed, the overall assessment these General Staff Academy materials suggested was that the Soviet capability to destroy NATO forces through conventional operations should be enhanced (Hines, Petersen, and Trulock, 1986: 123-124).

A more consistent emphasis on all the branches of the services continued through the early 1970s. Grechko's 1974 assessment seems a good summary of the Soviet view on this issue. He notes that, unlike Western military theories, Soviet military theory does not

> give preference in modern war to any particular branch of the armed forces. Soviet military science considers that modern war, if the imperialists unleash it, will involve all branches of the armed forces, coordination of goals, time and place. Each branch of the Armed Forces, each type of force, fulfilling its own tasks will contribute...to the overall goals of the war (Grechko, 1974: 177).

As one might expect from the above observations on the roles of the conventional and nuclear branches of the services, nuclear weapons remained very important, particularly as part of the strategic force posture. Nuclear weapons were considered the most important category in the Soviet weapons arsenal, yet the ones whose use was problematic. As Meyer notes, the concerns Soviet

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achieving established military goals and objectives.

military writers have expressed about the uncertainties of escalation, the military disutility of battlefield use of nuclear weapons, and about the demands placed on forces on a nuclear battlefield have indicated a lack of complete confidence among Soviets that they know how to manage a theater nuclear war (1983/84: 22).

While there were the usual comments in Soviet literature during this period about the readiness of the Soviet Union to repulse instantly an attack upon it and the presumption that the war following that attack may occur quickly. As Sokolovsiy and Cherednichenko commented in a Voyennaya Mysl' article, "it is hardly conceivable to count on full mobilization of the Armed Forces..." (1969: 36).

At the same time there were also indications that a future war would call upon far more than the forces in being at the initiation of the conflict. Major-General Zemskov, as cited above, noted that a "constant and powerful effort" in military operations for a "more or less lengthy time" necessitates the replacement of losses in manpower and equipment. Grechko in The Armed Forces of the State noted that to support the Armed Forces in wartime, it is important for the Soviet Union to accumulate strategic reserves and the ability to make a "rapid conversion of a military-economic potential into a

real military force." Continuing that stabilizing the operation of the national economy in time of war is critical to the war effort, he observes that "as is well known, it is impossible to conduct a war without a reliably functioning home front" (1975: 107). With all of these comments, Grechko points to possibility of a protracted war and the need to be prepared for same.qq While neither his nor Zemskov's comments explicitly assume a conventional conflict, it seems unlikely they would be expounding upon the need to strengthen and stabilize the military-industrial base during a war if they were assuming a central nuclear exchange early on.

There is obviously some tension between Soviet preparedness for dealing with a protracted conventional conflict and strategic exigencies for a conventional conflict in Europe. As Petersen and Hines note, if the Soviets are to win a conventional engagement in Europe--to achieve their military objectives before NATO uses nuclear weapons--the Soviets need to move fast and hard on the battlefield (1983: 716-721, 731-732). Whether the Soviets could expect to fight a protracted conventional struggle if they went on the offensive in Europe is doubtful.

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qqSee a similar discussion in Korniyenko and Korolev (1968: 30-35), who deal with some specific problems of nuclear conflict.

Therefore, perhaps the best way to reconcile the notions that 1) a focus on mobilization vs. forces in being suggests emphasis on a conventional rather than nuclear approach to warfare and 2) the Soviets need to pursue a quick victory in Europe to be successful is that the type of war assumed by Zemskov and Grechko is indeed conventional (since they make the assumption the Soviet military-industrial base has not been destroyed in a nuclear strike),rr but they are not assuming that the war has started with a Soviet offensive into Europe.

While the 1965-1975 period, like the preceding ones, is not without its ambiguity, there are numerous and significant indications that the Soviets during this period have been moving away from a nuclear orientation and toward a conventional orientation to warfare. Comments on the possibility of the use of conventional weapons, in a regional as well as a European conflict are fairly clear. Considering that these comments stand in marked contrast with statements of the previous decade about the utility of nuclear weapons, the conclusion that Soviet leaders were moving during this period toward a conventional warfare orientation seems clear.

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rrSoviet planners did not dismiss the possibility that the USSR's economy could be rehabilitated and mobilized even after a nuclear attack, though they conceded the highly problematic nature of doing so (see Sokolovskiy and Cherednichenko, 1968: 37-39).

CONCLUSIONS

Although Soviet statements about the various aspects of doctrine and strategy covered in this examination have not been without ambiguity, the general direction and substance of change from one period to the next appears clear. The conclusions drawn about change in declared doctrine and strategy, of course, have to be paired with the changes in force posture discussed in the next chapter to provide an important dimension of verification.

As a bridge from this chapter to the next, however, a summary here of the principal aspects of change will be helpful. In Tables 1-4, I use the chart developed in Chapter Two on methodology and summarize the doctrine and strategy developments discussed in this chapter for each of the three different periods. I have constructed columns as I did in the previous chapter and marked inferences from the military thought for a given period as these inferences addressed the hypotheses I posed. To indicate responses on issues whose options are multiple, I have provided brief explanations. For some issues where firm conclusions are difficult for a particular period, I have indicated so in a column labelled "Ambiguity".

The conclusions from the separate periods indicate that the late Stalin period was primarily conventional and

that the 1954-1955 period was basically a transition period but, on balance, was conventional.a By the middle of the 1956-1965 period, the orientation of Soviet doctrine and strategy had become predominantly nuclear, while the period afterward revealed an increasing emphasis on conventional warfare, though with a continued awareness of the importance of nuclear capabilities.

Because of the ambiguity inherent in Soviet discussions of some of the issues selected for this part of the assessment, the question of how well the hypotheses related to those issues can be falsified is somewhat problematic. The best responses are 1) that assessment of Soviet statements on some of these issues does require finely tuned judgment and 2) that the articles chosen for this part of the study were selected as the most representative of those utilized by Western scholars of these periods. Additionally, the indications of issues where ambiguity is present is an attempt at candor where the weight of the evidence is difficult to assess.

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aOne may notice in the chart that the "X" for this category is included parentheses. In accordance with the terms of the hypothesis, a focus by the literature on socalist-capitalist conflict would suggest a nuclear orientation. The Soviets, however, did not have a significant deployed nuclear capability for eight to ten years after World War II, so the socialist-capitalist conflict envisioned in the 1948-1953 period would have been conventional. The same is most probably also true for the 1954-1955 period.

Having established this characterization of the development of Soviet doctrine and strategy from officials' writing and public pronouncements, it is appropriate next to address changes in force posture and organization to determine how well the two sets of developments correspond.

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APPENDIX

Table 8.1: The 1948-1953 Period

	Conv. Focus	Nuc. Focus	Ambiguous
Doctrine Type of War:			
The laws of history hold that the socialist-capitalist struggle is the driving force for social development. The socialist countries, because of their inherently superiority, will be victorious. Wars in developing countries largely ignored.		(X)	
Character of War Development			
Initial Period:			
No real difference from subsequent/concluding period in character. Nuclear weapons may be used, but certainly will not be decisive. Superpowers will be engaged in conflict from beginning.		X (long) X (conv.) X (superpowers)	
Subsequent/Concluding Period:			
War assumed to be won by attrition of enemy forces. War will be long; primarily conventional; some use of nuclear weapons.		X (long) X (conv.)	
Outcome:			
Inevitable victory for socialism		X	
War as a policy instrument:			
Yes, but in self-defense from a capitalist attack		X	
Strategy			
Primary Services: Basically like World War II; Army will advance against enemy and seize territory in Europe; LRA will have deep interdiction role in theater		X	

Table 8.1 (cont'd)

	Conv. Focus	Nuc. Focus	Ambiguous
Importance of Nuclear Weapons: Marginal	X		
Forces in Being vs. Mobilization: Mobilization of Soviet society a key factor in victory of attrition	X		

Table 8.2: The 1954-1955 Period

	Conv. Focus	Nuc. Focus	Ambiguous
Doctrine			
Type of War:			
Probably a socialist-capitalist conflict, but inevitability uncertain; war in developing countries largely ignored	(X)		
Character of War Development			
Initial Period:			
Likely to be extended as victory achieved by successively stronger blows; serious attention to surprise and to use of nuclear weapons for decisive strike; superpowers probably involved from start	X (long) X (conv.)	X (superpowers)	X
Subsequent/Concluding Period:			
Probably long; probably conventional though some use of nucs	X (long) X (conv.)		
Outcome of War:			
Orthodoxy is that socialism is victor; some dissension that neither side can win	X		
War as a Policy Instrument			
Controversial; even hardliners see problems with nuclear use			X
Strategy			
Primary Services:			
Remains combined arms	X		
Importance of Nuclear Weapons			
Helpful but not primary; a supplement to existing firepower	X		
Forces in Being vs. Mobilization			
Focus remains on mobilization for attrition of enemy	X		

Table 8.3: The 1956-1965 Period

	Conv. Focus	Nuc. Focus	Ambiguity
Doctrine			
Type of War Socialist-capitalist, though likelihood alleged from time to time to have diminished; political and economic, but little military, support for allies in developing world		X	
Character of War Development			
Initial Period: Short, characterized by massive nuclear use; immediate superpower involvement		X (short) X (nuc.) X (superpowers)	
Subsequent/Concluding Period: Probably short; combined arms remains important for theater offensive, though services will use nuclear weapons		X (short) X (nuc.)	
Outcome: Socialism predicted victor, but a growing fear of mutual destruction		X	X
War as a Policy Instrument: Generally rejected, though some affirmation of concept	X		
Strategy			
Primary Services: SRF, though role of combined arms forces (with nuclear weapons) still affirmed		X	
Importance of Nuclear Weapons: Nuclear weapons are key for strategic and theater objectives		X	
Forces in Being vs. Mobilization: War will primarily be fought with existing forces		X	

Table 8.4: The 1966-1975 Period

	Conv. Focus	Nuc. Focus	Ambiguity
Doctrine			
Type of War: Socialism-capitalism the principal international conflict, but liberation struggles in developing world more the focus of conflict	X		X
Character of War Development			
Initial Period: Could be long or short, depending on political or military conditions;			X (length)
Strong likelihood of conventional conflict, though nuclear possible;	X (conv.)		
superpower involvement not likely immediate	X (superpowers)		
Subsequent/Concluding Period: Apparent emphasis on long period:	X (long)		X
but could be long or short, depending on whether nuc. or conv. weapons used			X (nuc. or conv.)
Outcome: Major focus on mutual destruction, though socialism probably the victor	X		
War as a Policy Instrument: No, except sometimes in national liberation struggles	X		
Strategy			
Primary Services: Consistent emphasis on combined arms, though SRF acknowledged important	X		
Importance of use of nuclear weapons: Important, but may not be politically or militarily desirable	X		X
Forces in Being vs. Mobilization Mobilization important, but forces in being important to maintain	X		X

CHAPTER IX

DEVELOPMENTS IN FORCE POSTURE AND DOCTRINE, 1946-1975

Matching force posture to doctrinal developments on conventional or nuclear warfare is difficult for several reasons. First, there is the issue of compiling evidence sufficiently precise to support hypotheses about nuclear-to-conventional shifts or vice versa. I will investigate this particular issue in more detail later, but the main difficulty here is the fact that some changes in force structure or weapons procurement could be interpreted as facilitating one type of warfare as well as the other.

Another issue is that Soviet decisionmakers cannot be interviewed to determine the steps they thought important to take in implementing such shifts. Therefore, the only plausible course of action is to construct hypotheses about those indicators that may arguably be related to changes apparent in declared doctrine and strategy. In examining these hypotheses, it is important to understand how conventional and nuclear forces operate to appreciate significance of certain force posture developments. Therefore, I have included brief explanatory comments at

the beginning of each to explain how individual developments are linked to an overall shift.

To examine the impact of doctrine and strategy change on force posture, I have chosen a series of eleven indicators. Some of these concern the manpower levels of the ground forces, their composition and readiness. Also important are the procurement levels and organization of the artillery, particularly the self-propelled variety, and of ground attack and close support aircraft. I will also examine budget levels for the various branches of the armed services, the procurement of tactical nuclear weapons, and field exercises.

As much as possible, changes in these indicators must be considered in the aggregate. Using any of these indicators in isolation may yield spurious inferences, especially considering that the changes being related in doctrine and strategy developments are trends that are sometimes subtle and in every case occur over long periods of time. To present the developments in these indicators, I will examine each individually and summarize their implications for possible shifts toward nuclear or conventional warfare. At the conclusion of the chapter, I will present the results of these summaries in table form.

Since many of these indicators involve quantitative trends presented as curves on a coordinate axis, I note at

this point that the main evidence I will use for change is whether there is any change in the slope or directionality of the trends plotted on the graphs during the specific time periods set forth in the previous chapter. Most of the changes for which data are presented in graph form are sufficiently visually clear that detailed quantitative analytical methods are unnecessary. Issues of lags and other considerations important to individual issues I will discuss as I deal with particular hypotheses.

As will become apparent, some of the graphs report data from Warsaw Pact deployments. Implicit in the use of this data are the assumptions 1) that a conventional war, if it occurred, would likely do so in Europe and 2) that inferences on Soviet doctrine and strategy may be adequately drawn by examining Warsaw Pact trends.

Regarding the first assumption, one might assert that conclusions based on Soviet force posture in Europe could be problematic, as conventional war that could involve the Soviet Union may occur in other parts of the world. This assertion cannot be disputed, but Eastern Europe is the one place outside the Soviet Union where Soviet troops have been located for over 40 years, so it probably makes as much or more sense to examine Soviet force posture there as anywhere. Furthermore, conclusions about doctrine based on force posture should theoretically not

vary significantly from region to region, since military doctrine and strategy (as opposed to operational art and tactics) are much more general conceptual frameworks.

Regarding the second assumption, it is generally understood that Warsaw Pact strategy and deployments are directed by the Soviet Union, so this assumption presents no confounding difficulties.

Before elaborating the hypotheses, it is first necessary to lay some conceptual groundwork in approaches to nuclear and conventional war. This discussion of principles underlying nuclear and conventional warfare will be stated in general terms, but the underlying assumptions will be that the principal conflict if interest is one that would be fought between the superpowers in Europe.

Nuclear and Conventional War

As is the case for any country which has sought to integrate nuclear weapons into its ground forces, the principle capability those forces provide is a tremendous increase in firepower--firepower which is largely indiscriminant and very destructive. Additionally, nuclear explosions also produce long-lasting and deadly contaminants, such as radiation and fallout, which can hinder troop movements through areas where nuclear weapons have been use. As military planners in the 1950s and

1960s considered how the use of nuclear weapons could affect the conventional battlefield, there were a number of conclusions that were apparent.a

First, this increase in firepower meant that nuclear fires could be used in place of artillery and aircraft strikes to soften up enemy defense before an attack. Indeed, a nuclear bombardment and subsequent thrust by ground forces could occur within such a short period of time (when compared to early pre-attack bombardments by artillery) that artillery, particularly heavy towed artillery, would be of little value. A second conclusion was that mobility and maneuverability of ground forces units would be a sine qua non for successful exploitation of nuclear fires. Such as the case because nuclear weapons could quickly wipe out troop concentrations. This dimension of the nuclear battlefield required that commanders not mass troops for an offensive. If troops were massed for an offensive, this preparation would have to be done quickly and the attack fast and forceful, lest the defensive forces have the opportunity to employ nuclear weapons against the attackers.

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aInformation in the following discussion in a variety of sources on the battlefield use of nuclear weapons. Among those sources are Heilbrun (1966), Midgley (1986), and Isby (1980).

A related conclusion was that in a nuclear battlefield, small maneuverable units would probably constitute the most effective formations. These units would not offer temporary targets for nuclear fires. Furthermore, if they were able to penetrate the enemy's line at various points, they might be able to deter the enemy's use of nuclear weapons, since the enemy in such conditions would want to avoid destroying its own troops in the process of firing at the opposing forces. Because a nuclear battlefield would be fluid, self-propelled artillery would be much preferable to towed artillery, and close-air support craft would have a reduced role because of the interpenetration of defensive and offensive units and because of the general absence of continuous fronts.

Another important aspect of the mobility necessary on a nuclear battlefield is that tanks, armored personnel carriers, and infantry fighting vehicles would be important components of ground units, both because the vehicles' speed which enables troops and tanks to stay together and because of the protection they provide to infantry.

Noting these characteristics of the nuclear battlefield, however, does not always provide clear criteria for differentiating force posture that support conventional, as opposed to nuclear, strategies. Tanks

and APCs, for example, are useful in both conventional and nuclear battlefields. More importantly, for opponents which both possess nuclear weapons, preparedness for a conventional war's becoming nuclear is vital, even if both sides anticipate only a conventional engagement.

These issues present important analytical difficulties for interpreting Soviet force posture changes in Europe. In understanding modifications favoring nuclear or conventional strategies, one has to discern developments that will not be mutually exclusive of one strategy or the other, but which will primarily enhance the capability to pursue one or the other strategy.b With this issue in mind, one is forced to construct hypotheses that can only be falsified in terms of degree rather than rejected categorically.

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bMyer (1978) posits a dialectical argument that the Soviet modernization of conventional forces was "a natural consequence of the nuclear revolution." He notes that the growing nuclear symmetry between the two sides in the early 1960s made the conventional advantage of the Warsaw Pact more apparent to Soviet planners and that these planners also realized that the use of nuclear weapons might preclude the attainment of political objectives (pp. 41-42). Myer effectively demonstrates that with improved conventional forces, "there simply is no requirement for the Warsaw Pact to initiate theater warfare with nuclear weapons" (p. 41). He shows in this way how conventional forces complement nuclear ones in the Soviet thinking on theater warfare and how the Soviets may have understood their decision to improve conventional forces in Europe. At the same time, however, his dialectical explanation does not account for why a modernization of conventional forces was the only conceivable "natural consequence" of the nuclear revolution for the Soviets.

Ground Force Developments

The Soviet Ground Forces are the logical place to start in discussing changes in force posture and organization useful in understanding developments in Soviet doctrine and strategy. As noted earlier, ground force units need to be smaller and more mobile and maneuverable to fight effectively on a nuclear battlefield. They would need to be prepared to go into battle quickly and with little mobilization. If ground forces acquire tactical nuclear weapons, they will have less need for conventional firepower. With these concerns in mind, I posit the following hypotheses:

1) A nuclear strategy would permit a reduced number of ground force personnel than would be necessary for a primarily conventional posture. A significant drop in ground force personnel levels over time may suggest leadership support for a nuclear strategy, while an increase in ground force personnel over time may suggest support for a conventional strategy.

2) While Category I divisionsc at a front would be important for both nuclear and conventional offensives, maintaining Category II and III divisions would really only make sense in terms of a conventional strategy, which would assume an engagement long enough for the troops to mobilize

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cThe Soviets have kept divisions at three category levels. Category I divisions have 75-100 percent of their manpower and all of their equipment; Category II divisions 50-75 percent of their manpower and all of their equipment, and Category III divisions 33 percent of their manpower and all of their equipment, though some of this equipment may be obsolescent (see Military Balance, 1973-1974).

and enter combat.d Some troop mobilization would occur before the beginning of a nuclear or conventional offensive, but this mobilization could not be extensive lest it send a clear signal to the opposing side of possible hostilities. Furthermore massing of troops would also present an appealing target for the opponent's nuclear weapons. A small number or an absence of Category II and III divisions would suggest a primarily nuclear strategy, while the presence of such divisions may suggest emphasis on a conventional strategy.

3) Integration of nuclear weapons into a conventional force structure would suggest a shift toward emphasis on a nuclear strategy, while reductions of such nuclear weapons would suggest a shift toward a conventional strategy. Additionally, a build up of conventional weapons for a theater ground force which already possessed nuclear weapons, assuming that force did not at the same time significantly increase its nuclear capability, could also suggest a move to a conventional strategy. Force planners in the latter scenario could arguably be shifting to a conventional strategy while maintaining the capability to fight a war if it escalated to the use of nuclear weapons.

4) Shifts in ground force organizational structure toward enabling units to operate more effectively with nuclear weapons would suggest a focus on nuclear strategy, while shifts in organizational structure toward enabling units to fight more effectively with conventional weapons would suggest an emphasis on conventional strategy.

5) Shifts in the design of equipment for the ground forces may be helpful to distinguish emphasis in nuclear or conventional warfare. For the present study, I will hypothesize that modifications in infantry vehicles to protect troops from radiation and fallout would suggest a move to a nuclear strategy. Increased conventional firepower and armament for infantry vehicles may suggest an emphasis on a conventional strategy.

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dThis indicator was identified by Goldberg (1985: 121-126).

With these hypotheses in mind, one can then turn to the development of the post-war Soviet army to trace the evidence for these hypotheses. As I examine these hypotheses, I will only discuss those aspects of the Ground Forces development which aid in the interpretation of the hypotheses.

Manpower and Readiness

Trends in overall personnel levels and in personnel levels of the Ground Forces are shown in Table 1 and Figure 1. After the war, Soviet Armed Forces were demobilized from 11,365,000 troops to about 2,824,000 from 1945 to 1948.e Of this concluding total, the Ground Forces numbered about 2,500,000 (Tyushkevich 1980: 371; Evangelista, 1982/83: 113-115). This change decreased the division total from about 510 infantry divisions to about 175.f Of these divisions at the end of 1948, about 1/3

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eThese figures were provided by Khrushchev in his January 15, 1960 speech to the USSR Supreme Soviet (see also Zakharov, 1968: 479). Matthew Evangelista comments that most Western analysts accept these numbers, in spite of the fact that contemporary US Government estimates were much higher (1982/83: 115). For the current assessment, it is not the actual numbers that are important but the overall trend in force levels.

fMackintosh (1967: 271) refers to 19 million men and 500 divisions in 1945; O'Ballance (1964: 189) reports about 510 divisions. These numbers may be high, since, at least in Mackintosh's case, it is based on a personnel total 8 million men higher than Khrushchev's manpower estimate. The 175 division total is a generally accepted number for 1948.

each were full-strength, partial strength, and cadre strength (Nitze, 1980: 173).g About 30 of these divisions were in Europe as occupation forces, and of these, perhaps 25 would have been immediately available for an invasion of Europe, while perhaps another 10-15 were available as reserves (Evangelista, 1982: 114).h

By 1955, the Armed Forces were increased to some 5,763,000, which still translated to about 30 divisions in Europe and 50-60 in the Western USSR (Tyushkevich, 1980: 409-410; Goldberg, 1985: 47).i Tyushkevich attributes this

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gThese labels are roughly similar to the Category levels noted earlier.

hTyushkevich (1980: 374) notes that Soviet manpower and readiness levels were somewhat increased in 1949. Mackintosh (1966: 280) elaborates that from 1949-1950, enlisted personnel service was increased from two to three years, while service for non-commissioned officers was increased from three to four years. A likely reason for this change could have been a perception of a undesirable decrease over time in forecasted available manpower, given the low birth rate. A proximate cause for the change might have been the conflict over Berlin, the formation of NATO, the Western criticism of events in Czechoslovakia in 1948, or a combination of the above.

iIn 1954, before the mid-1950's, Deputy SACEUR Viscount Montgomery reported 22 Soviet divisions in East Germany and 50-60 in the western USSR (Russia's Military Might, 1954: 45). Wolfe (1970: 39) argues that the 5.7 million figure, which Khrushchev provided in January 1960, is probably exaggerated, since it would suggest a very wide fluctuation in manpower levels from the early to late 1950s. Even if the correct total is somewhat lower, the fact that concern about international tensions would lead to such an increase in the Ground Forces makes an important statement about the contemporary orientation toward conventional warfare.

increase to Soviet concern about "imperialist aggression," probably referring to the US activity in Korea and, to a lesser extent, in Indochina.j

Starting in 1956, however, the Armed Forces began to be reduced again. For 1955-1956, reductions of about 1.8 million were announced, and in 1957 another cut of 300,000 was forecast. Both these cuts seem to have carried out in their entirety. These changes brought the armed forces from a total of 5.7 million to 3.6 million men (Record, 1975: 5; Wolfe, 1970: 164; and Seaton and Seaton 1986: 191). Of the final total, the Ground Forces seem to have constituted about 2.5 million men (Goldberg, 1985: 47).k By the end of these cuts, there were approximately 26 Category I divisions in Eastern Europe, 30 Category I and

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jThere is some uncertainty as to when the Ground forces were increased to the five million level. Godaire (1962: 43n) argues that when Khrushchev in his January 14, 1960 speech said that troops had been increased to this level "by 1955," he was avoiding direct mention that, on account of Soviet concern about the Korean War, the troops had been increased to approximately that level several years previously. Figure 1, however, reflects a rapid growth during this period rather than an immediate increase in 1952. The ambiguity about this assessment has no real effect on the arguments I make about the conventional warfare orientation of the early 1950s.

kIt is an obvious point, but one worth noting, that the Ground Forces constitute the bulk of the Soviet Armed Forces' manpower--approximately 2/3 of the overall total in the middle 1950s. Most of the time when cuts or increases are made in the Armed Forces, it will primarily be the Ground Forces that are affected.

30 Category II divisions each in the Western USSR and Central Military Districts (Goldberg, 1985: 124).

The next major series of cuts were announced in January 1960, when Khrushchev revealed his intentions to cut some 1.2 million troops from the armed forces. Part of the reason for this reduction, Khrushchev said, was because of the efficacy of nuclear weapons in ensuring Soviet security (Khrushchev, 1960).l These cuts were scaled back, the Soviet say, because of concern about the buildup of military strength in the West and in Japan, so that the actual reductions were about 600,000 (Tyushkevich, 1980: 411-412; Record, 1975: 4-6).m A cut of 600,000 was also planned in 1963 as a completion of the one scheduled several years earlier. This cut was not made at all, with the result that by 1965, the Armed Forces still numbered about 3 million men. Of this total, the Ground Forces comprised 1,750,000 troops. This total included 26 Category I troops in Eastern Europe, 30 Category I and 30 Category II in the western military

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lThe Scotts (1981: 305) question Khrushchev's comment on the efficacy of nuclear weapons as the reason for the 1960s reductions, suggesting that the need to increase the Soviet civilian labor force may have been a more important factor. This issue will be discussed in a later chapter.

mMackintosh (1966: 291) notes that an extra class of conscripts were retained at this time.

districts, and 13 Category II and 21 Category II troops in the central military districts (Goldberg, 1985: 123-124).

In the mid-1960s, the Soviet Armed Forces began to grow again. From 1965-1976, the Armed Forces increased to about 4.6 million men, of which the Ground Forces were about 1,825,000. This total included 31 Category I divisions in Eastern Europe, 20 Category I, 21 Category II, and 21 Category III divisions in the western USSR, and 12 Category II and 19 Category III divisions in the central military districts (Goldberg, 1985: 123-124).n This total includes some 43 divisions (15 Category I and 14 each Category II and Category III) in the Far East (Military Balance, 1975-1976). It is interesting that much of the growth in ground forces manpower that occurred from the mid-1960s to the mid-1970s was channeled to the groups of Soviet forces in Europe (Meyer, 1978: 50). This development is consistent with the idea that higher concentrations of conventional firepower at a front are necessary for a successful offensive.

In the mid-1960s, an important change in the conscription law for the Armed Forces was considered. The law was altered in 1967 to decrease the length of service in the land forces from three years to two years and in

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nOn this point, see also the Secretary of Defense Annual Report for FY1989 (1978: 21).

the navy from four years to three years. The minimum age requirement for the services was dropped from 19 to 18 (Seaton and Seaton, 1986: 192). With the existing three years' service and the current 80 percent induction rate, the services would soon have exceeded six million men, a level perceived undesirably high (by 1967, the number of males annually reaching 18 was approaching two million). Furthermore, the Soviets also seemed concerned with building up their reserve forces (Scott and Scott, 1981: 303-306).o

What one sees in examining overall manpower levels during the three decades after the war is a trend that points toward less people in the Ground Forces during a period when nuclear weapons were important and growth when there was an emphasis on conventional strategy. One might argue that the growth after the mid-1960s was mostly due to the larger number of 18-year olds in the population, but if the Soviet government had not sought such growth, it could have only conscripted a portion of the 18-year old cohorts or provided a greater number of deferments instead of supporting these men in the Armed Forces.

One could then argue in response that an increased number of deferments or some other change in universal

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oThe Scotts also note that this move would enable the conscripts to enter into the civilian labor force earlier (1981: 305-306).

conscription practice would have been unacceptable to the Soviets because of a desire that all able-bodied men have some military experience and be included as reservists. One would also assert by extension that the 1965-1975 growth in the Armed Forces was more a function of demographic trends than of a conscious decision to increase manpower. However, when one looks at manpower levels into the late 1970s and 1980s compared with the decreasing number of 18-year-olds, manpower levels remain constant or grow (cf. Figures 1 and 2).p If the growth in the Armed Forces in the 1965-1975 period was a function primarily of demographic trends, one would have expected manpower levels to drop as the 18-year old cohort did.

Changes in Category levels also yield interesting insights. As expected, during the troop cuts, units in Europe remained Category I. From the late 1950s until the end of Khrushchev's tenure, when the nuclear orientation was strongest, there were drops in both Category II and Category III forces. Along with the overall drop in force

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pIt is interesting to note that much of the growth in Armed Forces personnel from the late 1960s to late 1970s does not occur in the Ground Forces. This growth was spread generally among the SRF, Air Force and Navy, with the former two services benefiting most (Military Balance, various years). The reason for the growth in these services, to be noted later, was probably the substantial increases in hardware they received (ICBMs and tactical fighter aircraft, respectively) that needed crews.

levels, this change is consequent with the expectations that Ground Forces, and especially Category II and III divisions, would be of little use in a nuclear war.q

During the next decade, the Ground Forces were increased in size, which would be the expectation for a shift to a conventional orientation. Also, as expected for such a shift, the number of lowest Category divisions increased. Category II divisions decreased some--an unexpected shift--but this decrease, especially if measured from 1965, was fairly minor. What is probably the most significant trend during this decade in Category levels is that while total Ground Forces personnel increased by about 4 percent (75,000 men) from 1965 to 1975, the number of divisions increased by 15 percent (22 new divisions). This change signifies that there were many new divisions in 1975 at partial strength. This trend would indeed be consonant with expectations for a reliance on mobilization capability as part of a shift to a conventional warfare orientation.

Field Organization

Throughout most of World War II, the Soviet Army was comprised of infantry divisions; about 475 of the 500 Soviet divisionsr were rifle units. Two to four divisions

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qSee Figure 3 on Soviet mobilization potential for warfare in Central Europe; N.B. the length of time for complete mobilization for a conflict in Europe.

rThese are Mackintosh's division estimates.

made up a corps, with two divisions in the first echelon and one to two in the rear. Two to four corps comprised an army. Normally, there were three rifle companies in a battalion (324 men, plus others in the battalion's mortar and anti-tank units, etc.), three rifle battalions in a regiment (2500 men total; similar in size to a brigade), and three regiments in a division (9,000-10,000 men) (Mackintosh, 1966: 222-224).

The Soviets used four types of armies in the war. There were combined arms and guards armies, made up of three to four rifle corps with artillery, anti-tank, and other units. An assault army had heavier firepower and artillery for use against fortifications. Tank armies were comprised of two tank corps, and one mechanized corps. Each of the tank corps was made up of 189 tanks in three brigades (about 10,500 troops altogether) plus an infantry brigade. These tank corps also included artillery, rocket launchers, and other units. The Red Army also used mechanized corps, which resembled a tank corps, except that these had one tank brigade and three mechanized brigades. Each of the mechanized brigades had three motorized infantry battalions with an organic tank regiment (Mackintosh, 1966: 224-225).

After the war, about 110 of the 175 divisions remained as rifle divisions but were made a more mobile force

through the addition of transport vehicles. These divisions had 11,000 men (three regiments) and included a tank regiment (50-60 tanks) and artillery and other units. The remaining 65 divisions were reorganized as mechanized or tank divisions. Mechanized divisions had three mechanized regiments with one organic tank battalion (20 tanks), two tank regiments (120-130 tanks), and artillery. Tank divisions had four tank regiments (200 tanks total) and a motorized rifle regiment (2500 men) (Mackintosh, 1966: 272-273; Zakharov, 1968: 482-484).

The main differences from the World War II structures brought about by these changes were that tanks were made integral to rifle divisions, but decreased in proportion to rifle battalions for mechanized divisions. Tank divisions were maintained at about the same ratio of tank battalions to motorized rifle battalions, except that the new tank divisions were a little heavier on tanks. Another simplification was that guards and assault armies were dropped, so that there were now only combined arms armies (two to three rifle corps of two rifle and one mechanized division each) and mechanized armies (one or two tank divisions and two mechanized divisions each) (Mackintosh, 1966: 272-273). The chief result of all these changes, other than streamlining the structures, was to combine firepower with motorized rifle battalions.

As suggested earlier such a development would be pursued to enhance a conventional war capability. Indeed, as one Western assessment notes, Stalin's post-war army was definitely not designed to fight a nuclear conflict (Seaton and Seaton, 1986: 170). Not only did the orientation and structure of the units not reflect the changes expected to cope with a nuclear battlefield, the armored personnel carriers still had unenclosed rear cabins for the troops (Seaton and Seaton, 1986: 173).

In the mid-1950s, Defense Minister Georgiy Zhukov decided that the current mechanized divisions were too cumbersome for the rapid mobility required by developing nuclear warfare strategy. He therefore set about to abolish the corps-level command (between the division and the army) and to diminish the size of army-level organizations. Among his plans were to establish tank armies (three or four tank divisions and one to two motorized rifle divisions) and combined arms armies (three to five motorized rifle divisions and one tank division). Zhukov also intended to withdraw heavy tank divisions from mechanized armies and use them for independent tank combat groups at the disposal of the front or group commander.s

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sAnother justification for independent tank units was that tanks are more survivable in a nuclear environment, especially when the protection afforded by Soviet tanks at that time was compared to the protection afforded by personnel carriers (Karber, 1976: 107).

Additionally, Zhukov wanted to reorganize the artillery by withdrawing heavy weapons from divisions and armies and replacing this regular artillery with surface-to-surface and anti-aircraft missiles (Mackintosh, 1966: 296-297; Woff, 1981: 69).

These changes were underway at the time of the conflicts with Poland and Hungary in 1956. However, leadership conflicts involving these developments and other problems which eventually led to Zhukov's ouster in 1957 delayed these reforms. Many of them were eventually enacted, especially the replacement of mechanized armies by tank armies and the conversion of all rifle divisions to motorized rifle divisions (Mackintosh, 1966: 296-297; Garder, 1966: 199).

By 1965, Soviet tank divisions had ten tank battalions (300 tanks) but only three infantry battalions (1200 men), while motorized rifle divisions had six tank battalions (180 tanks and nine infantry battalions (3600 men). Tank armies at this time had approximately three tank divisions and four motorized rifle divisions (Seaton and Seaton, 1986: 183). Combined arms armies had two tank divisions and four motorized rifle divisions.

These tank armies, were therefore faster, more flexible, and easier to command than previous tank armies, capabilities which provided for fluid advance and pursuit.

At the same time, these tank armies lacked the staying power provided by the more numerous motorized rifle troops of the combined arms armies. They were also not as versatile (they could not overcome strongly defended localities), could not operate unaided in forests or built-up areas, and could not hold ground. Motorized rifle divisions, however, had both mobility and staying power. When dismounted, these units had the characteristics of infantry divisions with their own tank brigade support. When the troops were mounted, motorized rifle divisions were the equivalent of a western armored, rather than mechanized, division, since the latter had no organic tank units (Seaton and Seaton, 1986: 183).t

At this time, the Soviets also began to emphasize assaults from the line of march, where vehicles would form an assault from dispersed positions, perhaps in darkness, and then deploy from their assault columns (Seaton and Seaton, 1986: 181). Developments in armored personnel carries were also important during the first part of the 1960s because it was then that they were given an enclosed cabin for the troops and offensive armament against tanks and infantry (Seaton and Seaton, 1986: 188, 197-199; Madill, 1982: 57-59). This greater interest in mobility,

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tMotorized rifle divisions were formally constituted a branch of the Ground Forces in 1963 (Karber, 1976: 107).

maneuverability, and smaller force structures suggests a greater awareness of the requirements for fighting on a nuclear battlefield.

In the late 1960s, there were no significant changes made to the structure of the forces, but several other changes occurred that had important effects on how the Ground Forces would fight. From 1964-1967 the Ground Forces were without a commander (between Marshal Chuykov's departure and General Pavlovskiy's appointment) (Scott and Scott, 1981: 143).u This development was important in understanding the Soviet leadership's view of warfare. Khrushchev and his supporters in the political-military elite apparently abolished the Ground Forces Command because they perceived the Ground Forces role as being that of occupying forces after nuclear strikes had destroyed enemy troops and fortifications (see the section in Chapter Eight on strategy during this time). The reestablishment of the Ground Forces as an independent command suggests the positive reassessment about this time

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uScott and Scott also note a similar gap from 1951-1955, when they assert differences in the political leadership delayed the appointment of a chief for the ground forces (Scott and Scott, 1981: 143).

of the combat role of the Ground Forces (Holloway, 1982b: 379).v

When the Ground Forces reemerged as an independent command, the buildup in manpower and equipment that followed profited the roles of the MRD and accompanying artillery more so than the tank forces. By 1976, motorized rifle divisions had three motorized rifle regiments and one tank regiment, to which one tank battalion was added during the period. By 1976, tank regiments of the Group of Soviet Forces in Germany had incorporated a motorized rifle company, plus one motorized rifle regiment for the whole division (of three tank regiments).w This change amounted to about 1 1/3 more motorized rifle regiments per tank division. Within several more years, the motorized rifle companies in the Group of Soviet Forces in Germany and in other tank units had expanded to battalions. As a result these tank divisions have twice as many motorized rifle battalions as a motorized rifle regiment (Erickson, 1977: 43; Madill, 1982: 59).

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vAs argued in Chapters Three and Eight, while it is hard to date specifically the shift favoring conventional warfare, it seems reasonable to suggest that the principal dimensions shift must have occurred by the time of Pavlovskiy's appointment.

wUntil 1976, Soviet tank regiments generally did not have integral motorized rifle regiments (Erickson, 1977: 52).

These changes, for the first time, gave tank commanders a combined arms capability down to the regimental, if not battalion, level. With the addition of infantry, tank commanders could more easily mount assaults on prepared defenses and be better able to function in combined arms engagements (Madill, 1982: 59). In nuclear engagements, tanks can often be used in the first echelon (assuming the terrain is basically conducive to tank warfare), since the enemy's defenses would have been attritted by nuclear fires. In conventional conflicts, Soviet tank divisions are normally kept in the second echelon. The infantry and the artillery first attack the enemy defenses, especially the anti-tank units, to establish a breakthrough sector. When this sector is wide enough, the tanks follow and exploit the breakthrough (Isby, 1980: 71). Providing tank commanders with the firepower of more infantry better enables them to operate in a conventional environment. Indeed, during the early to mid-1970s, there seems to have been a general increase in firepower for Soviet divisions stationed in Europe. John Erickson (1977: 42-43) notes that from 1971-1976, Soviet forces in Europe increased by 100,000 troops, but no new formations were established; divisions were just packed with more firepower, both of troops and of weapons. Part of this improvement in firepower, discussed in more

depth later, was an important increases in fire suppression capability (provided especially by artillery improvements), in organic air defense, in anti-tank weaponry, and in logistics (for staying power) (Erickson, 1977: 41-44).

Another aspect of these improvements supporting conventional capabilities was the debate following the introduction of the infantry fighting vehicle (BMP) in 1967. The BMP was originally designed to exploit enemy defenses breached by a nuclear strike: it is fast and can operate independently, but it is not heavily armored for conventional warfare (Madill, 1982: 57-58; Donnelly, 1978: 1406). In the early to mid-1970s, there was a significant debate in the Soviet military literature about the problems of using the BMP against unreduced defenses, a debate concerning such issues as when troops should disembark and how the BMP's firepower can support these troops. This discussion, in the opinion of Western analysts, clearly pointed to the Soviet realization that use of the BMP was problematic in a non-nuclear scenario (Donnelly, 1978: 1406-1407). The debate was resolved in 1976 with the conclusion that the BMP was best used in the second echelon to exploit breakthroughs (rather than in the first echelon to take advantage of nuclear fires) (Donnelly, 1978: 1407; Madill, 1982: 57-59). Clearly,

this conclusion is consistent with an emphasis on conventional warfare.

By the mid-1970s, then, there were a number of important and consistent indicators in the structure and equipping of the Ground forces that suggested a greater emphasis on conventional warfare. Manpower levels had been increased, and units were equipped with more combined arms firepower than would be necessary in a primarily nuclear conflict. As was indicated in the previous chapter on doctrine and strategy, the Soviets continued to train for the possibility that a war in Europe may go nuclear, and maintenance of nuclear weapons (discussed below) and decontamination equipment in ground force structure reflect this concern. Overall trends, however, suggested a focus on conventional warfare.

Nuclear Weapons

Turning to the issue of nuclear weapons for the ground forces, the equipping of troops with these weapons is fairly easily documented. A Soviet source indicates nuclear weapons of various yields began to be come available in the Armed Forces in 1954. Over the next several years, operational-tactical missiles (a Soviet term indicating a range of several hundred kilometers) and tactical missiles (having a range of "dozens" of

kilometers)x were issued to the Ground Forces so that by October 1961, Khrushchev could say that the rearming of the Soviet Ground Forces with nuclear weapons "'has been completed in its entirety'" (Tyushkevich, 1980: 412-416; Seaton and Seaton, 1986: 174; see operational-tactical and tactical missiles on Figure 4).

Stephen Meyer (1983/84: 7, 54) notes that the mid-1950s was the initial period of the introduction of nuclear weapons to the Ground Forces, with the deployments of the SS-3 (1955), SS-4 (1959), Scud A (1957), and FROG (1958) missiles.y The first dual-capable howitzer was deployed in 1955, but not in extensive numbers (Hoffman, 1977: 1059; Bonds, 1981: 76-77). Since the mid-1950s, theater nuclear systems directly associated with the Ground Forces have continued to be modernized (along with other theater nuclear weapons) (Meyer, 1983/84: 54; Madill, 1982: 64-65; Record 1981: 43-44).

The introduction of nuclear weapons into the Ground Forces in the mid-1950s is consistent with an

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xWestern analysts most often use the following categories: medium range (600 mi-3400 mi), short range (300 mi-600 mi), and battlefield (less than 300 mi). In Western analyses, one sometimes also sees "medium range battlefield support systems" (101mi-500mi) and "tactical/battlefield systems (up to 100 mi).

yMeyer notes that the first Soviet medium-range nuclear bombers were deployed earlier, but these were not under the control of the Ground Forces (1983/84: 54; see Table 2).

interpretation that there was an increasing emphasis on nuclear warfare at that time. Although there was no diminution of these capabilities from 1965-1976, this fact does not necessarily contravene a shift toward a conventional strategy. There was no substantial increase in Soviet theater nuclear systems during this period, and it is reasonable to assume that the Soviets maintained these nuclear capabilities in order to be prepared to fight and win a theater conflict if were to go nuclear.

Artillery

The next indicator to be examined is artillery. As suggested earlier, artillery is important in a conventional offensive for suppressing enemy firepower and reducing enough of the enemy's front-line defenses to permit a breakthrough. If planners intend to use nuclear weapons at the beginning of a conflict, artillery becomes less important for several reasons.

First, nuclear weapons, because of their destructive capability, can create major holes in an enemy's front lines, essentially performing the task earlier accomplished by lengthy artillery bombardments. Second, in a conflict with nuclear weapons, conventional artillery is not that useful. It takes a much longer time to degrade enemy defenses with an artillery barrage than it does with the use of several nuclear weapons. Third,

artillery, especially in towed form, does not have the mobility necessary for a fluid battlefield. Towed artillery, especially the heavier guns, have usually needed to be lined up and trained on enemy positions before a barrage can be begun. On the nuclear battlefield, mobility and maneuverability are essential in the attack as well as the defense, not to mention the need to avoid massing forces. Traditional artillery in a way becomes something of a handicap. Artillery on a nuclear battlefield needs primarily to be self-propelled. Self-propelled artillery, like tanks, can be useful in meeting engagements and other such confrontations between small, maneuverable units to add incremental firepower selectively focused.z

One can argue, then, that if defense planners anticipate a greater likelihood that a theater conflict will be nuclear, conventional artillery will be largely replaced by nuclear-capable platforms, be they missiles or airplanes. Large nuclear-capable artillery may appear, but in small numbers, given the mobility problem and the fact that firepower can be delivered faster and in greater quantity by missiles and planes. Self-propelled guns may

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zAdditionally, self-propelled artillery, capable of direct fire, is better for suppression of anti-tank defenses than regular artillery, normally used only for indirect fire (Karber, 1976: 110).

also appear, but in relatively small numbers, since conventional firepower is not as effective as nuclear firepower.

One can then frame the hypothesis that, in the Ground Forces, a shift away from conventional artillery in favor of nuclear missiles should be a key indicator of a shift in planning for a nuclear conflict.aa Nuclear howitzers and self-propelled artillery may appear, but in relatively small numbers.

Conversely, while one might expect fewer nuclear weapons and more traditional artillery if a shift were to occur from a nuclear to a conventional emphasis, there is a greater likelihood that what would appear would be increased numbers of mobile artillery. Such would be the case since planners would have to take into account that a conventional engagement would become nuclear. For the same reason, while stocks of nuclear missiles and dual-capable aircraft might be decreased some in a shift from a nuclear to conventional emphasis, they probably would not be extensively reduced, as planners would need to retain an adequate nuclear capability if the conflict should escalate to nuclear use.

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aaNuclear-capable aircraft would also be important here, but these are discussed in a later section.

Artillery has always been highly regarded by the Russians. Particularly during the last years of World War II, Soviet artillery was one of the most important means of firepower brought to bear on the Germans. During the early years of the war, the Soviets had learned that the artillery was more effective in massive concentrations operated by skilled professionals than it was simply distributed among infantry divisions as was the case at the beginning of the war. By 1943, divisional artillery had been reduced, and separate artillery regiments and divisions had been created as part of the High Command's reserve.bb These units were allocated to the fronts as the High Command saw fit.cc Additionally, air defenses were also the responsibility of the front's artillery commander. In the latter stages of the war, artillery divisions were grouped together as corps (Mackintosh, 1966: 226-227).

In the post-war reorganization of the army, artillery and anti-aircraft units were organized as divisions, as was the case during the war, so with these forces there was no organizational change. From the mid-1940s through

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bbThese units included self-propelled guns, which where initially produced in 1942 to provide field and anti-tank units with mobile firepower (Hoffman, 1977: 1058).

ccThis use of artillery was borrowed from the Germans (Seaton and Seaton, 1986: 153).

the mid-1950s, Soviet artillery forces were improved, though basically in traditional ways. There were significant improvements in range and intensity of fire, and there were increases in production levels of tractor-towed artillery. There was a variety of guns produced during this time, included heavy, medium, and field guns, howitzers, mortars, and free-flight rocket salvo batteries mounted on trucks (Seaton and Seaton, 1986: 174). During the decade after the war, however, the General Staff maintained artillery production at a low priority. The range of some weapons was increased and obsolescent equipment was replaced, but even the conversion of standard artillery pieces to self-propelled units, vigorously pursued in World War II, was foregone (Hoffman, 1977: 1058-1059; Gordon, 1956: 363-364).

For the 1946 to 1953 period, there were three new pieces introduced (towed guns; all began service in 1953).dd In 1954 and 1955, six towed guns and howitzers were introduced, as well as a towed anti-tank gun. From 1956-1965, one towed howitzer, five rocket launchers, five anti-tank guns (two towed, two self-propelled, and one with an auxiliary motor for some mobility) were brought into service. Except for the rocket launchers, however, most of this equipment was designed to replace older

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ddSee Table 3 for post-war artillery development.

models (Hoffman, 1977: 1058-1059).ee As indicated earlier, this period also saw the introduction of the FROG tactical rocket in versions FROG 1 to FROG 7 (1957-1965), and the SS-1b (Scud A, 1957), SSC-1b (1962), and SS-1c (Scud B, 1965) operational-tactical missiles. During this period was also introduced a series of surface-to-surface missiles: SS-3 (1955), SS-4 (1959), and SS-5 (1961) (Meyer, 1983/84: 54).

From 1966 to 1975, there was a concern among Soviet defense planners with NATO's growing anti-tank capability. This period saw the introduction of two self-propelled howitzers (1974, 1975) as well as a towed gun, to meet this threat. These two self-propelled howitzers were the first new ones produced since the end of the war, and their turrets could train through 360 degrees (Hoffman, 1977: 1059-1060; see also Donnelly, 1979 and Karber, 1976).

This data, however, does not reflect deployment patterns, which were even more telling. As one can see from Figure 4, after a decrease from the mid-1950s in the production of all kinds of artillery except medium to heavy guns, the numbers of artillery tubes deployed on the

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eeHoffman (1977: 1060) notes that the Sokolovskiy authors remark in 1962 that to counter enemy missiles and tanks and overcome small pockets of resistance on the ground, only rockets and anti-tank missiles are appropriate.

Warsaw Pact central front (the GDR, Poland, and Czechoslovakia) picked up substantially in the mid-1960s in terms of mobile rocket launchers and, light artillery, and in the mid-1970s in terms of self-propelled guns (Goldberg, 1985: 130; Cordesman, 1983: 52). Heavy anti-tank capabilities on the Central Front increased markedly after the mid-1960s, as did overall artillery inventories (see Figures 4-6). From 1967-1977, the number of guns in mechanized infantry units alone tripled (Hoffman, 1977: 1061; see also Dick, 1979).

The fact that tubes were maintained but not significantly improved in the decade after the war suggests an awareness that traditional artillery would eventually be superseded by more powerful weapons and a realization that traditional firepower in the meantime was worthwhile to maintain. The introduction of nuclear missiles beginning in the mid-1950s suggests, as mentioned earlier, an awareness of the importance of the deployment of nuclear "artillery" with the Ground Forces and an emphasis on the possibility of a nuclear conflict in Europe.

The development of new self-propelled guns in the 1965-1976 period, and particularly their deployment in significant numbers, suggests a more to a conventional strategy because of a focus on traditional artillery

firepower. As was mentioned in the last section, the fact that the Soviets have maintained nuclear missiles in the Ground Forces need not contradict a growing orientation to a conventional strategy. In the absence of increases in conventional artillery, the normal modernization of these missiles could be cause for speculation that the Soviets were maintaining a nuclear orientation, but the development and deployment patterns of conventional tubes indicates otherwise.

In current Soviet thinking, the tasks of the artillery in a conventional battlefield that could become nuclear are suppression and destruction of enemy nuclear missles and other anti-tank weapons of all varieties, the destruction of anti-tank obstacles, and the support of assaulting troops (Donnelly, 1979: 1102).

Tactical Fixed-Wing Aircraft

In assessing trends in the development of the Soviet Air Force relevant to a nuclear or conventional approach to theater warfare, one has to examine the missions Soviets have for aircraft, what types of planes come into production when, and how the inventories of various planes compare. As was the case with the artillery, the principal issue here is how firepower is brought to bear against an opponent. In a theater nuclear engagement, firepower could be applied by missiles, long-range

bombers, or by tactical bombers. In a conventional engagement, firepower would most likely be applied by artillery, tactical bombers, and close support aircraft. In a nuclear battlefield, fewer tactical bombers are needed because of the greater lethality of the stores single planes can carry and because objectives assigned to such aircraft can also be targeted by missiles. Close air support is not as essential because the enemy's front lines would have been significantly reduced by nuclear fires.

The hypothesis I advance here is that the design and production of ground attack and close support aircraft would reflect a move to conventional warfare, if such planes have not been produced in significant numbers in the recent past. Design of aircraft for purposes other than ground attack and close air support would suggest a nuclear warfare emphasis, again under the assumption that such planes had not been produced in significant numbers in the recent past. An emphasis on nuclear warfare would also be suggested by the deployment of nuclear missiles and nuclear-capable interdiction aircraft. Since some attack and interdiction aircraft can be dual capable, I will compare the number of these aircraft to nuclear or conventional aircraft with regard to the relative efficiency of their use as nuclear or conventionally

armed. The criteria I will use here will be the firepower than can be brought against individual targets.

Soviet aviation, in terms of its missions and force structure, has developed differently from US aviation. During World War II, the Soviet air forces were primarily used in close support and ground attack roles. While one of the US Air Force's principal missions was strategic bombing, approximately two-thirds of the four million sorties flown by Soviet air forces in World War II were ground attack missions and other missions in support of ground forces. Indeed, all Soviet air units were under the command of the Ground Forces front commander (Berman, 1978: 5-6; Mackintosh, 1966: 228). Only about two percent of Soviet fighters in World War II were assigned to air defense, since there was no strategic bombing threat to the Soviet Union from the Germans and because of the dispersion of Soviet industry (Berman, 1978: 5-6). The Soviets had few bombers, and even after Long Range Aviation was reestablished in 1942, its planes were primarily used for transport (Berman, 1978: 6).

After the end of the war, Western air forces were moving toward jet propulsion and new designs and avionics. The Soviets, who had to adjust rapidly to these changes, did so in part by borrowing Western aircraft and engine designs. In terms of force posture, though, the Soviets

significantly downsized their air forces, from 70,000 to 15,000 planes in 1945 and 1946, and further during the next ten years (Berman, 1978: 7-8).

Faced with a growing threat from US strategic aircraft, the Soviet Union began in the 1950s to improve its air defense forces. Fighters allocated to air defense increased from 2,000 in 1950s to 5,000 in 1960. There was a drop in this total to 3800 by 1965, but during the 1960-1965 period, the air defense force virtually doubled its number of surface-to-air missiles (from 4800 to 8800). The air defense force (PVO Strany) was constituted a separate arm of the air forces in 1954 (Berman, 1978: 16).

Concern about air defense was quite logically reflected in fighter design.ff Of the six principal

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ffSoviet aerospace weapons have been identified as having a five- to ten-year research and development stage before IOC. Soviet aircraft and missile requirements are decided at high levels of the military-political leadership and handed down to the design bureaus. This practice makes the R&D process shorter and simpler from that characteristic of most Western governments, in part because the "design competition" phase does not exist as it is known in the West. Airplanes have about a 5- to 7-year R&D phase, with the period being shorter in the 1940s and 1950s, when airplane designs were less complicated, and becoming longer as time progressed. Missiles, particularly longer-range systems, have been identified as having seven- to ten-year design periods. From information on IOC and first flights, one can approximate when the system entered the design phase (see Goldberg, 1985: 135-138; Meyer, 1983/84: 1-2; Berman, 1978: 3). Berman notes that since there is more turnover in fighter aircraft than bombers in most air forces, noting design differences in fighters can provide more current insights into technological change and developments in design

tactical aircraft designed in the post-war decade, four were clearly counter-air and a fifth had that capability. Similarly, of the five principal new fighter designs of the early 1960s, four had counter-air as their primary mission (Goldberg, 1985: 141; see Table 4 and Figure 8).gg

Air defense preparations, of course, would only be one part of an orientation to nuclear warfare. While the Soviets did have some medium-range bombers by the late 1940s, it was not until the mid-1950s that they were able to equip those bombers with enough nuclear weapons to be able to say that the Soviets had a nuclear bombardment capability. Furthermore, as noted in the earlier chapter, there was little discussion, much less development, of a Soviet strategic nuclear bombardment doctrine before 1954-1955. The Soviets' improvement of air defense capabilities in the late 1940s and early 1950s, therefore, must be understood as only a partial move toward a nuclear warfare strategy.

The situation for Frontal Aviation was different during these two decades. Frontal Aviation, primarily

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preferences (1978: 3).

ggLong Range Aviation also grew from 1950 to 1965, but only slightly (900 to 1075 planes, including both long- and medium-range bombers) (Berman, 1978: 25). According to Soviet literature in the 1950s, some fighters would accompany bombers to provide cover on regional or theater missions (Goldberg, 1985: 143).

focused on Europe, dropped from 16,000 aircraft in 1950 to 9,600 (1955), 4,000 (1960), then 3,200 (1965) (Berman, 1978: 29). These precipitous drops, plus the data above on mission designs, suggest that in tactical aviation, the Soviets were distinctly planning for air defense rather than ground support. Not only were Frontal Aviation inventories dwindling, but ground attack planes were not being replaced with new fighter designs.

The scene began to change after the mid-1960s. Of the six principal tactical aircraft that entered the design stage from 1966 to 1974, four were primarily ground attack aircraft, one was for close-air support, and one was for counter-air missions (see Table 4 and Figure 8; also Erickson, 1979: 73). In terms of inventories, air defense fighters dropped from 3800 to 2630 from 1965 to 1977 (surface-to-air missiles increased during this time from 4800 to 12,000), while Frontal Aviation grew from 3200 to 4600 craft (not including helicopters) (Berman, 1978: 16, 29; see Figures 7 and 19). During the 1966-1975 period, there was also a 58 percent increase from the previous period in the average ordnance load in tons these planes could carry and a nearly 300 percent increase in the offensive load carrying capacity (maximum combat radius

times ordnance load] [Berman, 1978: 32; see Table 5].hh Indeed, ordnance stations nearly doubled on planes designed in the 1965-1975 decade as compared with those planes designed in the fifties and early 1960s [Berman, 1978: 32]. These developments suggest that not only were Frontal Aviation planes being modernized and inventories increased, but planes were being improved in ways that added substantially to their deliverable firepower as ground attack aircraft.

Furthermore, to deliver nuclear weapons in the theater, the Soviets had developed medium-range bombers, but of those nuclear-capable tactical aircraft, the maximum number of nuclear systems they could carry was one, with a yield of 50-500KT [Meyer, 1983/84: 54; see Tables 6 and 2].ii Such a nuclear weapons system obviously contained a lot of firepower, but a plane's being able to carry only one weapon was an important limiting factor, since the aircraft could only strike one major target per sortie. Furthermore, the pilot could not discriminate in the degree of destruction he could cause a

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hhSee also Berman's useful charts on other technical characteristics of Soviet tactical aircraft of the 1960s and 1970s [1978: 48-51].

iiAll of these dual-capable tactical aircraft had been designed before 1968, but since their basic mission was ground attack, it is not surprising to find evidence that conventional capabilities constituted their primary design focus [Meyer 1983/83: 22].

target, as he could if the plane were armed with conventional stores. A dual-capable plane can clearly provide more flexibility to its ground attack role when it uses conventional weapons.

This flexibility fits in well with the changing role of artillery in the Soviet Ground Forces in the late 1960s and early 1970s and the ways these roles meshed with those of Frontal Aviation. Unprotected artillery batteries had been a concern of military planners from the beginning of the nuclear period, as suggested earlier, and the 1973 Arab-Israeli conflict revealed conclusively the vulnerability of unprotected artillery to counterbattery fire and air attack. This concern led to the deployment of more self-propelled artillery, and the deemphasis on preplanned area fire missions for Soviet artillery in favor of time-sensitive targets has led to a new role for Frontal Aviation. In taking over much of the deep interdiction and ground-support strikes earlier assigned to missile and tube artillery, Soviet tactical aircraft have provided more flexibility, both in terms of the platforms themselves as well as in the ability to carry a variety of conventional ordnance [see Schneider, 1979: 78, 80].jj

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jjIn comparing firepower delivered per man-year of combat exposure for US forces in Southeast Asia, William White notes that surface forces provided 13 tons, while

One other piece of evidence that bolsters the interpretation of the growing importance of aircraft for ground support involves the reorganization of Soviet air defense forces in the late 1970s that had been completed by 1980. The basic change during this period was that all ground-based air defense forces, including those supporting the Ground Forces, were subordinated directly either to the military district (if located inside the USSR) or to the Group of Soviet Forces commander (if located outside the USSR). The purpose behind this shift was to facilitate the conduct of air and air defense operation in any theater of military operations (Peterson, 1980: 274-275; see also Schneider, 1980: 134-135).

As part of this reorganization, provision was apparently made for the establishment in wartime of "army aviation," a structure used in World War II which involved the creation of an army-level aviation force. Such an organization would help in providing direct air support for the advance of tanks and motorized infantry while other air assets were involved in important deep interdiction tasks. This development reflects the

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fighter-bomber operations provided 365 tons. He concludes that "the mixture of battle inputs achieved through the use of tactical airpower is far richer in firepower than that for the surface forces" (White, 1974: 9-10).

importance now assigned to close air support for the Ground Forces (Petersen, 1980: 274-275).

Looking at the trends in design and production of tactical aircraft from the end of World War II, one sees the obvious focus on air defense from 1945 to the mid-1960s, to the near exclusion, in design as well as deployment, of ground support craft. These developments quite well reflect the growing focus of the leadership on the role of tactical aviation in a strategic nuclear war, though there was really no offensive nuclear capability or strategy until the mid-1950s. While these developments do not directly imply a perception that a theater war would be nuclear in its early phases, the lack of emphasis on ground support aircraft certainly reflects little preparation for a conventional conflict.

Developments in the years after the mid-1960s indicates a reconsideration of the requirements of conventional war. The design and deployment of an increasing number of ground support aircraft and the organizational steps to bolster Frontal Aviation's role in a theater conflict reflect a greater emphasis on the possibility of a conventional theater conflict.

Helicopters

As suggested above, the Soviets in the mid-1960s began to design and deploy planes that could assist the Ground

Forces by deep interdiction and ground attack. Yet a traditional task for Frontal Aviation--close air support--was not entirely met by fixed-wing designs. Indeed, only one plane was designed for close air support--the SU-25 Frogfoot, and this plane did not enter the design phase until the first part of the 1970s (Goldberg, 1985: 141; see Figure 8).kk As aircraft designs developed during the post-1965 period, this close air support role was assigned primarily to helicopters.

In the 1950s and 1960s, Soviet planners envisioned an important role for helicopters as military transports, and this approach to helicopters can be seen in the types and numbers of helicopters built during those years (see Hart, 1956: 291). While there were some helicopters built for ASW, most were utility and transport craft. As attention began to be focused on providing the ground forces with greater conventional firepower and support, helicopters were perceived to provide a suitable platform. They can loiter, are very maneuverable, and can carry a significant variety of ordnance. The Soviets, particularly in their

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kkIndeed, although aviation performs many of the same functions as artillery, the Soviets see aircraft as better suited to hit targets in the rear, because of the range and flexibility airplanes have to identify a target and strike immediately. Since the Soviets assign airplanes these sorts of missions, they use helicopters, more so than fixed-wing craft, for close air support (Donnelly, 1979: 1102; Epatko, 1979: 19).

military literature post-1965, had commented favorably on the US use of combat helicopters in Vietnam (see, e.g., Hansen: 1984: 241-242). The Soviets, however, added armor and firepower to their helicopters so that they could effectively attack tanks and withstand combat damage (Goldberg, 1985: 149-150).

Given the need for close air support for ground troops, the hypothesis for this aspect of tactical air power is that an absences of significant close air support capability would reflect a primarily nuclear orientation toward theater conflict, while the presence of such a capability would reflect a primarily conventional orientation.

Trends in the design and production of close air support craft are not hard to discern. As Goldberg indicates, from the late 1940s to the mid-1960s, there were no tactical aircraft designed whose primary mission was close air support (1985: 141; see Table 4). There were a number of transport and utility helicopters built during this period that were fitted with rocket or machine guns pods to provide covering fire for the troops they carried (the Mi-2, -4, and -8) (Isby, 1980: 316, 318).

There were, however, no dedicated platforms of fixed- or rotary-wing craft for close air support. This situation was partially rectified with the Mi-8C Hip, the

first assault version of the Mi-8 series, which entered the design phase in the mid-1960s and began to see service in the early 1970s (Goldberg. 1985: 141; see also Hansen, 1984: 245-247). Its primary mission is the delivery of troops, combat equipment, and supplies behind enemy lines (Taylor, 1981: 111-112).11

The Mi-24D Hind, which entered the design phase at about the same time as the Mi-8C and was introduced into the force structure in 1973, was the first dedicated close air support craft deployed since the end of World War II. Its primary missions are anti-tank, anti-helicopter assault transport, and search-and-destroy. Often Mi-24s fly as cover for Mi-8s (Taylor, 1981: 111-112; Hansen, 1984: 252).

Production runs for the two craft are shown in Figure 14. Design developments and production levels in rotary-wing craft in the 1965-1975 decade indicate the Soviets' serious commitment to providing conventional firepower support to ground troops in fast-moving combat situations.

11There was also evidence, beginning in the late 1960s, from Soviet maneuvers of Mi-8 versions, as well as versions of the Mi-4, being used in ground attack roles. Mi-24s were seen in maneuvers in these roles beginning in 1976 (Turbiville, 1977: 28, 30).

INF Systems

INF systems have been covered in part in the sections on the Ground Forces and the artillery, but some further examination may be useful. INF systems include bombers, tactical aircraft, air-to-surface missiles, and ground- and sea-launched surface-to-surface missiles. These systems are useful because of the tremendous firepower they provide for deep interdiction, destruction of massed troops, and degradation of prepared defenses.

One may hypothesize that the development and deployment of theater nuclear systems to support conventionally oriented ground forces would suggest a shift in emphasis to a nuclear warfare. Conversely, a reduction of such systems would suggest an increased emphasis on conventional warfare. As was asserted earlier, a military establishment that needed to be prepared for either type of engagement would not necessarily reduce its nuclear forces if it anticipated a significant or solely conventional phase to a conflict. Therefore INF forces may not necessarily serve as an indicator of an increased conventional orientation.

Table 2 and Figures 10 and 11 indicate the periods that the principal Soviet theater nuclear forces entered the design phase and began to see service. The rise in the quantity of weapons put into design in the early 1950s

and deployed in the mid part of that decade suggests the growing nuclear orientation to theater warfare during that time. The drop in number of new systems in design in the mid-1960s is a normal design cycle phenomenon between system generations (Meyer, 1983/84: 1-2). Indeed, from Figure 12, one can deduce that from 1953-1965, there was an average of 7.5 TNF systems in the design phase per year, and Tables 7 and 8 indicate that from the late 1950s through the mid-1960s, the government was bringing a substantial number of new systems into service each year. The strong interest during this decade in theater nuclear capabilities is also suggested by Figure 11, which shows that the 1955-1965 decade was the principal procurement period for M/IRBMs and medium-range bombers.

The 1966-1975 period shows somewhat of a drop in new TNF systems put into design, but not that much of a drop in new systems brought into service (see Tables 7 and 8). From Figure 12, one can calculate that there were an average of 5.2 TNF systems in the design phase per year. The information from these tables and the chart suggest continued support for the theater nuclear capability during the 1966-1975 decade, as does Figure 11, which shows no significant drop in bombers or M/IRBMs during this period. At the same time, the drop in modernization rates, while possibly a function of the lifespan of those

systems designed in the previous decade, may suggests a somewhat lessened interest in maintaining a wide range of modernized TNF systems. Perhaps the development and deployment in the late 1970s and early 1980s of the Tu-22 Backfire and the SS-20 through SS-23 was considered sufficient modernization. Therefore, while data for the 1966-1975 period show no real diminution in TNF capabilities, the various and significant increases in this area in the 1953-1966 period does suggest a strongly growing emphasis placed on nuclear force posture and, by extension, on nuclear warfare.

Service Budgets

Emphasis on nuclear and conventional warfare can also be traced through service budgets. One can hypothesize that increased funding for the Strategic Rocket Forces or Air Defense Forces would reflect a growing focus on nuclear warfare, assuming that investment in the other services was not increasing at a similar rate. Increased funding for Ground Forces or Frontal Aviation would suggest a growing conventional warfare emphasis, with the same assumption about the other services's budgets remaining constant or decreasing.

Service budget changes do not provide sufficiently precise information to make such changes a key indicator for inferences about doctrine and strategy developments.

At the same time, such information does help establish a context in which to interpret allocation preferences, so the indicator is therefore valuable for the overall assessment.

Data to differentiate Soviet service expenditures are difficult to obtain, particularly for the 1950s and 1960s. Until the late 1960s when this data became available, one has to base conclusions on inferences from more general information, such as found in Figure 13.mm In Figure 13, line C shows expenditures for military manpower. Line D, which is the difference between total military expenditures (Line A) and Line C, represents spending commitments on weapons R&D and procurement.nn

One can see that expenditures on manpower increase through the early 1950s, then begin to drop in the mid-1950s. This trend in decreasing expenditures continues at least into the early 1960s. If spending on manpower basically varies with manpower levels during this period (as one can conclude from Table 1 is the case), it would be logical to conclude that spending on weapons to equip

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mmAlthough an early effort to track spending in the 1950s, note that Figure 13 compares well with the appropriate section of Figure 18, produced much later.

nnNote that Line A is generally corroborated by Chart 20. The fact that the units of the two charts do not match is relatively unimportant, since it is not the actual expenditures that matter in this study, but the relative trends in spending across time.

those forces is also dropping. Then, from what is known about investment in R&D and procurement for theater and intercontinental nuclear missiles and air defense forces (see Figures 11, 14 and 15 and the previous section on fixed-wing aircraft), it would therefore not be difficult to surmise which services were profiting from the defense increases during this time. Even given that overall military spending was increasing during this time and that nuclear systems are less costly to procure and maintain than general purpose forces, the primary emphasis on improving nuclear force posture during this time is reasonably clear. The corresponding inference that this investment was designed to support a nuclear warfare orientation is also reasonable.

This inference is further strengthened when one considers ministerial organizational changes in the 1950s. In June 1953, the Ministry of Medium Machine-Building was established to oversee the production of nuclear weapons. The Ministry of General Machine Building, responsible for strategic missiles, was founded in April 1955. Two years later, it was absorbed by the Ministry of Defense, only to reappear under its original name in 1960. The Ministry of Machine Building, also responsible for some aspects of ballistic missiles, was founded from the Ministry of the Defense Industry in the early 1960s (Holloway, 1982a: 305-

306). The Strategic Rocket Forces, as noted earlier, was established as a service in late 1959. The fact that all these organizations dealing with various aspects of strategic nuclear weapons were initially established in the mid-1950s to mid-1960s clearly indicates significant leadership concern for implementing nuclear weapons into the force posture.

In contrast with budgetary data for the years before the mid-1960s, investment patterns are clearer for the 1966-1975 decade (see Figures 17-22). Funding for the SRF, the Air Defense Forces (except for a few years in the late 1960s), and the Navy (not traditionally a favored service) decreased as a proportion of the overall defense spending in the 1970s. The Ground Force's percentage increased until the early 1970s, and the Air Force's percentage increased substantially during the entire period.

From Table 1, one surmises that part of the increase in Ground Force expenditures were to support the higher troop levels in the Far East. Such is the case, but procurement of tanks, surface-to-air missiles, APCs, and artillery also contributed to the increases (Estimated Soviet Defense Spending, 1978: 4). From Figure 21, one can see that even though the Ground Force's share did not increase continually throughout this period, its share did

remain fairly constant in relation to the overall budget, which was significantly increasing throughout this period. The support allocated to the Ground Forces during this period provides further confirmation of the importance of that service for a shift to a conventionally oriented approach to warfare.

From Figure 7 and from intelligence reports, it is clear that most of the expenditures for the Air Force were channelled toward building inventories of fighter bombers and close support aircraft (see Estimated Soviet Defense Spending, 1978: 4). As noted earlier, this support is indicative of a growing emphasis on conventional warfare.

Exercises

Another gauge to judge the approach a military establishment takes toward conflict is to observe how it exercises its troops. It is logical to suggest that forces would train for the type of conflict they expected to fight. Therefore, one could hypothesize that if exercises primarily assume a nuclear engagement or if they simulate nuclear fires early, the military leadership probably anticipates a nuclear engagement. Conversely, if the exercise is conventional in its entirety or if a nuclear strike is not simulated until well into the exercise, the military leadership probably anticipates a primarily conventional conflict.

There is little sufficiently detailed information on Soviet ground force exercises in the 1950s. Evangelista (1988: 178-179) notes that Soviet troops were exercised with nuclear weapons beginning in 1953, when they were exposed to a nuclear environment, similar to the Desert Rock exercise of U.S. troops in 1952. Ground and air forces began to receive more training in nuclear weapons after those services began to receive nuclear weapons in 1954.

While there had been some joint training with Soviet and East European troops in the 1950s, it was not until the 1960s that the first large-scale exercises began. Early exercises, such as "Brotherhood-in-Arms" (September 1962), "Quartet" (September 1963), and two in 1964 were orchestrated almost as a drill. There was a NATO attack, a WTO counter-attack, then a simulated nuclear exchange; this pattern was re-staged for northern and southern tier forces. "October Storm", the first really large-scale exercise took place and involved a "pause" before the nuclear exchange. In this exercise, Polish and Czech troops had the assignment of stopping and holding the NATO attack for three days, while the Soviets airlifted Polish units to the forward area. Then there followed a Warsaw Pact counter-attack and a simulated nuclear exchange

(initiated by NATO). The September 1966 exercise "Vltava" was nuclear from the outset (Erickson, 1971: 93-94).

The Soviets in September 1967 staged the massive "Dnepr" unilateral exercise, with the Byelorussian Military District (as the western forces) attacking the Kiev Military District (as the eastern forces). This exercise, which was entirely non-nuclear, was a wide-ranging tactical battle employing significant numbers of motorized and tank units and helicopter-borne "tactical landings" (Erickson, 1971: 19-20, 94-95).oo

A series of exercises were staged in the spring and summer of 1968, in part to put pressure on the Dubcek government. These exercises, including "Sumava" (June), "Sever" (July), "Niemen" (July), and "Sky Shield" (August) were non-nuclear, except for part of "Niemen".

"Dvina" (1970) included a nuclear phase, but it is thought that this phase was included primarily to test coordination of conventional and nuclear strikes (Erickson, 1971: 94-95; Wolfe, 1970: 478-480). Soviet commentaries on "Dvina" note that nuclear battlefield

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ooSeveral Soviet commentaries on "Dnepr" occasionally mention the contribution of rocket troops, but the implication seems to be that those units were conventionally armed. The discussion of the activities of these troops takes place in the context of conventional maneuvers, and there are no references to nuclear warheads or strikes. See "Dnepr" (1968), Ponizovskiy (1968), Kuz'min et al. (1970: 211-220, 288), and Gol'tsev (1974: 5-36).

weapons (FROG-3s and -5s, to judge from the accompanying pictures in one volume) were used on the second day as the first stage of an effort to break through the "enemy's" heavily fortified defense. These weapons were used in conjunction with artillery and air strikes after the first echelon had made contact with the enemy (Ryakov, 1970: 76-80; Kuz'min et al., 1970: 108).pp One commentary reports that nuclear weapons were used later in the battle, both by the attacking (Soviet) forces as well as by the "enemy" against paratroop units of the attacking force (Kuz'min et al., 1970: 146-147). It seems a more important point, though, that the presentation of this exerxcise in these two books focuses almost entirely on conventional operations.

Of exercises conducted in the next several years, "Yug" (1970) apparently involved only conventional weapons, while submarines in "Okean" (1970), a primarily naval exercise, fired SLBMs (Gol'tsev, 1974: 104-105, 115-136). "Shield-75" also involved conventional and nuclear operations (Brown, 1975: 68).qq

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ppInterestingly, these Soviet commentaries on "Dvina" only mention the use of battlefield nuclear weapons. One would imagine, but cannot be sure, that INF forces were exercised as well.

qqScott and Scott (1981: 203-204) and Wolfe (1970: 478-480), present lists of other exercises but include little additional information on these events.

While the Soviets would be expected to train for the possibility of nuclear escalation in a theater engagement even if they preferred the conflict remain conventional, the inclusion of more than a token conventional phase at the outset of exercises suggests that the Soviets, from the mid-1960s, began to consider seriously and plan for the possibility of a lengthy conventional phase of the conflict. Soviet-Warsaw Pact exercises, while arguably just rehearsals for various contingencies, do suggest that the contingency of a conventional engagement, or a least not an early escalation, was more a part of Soviet planning by the late 1960s.

Conclusions from Chapters VIII and IX

Tables 1-3 in Appendix 1 summarize the conclusions reached concerning the indicators discussed in this chapter. As one can see, the indicators are fairly consistent with the conclusions from the previous chapter on the basic orientation toward nuclear or conventional war.rr Assuming the validity of the hypotheses linking the changes in force posture to the basic orientations,

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rrThe 1954-1955 period can best be understood as one of transition, given its short length and the fact that thinking on the uses of nuclear weapons had been developing only a short time. Here, it seems more appropriate to treat it, not as an independent period, but as part of the earlier time frame, since it was not until the mid-1950s that Soviet thinking on nuclear war really began to flourish.

the evidence for the indicators appears less ambiguous about the nuclear or conventional orientation than some of the response patterns of the declaratory doctrine.

I have used the same basic format as for the previous chapter. I summarize the evidence for the indicators and note its significance. As before, the column labelled "Ambiguity" is to indicate the existence of evidence that contradicts the principal conclusions drawn from a body of information. If there is scarce evidence, but the evidence that exists seems to point in a consistent direction, I have not put a mark in the "Ambiguity" column. In cases where there is no evidence at all, I have not put a mark in any column.

By comparing the series of charts at the end of this chapter and the previous one, it is clear that there is substantial accord--that trends in force posture and organization parallel trends in declaratory doctrine and strategy. The indicators are consistent among themselves and reflect measures in the anticipated direction (if not strength) anticipated from the doctrinal and strategy changes discussed in the previous chapter. Time lags in force posture developments do not create interpretive problems here. While procurement in the 1955-period, especially for more complicated systems such as strategic

missiles and modern tactical aircraft, does lag the change in doctrine and strategy by the anticipatedamount of time,ss new designs seem to be undertaken roughly contemporaneously with the doctrine and strategy shift.tt There also do not seem to be significant lags in other indicators, such as manpower levels, force organization, or budgets.

By 1975, the Soviets had made major strides in improving force capabilities, particularly in Europe, to fight a conventional war for a significant period of time before they would need to escalate the conflict to the nuclear level or risk losing. Doctrinal statements suggest that the nuclear capability is still important to the Soviets, and INF design, IOC, and procurement information supports this concern, not to mention the growth in the strategic nuclear arsenal in the 1970s. Furthermore, having expended such effort to build a power and diverse nuclear posture, one would not have expected the Soviets to let it become obsolete.

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ssBasically the length of time it takes to design and develop a particular system, be it a missile, airplane, tank, etc.

ttGiven the number and variety of nuclear systems in R&D during Stalin's tenure, one imagines that had he lived into the mid-1950s, he probably would have sanctioned a change in doctrine to emphasize nuclear weapons.

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APPENDIX A

Table 9.1: Soviet Military Manpower Trends, 1946-1975

	1948	mid-1957	1960 (pre-cut)	1965	1969	1971	1973	1975
Armed Forces Personnel	2624	3923	3623	3220	3300	3305	3375	3575
Ground Forces Personnel (in thousands)	n/a	2650	2500	1750	1750	1750	1825	1825
Divisions by Region and Category								
E. Europe	25-30 I	32 I	26 I	26 I	32 I	31 I	31 I	31 I
W. USSR MDs	12 I?	60 I-II	30 I,30 II	30 I,30 II	20 I,20 II, 20 III	20 I,20 II, 20 III	20 I,20 II, 20 III	21 I,21 II, 21 III
Central USSR MDs	n/a	30 II-III	30 II,30 III	13 II,26 III	16 II,17 III	18 II,18 III	11 II, 17 III	11 II, 18 III
Far East MDs	n/a	31 II-III	10 I,5 II	10 I,7 II	10 I,11 II	15 I,15 II	15 I,15 II, 15 III	15 I,14 II, 14 III
Total Divisions by Category	60 I	n/a	66 I	66 I	62 I	66 I	66 I	67 I
	58 II	n/a	65 II	50 II	47 II	53 II	46 II	46 II
	57 III	n/a	30 III	26 III	37 III	38 III	52 III	53 III
Total Divisions	175	175	161	142	146	157	164	164

Sources: Evangelista (1982/83: 114) for 1948; Goldberg (1985:47), Main Trends in Soviet Capabilities (1957:53-54) for 1957; Goldberg (1985:47, 120, 122-124), Military Balance , various years, for 1960-1975 (see Chapter IX).

Table 9.2: Soviet Nuclear Delivery Systems

Soviet Nuclear Delivery Systems Assigned Primary Operational and Strategic Missions within the European Theatre(s) of Military Operations, 1950–82[a]

System	Service	Range[b] (km)	Yield	RVS	CEP (km)	Reliability[c]	Penetration
Aircraft							
Tu-4	1947	2,500	20KT–100KT	1	0.5–2.0	0.3–0.5	0.6–0.8
Tu-16	1954	2,500	300KT–5MT	2	0.5–2.0	0.3–0.7	0.6–0.8
Tu-22	1962	1,500	300KT–5MT	2	0.4–1.0	0.4–0.8	0.7–0.9
Tu-26	1974	4,000	300KT–5MT	4	0.1–0.5	0.6–0.9	0.8–0.9
Il-28	1950	1,000	20KT–100MT	1	0.5–1.25	0.3–0.7	0.6–0.8
Su-7	1959	500	50KT–500KT	1	0.3–0.6	0.3–0.7	0.6–0.8
Yak-28	1961	900	50KT–500KT	1	0.3–0.6	0.4–0.8	0.6–0.8
MiG-27	1973	1,200	50KT–500KT	1	0.1–0.5	0.6–0.9	0.7–0.9
Su-17	1972	700	50KT–500KT	1	0.1–0.5	0.6–0.9	0.7–0.9
Su-24	1974	1,600	50KT–500KT	1	0.1–0.5	0.6–0.9	0.7–0.9
Tu-95[d]	1956	6,500	500KT–5MT	4	0.5–1.3	0.2–0.5	0.5–0.7
Mya-4[d]	1956	5,000	500KT–5MT	2	0.5–1.3	0.2–0.5	0.5–0.7
Land-Based Missiles							
SS-3	1955	1,200	100KT–500KT	1	2.5–5.0	0.2–5.0	1.0
SS-4	1959	1,900	1MT–3MT	1	1.5–3.0	0.3–0.7	1.0
SS-5	1961	3,900	500KT–2MT	1	0.9–1.9	0.3–0.7	1.0
SS-12	1969	800	200KT–1MT	1	0.4–1.0	0.4–0.8	1.0
SS-14	1970	4,000	500KT–1MT	1	0.6–1.2	0.3–0.7	1.0
SS-15	1970	5,000	500KT–1MT	1	0.6–1.2	0.3–0.7	1.0
SS-20	1977	5,000	100KT–300KT	3MIRV	0.1–0.4	0.6–0.9	1.0
SS-22	1980	900	100KT–1MT	1	0.2–0.4	0.6–0.9	1.0
SS-11[d]	1966	—	500KT–2MT	1	0.4–0.7	0.6–0.8	1.0
SS-19[d]	1975	—	500KT–5MT	1/6MIRV	0.1–0.3	0.7–0.9	1.0
FROG-1	1958	35	20KT–100KT	1	0.6–1.0	0.4–0.8	1.0
FROG-3	1960	40	20KT–100KT	1	0.5–0.8	0.4–0.8	1.0
FROG-5	1964	60	20KT–100KT	1	0.4–0.7	0.4–0.8	1.0
FROG-7	1965	60	50KT–300KT	1	0.4–0.7	0.6–0.9	1.0
SS-21	1978	120	20KT–100KT	1	0.1–0.3	0.6–0.9	1.0
SS-1b	1957	150	20KT–100KT	1	0.8–1.5	0.4–0.8	1.0
SS-1c	1965	280	100KT–500KT	1	0.5–1.0	0.6–0.9	1.0
SSC-1b	1962	300	50KT–200KT	1	0.5–0.8	0.2–0.5	1.0
SS-23	1982	350	100KT–500KT	1	0.2–0.6	0.6–0.9	1.0
Sea-Based Missiles							
SLBM							
SS-N-4	1959	500	2MT–3.5MT	1	3.0–5.0	0.2–0.5	1.0
SS-N-5	1964	1,100	1MT–2MT	1	2.7–4.0	0.2–0.5	1.0
SS-N-6[d]	1968	2,500	500KT–1MT	1/3MRV	0.9–2.0	0.4–0.8	1.0
SLCM							
SS-N-3	1958	300	50KT–200KT	1	0.5–1.0	0.2–0.5	0.7–0.9
SS-N-12	1975	600	100KT–200KT	1	0.3–0.7	0.5–0.9	0.7–0.9
Air-Launched Missiles[e]							
AS-2	1960	200	200KT–600KT	1	0.5–1.5	0.2–0.5	0.7–0.9
AS-3[d]	1960	600	1MT–3MT	1	0.5–1.5	0.3–0.7	0.7–0.9
AS-4	1962	500	200KT–600KT	1	0.5–1.5	0.3–0.7	0.8–0.9
AS-6	1977	300	100KT–500KT	1	0.2–0.5	0.6–0.9	0.8–0.9

[a] Values pertain to initial service period.
[b] Combat radius for aircraft.
[c] Reliability includes system reliablity multiplied by operational readiness of deployed system.
[d] Initially developed for intercontinental strikes, but likely to be assigned to missions in the European theatre of military operations.
[e] Includes delivery vehicle performance.

Sources: Gunston; IISS; Treverton; Lee (1981); Collins; Isby; US DOD (various years), Van Diepen; Almquist.

Source: Meyer (1983/84: No. 188): 54

Table 9.3: Soviet Artillery Development

Date in service	Designation	Type	Calibre (mm)	Mobility	Ordnance range (m)	Remarks
I. Guns/howitzers						
1937	M 1931/37/A-19	Gun	122 0	Towed	20 800	
1938	M 1938/M-30	How.	121 9	Towed	11 800	
1942	SU-76	Gun	76 2	SP/T-70	13,200	
	SU-122/M-30S	How	122 0	SP/T-34	20,700	
	SU-122P/A-19	Gun	122 0	SP	19 500	
1943	SU-152	Gun/How	152 0	SP/KW-1S	12,400	
	SU-85/D-5S	Gun	85 0	SP/T-34	10 150	
	M-1943/D-1	How	152 0	Towed	12,400	Modified M 1938/ M 30/ M 10
	SU-100/D10S	Gun	100 0	SP/T-34	21 000	
1944	JSU 122/A-19	Gun	122 0	SP/JS	19 300	
	JSU 122S/D-25S	Tk gun	122 0	SP/JS	19,300	Also as JSU-122 BM version
	JSU-152/ML-20S	Gun/How.	152 0	SP/JS	17,300	Replaced SU 152 also as JSU 152 BM version
	M-1944/BS-3	Gun	100 0	Towed	21 000	
1946	M-1946	Gun	130 0	Towed	31 000	Derived from 130 mm SM 4-1 radar controlled coastal gun
1954	M-1954	Gun	130 0	Towed	27 000	
	M 1954/M-46	Gun	130 0	Towed	27 600	
1955	M 1955/D-20	Gun/How.	152 0	Towed	17 300	Replaced M 1944/ D-1
	M-1955/D-74	How.	122 0	Towed	23 900	Replaced M 1931/ 37/A-19
	M 1955	Gun/How.	203 0	Towed	29 250	Nuclear capability
	M-1955	Gun	100 0	Towed	21 000	
1963	M-1963/D-30	How.	122 0	Towed	16 000	Replaced M-1938/ M-30
1973		Gun	180 0	Towed	32 000	44 km with more powerful munitions
1974	M-1974	How	122 0	SP	21 900	Amphibious
1976	M 1976	How	152 0	SP	17,300	
II. Mortars						
1943	M-1943		82 0	Transp / towed	3 040	Obsolete
	M-1943		120 0	Towed	6 700	Modified M 1938
	M 1943		160 0	Towed	5 000+	Obsolete replaced by M 1963/M 160
1953	M 1953/M-160		160 0	Towed	8 040	
	M 1953/M 240		240 0	Towed	9,700	

Date in service	Designation	Calibre (mm)	Launchers/ tubes	Mobility	Rocket range (m)	Remarks
III. Rocket launchers						
1964	BM 24	240 0	12	On truck	10 800	
	BMD 20	200 0	4	On truck	19 000	
	BMD 14-16	140 0	16	On truck	10,400	Variant available for airborne troops
1957	BM 25	250 0	6	On truck	30 000	
	BM 14 17	140 0	17	On truck	10,400	
1964	BM 21	122 0	40	On truck	11 000	Possibility of 21 (RK) range
1966	M 1965	140 0	16	Towed	10 600	
	BM 28	280 0	6	On truck	30 000	
IV. Anti-tank guns						
1942	M 1942/ZIS 3	76 2		Towed	13,300	Light field gun
1943	M 1943/ZIS 2	57 0		Towed	8 400	Light AT gun
1944	M 1944/D 10	100 0		Towed	21,000	Replaced by M-1955/ 100 mm
	SU 76B	76 2		SP	13,290	?
	SU-74	57 0		SP	6 400	?
	SU 100/D 10 S	100 0		SP/T-34	21 000	
1945	M 1945/SD 44	85 0		Aux motor	15 650	
	/D 44	85 0		Towed	15 650	As SD 44, but without aux motor
1950	M 1950/B-10	82 0		Transp.	4 400	On tripod or wheels
1955	M 1955	100 0		Towed	21,000	Replaced M-1944/ D-10 Infrared
1958	HG 8-11	107 0		Towed	6,700	
	M 1955/SD	57 0		Aux motor	8 000	M 1943/ZIS 2 variant
1957	ASU 57	57 0		SP	7,000	Parachutable for airborne troops
1962	ASU 85	85 0		SP	9 000	SP airtransportable
1965	M 1965/T 12	100 0		Towed	21,000	Infrared replaced M-1955
V. Anti-tank missiles						
1962	AT 1/Snapper		3	BRDM	2 000	Wire guided
1964	AT 2/Swatter		4	BRDM	2 500	Radio guided
1965	AT 3/Sagger		1	BMP	3 000	Wire guided
						3 in reserve
			1	BMD		3 in reserve
			6	BRDM		Single or salvo
VI Tactical rockets and missiles						
1957/65	Frog 1/7			Frog 1	30 km	
				2	20 km	
				3	40 km	
				4	60 km	
				5	35 km	
				6	Training rocket	
				7	60 km	
1957	Scud A				180 km	
1965	Scud B				280 km	
1968	SS 12 (Scaleboard) (SRBM)				ca 750 km	

Source: Hoffman (1977: 1059)

Table 9.4: Soviet Tactical Aircraft Decision Clusters

Design Decision Period	Design Type	Primary Mission
1949/1950	MiG-17 (Fresco)	CA[a]
	MiG-19 (Farmer)	CA
1953/1954	MiG-21 (Fishbed)	CA
	SU-7 (Fitter)	GA[b]
	SU-9 (Fishpot B)	CA
	YAK-28 (Brewer/Firebar)	CA/GA
1961/1962	MiG-23 (Flogger B/G)	CA
	MiG-25 (Foxbat A)	CA
	SU-11 (Fishpot C)	CA
	SU-15 (Flagon A-F)	CA
	SU-17 (Fitter C)	GA
1966/1967	MiG-27 (Flogger D/F)	GA
	SU-24 (Fencer)	GA
	MI-8 (HIP C/E)	CAS[c]
	MI-24 (Hind A/B/D/F)	CAS
1973/1974	MiG-29 (Fulcrum)	GA
	MiG-31 (Foxhound)	CA
	SU-25 (Frogfoot)	CAS
	SU-27 (Flanker)	CA

[a]Counterair

[b]Ground Attack

[c]Close Air Support (short-range assault missions for troop support)

Source: Goldberg (1985: 141)

Table 9.5: Frontal Aviation Capabilities

[redacted] Capabilities of Frontal Aviation's Aircraft in Three Design Generations, 1946–75

Design generation and aircraft	*Ordnance load (tons)*	*Maximum combat radius (miles)*	*Offensive load carrying capacity*[a]	*External ordnance stations*[b]	*Maximum speed (Mach number)*
First (1946–55)					
IL-28 Beagle[c]	2.2	600	1,320	3.0[d]	0.80
MIG-15 Fagot	0.5	280	140	2.0	0.87
MIG-17 Fresco	0.5	360	180	2.0	0.96
MIG-19 Farmer	0.5	400	200	2.0	1.35
Average	0.9	410	460	2.3	n.a.
Second (1956–65)					
MIG-21 Fishbed D	1.0	200	200	2.0	2.00
SU-7 Fitter	2.0	300	600	6.0	2.00
YAK-28 Brewer	2.2	500	1,100	3.0[d]	1.10
Average	1.7	333	633	3.7	n.a.
Third (1966–75)					
MIG-23 Flogger B	2.2	525	1,155	5.0	2.30
MIG-27 Flogger D	2.2	600	1,320	7.0	1.60
SU-17 Fitter C	3.0	600	1,800	8.0	1.60
MIG-21 Fishbed J	1.0	400	400	5.0	2.10
SU-19 Fencer	5.0	800	4,000	6.0	2.30
Average	2.7	585	1,735	6.2	n.a.

Sources: Green and Swanborough, *The Observer's Soviet Aircraft Directory*, pp. 53, 143, 162, 170, 177, 203, 210, and 242; and R. Meller, "Europe's New Generation of Combat Aircraft," pp. 180–81.

n.a. = not applicable.

a. Maximum combat radius times ordnance load.

b. Hard points to which bombs, missiles, spare fuel tanks, or electronic parts can be attached; the number is a measure of versatility.

c. A Chinese version of the IL-28 Beagle is reported to have an ordnance load of 3.3 tons (*Allocation of Resources in the Soviet Union and China—1976*, Hearings before the Subcommittee on Priorities and Economy in Government of the Joint Economic Committee, 94:2 [GPO, 1976], p. 94).

d. Includes internal storage area for bombs.

Source: Berman (1978: 32)

Table 9.6: Dual-Capable Aircraft

SOVIET DUAL-CAPABLE TACTICAL AIRCRAFT
1984

System	IOC	Warheads/ System
SU-7	1959-1960	1
SU-17	1971	1
SU-24	1974	1
MiG-21 (J-N)	1970	1
MiG-27	1974	1

SOURCE: The Military Balance 1984-85

Source: Goldberg (1985: 162)

Table 9.7: Soviet Theater Nuclear Weapons Systems*

Years	New Systems Entering Design Phase	New Sytems Entering Service
1946-47	1	1
1948-49	2	0
1950-51	2	1
1952-53	5	0
1954-55	3	2
1956-57	2	3
1958-59	2	5
1960-61	2	5
1962-63	3	3
1964-65	0	4
1966-67	2	1
1968-69	4	1
1970-71	2	2
1972-73	1	2
1974-75	1	4
1976-77	0	2
1978-79	0	1
1980-81	0	1

Source: Based on Meyer (1983/84: 54, 56)

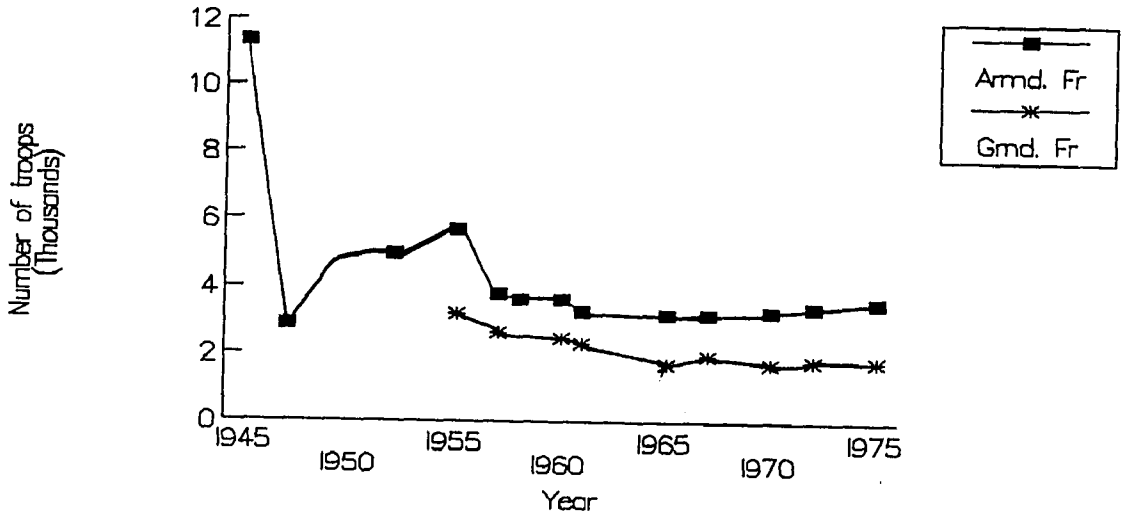
*Does include 4 dual-capable aircraft (whose roles may not necessarily be nuclear); does not include dual-capable artillery (approximately 8 potentially dual-capable artillery systems were put into service during these years.)

Table 9.8: Soviet TNW Design and Production Cumulative Statistics

Period	Cumulative Systems Entering Design Phase During Period	Cumulative Systems Entering Service During Period
1946-53	10	2
1954-55	3	2
1956-65	9	20
1966-76	11	11

Source: Based on Table 7 above

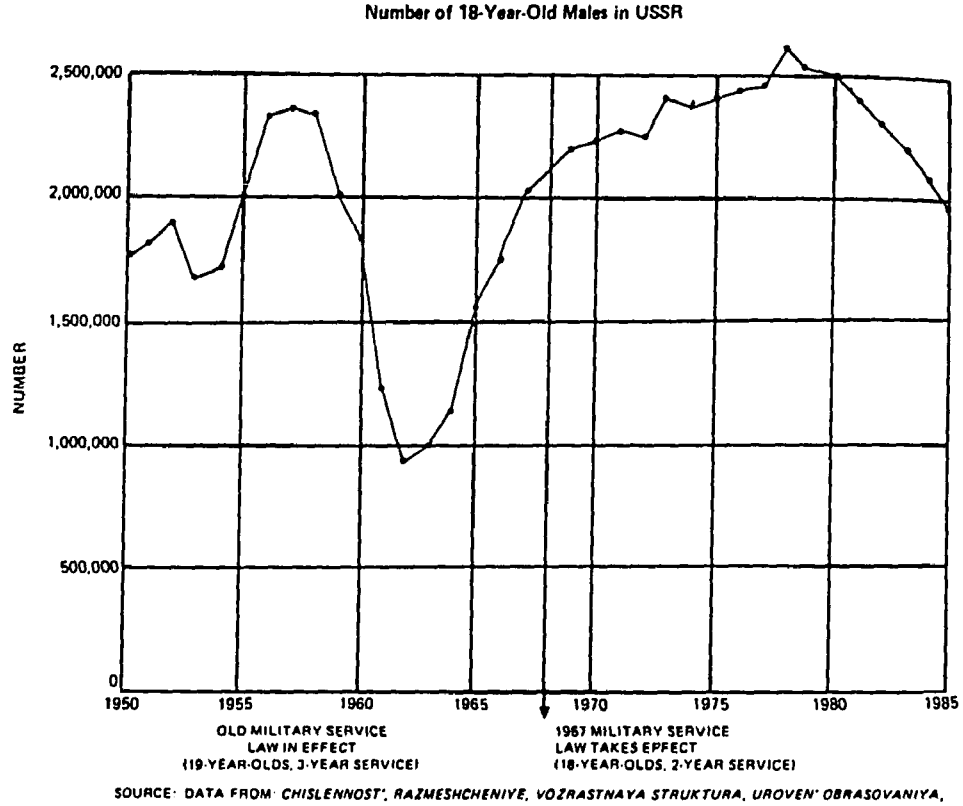
Manpower Levels: Soviet Armed Forces and Ground Forces



Sources: Goldberg (1985: 47, 123), Military Balance, various years; Tyushkevich (1980: 410-411); Main Trends in Soviet Capabilities (1957: 73)

Note: Ground Force numbers before 1960 are somewhat inflated, as they have usually included the 200,000-250,000 troops of the Air Defense Forces ground personnel. These troops are excluded after 1960. The Armed Forces numbers, particularly after 1960, do not include internal security or construction troops. Reliable data on Soviet Ground Forces personnel before 1955 is unavailable. See p. 666n on the 1950-1955 period.

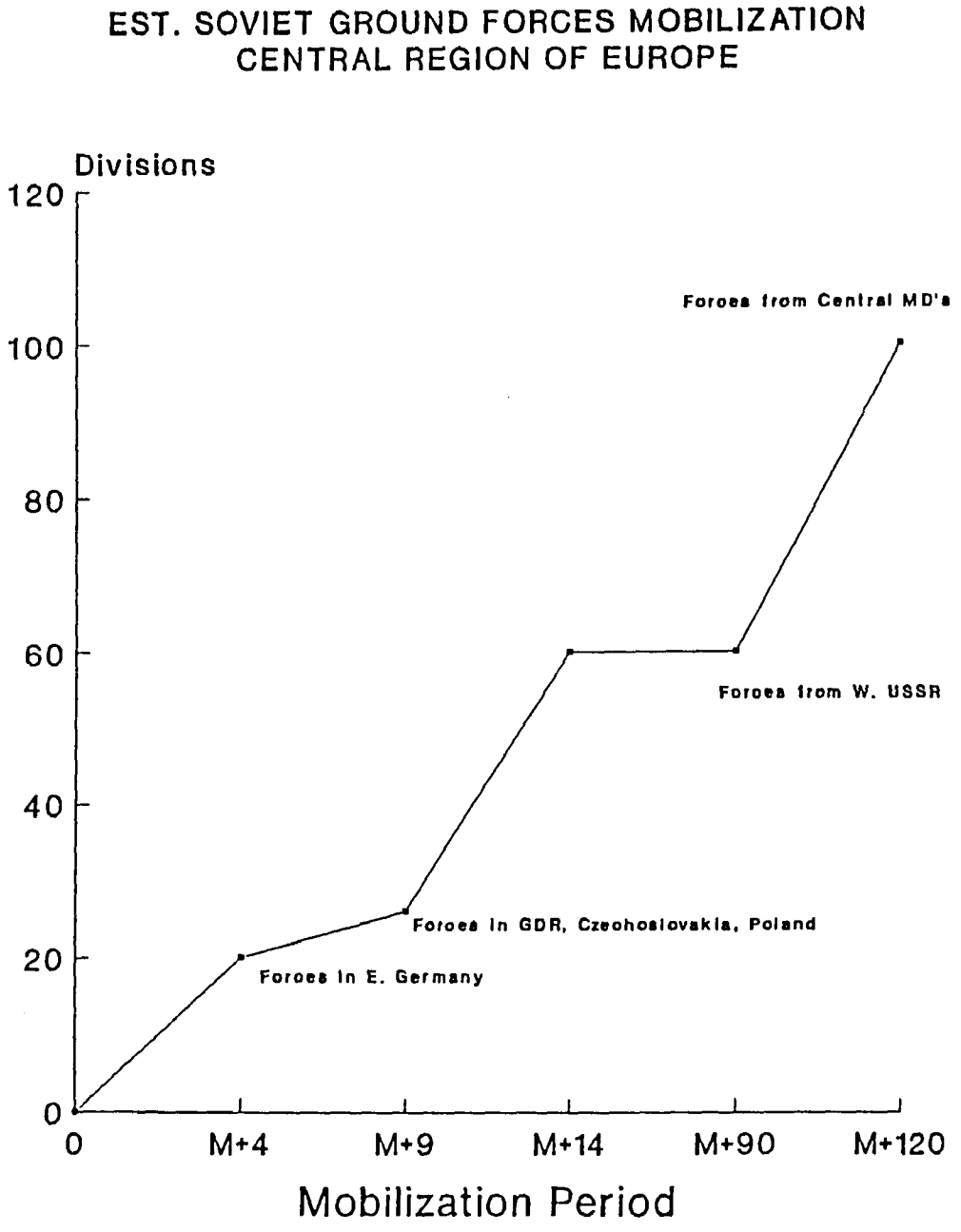
Figure 9.1: Soviet Military Manpower Trends



SOURCE: DATA FROM: *CHISLENNOST', RAZMESHCHENIYE, VOZRASTNAYA STRUKTURA, UROVEN' OBRASOVANIYA, NATSIONAL'NYY SOSTAV, YAZYKI I ISTOCHNIKI SREDSTV SUSHCHESTVOVANIYA NASELENIYA SSSR* (NUMBER, LOCATION, AGE STRUCTURE, LEVEL OF EDUCATION, NATIONAL ORIGIN, LANGUAGE, AND SOURCE OF INCOME OF THE POPULATION OF THE USSR) (MOSCOW: "STATISTIKA" PUBLISHERS, 1971); AND MURRAY FESHBACH AND STEPHEN RAPAWAY, "SOVIET POPULATION AND MANPOWER TRENDS AND POLICIES" IN *SOVIET ECONOMY IN A NEW PERSPECTIVE*, A COMPENDIUM OF PAPERS SUBMITTED TO THE JOINT ECONOMIC COMMITTEE, CONGRESS OF THE UNITED STATES, OCTOBER 14, 1976 (WASHINGTON, D.C.: GOVERNMENT PRINTING OFFICE, 1976), TABLE 15, P. 150.

Source: Scott and Scott (1981: 304)

Figure 9.2: Availability of 18-Year-Old Males



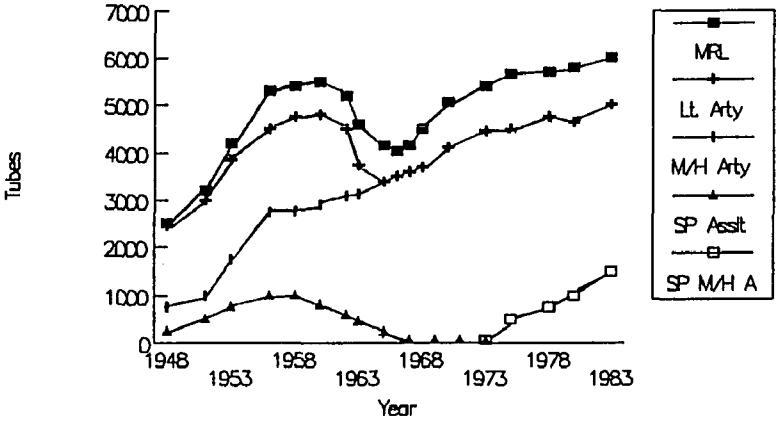
SOURCE: William Kaufmann, "Non-Nuclear Deterrence," in John D. Steinbruner and Leon V. Sigal (eds.), Alliance Security: NATO and the No-First-Use Question (Washington, D.C.: Brookings, 1983), p.60

Source: Goldberg (1985: 127)

Figure 9.3: Ground Forces Mobilization

Soviet Artillery Deployed on

The Central Front*



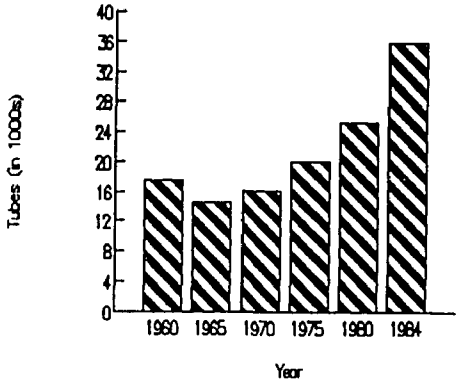
*Deployed in the GDR, Poland, and Czechoslovakia

Source: Codesman (1983: 52)

Figure 9.4: Central Front Artillery

Soviet Artillery Inventories,

1960–1984

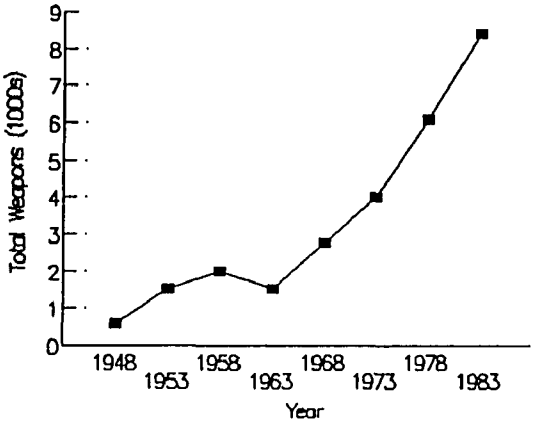


Source: Goldberg (1985: 132)

Figure 9.5: Artillery Production

Warsaw Pact Heavy Anti-Tank Weapons

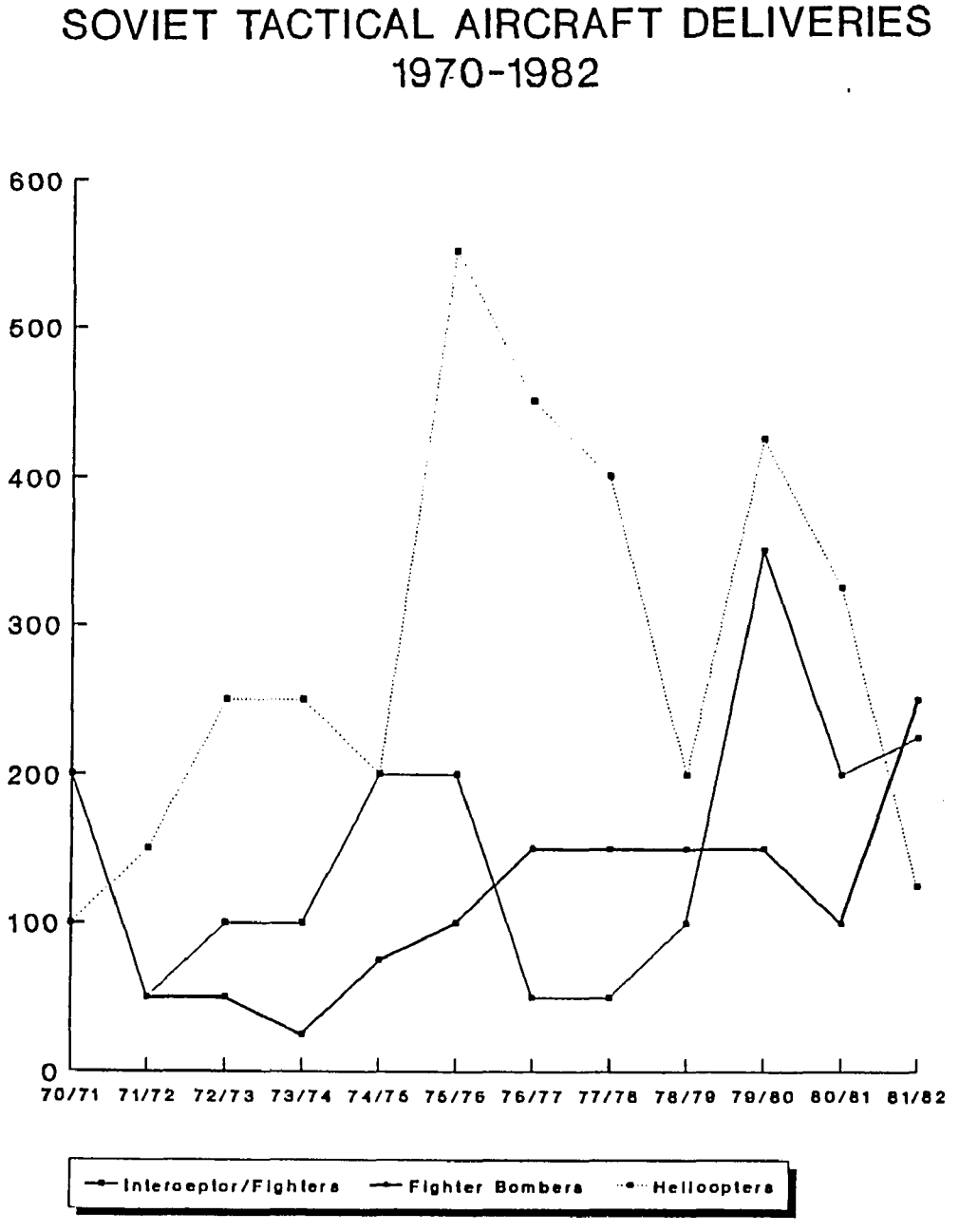
On the Central Front, 1948–1983*



*Includes ATGMs, anti-tank guns, etc.

Source: Cordesman (1983: 46)

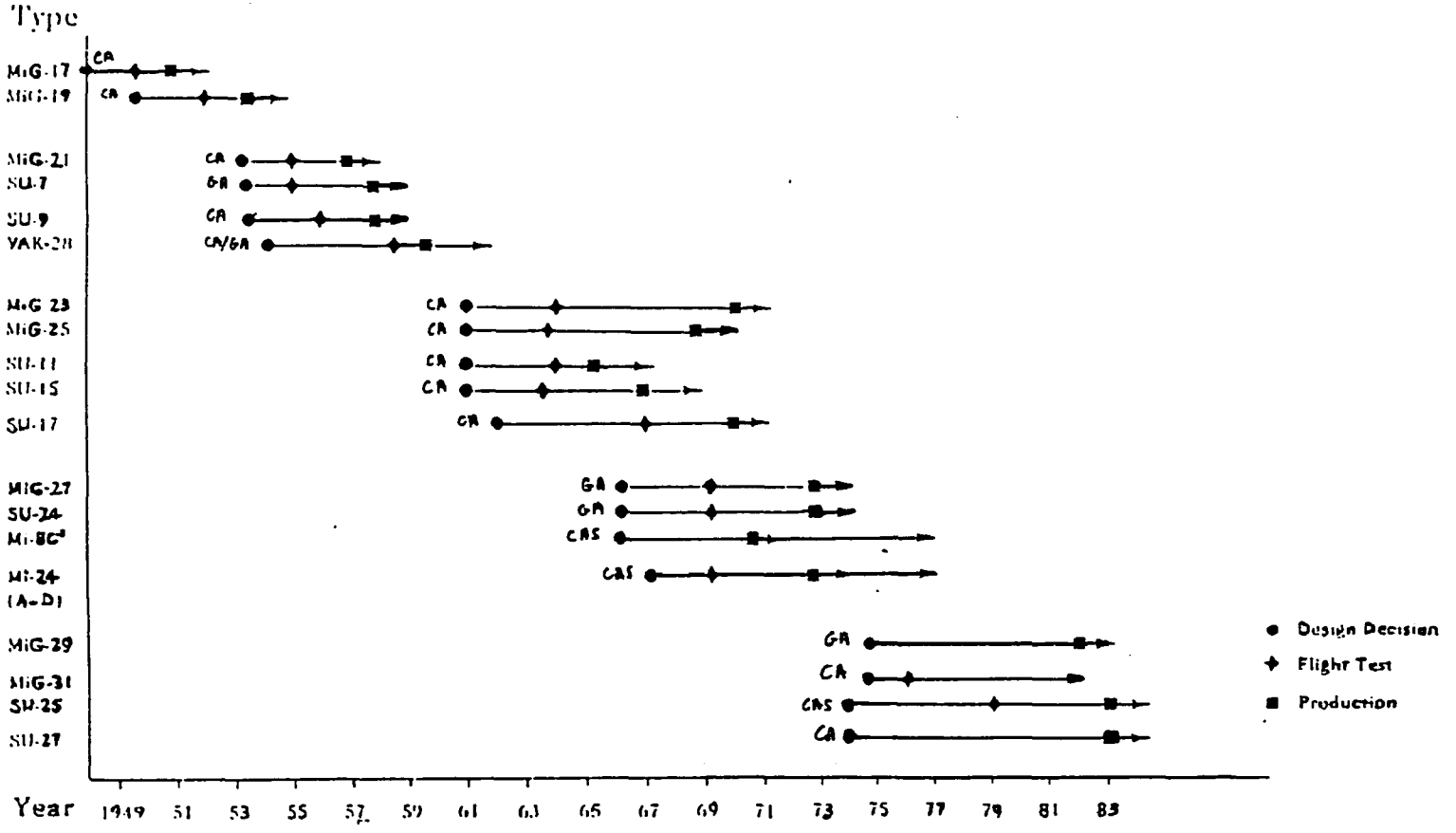
Figure 9.6: Heavy Anti-Tank Weapons



Source: Goldberg (1985: 158)

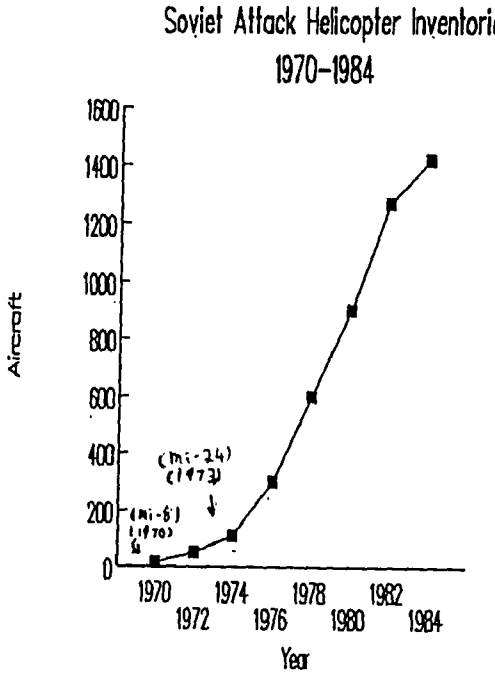
Figure 9.7: Tactical Aircraft Deliveries

Design Cycles for Soviet Tactical Aircraft, 1949–1984



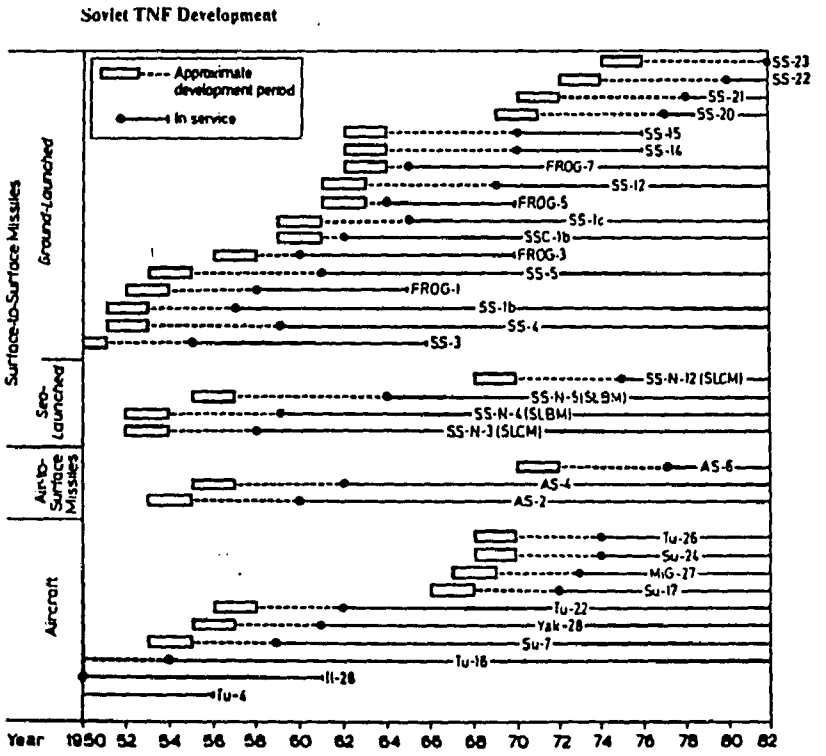
*Flight tested in 1961 as Mi-8a
CA=Counterair; GA=Ground Attack; CAS=Close Air Support
Source: Goldberg (1985: 139)

Figure 9.8: Tactical Aircraft Design Cycles



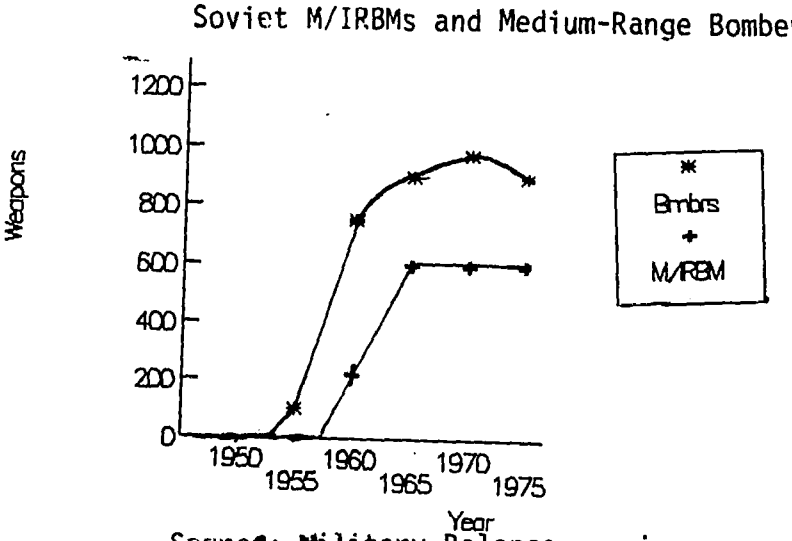
Source: Goldberg (1985: 155)

Figure 9.9: Attack Helicopters



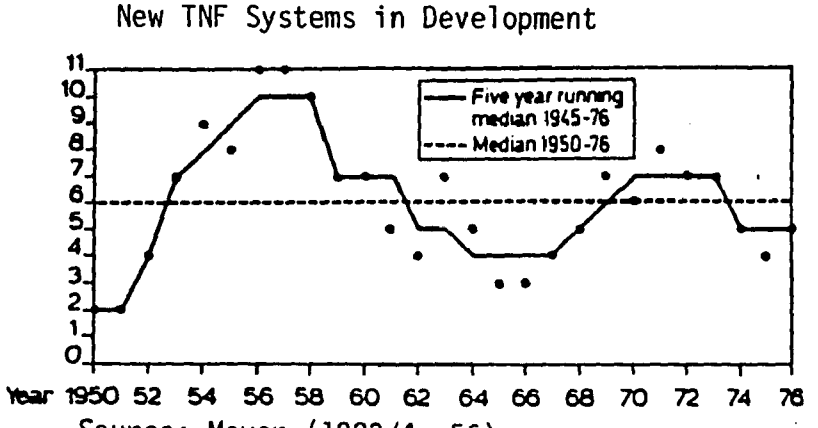
Source: Meyer (1983/4: #188), p. 56

Figure 9.10: Soviet INF Development



Source: Military Balance, various years; also Bloomfield, Clemens and Griffiths (1966: 94-95)

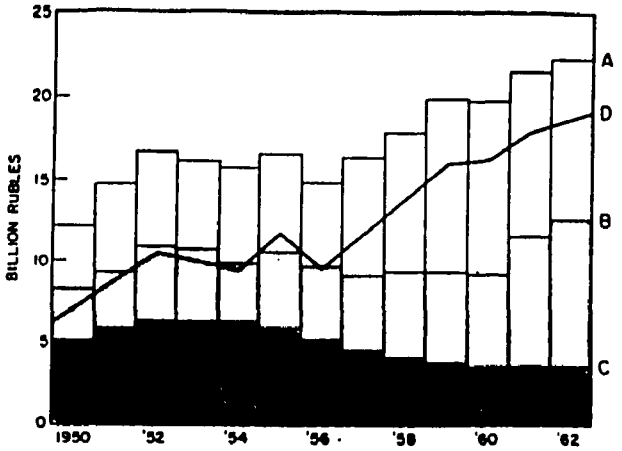
Figure 9.11: M/IRBMs and Medium-Range Bombers



Source: Meyer (1983/4: 56)

Figure 9.12: New INF Systems in Development

Trends in Soviet Defense Spending



Estimated Soviet defense and space expenditures, 1950–1962.

Line A represents an estimate of possible total defense and space expenditures developed by J. G. Godaire, "The Claim of the Soviet Military Establishment," in U.S. Congress, Joint Economic Committee, *Dimensions of Soviet Economic Power* (Washington, 1962), *passim*, and pp. 39, 40. It is known that the official defense budget grossly understates actual Soviet outlays on defense inasmuch as it fails to encompass the bulk of military R & D, some advanced weapons procurement, and some installation costs. Godaire's estimate involves additions to the official defense budget of (1) official outlays on science, most of which are known to go for defense purposes, and (2) certain unexplained residuals in the Soviet budget, arbitrarily reduced to reasonable limits. As regards absolute magnitudes of the Soviet defense effort in given years, the accuracy of Godaire's estimates is highly problematical. His assessment of relative magnitudes, that is, the shape of the curve, appears to be closely suggestive of reality. In most years Godaire's estimates parallel the official defense budget; a sharp upward deviation after 1956 is confirmed by a sharp decline in the growth of civilian machinery output as a result of a presumed diversion of resources to defense. See Rush V. Greenslade and Phyllis Wallace, "Industrial Production in the USSR," in U.S. Congress, Joint Economic Committee, *Dimensions of Soviet Economic Power, op. cit.*, p. 120.

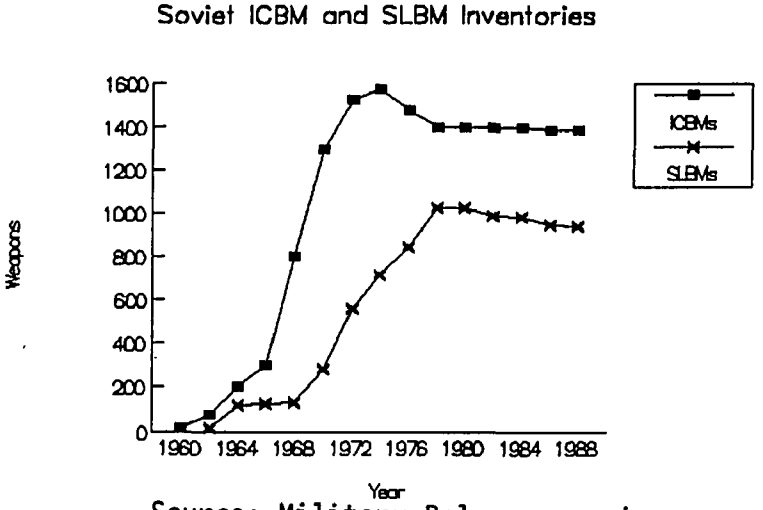
Line B depicts the official Soviet defense budget as realized and announced at the end of the fiscal year coextensive with the given calendar year. As a rule, the official published annual defense budget is slightly lower than the official planned budget announced at the beginning of the fiscal year. Official realized defense expenditures are from Godaire, *op. cit.*, p. 37. These figures are available also in *Narodnoe khoziaistvo SSSR*, under "Finansy i kredit." Planned expenditures for any year are available in the published budget, which usually appears in December or January.

Line C represents the estimated costs of Soviet military manpower (pay and subsistence) and is a product of military man-years, from Godaire, *op. cit.*, p. 43, times an estimate of the average cost per man (1,090 new rubles), derived by Abraham S. Becker, *Soviet National Income and Product: The Goals of the Seven-Year Plan*, RAND Memorandum RM-3520-PR (Santa Monica, Calif., 1963), p. 139.

Line D represents possible total "weapons and space systems development and procurement" outlays and is derived by subtracting the cost of military manpower (Line C) from possible total defense and space expenditures (Line A).

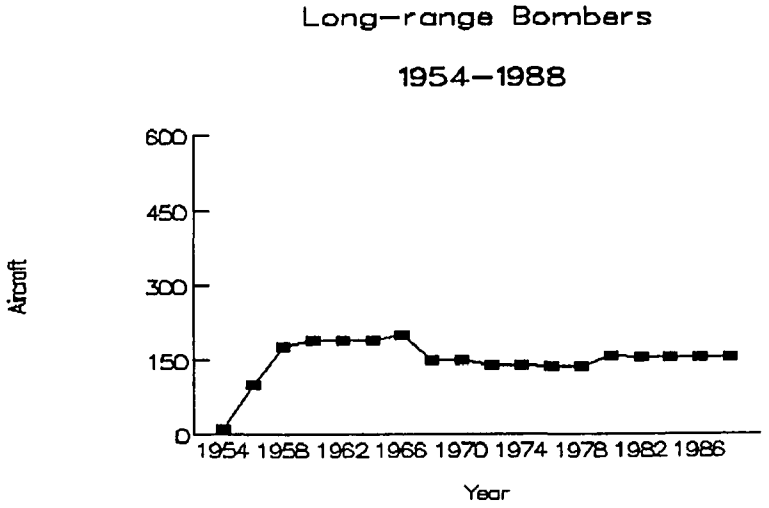
Source: Bloomfield, Clemens, and Griffiths (1966: 52-53, 94-95)

Figure 9.13: Soviet Defense Expenditures, 1950-1962



Source: Military Balance, various years

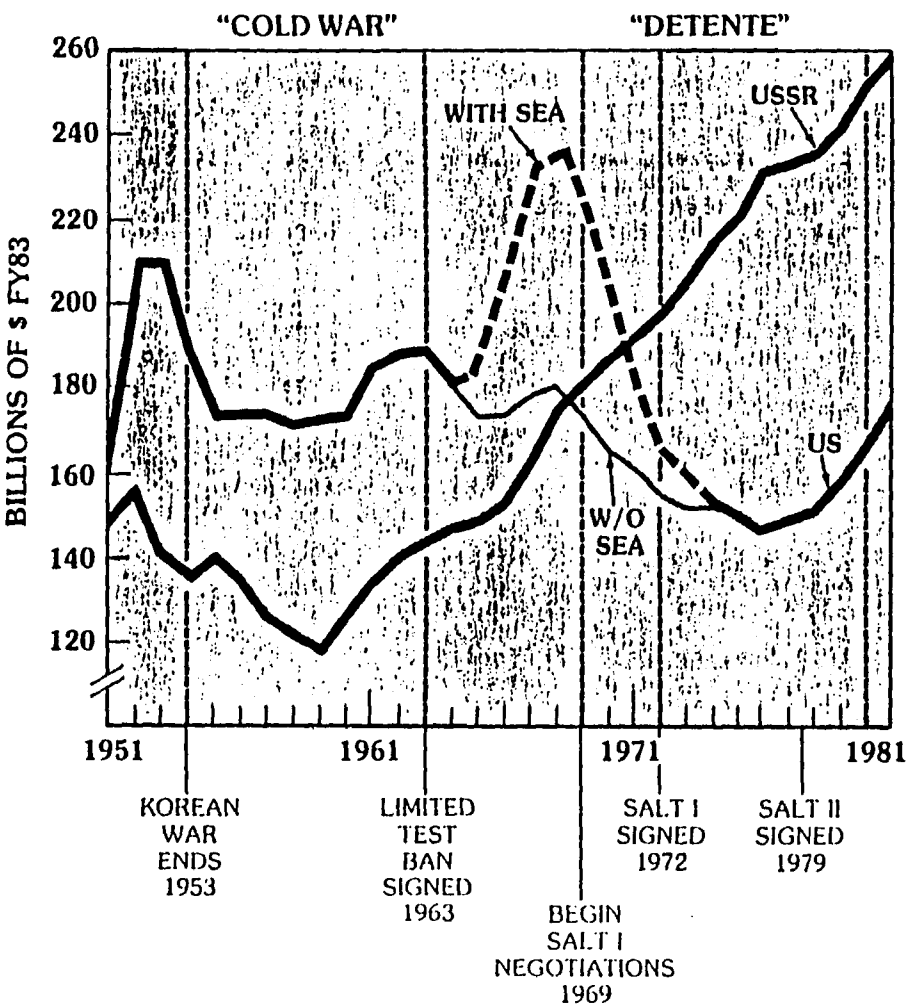
Figure 9.14: Soviet ICBMs and SLBMs



Sources: Bloomfield, Clemens, and Griffith (1966: 94-95; Military Balance, various years; Report of the Secretary of Defense for FY81 (1980: 75)

Figure 9.15: Soviet Long-Range Bombers

US DEFENSE OUTLAYS AND ESTIMATED DOLLAR COST OF SOVIET DEFENSE ACTIVITIES DURING THE "COLD WAR" AND "DETENTE" PERIODS



Source: Report of the Secretary of Defense for FY83 (1982: I-20)

Figure 9.16: U.S: and Soviet Defense Spending Trends

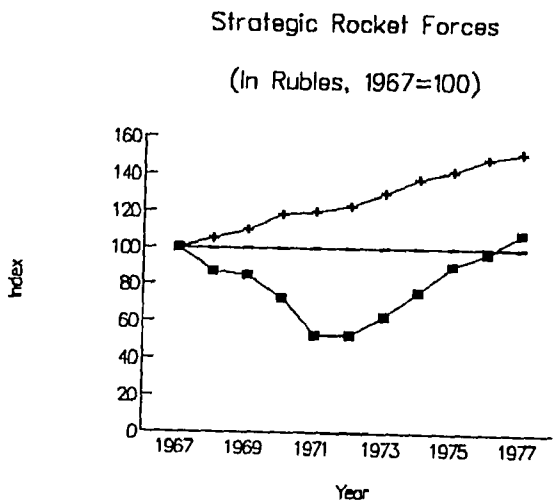


Figure 9.17: SRF Spending

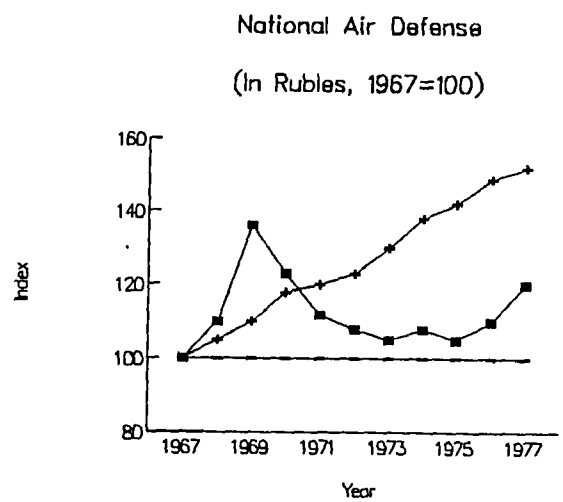


Figure 9.18: Air Defense Spending

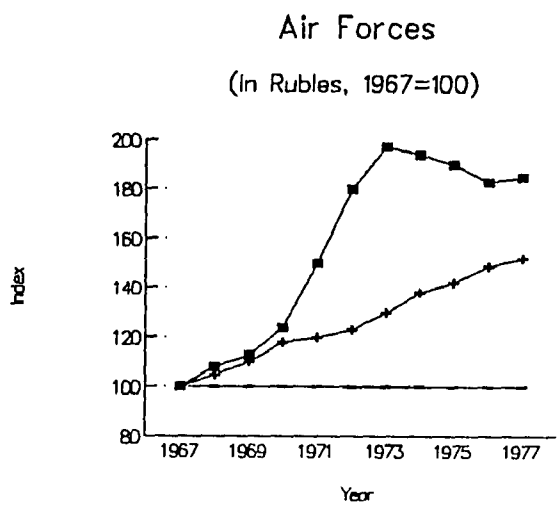
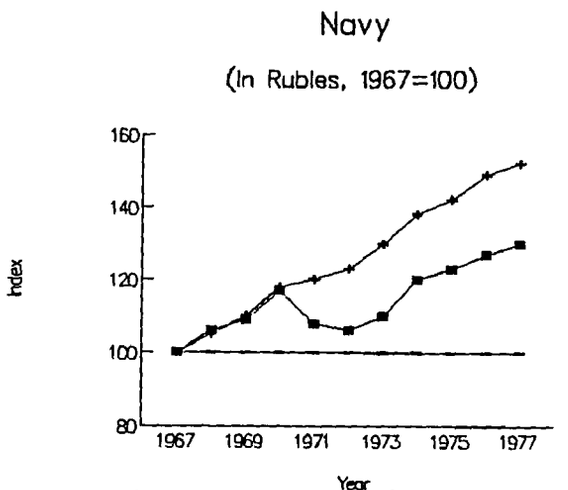


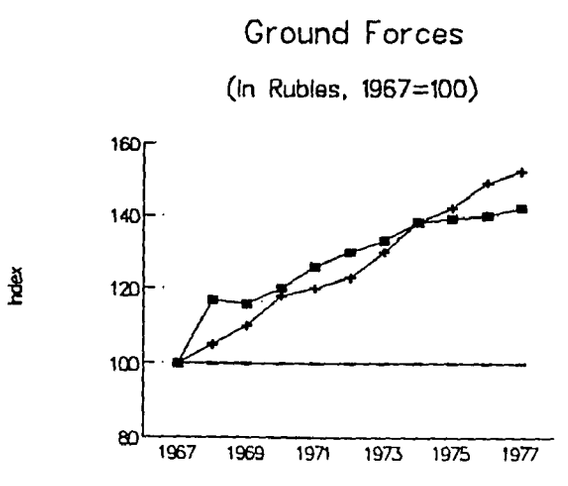
Figure 9.19: Air Forces Spending

Figures 17-21 compare outlays for individual service branches with outlays for the entire Armed Forces. Armed Forces' outlays are represented by the "+". Service outlays are represented by the filled square. Source for all figures: Estimated Soviet Defense Spending: Trends and Prospects (1978: 5)



Source: see previous page

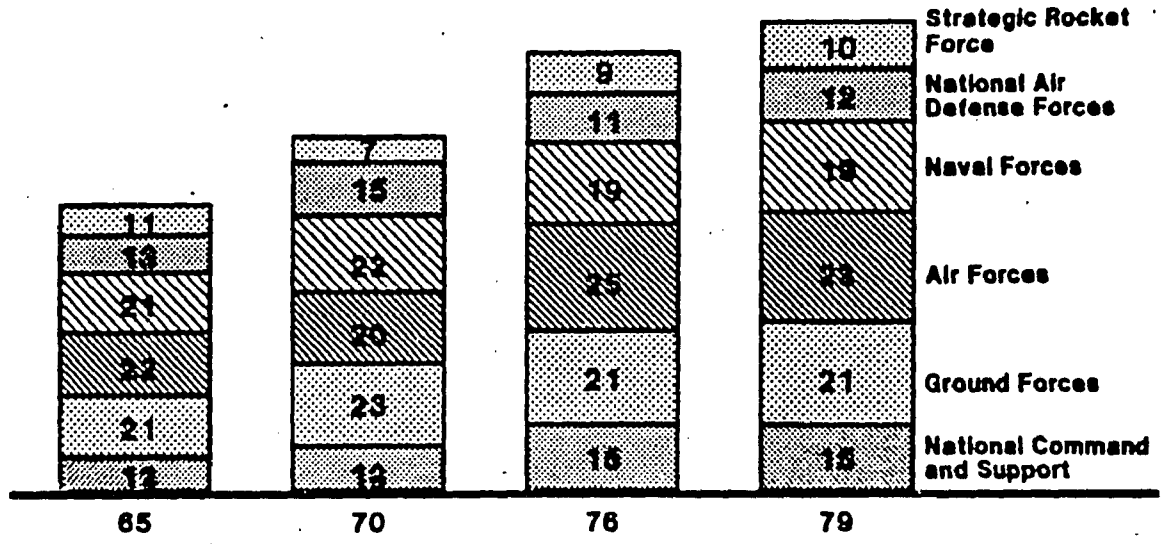
Figure 9.20: Navy Spending



Source: see previous page

Figure 9.21: Ground Forces Spending

Percentage Shares of Estimated Soviet Investment and Operating Expenditures for Military Services



Source: Based on Soviet Spending for Defense (1979: 6)

Figure 9.22: Percentage Shares of Soviet Military Spending

APPENDIX B

Differences in Opinion

In the wake of the Soviet reassessment of the value of conventional warfare and Western assessments of both Soviet doctrinal statements and force posture changes, there has been some disagreement in the West about the implications of what occurred in the post-1965 decade. For example, Joseph Douglass [and on occasion together with Amoretta Hoeber] takes issue with officials such as former Secretaries of Defense James Schlesinger, Donald Rumsfeld, and Harold Brown, who reported in various Posture Statements that the Soviets' doctrinal emphasis on theater warfare was changing from nuclear to conventional. These officials noted that the Soviet nuclear capability still remained important, but that the Soviets were increasingly emphasizing conventional capabilities and doctrine [Douglass and Hoeber 1981: 1-2]. Douglass and Hoeber, among other, have argued that such is not really the case--that the Soviets basically are as much oriented to nuclear doctrine as before.uu

While it would be inappropriate here to examine Douglass and Hoeber's arguments in depth, a brief summary and response would be worthwhile 1] to illuminate some of the methodological and interpretive problems involved with assessments of doctrine and strategy change and 2] to clarify some of the key issues and assumptions under debate. Although others have expressed views similar to those of Douglass and Hoeber, I will focus upon these two analysts, as they have developed their arguments extensively in several publications [Douglass, 1976, 1980; Douglass and Hoeber, 1979, 1981].

Douglass and Hoeber criticize those who, they argue, read too much into Soviet statements and force posture changes that enhance conventional warfare capability. Douglass and Hoeber argue that the Soviet have not really shifted to a more conventional view of theater war. Rather, they assert, the Soviets have improved conventional capabilities because they realize more now than earlier that there may be a period of conventional war at the outset of a theater conflict before the conflict goes nuclear. Douglass and Hoeber contend that the Soviets have long viewed nuclear weapons as the decisive instruments of war and that the key issues is <u>when</u>, not <u>whether</u> to make the transition to nuclear weapons [1981: 7, 1979: 2]. After cutting conventional forces in the late 1950s, the Soviets realized in 1961

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uuSee also Myer's [1978: 39-40] summary and refutation of this position.

that conventional forces were indeed important, and they therefore started building up the Ground Forces as more 18-year-olds became available for army service in the mid-1960s [Douglass, 1980: 177].vv

Specifically, the Soviets realized in the mid-1960s and continue to acknowledge that a conventional period at the beginning of a war provides some advantages. Troops can advance without worrying about nuclear blast and fallout, and during this early phase, there will be time for reconnaissance of NATO's dispersed nuclear weapons so that they can be effectively targeted and destroyed by Soviet nuclear weapons in the next phase [Douglass and Hoeber, 1981: 12, 23-32]. Furthermore, the analysts say, the Soviets train and equip their conventional forces to fight a nuclear war, so that there is really little distinction between the two approaches. The Soviets have no interest in keeping a war conventional; in fact, "a successful conventional phase attack might lead the Soviets to accelerate rather than delay the introduction of nuclear weapons, so as to be sure to achieve surprise" [Douglass and Hoeber, 1981: 30, 50].

While in some ways these arguments are correct, there are several difficulties in the areas of interpretation, argumentation, and methodology. The Soviets have indeed said that nuclear weapons are decisive, but there have been a variety of Soviet military and political authors that have noted the significant military and political costs in using nuclear weapons, and Douglass and Hoeber never really investigate these. Douglass and Hoeber reasonably assume that the Soviet will not delay long in using a weapon they have labelled as decisive, but one wonders if the Soviets might not have considered winning a conflict in some other decisive way.

Additionally, one would expect a prudent modern army to train with both conventional and nuclear weapons, but Douglass and Hoeber never present for the reader what they would consider constituting proof that the Soviets were truly focusing on conventional warfare. Douglass, in discussing the "Dnepr" exercise, notes that nuclear weapons are used but concludes that the conventional phase of the exercise was merely to practice the transition to nuclear weapons. He never examines the possibility that the Soviets might have practiced the conventional phase to see if they could continue warfare in that mode for a significant period of time.

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vvWhy or how the Soviets made such a decision in 1961 is not explained.

Douglass and Hoeber's failure to state clearly their hypotheses on the transition conditions to nuclear war so that their hypotheses could be falsified is one of their key methodological shortcomings. Douglas and Hoeber argue that the Soviets eschew compromise and in war would seek the entire defeat of the enemy [1979: 14, 20], and this assumptions drives much of their assessment that the Soviets will stop at virtually nothing to vanquish capitalism. Again, this argument about the Soviets has arguably been valid at times in the past, but one is hard pressed to understand what Douglass and Hoeber would consider constituting a shift from this point, short of a wholesale Soviet rejection of the presence of tension between the socialist and capitalist worlds.

In this realm of argumentation, the basic issue is that of constituting a clear hypothesis that can be reasonably falsified. This step is necessary so that in presenting support for such a hypothesis, one can argue a solid case and not just facilely score debating points. In analysis concerning intentions about nuclear or conventional war, it is admittedly difficult to construct good hypotheses and offer reasonable conditions under which the hypotheses can be falsified. Taking such a step, however, is still important.

Turning to more specific methodological issues, it would be worthwhile to quote what Douglass and Hoeber present as their methodology:

> The methodology used in this study was first to read and reread this material to understand the Soviet mind-set and isolate the basic principles that appear to dominate Soviet military thought. In contrast to much of Western military literature, the Soviet literature is seriously directed to the problems of fighting and winning a nuclear war. Moreover, we discovered no evidence of the existence of opposing schools of military thought as are found in the West. The Soviet literature is extremely consistent; different categories of sources [e.g., journals and textbooks] agree and, except for occasional, gradual developments in basic themes, are consistent over time. This consistency prompted us to reconstruct the basic themes of Soviet thought on world nuclear war. The material was then systematically reexamined to fill in details and supply documentation [1979: 5].

The preceding constitutes the entire discussion of methodology in their book on nuclear war strategy, and Douglass repeats it with few changes in his book on

theater nuclear war in Europe (1980: xiii). Even for someone who might be inclined to share their substantive views, this approach to research and argumentation is sadly lacking in rigor. There are no hypotheses, no means to evaluate author selection, and no criteria on how to judge which pieces of information might be more important than others. Furthermore, in four volumes with dozens (sometimes hundreds) of citations from Soviet military literature, the authors average one Russian-language source per book. One wonders how much the authors may be missing by pursuing primarily translated literature.

Elsewhere in their volume on strategic warfare, Douglass and Hoeber note that many of the sources they chose to review were published before 1970. They comment that these sources "should not be regarded as necessarily out of date. Most of this material is directed toward the future and is particularly concerned with problems that need to be solved..." (1979: 4). No doubt these sources are useful, but just to assert that this material is as useful in explaining Soviet thinking ten years or more after it was published as it was when it first appeared is highly problematic. Although Douglass' second volume on Soviet theater warfare in Europe (1980) uses some sources as late as the mid-1970s, most of the sources in this volume as well are pre-1970. To evaluate a shift toward conventional warfare that was still taking place in the early 1970s, relying on earlier sources to explain contemporary developments is questionable.

In conclusion, then, it may be said that Douglass and Hoeber have some valuable criticisms to offer on the issue of the shift toward conventional warfare, but the problems in their research render their criticism not as powerful as it otherwise might be. Nuclear warfare continues to remain an important option for the Soviets, but Douglass and Hoeber's affirmation of this option is misconstrued.

APPENDIX C

Table 9.9: The 1946-1955 Period

Indicator	Conv. Focus	Nuc. Focus	Ambiguity
Ground Forces			
Personnel: Manpower levels remain constant after demobilization but rise significantly by 1955	X		
Category levels: Remain constant after demobilization; no major changes from wartime proportions within total number	X		
Integration of nuclear weapons: not at any significant level for the Ground Forces	X		
Force organization: no real change from World War II organization	X		
Equipment changes: Basic modernization; no real changes to protect troops in nuclear environment	X		
Artillery			
Artillery modernized some, but no major differences from World War II; lack of further modernization may presage a future reliance on missiles	X		X
Helicopters			
Technology apparently not considered for ground support role; intent in theater offensive probably to rely on older close support aircraft			
Tactical Fixed-Wing Aircraft			
Counter-air designs pursued to protect Soviet Union against air attack from U.S.; premonition of nuclear orientation, though Soviet Union has no nuclear offensive systems; no ground attack designs pursued		X	X
INF Systems			
Significant number put into design phase; few procured--largely a time-lag issue; still, no nuclear use doctrine or strategy apparent	X		X

Table 9.9: (cont'd.)

	Conv. Focus	Nuc. Focus	Ambiguity
Service Budgets Slightly favors Ground Forces; definitive data unavailable			X
Exercises No data available (WTO not founded until 1955; exercises, if any, would have been entirely Soviet)			

Table 9.10: The 1956-1965 Period

Indicator	Conv. Focus	Nuc. Focus	Ambiguity
Ground Forces Personnel: Manpower levels cut significantly		X	
Category levels: Proportionately fewer Category II and Category III divisions		X	
Integration of nuclear weapons: Significant increase in numbers and integration		X	
Force organization: Divisions lightened and made more mobile		X	
Equipment changes: BMPs given covers to protect troops from radiation		X	
Artillery Minimal modernization; low production runs; artillery largely replaced by missiles		X	
Tactical Fixed-Wing Aircraft Continued strong focus on counter-air designs and production		X	
Helicopters Used as transport, not close support		X	
INF Systems Continued strong emphasis on a variety of designs and significant production runs		X	
Service Budgets Little data, but what is available suggests a drop in support for Ground Forces and heavy investment in strategic nuclear forces and INF systems		X	
Exercises Begin in 1960; largely nuclear-oriented; significant conventional phase included only in 1965		X	

Table 9.10 (cont'd.)

	Conv. Focus	Nuc. Focus	Ambiguity
Exercises			
Several conducted with non-nuclear phase; several have both nuclear and non-nuclear strikes; non-nuclear period longer than before		X	

Table 9.11: The 1966-1975 Period

Indicator	Conv. Focus	Nuc. Focus	Ambiguity
Ground Forces			
Personnel: Some increase after mid-1960s; related to conventional buildup in Far East	X		
Category levels: Significant increase in understaffed divisions	X		
Integration of nuclear weapons: no real change from previous period; no major increase		X	X
Force organization: Tank forces given manpower and MRBs given tanks; overall division firepower levels increased	X		
Equipment changes: No really distinctive changes to indicate either focus, except that concern expressed about lack of BMP armor			
Artillery			
Very significant increase in tubes, self-propelled guns, and other types, beginning in mid-1960s and continuing strong	X		
Tactical Fixed-Wing Aircraft			
Most of tactical aircraft design for ground attack or interdiction; procurement significant	X		
Helicopters			
Several new designs, and very heavy procurement; these helicopters first to serve as close support aircraft	X		
INF Systems			
Somewhat few new weapons enter design phase and production; leadership interest consistent in support of TNF		X	X
Service Budgets			
Favors Ground Forces, Frontal Aviation; does not favor SRF or air defense	X		

SOVIET MILITARY DOCTRINE AND STRATEGY SHIFTS: PRINCIPAL DYNAMICS AND IMPLICATIONS FOR CONVENTIONAL WARFARE

VOLUME III

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in the Graduate School of The Ohio State University

By

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* * * * *

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CHAPTER X

CONCLUSIONS FOR THE 1946-1975 PERIOD

As I draw conclusions linking the internal and external variables to the dependent variable, I will first discuss the implications of those linkages from the standpoint of their relevance for the particular periods of doctrine and strategy development. I will examine the relative importance of the variables during each of these periods and try to explain why some variables are more important than others (results summarized in Tables 1 and 2).

Second, I will suggest possible systemic linkages across time about the influence of these variables and the conditions under which their influence has an impact. I will discuss the influence of these factors in terms of their long-term relevance for Soviet doctrine and strategic decisionmaking, and I will offer conclusions about U.S. and NATO defense decisionmaking in light of the generalizations about Soviet doctrine and strategy up to 1975. As part of this discussion, I will speculate about the relevance of the 1946-1975 period for the post-1975 period. Finally, I will discuss implications of these

results for doctrine and strategic decisionmaking in terms of comparative foreign policy.

The Immediate Post-Stalin Period

Internal Variables

Evidence about the shift in military thinking that occurred after Stalin's death has led most Western analysts to speculate that two internal factors were most important--leadership change and advances in military technology. Data from this study generally confirms that assumption. There were indeed major changes in the leadership in the eighteen months prior to the publication of Talenskiy's article--changes in the First Secretary, the Minister of Defense, the Minister of Foreign Affairs, the Chairman of the Council of Minister, and other important posts.

As indicated in the chapter on leadership change, it is not only the number and positions of the leaders who change that are important, but also how policy preferences differ from the former to the current leaders. Although views of individuals could only briefly be discussed in the chapters on leadership change and doctrine change, it is clear that there was an important difference between the views on doctrine and strategy of the Soviet

leadership under Stalin and the Soviet leadership in the immediate post-Stalin period. Many Party and military leaders were unhappy with the post-war status quo in doctrine and strategy, so those areas were among the first to begin changing after Stalin's death.

Certainly one of the key pressures in the military realm originated from the changes in military technology that had occurred in the Soviet Union since World War II and the new resources that were available to defense policymakers. More specifically, this pressure was generated by the awareness that military resources of major significance were available that were not being used. As Soviet military R&D progressed from 1946 to 1955, the most important new technologies involved nuclear weapons and their delivery systems, such as jet planes and missiles. All these were major, not incremental, changes in military technology, and the conclusion drawn by most of the Soviet Party and military officials was that the combination of these technologies strongly favored a doctrine and strategy orientation to nuclear weapons. There were other military R&D advances during this time, including incremental ones that favored conventional weapons, but there were no major advances as important as those involving nuclear weapons and their delivery systems.

The Soviet economic situation had been making fairly substantial progress from the late 1940s through the early 1950s. Growth along the selected indicators from 1945 to 1950 was strong, and as explained in the presentation of the hypotheses for that period in Soviet economics, there was no particular reason to think that a strong conventional force posture could not continue to be supported. Although there were drops in growth in some indicators from 1951-1953, there were no clear problem areas (except agriculture, which is not unusual). Even considering developments during the entirety of the Fifth Five-Year Plan (1951-1955), there were no clearly important economic pressures that would have suggested a change in defense posture. Except for one year (1953), defense spending continue to grow during that period.

Can one make a determination as to which of the two main variables--leadership change or technological advances--was the more important? There are several ways to frame the question dealing with the principal counterfactual issues. Would the Soviets have initiated a transition in doctrine and strategy if Stalin had lived longer? The answer to this question seems affirmative. Soviet advances in nuclear technology, not to mention the increasingly nuclear-oriented U.S. defense posture within the next few years would have been too much to ignore,

even given Stalin's support for the permanently operating factors. As noted in the chapter on technology, Stalin did firmly support the Soviet nuclear R&D effort, and when those technologies had become clearly demonstrated as systems, it seems almost a foregone conclusion that Stalin would have wanted to deploy them to keep Soviet military capabilities on a par with (if not hopefully ahead of) U.S. military strength.

Would the Soviets have initiated a transition in doctrine without the basic nuclear capability that they had developed up to 1953? Possibly so, but it seems rather unlikely. Analysts in the U.S., by the late 1940s and early 1950s, had begun to explore areas of nuclear doctrine before the U.S. had many of the systems it would have in the late 1950s and early 1960s. The Soviets could have done the same, but given what is known about freedom in the Soviet Union at that time to explore new areas of military thought that stood in contrast with or are critical of accepted thinking, such discussion would have probably taken place only at the high levels of the military hierarchy, such as the General Staff. This limitation, in contrast to the more extensive debate in the U.S., would have hindered the kind of debate necessary to precede a shift as momentous as that from a

conventional to a nuclear orientation in doctrine.a Such a shift would therefore have been significantly retarded, absent the opportunity for a broader debate.

So, until the capabilities had been further demonstrated, it seems that such discussion would not have been extensive. Therefore, it seems unlikely that a transition in military doctrine would have gotten underway absent the progress the Soviets had made by 1953 in nuclear weapons technology.

The issues of leadership change and technology advancement for this period are obviously interactive, so it would be inappropriate to consider one divorced from the context of the other. Still, if one were forced to make a choice, it seems that technology was probably the more important internal variable for the change during this period.

External Variables

In terms of external variables, the Sino-Soviet dispute, except for disagreement over support for North Korea, was fairly non-problematic during this period. The impact of U.S. and NATO defense planning, however, was more significant. The apprehensions and hostility about

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aBecause of the foreign policy implications of a change of this nature in military doctrine, one would anticipate that some of the foreign policy community would need to be involved, even if only at the highest level.

the U.S.S.R. the Soviets could perceive from U.S. Government officials (not to mention from the Congress and the general populace) was quite apparent, and when the Soviet awareness of this U.S. perception is combined with the emphasis in the U.S. military community about significant improvements necessary in U.S. nuclear forces, the overall directions in doctrinal thinking of U.S. defense decisionmakers were, no doubt, of major concern to the Soviets.

While the Soviets may have been able to perceive some of the apprehension as a legitimate reaction to such events as the Soviet
involvement in the extension of communist power and influence in Eastern Europe (especially in the takeover of Czechoslovakia), the Berlin blockade, and the Korean War, it is most likely that the Soviets did not consider themselves responsible for the depth of opposition they observed from the West. While U.S. conventional forces remained important for U.S. war planners in the late 1940s, the shift in overall U.S. defense planning to nuclear weapons, begun in the late 1940s and substantiated by the New Look policy, no doubt confirmed for the Soviets what type of threat they were to face from the U.S.

Soviet awareness that the U.S. and its allies (especially as they recovered from World War II) perceived

strong tradeoffs between a conventional force posture and continued economic growth coupled with a predominantly nuclear posture most likely increased Soviet concern about the importance of nuclear weapons to the West. This concern would also have been enhanced by Soviet awareness of the early efforts of the U.S. Army to incorporate nuclear weapons on the battlefield without working out how it would keep a conventional battle in Europe from escalating.

At the same time, the New Look policy was not inaugurated until the fall of 1953, and Dulles' "Massive Retaliation" speech was not given until January of the following year. While the Soviets were probably aware of Eisenhower's defense policy preferences and the defense budget thinking in the early months of the Eisenhower Administration, it seems a reasonable conclusion that the impact of U.S. defense planning on the incipient shift in Soviet doctrine in late 1953 was not as key as the leadership and military technology variables discussed earlier. There was certainly an interactive effect between the perceived usefulness of nuclear weapons to Soviet military officials and their awareness of the movement toward nuclear weapons characteristic of U.S. and Western defense planning in the late 1940s and early 1950s. However, if one is pushed to make a decision as to

how the proposed variables ranked in importance, one would have to say, for the reasons indicated above, that the internal ones were more important than the external ones, with technology being the more important of the former.

The 1956-1965 Period

Internal Variables

The 1954-1955 period, as mentioned several times earlier, can basically be considered a transition period for the decade to follow. For the 1956-1965 period, the evaluation of some of the independent variables is basically the same as that for the 1954-1955 transition. In the case of technology change, it would be inappropriate methodologically, even if possible evidentially, to separate the overall effect of advances in military technology in 1954-1955 from the effect of advances of the previous five to eight years. Therefore, one can assert that the pressure that the availability (or potential availability) of nuclear weapons created for political and military decisionmakers to shed the Stalinist orthodoxy after the dictator's death was the same pressure that led the leadership in the mid-1950s to begin shifting the orientation of Soviets forces to a nuclear basis.

As one reviews the changes in military technology during that period that were arguably major, four of the

six are closely related to nuclear weapons, while the other two are applicable to either conventional or nuclear warfare (i.e., not applicable only to conventional warfare). Two of those four (small warheads and staged ballistic missiles) were technologies demonstrated before the end of the decade and therefore enhanced the trend toward reliance on nuclear weapons. Therefore, while the final evaluation of new technologies in the 1955-1966 period must await the discussion on the mid-1960s shift, one can at least say at this point that there were several important technologies demonstrated earlier in the period that contributed to a nuclear emphasis and that there ere no important technologies developed that would have contributed to a prolonged conventional orientation.

The leadership change factor again is fairly important. In the 18 months prior to Khrushchev's articulation of the concept that nuclear war was not inevitable, the key leadership changes were Bulganin's replacement of Malenkov as Chairman of the Council of Ministers and Zhukov's appointment as Minister of Defense. Both of these changes were important because Khrushchev's ability to bring people who shared his views on security matters into two key positions in the Party-military hierarchy.

At the same time, these and other promotions at this time were perhaps more important because the appointees helped Khrushchev solidify his leadership within the Party. This development aided Khrushchev in a number of ways, one of which was to strengthen his hand in dealing with political matters overall. For example, of the appointments in the period after the 20th Party Congress, there is no question but that Gromyko would have an important role in the following years in shaping and implementing Soviet foreign (and, often therefore, military) policy. Additionally, Malinovskiy's appointment was important for his help both with Khrushchev's effort to implementing troop cuts and with making alterations in force planning because of those changes.

Additionally, the assistance these new appointees provided Khrushchev's solidification of leadership in the Party at the time also contributed to Khrushchev's continued efforts to solidify his political standing and undercut the standing of those who disagreed with him. In this instance, the leadership change in early 1956 needs to be viewed historically in tandem with the June 1957 defeat of the anti-Party group. Leadership changes at both these points were important for further solidifying Khrushchev's hold on politics and for shaping doctrinal thinking on the East-West conflict. In both the February

1955 and June 1957 changes, for example, a principal political outcome was to shift the Government's political orientation toward a slightly less conservative position--one slightly less antagonistic toward the West.b

As mentioned in the chapter on leadership change, it is not essential to have sampled leadership changes around the January 1960 speech, since there was no real shift of doctrine at that time, but rather a clearer, authoritative articulation of it as it had developed in the previous few years. Still, several things can be said about the impact on military doctrine of the various changes around early 1960 noted in Chapter Three. One is that while there were quite a few changes in the periods before and after the January 1960 speech, the number of especially important positions that changed hands is low. None of the really important spots changed hands in the 18 months before January 1960, and the changes afterwards had more to do with general East-West relations (especially the U-2 and the Paris Summit) than with military doctrine. Even

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bIt is also interesting to note that there was still plenty of anti-Western hostility in the Soviet leadership at this time, and therefore this slightly reduced sense of antagonism does not contradict the assumption mentioned in Chapter Eight that hostility toward the West should correlate with a heavier reliance on nuclear weapons. At the same time, it would not be off the mark to say that the leadership change in 1957 would eventually have an impact on the doctrine and strategy change of a decade later, when the Soviet Union and the U.S. were on better terms than in the mid-1950s.

though in there were a few changes in the post-speech phase that probably made a contribution to the development of nuclear warfare doctrine at that period (the CinC Ground Forces and Chief of the General Staff), the principal reason they were chosen seems to be that they were both Khrushchev supporters and did not object to his program on troop cuts. It is likely these appointees were more instrumental in implementing Khrushchev's doctrine than in contributing to the decisionmaking which had led to Khrushchev's January speech. Indeed, since the policy articulated in January 1960 was not really a doctrine change, one would not have expected many high-level changes in the political-military leadership.

The economic conditions that obtained for decisionmakers in the early 1950s and in the year or two after Stalin's death were basically the same ones that leaders in the 1955-1956 period faced. The economy did fairly well from 1951-1955, so there were no pressing economic constraints that would have led leaders to cut back on defense spending, or for the purposes of this study, to reconsider support for a conventional force posture.

At the same time, we know from the historical record that Khrushchev, after he unseated Malenkov in 1955, supported some military reductions (such as in the wages

account for the Ground Forces personnel) in order to increase funding for initiatives concerning the Virgin Lands, the chemical industry, and consumer goods. What all this evidence together says is that while economic conditions themselves were not a constraint, a key leader sought to shift priorities so that some aspects of military spending would be less. Support for ballistic missile R&D no doubt continued strongly, but overall defense spending dropped in the first few years of this period.

As one traces economic conditions further into the period, additional problems appear. Growth slows in a number of categories for the 1956-1960 period. There is only slow growth in the key areas of GNP and factor productivity, so there were warning signs to the Soviet leadership by the late 1950s and early 1960s that the economy was encountering difficulty. So, while the data by themselves do not reveal salient economic problems as clear constraints against the level of investment needed to maintain a strong conventional force posture, such problems were growing. Khrushchev's and other leaders' awareness of these problems probably added weight to the importance assigned a nuclear-oriented posture.

Evaluating the internal factors for implications for the shift in doctrine beginning in 1956, the conclusions

are in many ways similar to those preceding the 1954-1955 transition period. Leadership change and military technology changes are the most important this time; economics arguably had no effect, except in the second half of the period to confirm decisions favoring a nuclear posture made in the first half.c

Turning to the counterfactuals, is it the case, looking at the first two internal factors, that one is more important than the other? Could the Soviet Union have pursued a nuclear posture to the degree it did without the developments noted in nuclear weapons R&D? While these R&D developments did not compel the shift, the shift would certainly have been impossible without them, particularly the technologies of nuclear weapons, small warheads, and staged missiles. One can probably go farther, though, and say that the magnitude of the power available in nuclear weapons and the collapse of time-to-target rates (in comparison with conventional weapons) with the advent of ballistic missiles--a change that

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cOf course, it is clear from the historical record that economic factors were important because of the funds Khrushchev sought for the programs he wanted to initiate. These constraints were arguably self-imposed and so are not picked up in my study. The implication for doctrine here is that some economic programs were among the many policy preferences Khrushchev was able to pursue after the mid-1950s leadership shift and that some of these were to have an effect on doctrine development. The specific factor here, then, is leadership change rather than negative developments in economic growth.

permits the quick achievement of strategic military goals--did in a sense compel the shift. Such is arguably the case, since few military planners would conceivably dismissed the capabilities nuclear weapons--particularly ballistic missiles--could provide.

Would the Soviet shift to nuclear weapons have been possible without the leadership changes in the mid-1950s? Here the response is more difficult to assess. As is the case with Stalin's departure, it does seem likely that the Soviets would have continued to configure their force posture with nuclear weapons regardless of who was in power. It seems less likely, though, that the Soviets would have pursued the extent of reliance on nuclear weapons that they did without Khrushchev. As is clear from the historical record, Khrushchev had a number of pressing domestic objectives he had set for himself. To reach these goals, plus building Soviet international prestige by working to establish the country as a superpower military equal with the U.S., Khrushchev resolved to move manpower from the military to the civilian sector, to cut defense spending for conventional forces, to increase the stockpile of nuclear weapons, and to continue R&D on ballistic missiles and ballistic-missile-carrying submarines.

At the same time, given the importance the Soviets traditionally assigned to combined arms (reflected in part by the opposition Khrushchev faced to his emphasis on ballistic missiles and troop cuts in the early 1960s), one might argue that the Soviets would not have moved to such a concentrated reliance on nuclear weapons in their military doctrine without Khrushchev's influence. It is also possible, of course, that Khrushchev had not entirely made up his mind about Soviet military doctrine and the role therein of ballistic missiles by the mid-1950s (or at least not until the successful ICBM test in August 1957). Still, what is known about his military preferences as well as the implications of his solidification of power and ability to place supporters in key defense roles, clearly had an impact on how Soviet military doctrine developed from 1956 to 1965. So, it seems fair to say that the factors of technology change and leadership change were probably on equal footing for this period.

External Variables

In the realm of external variables, it is apparent that the U.S. and its NATO allies by the mid-1950s were pursuing a strong shift to nuclear weapons. New Look, Massive Retaliation, and MC 14/2 were all clear symptoms of this move. The debate and implementation of the Pentomic division and the results of Army exercises

(particularly ones like Carte Blanche) would have added further confirmation of this shift for any Soviet skeptics. Furthermore, it is also clear from the Soviet press during this period that these U.S. developments were of much concern to Soviet policymakers (Lockwood, 1983: 45-78).

Would the Soviets have moved to nuclear weapons without this influence from the U.S. and NATO? This thought stretches the bounds of imagination of counterfactual historical situations and is therefore particularly difficult to comment upon with confidence. Given the remark earlier about the importance of nuclear weapons, the basic answer is probably affirmative. However, the strategic relationship's interactive dimensions--in this case, the necessity of Soviet planners having to account for the most plausible threats from the U.S., whatever they might be--would not have permitted the Soviets to ignore such strong signals from the U.S. about the direction of its military doctrine and force posture. So, if the U.S. had not moved to a nuclear posture or had not moved as clearly, it is plausible that the Soviets might not have focused as much attention as they did on a nuclear-oriented doctrine and force posture. Therefore, it seems appropriate to conclude for the 1956-1965 period that internal variables were more important than external

ones, but that they were only somewhat more important that the principal external variable during this time--the U.S. and NATO move to reliance on nuclear weapons.

The Post-Khrushchev Decade

Internal Variables

As any Sovietologist looks over the period of the mid-1960s, the effect of Khrushchev's ouster is apparent on a wide range of Soviet policies. In the area of military doctrine, given what is known about the differences in views between and among the upper-level military leaders on strategic weapons and combined arms, it seems to go without saying that Khrushchev's departure had an important effect on the Soviet developments in doctrine and strategy beginning in the mid-1960s. The impact of leadership change as a variable extends beyond the removal of Khrushchev himself, of course, since there were key changes during this period of personnel in the Party, civilian government, and military positions. When some of those new appointees are matched with remarks they made both before and after the 1966-1967 change in doctrine, it is fairly clear that many of the leaders who were brought into new positions had an important impact both on the conceptualization of the changes and on their implementation after the shift.

Evidence from the variable of technology change indicates little significance of this factor on the mid-1960s doctrine shift. The major developments in technology during this period were in the area of nuclear weapons, an although there were some developments classifiable as "major" that could have enhanced either conventional or nuclear warfare capabilities, there were no developments classified as "major" that could be interpreted as enhancing only conventional warfare capabilities. Considering the nature of the change in Soviet doctrine in the mid-60s, it seems that technology change was not an important factor.

The economic factor presents an interesting picture. GNP had stayed fairly constant in terms of its five-year average during the 7th Five-Year Plan (1961-1965) as compared to the previous Five Year Plan, but it had experienced significant swings during this period, due mostly to strong fluctuations in agriculture (and in investment). Growth in other areas of the economy had also slowed during this period. Some of the least impressive aspects of economic development during this period appeared in one of the most important sets of indicators--those for factor productivity. While there was improvement in some economic indicators for the 1966-1970 period, the improvements were not strong, and there

were several indicators which showed continued poor performance.

As suggested in Chapter Five, these economic trends to suggest constraints that would preclude enhancement of capabilities for conventional warfare. Such would especially seem the case given what is known about continued strong Soviet investment throughout the 1960s in their strategic nuclear force posture (especially ICBMs). Since from Chapter Nine it is apparent that it was precisely in the mid-60s that significant growth begins in hardware for conventional warfare and that these trends continue largely unabated into the early 1970s in spite of a worsened economic situation, the only viable conclusion is that economic constraints were not an important factor for the leadership as a change in doctrine in the mid-1960s was being considered.d Obviously Soviet leaders at this time had other priorities.

With regard to ranking the internal variables in terms of importance, the task seems rather straightforward: leadership change was key, while technology change and economics were not. The trend in doctrine seems actually

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dBunce (1983: 138-141) sees a somewhat brighter economic picture in the immediate post-Khrushchev years, but she focuses more on more equitable distribution policies than on actual economic performance in the first half of the 1960s.

to have taken a reverse course from what one would have expected given the economic conditions.

External Variables

When trends in U.S. and NATO decisionmaking are considered, the evidence certainly seems to suggest that this factor had an important impact on the Soviet doctrinal change in the mid-1960s. Military analysts and officials in the U.S. had been talking about limited nuclear war and more importantly, the conventional component to a graduated deterrent. Since the late 1950s, U.S. and NATO leaders had debated these issues from the very late 1950s throughout the 1960s, and by the time the Soviet doctrine and strategy change gathered momentum, Flexible Response was only a year away from approval. Additionally, U.S. involvement in Vietnam and the increase in its conventional arsenal undertaken for that conflict provided further concrete evidence of U.S. intentions to improve its capabilities to pursue conventional wars in distant areas. Moreover, it was clear from the Soviet press that leaders there were tracking these developments in U.S. strategic thought, force posture, and foreign policy initiatives (Lockwood, 1983: 81-119).

What about the effect of the Sino-Soviet dispute during this period? As suggested in Chapter Eight, the principal military developments in the Sino-Soviet dispute

did not take place until after the key shift in Soviet military doctrine and strategy had begun. Within the methodological parameters of the study, then, one has to conclude that the hypothesis about its effect on the shift cannot be substantiated. At the same time, there is some evidence the Sino-Soviet borders clashes did indeed have an effect on doctrine and strategy. As the border clashes developed in 1967, Prague radio in August of that year commented that

> "some changes in Soviet military doctrine, above all the stress on the importance of conventional weapons and of land forces...and, to a certain extent also some re-equipping of the Soviet air force...are the expressions of a serious assessment of the potential danger which has developed in China" (quoted in Gelman, 1982: 27).

While the Soviet leadership certainly must have authorized this statement as part of the domestic and foreign public relations campaign they were conducting at the time to pressure the Chinese to curtail border provocations, the message seems too specific to dismiss (Gelman, 1982: 27).

This statement, to the extent that it is accurate, seems to conflict with the conclusion that the border dispute did not have an important effect on the Soviet doctrine shift in the mid-1960s. If one wants to assume the statement is basically propaganda, this problem can be ignored. If one takes the statement as true, however,

probably the best way to reconcile it with the rest of the evidence on this issue is to note that while the timing of this quotation puts it in the period identified as a transition phase for the new doctrine, the statement occurs in the very last part of that period. Therefore, while there may have been doctrinal changes that were a direct result of the Sino-Soviet border dispute, the timing of the statement suggests that changes may have been more related to the development and implementation of the new doctrine than leading to the actual shift itself in doctrine.

Are internal or external variables more important during this period? In considering the possible influence of U.S. conventional warfare developments on the Soviets, one might argue that the Soviets had always emphasized the importance of combined arms and that the heavy reliance on nuclear weapons Khrushchev and his supporters in government sought was an aberration that was corrected by the Brezhnev-Kosygin team. One could also argue that the U.S.S.R., like the U.S., realized especially after Cuba that the superpower rivalry would not be pursued by direct conflict or with the use of nuclear weapons but rather by proxy governments or proxy political movements using conventional weapons. One could also argue that as a part of the concept of pursuing the superpower rivalry through

proxies that, even apart from military conflict, the Soviets perceived that they could do much to augment their international prestige by supporting various political groups around the globe through conventional arms sales.e

Still, given what is known about Soviet military developments in Western Europe in terms of force posture, it seems that the U.S. and NATO developments were indeed important. While one could explain Soviet involvement in assisting national liberation movements and its efforts to carry on the superpower rivalry in the Third World by determinations the Soviets might have made absent the development of Flexible Response, it seems that the Soviet buildup in conventional force posture in Europe can only be explained principally by the U.S.' articulation of Flexible Response in the early 1960s and the allies impending acceptance of this doctrine by the mid-1960s.

It is true that the tradition of combined arms thinking and force posture would have had a mediating effect on Soviet military doctrine and capability development, leading to some increased emphasis on readiness for conventional warfare in Europe after Khrushchev was ousted if Flexible Response had not been

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eThe Soviets have done much of their international trade over the years on barter, but arms sales were one important way the Soviets could earn hard currency, especially since there was little demand for their non-military commodities.

adopted. However, this mediating, coming-back-to-center explanation does not account well for the extensiveness of improvements the Soviets pursued in their European theater capabilities beginning in the mid-1960s. So, it seems that one can argue reasonably that without Flexible Response and related developments in U.S. decisionmaking on conventional warfare that the Soviet shift would not have occurred as it did or that if the Soviet shift would have occurred anyway, it would not have been reflected in Warsaw Pact force posture increases to the extent that it was in subsequent years.

So, as one looks back at the internal and external variables for this last period, it would seem that leadership change and the U.S./NATO policy shift are of roughly similar importance, while the Sino-Soviet split would be a distant second. Economics and military technology seem not to have had any major impact.

Pushing this conclusion farther though, especially the issue of the relative importance of internal or external variables, one could say that to argue the U.S./NATO shift was a particularly important variable in this period is to imply that leadership change was even more important. Such is the case because the Soviet doctrinal shift did not really get under way until a year or so after Khrushchev left office, but Flexible Response had been

under debate since at least 1962, and NATO allies were clearly heading in the direction of a Flexible Response-type doctrine, in spite of their disagreements on how to articulate it for the alliance. If leadership change were not the key variable, it seems very reasonable to argue that the Soviets would have begun reacting to Flexible Response in an institutional way earlier than they did. Debates would have occurred on major force posture issues earlier and some restructuring of the force posture would probably have been undertaken. Since these developments did not occur until after Khrushchev's departure it seems, as I suggested in Chapter Three, that leadership change is a "gate" of sorts for change in doctrine and strategy.

Retrospect

Looking back over the 25-year period covered here, what can be said about why the internal and external factors addressed have varied (or not varied) in importance over time? First, it is worthwhile to note a few caveats. One is that the number of decisions examined here is not large. This aspect of the analysis means 1) that the evidence is not broad enough to permit conclusions be drawn with complete confidence and 2) that one cannot be sure the factors affecting doctrine shifts have been influential primarily because of junctures of

events in history that might not come together in similar ways in the future.

Those caveats being offered, it seems first worthwhile to note that generally internal variables have carried more weight than external ones. While acknowledging that external and internal environments are linked through the perceptions of policymakers and that key policymakers in the Soviet Union can gain or lose power because of their views on foreign policy issues, one could not say from the evidence available here that external factors clearly cause Soviet doctrine and strategy developments. How a leader perceives the international environment obviously can affect his positions on foreign policy or Soviet military doctrine and can influence how he aligns himself in domestic policy debates, but the filter of his perceptions is such that one could not be assured that a certain set of security policies enacted, for example, by the U.S. or NATO, would lead to a certain set of responses from Soviet policymakers. While in the cases of the post-1955 and post-1965 shifts in doctrine and strategy, the Soviet shift seems generally to have paralleled U.S. change after the U.S. change occurred, there were indeed other factors at work affecting the timing and direction of the Soviet move.

Additionally, the evidence surrounding leadership change--the variable most frequently important--suggests that not only is the leadership's perceptual filter important for understanding the development of Soviet doctrine and strategy, but also change itself in the leadership. There may have been a growing common perception among leaders about the need for a shift in doctrine or strategy during the periods studied, but these shifts did not actually transpire until a change in the leadership had taken place. As suggested in the chapter on this variable, it seems to be the case that people become so closely associated with policies or are perceived to be so closely associated that these officials have to leave positions before the policies will shift. While this observation may be generally true for leadership politics in many countries, it is arguably more true in the Soviet Union because of a lack of responsibility to an electorate. If the upper levels of leadership in a country do not experience much turnover over time or at least not at regular intervals, and if, consequently, the only political winds to which a leader needs to be sensitive are the ones that blow at the top, it is likely the case that those winds are fairly light and not characterized by significant and strong crosscurrents.

One could perhaps argue to the contrary that even in a country where the leadership is responsible to an electorate that the electorate is not going to express itself often on technical issues such as military doctrine and strategy. Nevertheless, it is important to note that the political aspect of military doctrine as a substantial foreign policy component to it, and electorates do often have strong views on foreign policy. Furthermore, even if a large portion of the leadership changes related to a regular election did not concern military doctrine issues, one could argue that regular elections involving a responsive electorate would have a positive spillover effect on doctrine by bringing new people in with new ideas on foreign policy and military policy issues. This kind of spillover effect might facilitate a style of doctrinal development that was more immediately responsive to changing internal and external pressures.

The import of the military technology factor has been covered in is basic substance earlier. Military technology seems to have a strong effect on superpower doctrine and strategy only if new technology is available that is perceived by military leaders to be able to change the shape of warfare in such a fundamental way that it has to be dealt with early on, either by incorporating it into

force posture or, perhaps, by pursuing arms control agreements to halt its further implementation. Here I would define "fundamental" as involving significant differences in lethality or in how a conflict would be prosecuted if the new technology were available in deployable weapons systems. Such changes in military technology are not likely to occur often, so military technology should not frequently be a factor in doctrine and strategy shifts.

The economic issue has a similar cant to that of leadership changes, since, in a way, economic issues are among those that usually surface in debates surrounding leadership change. Soviet leadership attitudes about economic performance have been frequently debated in the West, and there has been a consensus for a long while that Soviet leaders have not been adequately concerned with productivity and that they have accorded little emphasis to consumer commodities. While this is not the place to embark on a discussion of Soviet political economy, the decision of the Soviet leadership over time to pursue certain ideological or political values at the expense of productivity, consumer welfare, and a vibrant R&D base, has been a consistent characteristic of Soviet leadership politics. It has also been a characteristic that has increasingly hurt Soviet GNP.

Economic constraints for the Soviets, therefore, at least in the 1946-1975 period, seem to have been a factor affecting doctrine and strategy only when leaders decided to recognize them as such--which was virtually never. Additionally, one can say that the lack of Soviet leadership concern for economic productivity has been detrimentally affected by the lack of an electorate with any political clout in national economic policy. The degree of centralized planning in the Soviet Union, the extent of the leadership's autonomy in the planning process, the inability of the populace to contribute to those decisions, and the capacity of the populace to endure deprivation are all factors which made it possible for the leadership to ignore economic constraints. If any of these factors changes significantly, then economic constraints may become more important for decisionmaking. Therefore, while economic constraints remain important to watch, the hypothesized ties between economic health and conventional doctrine and between economic decline and nuclear doctrine could not be validated in this part of the study.

The question of U.S./NATO decisionmaking as a factor has also been covered at several points already. What one superpower is doing--how it says it will fight a war and what kinds of forces it is procuring to implement its

doctrine--is obviously important for the other side's doctrine and strategy, but that is not to say that the shift in the doctrine of one side need lead to a shift in the doctrine of the other. For example, while one sometimes hears the argument that the U.S. shift to nuclear weapons influenced the Soviet shift in that direction and that Flexible Response influenced the Soviet shift to a more conventional-oriented posture, no one has really made the argument that the Soviet shift to nuclear weapons in the mid-1950s or the shift in emphasis to conventional weapons in the late 1960s led to any major shifts in U.S. doctrine. The reason most analysts would assert that the latter series of events did not occur was that U.S. leaders by those points in time had developed a doctrine with which they were satisfied and did not see a need to change simply because Soviet doctrine did. One could respond that the Soviets in the early to mid-1950s or early to mid-1960s were just "out of step" with the U.S. and were readjusting, but the basic fact remains that changes in one superpower's military doctrine and strategy (here, the Soviet Union's) did not lead to a shift in the orientation of U.S. doctrine. So, while shifts in Soviet doctrine have generally paralleled those of the U.S. and NATO in time and direction, there is no guarantee such would be the case in the future.

While McConnell's (1985) analysis mentioned in Chapter One--that each of the superpowers formulates strategic doctrine based on the weaknesses of the other--is probably close to the mark, he only looks at the interaction of superpower doctrine and for the Soviets tries only to explore doctrinal shifts in terms of Massive Retaliation or counterforce or LNOs. Developments in the other sides' strategic doctrine may arguably be the only variable of any importance, but my study suggests such is not the case.

While he may have been more on the mark with the strategic relationship by calling it an action-inaction, the link through the perceptual filter of the several influences on doctrine is not something he covers. Because one side's development of strategy in the other side's perceptual filter may affect a variety of elements of the bilateral relationship, it is possible to see why one side's doctrinal change at one point may influence the other side's doctrinal thinking but not so much at another juncture in time. The fact that there are several factors which could have an effect at one time does not make prediction impossible; it just means that one has to be sure to weigh a variety of factors simultaneously in evaluating shifts in military doctrine and strategy.

The same dynamic is true for the Sino-Soviet relationship. Military relations between the two sides are important, but they have to been seen in the context of the overall political relationship as to whether military improvements China pursues in its nuclear or conventional forces or military activities it conducts are perceived as dangerous. Provocations at the border were serious, but the fact that the Cultural Revolution and the Red Guards, rather than the Chinese Government, may been behind them, provided a different orientation for the Soviets on the incidents and was one of the reasons, along with the generally low level of violence of the provocations, that the Soviets did not react earlier. If there had been an earlier reaction, the border clashes may have had more of an impact on the mid-1960's doctrine shift.

In general, then, for doctrine and strategy change in Soviet system, one has to conclude that leadership changes are almost always important, especially if differences have appeared on military doctrine or relations with the West. Usually it seems that the more important leadership changes involved with a shift in doctrine precede the shift rather than follow it. Military technology developments can be important if key technology changes are not implemented. Economic constraints can be important

if they are part of the debate in leadership change or if the leadership otherwise acknowledges economics as an issue. External factors are important if there is an important change in one side's military doctrine and this development occurs in time for it to be part of debates surrounding leadership change in the other side. Otherwise, there may be a delay in the Soviet doctrinal response. These characteristics noted about doctrine and strategy change in the Soviet system are significantly affected by the absence of an electorate with political power on foreign affairs issues. Finally, while the analysis of factors affecting doctrinal change have focused on aspects of doctrine dealing with conventional warfare, it seems fairly reasonable to assert that the dynamics discussed here would be applicable to the development of most important aspects of Soviet military doctrine.

Implications for Future Soviet Developments and for NATO Defense Planning

Having identified the individual factors that have played a part in doctrine development over the first thirty years of the post-war period, what predictions could be made for future developments? One prediction is that if a debate seems to be brewing in the military or political press about key security or security-related foreign policy issues, one could anticipate that that

debate may be resolved within several years (or sooner) of a leadership turnover that involved either the General Secretary or the Minister of Defense. Even if there were no clear debate before such a turnover (and especially if there were a turnover in both these positions at approximately the same time) one might expect some change in doctrine or strategy anyway.

A change in these positions, of course, could only be considered a necessary rather than sufficient condition for a shift in doctrine. One could not guarantee that a change in doctrine would follow personnel shifts in these positions. Still, while my study has not focused on all leadership changes since World War II and attempted to determine what important contemporaneous political developments these changes may have affected, it is interesting to note that most of the changes at the highest levels of the political-military leadership--particularly the General Secretary and Minister of Defense--occurred about the same time as the principal shifts in doctrine and strategy. This evidence suggests that some changes in military doctrine and strategy may continue to accompany such developments even if doctrine and strategy have not been key issues in the succession surrounding either office.

Additionally, as indicated earlier, this argument about leadership change seems precedent on the Soviet Union's remaining a polity where the leadership need not be responsive to the electorate on foreign policy issues. Were that situation to change, one might see shifts in doctrine or strategy without change at the highest levels of leadership.

Changes in doctrine or strategy may also follow upon Soviet development of new technologies that would alter warfare in significant ways. Westerners would, of course, need to understand how the Soviets viewed such technologies and the roles they could serve for Soviet military purposes before making predictions about doctrine and strategy change. Although there are many similarities between Soviet military doctrine and Western approaches to warfare, Western analysts would also need to be sensitive to differences in military culture before reaching conclusions as to how potentially valuable Soviet leaders would evaluate a new technology.

Based on the evidence until 1975, Western analysts would not expect economics to be an important influence on Soviet doctrine. Soviet economic performance has continually declined since the mid-1960s, and while Soviet leaders by 1976 often talked of reforms, little had been pursued by that time, and the reforms that were pursued

were half-hearted and short-lived. Unless Soviet officials were to come to a consensus that they had economic problems severe enough that immediate remedial attention was needed, doctrine should continue to be unaffected by economic trends.

U.S. and NATO planners could anticipate that if the U.S. or NATO pursues a major change in doctrine or strategy, it is likely that some sort of Soviet doctrinal change may follow. In the past, the Soviets basically shifted in the same directions U.S./NATO planners did, though several years after the U.S./NATO change had taken place. This development is not to say that a potential Soviet change would necessarily occur or would follow the same direction as the U.S./NATO change, only that such has been the trend in the past.

Because of the undeniable interactive nature or the military doctrines of two superpowers in a world where there have not been challengers of approximately equal size and strength, the two countries have been able to manage this condominium with little pressure from other agents. If such challengers developed as the U.S. or NATO were shifting its doctrine, one would need to be fairly alert to the effect of such agents on Soviet doctrinal planning.

The Soviets by 1975 probably had sufficiently revised doctrine for military problems on the Sino-Soviet border to handle whatever problems might result there. However, if the perceived military threat from China were to drop significantly, one could anticipate that doctrine and strategy toward China might change. Obviously, the Soviets do not develop specific doctrines or strategies for dealing with individual countries; the strategy the Soviets had developed for a conflict with China would probably be more similar to than different from the strategy they would devise for a conflict in Europe. Still, a greater or lesser perceived military threat from the PRC could stimulate a change in doctrine or strategy.

Likewise, influences that affect how the Soviets would fight in one theater would probably affect their thinking in other theaters. Therefore, one could also look for changes in Soviet thinking about a war with the U.S. or a war in Europe with NATO as suggestive of possible shifts in Soviet thinking about a war with China. Soviet tactics, operational art, and some types of strategy would shift for different countries (given variations in geographic, political, and military factors), but the general Soviet outlook on war in one region is probably similar to Soviet outlook on war elsewhere.

As U.S. and NATO leaders go about planning their arms control and defense policy, then, it seems that there are a few assumptions about possible Soviet reactions that can be made. First, these planners would need to be aware of how Soviets usually go about solving certain foreign and military policy problems in order to understand what kinds of reactions the Soviets would be likely to have to important U.S. or NATO military initiatives.

Second, the evidence from this study suggests that the direction and strength of the Soviet reaction to such planning, if there were a reaction, would be hard to predict. NATO leaders could not just assume a mirror-image response; a Warsaw Pact response to a NATO shift might not be shift in the same direction but rather designed in some other way to counter the doctrine developed by NATO. Even this assumption might not account well for what did actually occur, if consideration were not given to non-military aspects of the postulated Soviet response. Third, NATO leaders may want to take into account that until a Soviet electorate develops that actively expresses its will on foreign policy matters, a Soviet doctrinal response to a major NATO doctrinal initiative may be retarded until a major Soviet leadership change occurs.

Implications for Comparative Foreign/Security Policy Formulation

The model of security policy formulation introduced in Chapter One seems to comprehend adequately the results so far of this study (this model is reproduced as Figure 1 of this chapter). I will therefore edit the chart here with my comments, rather than redesigning it.

Starting with the inputs, one would suggest that while political, military, and economic inputs could have both internal and external sources, this study suggests that the political dimension is more significantly affected by domestic than external factors, since the external environment is so strongly filtered through the context of leadership politics in the Soviet Union. Military inputs here are probably more affected by external sources than internal ones, since this study suggests the principal internal dimension of the military input depends on technology, which Collins has already defined as an internal input.

Finally for the Soviet Union, which has not been extensively involved in the international economy, economic inputs are probably related more to internal than to internal and external sources equally. For countries similarly isolated, the effect would be similar, though, indeed, this isolation has been characteristic of relatively few countries. Social and psychological factors are legitimately considered internal inputs,

though it seems difficult to measure these and therefore to assess how valuable they actually are for the model. Perhaps they could be ignored.

Also, one could probably rank the inputs Collins proposed. From this study, perhaps a ranking of political-military-technological-economic-social-psychological would be appropriate.

My study does not deal with formulation of goals or objectives, so the manner in which these elements are presented in the model seems reasonable. I would agree that military doctrine is the ordering principal of those objectives involving the military aspect of foreign policy. I would add, though, that military doctrine--here, nuclear or conventional--can be considered a function of leader's value systems and worldview. Doctrine, because it helps tie strategies with resources, is a manifestation of what the leadership considers the most appropriate means to achieve security and foreign policy goals.

So, while it seems rather obvious to say that whether a leadership thinks its foreign policy goals are better met through a nuclear or conventional doctrine is a function of those same inputs that define objectives and interests, it may be worthwhile to point out that their is a connection to doctrine from these inputs through a

"worldview" filter. It would be a rather subjective analysis to try to comment on why a leadership at one point in time sees its security policy goals best met through a nuclear-oriented doctrine and at another time through a conventionally oriented doctrine. Such issues in part touch upon the psychology of leadership noted briefly by Lambeth (1974) and Dallin (1981) in Chapter One, who comment on the important linkage of subject and objective (either external or internal) factors. Obviously, such changes can be a function of the country's foreign policy goals, its resources, or both.f In any

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fIn the instance of the U.S. move from conventional to nuclear policy, one can point to several factors. One is that decisionmakers early on considered nuclear weapons to be much like conventional weapons, only more powerful. This point, discussed in Chapter Seven, is a central theme of Girrier's (1985) assessment of the no-first-use debate in the first post-war decade. Another factor was economic--nuclear weapons provided much more military power at much less expense, in terms of both money and troops (see Chapter Seven and Mansfield, 1951). A third reason was a strong sense of obligation to provide the best protection possible to an "enfeebled" Western Europe (NSC-30, 1948). A fourth factor, voiced by Eisenhower during some decisionmaking sessions, was that the U.S. should rely on atomic weapons because it was "opposed by people who would [not] think as we do with regard to the value of human life" (Goodpaster, 1956).

The U.S. move back to a conventional emphasis in theater warfare seems most clearly tied to a shift in foreign policy goals, combined with a shift in the political-military context of the international environment. U.S. objectives for its relationship with the Soviet threat changed, and this change was a function of factors such as increased Soviet nuclear power, decolonialization of developing countries, and their openness of these countries to political pene-tration. Some of these factors in both cases might be true for the

case, the tie between doctrine and inputs through a "worldview" filter should not be ignored, because perceptions of the hostility, trustworthiness, and legitimacy of the other side's foreign and defense policy activities would come strongly into play.

What one might be able to do for a country to understand how its leaders would process challenges to that country's security is specify the conditions under which a shift in the worldview filter would occur, in other words, how changes in inputs--in this case, principal military threats--could affect changes in doctrine and strategy. My study has not been a decisionmaking analysis, so there is no real evidence from the study to address this question. Nevertheless, one might be able to move toward an answer to this question by exploring an approach such as a dynamic utility analysis of the perceived effectiveness of various resources and instruments in achieving policy goals.

Finally, since my study has been descriptive rather than analytical about how doctrine relates to strategy, there are no particular implications from this analysis about the final stage of policy implementation Collins mentions. Implementation issues clearly would have a

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Soviet Union.

feedback effect on the policymaking process, but that would be a topic for another research project.

Projections for Part Two of the Analysis

Before turning to an elaboration of the independent and dependent variables for the second part of the study, it is appropriate to note some hypotheses for doctrinal development for the post-1975 period based on the findings thus far. As suggested in Chapter Two (and as explained further in Chapters Eleven and Thirteen), Western and Soviet commentators have noted that doctrinal developments tied with the mutual security concept basically were undertaken beginning in 1985. Before that time, doctrine on conventional war had remained fairly consistent from the late 1960s. Therefore, my hypotheses are geared to developments in the mid-1980s, and though specific hypotheses regarding specific internal and external factors will be discussed at the ends of Chapters Eleven and Twelve, respectively, these general hypothesis here will help in setting the analytical framework for the second part of the analysis.

First, I will hypothesize that leadership change should be as important for the recent developments as it has been in the past. There were numerous changes in key political and military positions surrounding the Gorbachev

succession, and these new appointments were arguably important in the recent doctrinal developments.

It is difficult to speculate about the impact of Soviet technology developments for mutual security. In consideration of defensively oriented Warsaw Pact, perhaps if it can be shown that there were key development in defensively oriented techonologies, one can assume developments in military technology had an important impact on recent doctrinal modifications. While differentiating between technologies for nuclear or conventional conflict is feasible in many cases, it is rather more difficult to link technologies specifically to a "defensive defense" concept. Therefore, it may not be possible to assess with confidence the importance of Soviet military technology developments for the current doctrinal debate.

Based on the evidence thus far on economic constraints, one would hypothesize that the continuing decline in Soviet economic conditions would have no clear relationship to doctrinal developments. Keeping in mind the original hypotheses about the relationship of economics to military planning, one might also propose that if increasing economic constraints were taken into account by the leadership as they considered military doctrine issues, leaders would most likely not be in favor

of augmenting Soviet reliance on conventional warfare and associated force posture. Such is the case because of the significant investment in military R&D the Soviets would have to pursue to develop the kind of technology necessary for PGMs.g

U.S/NATO doctrinal changes have been relatively important for Soviet doctrinal developments in the past, so one anticipates that U.S/NATO policies are likely to be important for recent Soviet developments as well. As this external factor is explored further in Chapter Twelve, it will be necessary to be as precise as possible about how U.S/NATO policies can be linked to the mutual security concept. The evidence thus far on the Sino-Soviet relationship would suggest that military tensions between the two countries is not likely to be an important factor in recent Soviet doctrinal developments.

If it can be shown that a Soviet doctrinal shift has been under way, what can be said about the likely comments leaders will make about the reasons for change? New Soviet leaders have historically been critical of their

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gIn actuality, the economic constraints, together with the security problems the Soviets faced in Europe, led to a wholesale revision of their military posture in Europe and their views on the efficacy of military force in foreign policy. Events, in a manner of speaking, overtook the "defensive defense" discussion, but the speculation as offered here is based on the evidence up through 1976, not through the late-1980s.

predecessors for problems the country continues to face. Evidence thus far on doctrinal developments, particularly for the 1956 and 1964 successions, suggests that a new leadership may be critical of the overall security orientation of the preceding leadership, though it will forego criticism on specific doctrinal issues. In the past, Soviet leaders have bragged about technological developments when those developments have been important for doctrinal modifications. If technology appears important for the current doctrinal discussion, one should probably expect similar comments. Since economic constraints have not been important for doctrinal shifts in the past, there has been little discussion of the effect of specific economic developments on doctrine. Given the relative unimportance of economics for doctrine thus far, one should expect not to see comments about the economics-doctrine relationship in the current period.

In the past, the Soviets have talked abount U.S./NATO doctrinal developments as being aggressive initiatives to which the Soviets must respond. There has clearly been an element of propaganda in such remarks, but the historical connections between U.S./NATO and Soviet doctrinal planning have arguably been plausible enough in some cases to lend credence to that commentary. If U.S./NATO doctrinal planning is shown to have a connection to

current Soviet doctrinal developments, then one should expect to see Soviet commentary on the connection.

While in the past the Soviets have not spared criticism of the Chinese, comments about the effect of Chinese military developments on Soviet doctrine have been minimal. This study would obviously attribute much of that absence to the lack of evidence of an impact of Sino-Soviet military tensions on Soviet doctrinal shifts. One would therefore anticipate seeing little, if any, Soviet leadership commentary of the effect of Sino-Soviet relations on current Soviet doctrine.

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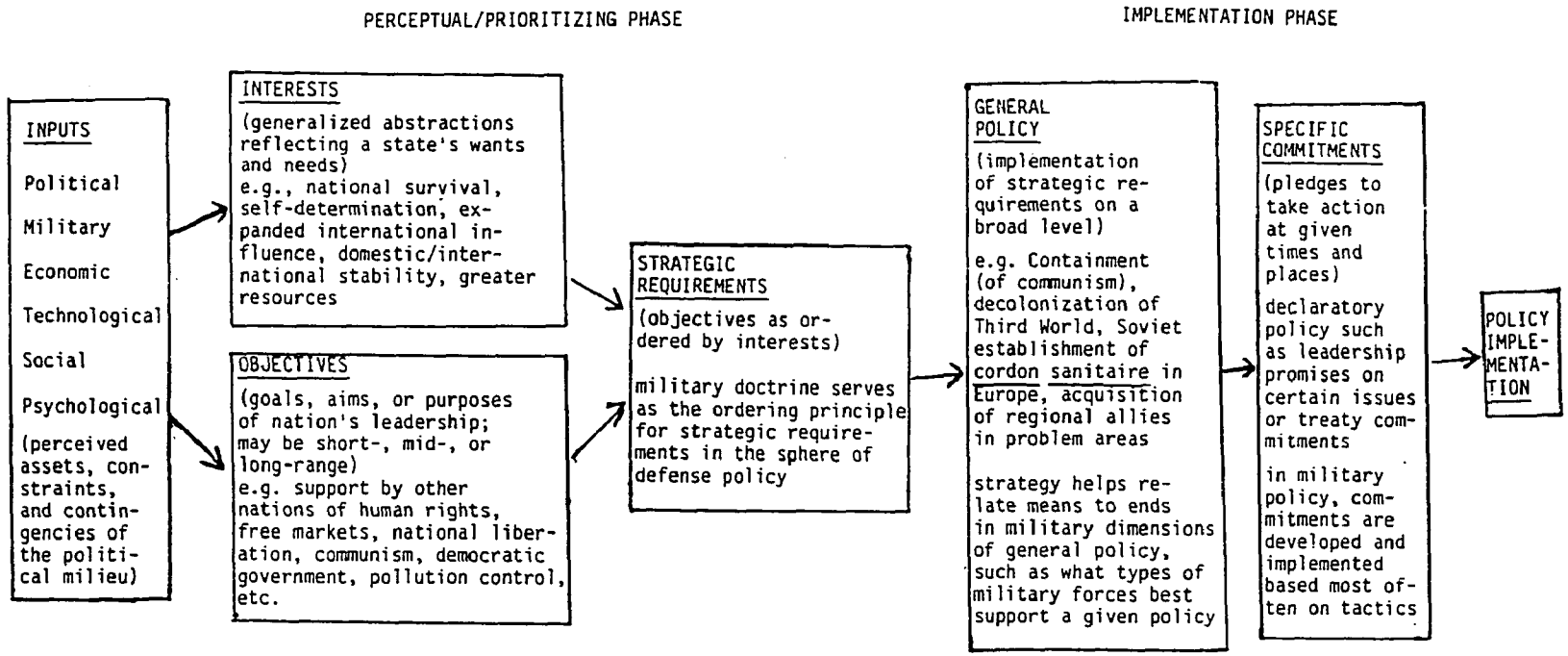
APPENDIX

Table 10.1: Summary of Independent Variable Effects

Period of Doctrine Shift	Variables (in order of importance)
1954-1955 (transition period)	Internal: Technology advances Leadership change External: U.S./NATO doctrine shift (U.S. strategic doctrine in particular)
1956-1965	Internal: Leadership change Technology advances (economics possibly by 1960) External: U.S./NATO doctrine shift
1966-1975	Internal: Leadership change External: U.S./NATO doctrine shift (Pressures from Sino-Soviet military problems confirm direction of shift)

Transition Period		1953-1954	1955-1956	1965-1967	
Dependent Variables	Military Doctrine	Toward Consideration of Nuclear Weapons	Toward Predominance of Nuclear Weapons	Toward Predominance of Conv. Weapons	Evaluation of Impact
INDEPENDENT VARIABLES — INTERNAL	Leadership Change	X	X	X	Major Significance (MS)
					Contributory Significance (CS)
					Negligible or No Significance (NS)
	Technology Advances	X	X		MS
					CS
				X	NS
	Economic Constraints				MS
					CS
		X	X	X	NS
INDEPENDENT VARIABLES — EXTERNAL	U.S./NATO Doctrine Shift				MS
		X	X	X	CS
					NS
	Sino-Soviet Military Tension				MS
					CS
		X	X	X	NS

Figure 10.1: Summary of Variables and Their Significance in Doctrine Transitions



Source: Based on Collins (1973: 2)

Figure 10.2: National Security Process Schema

Table 10.2: Anticipated Ranking of Variables for the 1976-1985 Period Based on the Evidence for 1945-1975

Internal

Leadership change (most probably important)

Technology developments (of questionable importance)

Economic constraints (of no likely importance)

External

U.S./NATO doctrine or strategy shift (very possibly important, if one occurs)

Sino-Soviet military tension (of doubtful importance)

CHAPTER XI

SUMMARY OF INTERNAL INDEPENDENT VARIABLES, 1976-1989

Leadership Change

As noted in Chapter Two and as will be confirmed in Chapters Thirteen and Fourteen, Soviet military doctrine from 1976 to the mid-1980s was fairly consistent with that of the previous decade. Soviet officials and Western scholars alike concur in their assessments that it was in the mid-1980s that Soviet doctrine began to shift. Before proceeding with the analysis of leadership change, therefore, it is first necessary to settle upon a point in time at which separate developments of the post-1975 period from developments of the period of "new thinking."

Soviet high-level political and military officials have said that Soviet doctrine was revised from 1986-1987, and the Warsaw Pact, whose military planning normally reflects Soviet thinking and over whose affairs Soviet officials have exercised a strong guidance, issued a major revision of doctrine in May 1987.a Gorbachev himself noted that in early 1986 that the April 1985

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aSee O voyennoy doktrine, 1987: 1.

Central Committee plenum (at which he was elected General Secretary) undertook a review of the threat of nuclear war (Parrott, 1988: 3).

Marshall Akhromeyev remarked sometime after Gorbachev's statement that that plenum had lead to the Defense Council's pursuing a two-year review of military doctrine (Parrott, 1988: 3n). Since military doctrine is a subset of foreign policy, one may also note that the 27th Party Congress in February 1986 was the forum at which Gorbachev laid out the key elements of his "new thinking" in foreign affairs. More of the concepts in this speech dealt with East-West affairs and the security relationship, and Gorbachev had set the stage for this exposition of ideas with some of the arguments he had made in his April 1985 acceptance speech.

If the February 1986 speech is viewed as a salient point in the chronology of Soviet doctrinal development, one could say that the key shift extended from April 1985 until May 1987. The subsequent analysis, then, will use that time frame as the principal period of transition and will examine how the changes initiated during that period fit into the framework that underlies my analysis.

Assessment of leadership change for this doctrine shift encounters some of the same methodological problems as the shift in the mid-1960s, in that there is a

transition period of approximately two years. The length of this period significantly extends the time in which leadership changes may occur, thus potentially confounding the analysis because of the much larger number of appointments that could be surveyed prior to the formal articulation of the new doctrine.

Before I restate the hypotheses developed from Chapter Three that I will use to assess this shift, I will note that I resolve this methodological problem in the same way I resolved it in Chapter Three. This approach is to consider as key changes primarily those new appointments made in the 18-month period prior to the initial indication that a shift is being considered. The logic here is that it would be those leadership changes that preceded this initial indication that would be the most important for setting the change process into motion.b I will use the criteria from Chapter Three to evaluate whatever changes occur during this period.

New appointees to the surveyed positions during the transition period following this initial indication would also be influential in the reevaluation of doctrine and helpful in shaping the final doctrinal product. However, it would be more difficult to say whether these new appointments were really important for the doctrinal changes or whether they were made largely as a result of

bThis point is admittedly arguable, but not enough so to warrant modifying the methodology for this time period.

the momentum that had built up for the doctrine shift and then simply helped foster that momentum. Given this difficulty and the assumed greater importance of the appointments prior to the initial articulation of a shift, I will consider appointments during the transition of lesser importance than those that occur in the 18-month period prior to the initial articulation.

Therefore, any changes in key positions that occur during this period (General Secretary, Minister of Foreign Affairs, Minister of Defense, Chief of the General Staff) will be considered to have only a "moderate likelihood" of effect on doctrine, regardless of the prestige of the position. Changes in positions below these, if such changes occur during the transition period, will be considered to have only a "plausible" effect on doctrine development (no change from the earlier criteria here).

I will also use this approach for the interpretation of appointments that occur during the year following the basic formal articulation of doctrine. Appointees selected during this time may influence the development of the new doctrine, but it is probably not the case that these officials had as much influence on the doctrine shift as those appointments in the 18-month period prior to the initial articulation of the shift.

Here, then, are the hypotheses that relate leadership change to the shifts in doctrine:c

1) If there is a change in the positions of either First Secretary or the Minister of Defense in the 18-month period before the doctrine and strategy shift, leadership change can be assessed as having an impact on doctrine. In the case of changes in these two particular positions, I will consider there to have been a "strong likelihood" that the changes were important in the subsequent shaping of doctrine and strategy. If there are changes in both the First Secretary and Minister of Defense in the 18-month period prior to the doctrine and strategy change, I will consider there to have been a "definite likelihood" such changes had an effect on subsequent doctrine and strategy shifts.

2) If there is a change in either the Minister of Foreign Affairs or Chief of the General Staff in the 18-month period before the doctrine shift, one can also conclude that leadership changes were important for doctrine change. In the case of these changes, I will consider there to have been "moderate likelihood" such change had an effect on the subsequent shaping of doctrine and strategy. Because of the importance of the Minister of Foreign Affairs and Chief of the General Staff for issues of military doctrine, if there were changes in either (or both) the Minister of Foreign Affairs or Chief of the General Staff as well as either the General Secretary or Minister of Defense, then I will assume there was a "definite likelihood" such changes had an effect on subsequent doctrine and strategy shifts.

3) If there were changes in deputy ministers of defense, deputy chiefs of the General Staff, or other officials (such as Chairman of the Council of Ministers or Chairman of the KGB) in the 18-month period before a doctrine and strategy shift, then there is a plausibility that these changes had an important effect on that shift.

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cAs indicated, these hypotheses are the same as those used in Chapter Three.

4) In the case of a doctrine shift that involves a lengthy transition period, changes in key positions (General Secretary, Minister of Defense or Foreign Affairs, Chief of the General Staff) that occur before the conclusion of the transition period, though after the principal initial indication of the shift in doctrine, will also be considered as indicative of the importance of leadership change on doctrine shifts. Such changes, regardless of the level of the key official, will be taken as evidence that leadership change has had only a "moderate effect" on doctrinal development. If changes occur among the other positions during this time, leadership changes will be considered to have had only a "plausible" influence on the doctrine shift.

5) If any changes in the surveyed positions (regardless of the level) occur in the one-year period following the doctrine shift, leadership change will be considered to have had a "plausible" influence on the doctrine shift.

6) If a doctrine and strategy shift occurred with no changes in the surveyed positions, although there may have been changes in other positions in the leadership, then there is "no likeli-hood" that leadership changes were important for the doctrine and strategy shift.

Having presented these hypotheses, I now turn to the changes in the Soviet leadership for the mid-1980s. As one can see from Tables 1-4, leadership change was particularly important for the recent shift, as it was for the earlier ones. In the 18-month period before the shift began, changes occurred in the all key positions: General Secretary, Minister of Defense, Minister of Foreign Affairs, and Chief of the General Staff. During the transition period, there was also a change in a key position, that of Minister of Defense. There were also

numerous changes in the other surveyed positions, both during the 18-month initial period and during the transition.

The politics of the Gorbachev succession have been thoroughly evaluated by several Western scholars (see Hough, 1990: 17-43, 128-182; Brown, 1989; Doder, 1986). There is a general consensus that Gorbachev had been a key contender, if not the principal contender, and that there were important ties between Gorbachev and Andropov that help "position" Gorbachev well in relationship to other potential contenders for General Secretary, most notably Grigoriy Romanov, but Victor Grishin.d There is also a consensus that Gorbachev was assisted by ties to Suslov and to Kirilenko.

A strong consensus exists as well among Western analysts that the principal issues of the Gorbachev succession concerned economic and management reform. Not unexpectedly, there is also agreement that the foreign policy directions the new leadership began to pursue were strongly influenced by the need for broader and more

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dHough (1990: 42, 152-153) thinks that the position of General Secretary would have passed directly from Andropov to Gorbachev if Andropov had lived longer and been able to undercut Chernenko's power more. Hough believes that as events developed, Romanov and Grishin were not major threats to Gorbachev by the time of Chernenko's death. Brown (1989: 180-184) sees these challenges as more distinct.

stable contacts with the West. In this line of thinking, healthier relations with the West were necessary not only for improving the general foreign policy and security relationship, but also to facilitate a greater intensity of economic cooperation so that such cooperation could contribute to Soviet economic development.

New Appointees: Views on Security Issues

While domestic issues, if not domestic reform, seem to have been the principal concern in the Gorbachev succession, foreign and security views of the new appointees were not unimportant.e Gorbachev's views prior to his selection as General Secretary were relatively optimistic about cooperation with the West, and he had made several important trips to Western countries before spring 1985. Shevardnadze and Ryzhkov, neither of whom had significant foreign policy experience before their appointments, are thought to have been more open to innovative ideas on security. Such is thought to be case because the early political experience of their generation (which included Gorbachev) was not as decisively shaped by the Great Terror and World War II as that of the group these officials were replacing (see Parrott, 1988: 4). For example, Shevardnadze's predecessor Gromyko, while

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eMuch of the following discussion of leaders' views before their mid-1980s appointments is based on Parrott (1988).

generally supportive of detente with the West, had a strong reputation regarding the limits he saw as appropriate for Soviet foreign policy compromise.

Akhromeyev had a reputation as having more moderate security views than Nikolay Ogarkov, whom he replaced as Chief of the General Staff. While Sokolov's views on Soviet security relations with the West probably were not that different from those of his predecessor Ustinov,f they were different from those of his successor Dmitriy Yazov. Yazov is decade younger than Sokolov, a factor which may have some impact on his views, and Yazov is much beholden to Gorbachev for his appointment. Yazov was selected Minister over the heads of the first deputy ministers of defense; indeed, Yazov had only been a deputy minister of defense for about four months before his selection as Minister. Other military officials who were replaced in several cases had served in their positions for an extended period of time or were known for conservative views, or both. Both of these dimensions were true for Tolubko, Gorshkov, and Kulikov.

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fMoreover, Sokolov was appointed on the occasion of Ustinov's death, not his dismissal or resignation, so his particular views are not that important for the current assessment. Moreover, the conventional wisdom is that Sokolov, who was 73 upon his appointment, was viewed as a transitional leader by the Politburo (Murphy, 1984).

Therefore, a perspective taking into account foreign policy views confirms that more flexible and open-minded orientations on such issues were important for leaders appointed to new positions during the recent doctrine shift. A willingness to reconceptualize and to compromise in East-West relations was clearly an important characteristic of the leaders who brought about the changes in military doctrine in the mid-1980s.

Military Technology Developments

For the period from 1976 to the present, the basic context for Soviet military technology R&D was already established in Chapter Four. The hypotheses from Chapter Four (repeated below) will also serve adequately for the contemporary period to relate technology to nuclear or conventional warfare.

As one speculates about the relationship of military technology developments to mutual security, however, some difficulty arises regarding technologies that might shape a preference for mutual security. There are two particular problems here. One is that the military concepts of mutual security are defensively oriented. The other, and perhaps more important issue, is that mutual security is heavily oriented toward political rather than military resolutions to conflict.

The significance of the defensive orientation of the military aspects of mutual security is that there are few military technologies that are specifically defensively oriented (as opposed to nuclear or conventionally oriented), thus making it difficult to identify specific technologies whose development might shape a preference for mutual security. In keeping with the approach in this study established for assessment of technology developments, new technologies would not only have to be fairly clearly identifiable as being useful for a particular type of warfare. These technologies would also have to represent major breakthroughs in order to be considered as having a probable impact on the shaping of new concepts in doctrine or strategy.

It is questionable whether such clearly defensive technologies exist. Most military technologies useful for offensive engagements are useful for defensive ones, thus rendering moot the question of the technology's offensive or defensive purpose. For example, it is generally accepted that cruise missiles serve a primarily deterrent role in a strategic force posture because of their lengthy times-to-target. Similarly, non-MIRVed land-mobile ICBMs are thought to serve a similar deterrent function because they are relatively invulnerable to attack and because they can only hit a single target. Both these types of

systems, however, can be used offensively (the cruise missile, obviously, more so in theater operations).

In reflecting on the type of military engagement that might be fought under the doctrine of mutual security, one may think of defensive holding engagements in Europe. Most types of technologies for such engagements, such as good C-cubed, defensive fortifications, and aircraft with sufficient range to attack targets at various places along the front, have already been developed.

One type of new technology that might be particularly suitable for defense involves those precision-guided munitions like Assault Breaker, which are intended to retard and stop armor assaults. Such munitions can be used together with movement- or noise-sensitive sensors dispersed in the ground as an electronic warning network. Such technologies do have offensive applications, but their defensive uses are arguably primary.

The Soviets, though, have not developed such systems, much less deployed them. Such is most likely the case because of Soviet problems in developing--and producing on a mass scale--systems with sufficiently sophisticated microprocessors and sensor technology. The Soviets are making progress on PGMs and have developed laser-guided bombs and electronically advanced tactical air-to-surface missiles. These systems, however, do not fall into the

class of PGMs one could appropriately classify as defensive. Moreover, these systems are not given high marks by Western analysts, an evaluation suggesting that Soviet technology for "defensive" PGMs will be a long time in coming.g On the point of political resolution of conflict, one could argue that defensive military technologies are not likely to lead to such a preference in any case--that the concern for political settlement of conflict is inspired by political and social concerns rather than new military technology. This is a very reasonable argument.

The upshot of these obstacles in linking military technology to the current period is that one can continue to make determinations about nuclear or conventional orientations, as these orientations may be influenced by technology developments, but not about the mutual security orientation. Perhaps if the Soviets had a proven and extensive PGM capability, some links might be drawn, but no links can be drawn in the absence of such capability.

New Soviet military technologies for the current period are listed in Table 5. Hypotheses linking

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gCurrent Soviet laser-guided bombs, for example, are no more accurate--and usually less so--than an F-16 dropping "dumb" bombs (U.S. Government official, 1990).

technology to nuclear or conventional doctrine, based on Chapter Four, are as follows:

> If there is at least one major new development in nuclear technology during a certain time period and if it can be shown that (1) this technology was later incorporated into the force posture on a broad scale and (b) was considered in doctrinal writings during that subsequent period as an important development effecting change in thinking about doctrine or strategy, that development can be considered to have shaped significantly subsequent thinking on the nuclear orientation of doctrine and strategy.
>
> If there is at least one major new development in conventional technology during a certain time period and if it can be shown that (1) this technology was later incorporated into the force posture on a broad scale and (b) was considered in doctrinal writings during that subsequent period as an important development effecting change in thinking about doctrine or strategy, that development can be considered to have shaped significantly subsequent thinking on the conventional orientation of doctrine and strategy.

As Table 5 indicates, there was a wide variety of new Soviet military technology developments in the last half of the 1970s and in the 1980s. There were several breakthroughs in technology for strategic systems, such as titanium hulls, OTH radar, and mobile-missile technology. These breakthroughs, however, were not such as to alter significantly Soviet nuclear capabilities or the Soviet-U.S. strategic relationship. Most of the changes in technology during this period were incremental ones and enhanced both nuclear and conventional capabilities.

Therefore, there are no clear indications about the impact of technology for doctrinal developments in the mid-1980s. The necessary conclusion, both for substantive and methodological reasons, is that developments in Soviet military technology were not important influences on the mid-1980s doctrinal shift.

Economic Developments

In considering the relationship of economic trends to military doctrine decisionmaking for the period from the mid-1970s until the present, I will use the same hypotheses as before. I present them here for the sake of clarity. Stated simply, the hypotheses are that

> leaders of a country may pursue a conventionally oriented military doctrine and force posture if the economy is stable or growing, but they will not pursue such a doctrine and force posture if the economy is declining. If the economy declines, the leadership may try to reduce the military drain on the economy, possibly by emphasizing a nuclear posture or by cutting military expenditures overall.

As is well-known, Soviet economic trends of the second half of the 1970s continued to present Soviet leaders with many of the same problems they had been dealing with until that time. As indicated in Chapter Five, the declining trends in GNP growth, industrial and agricultural production, factor productivity, and consumer goods continued to provide evidence after 1975 that

significant remedial work on the economy was necessary (see Tables 6-7 and Charts 1-4). The reforms of 1965 had not had any appreciable long-term effects, and administrative tinkering with the economy into the mid-1970s continued to seem in vain.

The Soviets did benefit in the early 1970s from increased technological imports from the West with the advent of detente. However, this assistance did not have much effect on growth rates calculated for the conclusion of the Ninth Five Year Plan (1971-1976), and such it certainly did not provide sufficient momentum even to begin to reverse the degree of economic decline. Such was especially the case given the depth of systemic problems affecting the economy. That these negative economic trends continued to have no appreciable effect on defense spending is clear. The five-year average for defense spending growth during the last half of the 1970s dropped slightly, but leaders continued to spend so much on the military that this drop in growth had a marginal effect on total defense spending.

By the mid-1970s, not only was the economy stagnating; so also was decisionmaking within the leadership. As in the past, one would have thought that steps would have been taken perhaps to improve the availability of consumer goods or R&D efforts, but investment growth in consumer

goods dropped by about 30%, and growth in R&D investment dropped by about 50% in the last half of the 1970s.

Systemic problems were compounded by the 1973 oil embargo. The old shortage caused by the embargo had advantages for the Soviets because it provided additional revenues for one of the country's important exports. At the same time, higher costs for fuel in the Soviet Union, as well as in Eastern Europe, cut into industrial production.

Except for 1977, when there was a slight gain in industrial production, and 1976, which was a good year for agricultural production, trends in all important indicators were negative. There was slight growth in consumer goods investment in 1977, which was sustained in the next two years, and there was some growth in investment in consumer services, though this growth was not maintained. Agricultural production showed improvement in 1976, but there were enough problems in this sector that, unless the weather was virtually totally cooperative, it would have been difficult to forestall the substantially negative growth characteristic of this sector in the last years of the decade.

In terms of remedial efforts for the economy, it was probably in part because of the decline in the civilian economy that growth in defense spending dropped from

approximately 4% per year to 2% from 1975-1985. This development may indeed confirm the hypothesis that leaders will reduce defense spending in periods of major economic constraints. However, there are two aspects of defense spending at that time that preclude confidence in this interpretation.

One aspect, mentioned earlier, is that a drop from 4% growth to 2% growth is not particularly significant, given the high level of military spending up to that point. The second is the argument made by Western analysts reflecting on this change that the lower growth in defense spending in the years after 1976 may have been due to cyclical factors in the defense acquisition process--particularly the factor that the Soviets may have planned to conclude some major procurement programs by the mid-1970s and that there was no need to spend as much on procurement in the following years (U.S. Congress, 1988: 102-104).h This supposition may be significant, though it would be difficult to rule out the possibility that the leadership was trying to effect some reduction in defense expenditure because of the problematic economic trends.

In terms of defense posture for the 1980s, the economic trends of the 1976-1980 period suggest, as did

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hProcurement, normally an important component of growth in defense spending, was about 1% during this period (U.S. Congress, 1986: 36, 1988: 102-104).

the trends for the 1971-75 period, that continued heavy expenditures would not have been a suitable economic course for a leadership concerned about improving the country's civilian economy. From what is known from charts 17-22 of Chapter Nine, much of the defense spending was being channeled toward improved conventional capabilities. There were indeed some important nuclear systems that began to be procured and deployed in the mid-1970s (SS-11, mod 3; SS-17, mod 13; SS-18, mod 4, SS-20s, Backfire, and Typhoon), and these programs also created a drain on the economy.i In addition, Soviet military assistance to Afghanistan and Vietnam during this period added to the defense burden. While it was still arguably the case that expenditures on procurements to enhance a nuclear rather than a conventional posture could have been a more feasible course of action, the Soviet economic situation was such that continued substantial defense expenditures of any type would not be conducive to the country's overall economic health.

One might expect, then, given the economic trends in the Soviet Union in the first half of the 1970s and leaders who are concerned about the health of the domestic economy, that steps would be taken to reduce military

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iFor information on these newly deployed systems, see The Military Balance, 1987-1988 (1987: 205).

spending on conventional forces, and, to the extent possible, to cut back on military expenditures overall. Such steps, however, continued to be avoided by the leadership.

In the first half of the 1980s, a period in Soviet history when the country was led by four different General Secretaries, there were no significant modifications in economic trends. Except for years when there was a good harvest (1982 and 1985), GNP growth was very low. Industrial production continued to decline, as did factor productivity. Investment in agriculture varied, but investment in industry grew during some years of the 11th Five Year Plan (1981-1985), in comparison with the 10th. Average per capita consumption dropped to one-half of what it had been for the previous five-year period. Annual defense spending growth continued a nominal 2%, the same rate as previously.

By the beginning of the 12th Five-Year Plan, and particularly as Gorbachev's supporters in the leadership began to implement his economic restructuring measures, it was clear that the Soviets were serious about trying to rectify the systemic problems they faced. A number of changes were proposed for the 12th Five-Year plan in order to turn around the poor economic performance. These changes included improving the introduction of new

technology into production lines, boosting labor productivity, cutting out delays in the investment cycle, and moving more enterprises to the self-financing basis (Ryzhkov, 1986: 1-5).

The impact of Soviet economic performance on the politico-economic system, and on military affairs in particular, seems straightforward. The evidence here, similar to much other evidence noted by Western and Soviet scholars, strongly demonstrates the need for the Soviet leadership to make significant adjustments in domestic economic policy, if not to overhaul the system entirely. The new leaders of the mid-1980s began to be more concerned about the relationship between defense spending and foreign policy and between defense spending and the civilian economy. This concern began to have a significant effect on military doctrine, as I will discuss in the last part of Chapter Fourteen and in Chapter Fifteen.

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APPENDIX A

Table 11.1: Leadership Changes for the 18-Month Period Prior to February 1986

Name	Position	Date Appt'd./Elected	Date Released/Died
Party/ Government			
K.U. Chernenko	Gen. Sec.		3/85
M.S. Gorbachev	Gen. Sec.	3/85	
A.A. Gromyko	MFA		7/85
N.I. Ryzhkov	Chrmn., CM	4/85	
E.A. Shevardnadze	MFA	7/85	
N.A. Tikhonov	Chrmn., CM		4/85
Military			
S.F. Akhromeyev	1st DMin. and Chief, Gen. Staff	9/84	
V.N. Chernavin	DMin. (Navy)	7/85	
M.A. Gareyev	DC Gen. Staff	4/85	
S.G. Gorshkov	DMin. (Navy)		7/85
Ye.F. Ivanovskiy	DMin. (Ground Forces)	2/85	
Yu. P. Maksimov	DMin. (SRF)	7/85	
G.A. Morozov	DC Gen. Staff	10/84	
V.I. Petrov	DMin. (Ground Forces)		2/85
	1st DMin.	2/85	
S.L. Sokolov	1st DMin.		12/84
	MOD	12/84	
V.F. Tolubko	DMin. (SRF)		7/85
D.F. Ustinov	MOD		12/84
A.N. Yefimov	DMin. (Air Forces)	12/84	

Table 11.2: Leadership Changes for the Period February 1986-May 1987

Party/Government			
No changes in surveyed positions			
Military			
V.Ya. Abolins	DC Gen. Staff		/86
V.L. Govorov	DMin. (Main Inspectorate)		7/86
	DMin. (Civil Defense)	7/86	
V.N. Lobov	1st DC Gen. Staff	3/87	
P.G. Lushev	1st DMin.	7/86	
V.I. Petrov	1st DMin.		/87
Yu.A. Sysoyev	DC Gen. Staff	12/86	
I.M. Tret'yak	DMin. (Main Inspectorate)	7/86	
D.T. Yazov	DMin.		5/87
	MOD	5/87	
Ye.A. Yevstigneyev	DC Gen. Staff	8/86	

Table 11.3: Leadership Changes for the One-Year Period, June 1987-May 1988

Name	Position	Date Appt'd./Elected	Date Released/Died
Party/Government			
No changes in surveyed positions			
Military			
V.M. Arkhipov	DMin. (Rear Services)	5/88	
K.I. Kobets	DC Gen. Staff	1/88	
A.I. Koldunov	DMin. (Air Defense)		6/87
G.F. Krivosheyev	DC Gen. Staff	9/87	
I.N. Shkadov	DMin. (Personnel)		7/87
M.I. Sorokin	DMin. (Main Inspectorate)	7/87	
D.S. Sukhorukov	DMin. (Personnel)	7/87	
I.M. Tret'yak	DMin. (Main Inspectorate)		7/87
	DMin. (Air Defense)	7/87	

Table 11.4: Summary of Significance of Leadership Change

Relevant Dates for Current Doctrine Shift	Evaluation of Effect of Leadership Change	Basic Reasons
18-Month Period Prior to February 1986	"Definite Likelihood"	Changes occurred with Gen. Secy., Mins. Defense and Foreign Affairs, Dep. Mins. Defense, Dep. Chiefs of the Gen. Staff, and Chrmn., Council of Ministers
Transition Period: February 1986-May 1987	"Moderate Likelihood"	Changes in Min. Defense and several Dep. Mins. Defense, Dep. Chiefs of the Gen. Staff
One-Year Period After May 1987	"Plausibility"	Changes in several Dep. Mins. Defense and Dep. Chiefs of the Gen. Staff

Table 11.5: Major Developments in Soviet Military Technology, Mid-1970s-Late 1980s

Technology Changes	Type of Innovation: Major/Incremental	Type Warfare Favored: Nuc./Conv./Either
(reported from 1975-1980)		
Increased accuracy, payload for ICBMs MRV and increased range for SLBMs, solid propellant technology for SLBMs	incremental	nuc.
Land-mobile technology for MRBMs developed	major	nuc.
Titanium hulls for attack submarines	major	nuc.
New ASMs for long-range bombers developed	incremental	nuc.
Improved ABM technology, including endoatmospheric missiles	incremental	nuc.
Modernization of air defenses, including OTH radar, transportable radars	major	nuc.
Improved capabilities for tanks, armored infantry vehicles, self-propelled field guns	incremental	conv.
Improved accuracy and greater range variation on anti-ship and anti-submarine missiles improved torpedo capabilities	incremental	either
Improved avionics and ECM for fighters	incremental	either
Improved range, payload, and penetration capabilities for strike aircraft	incremental	either
(reported from 1981-1985)		
Enhanced guidance and multiple yield capabilities for ICBMs; better post-boost and reentry vehicles	incremental	either
Better range and accuracy for SLBMs	incremental	nuc.
Improved range, accuracy and survivability for MRBMs	incremental	nuc.
Land-mobile technology for ICBMs developed	incremental	nuc.

Table 11.5 (cont'd)

Improvements in ALCM technology, especially range	incremental	nuc.
Increased speed and ceiling of reconnaissance aircraft	incremental	either
Advances in airborne C-cubed capabilities	incremental	either
Improvements in C-band phased-array radars, for ABM systems, including probable radar mobility for tactical applications	incremetal	nuc.
Advances in high peak-power microwave generators for C-cubed	incremental	either
Improvements in IR-homing guided interceptors for ASAT applications	incremental	conv.
ASW and anti-mine improvements in helicopters	incremental	either
Pivoting pylons for variable-geometry airframes	major	either
First true look-down shoot-down radar for fighters	major	either
Improved armament, range, and maneuverability for fighters, improved thermal resistance properties for airframe skins	incremental	either
Improved avionics for fighters, including J-band pulse-doppler radar, 360-degree warning radar, and terrain-avoidance radar; inertial navigation systems developed for fighters (all basically a function of improved computer technology)	major	either
Improved air-to-air missiles, especially capabilities for beyond-visual-range engagements; improved laser target seeker	incremental	either
Enhanced engine capability for helicopters; improved gearboxes and navigation systems	incremental	conv.
Low-light level TV sighting units for helicopters, FLIR and indirect-vision sensors	incremental	conv.
Better fuel-efficient engines for transport planes (i.e., high-bypass turbofans)	incremental	conv.
Improved off-road capability for tanks; better armor and CBW protection for tanks	incremental	either

Table 11.5 (cont'd)

Better range, accuracy, and mobility of artillery	incremental	either
Development of scatterable-mine warheads; improved portable rocket launcher	incremental	conv.
Improvements in amphibious engineering vehicles and tank recovery vehicles	incremental	conv.
(reported from 1986-1990)		
Improvements in reactive armor technology and capabilities of turretless tanks	incremental	either

Sources: The Military Balance, various years; The Soviet Armed Forces Review Annual, various years; Allocation of Resources in the Soviet Union and China, various years. This table has been unofficially coordinated with the USAF Foreign Science and Technology Division, Wright-Patterson AFB, Dayton, Ohio (Letter, 1990).

John Collin's tables on the U.S.-Soviet "technological balance" in his U.S.-Soviet Military Balance, 1980-1985 can be compared with similar tables in his Trends in the U.S.-Soviet Military Balance, 1960-1980 for further insights on Soviet technological developments. It is sometimes difficult to interpret precisely Collin's tables, but the following information was developed by noting technologies in which the Soviet Union had advanced in the 1980-1986 period. New technologies in this period include better fiber optics for communication equipment, image intensifiers and optimisers for satellites and communication equipment, improvements in endurance for hulls of surface ships, improvements in ship fire control systems, improvements in submarine hulls for greater operating depth, and integrated naval communcations systems (1980: 111-114, 1986: 38-42).

Table 11.6: Average Annual Growth Rates of Selected Accounts

Period / Account	1971-75 (for comparison)	1976-80	1981-85
GNP	up poorly (3.7)	up poorly (2.7)	up poorly (1.8)
GNP per cap.	up poorly (0.9)	up poorly (0.8)	n.a.
Investment	up moderately (5.4)	up less (4.3)	up poorly (4.2)
Indus. prod.	up moderately (5.9)	up less (3.5)	up poorly (1.8)
Total Consumpt.b (per capita)	up some (3.0)	up less (2.6)	up poorly (0.8)
Agriculturec			
as origin	declines (-2.3)	up slowly (0.3)	up poorly (1.3)
as end use	up moderately (4.8)	up moderately (5.4)	up poorly (1.1)
Factor prod.			
of which:			
GNP	declines (-0.2)	declines (-1.3)	declines (-1.4)
GNP inputsd	up well (4.1)	n.a.	n.a.
Industry	up well (1.5)	declines (-2.1)	declines (-2.3)
Indus. inputs	up strongly (4.5)	up strongly (4.9)	up strongly (4.1)
R&D invest.	up moderately (6.0)	up less (3.2)	n.a.

aData for this table for 1971-80 is based on Pitzer (1982: 55, 68, 72-73, 123) except for the factor productivity data for 1971-75, which is based on Greenslade (1979: 279). Greenslade uses the same basic data series as Pitzer. Values assigned to trends compare the growth rate in that period with the growth rate in the previous period. Data for 1981-86, excluding defense spending for 1976-1981 but including factor productivity data for 1976-80, is based on U.S Congress (1988: 61-66, 102-104).

bConstitutes allocations to both goods and services. Consumption per capita, rather than total consumption, was the accounting category used in JEC reports in the 1980s, so I have used that category here.

cOrigin signifies actual production; end use signifies investment allocated to the sector.

dNot calculated from 1980 on in available data.

Table 11.6 (cont'd.)

Defenses	up some (about 3.8%)	up some (about 2%)	up some (about 3%)

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eBy 1988, the CIA had revised its estimates of military growth for the 1970s. The agency noted a drop from an approximate 4% growth in 1974 and previous years to 2% in 1975. This level the Agency asserts was maintained until the mid-1980s, when procurement rates, (the principal reason it had been lower for a decade) increased slightly (U.S. Congress, 1988: 103-104, cf. 1987: 36).

Table 11.7: Annual Growth Rates of Selected Accounts

(in percent, based on 1970 ruble values, 1976-80 and 1982 ruble values, 1981-87)a

Year / Account	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85
GNP	4.8	3.2	3.4	0.8	1.4	1.0	2.7	3.3	1.4	0.7
Invest.	8.0	5.1	3.7	1.7	3.0	3.9	2.9	5.4	4.3	8.4
Indus. prod.	3.9	4.0	3.5	3.0	2.9	0.9	1.0	2.5	2.7	1.8
Agriculture										
by origin	11.4	3.5	3.5	-8.3	-7.3	-2.5	8.9	6.2	-2.0	-4.1
by end use	9.1	2.3	6.2	3.9	5.6	2.3	1.6	3.5	-3.1	1.3
Consumptionb										
Total	2.3	2.9	2.9	2.8	2.3//1.3		-0.9	1.3	2.1	0.1
Goods	1.8	3.2	2.6	2.7	1.9			n.a.		
Services	3.1	2.3	3.4	3.0	2.9			n.a.		
Non-durables	1.2	3.3	0.6	2.6	0.1			n.a.		
R&D invest.	1.4	2.6	2.5	4.3	4.3			r.a.		
Defense	approximately 2.0 from 1975 through 1985									

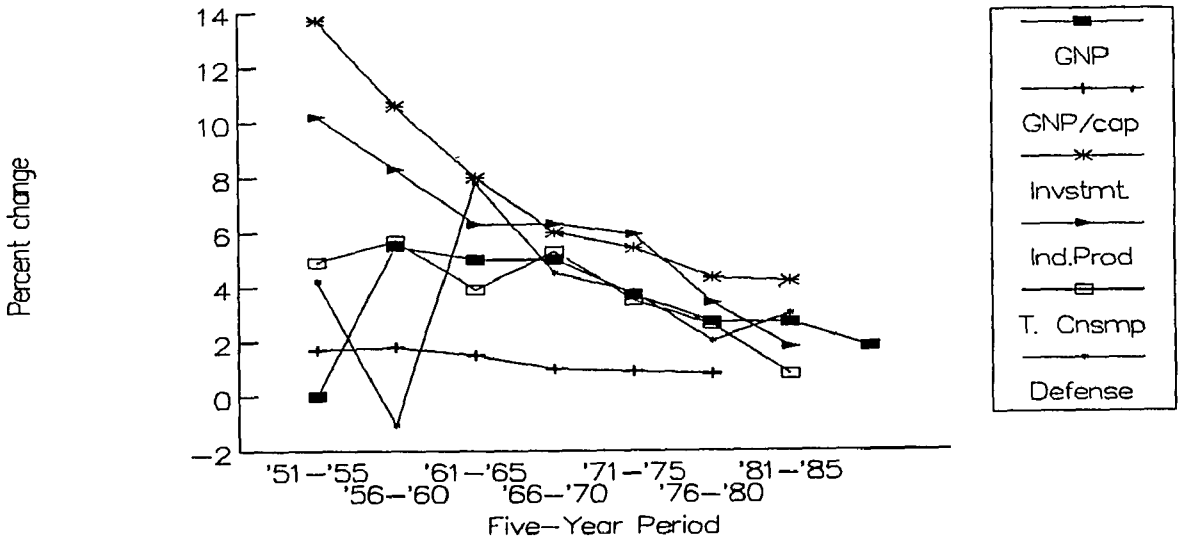
aData for this table for 1976-80 is based on Pitzer (1982: 55, 68, 72-73, 123). Data for 1981-86, is based on U.S Congress (1988: 61-66, 102-104).

b"Total" is the total yearly allocation to the entire consumer sector. "Goods" includes both food and consumer durables. "Non-durables" are primarily food products. The data for the "Total" series is in per capita terms after 1980. This series is the only consistent one available for the 1980s.

Table 11.7 (cont'd)

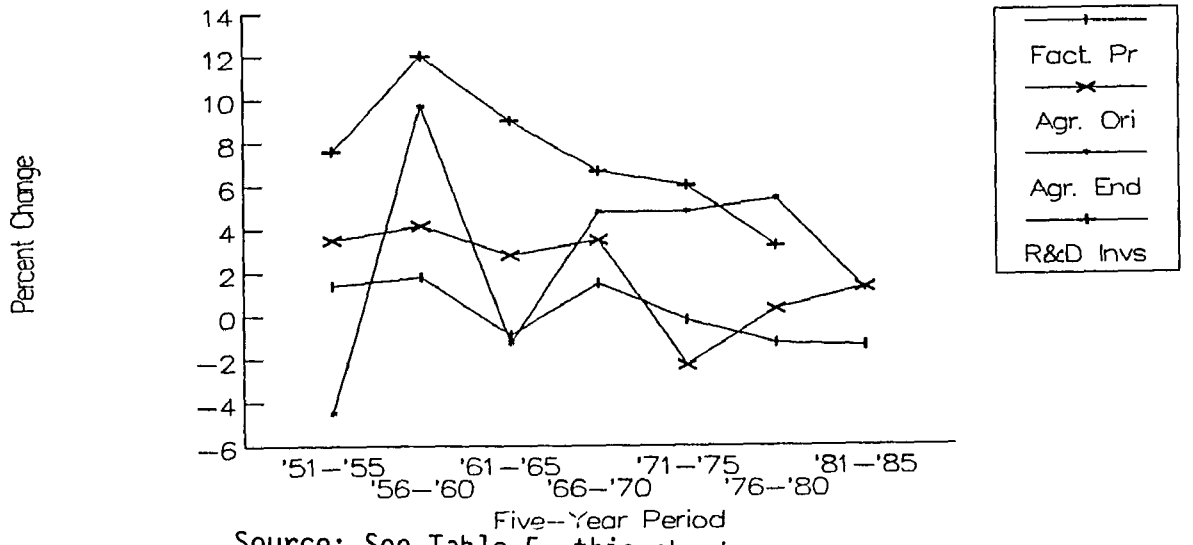
Year Account	'86	'87
GNP	3.9	0.5
Invest.	-2.0	(0.7)a
Indus. prod.	2.6	(1.6)
Agriculture		
by origin	7.8	(-5.2)
by end use	6.3	n.a.
Consumption		
Total	-2.0	(0.7)
(per capita)		
Defense	3.0 (approx.)	n.a.

aParentheses indicate preliminary figures.



Source: See Table 5, this chapter

Figure 11.1: Economic Trends, 1951-1985 (1)



Source: See Table 5, this chapter

Figure 11.2: Economic Trends, 1951-1985 (2)

NB: Plotted points in both these Figures are five-year averages. Annual averages, had they been plotted instead, would have shown much more fluctuation and would probably have made unnecessisarily confusing the key trends.

CHAPTER XII

NATO AND SINO-SOVIET DEVELOPMENTS, 1976-1989

Part One: Trends in U.S. and NATO Military Policy

Generally speaking for the post-1975 decade, basic attitudes of the U.S. leadership about the emphasis on nuclear or conventional warfare with the Soviets in the decade following the mid-1970s were consistent with the preceding period. There were indeed shifts in U.S. leadership views about detente and the potential for cooperating with the Soviets and on specific policies in the military realm to pursue these perspectives. Still, continuity characterized the basic orientations of the leadership regarding the orientation toward conventional and nuclear war during this period.a It was not until about 1987 that basic perceptions about the Soviet Union began to shift and, consequently, not until that time that more fundamental issues in the nature and pursuit of the deterrence relationship began to shift.

In this part of the chapter, I will extend the discussion of the evolution of elements U.S. military

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aTable 1 provides a summary of U.S./NATO developments for this period.

doctrine and strategy towards the Soviets in the same context that I have been using up to this point. I will describe new currents in doctrinal developments since the mid-1980s and offer projections as to how these changes may affect and interact with Soviet military doctrine developments in the coming years.

I will also use the same hypotheses as for the survey of U.S. and NATO policy in Chapter Six. I repeat those hypotheses here:

> Nuclear weapons can be considered a preeminent part of doctrine and strategy if political and military leaders refer to them as central to meeting threats to that country, particularly during times of crises. Such emphasis must also be reflected in strategic policy developed and implemented for these leaders and by procurement patterns that emphasize building or increasing the size of the nuclear force. A nuclear focus would also be reflected in operational doctrine for a country's army. If a country's military posture had been based on conventional weapons, one would expect a reorganization of ground forces in order to fight more effectively on a nuclear battlefield. These changes would include lighter, more mobile divisions, and less firepower and close air support for army units.
>
> A move to a doctrine and strategy based more on conventional weapons can be said to have occurred if political and military leaders seem to emphasize more the relative importance of conventional forces in meeting threats to that country, while they ad earlier been emphasizing nuclear weapons. In the case of the U.S. vis-a-vis the Soviets, I will argue, as I do in the chapter on Soviet doctrinal developments, that a perception that a major war is less likely would suggest a move away from nuclear weapons. This orientation would also be reflected in strategies that provided for something other than a full-scale nuclear response to military aggression by the other side. Such strategies may

> also focus less than previous ones on exclusive role of nuclear weapons. A conventional emphasis (new or renewed) would also be reflected in procurement patterns that emphasize substantial improvements in conventional weaponry. Such a change would also be reflected in U.S. Army strategy and operational doctrine, in that divisions would be larger and have greater firepower attached to them.

Basic Leadership Perceptions

As suggested in Chapter Six, detente was under attack by conservative elements in the U.S. leadership by the mid-1970s, and even though a Democrat was elected President, there remained a fairly healthy skepticism within the Government about pursuing detente as it had been pursued under the Nixon Administration. Detente did not fall into as much disfavor under Carter as it probably would have in a Republican administration, but there was some significant rethinking of the concept in the late 1970s.

Carter himself had provided conflicting signals about his view of detente. He had criticized Ford in the election campaign that his policies had conceded too many advantages to the Soviets, but he also criticized Ford for abandoning the term "detente" (Garthoff, 1985: 564). As Raymond Garthoff characterizes the early years of the Carter Presidency, the differing attitudes on detente and the possibilities for cooperation with the Soviets were probably most visibly represented in the approaches taken

by Secretary of State Vance and National Security Adviser Brzezinski. Vance was generally in favor of more cooperation with the Soviets while Brzezinski was against it (Garthoff, 1985: 564-565).

These two strands of thought were especially visible in President Carter's June 1978 commencement address at Annapolis. On the one hand, Carter noted that detente between the U.S. and U.S.S.R. was "central to world peace" and that the U.S. wanted to "increase our collaboration with the Soviet Union." On the other hand, he noted that detente to the Soviet Union "seems to mean a continuing aggressive struggle for political advantage and increased influence," and he commented that the U.S.S.R. abuses human rights and "attempts to export a totalitarian and repressive form of government" (Brown, 1983: 555; Garthoff, 1985: 601-604).b

Actually, detente in the first years of the Carter Administration probably encountered more resistance from the Legislative than from the Executive Branch, particularly as this resistance developed in response to the SALT II negotiations. Congressional opposition also

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bIn a speech at Wake Forest University three months earlier, Carter had talked about his concern to maintain the strategic balance in the SALT-II negotiations and the need to strengthen U.S. forces in Europe because of the Soviet buildup there (Garthoff, 1985: 594).

developed about such matters as Soviet involvement in the Horn and increasing levels of Soviet defense spending.

The growing negative attitude about detente within certain sectors of the U.S. Government has been extensively chronicled and analyzed. Therefore, it will suffice to say here that the Soviet invasion of Afghanistan, support for the Sandinistas and the rebels in El Salvador, deployment of the SS-20s in European Russia and the Far East, and Soviet support for Vietnam in the invasion of Kampuchea were all contributory factors.c Many in the Government (and Carter himself after the invasion of Afghanistan) began to develop a sense of resurgent aggressiveness in Soviet foreign policy, and this impression continued to grow within the Government.

The increasing perception in the Carter Administration that the U.S.-Soviet relationship was more characterized by confrontation than cooperation was seen in the Administration's policies. The Administration was a strong supporter of arms control and an opponent of the B-1, but as perceptions of the Soviet threat grew and peaked with the invasion of Afghanistan, the Administration

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cWhile the decline of detente continued in the superpower relationship, detente with one former U.S. enemy--the P.R.C.--was enhanced with the resumption of diplomatic ties in December 1978. While this move had important implications for the superpower relationship, those implications fell more in the realm of foreign policy than that of military doctrine.

pursued policies to improve the country's military capabilities. These initiatives included increasing real defense growth by three percent (after promising in the election to reduce it), pursuing NATO INF modernization, the MX, and the Rapid Deployment Force (Brown, 1983: 555-556). The concerns about Soviet aggressiveness, particularly about potential Soviet involvement in Middle East instability in the Mideast because of perceive threats to the West's oil supply) led in January 1980 to the enunciation of the Carter Doctrine--that any attempt by an outside force to control the Gulf would be regarded as an encroachment on U.S. vital interests and might be met by force (Brown, 1983: 561-562).

The impression of growing Soviet aggressiveness and the U.S. "failure" to anticipate and prevent it was a major factor providing the political momentum that brought Ronald Reagan into office.d Reagan, who had been critical of detente ever since the 1976 Presidential race, left no uncertainty about the views of his administration on these issues. In his first news conference, he noted that the goal of every Soviet leader since the Revolution was the

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dOne must note than an important part of this momentum--a need to overcome a perceived weakness in America's image abroad was generated by feelings about issues not directly part of the U.S.-Soviet relationship. These issues included the U.S. failure in Vietnam and the capture of the U.S. embassy in Teheran.

"promotion of a world revolution and a one-world Socialist or Communist state." He continued that the Soviets "reserve unto themselves the right to commit any crime, to lie, to cheat" in order to obtain that goal (Brown, 1983: 570-571). He repeated these same ideas on other occasions.

Alexander Haig, during his confirmation hearings as Secretary of State, noted that the Soviet Union in recent years had transformed its land army to a "global offensive army, navy and air force, fully capable of supporting an imperial foreign policy." "Unchecked," he added, "the growth of Soviet military power must eventually paralyze Western policy altogether." As a consequence, Haig argued for a policy of rearmament which he said would be necessary for the U.S. to pursue meaningful arms negotiations (Brown, 1983: 572).

This vision was crafted into policy: the U.S. would close the window of vulnerability with the strategic nuclear arsenal; it would field an RDF that could establish a "credible presence" for the U.S. in a military conflict, and it would materially support a strategy that, in the words of Secretary of Defense

Weinberger "permits us to take full advantage of Soviet vulnerabilities" (Brown, 1983: 568-570).e

This crusading attitude towards the Soviets characterized the initiatives of President Reagan's first administration and the early part of his second. Probably the turning point in this orientation came in the fall of 1984. It was at this time that the Soviets, who had broken off the INF negotiations (because of the NATO deployments) and refused to negotiate a strategic arms agreement unless it were tied to negotiations on the Strategic Defense Initiative, decided they could pursue both INF and strategic arms treaties without the earlier preconditions. The turn was further manifested in the Reagan Administration's involvement in the Geneva and Reykjavik summits with Gorbachev, and later the visits of the two leaders in Washington and Moscow. The reason offered for this shift is that the Soviets had shifted their attitude on negotiation and had become more amenable to resolving differences between the two countries (Excerpts, 1986: A8).

This approach was continued by the Bush Administration, which, after some difference of opinion among the top leadership on the Soviets' ability to

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eReagan's five-year defense budget, presented in 1982, called for increases of $1640 billion over the five-year period (Brown, 1983: 593-594).

sustain perestroyka, resolved that the U.S. should seek to aid the Soviets in their reform efforts. Early in the administration's tenure, Bush officials suggested that it would be difficult to predict whether the Gorbachev regime would succeed with perestroyka and that therefore the U.S. should pursue policies which would serve its interests regardless of the outcome of perestroyka.

In October 1989, however, Secretary of State Baker commented that the Bush Administration wanted perestroyka to succeed and the U.S. was ready to provide technical and economic assistance. Baker acknowledged that such aid could permit the Soviet state to improve its efficiency and capabilities, and perhaps to mount a greater challenge to U.S. interests. At the same time, he noted that perestroyka would probably not succeed without the further institutionalization of democratic freedoms--essentially that the Soviet government be accountable to its populace, and that such developments inimical to U.S. interest were not a foregone conclusion (Friedman, 1989: 1, 7; Excerpts, 1989: 7).

The offer of aid Baker made was later confirmed to the Soviets at the Malta summit. Additionally, this change was manifested in the Defense Department decision to seek cuts in the Pentagon's budget of 10% from 1990-1995 (see Gordon, 1990: A1, 18). Others in government, for example

the Legislative Branch, have called for greater reductions (and later authorized to go even further (see Gordon and Eckholm, 1990: A1, 28).

Perceptions of the Role of NATO

U.S.-NATO relations for most of the decade after the mid-1970s were dominated by two events--the Pershing II/GLCM deployment decision and the disagreements on the response to the Soviet invasion of Afghanistan and the declaration of martial law in Poland. The basic perception in the U.S. of NATO was that it continued as an instrument through which to strengthen Western security capabilities as well as to search for negotiated settlement of East-West tensions. Events during this period as NATO members pursued these two general objectives had important implications for the participants' perceptions of U.S.-NATO relationship. The challenges U.S. leaders faced in dealing with NATO defined in more detail both the capabilities and the limitations for cooperation between the U.S. and its allies.

The Two-Track decision, for example, coming as it did on the heels of the embarrassing disagreement over the neutron bomb, was important both for the ostensible purpose of modernizing NATO's tactical nuclear forces as well as for demonstrating the alliance's ability to

maintain its political cohesion on a key security decision. This cohesion was severely tested by the popular sentiment that developed in several NATO countries against the deployment. However, not only did the NATO governments coordinate fairly well their position on the importance of deployments and negotiations, they also were able to stand firmly together through the winter of 1983-84 as the deployments began. This coordination continued into the resumption of the meetings on an INF treaty and its successful negotiation.

By contrast, this sense of coordination and cohesion was absent on the response to Soviet aggression in Afghanistan and their support of martial law in Poland. While NATO allies were willing to support the U.S. call to boycott the 1980 Olympics, the allies were not favorably inclined toward revising contracts for equipment for the gas pipeline the Soviets were building into Western Europe. The allies resisted U.S. pressure to renege on these contracts, as well as U.S. efforts to tighten COCOM regulations to include a greater range of semiconductors and microelectronics (see Brown, 1983: 608-612). The Reagan Administration finally backed off this effort in the winter of 1982-83, but it remained a sore spot for the alliance.

By the time the Soviets were willing once again to pursue INF negotiation, inter-NATO relations on export policy had improved. The allies were, of course, happy to negotiate the INF treaty because it provided them a way to attend to security needs as well as to pacify public anti-nuclear sentiment. While there were disagreements in the mid-1980s about the modernization of short-range nuclear systems in Germany (with Britain and the U.S. in favor and Germany basically opposed), these were largely deferred by means of the broader proposal articulated by President Bush in May 1989 to cut U.S. forces in Europe. The allies, by agreeing to this proposal, consented to put off negotiations on modernizing short-range systems until they could reach an agreement on conventional forces. However, since the allies agreed to major cuts in conventional arms and an early completion of a treaty, the possibility of negotiation on short-range nuclear weapons in the near future remained a strong possibility (Markham, 1989: 1, 7; Excerpts from Joint Communique, 1989: 7).

This progress then became subsumed itself by the East European governmental changeovers in the fall of 1989. While these developments, as well as Gorbachev's calls for a one-European home have note yet rendered NATO and the Warsaw Pact outmoded, they have placed issues of NATO planning and force posture in a new context (see Witney,

1989: 1, 9). These developments raise many new questions about the character of NATO's role, how that role should develop, and what would be the U.S. leadership's perception of its relationship to the alliance. Some observers have noted, for example, that U.S. involvement in NATO continues to be important as a counterweight as much to German strength as to the Soviets. That the U.S. will seek to be strongly involved in European affairs seems certain. As U.S. NATO Ambassador William Taft commented in November 1989, whatever the West Europeans decide about how to manage the evolving relationship with East Europe, the U.S. concern "is that European unity not be purchased at the expense of Atlantic cooperation" (Riding, 1989: 7; Gordon, 1989: 12).

Relevance of Perceptions of Soviets for U.S. Doctrine

Much of the concern in the late 1970s about the demise of detente and increasing Soviet aggression led to efforts to improve U.S. strategic nuclear systems. However, Reagan's attention to the "window of vulnerability," as well as defense improvements sought by the Carter Administration, resulted in increased spending on conventional forces, and it would be difficult to say whether from 1976 through 1985, the overall increases in the U.S. military capabilities put conventional or nuclear forces at a relative advantage. Clearly the

perception was that there were various parts of the world where the Soviets were trying to gain further influence, and in most of these places the Soviets were attempting to pursue these goals through the supply of conventional arms. When referring to Soviet military developments, Secretary of State Haig, as indicated earlier, spoke of the transformation of a continental land army into a global military power supporting an imperialist foreign policy (Brown, 1983: 572). Such comments imply primary concern for a conventionally well-armed opponent.f

Probably the most prudent implication from this sense of a need for rearmament is that U.S. officials thought they needed to be prepared to assist allies in the development world with military supplies and troops, if necessary, to stem the advance of guerilla or regular forces equipped by the Soviets. While this approach to conflict could (and did) lead to greater American military involvement in conflicts around the world, one could not say that this attitude could be directly linked to a shift in ideas as to how to fight an engagement with the Soviets. The establishment of organizations like the RDF

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fAs a matter of fact, Reagan's first defense budget (for FY 1983) called for increasing strategic forces by $6.9 billion (over the FY 1982 amount of $16.2 billion) but conventional forces by $18 billion (over the 1982 amount of $88.2 billion) (Gelb, 1982: 28; and Text of President's Budget Message, 1982: 25-26).

clearly indicated emphasis on conventional warfare, but the RDF was not formed primarily for a European conflict scenario.

Indeed, when one considers the Reagan Administration's military buildup with developments in Europe during this period, particularly the Pershing II/GLCM deployment, one possible inference is that the evidence suggests a greater willingness to be involved in a nuclear--viz., theater nuclear--war. Several arguments militate against this inference, though.

One contention is that with the Two-Track decision, NATO concerns for an "adequate" nuclear capability in Europe--one that presented a "sufficient" response to the Soviet SS-20 deployment--was based more on interest in a better deterrent capability than in a better "warfighting" capability. At the very least, this deterrence function was an important original reason for this deployment. As Schmidt in 1978 spoke to the need for nuclear systems in Europe, he communicated the concern of Europeans that NATO nuclear forces be adequately coupled to the U.S. strategic nuclear force. The original request (and the NATO decisionmaking to support the Pershing II/GLCM initiative) was not accompanied by proposals that NATO forces rely more on nuclear weapons than on

conventional forces, just that NATO's nuclear weapons be available for use if necessary.

Much this same idea was characteristic of the Reagan Administration's desire to "close the window of strategic vulnerability." U.S. military planners were most likely assuming, not that the U.S. would be more likely than before to fight a nuclear war, but that the U.S. had to have an "adequate" nuclear capability to deter the Soviets more effectively from undesirable activities and to put the U.S. in a better bargaining position in arms control negotiations.

Concerning U.S.-Soviet security relations and the role of NATO, one notes the perception of grater antagonism in the U.S.-Soviet relationship from 1976 to 1985, but there do not necessarily seem to have been clear implications for doctrine from this perception. Possible implications from this perception for lower levels of analysis will be examined in subsequent sections here, but the apparent lack of effect on doctrine of this greater sense of conflict seems fairly certain.g

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gThe significance of the U.S.' force posture improvements for its willingness to engage in military conflict is a more controversial point. I think the evidence suggests that while there was a clear improvement in capabilities, this improvement did not necessarily reflect a basic change in attitudes on military conflict with the Soviets.

Garthoff (1985: 1019) thinks otherwise, commenting that PD-59, the NATO INF decision and the Reagan Administration

The changes after 1986 portend much for the approaches to conflict pursued both by the U.S. and the Soviets. These changes will be important, less for inferring U.S. strategy on how an actual war would be fought, but for understanding U.S. perceptions on threat assessment and on deployments of troops in Europe. These changes will probably also have an important effect on the structure of NATO and Warsaw Pact troops in Europe, as well as on U.S.-West European-Soviet relations in general, all of which could have a further effect on the threat assessment done by each side of the other.

Changes in the threat assessment will probably result in enhancement of the perception of a decreased threat from the Soviet Union. Also the perception of the Warsaw Pact's becoming more defensively oriented will probably further the denuclearization of Europe. Such shifts will, no doubt, continue to diminish the perceived likelihood by either side of a nuclear or conventional war. Such perceptual change on both sides will most likely increase Soviet support for a doctrine based on "mutual security." This change may well also lead to a

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defense programs indicate a change in U.S. military doctrine had occurred. Garthoff comments that these developments all suggest that the U.S. had "abandoned mutual deterrence based on parity and substituted a drive for superiority in war-waging capabilities in order to provide escalation dominance at all levels of nuclear and non-nuclear engagement."

revision in U.S./NATO doctrine on warfare in Europe; such a revision may indeed already be under way.

Strategic Policy

As discussed in the final section in Chapter Six on strategic planning, the principal impact of the Nuclear Weapons Employment Policy (NUWEP-1) of 1979 and the subsequent operations plan (SIOP-5) based on it was the more careful assessment undertaken of targets of economic recovery thought important to destroy in a nuclear strike (Ball, 1984: 73-75). The first review of U.S. strategic policy by the Carter Administration (PRM-10) and the subsequent Presidential Directive (PD-18) confirmed the continued use of NSDM-242 and NUWEP-1 as a basis for planning. It also stated that a reserve of strategic forces be maintained in the event nuclear war became protracted, and it directed several other studies be conducted on U.S. strategic posture (Ball, 1986: 76).

One of these studies, the Nuclear Targeting Policy Review, recommended new targets, such as the Soviet food supply and Soviet military installations in the Far East, in order to make them vulnerable to Chinese forces. This policy review also developed a highly complex set of targeting packages of "building block" options that could be combined to achieve certain political goals in the context of different strategic situations (Ball, 1986:

77). PD-59, a directive signed in July 1980 which expanded on the some of these package concepts, noted the importance of strikes over an extended period of time on economic recovery targets and called for the development of improved capabilities to determine the location of mobile targets, such as conventional forces, that might become important objectives to destroy in a conflict (Ball, 1986: 78). As follow-up guidance on these matters, PD-59 authorized NUWEP-2 (or NUWEP-80 issued in October 1980), that established these military and war-supporting objectives as priorities rather than economic recovery targets (Ball, 1986: 78-79). This reordering of priorities was seen as an appropriate way to improve the military effectiveness of a strategic nuclear campaign (Brown, 1983: 549-550; Garthoff, 1989: 789-790).h

The Reagan Administration expanded upon this guidance with National Security Decisionmaking Directive 13 and NUWEP-82, which formed the basis of a new SIOP (SIOP-6 of October 1983). This SIOP set forth some 50,000 potential targets (compared with the 20,000 of SIOP-5) that could be important in a prolonged nuclear conflict. There were four classes of targets included in this SIOP: Soviet

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hInterestingly, the PD-59 decision surfaced publically as the momentum of the Two-Track decision was building, and the Two-Track decision seemed a confirmation of PD-59 guidance and concepts (Garthoff, 1985: 878).

nuclear forces, conventional forces, military and political leadership installations, and economic and industrial targets (Ball, 1986: 80).

Developments in nuclear doctrine after 1976 confirmed the general trends in this area under way since the early 1970s, in that greater selectivity of options was an important theme. As was the case earlier, one cannot argue the emphasis on providing the President a greater number of options in nuclear targeting necessarily reflects a greater emphasis on conventional warfare, but there are several inferences about doctrine on conventional war that may be drawn from these developments.

One is that continuity in the trend away from "city busting" and toward military targets suggests that thorough nuclear destruction of the other side's industrial and economic centers suggests the possibility of a nuclear war with goals more purely military (i.e., tied to military objectives), rather than wholesale destruction of the other side's socioeconomic fabric. There is certainly more room for conventional warfare in this selective approach to nuclear targeting than in the less discriminate application of nuclear weapons. Second, the concept that targeting needs to be structured for a potentially protracted nuclear war suggests that there may

indeed be occasions during the conflict to pursue military objectives with conventional warfare.

Third, instituting an option to target conventional forces suggests that the leadership perceived it may find itself at a point where conventional forces of the two sides are important for the military conflict and that if U.S. or NATO conventional forces are not able to prevail over those of the Warsaw Pact, that nuclear weapons may be necessary. This does not sound like a new concept in military thinking within the alliance, but as this concept with PD-59 seemed to have worked its way finally into strategic targeting doctrine, one infers a greater awareness at high planning levels of the role of conventional warfare in a nuclear conflict. So, while the targeting policies developed after 1975 do not directly imply a greater role for conventional warfare, they do seem to provide greater latitude for it if decisionmakers seek to move in that direction.

U.S. Army Doctrine

The influence of the October 1973 war and particularly its effect on Army thinking regarding the importance of conventional firepower and "winning the first battle" continued through most of the 1970s. This approach to warfare in the 1976 version of FM 100-5 focused on the anticipated battlefield in Europe, where the quality of

the enemy's weapons was expected to be roughly equal to that of NATO, but much greater in quantity. FM 100-5 recommended an orientation to combat called Active Defense, in which NATO forces would try to establish a "shield of blows" to retard the Warsaw Pact advance, carefully coordinating their fires in an "integrated battlefield" in order to make the best use of their limited resources (Romjue, 1984: 5-10; FM 100-5; Karber, 1984: 42ff.). As indicated in Chapter Six, the nuclear dimension of this orientation to conflict was not well thought out or articulated.

The new field manual began to generate questions on why the Army's pursuit of such a heavy emphasis on firepower, as opposed to maneuver, and on the apparent emphasis on continued holding actions and withdrawals, (as opposed counterattacks) in responding to Warsaw Pact aggression (Romjue, 1984: 13-20). There was also no role in Active Defense for deep attack against an enemy (Romjue, 1990). While FM 100-5's defenders argued that maneuver was not being sacrificed to firepower and that the revised doctrine did call for a transition to the offensive at an appropriate time, some of the criticism in these areas persisted and led to further rethinking of the Army's approach to warfare (Romjue, 1984: 21).

This further rethinking at TRADOC, under the command of Gen. Donn Starry, focused on a variety of aspects of the battlefield and its changing character in the mid-1980s and beyond. One dimension was the relationship of the size of the units to the time frames in which units at various levels in the structure could expect to give battle, given the size of the enemy force and the terrain in which the battle would occur. The importance of "seeing deep," especially given the attacking enemy force anticipated to be stronger than the defending force, was an important analytical addition to the debate (Romjue, 1984: 26-27).

A second important dimension was the composition of a Battlefield Development Plan, in which anticipated environmental changes in the battlefield were mapped out. These changes included extremely fast communication of battlefield data, thermal imagery, new types of armor, and improved command and control capabilities. With the advances in these capabilities possible by both sides, NATO forces, given their numerical inferiority, would need to pay special attention to concentrating force effectively to forestall Pact reinforcement by second echelon troops. This effort would require all-source surveillance of the enemy's movement and massing, as well

as disruption by air- and ground-launched rockets of the enemy's attempts to mass its forces (Romjue, 1984: 26-27).

Another part of the efforts to revise the 1976 version of FM 100-5 was initiated within the office of the Army Chief of Staff by General Edward Meyer, who wanted to make Army operational doctrine suitable for use outside central Europe. Meyer thought that although such battles would be less important than one fought in Europe, they would probably be more likely (Romjue, 1984: 30, 39).i

Deep interdiction also became an important facet of these discussions, and along with the discussion of the best ways to coordinate ground and air activities for interdiction grew debates about the utility of chemical and tactical warfare. Important reviews of both these concepts took place in late 1979 and the spring of 1980, including combined arms reviews attended by high-ranking officials of the Army and the Air Force. Out of these meetings developed the concept of interdiction efforts aimed not at random disruption of enemy forces but at shaping the ensuing battle to NATO advantage. As time-

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iAn assumption behind this preference was that central concepts of combined arms combat in Europe would also be useful in Korea and the Mideast. This assumption was based on the notion that insurgent or regular forces to which the Soviets have provided military equipment or advice would echelon their forces and fight in the way the Soviets were expected to in Europe (Romjue, 1984: 45, 66). This assumption is well-intentioned from a planning standpoint but is questionable in actuality.

distance assumptions were developed for application of nuclear and chemical weapons against advancing Pact troops, Army planners emphasized attacking deep echelons early to disrupt or destroy them while engaging assaulting forces at the same time (Romjue, 1984: 34-36).

In defense, dispersal in depth was considered important in case of enemy use of nuclear and chemical weapons. Indeed, in attack, the concept was to destroy or bypass enemy forward defenses and move rapidly to the enemy rear to destroy command and control, logistics, and other soft targets and reserves. In developing the revision for U.S. forces, nuclear weapons were considered permissible for defending forces and attacking NATO forces to use, while chemical weapons were thought only appropriate for defense. NATO first use of chemical weapons was foresworn (Romjue, 1984: 27, 41, 56). Integrated tactical nuclear and conventional fires were discussed as part of the goal of deep second-echelon interdiction (Romjue, 1984: 34-36).j

One major problem planners faced were time delays in converting from conventional to nuclear operations and

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jOther criticisms that were addressed in the revision of the 1976 Field Manual concerned allegations that the anticipated operations were too stylized, that they exaggerated the mechanical aspects of war, that they overstressed firepower, and that they overlooked moral factors (Romjue, 1984: 53).

obtaining release authority from the U.S. National Command Authority, plus converting back to conventional operations if release authority were not obtained. Obviously, such delays could greatly weaken a unit's effectiveness as a fighting force. The solution advocated for this problem was to assume that the battlefield would be nuclear from the start. This principle of planning for a nuclear battle was endorsed by Army Vice Chief of Staff General John Vessey and by TRADOC's commander General Donn Starry (Romjue, 1984: 37-38). This move was not really a shift in operational doctrine but an acknowledgement of the importance of nuclear weapons. Indeed AirLand's emphasis on conventional weapons was seen as stabilizing the battlefield (Romjue, 1990).

The Command and General Staff College responded to this growing focus on nuclear weapons, and by January 1980, it was providing about 30 hours of instruction on the battlefield integration of nuclear operations, instruction specifically focused on the impact of nuclear weapons on tactics.

Revision of FM 100-5 to reflect this new thinking began in early 1980. The initial draft was completed by January 1981 and the final version in June 1982. The principal exposition of the concept occurred with General

Starry's March 1981 Military Review article "Extending the Battlefield" (Starry, 1981).

As these changes began to occur in doctrine, the need was perceived to work these concepts into exercises. In particular, targeting units capable of targeting with either conventional or nuclear weapons needed to be established in all fire support elements, both in Europe and in the Pacific. Access would have to be established for these units to data from the wide variety of existing battlefield sensors as well as downlinks to receive data from national and theater systems (Romjue, 1984: 48).

Additionally, it was thought that if the Soviets might use nuclear weapons, U.S. forces would need to be ready to counter such use; first use of nuclear weapons by the enemy would not be permitted to decide the conflict, so it was thought that "nuclear fires may become the predominant expression of combat power." Small tactical forces were thought to be the type most capable of exploiting the effects, and decisive engagements were anticipated to be short and violent, lasting hours instead of days (Romjue, 1984: 67).

The extremely fluid nature of the anticipated battlefield was thought to place a premium on leadership, unit cohesion, and effective independent operations. A concomitant importance in training for the type of

battlefield conditions anticipated was also emphasized. Agility, quick-minded, flexible leaders and flexible organizations were seen to be vital. It was stressed that unit leaders needed to have the capability to make effective assessments of rapidly changing battlefield characteristics and to be able to synchronize the execution of tasks within their commander's overall plan (Romjue, 1984: 67-68).

Noting the importance of ground-air coordination, the Field Manual calls for close cooperation with air elements, particularly the suppression of enemy air defenses and interdiction of the second echelon for offensive operations. The 1982 Field Manual was the first to include battlefield air interdiction as part of the Army's doctrinal statement. After some disagreement between the Army and the Air Force in late 1979 over who would direct the interdiction mission, the two services worked out an accord by mid-1971 that the primary guidance would be from a joint force commander to the air component commander (Romjue, 1984: 61-73).

NATO Operational Plans; U.S. Army Doctrine

Shortly after President Carter took office, he gave voice to a concern raised in U.S. and elsewhere in the NATO alliance that the organization improve its conventional defenses (see, for example, Garthoff, 1985:

594). The Soviets had been building up their conventional force posture, and there was a concern that NATO's conventional forces not fall behind significantly in effectiveness or numbers.

Therefore, at the NATO summit meeting in May 1977, Carter proposed the alliance undertake a major effort to improve the alliance's force posture. The Long-Term Defense Program (LTDP) he presented was to be elaborated by ten task forces, nine of which were to chart improvements in various aspects largely focused on conventional war, while a tenth was to deal with theater nuclear forces. Because the TNF issue was a sensitive one, this tenth group was set up to report to the Nuclear Planning Group instead of to the Defense Planning Committee, a somewhat lower-level body of the NATO hierarchy (Legge, 1983: 34).k

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kAnother reason for this difference in subordination was that the principal U.S. interest in the Long-Term Defense Program--conventional force posture--was being managed by nine committees, while TNF was being handled by one. U.S. and other NATO leaders did not want to create the impression that this more extensive focus on conventional forces implied a "decoupling" of NATO nuclear forces from the U.S. strategic deterrent. Consequently, this task force was staffed by the pre-existing High Level Group of experts from the participating countries. The other task forces were staffed by the NATO International Staff and the national delegations in Brussels. The intended net effect of this arrangement was to demonstrate that the U.S. and its NATO allies were still "serious" about the role of nuclear weapons (Legge, 1983: 34).

As the LTDP got under way, the work of the nine task forces became divorced from that of the tenth. The efforts of the nine proceeded fairly much on schedule during the following year that they had to make their basic reports. The proposals of the tenth were not completed until later. These proposals had significant input from U.S. representatives to the High Level Group (HLG). As the HLG continued its work through the summer and fall of 1978, it was aided by PRM-38, and NSC study commissioned by Carter in June 1978 to outline various options for TNF modernization and its advantages and disadvantages. These proposals formed the basis of the Long Term Theater Nuclear Force Development Program (LRTNFDP), discussed by principal NATO heads of state at a January 1979 meeting in Guadeloupe. These proposals were then adopted by the alliance in October 1979 and approved in December of that year (Legge, 1983: 34-35; Schwartz, 1983: 238-240; Garthoff, 1985: 858-859).1

What does the TNF modernization program, which received very extensive publicity from its inception, indicate about NATO's military strategy and how it would fight a war?

1Schwartz (1983: 217-228) discusses some of the issues involved in the High Level Group's deliberation of NATO TNF.

While the LRTNFDP decision was interpreted by some to suggest a shift in the alliance doctrine to a stronger nuclear orientation, the program was essentially part of the effort to "flesh out" in force posture the doctrinal requirements of MC 14/3. NATO had taken steps to improve its nuclear posture since the inception of MC 14/3, with the addition of FB-111s to bases in Britain in 1969 and the Lance short-range missile to replace the Sergeant in the mid-1970s. France, though not a part of the military alliance, had significantly improved its nuclear forces with the deployment of new IRBMs, a new short-range missile, and the launching of four submarines with 16 SLBMs apiece (Schwartz, 1983: 196).

However, by the mid-1970s, a slight weakening of American and British economic and political power and the growth of German economic strength had provided Germany a somewhat more influential position in the alliance than previously. Helmut Schmidt, a German chancellor well versed in arms control and defense issues, came to power in 1974 and began to make his views on defense issues known. Particularly, he began to argue in 1977 that the superpowers' strategic weapons had become essentially neutralized through the SALT process and that the SS-20 deployments had unbalanced the theater nuclear relationship (Schwartz, 1984: 194-202). The Schmidt

speech in October 1977, plus such developments as European fears of not having access to cruise missile technology, the neutron bomb fiasco, the publication of parts of PRM-10, and the deployments of the Backfire and SS-20, gave momentum to the concerns Schmidt expressed about INF. By extension, they also lent momentum to the December 1979 decision to pursue the modernization program (Schwartz, 1983: 202-214).

Even considering PRM-38 and PD-59, however, there were no major revisions of employment doctrine either in NATO or U.S. decisionmaking circles that accompanied the development of the modernization program.
Indeed, the High Level Group did not envision continued INF competition with the Warsaw Pact as the only alternative for NATO. This concern for other solutions to continued INF modernization was what led the HLG in late 1979 to propose a negotiation initiative along with the Pershing II and GLCM deployments (Legge, 1983: 36-37). Viewing NATO's INF modernization in part as a response to the SS-20 and Backfire deployments is legitimate, but just as the SS-20 deployments did not necessarily demonstrate a shift in Soviet theater doctrine toward a stronger nuclear orientation (a key point of Chapters Eight and Nine), so also did the LRINFDP not necessarily reveal such a shift in NATO doctrine.

So, while both the nuclear elements of Reagan's rearmament proposal and NATO INF modernization gained much notoriety, the evidence suggests that these improvements in force posture were envisioned more as enhancement of existing capabilities and consonant with existing doctrine. That either reflects a growing shift in orientation to nuclear war seems unlikely from what is known about strategic and operational thought at the time. Carter and Reagan, with their nuclear policies, were heading toward more flexibility; one could even argue that doctrinal developments during their tenures concerning nuclear war even seemed to countenance a greater role for conventional warfare. Schmidt, in his approach to the nuclear/conventional issue, was basically advocating a stronger deterrent posture that would preclude the possibility of any sort of war.

To what extent were the changes in U.S. Army doctrine in the late 1970s and early 1980s coordinated with NATO? As mentioned earlier, one of the principle concerns of General Donn Starry and others was that Army operations doctrine be suitable to employ against opponents in non-European parts of the world, particularly those opponents whose approach to warfare had been significantly influenced by Soviet thinking and equipment. At the same time, there seem to have been several aspects of these

developments in approaches to warfare that were coordinated within NATO.

It seems that after the shift toward conventional forces in Army operational doctrine that began in the early 1960s and lasted through most of the 1970s, a renewed emphasis on nuclear weapons developed. This trend seems to have started in the late 1970s and to have become embodied in the AirLand doctrine articulated in the 1980s.

Part of this emphasis could have been due to the Two-Track decision and the concern about NATO's long-range TNF, but it seems more likely that much of the concern that drove the nuclear aspects of the development of AirLand in its early days was basically a dimension of the long-standing concern within NATO of being overwhelmed by a conventionally superior opponent. The technological improvements of the modern battlefield in the new types of equipment becoming available to both sides put a slightly different "spin" on this concern, in that NATO forces were becoming worried that the Pact might be able to enhance their conventional superiority further with this technology. The force exchange data of the October War further enhanced this spin.

It seems, then, that the most appropriate conclusion to draw from the evidence for this period is that U.S. and NATO policy remained basically conventional in its

orientation on the way a war would likely begin and the way U.S. and NATO leaders would like to fight it as long as possible.

This orientation fit in with the other dimensions of U.S.-Soviet security relations: while the relationship was characterized by greater hostility, there was no real change in the relative emphasis on conventional and nuclear war. The U.S. during this period was more ready to meet challenges from the U.S.S.R. (or other countries) in various parts of the world, but doctrine about how to fight such a military conflict remained basically the same. In Europe, the U.S. increased and modernized some of its weapons systems, and with AirLand imparted an offensive dimension to NATO defense, but the West's basic orientation to how and under what conditions it would fight a war remained basically consistent from the previous period.

Specifically on the issue of coordination between the U.S. Army and NATO forces during the post-1976 period, available evidence suggests a significant amount of interaction. From 1975 to 1976 as the Field Manual was being updated in response to the October War, there were TRADOC consultations with the Germans, particularly on the Allies' role in the military campaign and in operations in built-up areas (Romjue, 1984: 5).m In the redrafting of

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mThis point was discussed in Chapter Six.

the Field Manual to incorporate ideas of the AirLand battle, TRADOC analysts borrowed from the 1973 German manual HDv100-100 Command and Control in Battle the concept of mission orders (Auftragstaktik). Because centralized control of subordinates would be difficult as the future battlefield, Army planners sought a solution to being able to continue operations in spite of communication breakdowns. The concept of mission orders was helpful in that it called for the training of subordinate leaders to chose an alternative course within their commanders' general intent; to execute a decision when changed battlefield conditions made the original course no longer appropriate (Romjue, 1984: 43, 59).n

TRADOC planners also borrowed from the Germans the concept of the center gravity (Schwerpunkt) of the attack. The principle here involved the designating and maintaining of the main attack effort at the point of enemy vulnerability (Romjue, 1984: 59). Finally TRADOC and War College planners recommended the incorporation into the new Field Manual of the German concept of the operational level of war as an intermediate level between

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nThis concept arguably reflects concerns more about a nuclear than a conventional battlefield.

strategy and tactics.o This move was important because the Air Force's cooperation with the Army occurred at just that level (Romjue, 1984: 61).p

Comparing NATO and U.S. Army doctrine, there was a basic conjuncture in development during the 1976-1989 period. U.S. Army doctrine seems to have been more explicit about the use of TNW during this period, and this concern was arguably consonant with NATO's nuclear modernization efforts, as well as with some of the concerns among strategic planners about nuclear options.

At the same time, neither the U.S. Army nor NATO altered its basic strategy about nuclear weapons. Both institutions sought to improve its conventional and nuclear force posture and operational planning, and the two institutions developed ways to improve cooperation on the modern battlefield.

Overall, there seems to have been no major change in U.S. or NATO doctrine on nuclear and conventional war (see Table 1). The same basic approach to these issues was pursued as outlined in MC 14/3 and the Harmel Report, though implications of these documents for strategy and

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oVon Moltke developed this concept in the late 19th century, and the Russians had borrowed it from the Germans at least as early as the 1930s.

pSee Herbert (1988) for aspects of U.S.-NATO cooperation on the 1976 FM 100-5, which had an important influence on the following edition of the manual.

force procurement were more thoroughly developed. There was a relatively minor shift in NATO strategy in terms of the implementation of AirLand Battle, and there was a clarification in U.S. Army doctrine on the use of nuclear weapons. Still, since there were no major shifts in U.S. or NATO doctrine, the hypothesis on conventional warfare substantiated in Chapter Six is confirmed again here.

Part Two: Sino-Soviet Developments and Soviet Military Doctrine

In continuing the examination of the effect on Soviet military doctrine of the Sino-Soviet military relationship--particularly that part of the relationship concerning tensions on the border, there are five elements that need to be discussed. Sino-Soviet military relations during the post-1975 period were affected by the Vietnamese invasion of Kampuchea and the subsequent Chinese invasion of Vietnam, the Soviet withdrawal of troops from the Mongolian border, the Vietnamese withdrawal from Kampuchea and the Soviet withdrawal from Afghanistan.

There have not been any significant clashes on the border since the 1969 incidents. Therefore, in assessing the impact of Sino-Soviet relations on Soviet military doctrine, one has to consider events of the broader Sino-Soviet security relationship to see if there are

connections between tensions in this relationship and Soviet military doctrine. As one frames hypotheses about how military aspects of the relationship affect doctrinal developments on conventional warfare, the conclusions about correlations of changes in this relationship and Soviet military doctrine will probably be more general than if one examined purely military interactions. Such is the case because the independent variable in a possible cause and effect relationship will have more of a foreign policy than a specific military character to it. Based upon the historical record of developments in these four aspects of the relationship, I offer the following hypotheses:

> Soviet mobilization of conventional forces in the border area in the wake of the Chinese invasion could suggest a continued Soviet awareness of the need to be prepared for a conventional engagement there and the need to have sufficient troops in the region in case of a military conflict. If there was no significant conventional mobilization but rather a shifting of nuclear weapons to the area before or after the crisis or an indication of threats of possible nuclear action against the Chinese if they continue their aggressiveness towards Vietnam, this move would indicate a greater emphasis on a nuclear-oriented doctrine.
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> If there was no strong response in the military (conventional or nuclear) or foreign policy realms, one would conclude that the Chinese invasion of Vietnam was not particularly important for the Sino-Soviet military relationship as it relates to doctrinal developments. Concomitantly, if these developments had an impact on doctrine, one would expect the discussion of responses to the problem either favoring a nuclear or conventional emphasis to be reflected in discussions of

> doctrine reflecting the alternatives for conventional or nuclear emphasis discussed in Chapters Two and Eight.

Of the three conditions frequently posed by the Chinese for negotiations with the Soviets, the one most important for the current assessment concerns Soviet troops in Mongolia, since Mongolia has a long border with China. The issues of Soviet troops in Afghanistan and Vietnamese troops in Kampuchea are somewhat more foreign than security policy issues affecting Sino-Soviet relations during the past decade, so I will deal with these issues later. I would assert the following hypothesis for the Mongolian withdrawal:

> If the Soviet troop levels in Mongolia and on the border remain constant, such will be considered evidence that a strong conventional force posture remains an important objective of the Soviets. Such will particularly be the interpretation if doctrinal discussions continue to mention the conventional threat from China and the need to meet this threat with adequate conventional forces. If there is a clear decrease over time in the forces stationed on the border and a revision in the discussion of the nature of the military threat there, one would conclude that a revision in military doctrine may have occurred, or at least a revision of the type of threat posed by the PRC.
>
> If a decrease in conventional forces occurs and that decrease is paralleled by doctrinal discussions mentioning such concerns as the legitimacy of Chinese perceptions about security issues or the inappropriateness of force to resolve border aspects of the Sino-Soviet dispute, then one may conclude that a shift could be taking place in the direction of mutual security.

Soviet involvement in Afghanistan is not a direct facet of the Sino-Soviet military relationship, except that the

Chinese have defined it as important for security relations between the U.S.S.R. and the P.R.C. The Soviets probably realize that the Chinese, over the years, were not exaggerating in presenting their perception of the Soviet involvement in Afghanistan as an important security threat. While the Soviets could have decided to withdraw from Afghanistan without this discussion being accompanied by a shift in doctrine, it seems plausible to assert the following hypothesis:

> If the Soviet withdrawal from Afghanistan was accompanied by doctrinal discussions of the potential improvements the withdrawal would have on Sino-Soviet relations (because it demonstrated Soviet concern for political aspects of Chinese security) and if it reflected (similar to the case of the Mongolian situation) the concern that military force is not the optimal solution for the problems in Afghanistan, then one could assume that a change in doctrine toward a mutual security orientation was taking place.

One could formulate a similar hypothesis about the situation in Vietnam. Obviously, the Vietnamese government has had its own objectives apart from Soviet interests and the Vietnamese are not subservient to Soviet control as it pursued its foreign policy. At the same time, the Soviets have subsidized the Vietnam at a heavy rate. Also, the Vietnamese occupation of Kampuchea was an expensive proposition that the Vietnamese could not have continued without Soviet assistance. With these

considerations in mind, one may be able to advance the following hypothesis:

> If a significant change occurs in Soviet political or military support for the Vietnamese military involvement in Kampuchea, and if there is contemporaneous discussion in the Soviet press about the relevance about the relevance of this development to Soviet military doctrine, then one could speculate that a change in doctrine attributable to a revised view of Sino-Soviet relations was occurring.

Obviously for each of these last three situations--Mongolia, Afghanistan, and Vietnam, the change in posture may be a function more of some other factor(s) than a change in Chinese policy or a reconsideration of the Sino-Soviet relationship. However, because these are important issues in the Sino-Soviet relationship, significant change in them (particularly in Soviet military deployments) could be arguably due to developments in the Sino-Soviet relationship, especially if the force posture changes can be associated with doctrinal discussion on these or similar issues. Constructing these linkages will need to wait until Chapters Thirteen and Fifteen, but these linkages can be identified in their basic form here.

Historical Background

A discussion of the Chinese invasion of Vietnam and of developments involving these three conditions is properly placed in a discussion of foreign policy developments involving the two countries, as well as the developments

in the negotiations on the border issues. These two areas of activity do not need to be discussed in detail, so I will present only a brief summary of the relevant points so I investigate the more central issues.q

As indicated in Chapter Seven, by the mid-1970s, tensions on the border had calmed, in part because the border areas were so heavily fortified. By the late 1970s, there had been a number of initiatives by both sides to mend the relationship, but no momentum had developed. In November 1974, the Chinese proposed a non-aggression pact, an initiative which the Soviets had proposed earlier, but the Soviets did not respond. The Chinese in 1975 also released a Soviet helicopter crew seized the year earlier, but there was again no follow-up by the Soviets (Barnett, 1977: 13).

The verbal war between the two sides had persisted during this period. However, after Mao's death in 1976, there was no perceptible drop in Chinese polemics about the Soviet Union, probably because of the conflict that continued within the upper echelons of the Chinese government (see Barnett, 1977: 84). On the positive side, there was a belief among some Chinese leaders that Soviet "aggressiveness" was aimed at the U.S., Japan, and Europe

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qFor historical discussions of Sino-Vietnamese disagreements, see Chanda, 1986 and Heder, 1981.

rather than at China. Still, there were other Chinese leaders who saw Soviet intentions as specifically oriented against the P.R.C. (see Armstrong, 1984: 182-184; Holmes, 1983: 24-26).

The Soviet made several efforts during this period to improve relations. Brezhnev sent personal congratulations to Hua Guofeng on his appointment as the new Central Committee chairman (the first attempt at party-to-party communication in over a decade, but these were rejected by the Chinese), and in late 1976, the first publically announced session of border talks in over two years took place. In early 1978, the Soviets called for a joint statement on the "principles of mutual relations," but this offer was rejected by the Chinese. During these years, the Soviets, like the Chinese, had not significantly curtail their propaganda critical of the other side (Liebenthal, 1978: 20-22; Barnett, 1977: 51).

Against these developments as a backdrop occurred the improvements in the relationships between the Soviet Union and the U.S. and between the U.S. and the P.R.C., improvements that had been developing in each case since the late 1960s. Both the P.R.C. and the Soviet Union were apprehensive about improvements of the other's ties with the U.S. because of what those ties might mean for the U.S.-U.S.S.R.-P.R.C. strategic triangle. Indeed, there is

some evidence that the Soviets saw themselves in somewhat of a competition with the P.R.C. to improve relations with the West (Gelman, 1982: 56). The two sides even traded criticisms as to which one was "giving in" more to capitalism and imperialism by improving ties with the U.S. (Liebenthal, 1978: 41-45, 57-63; Garret, 1981: 193-206).

Matters took a turn for the worse in 1979 with the Vietnamese decision to invade Kampuchea. Although Vietnam had been receiving most of its war materiel from the Soviet Union, it had maintained reasonably balanced ties with both the U.S.S.R. and the P.R.C. in the late 1960s and early 1970s.r The Chinese leaders had annoyed the Vietnamese in the early and mid-1970s as the P.R.C. began opening up to the superpower the Hanoi government had been fighting for many years, and in the summer of 1978, Vietnamese leaders objected to the Chinese cutoff of all economic and military assistance.s As a result, the

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rAs late as mid-1977, in fact, the Chinese offered cordial welcomes to two key visiting Vietnamese leaders, Defense Minister Giap and Party head Le Duan (Sutter, 1986: 71).

sThis problem had actually begun to develop in January of that year, when the Chinese government launched a campaign to win the allegiance and support of overseas Chinese to improve P.R.C. access to their technical and financial resources. The problem worsened in March, when the Vietnamese government took control of trade in the south. This move hurt the economic situation of the ethnic Chinese there, who often worked as businessmen and merchants (Sutter, 1986: 72).

Vietnamese government became a member of COMECON in June 1978 and in November of that year signed a broad-ranging Treaty of Friendship and Cooperation with the U.S.S.R. that included defense, economic, and scientific-technical agreements (Pike, 1979: 1162-1965; Zagoria, 1989: 168).t

The summer of 1978 brought additional direct Sino-Vietnamese problems. There had been various charges back and forth of border violations and harassment of one country's civilians by the army of the other. There was also fairly intense criticism between the two countries concerning their views on Kampuchea, the Soviet Union, and ethnic Chinese in Vietnam (see Sutter, 1986: 73-81). Perhaps even more problematic were the efforts that year by the Vietnamese government to confiscate property of ethnic Chinese and force many of them as refugees to return to China (Tretiak, 1979: 740-741).u

In January 1979, Vietnam aggravated the situation further by invading Kampuchea and capturing Phnom Penh from the Chinese-backed Pol Pot government (Tretiak, 1979:

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tThe Soviet Union had been providing significant amounts of economic aid to Vietnam after the war with the United States had ended (Pike, 1979: 1163-1164). One analyst concludes that the Soviet Union probably learned of the intention of the Vietnamese to attack Kampuchea at the negotiations for this treaty (Gelman, 1982: 84).

uChina argued that its cutoff of aid to Vietnam was in party because it had to take care of these refugees (Tretiak, 1979: 741).

740-741). Even if this move had not been intended by the Vietnamese to pursue a Southeast Asian empire, the effort was no doubt seen by the Chinese as an overthrow of a client state by a country working with the Soviet Union, an initiative with the underlying goal of surrounding the P.R.C. with unfriendly governments (Zagoria, 1989: 168). In the month or so before the invasion, China had reinforced troops stationed in Xinjiang, evacuated citizens on a large scale from the border areas, and put forces facing the Soviet Union on enhanced readiness (Gelman, 1982: 98-100).

The Invasion

Chinese Developments

China's aims in the invasion were limited, and there were a number of ways this limited approach was pursued. First, while the Chinese complained in the months before the invasion of the Soviets and Vietnamese developing a "pincer" relationship with China in the middle, the Chinese prior to and during the invasion did not intensify their criticism of the Soviet Union. Second, while in October and November 1978 it appeared that a decision was taken in principle to mobilize PLA troops on the southern border, a decision to invade was apparently taken only in mid-December, and then only if the Vietnamese mounted a successful invasion to overthrow Pol Pot. After Phnom

Penh fell in early January, more than a month passed as Deng Xiaoping travelled to the U.S. and Japan to "test the international waters" about a possible Chinese retributive incursion (Tretiak, 1979: 748-749).

Immediately prior to the conflict, the level of criticism of Vietnamese border incidents and of the Soviet Union did not increase noticeably immediately prior to the conflict. During the conflict, the Chinese publically stated their actions would be limited. Furthermore, no Chinese leaders gave speeches supporting China's position in the war. There were also no demonstrations in any Chinese city supporting the incursion, and the attitude of the official community in Beijing at the time was calm (Tretiak, 1979: 750-751).

During the operation, as the capture of Lon San seemed more difficult, the P.R.C. government sent a private message to the head of the diplomatic corps in Beijing on February 20 that a Chinese withdrawal had begun. This message was clearly intended as an authoritative confirmation to the Soviets of the limited nature of China's aims (Gelman, 1982: 98-100).

Operationally the Chinese did not push farther than 25 miles into the country and withdrew after a little more than two weeks (February 17-March 5). After the conflict several Chinese leaders visited the border area, but they

did not exaggerate the few successes Chinese forces were able to achieve (Tretiak, 1979: 751; Baylis, 1987: 119).v

Soviet Developments

The Soviets seem to have accepted the Chinese signals as a credible indication of a limited invasion. After the Soviet press initially charged that the Chinese were conspiring with the U.S. to pursue the invasion into Vietnam, Gromyko on February 26 argued that the principal Chinese objective was to create antagonism between the Soviet Union and the U.S. and that the U.S. sold place a higher priority on its relations with the Soviet Union (Yahuda, 1983: 206; see also Gelman, 1982: 97).

Indeed, as one commentator notes, Moscow's early pronouncement os n the invasion "were so generalized in terms of threat to China as to be virtually meaningless." The Soviets apparently thought that the incursion would be shallow and brief and that the Vietnamese could deal with it adequately with continued Soviet provisioning of arms. Soviet military developments surrounding the crisis will be discussed further below, but I will note here that while the Soviet Union did institute an accelerated

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vWhile the Chinese did achieve the goal of the capture of the regional capital Lon San, the Chinese lost 20,000 men and Vietnam continued with its policies in Kampuchea. It was indeed a significant cost to the Vietnamese to have to maintain troop concentrations at both borders, but this necessity could hardly be considered a Chinese success (Tretiak, 1979: 753-754).

military assistance program by air lift, the conflict was over too quickly for these supplies to be of much use. There was little need for more help; the Vietnamese did not even commit regular troops to the conflict (only military-production militia), so there was no need to request Soviet troops (Pike, 1979: 1167-1168).

The relatively low-key approach that the Soviets attempted to project was evident in further commentary as the conflict came to a conclusion. In early March, as the Chinese announced their withdrawal, a Pravda commentary appear that congratulated the Soviet leadership for having understood the "schemes" of the P.R.C. in time and avoided the Chinese leaders' "'provocations, the purpose of which is to get us into a collision with the U.S.'" (Yahuda, 1983: 206; see also Gelman, 1986: 101-102). With these comments and actions, the Soviets clearly demonstrated that the Chinese invasion did not create an important military threat for them.

The Invasion and Force Posture Developments

To what extent were Sino-Soviet tensions in the decade or so after the mid-1970s reflected in force posture, and how did the invasion affect the force posture of the two sides? The issues addressed by the two questions overlap, but I will deal with the questions separately, the broader one first and then the more specific aspect.

As suggested earlier in this chapter and in Chapter Seven, efforts to fortify the border slowed in the early 1970s, and force levels in the boarder areas remained fairly constant afterwards. According to one analyst, throughout the last half of the 1970s and into the early 1980s, neither side in conventional forces had "anything near what could be called overwhelming offensive potential" (Segal, 1983: 7). Both sides seemed to perceive the threat as long-term and therefore one probably not best dealt with by military means.

Conventional Forces

As Table 2 indicates, from 1975 to the mid-1980s, Soviet division strength in the Far East was fairly constant, growing by only a couple of divisions until 1983-1986. Two-thirds to three quarters of the divisions in the post-1975 decade were Category III, so it appears that the manpower growth that did occur was basically defensively oriented. The principal increase in division strength during this period, which came in 1983, was not related to specific negative developments in Sino-Soviet relations, but more likely to the general concern the Soviets had about border security there. This point is clearer when one reflects that this increase came four years after the Chinese invasion of Vietnam; occurred at a time when there had not been any significant increase in Chinese border

forces; and came during a period when the Soviets were trying to improve relations with China.w The growth may be attributable to improved Sino-U.S. relations and worsening U.S.-Soviet relations in the early 1980s, but this would be difficult to verify.

While there is no readily available information on the nature of the equipment provided the Soviet divisions, the fact that so many were Category II and III does not suggest a primary orientation to nuclear warfare. This conclusion may also be considered appropriate given Chinese deployments. The Chinese usually maintained a higher level of infantry deployments in the border than the Soviets (see Table 3), but both sides were aware of the overall Soviet conventional military preponderance in the area. Given this preponderance (not to mention a similar preponderance--discussed below--in theater nuclear weapons), there would probably be little reason for the Soviets to use nuclear weapons for most of the goals they would probably seek in invading China.x

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wDuring 1982, Brezhnev had made speeches in March in Tashkent and in September in Baku where he spoke of Soviet interest in diminishing the ideological differences between the two countries and exploring border negotiations and Asian CBMs (see Griffith, 1983: 20-22 and Yahuda, 1986).

xPerhaps even more important, an invasion of China would be highly improbable short a serious deterioration of relations.

Furthermore, there was also little cause for the Soviets to expect a surprise invasion from the Chinese, to which the Soviets might have to respond with nuclear weapons. The overall Soviet preponderance is one factor in this assessment. Also, Chinese forces had basically arrayed themselves in positional defenses in the border regions, and their military exercises reflected this positional defensive orientation (Segal, 1983: 6-8). Therefore, one infers that given these factors--the Soviet preponderance, the nature of the Chinese deployment and assumptions made by Chinese planners in designing exercises--that the Soviet military planners even on the basis of a purely military calculus probably did not anticipate a Chinese invasion requiring a Soviet nuclear response.

Nuclear Forces

The two sides' nuclear forces have been mentioned briefly, and a few more comments are necessary about nuclear force posture. Both sides improved their nuclear forces during the post-1975 decade, but these improvements seem more generally related to force modernization or other causes than specifically Sino-Soviet tensions. As Table 4 indicates, the Soviets by 1980 had begun to replace their SS-4s and SS-5s in the region with SS-20s, and they had begun to replace their

Badgers and Blinders with the Backfire.y The R&D period necessary for both of these new systems would place the initial work on them in the late 1960s as Sino-Soviet relations were worsening. Given the aging systems they were to replace as well as the threat the Soviets perceived from the U.S. and its allies in Europe and the Pacific, it would be very difficult (if not unwise) to argue that these systems were developed because the Soviets wanted to emphasize nuclear operations in the Far Eastern theater. While the deployment rates of these systems (particularly the SS-20s) in Europe and Asia did raise questions about the relative Soviet emphasis on nuclear or conventional war, it would be inappropriate to infer that these forces reflected an increased emphasis on nuclear warfare in East Asia or that Sino-Soviet tensions clearly had an effect on the initiation of their R&D.

China's first nuclear systems began to be deployed in the mid-1970s and early 1980s. It began to deploy an MRBM in 1970, an IRBM by 1971, an ICBM by 1976 or 1977, and its first successful SLBM test occurred in 1982 (The Military Balance, Gelman, 1982: 85-86).z While Sino-Soviet tensions were no doubt important for these developments,

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yOn the Soviets' modernization of the nuclear forces in the area, see Cordesman, 1983: 92, 96-101, 108.

zSee also Baylis, 1987: 136-138.

particularly the M/IRBM deployments. For Soviet planners, Chinese development of theater and intercontinental nuclear capabilities may have enhanced the Soviets' interest in improving their own nuclear capabilities in the Far East, but it just as arguably created a deterrent to Soviet use of nuclear weapons against the Chinese. The net effect of the development of a Chinese nuclear capability on Soviet force posture orientation is therefore hard to assess precisely.

Developments Around the Invasion

With the development of this background on force posture, I will turn to specific regional conflicts since the mid-1970s to assess their relevance for Soviet force posture. As the examination of overall force posture change was a point of departure from the discussion of the Sino-Vietnamese conflict, it is appropriate to return to that discussion.

As indicated earlier, problems began between the Chinese and the Vietnamese early in 1978 with the disagreement over the ethnic Chinese minority. In April 1978 General Secretary Brezhnev and Defense Minister Ustinov traveled to Vladivostok, where they visited with the Soviet fleet, and to Kharabovsk, where they watched combined arms maneuvers. Changes during that time in Soviet force posture that were marked or were given

emphasis by this visit included an upgrading of equipment (especially of aircraft), increased deployment of thinly manned divisions, and augmented forces in Mongolia.

During the conflict, the Soviets assisted Vietnam with air and coastal transportation, increased naval reconnaissance in the Far East, and maintained naval intelligence ships already deployed near Vietnam. The Soviets also moved a naval flotilla from the Soviet Far East to the East China Sea, but this flotilla did not enter the South China Sea during the fighting (Gelman, 1982: 100).

The Soviets, beginning around March 16, 1979, held an unprecedentedly large exercise of their troops in Mongolia (Burt, 1979: 3). These exercises may have been intended in part as a signal to China of Soviet displeasure with the invasion (which had ended more than a week previous) (Gelman, 1982: 100-101). However, it is more likely, since such exercises are usually planned months in advance, that the maneuvers were conducted to test the recently reorganized Soviet command structure in the Far East. In early 1979, the Soviets had organized a new Far Eastern Strategic Theater in that part of the country that superintended the Far Eastern, Siberian, and Transbaykal

Military Districts, as well as Soviet forces in Mongolia.aa Therefore, it seems reasonable to conclude that while general Sino-Soviet tensions may have been one of the motivating forces spurring the Soviet improvement of its military posture in the Far East, this buildup does not seem to have been much affected by the Chinese invasion of Vietnam. Furthermore, there does not seem to be any indication that this buildup is related to changes in doctrinal orientation. The Soviets, as has been demonstrated, improved both their nuclear and conventional forces in the decade after 1975. The fact that they seemed to concentrate on improving conventional forces seems to confirm the approach they had been pursuing toward theater warfare since the mid-1960s.

Other Key Regional Conflicts

There was some effort made by the two sides in the months subsequent to the crisis to defuse further tensions, but these efforts came to a halt with the Soviet invasion of Afghanistan in December 1979 (Gelman, 1982: 106). Although there was diplomatic contact between the

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aaAt its founding, this new theater was headed by Gen. Petrov, the commander of the successful Soviet-Cuban operation in Ethiopia. It is likely that this new command structure was created not only because of Soviet concerns about China but also because of concerns about U.S. and Japanese forces in the Far East. In wartime, the Pacific Fleet as well as the Central Asian Military District would probably come under this command's control (Gelman, 1982: 76).

two countries over the next several years, the relationship continued to be beset by difficulties. The warming Sino-U.S. relationship was problematic for the Soviets, and the Chinese objected to the Soviet-supported declaration of martial law in Poland in December 1981. As is well known, differences between the two countries on China's "three conditions"--Soviet troops in Mongolia and Afghanistan, and Vietnamese troops in Cambodia--continued to hinder improvement of the bilateral relationship.bb As one can surmise from Tables 1 and 2, the basic force posture relationship between the two countries remained fairly constant into the mid-1980s. From the available political and military data for this period, there appears little indication that Soviet military doctrine underwent any significant changes since the mid-1970s.cc

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bbA number of scholars have chronicled and analyzed Sino-Soviet relations in the early 1980s. See Griffith (1983; for 1981-1982), Ellison (1987; for 1982-1986), Wishnick (1985; for 1982-1985), and Yahuda (1986; for 1982-1985). Berton (1985), Sutter (1986), and Tanaka (1983) also offer useful analyses for this period.

ccThe increase to 61 divisions occurred in the period from 1985-1987, when the International Institute for Strategic Studies was revising its accounting scheme for divisional deployments to reflect Soviet Theaters of Military Operations. This apparent increase is most likely a function of difficulties in the Institute's revisions of its accounting scheme for The Military Balance. Note that the division total returns to the lower level by 1988. Additionally, no other sources consulted on Sino-Soviet affairs during this period noted

Although there had been a few slight improvements in the relationship in the first half of the 1980s, matters only really began to make progress after Gorbachev's speeches of March 1985 and July 1986. Gorbachev, in his first Central Committee speech as General Secretary, made special mention of the importance of Sino-Soviet relations, and he had a beneficial visit with then Vice-Premier Li Peng that month at Chernenko's funeral. In a speech in Vladivostok in July 1986, Gorbachev commented that he intended to withdraw troops both from Mongolia and Vietnam (see Robinson, 1987: 155-159). The Chinese around this time also pursued initiatives concerning Mongolia and Vietnam, which suggested that they too saw some room for improvement of relations. As a result of these developments there began to be an increasing number of talks between officials of the two countries on a wide variety of political, economic, and social issues.

Perhaps the most progress on the military aspects of the relationship--the "three conditions"--in January 1988 when Foreign Minister Shevardnadze announced an unconditional Soviet withdrawal from Afghanistan. This withdrawal was completed by early February 1989 (Keller, 1988: 1; 1989: 1). More progress occurred in late 1988, as the Soviets withdrew some troops from Mongolia and as

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a divisional increase of this size.

the Soviets and the Chinese planned their first summit meeting in twenty years (Taubman, 1988: 1, 6).

At the summit in May 1989, Gorbachev announced that Soviet forces there would be reduced by 120,000 men and that 12 army divisions and 11 air force regiments would be disbanded. He also announced that 16 warships would be withdrawn from the Pacific Fleet. The following month, the Soviets announced that the Central Asian Military District had been disbanded and that its units would be reduced or disbanded (units maintained were transferred to the Turkestan Military District) (The Military Balance, 1989-90: 29-30). These changes, particularly the reduction pledges, were made without reference to corresponding Chinese reductions. Obviously the Soviets were serious about modifying their force posture on the Sino-Soviet border, and it is very arguably the case that these reductions fit in with various aspects of the mutual security orientation.

Positive movement on the Kampuchean problem developed in early 1989, when Vietnam announced after negotiations with the Chinese that it would withdraw its forces from Kampuchea by September. China had contributed to this decision by agreeing to reduce aid to the Khmer Rouge in conjunction with the departure. However, it seems that the principal factors leading to the Vietnamese

announcement was Soviet concern about continued economic support of Vietnam's occupation of Kampuchea and the Vietnamese government's realization that it could not seek economic aid from the international community unless it withdrew from Kampuchea (Erlanger, 1989a: 14; 1989b: 1). It seems reasonable to argue that it would have been unlikely for the Vietnamese to have withdrawn without Soviet economic and political pressure that they do so.

As one reviews developments with these principal military aspects of the Sino-Soviet relationship in the several years after Gorbachev's accession to power, it seems fairly clear that the principal moves toward reconciliation were made by the Soviets. There are obviously a variety of reasons why the Soviets made these choices. With Afghanistan, it was probably the economic and foreign policy costs of continuing the war there.dd With Vietnam, the Soviet reasoning was influenced in part by economic concerns and in part by their desire to improve Sino-Soviet relations.ee

With the Mongolian withdrawal, the economic cost of maintaining forces there, plus the objections raised by the Chinese were important factors, were probably the most

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ddThe Soviets have, however, maintained a major aid program to Afghanistan since the withdrawal.

eeThe Soviets have continued their general economic aid program to Vietnam.

important factors. With the Mongolian withdrawal, more so than the initiatives with Afghanistan or Vietnam, there is reason to tie force posture change with a possible doctrine change. Of course, the economic cost of maintaining more rather than fewer forces in a distant part of the U.S.S.R. was not an unimportant factor. Still, while the incursion into Afghanistan was a sort of "pacification" effort and the support for Vietnam (as for Cuba) interpretable as useful aid to a strategically located ally, the level of forces on the border with China can more arguably be said to reflect how the Soviets think it best to meet a long-term military threat from an important neighbor.

The force posture evidence concerning troops in the Far East will have to be viewed together with doctrinal statements at this time about how a conflict with the PRC might be pursued, but the developments on the Sino-Soviet border in the late 1980s seem consonant with aspects of the "mutual security" orientation. Such seems further the case when the initiative involving troops in Mongolia is viewed in conjunction with the developments in Afghanistan and Kampuchea.

Conclusions

Final evaluation of the hypotheses posed in this section of the chapter will have to wait until the

examination of doctrinal discussions, but some preliminary conclusions can be presented. Concerning Soviet force posture development in the Far East in the post-1975 decade, it seems that activities there confirm a conventional emphasis on doctrine, if anything. The Soviets did improve their nuclear capabilities in the area as one would have expected, but conventional forces were very thoroughly built up. Furthermore, given the nature of the military forces the Soviets faced in China, it would seem the nuclear forces the Soviets moved into the area probably were intended to serve a deterrent function. There were arguably few objectives related to a ground campaign the Soviets would feel constrained to target primarily with nuclear weapons. Chinese nuclear pre-emption of Soviet ground forces in the theater was probably not considered a very likely prospect. The relatively low key approach both the Chinese and Soviets took to the incursion into Vietnam suggests that the invasion was not a particularly important factor in Soviet doctrinal developments.

Soviet troop levels in Mongolia suggests that a strong conventional posture in the are remained important to the Soviets, at least until the mid-1980s. At that point, Soviet promises of troop withdrawals from Mongolia, plus their agreement in the INF treaty to dismantle missiles in

the area, suggests a change in military thinking about the area after Gorbachev's accession.

In the mid-1980s, the Soviet withdrawal from Afghanistan and the influence they apparently exerted on the Vietnamese to withdraw from Kampuchea also suggests a revision of attitudes about foreign policy and military force commitments in the region. If these developments can be related to doctrinal discussions, and particularly to discussions about how the Afghanistan and Kampuchean issues affect Sino-Soviet relations and thereby Soviet military doctrine, then one may be able to conclude that Sino-Soviet tensions did shape Soviet military doctrine developments.

Part Three: Independent Variables' Importance of All Dependent Variable, 1976-1989

Having characterized developments in the independent variables, it is appropriate to note the extent to which developments in these variables are likely to affect developments in the independent variable. As I comment on the relationships of the independent and dependent variables, I will frame the discussion in the contexts both of the developments I have presented in the past two chapters and of the concluding remarks in Chapter Eleven on historical precedents. Here I will summarize the basic conclusions from this chapter and the previous one on the

particular variables of importance. In Chapter Fourteen I will discuss the interactive dimensions of these variable and suggest how they might be ranked in importance.

There were key leadership changes in virtually all the most important positions in the Soviet political-military hierarchy, not to mention quite a few in the positions of secondary importance. The central hypothesis relating leadership change to change in military doctrine was met, so again developments related to this variable again seem to be important. This finding is consequent with the historical assessment of this variable.

Technology advances seem not to have been an important factor in this period. The evidence is equivocal, in terms of a nuclear or conventional orientation, in that many advances were in technologies that could be used in either sort of conflict, and important advances technologically during this period were not particularly significant in terms of new directions in force posture that were made possible. There is really no single technology or set of technologies that one could tie unmistakably to an orientation on mutual security, so the technology variable fails in importance this time both for substantive and methodological reasons. This development stands in some contrast with the past, when technology did have an arguably key role in doctrinal development.

Concerning the economic variable, the conditions of increasing severe economic constraints were such for the entire post-1976 period that the conditions for the hypothesis of economic change affecting doctrine are met. Either the economic factor will continue with be ignored, as in the past, or the evidence hypothesized as important for change will receive greater attention by the leadership.

Evidence on U.S. and NATO doctrine and strategy change suggests that this variable was not an important factor during the last period because there were no major changes in either. Historically this variable has been important for Soviet policymakers concerned with military doctrine. However, since there were no major shifts in U.S. and NATO doctrine and only a minor shift in NATO strategy, one concludes that this variable should not be of great importance.

Similarly, Sino-Soviet tensions were relatively low during the recent period and even began to improve. The importance of Sino-Soviet military disagreements for doctrine change, as is the case with technology change, seems to be generally nonexistent. This inference is consistent with the historical interpretation of this factor.

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APPENDIX

Table 12.1: U.S./NATO Doctrine Development, 1976-1989

Orientation Favored: Conflicting interpretations possible, but basic orientation seems primarily conventional, though nuclear forces are increased and improved for deterrence; beginning in mid-1980s, growing interest and activity in improving the security relationship through greater cooperation in a wide range of foreign affairs areas

U.S. Leadership Perception

The Carter Administration was divided about detente initially: both support for and skepticism about detente grow, with detente arguably being more important; the invasion of Afghanistan greatly increases skepticism about the possibility of U.S.-Soviet cooperation; the Reagan Administrations view the Soviets even more negatively until Gorbachev comes to power, when U.S. leaders become cautiously optimistic; under Bush, there is some initial skepticism, but optimism about U.S.-Soviet relations grows and becomes predominant

Role of NATO in Leadership Perceptions

NATO is a key zone where the line has to be held against Soviet influence; NATO also a path for arms talks to reduce tensions in Europe; in late 1980s, consideration is given to transforming NATO into more of a political than a military alliance as the Warsaw Pact disintegrates as a military structure

Strategic Planning

A continued moved toward greater flexibility in nuclear options; arguably more room for conventional conflict in context of possibly limited or delayed nuclear use

U.S. Army Planning

Greater stability sought in a potential ground engagement with Warsaw Pact forces; continued importance recognized of nuclear weapons and the capability to fight in a nuclear environment; at same time, a concern for greater effectiveness in the use of conventional forces with the addition of operational plans to strike deep into the enemy rear if the enemy attacks

Army-NATO Ties

Army takes into account German planning on maneuver and force concentration for defense and counterattack; AirLand concern for counterattack in enemy rear probably appeals to European NATO leaders because of concern to reduce destruction to West European territory where possible

Table 12.2: Soviet Military Manpower Trends, 1976-1989

	1976	1978	1980	1982	1984	1985	1988		1989
Armed Forces Personnel	3650	3638	3658	3705	5115*	5300	5096		4258
Ground Forces Personnel	1825	1825	1825	1825	1846	1995	1900		1596
(in thousands)									
Divisions by Region and Category **									
E. Europe	31 I	31 I	31 I	31 I	31 I	Northwest, West and Southwest TVPs: 33 I	Northwest TVD 13	31 I (E. Eur.)	Northwest TVD: 13 (mostly III)
W. USSR MDs	64 (1/3 I,II, III)	64 (1/2 I/II, 1/2 III)	66 (1/2 I/II, 1/2 III)	69 (1/4 I/II, 3/4 III)	65 (35% I/II, 65% III)	15 I/II; 40 III	West TVD 69	17 I/II	West TVD: 27 I, 43 (mostly II)
							Southwest TVD 32	72 III	Southwest TVD: 4 I, 28 (1/2 II, 1/2 III)
Central and Southern MDs (Afghanistan)	30 (mostly III)***	30 (mostly III)	30 (mostly III, but with ~5 Is)	30 III (4 I)	44 (II/III) (4 I)	Central and Southern TVDs: 10-11 I; 36-39 II/III	Central TVD 21; Southern TVD 32	33 I/II; 50 III	Central TVD: 21 (mostly III); Southern TVD: 1 I, 42 (mostly III)
Far Eastern MDs (includes Mongolia)	43 (1/3 I,II, III)	44 (1/2 I/II, 1/2 III)	46 (1/2 I/II, 1/2 III)	47 (1/4 I,II, 3/4 III)	52 (35% I/II, 65% III)	Far Eastern TVD: 19 I/II; 34 III	Far Eastern TVD 61		Far Eastern TVD: 1 I, 54 (1/2 II, 1/2 III)
Total Divisions by Category (approximate)	66 I; 43 II; 59 III	58 I; 33 II; 78 III	63 I; 33 II; 77 III	49 I; 15 II; 115 III	55 I; 31 II; 106 III	58 I; 36 II; 98 III	55 I; 26 II; 112 III		42 I; 90 II; 102 III
Total Divisions	168	169	173	177	192	192	203		234

* This total and subsequent totals of Armed Forces Personnel include 1,500,000 command and general support troops that had not earlier been listed in The Military Balance.

** Includes artillery divisions.

*** The Military Balance notes fractions of categories as high as 1/4 (see listings for W. USSR MDs above and Far Eastern MDs below). To compute Total Divisions by Category (below), I will assume "mostly III" means 4/5 III and 1/5 II. "Mostly II" I will assume means 4/5 II and 1/5 I.

Source: The Military Balance, various years

Table 12.3: PRC Military Manpower Trends, 1976-1989

	1976	1978	1980	1982	1984	1985	1987	1989
Total Ground Forces Personnel	3000	3625	3600	3950	3160	2973	2300	2300
Military Districts								
Northeast (Shenyang & Beijing)	55 MF* 25 LF	55 MF 25 LF	54 MF 29 LF	50 MF 29 LF	53 MF 26 LF	53 MF 26 LF	60 MF **	41 MF
North and Northwest (Lanzhou & Xinjiang)	20 MF 7 LF	15 MF 8 LF	9 MF 8 LF	9 MF 4 LF	9 MF 2 LF	9 MF 2 LF	16 MF	10 MF
West (Xinjiang; separates from Lanzhou MD in 1980; rejoins by 1987)			6 MF 8 LF	6 MF 8 LF	5 MF 7 LF	5 MF 7 LF		

* MF = Main Force division
LF = Local Force division (has fewer troops, less equipment than MF)

** LF divisions included after 1985 as part of paramilitary forces

MRBM (700 mi) operational in 1975
IRBM (1750 mi) operational in 1975
ICBM (3000-3500 mi) operational in 1976

Source: The Military Balance, various years

Table 12.4: Soviet Theater Nuclear Forces

Soviet Nuclear Forces for Theaterwide Conflict, 1985 (Far East Theater)[a]

	1965	*1970*	*1975*	*1980*	*1985*
MR/IRBM Launchers					
SS-4/SS-5	100	100	100	100	0
SS-20[b]	0	0	0	40	135–171
Total	100	100	100	140	135–171
Medium-Range Bombers					
Strategic Air Armies					
Badger/Blinder	[c]	175	160	145	80
Backfire	0	0	0	15	40
Total	[c]	175	160	160	120
Soviet Naval Aviation					
Badger/Blinder	55	70	85	95	90
Backfire	0	0	0	5	40
Total	55	70	85	100	130
Submarine-Launched Ballistic Missiles (SLBMs)[d]					
Submarines (SSBN/SSB)	[c]	[c]	[c]	[c]	31
SLBM Launchers	[c]	[c]	[c]	[c]	405

Sources: Department of Defense, *Soviet Military Power;* The International Institute for Strategic Studies (IISS), *The Military Balance*.

[a]Forces deployed in the Siberian, Transbaykal, and Far East military districts, and at sea.

[b]Each SS-20 missile is MIRVed with three warheads. Each launcher is assessed to have one missile on launcher, plus one refire missile. The upper range of numbers for 1985 includes launchers that can target both Europe and Asia.

[c]Data not available.

[d]SS-11 ICBMs deployed north of China could also be used to attack U.S., allied, and Chinese targets in the Asia-Pacific region.

Source: Martin (1986: 272)

CHAPTER XIII

SOVIET DOCTRINAL DEVELOPMENTS, 1976-1989

This chapter will assess the decade and a half of Soviet security policy thinking--focusing on developments within the last half-decade--to present the principal trends in Soviet thinking and assess the nature of changes that have occurred in the recent past. As noted in Chapter Two, I chose the mid-1970s as a starting point because the principal book-length historical analyses of Soviet military doctrine basically only cover through the mid-1970s.a As I examine doctrinal developments during this period, I will use the same basic hypotheses and evaluative criteria as I did for the 1946-1975 period. As noted in Chapter Two, most scholars of Soviet military affairs perceive the character of Soviet doctrine as being essentially continuous from the mid-1970s to the mid-1980s, and my assessment concurs with this evaluation.

In the next three chapters, I will evaluate the doctrinal developments of the past decade and a half. The present chapter is divided into two parts. The first will

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aMccGwire's analysis extends beyond then, but as noted earlier, his approach is inductive.

cover doctrinal developments in the post-1975 decade, and the second will cover doctrinal developments since the mid-1980s. In the next chapter, I will discuss force posture developments that may reflect doctrinal shifts, and I will draw some conclusions about the projected influence of the internal and external variables on post-1976 developments.

The following chapter will assess the reasons Soviet political and military leaders have adduced for why modifications have needed to be made in Soviet doctrine. In this chapter, I will address both what Soviet leaders have said about the reasons for change and how what they have said compares with the evidence from the independent variables I explore.

Before proceeding with the substantive analysis, it is first necessary to recap briefly the issue of the point in time at which separate developments of the post-1975 period from developments of the period of "new thinking." As I noted in the section on leadership change in Chapter Eleven, Soviet high-level political and military officials have said that Soviet doctrine was revised from 1986-1987, and the Warsaw Pact, issued a major revision of doctrine in May 1987. Gorbachev himself noted that in early 1986 that the April 1985 Central Committee plenum undertook a review of the threat of nuclear war.

Marshall Akhromeyev commented sometime after this remark by Gorbachev that that plenum had lead to the Defense Council's pursuing a two-year review of military doctrine [Parrott, 1988: 3].

If the February 1986 speech is viewed as a salient point in the chronology of Soviet doctrinal development, one could say, as noted in Chapter Eleven, that the key shift extended from April 1985 until May 1987. The subsequent analysis, then, will use that time frame as the principal period of transition and will examine how the changes initiated during that period fit into the framework that underlies my analysis.

After explaining the principal aspects of the recent apparent shift in the dependent variable of doctrine and strategy, in Chapter Fifteen I will relate those developments to changes in the independent variables in two main ways. First, I will discuss why principal political-military leaders thought changes in doctrine were necessary. Then I will examine differences that may appear between the Soviets allege for the change and where and why my analysis of the independent variables differs.

Before characterizing the doctrinal developments of the recent past, I turn for a moment to the hypotheses for the assessment of this period. I will frame these

hypotheses in the context of the basic questions I posed in Chapter Eight.

Doctrine

Type_of_War

Is the next important conflict to involve the Soviet Union likely to be directly with the West--the final conflict--or might it involve non-European regional opponents?

Hypotheses:

(Nuclear orientation) Since the West (and the U.S. in particular) is the Soviet Union's chief rival and is the rival with the most advanced strategic nuclear systems, if the predominant opinion among the leadership is that the next important conflict to involve the Soviet Union will be the final conflict with the West, the leadership also perceives the next conflict is likely to be a general nuclear war.

(Conventional orientation) The opinion that the next important conflict to involve the Soviet Union is not likely to be with the West will reflect an orientation to conventional warfare.

(Mutual security) If the consensus among the leadership is that any type of war should be avoided, such an orientation will reflect an orientation to mutual security

Character_of_the_War's_Development

How long will the initial period be? Will it primarily involve nuclear or conventional weapons? How soon will the superpowers be directly involved?

Hypotheses:

(Nuclear orientation) A consensus that the next war will include a short initial period, involve nuclear weapons, and witness the early direct involvement of the superpowers will suggest a nuclear doctrine orientation.

(Conventional orientation) A consensus that the war will not have a short initial period and will not soon witness either the use of nuclear weapons

or the direct involvement of the superpowers suggests a strong conventional orientation among the leadership.

[Mutual security] A consensus that any war should be avoided makes the issue of the initial period basically irrelevant, so these issues are not likely to be discussed if the leadership's orientation is mutual security. To the extent war is mentioned, a nuclear or conventional initial period should be characterized as unacceptable, as should the involvement of the superpowers at any point.

How long will the subsequent/concluding period be? Will it involve primarily nuclear or conventional weapons?

Hypotheses:
[Nuclear orientation] A consensus that there will be a very short concluding period and/or that the concluding period will involve primarily nuclear weapons will reflect an orientation within the leadership toward nuclear war.

[Conventional orientation] A consensus that the concluding period will not be short or will involve primarily conventional weapons will suggest a conventional orientation among the leadership.

[Mutual security] As was the case with the initial period, the consensus on the inappropriateness of military conflict will mean that this issue will not be discussed. If it is mentioned, a consensus on mutual security will be reflected in a consensus that a subsequent period of any length or of any type of weapon is unacceptable.

Outcome

Which socioeconomic system will be the victor?

Hypotheses:
[Nuclear orientation] A consensus that the socialist system will clearly be the victor will suggest an orientation toward nuclear war.

[Conventional orientation] A consensus that neither system will be the victor will suggest an

orientation toward conventional war [more precisely, an orientation away_from nuclear war].

[Mutual security] As is the case with the conventional orientation a consensus that neither system will be the victor in a major war will also reflect an orientation to mutual security.

Policy_Instrument

Is war an instrument of superpower policy?

Hypotheses:
[Nuclear orientation] A consensus that this question may be answered in the affirmative concerning conflict between the superpowers suggests a nuclear orientation among the leadership. This orientation will also be reflected in a frequently stated preference for increased military expenditures or for maintaining parity in force posture with the West.

[Conventional orientation] A consensus that war is not a policy instrument for superpower conflict or that it only may be an instrument for superpower use in the developing world will suggest a conventional orientation. This orientation will also be reflected in a frequently stated preference for increased military expenditures or for maintaining parity in force posture with the West.

[Mutual Security] A consensus that only political policy instruments are suitable for resolving conflict will suggest an orientation to mutual security. This orientation will be reflected by a stated preference for reliance on reasonable sufficiency, defined as the minimal expenditure to support a reliable defense posture.

Strategy

Service_Branches

What will be the principal service branches used in the next major conflict, and what will their roles be?

Hypotheses:
[Nuclear orientation] A consensus that the principal services branches will be the SRF and nuclear submarines will suggest a predominant nuclear strategy.

[Conventional orientation] A consensus that the Ground Forces will be the primary service in the next major conflict will suggest a conventional strategy.

[Mutual Security] As was the case with the character of the war's development, the postulated irrelevance of war will mean that the issue of the primary service will not be extensively addressed. To the extent the issue is mentioned, the standard formula of nuclear forces being the principal branch but there being a harmonious development among the branches should be used.

Weapons_to_Achieve_Objectives

How important will nuclear weapons be for achieving military objectives?

Hypotheses:
[Nuclear orientation] A consensus that nuclear weapons will be the principal weapons used to achieve military objectives will suggest a nuclear posture.

[Conventional orientation] A consensus that nuclear weapons may be of equal or less importance than conventional weapons will suggest a conventional orientation.

[Mutual Security] Since military conflict is eschewed in a mutual security orientation, a consensus that no type of weapon is appropriate will reflect a mutual security orientation.

Mobilization_Potential

Will the next war be fought primarily with the forces in existence at the outset of the conflict, or will there be time during the conflict to mobilize troops and the economy?

Hypotheses:
[Nuclear orientation] A consensus that the next war will not permit extensive mobilization of the armed forces will suggest a nuclear orientation.

[Conventional orientation] A consensus that the next war may permit extensive mobilization will suggest a conventional orientation.

[Mutual Security] A consensus that war is an inappropriate instrument to resolve conflict will mean that this issue will not be addressed in a mutual security orientation.

Emphasis_on_Arms_Control_Measures

Should arms control and crisis management negotiations be a primary aspect of Soviet defense policy?

Hypotheses:
[Nuclear orientation] A nuclear orientation will be characterized by little or no emphasis being given to arms control measures as a primary dimension of defense policy.

[Conventional orientation] A consensus that arms control measures are of relatively minor importance except in areas concerning the avoidance of nuclear war will reflect a conventional orientation.

[Mutual security] A consensus that arms control and crisis management negotiations are a key part of defense policy will suggest a mutual security orientation.

As discussed in Chapter Two, the leaders whose speeches and articles were reviewed for this section were the highest level political-military decisionmakers in the Soviet Union, consisting of members of the Defense Council, Deputy Ministers of Defense, Chief and Deputy Chiefs of the General Staff. For the 1976-1989 period, I read through approximately 2950 articles and speeches by

these individuals on foreign affairs topics. From this group, I used approximately 850 citations that dealt specifically with doctrinal issues of interest in this study to constitute the research base.b

Military Doctrine, 1976-1985

As previously noted, there was a strong amount of consistency in doctrinal developments in this time frame compared with doctrinal developments of the previous eight to ten years [see Chapter Eight, Table 4 and this chapter, Table 1]. To avoid repeating the points of the last section of Chapter Eight on the post-1966 period, I will present here basically comments from leaders that offer sufficient evidence of the consistency of doctrine from the previous period. I will also note interesting departures from this consistent trend where those few departures exist.

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bThe question of the value of Soviet open sources on military questions has been adequately dealt with before [see e.g. Meyer, 1983/4: 6-7 and Douglass, 1980: xi-xii; see also Frost, 1989: 95, n7: methodological appendix]. The propaganda content of Soviet media cannot be denied, but careful comparison of how the Soviets approach security issues over time when writing about them and how that declaratory policy fits with actual policy can help winnow much of the propaganda content of these publications.

Type_of_War

As we the case earlier, I will begin the discussion of Soviet views on the type of war by characterizing the nature of the threat[s] Soviets perceived to their security. The Soviets continued to believe during the post-1976 decade that the most significant military threat they faced was from the West,c but that regional conflicts were more likely to involve actual Soviet military assistance. Still, the Soviets wanted to continue pursuing detente in order to lessen the Western threat.

Speaking to this threat, for example, First Deputy Defense Minister Sokolov commented in early 1979 that "reactionary imperialist forces" were trying to "poison the international atmosphere and revive an atmosphere of distrust" because of their military expenditures and support of "hotbeds" of tension [1979: 4].

In the last part of the 1970s and particularly with the advent of the Reagan administration, Soviet leaders criticized Western charges of the "Soviet military threat"

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cChina remained less of a problem during this period. Soviet criticism of China increased in the late 1970s as U.S.-PRC relations warmed and particularly in 1979 when China invaded Vietnam. The criticism diminished over the next several years and became muted as the Soviets sought to improve relations with the PRC. Even around the turn of the decade when criticism of China had become harsh, China was usually disparaged because it had associated itself with Western powers and, by implication, with NATO. See, e.g., Ustinov [1980: 2].

and argued that U.S. defense programs were a major provocation and stimulus to arms competition. Chairman of the Council of Ministers Nikolay Tikhonov remarked in November 1983 that the U.S. and "imperialist circles" were "unleashing an unprecedented arms race" (1983: 1). First Deputy Defense Minister Nikolay Ogarkov noted in late 1984 that "there has been a particularly sharp increase in the reckless bellicosity" with the arrival of the Reagan administration, the "protege of the most reactionary and aggressive circles of U.S. imperialism." Reagan's "imperial ambitions," continues Ogarkov, are "thoughtlessly pushing the world toward nuclear war" (1984: 22). Ogarkov's acerbic criticism is characteristic of many comments from military officials during the early 1980s who alleged that the Reagan military buildup was indicative of aggressive intentions on the part of the U.S. leadership.

At the same time (but more so in the late 1970s than the early 1980s), Soviet spokesmen also sought to constrain this Western threat they perceived by furthering the cause of detente. Brezhnev, who among the Soviet leadership was probably most closely identified with the policy of detente, commented that the Soviet Union would continue to try to improve relations with the United States. In 1978, for example, Brezhnev commented that the

Soviet Union would "persistently, consistently, and more actively every year" strive for a solution to arms competition [1978: 1]. Kirilenko that same year noted the importance of the struggle to continue detente and reducing international tension [1978: 4]. Andropov in 1980 commented on the importance of reducing "the hostility of the cold war" and resolving disputes peacefully. Detente, he remarked, "means too much" to let it be derailed [1980: 2].

At the same time, the Soviets continued to affirm their political and material support for national liberation movements. It is the specific comments about support for groups in such struggles that creates the impression that regional military involvement [although usually indirectly] was more acceptable to the Soviets than a large- scale involvement.

For example, Defense Minister Ustinov in 1978, while noting that the Soviet Union "persistently strive to strengthen detente," comments in the same speech that the Soviet Union continues to give a decisive rebuff to the aggressive intrigues of imperialism and...supports all progressive forces" [1978: 2]. Suslov, in late 1977, commented that the Soviet Union values its "mutual support of fighters against social and national aggression" [1977: 18-19], while Deputy Minister of Defense Moskalenko cited

the importance of the "internationalist duties of the Soviet Armed Forces" (Moskalenko, 1978: V1). Ogarkov in 1982 noted that the U.S. suppressed national-liberations movements as part of its drive to world domination and "global offensive on socialism" (1982: 2).

Similarly Ustinov, commenting in 1981 that the Soviet Union was "against the export of revolution," but would not brook encouragement of "counterrevolution" or "imperialism's attempts...to isolate liberated countries from their natural allies--the USSR and the entire socialist community" (1981a: 2). A year later he noted that "fighters for freedom and peace" always receive support from the Soviets (1982a: 2).

This basic attitude--that the U.S. was the principal threat to peace but that the Soviet Union was most likely to meet this threat in regional conflicts--continued through the early 1980s. The Soviets acknowledged the need to maintain strong strategic forces in light of U.S. strategic power and Reagan's increases of same, but references to specific military conflicts were almost always in non-European locations. The only potential exception here would be the Soviet troop activity in the winter of 1980-81 in response to the Polish crisis (see Suslov, 1981: 2; see also Ustinov 1982b: 1).

Character of the War's Development

The initial period

The question of the initial period of war was not addressed specifically by the political and military leaders whose speeches and article were surveyed, but attitudes toward this topic can be inferred from comments on several of the principal security issues Soviet leaders faced during this period. Basically the evidence suggests that if the war began with nuclear weapons, the initial period would probably be short. If the war were not nuclear from the outset, the possibility of a protracted conflict was evident.

Commenting on the proposed NATO deployment of the Pershing-II and cruise missiles, the Soviets made the point that the P-II would only take a few minutes to reach Soviet territory from Western Europe and that such an attack would be met by strategic retaliation strike against the U.S. homeland (Ustinov, 1981b: 4; Akhromeyev, 1980: 3). An important point the Soviets tried to make during the controversy over the P-II/GLCM deployment is that they did not recognize a "Eurostrategic" missile--that they would regard any missile attack from Europe as strategic and would not restrict their response to the European theater (see Brezhnev, 1981b: 1; Ustinov, 1982a: 2). In doing so, at least with their declaratory

doctrine, they sought to emphasize that a war that started or included an attack on the USSR with nuclear weapons could not be limited by size or type of warhead or by geography. Therefore one supposes that if the initial period began with nuclear strikes on the Soviet territory, the Soviets would expect the initial period to remain nuclear, to be short, and to involve both superpowers relatively quickly.

The Soviets also criticized PD-59 for its alleged inclusion of various plans on limited nuclear war. This "so-called new nuclear strategy with its partial application of nuclear weapons," said Brezhnev in 1980, was designed to make nuclear war "more acceptable to public opinion" but is "totally unrealistic and only deludes people" [1980: 2; 1981a: 3].d This argumentation fits well with the case the Soviets were making against the NATO INF deployment--that a war that began with nuclear weapons was not likely to be limited by yield, with the implication that it also was not likely to be protracted.

Other evidence, however, suggests the possibility that a war that began with conventional weapons might remain

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dSee also Ustinov [1981b: 4] for criticism of PD-59 and the assertion that it is impossible to pursue war in Europe because of the huge number of casualties that would result.

so, with the implication that the initial period [and the subsequent/concluding period] might be protracted. Brezhnev in his speech at Tula in January 1977 reaffirmed the Warsaw Pact declaration of no first use of nuclear weapons and later that year affirmed the Warsaw Pact proposal for an international treaty on the initiative [Brezhnev, 1977a: 2; 1977b: 2; also Predlozheniye, 1976: 1].

Carrying further the topic of an actual outbreak of war, Deputy Defense Minister Altunin wrote on several occasions of the importance of civil defense measures for ensuring continued economic productivity under "extreme conditions," and Deputy Defense Minister Kurkotkin wrote of the importance of good "military-economic analysis of a battle or operation" and effectively organized rear services to ensure victory [Altunin, Voyenniye Znaniye, #10, 1977; 1980: 2; 1982: 2; Kurkotkin, 1984: 2-3]. Similarly, Deputy Defense Minister Shabanov noted the necessity that the economy be able to shift quickly in the production of various types of combat equipment in order to best meet the needs of the modern army [Shabanov, 1983: 7].

While such calls to action may apply to a nuclear conflict, it is much more plausible to infer they applied to a conflict that was largely, or possibly entirely,

conventional.e Obviously, economic production and continued, large-scale provisioning of troops would not likely be necessary in a short, primarily nuclear, conflict.

Outcome of a Conflict

On the topic of the outcome of a major war between the two social systems, the Soviets maintained their orientation that it would be catastrophic for both sides. Brezhnev in 1978, for instance, commented that a new world war would be "a terrible calamity for all if it broke out at any spot on the globe." In 1982, he remarked that a nuclear war "could mean the destruction of human civilization and perhaps the end of life itself on earth" [Brezhnev, 1978b: 2, 1982: 1].

At the same time, Brezhnev and other Soviet leaders argued the value of maintaining a strong Soviet military establishment in order to give a decisive "rebuff" to any aggressor [see e.g., Ogarkov, 1980: 2]. Ustinov commented in 1981, for example, that the "forces and might" of the socialist countries "are sufficient to rebuff aggression, and no one will ever be able to force them to their knees"

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eIt may be argued that these officials were primarily calling attention to their areas of responsibility [Altunin--civil defense; Kurkotkin--rear services, Shabanov--armaments]. It seems unlikely, however, that they would make such statements if a protracted conflict was not considered viable doctrinal alternative.

(Ustinov, 1981b: 4). Therefore, it seems that while the Soviets acknowledged the catastrophic proportions of a nuclear war for both social systems, at times they were inclined to assert that socialism would not be vanquished in such a conflict.

War as a Policy Instrument

The Soviets, in their declaratory policy in the post-1976 decade, presented a fairly uniform orientation on war as a policy instrument. Brezhnev implied this position when he noted in his 1977 Tula speech that the Soviet Union would not "embark on the road of aggression" (Brezhnev, 1977a: 2). Gromyko, that same year in a letter to UN General Secretary Kurt Waldheim, forwarded a Soviet proposal for the non-use of force in international relations that would cover both nuclear and conventional weapons (Na blago, 1977: 4). He repeated this position in a 1982 Kommunist article (Gromyko, 1982: 22-23). Andropov also voiced that concern in a 1980 speech when he called for the settlement of disputes "not by force, not by the threat of weapons, but by peaceful means, around the negotiating table" (Andropov, 1980: 2).

The fairly consistent evidence from Soviet declaratory policy on this point obviously contrasts both with Soviet involvement during this period in Afghanistan and with the degree of Soviet military support for allies in such

countries as Ethiopia and Nicaragua. Perhaps the best way to reconcile the Soviets' negative evaluation of war as a policy instrument with their significant involvement in regional conflicts during this period is to interpret the pacific aspects of declaratory policy to refer to direct military involvement of large numbers of Soviet troops.

Other evidence for Soviet views on war as a policy instrument can be gleaned for Soviet statements on the character of an appropriate defense posture and the relative value of military or political instruments to resolve foreign policy problems. For most of the post-1976 decade, for example, the Soviets' formula for comparison of defense posture with the West was "equality and equal security." The Soviets disavowed an interest in military superiority, and when comparing their force posture [overall and in the European theater] with that of the West, they framed their needs in terms of parity with the West [see, e.g., Gromyko, 1981b: 4].

Whenever they perceived their notion of parity as being challenged by Western deployments, however, they responded in terms of the force posture increases they would pursue. Rarely did Soviet leaders during this period talk about force reductions, and there was no mention of the "reasonable sufficiency" concept until the

mid-1980s.f As noted in the sections on the type and character of a war, Soviet political-military leaders often referred to the importance of their military establishment in maintaining Soviet security interests.

Furthermore, never publically did the Soviets during this period discuss the value of meeting opponents' security concerns as a way to enhance Soviet security. Virtually all assessments of the impact of Soviet troops in Afghanistan on Pakistani or Iranian security dismissed that concern, as did assessments of the impact of the SS-20 deployment on Western European security. Deputy Defense Minister Tolubko addressed succinctly the Soviet view about political versus military means of security when in 1983 he commented that the Soviet leadership was "pursuing a policy in which the active struggle for peace and [the] readiness to give a decisive rebuff to fanciers of military adventures and warmongers coalesce [as a single policy]" [Tolubko, 1983: 63].

Strategy

On the primary service Soviet leaders expected to be involved in a next important conflict, there are several ways to interpret the available evidence. Several Soviet

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fOn force reductions, see, e.g. Brezhnev 18 Jan 77; Ustinov, 1977: 16-7]. Given the brevity of these comments and their lack of elaboration, one expects that there may be a significant propaganda component to them.

authors during this period spoke consistently about the Strategic Rocket Forces as the basis or "main element" of the Soviet Armed Forces [Sokolov, 1976: 2; Ogarkov, 1983a: 2].

About the same time there were a number of interesting comments about the potential role of the Ground Forces in a future conflict. Gribov in 1979 commented that a future war would be a coalition war involving the forces of socialism and capitalism on a global scale [Gribov, 1979: 7]. From this comment one may infer an important role for conventionally armed ground forces; since not all socialist and capitalist countries possess nuclear weapons, conventionally armed troops would be the key forces in such a conflict.

Expanding on this idea, Ogarkov two years later wrote about the importance of quick mobilization of troops and the economy to a war footing, an admonishment that necessarily assigns an important role to Ground Forces in the ensuing conflict [Ogarkov, 1981: 87-89]. Most interestingly, Ogarkov wrote in 1977 of the efforts during World War II of Soviet troops in operations at Kursk, Kishinev, the Vistula-Oder, etc. to encircle and destroy large-scale enemy troop formations and to effect the rapid development of the offense-in-depth. He then went on to say that such "graphic examples of leading military art"

are "carefully studied today in our country and abroad" [Ogarkov, 1977: 1]. Assuming his characterization of military education in the Soviet Union was correct, it would indicate that such large-scale operations were among Soviet doctrinal alternatives [if not preferences]. Such future campaigns obviously would entail a major role for ground forces. Deputy Defense Minister Varennikov, writing in 1982, noted that in conflicts involving the U.S. and NATO, there may occur military activities of "broad scope" and the launch of strikes "over large distances, even including nuclear weapons." He then encourages combat readiness and the ability to deploy quickly, as these strikes may take place "without clear signs of preparation" [Varrenikov, 1982: 2]. If such strikes may "even include" nuclear weapons, they obviously may also not. From such evidence one may, therefore, infer again that Soviet military leaders considered the Ground Forces a key, if not primary, branch of the services. Ogarkov a year later mentioned the threat from "highly effective new conventional means of the armed struggle" [Ogarkov, 1983b: 2]. Such concern about PGMs would not be necessary unless the Ground Forces were likely to encounter them.

Comments earlier on the issues of the character of the war's development and the primary service involved have

already in part addressed the question about the relative importance of the existing forces or mobilization capacity. On the one hand, the SRF has been acknowledged as the basis of Soviet military might and the "main factor restraining aggressive ambitions of hostile forces" (Tolubko, 1977: 2). On the other hand, mention has also been made of developing a stalwart and flexible economic infrastructure that can adequately provision military forces, and the country at large, in the event of a major conflict.g Clearly some of the commentary on the strong economic base has been intended as an exhortation to the Soviet defense industry managers to improve their support of the Armed Forces in contemporary conditions of peace, but the conclusion seems inescapable that the Soviets accorded a not insignificant likelihood to the possibility of a protracted major war, a war that could involve conventional or both conventional and nuclear weapons.

The issue of Soviet interest in arms control is both an easy and a difficult issue to assess. The Soviets were quite clear about their interest in negotiating SALT II, as they were about continued adherence to the ABM treaty. The Soviets were also involved in a number of other arms negotiations during this period, such as those for PNEs,

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gIn addition to earlier references by Altunin, Ogarkov, and Varennikov, see Kozlov (1976: 2).

MBFR, ASAT, INF, CBMs in Europe and elsewhere, continuation of CSCE, and environmental modification.h

However, considering the orientation expressed above on the value of military means of ensuring security as well as the history of Soviet negotiating approaches to some of these talks (especially MBFR and INF), one is led to the conclusion that arms control opportunities were generally viewed as a secondary, rather than primary, means of ensuring security. While one could not expect a country's leadership to agree to a treaty that would be detrimental to the country's security, it is still reasonable to question a leadership's basic valuation of arms control and arms reduction as instruments to achieve security.

For the Soviets, involvement with the ABM and SALT I and II treaties, in comparison to their involvement with MBFR and INF, reveal a mixed picture. The record suggests that the Soviets were not willing to compromise on some key force posture issues, a fact which suggests that they were not willing to rely on political means of security at the anticipated expense of military means. The same observation, of course, could be made about the U.S. approach to arms control negotiations at many junctures.

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hFor comments in support of many of these negotiations, see Gromyko, 1981a; and Andropov, 1983: 1.

U.S. arms control attitudes, however, are not of concern here; the relevant point for the current assessment of Soviet military doctrine is that Soviet emphasis on arms control during this period was secondary rather than primary.

Looking back over the 1976-1984 period, the essential consistency with Soviet military doctrine during the previous decade or so seems clear. Several dimensions appear marginally more pronounced. One is the emphasis given the possibility of large-scale conventional warfare and the economic infrastructure to support such an effort. A second involves some new initiatives, such as the no-first-use and non-use of force propositions. These initiatives suggest that the Soviets, as they completed the basic buildup of their strategic and conventional force postures, were probably moving in this period toward the security orientation of a status-quo power. An overall assessment would suggest that 1) the Soviets continued to pursue a strong strategic deterrence capability but 2) sought at the same time to advance other foreign policy interests by maintaining strong conventional forces and conventional materiel assistance policies.

The 1985-1989 Period

Without prejudicing the subsequent analysis, it can be readily noted that Soviet military doctrine beginning in the mid-1980s has undergone important reconsideration and modification (see Table 2). The Soviet leadership's reconceptualization of the approach to foreign affairs has been marked, even though in many cases not totally transformed. Since security policy is a subset of foreign policy, this reconsideration has had an important effect on security thinking, and I will discuss this issue in some depth, particularly in the opening part of the "Type of War" section on the general nature of the threat the Soviets perceived from the West.

Additionally, glasnost' has been an important factor in this reconsideration, because it has permitted Soviet political and military leaders to be publically critical about past security policies and to disagree more candidly with one another in the debate on current security policy. While the overall effect of this candor is beneficial to doctrinal analysis, one appropriately anticipates a greater diversity of opinion on important security issues. I will try to note and evaluate this diversity where it exists in important areas of doctrinal thought.

Type of War: General Observations

Soviet views of their relationship with the United States and the nature of likely future conflict would be among the most likely areas of doctrine to reveal differences from what had been the case in the past, if significant revision in security thinking were to occur. From the first years of Gorbachev's tenure, change in such views has indeed seemed to occur. As I did for doctrine in the earlier time periods, I will discuss some of the general assessments of the Soviet-U.S. security relationship as a background for comments on the likely nature of future Soviet military involvement.

The years since Gorbachev's accession to power have manifested some interesting dynamics in commentary on the likelihood of Soviet involvement in military conflict. For example, there has been less than complete agreement within the political-military hierarchy on the nature of the threat from the West and how best to meet that threat. Commentary from political leaders about relations with the West began to take on a noticeably positive cant in 1985 and 1986, a tendency which continued to develop in spite of occasional pessimistic observations. Military officials, with the exception of the Minister of Defense and occasionally the Chief of the General Staff, have remained more pessimistic about the diminution of the

Western threat, though positive remarks occasionally sprinkle their commentary. The Ministers of Defense--and Yazov more so than Sokolov--have been more sanguine about relations with the West than have their colleagues, though negative comments occasionally do appear in the Ministers' opinions. Occasionally, though not often, political leaders also express particularly critical comments on the prospects of Soviet-Western cooperation.

Another interesting dynamic is that the modification of views that has occurred concerning the nature of a future war has not been really a mere reevaluation of the likelihood of war based on traditional parameters of force posture and doctrine but rather a fundamental reconceptualization of the security environment of the U.S.S.R. So, while in the early years of the Gorbachev administration, there were still references by some political-military leaders favoring the support (material and otherwise) of national liberation movements, this public avowal of support significantly dwindled, at least among civilian members of the political-military elite. As this transformation took place, the concept of the eradication of war through a "mutual security" regime gained prominence. This thrust was apparent in a number of the aspects of doctrine, aspects I will discuss below.

Initially in the mid-1980s, one witnesses the usual amount of criticism of the United States. Gorbachev in June 1985 commented at a scientific-technical conference that the Soviet Union appropriately spent "increased funds" on defense because the country was faced with the "aggressive policy and threats of imperialism [1985b: 1], and he noted in a Kommunist article that same year that "U.S. imperialism" was continuing its "undeclared war against Afghanistan" [Gorbachev, 1985a: 3]. Defense Minister Tolubko in 1985 noted continued U.S. "global aggression" and its "dangerous decision" to deploy medium-range missiles in Europe [Tolubko, 1985: 4-5].

Minister of Foreign Affairs Shevardnadze, commenting in 1986 about the level of militarization of the Mediterranean, noted that the reasons for this problem were "well-known; they directly follow from the U.S. policy of neo-globalism" and "American imperial ambitions" [Shevardnadze, 1986c: 4]. Warsaw Pact Commander-in-Chief Kulikov commented in 1987 that the "more militant Western circles openly proclaim their endeavor to destroy socialism as a world system.... Never has [the world] been so close to the dangerous limit, beyond which lies the destruction of all living things as it is today, and the blame for this lies utterly and completely with imperialism. The U.S., Kulikov continued, was the

"locomotive of imperialism," as it had imposed on its NATO partners a "political course aimed at the total struggle and direct confrontation with the USSR and other socialist countries' [Kulikov, 1987: 28].

Similarly, Chief of the General Staff Moiseyev in early 1989 noted about arms control talks that the Soviet Union does not "fail to see...the unremitting resistance of the reactionary imperialist circles [to arms reduction]. That would mean underestimating the level of military danger existing now." While he commented that in recent years "international confrontation has given way to cooperation," he observed that "there has been no fundamental breakthrough in international affairs [Moiseyev, 1989a: 2].

The choice here of political leaders' remarks to characterize the Soviet "threat perception" in the early part of the Gorbachev period and remarks by military official to characterize it later is intentional. I provide the opinion in this manner, since the degree of criticism evinced in the comments of the political officials cited was characteristic both of political and military officials for the first year or two of Gorbachev's tenure. Over time, however, political officials more frequently had positive things to say about Soviet-U.S. relations, while military officials evaluated

the relationship more consistent with earlier statements--in the same negative dimensions many Soviet leaders--political and military--had been using in the previous decade or so. Therefore, later in the Gorbachev period, civilian officials offer positive commentary about relations with the U.S., while military officials are frequently negative about the U.S. and "American imperialism."i

For example, Shevardnadze in 1986 noted that the Soviets "are determined to overcome what Mikhail Gorbachev described as the "period of alienation between the Soviet Union and the United States" (Shevardnadze, 1986a: 4). While Gorbachev commented in 1988 that he had met with many international leaders, "often including conservatively minded ones, and not one of them has offered doubts about the necessity to further the Soviet-American dialogue on disarmament (Gorbachev, 1988a: 1). Shevardnadze in 1988 noted that at the November 1985 Geneva summit, there occurred a deepened understanding between the two sides of various aspects of world politics and bilateral relations, as well as a growth of

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iFor the sake of this part of the discussion, I am distinguishing between "primarily" military officials and officials such as the Minister of Defense (and perhaps CinC Warsaw Pact), whose duties entail some political responsibilities that might cause the official to attenuate strong criticism of the West for the sake of public relations.

trust [1988a: 7]. He observed that in spite of some differences, "I think we have, nonetheless, succeeded in laying a foundation for the normalization and improvement of Soviet-U.S. relations [Shevardnadze, 1988b: 4].

Commenting in 1989 on the development of Soviet-U.S. relations, Shevardnadze remarked that the Soviet-U.S. dialogue had demanded a reappraisal of the "ideological approach to regional issues," and that it had been settled at the summit level that "the natural differences in the interests of our countries should not perpetuate rivalry--including regional problems." In the nuclear age, he said, the goal should be cooperation [Na kanune, 1989: 5]. Political officials did hedge their bets on this topic, but there was generally a growing positive trend in their comments as time continued.

While military officials maintained a generally wary attitude about the possibility of improved relations and the West, these leaders did occasionally offer positive assessments. One example was Marshal Akhromeyev's comment in 1988 that Soviet-U.S. progress in arms control in the previous few years "enjoys approval and support from the broad public and representatives of the most diverse political circles also in the West" [Akhromeyev, 1988: 3]. Warsaw Pact First Deputy Chief of Staff Lobov noted in late 1988 that just like Abraham Lincoln tried to make

peace with his adversaries, "similarly we in the military should also abandon the image of an enemy, and this, too, is a new form of thinking" (Lobov, 1988: 8-9). So, while there was less than uniform views on the general Soviet-U.S. relationship and a certain amount of hedging of bets when the basic assessment was positive, it was clear there was more consistent interest that in the past decade in better relations with the United States.

Type of War: Specific Comments

Specifically concerning the nature of a potential Soviet-U.S. conflict, there was a general consensus that any kind of conflict was to be avoided. Shevardnadze, meeting with Mongolian leaders in early 1986, noted that "a new war must never be unleashed, that it is essential to do everything to prevent a war--nuclear or conventional--between the USSR and the U.S." (Shevardnadze, 1986b: 4). In a discussion later that same year, he commented that when one speaks of relations with the United States, "it is pointless to hope for victory, and not only in a nuclear war--you cannot even win in small 'diplomatic wars'" (Shevardnadze, 1986e: 5). Three years later, in the same vein, the foreign minister noted that the Soviet Union and the U.S. should not perpetuate rivalry, even on regional issues (Na kanune, 1989: 5; see also Priyem M.S. Gorbachevym, 1987).

Defense Minister Yazov, noting in early 1988 the tragic consequences of either a conventional or a nuclear war involving the two superpowers, remarked that the two countries need "to renounce violence in thinking and acting in world politics" [Yazov, 1988b: 3]. While the Soviets continued to express support for struggles of national liberation movements and, early on in the Gorbachev period the provision of material aid,j the basic trend, as suggested above, was a disinvolvement with regional conflicts. As Defense Minister Yazov noted in early 1989, the use of conventional [or nuclear] weapons in regional conflicts "poses a direct threat of the involvement in military confrontation of many countries and peoples" linked by networks of treaties and agreements. "Thus," he continued, "every such conflict contains in its embryo a danger not only to national but also to universal security" [Yazov, 1989: 1].k

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jSee Gorbachev [1986d: 2]. Note the 1986 date. Later, Soviet leaders expressed less support in national liberation movements and began to cut back assistance to some of them.

kThe issue of a Chinese threat to the Soviet Union was largely non-existent during this period, as Sino-Soviet relations continued to improve. For positive comments indicative of this improvement, see Gorbachev's July 1986 speech at Vladivostok [1986f: 2-3] and his principal speech during his May 1989 visit to the P.R.C. [1989: 1-2].

Consequently, Soviet leaders argued that given the potential problem of both direct and indirect military conflict with the West, the best approach to take in this relationship was that of mutual security. As Gorbachev noted in early 1987,

> [t]he only conceivable security nowadays is mutual or, more precisely, universal security.
> So whether we like one another or not, it is essential to learn to coexist, to live in peace on this tiny and very fragile planet [1987a: 1].

Ligachev affirmed later that spring that

> [t]he preservation of peace today is only possible by affirming the new political thinking as the norm.
> Its essence lies in the necessity of rejecting wars and the policy of force, which have become totally obsolete in the nuclear space age. Very deep contradictions divide us from capitalism, but these are the contradictions of a single world. And its security is indivisible.
>
> * * *
>
> New thinking penetrates all the initiatives of the Soviet Union... [1987: 4].

Prime Minister Ryzhkov also tied mutual security to "new political thinking"

> Within the system of the views and values which constitute the concept of the new political thinking born by restructuring, we put in first place the values common to mankind and freedom of choice--the observance of the norms and rules without which progress of modern society is already impossible. The new political thinking is the projection of the course of restructuring in the sphere of international relations, the reflection of a novel approach to our own problems and goals.
>
> * * *
>
> The new political thinking has been conditioned by the realities of the modern world: by the cardinal change in the role of the military factor, the growing interdependence of North and South, East

> and West, the ecological threat, and the deepening awareness of the significance of general human and cultural values. So it is an imperative of our time (1989: 4).

Shevardnadze, a few months later, echoed much of this assessment of new thinking and highlighted the role of rationality. New thinking, he said, "preaches and professes the belief that any problem whatsoever can be rationally settled, if approached rationally" (1989: 5).

The ideas expressed here about mutual security and new political thinking touch upon several of the concepts to be discussed later. However, it is worth noting at this point, in reference to the "Type of War" criterion, that mutual security basically disavows military conflict at any level as an appropriate way to pursue foreign relations. Therefore, formulating Soviet military doctrine on the base of mutual security would mean that neither a major conflict directly with the West or an indirect conflict in the Third World would be anticipated. Rather, adversaries would try to settle differences before these differences reached a military conflict stage. SUch a policy preference obviously has great significance for the nature of military doctrine, but I will pursue this issue later after covering the other areas of doctrine.

Character of the War's Development

Initial Period

Given the fact, as just noted, that the Soviets in the last half of the 1980s have been moving in the direction of renouncing any level of military conflict as an adequate way to pursue national security, it is not surprising that these were little discussion about how a war would develop, if one indeed did occur. Before the signing of the INF treaty, there was discussion that the Pershing-IIs were designed for a surprise attack and that the Soviet Union would be ready for same (Sokolov, 1985: 1,3).1 First Deputy Minister of Defense Lushev in mid-1987 noted that while in the past it took "several months or weeks for the aggressor to bring its forces to full readiness for attack," in the contemporary period, it would take "just hours or even minutes," given the capability of the U.S. and NATO's nuclear and conventional weapons. Therefore, he asserted it was important to have good reconnaissance, high combat readiness, and quick action by covering echelons (Lushev, 1987: 5-6).

As far as the immediacy of superpower involvement is concern, it came to be the Soviet view, as indicated

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1Making much the same point, WTO CinC Kulikov noted in early 1987 that the P-II deployment reduces reaction time and increases the likelihood of nuclear war (Warsaw Pact Commander, 1987).

earlier by the quotations from Yazov and Shevardnadze, that the nations of the world are so interconnected that any regional struggle was likely to pull other nations into its vortex, especially the superpowers, and that this process would probably occur so rapidly that it would constitute a good reason to avoid military conflict altogether. As Gorbachev noted in discussing European security, "who does not understand that on the European continent, the use of even conventional weapons...will provoke consequences no less serious than nuclear war" [1986e: 2].

Subsequent/Concluding Period

Several military officials expressed opinions that suggested the possibility that the subsequent/concluding period may be protracted. Deputy Defense Minister Kurkotkin argued that strong and well-organized rear services were necessary to sustain an army if it hoped for victory. If a war should occur, he noted, having reliable rear services is "half the victory" [Kiselev, 1987: 4]. Ground Forces CinC Ivanovskiy commented that a future war would be the decisive confrontation between the two social systems. Referring to the Ground Forces' role in such a conflict, he said that they must be thoroughly trained in any type of combat in which they may find themselves [1985: 9-10]. Obviously, if he believes these forces need

to be so trained, he perceives their role to be an important one. In a similar vein, Deputy Defense Minister Govorov in 1987 asserted the importance of preparing thoroughly for combined arms operations on land, sea, and in the air [1987: 78-79].

Comments such as these suggest that planning for the possibility of a protracted subsequent/concluding period continued, and that this period might well make extensive use of conventional warfare. Planning for extended troop operations or combined arms campaigns would make little sense in a predominantly nuclear environment.

Therefore, while the overall emphasis during the mid-1980s was on avoiding war altogether, there were officials of the political-military group surveyed here who did discuss the possibility of a protracted war and how the Soviets should best plan for it. In the context of other doctrinal developments, however, this dimension of doctrinal planning seems of secondary significance.

Outcome

The issue of the outcome has been noted earlier. As Soviet officials advanced the concepts of mutual security and new political thinking, the basic drift of thought on the question of the outcome has been that not only is war unwinnable, but that military conflict of any sort is not a useful or appropriate foreign policy tool.

Shevardnadze's and Yazov's comments about the similar hazards of nuclear and conventional war address this questions specifically. Gorbachev, in a letter to a British group on disarmament issues, noted that mankind "has no choice but to survive or destroy itself entirely [1986a: 1]. Comments like the remark by Kulikov in 1986 that imperialism could not destroy socialism in World War II and is less able to do so in the contemporary period because of the power of socialism were extremely rare among the Soviet leaders surveyed for this study [Kulikov, 1986: 21].

Means of Conflict

Revision of the concept of military force as an instrument of security policy has been an important part of Soviet "new thinking" in foreign affairs. Gorbachev noted in a February 1986 report to the Central Committee that the policy of "military confrontation has no future." "Flight into the past," he continues, "is no response to the challenges of the future" [1986b: 2]. He remarked later in the speech that

> "[s]ocialism unreservedly rejects war as a means of resolving interstate political and economic differences and ideological disputes. Our ideal is a world without weapons and coercion, a world in which every people may freely choose its path of way of life freely [1986b: 7].

Yazov in 1988 noted that the Soviet Union "unreservedly rejects war as a means for resolving inter-

state contradiction." "War as a means of achieving political goals nowadays has become unacceptable," he commented. Soviet foreign policy now operates on new political thinking, "whose fundamental concept is that war is inadmissible [1988a: 5].

Further, in discussing the May 1987 Warsaw Pact statement of doctrine, Yazov emphasized "that it is for the first time that provisions concerning the prevention of war have been included in our doctrine in such a direct way." Earlier, he said, the Soviet Union was in favor of reducing the chances of war. Now, however, since "war is equivalent to suicide, to a global catastrophe, the task of struggling against war has been put to the fore in our doctrine" [1988a: 5].

Tieing this assertion specifically to new political thinking, Warsaw Pact CinC Lushev in February 1989 contended that the most important aspect of new political thinking is the perception that there can be no victor in a nuclear war and that "such a war, by virtue of its catastrophic consequences, cannot be perceived as an extension of politics by other means" [1989a: 3]. Deputy Chief of the General Staff Gareyev in 1986 emphasized the portion of the report of the 27th Party Congress that the CPSU rejects war as a means of resolving political and economic conflicts and ideological disputes and posits as

a goal a world in which every people can choose its own path of development freely [1986: 21].

Means of Struggle: Reasonable Sufficiency

Given that war and military conflict were renounced as legitimate instruments of foreign policy, it then became necessary to address how such a position would affect force posture and the conceptual bases on which forces would be designed, procured, and maintained. The Soviets offered as an answer to this question the concept of reasonable sufficiency. This concept was mentioned occasionally in the early years of the Gorbachev tenure [Gorbachev, 1986c: 2, 1986b: 2; and Sokolov, 1987: 2] but received fuller explication as time went on. Reasonable sufficiency, as presented by Soviet political and military officials, has two main criteria: a set of quantitative economic concerns and a set of qualitative concerns.

Commenting on the economic dimensions, Defense Minister Yazov remarked in spring 1989 that as far as the technical level of equipment is concerned, reasonable sufficiency signifies "the concentration of means and resources in those spheres of the development of arms that will ensure--with the minimal expenditure--the guaranteed fulfillment of defensive tasks" [1989: 1]. Noting the problem of reoccurring weapons replacement costs for large defense establishments, Yazov also observed that "you can

have so many weapons, mountains of weapons, and you can become a prisoner of those weapons? [Yazov Addresses, 1989: 42-43].

Commenting on qualitative dimensions, Yazov observes that in addition qualitative standards can be maintained by having optimal mixes of old and new weapons, improving standardization and maintenance, and fostering heightened attention to efficient training and combat readiness [1989: 1]. Continuing on the issue of qualitative dimensions, he observes that security based on reasonable sufficiency is founded not only on a "certain level of armaments, but also on a certain state of mind, a psychology and political mood in favor of the smallest possible number of weapons--a number sufficient for defense, but in no way sufficient for attack" [Vozmozhna, 1988: 3]. Speaking in reference to the Warsaw Pact, CinC Kulikov explained reasonable sufficiency as that level of security which "reliably guarantees the protection of the security of each state separately and that of the Warsaw Pact member states as a whole [Kulikov, Historian Proyektor, 1988: 9].

Occasionally, leaders voiced other approaches on the issue of appropriate force posture. Gorbachev, for example, noted in 1986 that a strategic "balance of forces" is necessary, though he states that "everyone in

the world should understand that "more weapons now means not more, but less security" [1986e: 2]. Gorbachev and others have commented positively upon the value of perceived parity in the superpower military relationship, and they have stated that whatever reductions are made, the Soviet Union would not allow the U.S. to have military superiority [Gorbachev, 1986b: 2; Akhromeyev, 1988: 3; and Yazov, 1988b: 1-2].

There was also occasional discussion among political-military leaders about strengthening the Armed Forces in significant quantitative ways, i.e., through increased procurement [Shabanov, 1986: 2-3; Yefimov, 1986: 2,3; Kurkotkin, 1986: 6] These differences do exist--and perhaps more so among lower-level officials, but the evidence tends to suggest that the overall trend was largely toward reasonable sufficiency.

As the Soviets endeavor to pare back force posture yet maintain adequate security, they have indicated an interest in balancing force posture reductions by augmenting the role of political means of ensuring security. One of the ways they have attempted to do this is to emphasize the importance of awareness of other nations' security concerns. This is a fairly novel approach for the Soviets, at least in terms of advocating this concern publically. As noted early, their primary

orientation had been toward maintaining, if not using, strong military forces.

Perhaps the most important aspect of the awareness of other nations' security interests is an acknowledgment that these interests should be considered in Soviet foreign-policy decisionmaking. In his February 1986 speech to the Central Committee, Gorbachev noted that because world is in a process of rapid change, no nation could effectively impose a status quo. Gorbachev observed that the main reason for this perception is that the world "consists of many dozens of states, each of which has its own, quite legitimate interests" [1986b: 2]. The emphasis on other nations' security interests and political solutions to conflict seems to have three main orientations.

First, expanding on these concepts in a 1988 U.N. address, Gorbachev noted that the "new stage" of international relations demanded a "de-ideologization of inter-state relations." He noted that this orientation did not mean for the Soviets that they would be "giving up our convictions, philosophy, or traditions," nor that they are "calling upon every one else to give up theirs. The Soviets, said Gorbachev, were not going "to shut ourselves up within our own values [1988b: 2]. Moreover, as this approach to foreign affairs affects relations with the

U.S., Gorbachev noted in 1987 that the Soviets "are not inclined to pursue a pugnacious policy" with the West. He also argued that the Soviets rejected the "vicious principle" that "the worse it is for the Soviet Union, the better it is for the United States, and vice versa" [Priyem M. S. Gorbachevym, 1987: 3].

Another principal aspect of this orientation toward political resolution of conflict involves support for structure within which to pursue such resolutions. Prime Minister Ryzhkov noted in 1986 that the 27th Party Congress endorsed the need to create "a comprehensive system of international security" so that cooperation among all states could help reduce international tensions and "scaling down the dangerous military confrontation of the two social systems [1986: 5]. Later that year, he noted the need for a persistent quest for political solutions to international disputes and an awareness by political leaders that no state can try to achieve security for itself at the expense of security of others [1986b: 4].

Gorbachev, speaking of cooperative structures for resolution of superpower disputes noted that the Soviets had been mistaken about the healthy adaptability of capitalist society and would not demand that capitalists give up their values but rather seek "new forms of

cooperation" in world affairs. "It becomes apparent," he asserted, "that internationalization of problems is needed." This belief, he continued, forms the basis of renewed Soviet participation in and support for the United Nations (Vystrecha, 1989: 2).

A third and equally important aspect of the political approach to conflict resolution is the implementation of political rather than military means of crisis management. Yazov commented in late 1988 that the increasing role of political means as a "basic tool" in settling international problems was an "objective and undoubtedly positive process." Yazov specifically ties this orientation to new political thinking and said that the Soviet planned to continue this approach (Yazov Interviewed, 1988: 89). Noting the value of international law for constraining international conflict, Gorbachev commented that same year that past decades demonstrated "the entire banefulness and futility of attempts to find military solutions to conflicts." Political solutions have been the only correct approach, he said (1988: 2).

Political means of conflict resolution, therefore, received the most attention as a means of dispute settlement. In partial contrast, there were occasional comments from officials (mostly military ones) noting the importance of maintaining or increasing the level of the

country's military capabilities [see Sokolov, 1986: 2; Ivanovskiy, 1987: 4]. The clear direction during the late 1980s, however, was toward political solutions, both in terms of declaratory policy and [as the next chapter will indicate] action policy as well.

Strategy

Just as the issue of the character of the war's development has not received extensive attention during this period, so also have the specifics of military strategy not been extensively discussed. Of course, if the very top-level leadership is seeking to emphasize political means of conflict management, it is unlikely that one would expect other member of the political-military elite to expound at length on different ways to employ military force. Apart from the arguments about the importance of political, as opposed to military, means of crisis resolution, and the characterization of any type of nuclear or conventional conflict as a major calamity, whether in Europe or elsewhere, there have been three other general themes in recent military literature on strategy issues and the use of the armed forces. One involves the perspective that the Armed Forces' principal task is to prevent a war rather than fight one. As Marshal Akhromeyev noted in mid-1989 in a discussion of World War II, the main historical lesson from the Soviet

Union's victory is that one "must fight against war before it begins" and that such an understanding was even more salient in the contemporary nuclear period [Vorontsov, Zagladin, 1988: 75; see also Petrov, 1986: 2]. Similarly, Warsaw Pact CinC Lushev commented a year later that the "basic function" of the Soviet Armed Forces "is not to allow war" [Lushev, 1989c: 1].

A second important theme during Gorbachev's tenure has been the planning and execution of programs from restructuring and downsizing the Warsaw Pact. Pursuant to comments such as Shevardnadze's September 1986 remarks before the U.N. General Assembly that the Soviet Union supports reductions in the level of politico-military alliances and that the Soviet Union "would generally not want our troops to be present anywhere beyond our national borders" [Shevardnadze, 1986d: 2]. Consequently, by 1989 the Soviets began reducing their forces in Eastern Europe as the Pact took on a more defensive orientation. Emphasizing greater reliance on "qualitative parameters" and greater efficiency, the Soviets in 1989 began to withdraw significant numbers of troops, tanks and airplanes [Syrokomskiy, 1989: 13; Moiseyev, 1989a: 2; 1989b: 5].

A third important general theme affecting strategy issues was the ostensible Soviet renunciation of nuclear

deterrence. The Soviets had never been favorably disposed to this concept as articulated in the West, in spite of their tacit agreement with its basic function.m Now the Soviets remarked that a more peaceful and realistic approach was needed to ensure strategic force reductions [Gorbachev, 1987c: 2-3]; the fear and reciprocal suspicion that constitute the basis of deterrence generate an unrestrained need for more weapons, said the Soviets [Shevardnadze, 1987: 4; and Yazov, 1988a: 5].n

In addition to the perception of the importance of political, rather than military, means of conflict management, the concept of the primacy of the Armed Forces for preventing war more than fighting it, the downsizing of the Warsaw Pact, and the dissatisfaction with the nuclear deterrence relationship would suggest a further deemphasis on the discussion of strategy, including most of those aspects which have been the focus of the current assessment. Such indeed has been the case, though discussion of the particular strategy issues has not evaporated entirely.

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mAs an example of Soviet criticism see Gorbachev's speech during a visit with Margaret Thatcher [1987b: 2].

nShevardnadze even suggested that if nuclear weapons truly performed a deterrence function, they would have deterred the competition in both nuclear and conventional weapons [1988c: 8].

Deputy Defense Minister Shabanov noted in 1986 that the Soviet strategic nuclear forces, including the SRF and strategic forces of the Navy and Air Force,o remained the "chief component of [the] Armed Forces combat might" and the "paramount factor in deterring aggression" (Shabanov, 1986: 2; see also Ivanovskiy, 1987: 4).p

Deputy Defense Minister Govorov in 1987 noted that continued attention to combined arms warfare enriched tactics for troop movements and assaults and for air and sea combat (Govorov, 1986: 2-3). Deputy Defense Minister Ivanovskiy in late 1985 noted Lenin's observation that it is "foolish or even criminal for an army not to train to use all of the types of weapons, all of the means and methods of warfare which the enemy possesses or may acquire" (1985: 12). "Front-line exposure," he noted, "is an inexhaustible source of military wisdom," since modern combat

> requires the ability to conduct combat operations simultaneously on the front and in depth, with the outflanking of the enemy on the ground and in the air, with the rapid switching of forces from one axis to another (Ivanovskiy, 1985: 16).

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oShabanov's comment--noting the importance of the Soviet Union's strategic nuclear forces--is a different formula from the usual expression, which notes the strategic rocket forces. This different terminology probably reflects the increased strategic capabilibies of the Soviet navy and suggests a greater relative balance of importance among the various service branches with strategic weapons (NB: the bomber force remains small).

pNote the positive reference to the concept of deterrence.

In 1987 he asserted that combat readiness "depends to a tremendous degree on the quality and quantity of combat equipment" and is based on the "harmonious array" of combined arms capabilities (Ivanovskiy, 1987: 4).q

These comments substantiate the conclusion that Soviet military leaders at this time were still giving significant consideration to strategy issues, particularly strategy issues for the conventional battlefield.

On the issue of mobilized versus existing forces, Govorov in 1986 and Gareyev in 1987 noted the importance of an economy being able to shift to a war footing (Govorov, 1986: 2-3; and Gareyev, 1988: 40-42, 53). Kurkotkin also in 1987 noted the important of strong and well-organized rear services in order to wage war successfully (Kiselev, 1987: 4).

There are several ways to interpret such comments. One is that these military officials were waging something like rear-guard battles to preserve the weight of military considerations of security policy, particularly as that

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qDeputy Chief of the General Staff Gareyev offered in 1987 a similar assessment in terms of the perceived challenge from NATO. He commented that important advances in weapons science and technology in NATO meant that the Warsaw Pact must devote increasing attention to troop organization and training in order to address these qualitative improvements (Gareyev, 1988: 17-18, 38-39).

policy would apply to preparations for a major war with the West. Another interpretation would be that these officials were just doing their job: Govorov as head of Civil Defense, Gareyev as a member of the General Staff, and Kurkotkin as chief of Rear Services. In the wake of significant evidence to the contrary, the most likely interpretation is probably the latter of these. The authors do manifest an elevated threat perception in contrast to other members of the political-military elite [and therefore may be somewhat out-of-step with the main contemporary drifts in security policy], but presenting the Soviet relationship with the West in the manner they do is probably the only reasonable approach for them to discuss their responsibilities.

Arms Control and CBMs

As one would infer from the earlier discussion of the importance of political and avoid military solutions to international conflict, arms control measures have been a key concern of Soviet leaders during the Gorbachev period. Warsaw Pact CINC Lushev, for example, remarked in 1989 that the Warsaw Pact and NATO would best pursue their differences with openness and reciprocity and commented that both sides should devote themselves to lowering the level of military forces in Europe [1989b: 3]. Shevardnadze, as noted earlier, asserted the value of

establishing organized political and legal structures for resolving differences between the Soviet Union and the West (1986e: 5, 1988c: 8-9). Soviet declaratory policy certainly suggests an important emphasis on arms control, and when one considers the progress in this area in the last half of the 1980s (see Chapter Fourteen), it is clear that action policy has followed closely upon declaratory policy in this area.

Conclusions

When one compares Soviet statements about doctrine and strategy in the last half of the 1980s with doctrinal statements during the previous decade, the differences are often stark. For the last half of the 1980s, a consensus seemed to have developed on most of the criteria that I have noted as important for my study of conventional warfare. The criteria suggested in Chapter Two that at lease the General Secretary and the Minister of Defense need to espouse this doctrine for at least two years for one to make the assumption that an actual declaratory doctrine shift is under ways his also fulfilled.

In considering the shift to Mutual Security, there does remain the problem that some military officials have addressed issues, such as the type of war and the capacity for mobilization, issues which, according to the original hypotheses would not likely be addressed. Part of f the

reason for this occurrence may be that the military disagrees with members of the Party leadership who discuss Mutual Security before both foreign and domestic publics. Purely political officials, as one might surmise, are not likely to address worse case scenarios if Mutual Security fails, and even if addressing such a development, political officials are not likely to talk about it with the same detail that military officials might. Therefore, while still recognizing the possibility of disagreement among some members of the political-military leadership, it seems a more reasonable conclusion that military leaders need to concern themselves professionally with what would happen in a military engagement. Therefore, I think that the best understanding of the differences of opinion that arose is that the lack of consensus is more apparent than real.

As noted earlier, there continues to be some disagreement among members of the political and military elite surveyed, and while these intra-group differences may be somewhat more pronounced than similar differences in earlier periods of Soviet doctrinal development, the overall direction in which the leadership is taking doctrine and strategy--toward mutual security--has clarity, consistency, and momentum. As I will observe in the next chapter, doctrinal directions in this chapter

appear to be well supported by doctrinal directions as observed in practice.

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APPENDIX

Table 13.1: Criteria for Doctrine and Strategy Debate, 1976-Present

	Conv. Focus (1976-1985)	Mutual Security (1985/86-present)
Doctrine		
Type of War		
Socialist-capitalist	major war would be socialist-capitalist, but regional conflict more likely	major and regional conflicts to be resolved politically
National lib./regional		
Neither of above		
Character of War Devel.		
Initial period		
Length (short or long)	short if nuc.; longer if conv.; immediate US/USSR entry not inevitable	war to be avoided; military officials note nuc. and conv. possibilities
Nuc./Conv.		
Immediacy of direct superpower involvement		
Subsequent/Concluding Period		
Length (short or long)	very possibly long	military officials note conv. likely
Nuc./Conv.	conv. likely	
Outcome (which socioeconomic system is the victor)	neither (possibly socialism)	neither
Means of conflict		
War as a policy instrument	no, basically	not at all
Reasonable sufficiency (vs. parity or continued increases)	parity or continued increases	reasonable sufficiency
Political vs. military means of enhancing security (imptc. of adversary's perceptions)	primarily political	only political
Strategy		
Primary service involved	SRF if war is nuc.; but combined arms engagements likely in next conflict; combined arms could be dominant	SRF as deterrent
Importance of nuclear weapons for achieving military goals	not necessarily; unlikely if conflict is conv.	any war unacceptable

Table 13.1 [cont'd.]

	Conv._Focus (1976-1985)	Mutual_Security (1985/86-present)
Strategy [cont'd.]		
Focus on existing forces or importance of economic mobilization capability	mobilization capability	military officials note mobilization capability
Focus on CBMs, crisis reduction centers	arms control initiatives impt. primarily to avoid nuc. war	arms control and international law are key for avoiding military conflict

CHAPTER XIV

TRENDS IN FORCE POSTURE AND RELATION TO DECLARATORY DOCTRINE

Given the developments noted in declaratory doctrine, what expectations are appropriate about force posture? First, since declaratory doctrine in the post-1976 decade on conventional war largely reflected a status quo in Soviet doctrine continuing from the previous five to ten years, one should not expect major changes in force posture in the context of the indicators elaborated in Chapter Nine. Such was basically the case, as I will argue below. With only a few exceptions, which do not contradict the principal dynamics, force posture trends along most of the indicators used in Chapter Nine are fairly consistent with how they had been developing in the late 1960s and early 1970s.a This consistency suggests no

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aProbably the two areas of Soviet doctrinal development that are at all unusual during this period involved Brezhnev's 1977 comments at Tula and the USSR's military activities in Afghanistan. One could argue that Brezhnev's comments at Tula on no first use implied a speculation about a longer conventional period at the beginning of a possible war. This assertion, however, would be hard either to confirm or disconfirm, first because no such implications were discussed, and second, because there are no certain means as to how such a change need be implemented by altering force posture. Discussions about lessons from Afghanistan normally dealt

basic reconsideration by the Soviets either of the balance between conventional and nuclear approaches to warfare or of other doctrinal dimensions.

What sorts of changes in force posture might one anticipate if the Soviets were truly moving to a doctrine based on mutual security? Generally speaking, since in this approach to security affairs, any type of war or use of military force in foreign policy is ruled out, and since political initiatives are asserted as the primary means of conflict resolution, one would expect either a status quo or contraction in conventional force posture (troops and/or equipment), but not an increase. One would expect the same in nuclear force posture.

If the side espousing a doctrine based on mutual security possessed the sort of force posture the Soviets deployed over the past several decades in Eastern Europe, there are several specific steps that side might take to convince the other of its seriousness.b I will elaborate these steps as a helpful way to evaluate the connection between declaratory doctrine and force posture for the

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with operational strategic issues such as guerilla warfare and mountain combat, rather than with strategy or doctrine issues like those used as evaluative criteria in this study.

bThe following discussion is drawn from an interview with a U.S. intelligence expert on the Warsaw Pact (U.S. Government official, 1990).

period following the mid-1980s. The first of these criteria--concerning tanks--probably by itself would be a sufficiently credible indicator of doctrine change in this particular context. Changes in the other indicators are also important but would basically provide supplementary confirmation of a possible doctrine change.

First, since the quantity of deployed tanks creates the most worrisome problem for NATO, tanks could be reduced. This change would be important because of the use of tanks almost solely in offensive, rather than defensive, roles. Tanks, in the quantity the Soviets have possessed in East Europe, would neither be good weapons to defend against a NATO attack or to impose order in Eastern Europe. The former function could be performed by ground and air anti-tank systems, and the latter by troops with infantry fighting vehicles (BMPs), with a few tanks at most. Furthermore, while motorized rifle divisions have organic tank regiments, the Warsaw Pact would not likely have the confidence to attempt a breakthrough and defeat of NATO without its tank divisions. For a reduction in tanks to be credible, one-third to one-half of the tanks in Warsaw Pact division tables of organization (TOE) would

need to be destroyed or removed a significant distance from the front.c

Second, because the presence of self-propelled guns mates mobility with firepower (in a similar way that these two characteristics are mated in tanks), reductions in self-propelled guns, even if they are replaced by towed artillery, would be the next most important indicator. Just as tanks are a primarily offensive weapons system, so are self-propelled (SP) guns. SP guns, like tanks, are also not as well suited for defensive engagements as other types of weapons systems.

A third important indicator would be the establishment of defensive fortifications. Such developments would provide confirmation that the side building them most likely did not intend to mount offensive engagements from their positions. A fourth indicator would be reductions in attack helicopters. Attack helicopters, though less powerful than tanks, are still primarily useful for offensive rather than defensive engagements. Soviet attack helicopters, while useful for ground support, are not viewed as an especially threatening weapons platform,

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cBecause tanks are moved on rail, their deployments are easy to monitor. Having tanks far back from the front would significantly increase tactical warning because of the time involved in bringing them back to the front.

but their primary offensive function makes them a candidate for reductions.

Fifth, reductions in attack aircraft and fighter bombers, troops, and logistic infrastructure could add credibility to a move to mutual security. Attack aircraft, as opposed to interceptors and reconnaissance craft, serve a primarily offensive function. Withdrawals of such aircraft, however, render only moderate credibility to an claim to restructuring based on mutual security. Such is the case since planes, moved to the rear, can be brought forward relatively quickly.

Reductions in troops would also be helpful, but troop reductions are hard to verify. Similarly, troops can be brought back to the front on passenger trains, so their redeployment forward would also be difficult to monitor. Reductions in logistic infrastructure would be useful, but such reductions may also be hard to verify.

Since it has been a conventional orientation that has principally characterized the Soviet approach to theater warfare since the late 1960s, the indicators offered here thus far have concerned conventional capabilities. One would expect that a shift to a mutual security orientation would also involve nuclear systems, so several indicators may be proposed in that area.

For the European theater, it would be an important indicator of a move to mutual security, perhaps as important as the indicator about tanks, if the Soviets were to reduce their INF capabilities. The most important reductions would need to be in the SS-20 force, since that intermediate system is the one with the greatest range and destructive capacity. These missiles would need to be destroyed rather than moved farther from the theater, because of their range.

Reductions in shorter-range systems would also be useful, though not as vital as reductions of the SS-20. These missiles would also need to be destroyed rather than simply moved into the USSR, because of the ease of redeploying them to the front.

Developments Since the Mid-1970s

Probably the simplest way to examine the period from 1976 to the present is to track developments in those indicators used for the historical section together with the indicators suggested above. In actuality, because there were no major reductions in the Warsaw Pact from the 1970s until the late 1980s,d this approach means that the previous indicators will be useful for almost the entire

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dI do not include the GSFG division "reduction" in 1981, because the divisions troops were reintegrated back into the Pact force structure (see, e.g., The Military Balance, 1982/83: 11).

post-1975 period, while the indicators on mutual security are applicable only in the last half of the 1980s.e

To maintain consistency for the post-1975 period, I will use the same hypotheses as presented in Chapter Nine concerning force posture changes as they relate to conventional- or nuclear-oriented doctrine. The general hypothesis I will use to evaluate force posture in terms of a mutual security orientation is that if reductions in tanks occur by one-third or one half, especially to the degree such reductions are accompanied by further force constriction, a move to mutual security will be adjudged to be taking place. Significant reductions in other areas, as described above, will be considered additional confirmatory evidence. After I examine force posture developments along the indicators I have suggested here, I will discuss other possible indicators of a move to mutual security and the significance for mutual security of the 1989 revolution in East European affairs.

Ground Force Developments, Mid-1970s to Mid-1980s

Manpower and readiness

For most of the post-1975 period, manpower totals in the Armed Forces and the Ground Forces remain constant or grow. As one can tell from Table One, most of this

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eThere is an attendant problem that thorough information on the indicators used previously dwindles the more current the time period one evaluates.

growth was in the Central and Southern Military Districts (associated with Afghanistan) and (less strongly) in the Far East. This overall growth is supported by the growth in available manpower (see Chapter Nine, Figure 2) through the 1970s but is not so supported thereafter. The maintenance and increase in manpower levels demonstrates the Soviet commitment in the 1970s and 1980s to having a strong Ground Forces capability, a capability most useful in conventional engagements.

Furthermore, there is a strong increase in the number of Category III divisions and a drop in the number of Category I divisions during this time. Specifically, from 1976 to 1985, there was a 66% increase in Category III divisions and a 12% drop in Category I divisions. As discussed in Chapter Nine, the creation of more Category III divisions (together with the decrease in Category I divisions) suggests an orientation to a conflict where there would be time for mobilization. Some of these Category changes may have had to do with structural shifts to accommodate the war effort in Afghanistan, but the trend is still too apparent to ignore. Additionally, as Figure 21 (of Chapter Nine) suggests, spending on the Ground Forces continued to increase through the 1970s, though (as Figure 22 indicates) expenditures remained

relatively consistent with the growth in the total services budget.

Field Organization

After the mid-1970s reorganization (discussed in Chapter Nine) that improved the combined arms capability of tank divisions, there were no other important changes in the structure of the ground forces. In the late 1970s, many motorized rifle units received armored personnel carriers (BTRs). These wheeled vehicles provide increased mobility on roads, though they do not have the armor or terrain abilities of the tracked BMPs (Madill, 1982: 57). BTRs are suited for highly mobile engagements where there is heavy suppression of enemy fire by tactical air and artillery assets--i.e., in the first attack echelon of attack of an enemy with prepared defenses (Madill, 1982: 58).f

Additionally, motorized rifle units, which in the 1970s had only a battery of six 122mm howitzers, by the late 1970s had triple that number. Organic artillery of tank units also grew. Both these developments improved the firepower of mobile units that would be key for an

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fBMPs, with their thicker armor, are more suited for operating in the enemy rear or in the second echelon (Madill, 1982: 58).

offensive engagement (Madill, 1982: 65).g Another indicator of increased firepower for the Ground Forces was the reorganization of Frontal Aviation to subordinate these assets directly to military districts or to commanders of Groups of Soviet Forces in Europe. The effect of this reorganization was to create a better structure to provide integrated air operations in a Theater of Military Operations (Schneider, 1984: 135).

Nuclear Weapons

There were no differences in this area from before. The troops received three new tactical nuclear systems: SS-21 (1978), SS-23 (1979-80), and SS-12, mod (1979) (Military Balance, 1987-88: 206). These were largely modernizations of earlier systems.h

Ground Force Developments, Mid-1980s to Present

Most of the important Ground Forces developments since the mid-1980s have been in the area of arms control, and that activity only started in 1988. Since the early 1980s, there had been little progress in MBFR talks or in other aspects of the conventional force postures in Europe until Gorbachev's 7 December 1988 speech at the United

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gSee Table 2, prepared by C.J. Dick, who disagrees in part with the assessment on the extent of 122mm howitzer growth but confirms the overall increase in firepower.

hthe SS-21 replaced the FROG-7, while the SS-23 replaced the SS-1c Scud B (Military Balance, 1987-88: 206).

Nations.i In this speech, designed to show how "new thinking" was being applied to Warsaw Pact force structures in Europe, he agreed to cut Soviet Armed Forces personnel by 500,000, with 240,000 of those troops to come from the Western USSR and Eastern Europe and the balance from the Far East and the southern USSR. Units to be withdrawn from Europe include six tank divisions, and air assault and assault river crossing units. Eastern European nations later announced their own reductions. Gorbachev stated these cuts would be made by 1991 (U.S. Department of Defense, 1989: 62).

From forces in the Far East, Gorbachev proposed in December 1988 to withdraw three-fourths of Soviet troops in Mongolia and all Soviet air force units. In May 1989 he specified that these reductions would include 12 divisions (about one-fourth of the total there) and 11 aviation regiments. Defense Minister Yazov in 1989 noted that some motorized rifle divisions would be converted to machine gun and artillery units at static defensive positions (U.S. Department of Defense, 1989: 62; see also FitzGerald, 1989: 1306).

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i The Soviet Union and the U.S., however, did sign an important agreement in September 1986 that increased the degree of notification the two sides would provide for troop exercises in Europe (Lewis, 1986: A1, 13).

Gorbachev also proposed to withdraw 10,000 tanks from Soviet forces deployed in the western Soviet Union and in Eastern Europe. These reductions, Gorbachev indicated, would mean the reduction of 40 percent of tanks in motorized rifle divisions and 20 percent in tank divisions. Eastern European nations also announced their own reductions in tanks (U.S. Department of Defense, 1989: 62, 103). In terms of total Warsaw Pact tanks, these proposed reductions totalled about 12,750 tanks, or a little more than one-fifth of the total.j

These reductions in ground forces began to take place in 1989 (see, for example Sauerwein, 1989), but after the governmental changeovers in Hungary and Czechoslovakia later that year, the new leaderships of those countries demanded the withdrawal of all Soviet troops from their countries. The Soviets were in basic agreement with these requests and proposed their withdrawal from Hungary by the end of 1990 and from Czechoslovakia by the end of 1991 (Randal, 1990: A20; Hoagland, 1990: A21;and Prague Says, 1990: A9).k By early 1990, the Soviets had agreed to

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jThis 12,750 total was for Eastern Europe and the Western Soviet Union (see Table 9). Also, approximately one-fifth of the tanks in North Central Europe (plus Hungary) were also slated for withdrawal.

kInterestingly, it seems that Gorbachev had tentatively agreed with Hungarian leaders in the spring of 1988 for an eventual total withdrawal from Hungary (Hoagland, 1990: A21).

reduce Soviet troops in Central Europe by another 375,000, leaving 195,000 stationed there (Lewis, 1990: A1, 10).1

Artillery

Apart from the increase during the post-1976 decade in howitzers and mortars (see Table 2), it is also worthwhile to note that new artillery deployments included a 152mm towed gun (1978) and a 152mm SP gun (1980) (Military Balance, 1986-87: 205). These new systems probably in part represent modernization of existing capabilities. However, considered in light of the earlier observation on 122mm howitzer additions and Tables 3 and 4, which show continued increases in Pact artillery capability through the mid-1980s, these new systems also represent continued Soviet commitment to maintaining, if not improving, unit firepower.m

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1The original proposal called for the withdrawal of six tank divisions from Eastern Europe, including one each from Hungary and Czechoslovakia. Assuming 325 tanks per tank division (415 in GSFG) and 266 tanks per motorized rifle division, the original withdrawal (including those proposed by East European countries), amounted to 4900, or 22%, of the 22,400 tanks in North Central Europe, including Hungary. Complete Soviet withdrawal from Czechoslovakia and Hungary meant the additional reduction of tanks from two more tank divisions and five motorized rifle divisions, which brought the total tank reductions to 30% of the 22,400 initial total (see The Military Balance, 1978-1979: 102, 1989-1990: 232). After German unification, Soviet divisions and their tanks in the GDR are likely to be cut further.

mAs noted in Chapter Nine, the fact that these new systems, as well as older ones, are dual capable does not indicate a preference for a nuclear orientation. Such

Gorbachev in his December 1988 speech proposed the unilateral withdrawal of 8500 tubes from the western Soviet Union and Eastern Europe. Several East European nations proposed their own reductions in artillery, and although information on the types of artillery to be withdrawn by Pact members is not available, overall withdrawals would be about one-fourth of total Pact artillery (U.S. Department of Defense, 1989: 62, 102).

Tactical Aircraft

No new types of fixed-wing aircraft have appeared apart from those noted in Chapter Nine for the 1970s. It is interesting to note the continued deployments, since from the early 1970s, Pact air forces facing NATO have benefited from an almost complete modernization of their aircraft (Schneider, 1984: 141). As Table 5 indicates, there have been new aircraft deployed for virtually every important air mission. Of the newer deployments, the SU-25 has a primary ground attack mission, while the SU-27 and MiG-29 have ground attack as a secondary mission (Schneider, 1984: 147).

Some information on deployments suggests substantial increases in strike aircraft (see Tables 6 and 7). While it is true that most of these aircraft are dual capable,

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design is prudent, and the main factor to note is the continuing increase in tubes, since nuclear artillery are not a primary means of delivering such ordnance effectively.

their role in conventional warfare is more significant because of their limited nuclear ordnance capabilities. Therefore the important increases in tactical fixed-wing aircraft deployments, especially of strike aircraft, support the interpretation of an important continuing orientation to conventional warfare in Europe.

Gorbachev in his December 1989 speech indicated the Soviets would withdraw 800 aircraft, and with the subsequent East European statements on reductions, the total would be about 1000 (U.S. Department of Defense, 1989: 62, 102). This amount is about one-eighth of total Pact combat aircraft.

Helicopters

Production and deployments of the Mi-24 and Mi-8 continued through the 1970s and 1980s (see Table 7 and Chapter Nine, Figure 9). Two new types of attack helicopters, the Mi-28 Havoc and the Hokum appeared in the mid-1980s, the former as a modernization of the Mi-24 and the latter for the new mission of battlefield air defense (against anti-tank helicopters and lower-performance fixed-wing ground attack aircraft) (U.S. Department of Defense, 1989: 71-72). These modernizations, especially combined with the procurement data, clearly suggest commitment through the mid-1980s to a conventional warfare orientation.

Specific reductions for helicopters were not mentioned in the withdrawals proposed by Gorbachev or the East Europeans. Helicopters may have been included in the reductions of combat aircraft.

INF

There were several changes in Soviet INF deployments in the late 1970s and early 1980s (see Figure 1). Deployments of the most important system during this period, the SS-20, began in 1977. Other systems entered service subsequently: the SS-21 (1978), SS-22 (1980) and SS-13 (1982) (see Chapter Nine, Table 2).

While these systems represent a modernization of older systems in some cases (the SS-21 and -23 were mentioned earlier, and the SS-20 replaced the SS-4s and -5s), they also represent improved nuclear capabilities. The MIRVed warhead and improved accuracy of the SS-20 are key examples of such improvements. The design and development of these systems from the late 1960s into the 1970s and their deployment in the 1980s indicate continued Soviet commitment to a strong nuclear capability in the European theater. One might even take them as evidence of a preference for a nuclear orientation, if the evidence for the conventional orientation were not so strong.

As is well-known, the negotiations on INF forces made only fitful progress until the Soviets withdrew in

December 1983 because of NATO's initial deployments of cruise missiles and Pershing-IIs. By early 1985, however, the negotiations had begun anew and the INF Treaty was signed in December 1987. Because this treaty called for the complete destruction of an entire class of weapons, it was an important step in reducing the threat of nuclear war in Europe.

In December 1988, Gorbachev promised the reduction of nuclear systems--probably FROG-7s or SS-21s--with the six tank divisions being withdrawn. These systems include either FROG-7s or SS-21s, plus the divisions' nuclear-capable artillery.n In May 1989, Gorbachev announced the further reduction of 500 tactical nuclear weapons from Europe, weapons which would included missile warheads, bombs, and artillery shells (U.S. Department of Defense, 1989: 62). In June 1990, Shevardnazde announced the reduction of 60 of the remaining 1400 tactical nuclear missile launchers in Central Europe, 250 pieces of nuclear-capable artillery, and 1500 of the remaining approximately 800-nuclear warheads in Europe. Shevardnadze noted these weapons would be removed to the Soviet Union but not destroyed (Friedman, 1990: A6).

Service Budgets

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nThis artillery was presumably part of the 8500 tubes noted earlier.

From the information available on service budgets, it is clear that spending for conventional forces experienced continued growth from the mid-1970s to the mid-1980s (see Figures 19 and 21 of Chapter Nine and Figures 2-4, this chapter).o This growth is also reflected when comparing Figures 5-7 (especially Figure 5) with Figure 8: the drop in spending for strategic systems as total spending increases again reveals the increased expenditure for conventional weapons.

As several Western analysts have suggested, Soviet military spending did slow somewhat in the mid-1970s from about 4% annual growth to about 2% in the late 1970s and the 1980s (see, e.g., Becker, 1986: 172-177; U.S Congress, 1988: 102-104).p By the late 1980s, though, Soviet officials began discussing much more significant reductions in military expenditures. Given increasing Soviet openness about defense expenditures, such discussion can probably be given more credibility than

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oChart 5 of this chapter and Chart 19 of Chapter Nine provide some additional evidence for this point. They demonstrate that spending for nuclear forces, which had declined in the late 1960s, declined again steadily after rising in the early 1970s (see also Charts 6-7, this chapter).

pThis reduction in the growth rate is noteworthy for the long run, but because the expenditure level had been so high previously (and because the reduction was primarily in procurement, as opposed to operating and maintenance, etc.), the drop seems to have had little effect on overall spending for conventional forces.

similar remarks in the past, because of the increased ability to verify reductions by accounting categories. In terms of reduction levels, General Nikolay Chervov of the General Staff announced in December 1989 that Soviet military spending in 1990 would be reduced by 8.2% (Soviets Say, 1989: 8; see also Vooruzheniye Sily, 1989: 2; Akhromeyev, 1989: 97-98).

Exercises

Although information on exercises in the post-1976 period is incomplete, a number of major exercises did not include the use of nuclear weapons. As was the case in the past, such determinations are normally made when Soviet reporting on the exercises does not include mention of the use of nuclear weapons, since the Soviets have usually noted in the past when nuclear weapons are used in exercises. Specifically, exercises not featuring a nuclear phase included Brotherhood in Arms-1980 (Steiner, 1981: 12), Zapad-1981 (Shera and Odeen, 1982: 1), Shield-1982 (Brusstar and Steiner, 1983: 3). Other exercises in which U.S. analysts did not note Soviet mention of the use of nuclear weapons included Druzhba-1982 (Shero, Steinert, and Odeen, 1982) and Neman (in 1979) (Odeen, 1980).

If the assumptions are correct that the Soviets would have mentioned nuclear weapons if they had been used and

that U.S. analysts would have noted such observations, one can make the case that the Soviets devoted much of their attention in exercises to combined arms engagements using only conventional weapons. This approach to exercises would suggest a primary orientation to conventional, as opposed to nuclear, warfare.

Adequate information on exercises in the last half of the 1980s is currently unavailable.

Developments after Fall 1989

The revolution in East European governments--the ouster of communist leaderships in all the Warsaw Pact states--have led to a situation in which, according to one respected Western analyst, the Warsaw Pact has "ceased to exist as an integrated military command" (Petersen, 1990). As noted earlier, these political changes have led to further reductions in military forces in those countries past what was proposed in the winter of 1988-89. Soviet forces will remain in Poland and East Germany for the present, but the Soviets have been negotiating with the new governments of Hungary and Czechoslovakia to withdraw entirely.

It is interesting to note that as Soviet ground forces have withdrawn from their garrisons in these countries, they have quite often dismantled their logistic facilities, such as fuel storage facilities. Because of

the difficulty in restoring these facilities, such developments indicate that the Soviets do not intend to reintroduce forces into these areas.

Perhaps even more importantly, the Warsaw Pact members announced at a joint meeting in June 1990 that the ideological conflict with the West was at an end. They noted they would work to make the Pact a democratic alliance and that Pact leaders would seek "constructive cooperation" with NATO. They noted as well that the bloc division of Europe was becoming obsolete and that this development was becoming "irreversible" (Clines, 1990: 1,4).

This reference to de-ideologization is in a sense a repetition of comments, noted in Chapter Thirteen, that the Soviets have been making about Soviet-U.S. relations. Still, the official expression of this sentiment by an institution like the Warsaw Pact is indeed noteworthy. For the purposes of this study, it is important to note that since military doctrine and strategy is a subset of foreign policy, such comments provide valuable guidance about the foreign policy in which military planning will take place in the future. It is clear from such comments that as international relations between East and West improve in Europe, assuming this trend continues, it is most probable that force structures will be reduced even

further and that progress toward an East-West military relationship based on mutual security will continue to develop.

As one looks back over changes in Soviet force posture since 1976, it seems clear that force posture developments confirm an orientation to conventional war, at least through the early 1980s. Force posture changes normally lag changes in declaratory policy, so it is not particularly surprising to note that it was not until the end of 1988, approximately one year after the May 1987 publication of the new Warsaw Pact doctrine, that major force posture changes were first proposed. Changes in conventional force posture announced by Gorbachev, while at the time not conclusively indicative of a shift to mutual security, suggested changes that may have taken place eventually as the East-West security relationship developed.

As it was, political developments overtook developments in Soviet defense policy, facing Soviet leaders with the challenge of responding constructively to these changes or risking a further deterioration in their foreign policy toward Eastern Europe and toward the West. The Soviets have responded positively, generally speaking, and their response has hastened the implementation of a mutual security doctrine. While the demise of the Warsaw

Pact and the nearly complete Soviet military withdrawal in a sense renders irrelevant the criteria on tank and artillery reductions proposed earlier, these criteria are being met. The situation is still in flux, but the total numbers should be available eventually that would provide conclusive evidence. Therefore, for the purposes of the current study, one can confidently observer that declaratory policy on mutual security is indeed being implemented in force posture.

The changes in Eastern Europe are not the only illustrations of the implementation of mutual security. When one recalls the aspects of this policy concerning the importance of international interdependence and the resolution of conflict by political means, evidence is apparent in other sectors of Soviet foreign policy apart from European security issues (for a review of some of these developments, see Parrott, 1988).

For example, the Soviets agreed to de-link SDI and INF in negotiating an INF accord; they withdrew from Afghanistan; and they significantly decreased military aid to Vietnam, Nicaragua, and Angola, thereby fostering resolutions of conflicts in which those countries were involved. The Soviets reaffirmed support for the United Nations and the role of international law; acknowledged the need to bring Soviet human-rights legislation more

into line with international norms; and created government structures to hold the foreign policy establishment accountable to the populace. All of these developments represent major departures from previous Soviet foreign policy conduct and lend significant credibility to the declaratory policy on mutual security.

Conclusions on the Independent Variables

Given the fairly clear change in declaratory doctrine that seems to have been set firmly in place by mid-1987 and confirmed in force posture and in other aspects of foreign policy, it is appropriate to conclude that a significant doctrine shift toward mutual security has been under way and to turn to the evaluation of the impact of the independent variables (see Table 8).

Internal Variables

For the current period, the change in the leadership seems again to be a key internal variable. Changes occurred in all the high-level positions surveyed for this duty and in many of the lower level slots. Gorbachev's support of "new political thinking" in foreign and security issues represents a break in many important ways from previous Soviet perspectives on the conduct of foreign affairs. While Gromyko and Sokolov were not extremely supportive of this revision in Soviet foreign

policy, Shevardnadze and Yazov have been (see Parrott, 1988: 4-24). Gorbachev has also surrounded himself with foreign policy advisors and has made other appointments which, while not reflected in the current assessment, point similarly to the importance of new leaders for the current Soviet administration's mode of foreign policy management.

Additionally, although this factor is not specifically picked up in the chapter on leadership change, Gorbachev's appointments and the appointments by his supporters have, over the past several years, extended through many areas of the Party and government bureaucracy. The range and depth of those appointments in the Party and government have done much to enable Gorbachev to build a political base to pursue his preferred policies on a wide range of foreign and domestic issues. Moreover, the relative stability of this base has facility the basic changes in foreign policy orientation Gorbachev has sought. It is, of course, true that Gorbachev and his supporters face continued resistance to his endeavors (especially in the area of domestic reforms) from many parts of the government bureaucracy as well as from conservative politicians, but the reorientation of foreign policy to new political thinking and mutual security seems fairly well set.

As indicated in the chapter on internal variables, the economic problems of the Soviet Union, particularly since the mid-1970s, have been well documented and have continued their secular decline. The GNP rate of growth was negative for several years during this period, and although growth in military spending had dropped off somewhat since the mid-1970s, the systemic problems of the Soviet economy continued to have their burdensome impact on the performance indexes used here. Some Soviet economists were aware that major systemic changes would be necessary, but the leadership was unwilling to address these problems with serious solutions.

Soviet developments in military technology do not seem to have had an important impact on doctrinal developments, as there were no particularly key developments easily related to a defense posture based on mutual security. There were, however, important developments in Western technologies that the Soviet perceived had both negative military and economic implications. These particular developments concerned SDI and PGMs. The Soviets have railed against the development of SDI ever since President Reagan's announcement of the program in March 1983, and they have persisted at trying to negotiate limits to its development. The intensity and consistency with which the Soviets have opposed the development of SDI seems

rather different historically from their approaches to about other new U.S. technologies that have seemed threatening. When looking back at Soviet criticism of the U.S. development of ICBMs, MIRVs, or advanced cruise missiles, for example, the Soviets have complained about Western militarism and have tried to limit the development and deployment of these systems but have usually been willing to negotiate mutual ceilings or other limitations on deployments. With SDI, the Soviets have persistently tried to stop it at the R&D stage, which suggests that the Soviets would not be able to match it with their own SDI-type system or would be less than confident of being able to counter it in other ways.

Soviet criticism of PGMs has been much less strident and has generally focused on the "mass-destruction" capabilities of PGMS, which the Soviets sometimes liken to NBC weapons.q While Soviet concern about the threat to their forces from NATO PGMs has not on the same level as their concern about SDI, indications are that it would be difficult for the Soviets to develop similar systems or useful counters, on account of the complexity of the microprocessor technology these systems use.

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qOn general Soviet reaction to PGMs and an assessment of how they may address the issue militarily, see Eastman (1966).

SDI, therefore, and (to a lesser extent) PGMs represent an important military threat to the Soviets. To an extent this threat is as much economic as military. It seems quite probable that the Soviets would build such systems if they had the technology, but since they do not, trying to develop such technology would be terribly expensive. Given their other economic problems, such expenditure has probably be judged out of the question, at least for the near term. Therefore, although technology has not been important for the move to mutual security in the way I originally defined the variable, it does seem important to note that technology has been important for the current shift, but primarily as such influence has been manifested through economic constraints.

Of the internal variables, then, which is the most important? If the leadership had changed but the Soviet Union not faced the same degree of economic difficulties, would there have been a move to mutual security? Such a change may possibly have occurred, but I think that there is so much evidence tieing the shift to mutual security to a need to refurbish the economy, that if the economy had been working reasonably well, there would have been few really pressing reasons to effect such a shift.

As suggested earlier, the Soviets probably perceived increased arms competition with the U.S. in the 1980s to

be as much or more an economic problem than a military one. That is, the Reagan buildup exacerbated the problems the Soviets faced related to their resource base and the sustainability of their strong commitment to defense expenditures.

Similarly, Afghanistan was a military and economic quagmire for the Soviets, but if the economy had been operating well, the Soviets could have withdrawn from Afghanistan and characterized their military involvement there as a costly but reasonable policy from a security standpoint (rather like the U.S. did in leaving Vietnam). They then could basically have continued with their activist foreign policy--with its significant military component--which they had been pursuing for most of the Brezhnev period. There was probably a realization by the some of the Soviet leadership in the early 1980s of the importance of interdependence and the political problems of continuing with the military-related aspects of their foreign policy, such as emphasis on military assistance to client states and liberation movements. I think, however, that without the degree of economic problems the U.S.S.R. faced, it is rather questionable whether the momentum or political clout behind a concern for reducing dependence on the military would have been sufficient to propel a

change to mutual security nearly as soon as the shift appeared.

Apart from a concern for interdependence, someone might also argue that the foreign policy problems of the Brezhnev period--for example, in relations with the U.S. over human rights or support for Third World clients--would have led to the development of reformist pressures within Soviet foreign policy even if the need to improve the economy had not been as pressing. This question is hard to judge, but the available evidence does not suggest there was great dissatisfaction within the elite about Brezhnev's foreign policy, apart from how much it cost to sustain this policy.

Furthermore, as discussed below, no major new threat had created by developments in U.S. doctrine or strategy. The problem the U.S. Administration's defense decisions posed for the Soviets in the early to mid-1980s was largely one of force posture increases. While the Soviets may have had reason to be apprehensive that the U.S. Government would tend to be more adventurist in foreign policy with an enhanced force posture, it seems fairly clear that the principal defense issue here was one of economics--of the stress of trying to maintain a force posture as strong and extensive as the one the U.S. was supporting.

The economic problems the Soviets faced, then, were varied and weighty. Moreover, I would argue, as I have here, that many of the military aspects of important foreign policy problems challenging the Soviet leadership actually had fundamentally more serious economic dimensions. The economic variable, therefore, seems quite imposing.

What about the leadership variable? What if Andropov or Chernenko had lived longer, or if a conservative like Romanov or Grishin had been chosen General Secretary after Chernenko's death? If there had been either no change in the leadership or no <u>essential</u> change (i.e., by the selection of a conservative successor to Chernenko) though the same economic problems, I think the Soviets might have pursued reforms such as the ones Andropov introduced, or maybe even more significant ones. I think it rather unlikely, however, that such a leadership would have pursued the systemic reforms that Gorbachev has. After all, Gorbachev's domestic economic reforms in the first year or two were not as radical as they were to become. Early in his tenure, for example, he emphasized "acceleration" of economic development and eradication of the "braking mechanism," but he was not yet pushing for market-type reforms. A leader notably more conservative than Gorbachev would not likely have embarked upon a

radical course to reform if the more limited reforms were not as successful as hoped. Probably even Gorbachev would not have pursued the reforms--and the move to mutual security--he did if the Soviet Union were not facing the economic problems it has been.r

In this scenario of a conservative leadership, I think that if more significant steps were to be taken to address the economic problem, the response would probably have occurred over a much longer period of time than it did under Gorbachev. So, I think it is possible that without a leadership change--or without an essential leadership change, a shift to something like mutual security might conceivably have developed, though probably at least a half-decade later than it did.

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rThere is some controversy among Sovietologists as to how radical Gorbachev's original vision about economic change was. Some early assessments noted the problems Gorbachev was encountering in pursuing reform and commented that many of his proposals sounded much like previous leadership attempts at economic change (Rumer, 1986). Later assessments, with the advantage of hindsight, have remarked that Gorbachev envisioned radical changes all along and that earlier he was simply adjusting the articulation of his policies until he could amass sufficient political support to push through what he had always planned (Hough, 1990: 185-195; Brown, 1989: 185-188). Gorbachev does have a reputation for flexibility and political expedience, so it is difficult to say what actually was his initial vision. Nevertheless, I think the basic point remains valid that he would not have pursued the radical reforms he has suggested unless the economy were in such poor shape.

I will address this issue of the quality of the leadership change in the final conclusions to the study but will note here that it was not just the leadership change that was important here for the move to mutual security but the leadership change that encompassed Gorbachev in particular and his supporters. In summary on the issue of the relative importance of the internal variables, it seems that economics was somewhat more important than the leadership change, with technological advances being of little or no importance. In trying to assess which would be harder to imagine--the possibility of a move to mutual security by the new leadership without the pressures of the Soviet Union's economic problems or the move to mutual security without the mid-1980s leadership change but with the economic problems, I think the former is the less likely prospect.

External Variables

What about the external variables? There was little change in U.S./NATO policy during this period. As discussed earlier, PD-59 was largely an extension of the thinking on counterforce that had been developing in the U.S. from at least the early 1970s. The P-II/GLCM deployment was in part a result of the security studies conducted pursuant to MC-14/3 and in part a reaction to the deployment of the SS-20s. While AirLand and the

Rogers plan were a reworking of part of the Active Defense concept, they did not constitute a major a redefinition of how NATO planned to fight a war.

The Soviets, however, reacted in their media to each of these developments, particularly the INF deployment, as an important change in U.S. strategic planning.s The Soviets tied the INF deployment with PD-59 and argued that the U.S. was developing both the doctrine and the force posture for a war in Europe with selective nuclear strikes. In criticizing the Rogers plan, they asserted that NATO was enhancing its strategy to launching an attack against Eastern Europe. As mentioned in Chapter Twelve, the Soviets also took the Reagan military buildup as evidence of operational willingness to pursue a nuclear war.t

Although these various U.S. and NATO modifications were not accompanied by U.S. leadership statements about fundamental changes in policy, it might be possible that the Soviets actually perceived these various changes as indicative of some overall change in U.S. thinking

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sI anticipate here parts of my discussion in the next chapter, but this development is unavoidable for an adequate discussion of the impact of this external variable.

tFor a summary of Soviet views on U.S. military procurement and policies from the late 1970s to the mid-1980s, see Babakov (1987: 192-206, esp. 201-206 on doctrinal issues).

acknowledging a greater likelihood of nuclear or conventional war with the U.S.S.R.u Such a change, however, would have been unlikely in the U.S. defense establishment without a public discussion of the new strategy--or at least a leak that a major change in doctrine and strategy was under consideration. Since such developments did not occur, the most reasonable interpretation of the Soviet reaction is that their comments were part of a propaganda campaign they mounted to create pressure for the U.S. and NATO to reconsider the actions they had taken.v

In seems, therefore, that a change in U.S./NATO doctrine and strategy is not an external factor that one appropriately considers for assessing Soviet doctrine and strategy change for this period. Since neither this factor nor tensions in the Sino-Soviet relationship were important for this period in Soviet doctrinal development, one appropriately concludes that it is the internal

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uThe Soviet assessment discussed earlier concerning SDI might provide additional evidence for this argument.

vNoting the Soviet's connection of LNOs with PD-59, Lockwood (1983: 145-153, 155-165) makes a similar argument. He comments that the Soviets could no doubt tell that there was no U.S. Government effort contemporaneous with PD-59 to protect the U.S. population. Lockwood concludes that the Soviets could not but have understood that a war-fighting posture without such a civil defense effort would be ludicrous.

variables that were key for the recent shift to mutual security.

The implications of the findings on the internal and external variables for the development of Soviet military doctrine and strategy will be explored in the final chapter. Next, though, I will examine what current Soviet leaders have said about the reasons for the shift to mutual security. If Soviet commentary closely "tracks" what seem to be the actual reasons the change occurred, one anticipates that the Soviets would emphasize economics and leadership change as being factors of similar weight, with perhaps economics being somewhat more important than the leadership change. One also would anticipates the Soviets will give little or no weight in their commentaries to military technology developments as an important factor, nor to U.S./NATO doctrine change or Sino-Soviet problems.

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APPENDIX

Table 14.1: Soviet Military Manpower Trends, 1976-1989

	1976	1978	1980	1982	1984	1985		1988		1989	
Armed Forces Personnel	3650	3838	3658	3705	5115*	5300		5096		4258	
Ground Forces Personnel (in thousands)	1825	1825	1825	1825	1846	1995		1900		1596	
Divisions by Region and Category **											
E. Europe	31 I	31 I	31 I	31 I	31 I	Northwest, West and Southwest TVPs	33 I	Northwest TVD	13	31 I (E. Eur.)	Northwest TVD 13 (mostly III)
W. USSR MDs	64 (1/3 I,II, III)	64 (1/2 II/III, 1/2 III)	66 (1/2 II/III, 1/2 III)	69 (1/4 II/III, 3/4 III)	65 (35% II/III, 65% III)		15 II/III	West TVD	69		West TVD 27 I 43 (mostly II)
							40 III	Southwest TVD	32	17 II/III	Southwest TVD 4 I 28 (1/2 II, 1/2 III)
										72 III	
Central and Southern MDs (Afghanistan)	30 (mostly III)***	30 (mostly III)	30 (mostly III, but with ~5 Is)	30 III (4 I)	44 (II/III) (4 I)	Central and Southern TVDs	10-11 I	Central TVD	21		Central TVD 21 (mostly III)
							36-39 II/III	Southern TVD	32	33 II/III	Southern TVD 1 I 42 (mostly III)
										50 III	
Far Eastern MDs (includes Mongolia)	43 (1/3 I,II, III)	44 (1/2 II/III, 1/2 III)	46 (1/2 II/III, 1/2 III)	47 (1/4 I,II, 3/4 III)	52 (35% II/III, 65% III)	Far Eastern TVD	19 II/III	Far Eastern TVD	61		Far Eastern TVD 1 I 54 (1/2 II, 1/2 III)
							34 III				
Total Divisions by Category (approximate)	68 I 43 II 59 III	58 I 33 II 78 III	63 I 33 II 77 III	49 I 15 II 115 III	55 I 31 II 106 III		58 I 36 II 98 III		55 I 26 II 112 III		42 I 90 II 102 III
Total Divisions	168	169	173	177	192		192		203		234

* This total and subsequent totals of Armed Forces Personnel include 1,500,000 command and general support troops that had not earlier been listed in The Military Balance.

** Includes artillery divisions.

*** The Military Balance notes fractions of categories as high as 1/4 (see listings for W. USSR MDs above and Far Eastern MDs below). To compute Total Divisions by Category (below), I will assume "mostly III" means 4/5 III and 1/5 II. "Mostly II" I will assume means 4/5 II and 1/5 I.

Source: The Military Balance, various years

Table 14.2: Changes in Numbers and Organization of Tank And Motor Rifle Divisions, 1971-81

Changes in numbers & organization of tank & motor rifle divisions 1971-81

Sub-unit or major eqpt	Motor rifle division		Tank division	
	1971	1980s	1971	1980s
Tk bns	6	7	10	10
MR bns	9	10	3	6
Med tks	188	272	319	331
APCs in motor rifle platoons	243	270	81	162
MRLs	18	18	18	18
152mm hows	18	36	–	36
122mm hows	54	90	60	90
100mm A-tk guns	18	18	–	–
120mm mors	54	60	18	36
Total mors and arty	162	222	96	180

Numbers of divisions*	1971	1981
Tank	51	50
Motor rifle	102	134
Airborne	7	7†

* Source: IISS, *Military Balance*

† There are also 8 air assault brigades

Notes: (1) GSFG divisions are taken as the model. Many divisions in the USSR have smaller establishments.
(2) *The 1980s figures assume that the current re-organization, now well under way, is taken to its logical conclusion,* i.e. it is assumed that every regiment will receive both a howitzer and a motor rifle battalion, and that one of the divisional artillery regiment's D-30 battalions is replaced by a 2S-3 (M-1973 SP gun-howitzer) battalion.

Source: Dick (1983: 1718)

Table 14.3: New Artillery Developments

Category[a] and type	First year deployed	Range (km)[b]	Throw-weight (000 lb)	CEP (m)[d]	Launcher total 7/86	Warhead details[e] (aircraft: ordnance load) and comments
Artillery						
M-1976 152mm towed gun	1978	27	–	n.a.	(1,500)	?2–5KT, also CW. Front.
2-S5 152mm SP gun	1980	27	–	n.a.	(2,100)	2–5KT, also CW. Front
D-20 152mm towed gun/how	1955	17.4	–	n.a.	(2,500)	2KT, also CW. Front. Army.
2-S3 152mm SP how	1972	27	–	n.a.	3,500+	Sub-KT–5KT. Div. Front.
M-1975 203mm SP how	1975	18+	–	(200)	(200)	2–5KT, also CW. Front.
M-1975 240mm SP mor	1975	12.7	–	n.a.	(200)	Nuc and CW. Front.

Source: Military Balance (1986/87: 205)

Table 14.4: Warsaw Pact Artillery Trends

Year	1976-1980		'81	'82	'83	'84	'85
Weapon							
Artillery, Motorized Rocket Launchers, Mortars (over 120 mm.)			9980	10,300	11,830	10,500	18,340
Anti-Tank Guns*	5600 (1976-1977)	10,000 (1978-1979)	1868	1978	1928	1868	876
Anti-Tank Guided Weapons			1437	1437	1787	1743	3998

	'86	'87	'88	'89
Artillery, Motorized Rocket Launchers, Mortars (over 120 mm.)	18,730	11,700	11,100	14,000
Anti-Tank Gun	895*			
Anti-Tank Guided Weapons	2050	4500	2650	3000

*Anti-tank guns are included in the total for artillery in 1987; they are deleted from this total in 1988.

Source: The Military Balance, various years

Table 14.5: Soviet Aircraft and Missions

Mission	*1973*	*1983*
Air superiority	MiG-17 (FRESCO)	MiG-21 (FISHBED K/N) Su-15 (FLAGON)
	MiG-19 (FARMER)	MiG-23 (FLOGGER B/G) MiG-29 (FULCRUM) Su-27 (FLANKER)
Interdiction	Il-28 (BEAGLE)	MiG-27 (FLOGGER D/J)
(1 Division)	Yak-28 (BREWER)	Su-24 (FENCER)
Close Air Support	Su-7 (FITTER)	Su-17 (FITTER C/D)
(3 Division)	MiG-17 (FRESCO)	MiG-27 (FLOGGER D)
Close Air Support (Contd)	MiG-15 (FAGOT)	Mi-24 (HIND-D/E) Su-25 (FROGFOOT)
Reconnaissance	Yak-27R (MANGROVE)	MiG-25R (FOXBAT B)
(1 Regiment)	Yak-28 (BREWER)	MiG-21R (FISHBED H)
	Il-28 (BEAGLE)	Yak-28 (BREWER D)
	MiG-21 (FISHBED)	Yak-28 [ECM, (BREWER E)]
		*An-12 [ECM (CUB C)]
Transport	*Il-2 (CAB)	*An-12 (CUB)
(1 Regiment)	*Il-14 (CRATE)	*Il-76 (CANDID)
	*An-8 (CAMP)	*An-8 (CAMP)
	**Mi-1 (HARE)	**Mi-6 (HOOK)
	**Mi-4 (HOUND)	**Mi-8 (HIP)
	**Mi-6 (HOOK)	**MI-10 (HARKE)
	**MI-8 (HIP)	**Mi-24 (HIND A, B, D)
	**Mi-10 (HARKE)	**Mi-26 (HALO)

*Fixed Wing
**Helicopter
Sources: International Institute for Strategic Studies, *The Military Balance* (London: IISS), US Department of Defense, *Annual Report*.

Source: Schneider (1984: 142)

Table 14.6: Soviet Aircraft Deployments, Central Europe.

1976: Soviet Union

	Type[a]	Max. range[b] (statute miles)	Max. speed (Mach no.)[a]	Max. weapons load (lb)	First deployed	No. deployed (July 1976)
Land-based strike aircraft (incl short-range bombers)	Il-28 *Beagle*	2,500	0.8	4,850	1950	2,500[m]
	Su-7 *Fitter* A	900	1.7	4,500	1959	
	Tu-22 *Blinder*	1,400	1.5	12,000	1962	
	MiG-21MJ *Fishbed* J	1,150	2.2	2,000	1970	
	MiG-23 *Flogger* D	1,800	2.5	2,800	1971	
	Su-17/-20 *Fitter* C	1,100	1.6	5,000	1974	
	Su-19 *Fencer* A	1,800	2.3	8,000	1974	

1986:

Category[a] and type	First year deployed	Range (km)[b]	Max speed (Mach)	Weapon Load (000 lb)	Launcher total 7/86	Warhead details[c] (aircraft: ordnance load) and comments
Tactical[f]						
Land-based strike						
Su-7 *Fitter* A	1959	1,450	1.6	8.8	80	2 bombs.
MiG-21 *Fishbed* L	1970	1,100	2.1	2	135	2 bombs.
MiG-27 *Flogger* D/J	1971	1,400	1.7	8.8	810	2 bombs.
Su-17 *Fitter* D/H	1974	1,300	2.1	7	900	2 bombs.
Su-24 *Fencer*	1974	3,600	2.3	24	700	2 bombs. (450 in Strat Avn.)

Source: Military Balance (1976/77: 74, 1986//: 206)

Table 14.7: Aircraft in Ground-Support Roles

Year	'78	'79	'80	'81	'82	'83	'84
Fighters and Ground Attack Aircraft*	1350	1350	1350	1755	1685	1685	1617
Armed Helicopters				156	756	1366	597
	'85	'86	'87	'88	'89		
Fighters and Ground Attack Aircraft*	1356	1446	779** 2144	915 2330	1140 2510		
Armed Helicopters	597	1694	430** 1630	545 1220	640 1515		

*Total excludes interceptors, reconnaissance aircraft, and light bombers.
** After 1987, the upper figure is the number of aircraft in Central Europe; the lower figure is the number of aircraft in the ATTU (Atlantic-to-the-Urals area.

Source: The Military Balance, various years

Note: On occasion, The Military Balance changes its accounting procedures for various weapons. The accounting for armed helicopters from 1983-86 is a case in point. These changes should be taken into account when assessing trends in particular weapon systems. See Figure 11, this chapter, for a graphic presentation of this data.

Table 14.8: Reasons for Shift to Mutual Security

Internal

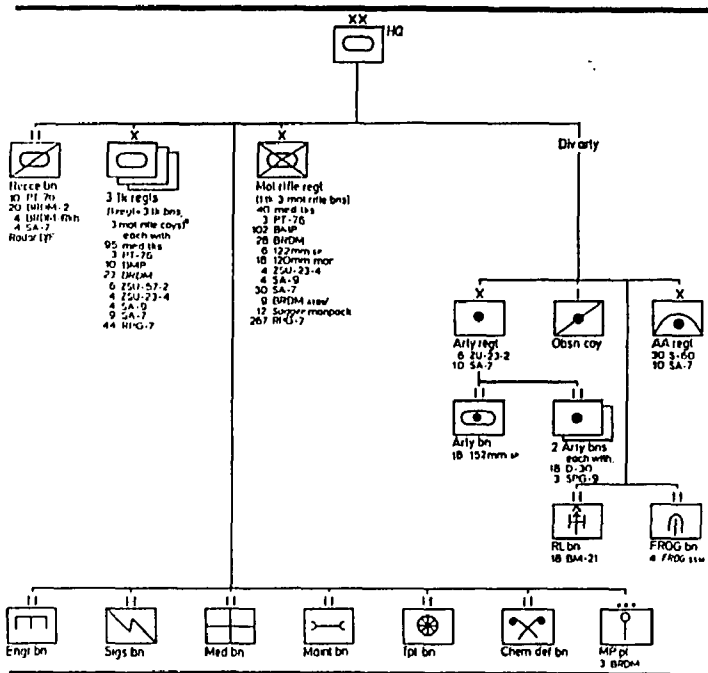
Economic Constraints (yes)
Leadership Change (yes)
Military Technology Advances (no)

External

U.S./NATO Doctrine Shift (no)
Sino-Soviet Tensions (no)

Table 14.9: WTO Division Structures

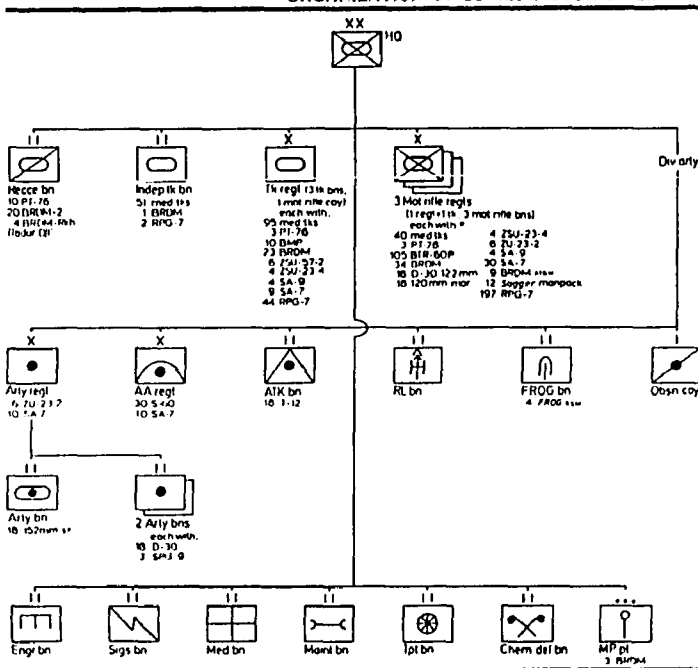
ORGANIZATION OF SOVIET TANK DIVISION



	Tank div	Motor rifle div
Manpower	11,000	13,000
Med tks (T-54/-55/-62/-64/-72)	325*	266
PT-76 lt tks	22	22
BMP MICV	132	112
BTR-50/-60P APC	24†	210
BRDM recce	124	153
152mm SP guns	18	18
122mm SP guns	6	6
D-30 122mm towed guns	36	72
120mm mor	18	54
BM-21 122mm RL	18	18
FROG SSM	4	4
ZSU-57-2 SP AA guns	18	6
ZSU-23-4 SP AA guns	16	16
S-60 57mm towed AA guns	30	30
ZU-23-2 towed AA guns	6	18
SA-9 SAM carrier (BRDM)	16	16
SA-7 SAM	86	128
T-12 100mm ATK guns	—	18
Sagger/*Swatter* ATGW carriers (BRDM)	9	27
Manpack *Sagger* ATGW	12	36
SPG-9 76mm RCL	9	12
RPG-7 RL	400	660

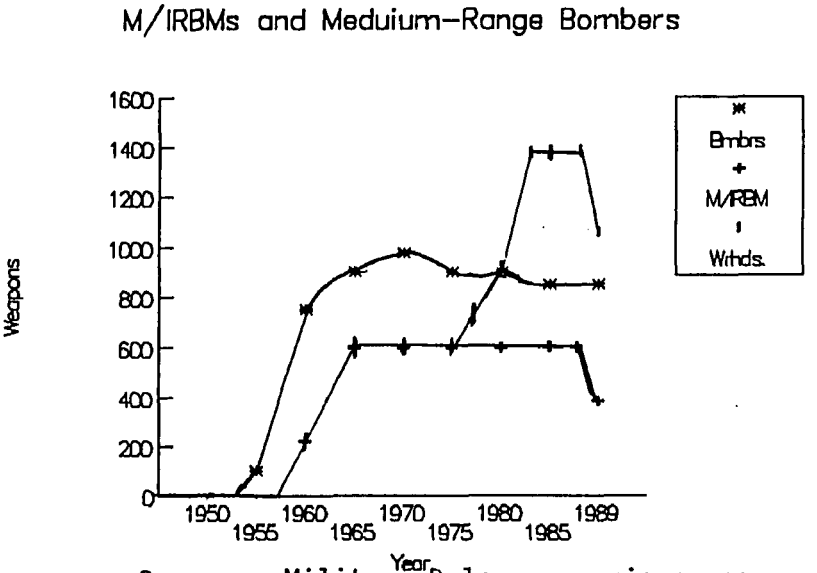
* Tk regts in Group of Soviet Forces in Germany have 3 extra tk coys, making 125 tks per regt and 415 per div.
† Distributed among spt units.

ORGANIZATION OF SOVIET MOTOR RIFLE DIVISION



* 2 mot rifle regts equipped as shown. 1 has 102 *BMP* MICV and 6 122mm SP guns (instead of BTR-60 APC and D-30 122mm towed) 267 RPG-7 and no ZU-23-2.

Source: Military Balance (1978/79: 102-103)



Sources: Military Balance, various years; Bloomfield, Clemens, and Griffiths (1966: 37, 94-95)

Figure 14.1: M/IRBMs and Medium Bombers

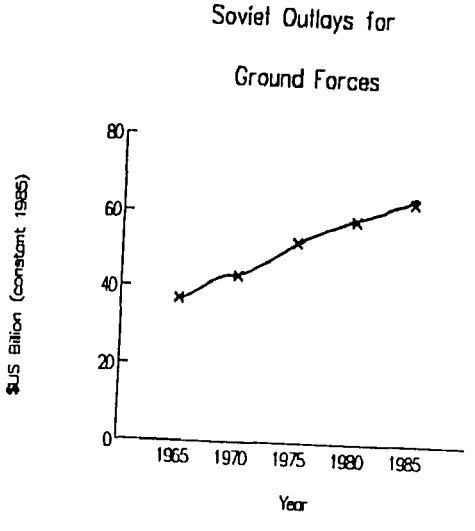


Figure 14.2: Ground Force Outlays

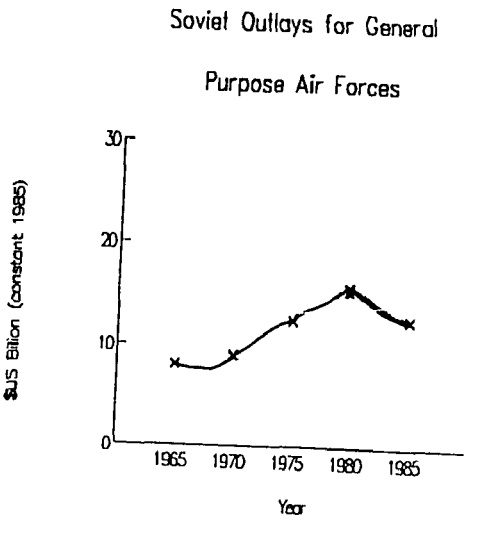


Figure 14.3: Air Forces Outlays

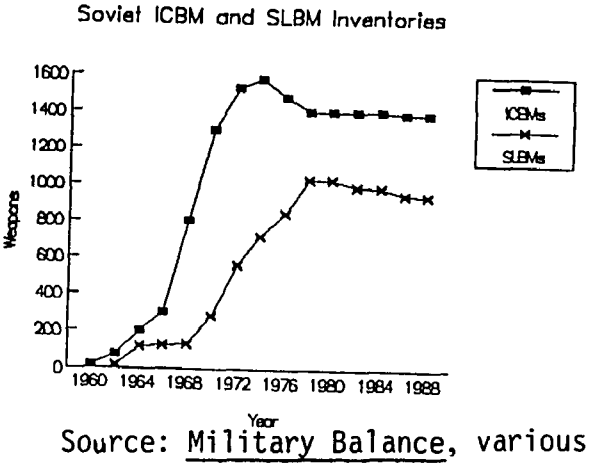
The source for Figures 2-5,8 is U.S. Congress (1987: 133-138).

Source: see previous page

Figure 14.4: Navy Outlays

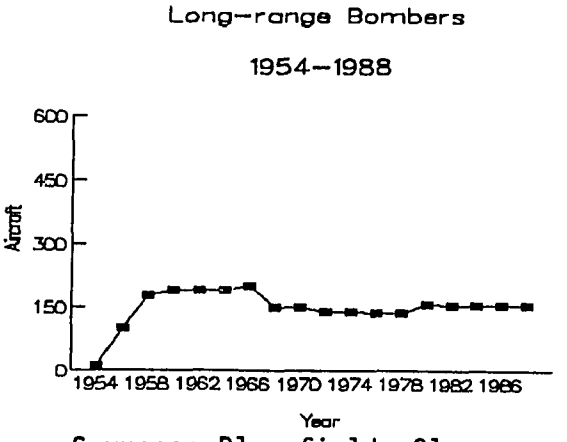
Source: see previous page

Figure 14.5: SRF Outlays



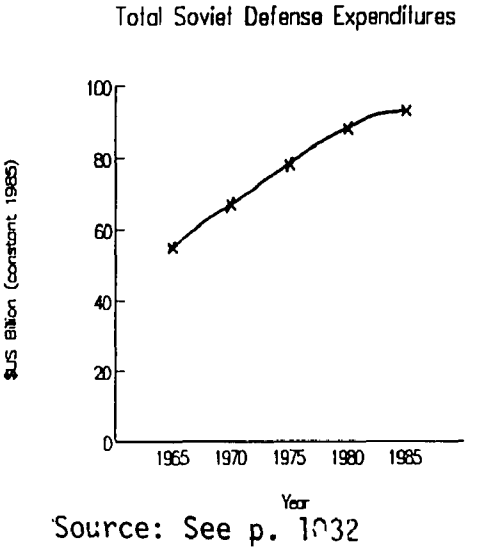
Source: Military Balance, various years

Figure 14.6: Soviet ICBMs and SLBMs



Sources: Bloomfield, Clemens and Griffith (1966: 94-95); Military Balance, various years

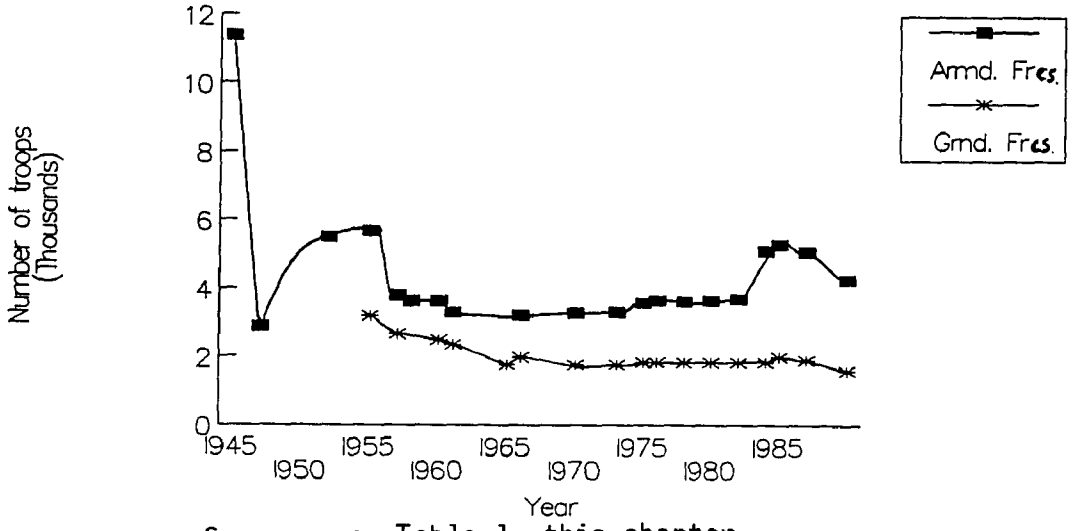
Figure 14.7: Long-Range Bombers



Source: See p. 1032

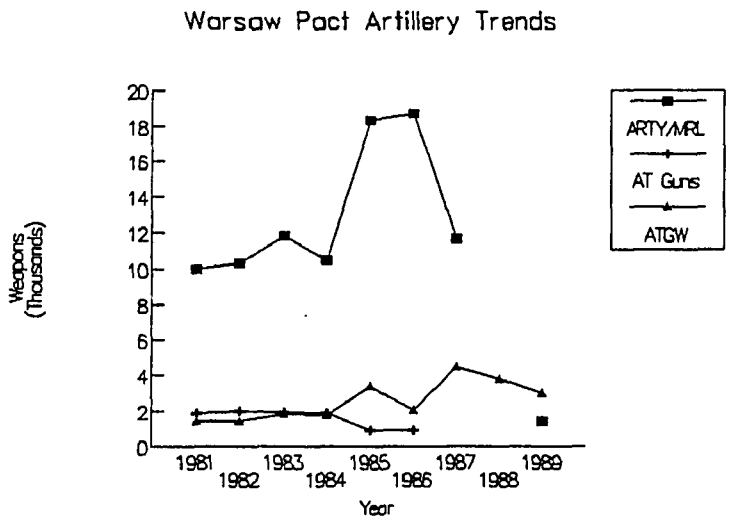
Figure 14.8: Total Soviet Defense Outlays

Manpower Levels: Soviet Armed Forces and Ground Forces, 1945–1989



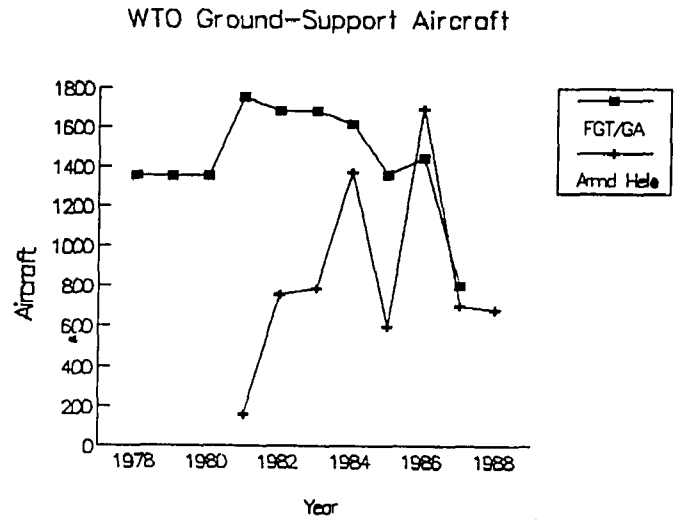
Source: see Table 1, this chapter

Figure 14.9: Soviet Military Manpower Trends



Source: see Table 4, this chapter

Figure 14.10: WTO Artillery Trends



Source: see Table 7, this chapter
(FGT=fighter; GA=Ground Attack, Armd Helo=Armed Helicopters)

Figure 14.11: WTO Ground-Support Aircraft

Chapter XV

SOVIET LEADERSHIP REASONS FOR DOCTRINAL REVISIONS

Introduction

Given the conclusions at the end of the preceding chapter about the importance of the various independent variables and their apparent relative weight, what sort of comments should one expect from the Soviet leadership about the reasons for the current doctrinal modifications?

As noted at the end of Chapter Ten, Soviet leaders are often critical of the previous leadership, though that criticism has not always extended in detail to security issues. Since leadership change seems to be an important factor for the current doctrine change, one would anticipate that the Soviets would mention this factor, though they may not characterize it as important as it seems to be.

The Soviets, except in more theoretical terms, have not discussed the impact of economic trends on doctrine. One basic reason for such lack of discussion is probably because this factor has not been a central one for such change. In terms of the analysis I offer of "objective"

conditions, economic constraints seem to be an important factor. In spite of historic reticence to discuss this issue, then, I think it reasonable to anticipate that the Soviets would mention this factor as important. Since technology change has not been an important factor for the recent doctrinal developments, one would not expect the Soviets to discuss this issue.

Since neither U.S. or NATO doctrine changed in the decade prior to the mid-1980s, one would not expect the Soviets to note U.S./NATO doctrine change as a factor affecting Soviet doctrine developments. As noted at the conclusion of Chapter Ten, the Soviets present a fairly consistently negative assessment of U.S. and NATO, and they have invariably criticized changes in U.S. and NATO doctrine when those changes have occurred. Since during this period, there was no major U.S. or NATO doctrine change, one should not expect more than the usual amount of criticism on this topic from the Soviets.

Finally, as I also note in Chapter Ten, Soviet comments about the effects of Sino-Soviet military tensions on Soviet doctrine have historically been few. In the current period, largely because Sino-Soviet military tensions have not increased and but also because the Soviets have wanted to improve relations with the Chinese, one should not expect to find comments about the

effects on doctrine of military relations with the Chinese.

Soviet Leadership Comments on Recent Doctrinal Change

To recapitulate the conclusions on doctrine shifts in the table at the end of Chapter Fourteen, I will note here that in the transition to a doctrine oriented toward mutual security, the evidence suggests that leadership change and economic factors were approximately equally important, which technological advances, apart from the concern about SDI and the interest in trying to limit it, were not. Since there was not much change in NATO doctrine (even though there were some modifications in strategy) and since Sino-Soviet relations continued to improve, these factors were do not seem to be important for the recent doctrinal developments. Judging from the Soviet responses discussed in this chapter, one concludes that much the same pattern characterizes Soviet commentary on the period, though with a few exceptions (see Table 4).

One exception is the fact that Soviet officials commented on the factor of leadership change but did not emphasize it as being as important as I suggest it was. This approach by the Soviets in accounting for the shift is perhaps to have been expected, as there would be no particular reason for the government to call attention to

itself as the author of major change in the sensitive area of security polity. Doing so would be inappropriate and maybe even appear as trying to foster something like a "cult of personality" around the reforming elite. Fostering such a perception would be truly counterproductive. Additionally, the occasions the elite changes--and Gorbachev's accession in particular--were mentioned, it was in the context of the reforms in general, not just in terms of military doctrine. This development is also not surprising. As noted earlier, military doctrine is a subset of foreign policy, and leaders are not likely to single it out for special mention, unless in a speech or article to explain how the changes in military doctrine came about. There were several articles that elaborated changes in doctrine, but leadership commentary basically exposited the new doctrinal characteristics and justifications for the changes without getting into in-depth analysis about the personalities and decisionmaking behind the changes.

A second exception is that while the Soviets did not attribute the changes in security policy orientation to new developments in technology, they did suggest that some aspects of technology were important in reaching their orientations on why a different approach to security policy would be appropriate. Specifically, while they

often denounced developments such as Stealth or Trident II (for its hard-target capability) as militaristic, there continued a near blizzard of negative commentary on SDI from Reagan's initial announcement of it in March 1983. The Soviets had criticized U.S. ASAT research in the late 1970s and early 1980s, but the possibility of a system that could make as much of a difference in the U.S. strategic position as SDI might was quite worrisome, judging from the nature and amount of negative press it received over time from the Soviets (see Garthoff, 1985: 1027-1028).

A third exception involves U.S./NATO policy. As noted in Chapter Twelve as well as at the end of Chapter Thirteen, there was really no change in U.S./NATO doctrine on the balance of nuclear versus conventional forces in the 1970s and early 1980s. The P-II/GLCM deployment, of course, was presented in the Soviet press as upsetting the theater nuclear balance in Europe and as indicative of a greater nuclearization of doctrine. The contention by NATO that the P-II/GLCM deployment was in response to the SS-20 deployment was rejected as false by the Soviets. It would be difficult to say if the Soviet military planners truly believed that the P-II/GLCM deployment was not entirely a response to Soviet SS-20s, though the Soviets' signing the INF treaty based on the Zero Option suggests

they recognized the link between the SS-20 and the P-II/GLCM deployments.

The Soviets also decried both the nuclear and conventional aspects of the Reagan military buildup as indicative, respectively, of a greater nuclear orientation in superpower relations as well as of increased interest in meddling in Third World conflicts. While the Soviets did not always address their understanding of how the military buildup affected U.S. doctrine in terms of a greater nuclear or conventional orientation, they almost always remarked that it suggested a greater degree of adventurism or hostile provocation on the part of the United States (see, e.g., Chapter Thirteen above and Garthoff, 1985: 1010-1022).

The real shift in U.S./NATO military policy involved the AirLand Battle and the Rogers Plan. As noted in Chapter 11, this initiative was an elaboration on the reintroduction of maneuver and offensive elements of defense into NATO planning on defending against a Warsaw Pact invasion. It did involve some change in strategy, but it was not a major shift in terms of requiring a shift in thought in NATO doctrine on nuclear versus conventional warfare. The Soviet leaders surveyed did not discuss the AirLand Battle or the Rogers Plan in any more than the usual terms of increased Western militarism, though there

was some echoing of the Western press that AirLand suggested more of an emphasis by the U.S. in fighting a potentially nuclear campaign on European rather than American soil.

These comments about U.S./NATO doctrine help to explain how the Soviet mention of greater militarism or a greater focus on nuclear weapons by the West became part of the Soviet commentary on their new security policy, even though there was not obvious doctrine or strategy change by the U.S. regarding either its nuclear or conventional postures. While there was undoubtedly a certain propaganda element in Soviet remarks about the perceived threat created by increased U.S. defense spending and the orientation to AirLand, it is conceivable that these developments did have some effect on Soviet doctrine. It would be hard to say from evidence examined here whether the U.S. defense expenditures for nuclear or for conventional forces or the implementation of AirLand had any effect on the nuclear or conventional orientation of Soviet doctrine. It is plausible to suggest, however, that these developments may have had an effect on the move to mutual security, but since it is difficult to hypothesize about what the specific connections might have been (apart from the obvious concern about the increase in

U.S. combat power). I will simply note this factor here as possibly important for the Soviet doctrine shift.

Two other issues are worth noting in speculating about the causes underlying the current shift in Soviet doctrine before moving to the actual reasons the Soviets adduced. One is that the role of economics as a factor in the current doctrine shift is probably best appreciated through the awareness that in the vast amount of Soviet literature thus far on the reform process in the U.S.S.R., it is the economic system that is most often discussed as the principal problem. It is true that the reform process touches many areas of Soviet life identified by proponents as needing change: the electoral system, the legal system, freedom of speech and assembly, etc., but commentary from the leadership, academics, journalists, and others normally point to economic problems as the principal reasons for the reform. This pattern in assessments by the Soviets is thoroughly reflected in assessments by Western analysts. Therefore, the strength of the economic factor in the current doctrinal shift cannot be underestimated.

Second, one factor that may have been important in the current Soviet doctrine shift that was not specifically monitored through the internal and external variables I have examined was the war in Afghanistan. While it would

be difficult to postulate that this involvement by Soviet troops had the effect of pushing the orientation of doctrine either more to conventional or nuclear warfare, it is conceivable that the disappointment of not achieving the objective of suppressing the rebels, plus the tremendous human and material cost of the war effort there, led Soviet leaders to reconsider the role of force in foreign policy. Certainly the international opprobrium they encountered for being in Afghanistan no doubt had such an effect.

How much of a contributing factor the Afghanistan involvement may have been for the move to mutual security is difficult to say. It does seem that even if the Soviets had not been involved in the Afghanistan adventure, that they still would have moved to a mutual security-like orientation, given the other factors coming into plan in the doctrinal and foreign policy decisionmaking during the early to mid-1980s. Because the Afghanistan experience is a plausible influential factor, it seems worthwhile to note its possible impact.

As I discuss the Soviets' reasons for the changes (see Tables 1 and 2 and the summary Table 3), I will address each of the areas of internal and external factors in the context of the assessments of internal and external variables I have made thus far and offer some conclusions

about the degree of correspondence between my conclusions and those of the Soviets.

The reasons listed in the tables for this chapter (see Tables 1-3) were selected as the most articulate and representative statements Soviet leaders made about why changes were thought necessary in security policy. The lists offered here are not exhaustive, but virtually all the statements not presented here simply repeat one or more points of the arguments that are recorded in the tables.

Internal Factors

Domestic and International Linkages

In the area of general domestic issues and domestic-international linkages, the point that the expense of arms procurement and maintenance for a military establishment of the scale the Soviets have supported over the past several decades is consonant with my own analysis of economic constraints. While the judgment of their "immorality" is subjective, the point that these resources could better be used for non-military purposes is logical, not to mention prudent.

The comment about ecological danger most likely refers to the concern about a Chernobyl-type accident.a

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aShevardnadze, for example, commented that the Chernobyl accident "has heightened our concern for the future of the earth" (Shevardnadze, 1986b: 4). Gorbachev,

Apparently Chernobyl significantly enhanced Soviet concern about the dangers of a nuclear war.b

The comment about the West hindering reform in the Soviet Union by causing foreign affairs problems for the Soviet Union and by continuing apace its military buildup is an arguably accurate reflection of a Soviet perspective. There were indeed occasional remarks from the Reagan Administration implying that the Soviets would eventually recognize the need to modify their political system if the U.S. kept up its pressure.c On the other hand, the Soviets have always criticized the U.S. for fueling the arms race, regardless of the trends in U.S. defense spending.

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in his May 1986 assessment of the accident, asserts it is a "grim warning" of the need for "new political thinking" and various curbs on nuclear weapons (1986e: 1) Marshal Akhromeyev adds an addition perspective. In arguing about the importance of preventing conventional as well as nuclear war in Europe, he notes that there are over 250 nuclear power stations in Europe. He continues: "And what did the accident at Chernobyl alone yield? And if a war breaks out, then these power stations will start to explode" (Akhromeyev Discusses, 1989: 99).

bI wish to thank Philip Stewart for bringing this point to my attention.

cWhile avoiding a judgment on the accuracy of this U.S. perception, it is interesting--but not surprising--to note that the Soviets argue the reverse of this logic. The Soviets comment that the U.S. foreign and military policy pressures hindered rather than fostered Soviet interest in and efforts for reform.

It would seem, then, that this explanation about obstacles to Soviet reform and growth in the arms race that the Soviets use to explain the need for perestroyka has a certain element of accuracy, though it also makes convenient use of the U.S. as a malevolent protagonist. Therefore, it is hard to judge whether the Soviets here are indicating that they do really perceive a major change in U.S. approaches to Soviet-U.S. security relations as a factor leading to a revision of Soviet perspectives on security, or whether this explanation is more a facile argumentation to cover more important, largely domestic considerations.

Probably the best way to understand comments like this one in the context of the current analysis is to assume they are basically accurate, but that they reflect Soviet perceptions, not so much of a change in U.S. military doctrine, but concern about U.S. force posture enhancement. In this way, such comments can be understood to reflect some concern about the security policy change implied by the U.S. developments but more central concern about the economic cost of trying to meet the challenge the U.S. force posture enhancement creates.

In this general list of remarks on domestic-international linkages, one point is somewhat obscured, particularly by the Gorbachev comment about a turning

point in economic difficulties occurring at the same time as a turning point in arms competition. There does not seem to have been a dramatic exacerbation in the early 1980s in either Soviet economic performance or in the superpower nuclear competition. Though pressures from economic difficulties and the arms competition were indeed present, the turning point argument seems a little artificial.

Probably the best way to explain the point being obscured here is that the turning point argument is one of the Soviet leadership's ways of saying that it was only recently that it had decided to acknowledge the Soviet Union's various problems as requiring serious attention. Attributing a change in security policy to a coincidental shift in both the domestic and international environments is therefore a face-saving way to justify the radical changes in policy being undertaken. This same point will surface several times more.

The comments about links to the global economy are reasonable and fit in well with my overall assessment of the economic factor. Shevardnadze's comment about Gorbachev is probably most understood as flattery, but because Shevardnadze rarely made comments of this nature, this compliment is probably a reasonably accurate assessment and not simply insincere praise. This

assessment about both Gorbachev and other new leaders fits well with my analysis of the importance leadership change.

Economic Dimensions of Perestroyka

The comments in the section on economic dimensions of restructuring are all consonant with my assessment of the Soviet economic constraints. It is interesting to see the Soviets link foreign policy so explicitly to domestic economics, and the fact that they make this connection and admit it so candidly demonstrates the priority of the domestic agenda. Remarks about the "fundamental modernization" necessary indicates the depth and direction of necessary domestic change. The comments about the influence of Stalinism reflects the dimenision of the historical legacy the Soviets face in effecting political and economic reform.

The comments on the citizens' involvement in foreign policy addresses more present and future influences than factors that actually led to the current changes. What these remarks suggest more subtly is that since the Soviet Government needs its citizens to be involved in the reform process, the government cannot therefore afford arbitrarily to restrict foreign policy from citizen commentary and criticism. While it may be too cynical to view such comments by Shevardnadze basically as a unavoidable concession to the citizenry in order to

advance perestroyka, the leadership's willingness to be so open about foreign policy indicates the magnitude of the reform under way.

Philosophical Dimensions

In the area of philosophical aspects of the relations between socialism and capitalism, the comments about the need to move beyond ideologies and to the broader goals of humanism in international relations clearly reflect the leadership's considerations about the political stance it had to articulate to foster international cooperation in support of perestroyka. Asserting, however, that the need to de-ideologize international relations is more urgent recently than in the previous half decade or so, or that the world needs to move from "adolescent pugnacity" to "wise maturity," is simply rhetoric. The essential point here on the issue of the ideological character of international relations is that current changes in policy have been motivated so much by changes in the international or domestic environments, but by a change in how the Soviet leadership perceives those environments.

The importance of perceptions for the current changes is underlined by the comments here concerning awareness of basic human needs and values and of changes in capitalism and socialism. It is obvious to anyone who has followed Soviet leadership discourse that the assessment of basic

by a change in how the Soviet leadership perceives those environments. There does seem to have been a clear change in Soviet ideology about how the world is perceived: the world is no longer principally an arena of class conflict, and a non-zero-sum relationship exists between the Soviet Union and its potential opponents.

The importance of perceptions for the current changes is underlined by the comments here concerning awareness of basic human needs and values and of changes in capitalism and socialism. It is obvious to anyone who has followed Soviet leadership discourse that the assessment of basic human values as an important driving force in foreign policy is very new. Such comments are obviously made in part because international audiences would find them appealing, but to note these factors so explicitly indicates the significant changes in world view that have been taking place among the Soviet leadership.

The remark about capitalism and socialism changing is obviously a rhetorical flourish, but it also reveals an interesting shift in perception. Capitalism and socialism are always changing--such is the nature of social systems--but it would be a definite stretch of the imagination to conclude that the respective rates of change here had somehow markedly increased prior to the mid-1980s. It is true that this comment was made in 1989, but it seems most

inappropriate to suggest, as Gorbachev does, that it was awareness of marked evolution in these systems that led the Soviets to reconsider "primitive attitudes" they inherited from their past.

A more appropriate understanding of change in social systems (and indeed Soviet leaders have said as much elsewhere) would be that the Soviets came to a fuller realization the problems of the socialist system in the U.S.S.R. and concluded they need to make radical adjustments to ensure, if not improve, the country's functioning. Assumptions (i.e., "primitive attitudes") about government-society and producer-consumer relations need to change, but so do assumptions tied with the rather Manichean approach historically characteristic of Soviet foreign and security policy. Gorbachev's comment that a more "realistic" approach to foreign policy would search out opportunities for cooperation underlines this need for perceptual change in foreign policy.

In the context of the current analysis, these comments about basic human needs and the evolution of capitalism and socialism point more directly to internal than external factors affecting current Soviet reform in domestic and foreign policy.

The comments about the senility and recklessness of capitalism is representative of occasional remarks

highlighting the Soviet leadership's ostensible goal of trying to forestall serious international crises by being the first superpower to take a responsible step toward improving relations with its adversary. Such comments as these that reflect so negatively on capitalism were infrequent and may have been used as a means to encourage support from conservatives in the government and in the populace for the reform process.

The Superpower Relationship

The remarks about the superpower relationship reveal several important points. One, as suggested in the comments by Lobov and Shevardnadze, is the argument made for many years by Western analysts that the Soviets seem to have had no clear response to the "How much is enough?" question when applied to defense procurement.d Current Soviet leaders are acknowledging such was indeed the case historically. This single-minded orientation toward defense was understandable, given the devastation of World War II and given the catch-up effort the Soviets had to pursue to build nuclear and conventional postures to levels approximating those of the West. At the same time, this orientation was so strong that it hindered

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dParrott, for example, refers to the "nearly reflexive conviction that the continuous expansion of Soviet military power would automatically enhance Soviet security" (Parrott, 1988: 2).

serious and timely reconsideration of the cost of security relative to the cost of other benefits consequently foregone.

A second point is that these comments reveal the isolation of defense procurement decisions from other economic planning considerations. These aspects the Soviets note concerning the reconsideration of defense spending are consonant with my analysis of economic constraints.

Third, the comments about the need for the previous generation to pass away and a newer generation to replace it who was not accustomed to thinking in "old" ways points to the importance of leadership change for the current shift in foreign and security policy. These comments also point to the importance of changing perceptions both in general security policy as well as in the cost of the programs to support this policy. Such change in perceptions of cost clearly have important roots in a reevaluation of domestic economic constraints and spending priorities.

The comments on "eliminating the existing deficit of trust" are clearly suggestive of the aspect of mutual security concerning the importance of considering other nation's security concerns. This greater focus on political, rather than military, means of ensuring

security reflects one of the key perceptual revisions characteristic of the current leadership.

Arms Competition

Concerning comments about ending the arms race, it is indeed a reasonable point to reduce arms competition, but alleging that the world is reaching the "brink of confrontation" is exaggerating the problem, as is the comment about humans not being involved in command decisions for a strategic defense system. The possibility, noted in subsequent comments, of a nuclear crisis growing from a technical problem, accident, or a malign misperception have always been present, and the superpower nuclear relationship is no more a game of roulette now than it was 10 or 20 years ago. So, while it is possible that the Soviets see such problems as more significant than before, the more probable explanation is that these comments are largely convenient justifications for the course change in security policy--comments designed for audiences without a very substantive understanding of the U.S.-U.S.S.R. strategic relationship. Very arguably, such an approach is an effective way to "sell" the revisions in security policy to the Soviet public.

To the extent these comments about ending the arms race do reflect leadership thinking (and such is probably

the case, to a degree), they have clear political and military dimensions, in the sense of being a function of new perspectives of the leadership to foreign policy and security issues. At the same time, these remarks also reflect technological and economic concerns. Soviet technological lags are well-known, and the leadership is aware that some of these gaps with the West (e.g., SDI technology) would be extremely expensive, if not impossible technologically, to close. Therefore some aspects of Soviet assessments about curtailing the arms race fit in well with my analyses on technology developments as well as economic constraints.

Interdependence

The basic legitimacy of the reasons concerning greater interdependence of actors within the international system cannot be questioned, though it is doubtful that the overall level of interdependence increased markedly in the half-decade or so before 1985. While one might jokingly conclude that the Soviets are simply discovering global interdependence 10-15 years late, that indeed seems to be what is happening. None of the comments in this part of the list seem rhetorical, and the Soviets are much to be credited for realizing and affirming the aspects of interdependence mentioned here.

The underlying concerns in this part of the list are easily tied to economic and political concerns. In the economic area, the Soviets seek help in restructuring and need to turn to a variety of sources to request it, so affirming the interdependence of the modern world seems a quite logical step. Furthermore, a peaceful international system would be most conducive to Soviet development, so noting the connectedness of nations buttresses the argument that individual actors should not pursue conflict because it disturbs the system.

There are two particularly important aspects of this issue. One is that the Soviets are acknowledging the limitations on the use of military force for accomplishing political objectives. The second, and perhaps more important aspect, is that the are reconsidering what their security needs actually are and and using this reconsideration in the formulation of foreign policy.

In the political area, the Soviets certainly realize that affirming interdependence is a good way to win them support from the West, whose assistance in restructuring is important. As has been the case earlier, these ideas linking security and interdependence also reflect the differences in perceptions of the current leadership, as compared with those of their precedessors.

Additional Observations

Looking over the list of reasons Soviet leaders offer, several other conclusions may be drawn. One is that there is a extraordinarily wide range of justifications offered. Part of the breadth of this range is due to the breadth of the problems the leaders are trying to correct, but part of it, particularly the more rhetorical statements, is due to the perceived need to draw the crisis in terms as sharp and compelling as possible in order to convince people of the need for major and difficult changes.

Two points most readily observed by looking at the references for the tables, is that most of the justifications offered are clustered in the 1985-1987 period and begin to dwindle into 1988 and 1989. There was no attempt to generate a random sample of these reasons; as indicated earlier, the statements were chosen for the comprehensiveness and eloquence. However, the fact that there were more justifications earlier rather than later makes sense, as a greater focus on reasons would be more necessary to convince people of the need for reform and not quite as necessary as the reform got under way.

Next, it is interesting to note that the vast majority of spokesmen providing these comprehensive justifications were purely political, as opposed to military, representatives. One would probably expect such to be the

case as it is the political officials who are usually more often involved than military representatives in explaining the leadership's policies to the masses as well as to other international leaders. The military officials who do appear on the source list are among those who have greater "public relations" responsibilities than, say, deputy ministers of defense or deputy chiefs of the General Staff.

Finally, there does not seem to be much change over time in the nature of the reasons provided. Reasons concerning changes in foreign and domestic policy seem relatively equally spread over the years during which leaders were surveyed for comments.

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APPENDIX

Table 15.1: List of Reasons--Internal Perspective

General Domestic Issues and
Domestic-International Linkages

The Soviet military establishment has become too expensive to maintain; defense expenditures at their current level are immoral and should be channeled to "civilian peaceful needs" (Gorbachev, 1985e: 2); the "unacceptable and ruinous squandering of resources on armaments," apart from being politically unjustified, is related to a growth in unemployment; this problem is becoming one of much greater dimension than earlier; armaments production also entails potential ecological danger (Gorbachev, 1987f: 2).

The imperialists in the late 1970s and early 1980s tried to keep Soviet leaders from reforming their socioeconomic system by exacerbating tensions in the international system; the Soviet Union will guarantee its security and that of its allies, but will not continue unthinkingly the arms race imperialism tries to impose (Gorbachev, 1986c: 2).

The need for improvements in the economy, especially scientific-technical capabilities and production efficiency, would be facilitated by more extensive links to the global economy. An international security system would benefit this global economy (Ryzhkov, 1986b: 6; see also 1986a: 1-2).

Fundamental tasks of the country's economic and social development determines the Communist Party's international strategy (Gorbachev, 1986c: 2), and in this case the Soviet Union needs international resources for a qualitatively new stage of socioeconomic development (Gorbachev, 1987a: 1).

The Soviet economic system, because of inertness and stiffness in management, decline of dynamism, and other negative factors, has reached a turning point, and has reached this point contemporaneous with the advent of a turning point in international affairs, tied with the superpower nuclear confrontation (Gorbachev, 1986c: 2)

Though various leaders during the period of stagnation considered the importance of Soviet domestic reform and worked for it, perestroyka as it is known today, has been led by Gorbachev. Gorbachev is "the initiator and

Table 15.1 (cont'd)

organizer of this grand work. There is no doubt about that" (Shevardnadze Praises, 1989: 4).

Aspects Specifically Related to Economic Reforms

Current Soviet foreign policy "flows directly from our domestic policy to a larger extent than ever before: We need a lasting peace to concentrate on the development of our society, in order to accomplish the tasks of improving the life of the Soviet people"; a context of peaceful, rather than hostile, rivalry and competition is needed (Gorbachev, 1987a: 2).

Perestroyka is "inextricably linked with activities to insure peace and international security"; "the old popular saying is applicable here: The person who builds a house doesn't want a fire. The one who is engaged in the development of the economy and improvement of the people's life doesn't want war" (Ligachev, 1987: 2).

The Soviet Union needs to aim for a "fundamental modernization" (Gorbachev 1986f: 1); revolutionary changes in technologies involving such areas as microelectronics, information science, and biotechnology, touched the Soviet Union only tangentially, since the country was still suffering from the distortions of Stalinism and problems like the command-administrative management system; as a result the Soviet Union is "as if in several of the most important spheres in the life of society, it were still in the past technological epoch," while developed countries of the West have moved to the epoch of high technology; "through restructuring, we want to give socialism new breath" (Gorbachev, 1989: 2)

It is important to raise economic growth rates, especially in areas of scientific-technical advances and of their implementation into the production line; this was a problem as of the 1970s, but Soviet leaders ignored it (Gorbachev, 1986c: 4).

Political Dimensions of Perestroyka

The 19th Party Conference (June 1988) established a "constitutional mechanism" that will "put an end to the situation in which the people are estranged from foreign

Table 15.1 (cont'd)

policy and foreign policy is detached from the people" (Shevardnadze, 1988a: 8)

Soviet foreign policy is now subject to "critical and exacting attention" by Soviet citizens. Soviet diplomatic actions now "are subject to strict approval by the nation." This is a "healthy and necessary phenomenon," even if it may sometimes hinder the conduct of foreign affairs. (Shevardnadze, 1987a: 26)

Table 15.2: List of Reasons--External Perspective

Reconceptualizing International Relations: General Philosophical Dimensions and Socialism-Capitalism Relations

Our ideal world as socialists is one "in which every people may choose its path of development and its way of life freely. This is an expression of the humanism of communist ideology and its moral values." (Gorbachev, 1986c: 7); "We now--in the Soviet Union--have concluded that at this time, common human values are the main ones: the struggle for peace, the elimination of nuclear weapons, joint action to prevent an ecological catastrophe," etc.; these values have become important to other countries as well (Akhromeyev Interviewed, 1989: 12-13).

Peaceful coexistence, as advocated by the Soviets, includes extensive economic cooperation with other states, regardless of the economic system to which they belong (Ryzhkov, 1986b: 7-8).

"The survival of humanity is at stake," and "the time has come for decisive and responsible action"; "new thinking" is needed "in line with the realities of the nuclear and space age. "The time is coming when considerations of groups, blocs, or ideologies are beginning to yield to the understanding that peace is a supreme value"; a "comprehensive system of international peace and security" is needed, encompassing political, military, economic, and humanitarian concerns (Shevardnadze, 1986b: 4)

"If you look at world affairs from the human angle, there is scarcely anything more urgent today than the humanization of politics. Nuclear disarmament is fundamentally a question of humanism, even primarily of humanism" (Gorbachev, 1987c: 3). We now need to restructure the political way of thinking and "orient it on a scale of priorities that would objectively reflect the values of mankind in general"; on the "broadest dimension, this is a challenge of a Renaissance scale"; it is the responsibility of the current generation "to take the world out of its period of juvenile pugnacity and to usher it into the age of wise maturity. This is its great mission." "The transition to mature international relations suggests their [i.e., international relation's]

Table 15.2 (cont'd)

democratization, humanization, and their being stripped of the ideological process" (Shevardnadze, 1988b: 4).

"Both capitalism and socialism are changing. This is happening in an atmosphere of global problems which dictates the necessity to break through the tendency to complication and to support the tendency toward normalization and cooperation. An understanding of that makes it easier to move on"; "it is time for all of us to rid ourselves of the primitive cliches which were developed in the past"; as we have our own values but "do not demand that those who favor the capitalist system give up their values, there is a need to be realistic and find new forms of cooperation" (Vystrecha, 1989a: 2).

The growing indication of the "deterioration" of imperialism's foreign "immune system" and of its "social senility" "reduces the probability of far-reaching changes in the policy of the dominant forces and increases its degree of recklessness"; a "crisis of capitalism" approaches as conservativism gives way to authoritarianism; the ruling class in American capitalism is not doing anything about important international problems (Gorbachev 1986c: 3)

Reconceptualizing International Relations: The Superpower Relationship

There were two main factors in our reevaluation of foreign policy. One factor was "the coming to power of a generation which had not been involved in the well-known deformations and refused to accept them." The second factor was that in the fifties and sixties, "there were different realities and different ideas about the external threat. There was no sense of firm national security and the threat of war was seen as an immediate and even inevitable reality. This could not fail to restrict the very scale of possible reform. It was necessary to acquire confidence and to eschew, if you will, our weakness complex so as to assess the situation objectively in a balanced way" (Shevardnadze, 1989: 3).

"In the time before restructuring, 'counting kopeks' when making decisions in the political arena (here I include defense issues) was regarded as almost disgraceful. Foreign policy was like a thing unto itself, but economics.... How could one deal in trivialities when speaking about ideals and ideas, about 'grand

Table 15.2 (cont'd)

politics'?"--such was our approach and the civilian economy "got what remained afterwards"; "The fact was directly ignored that in the international and defense spheres, there could be things that our country simply could not afford" (Noviy oblik, 1989: 2).

Before now, there was a stagnation in our approach to security affairs. Because of the very high price paid in the Great Patriotic War, the political thinking held that "there ought to be more weapons, a large army, and that one must have everything in order to guarantee the security of the Soviet people. And naturally, carried by inertia, this thinking reached the period of stagnation when it was thought" that a only large military could defend the country. This thinking let us be drawn into the arms race (Lobov, 1988: 8-9).

The Soviet Union wants to end its "period of alienation" with the United States (Shevardnadze, 1986a: 4); the Soviet Union's image of the U.S. as its enemy "began to fade several years ago" with the inception of a new Soviet foreign policy (Akhromeyev Interviewed, 1989: 14).

"Eliminating the existing deficit of trust" in relations with the U.S. is "absolutely essential"; trust among nations is "the most precious capital" (Gorbachev, 1986a: 1).

Reducing Arms Competition and Military Confrontation

The increasing arms race, of which the most recent manifestation is SDI, heightens the "unpredictability of events," since computers would be making key military decisions; responsible decisionmakers are much needed in the U.S. and U.S.S.R. in order to ensure the preservation of "civilization and life itself"; leaders in the U.S. and U.S.S.R. must "rise above our narrow interest" and recognize the mutual responsibility for world peace (Gorbachev, 1985f: 1); "the arms race was coming close to a critical point" and "against that background, our traditional political and social activities in favor of peace and disarmament began to become less convincing"; the Soviet Union could have found itself on the brink of a military confrontation, and this is the reason Soviet foreign policy needed "not simply an improvement, but a

Table 15.2 (cont'd)

"decisive renewal" (Gorbachev, 1988g: 3); a return to detente needed, but something "much more than the detente of the 1970s" (Gorbachev, 1985c: 3).

The Soviet Union, in its relationship with the West, wants an cutback in arms competition and the establishment of an equilibrium of military forces at its lowest possible level (Gorbachev, 1985a: 3; 1985d: 1); specifically with regard to INF forces in Europe, strategic offensive forces, and SDI, it wants an "honest dialogue" and good will (Gorbachev, 1985b: 1).

"Having thoroughly evaluated the situation that has developed, the CPSU has advanced an integral program for the complete liquidation of mass-destruction weapons before the end of the present century" (Gorbachev, 1986c: 7).

"Let us grant that Western leaders will have enough prudence and will not [intentionally launch a nuclear attack against the USSR]. But what if the danger of a lethal explosion arises as a result of human error, a technical fault, or an evil intention of some individual. The possibility of such a tragic turn of events has been spoken of often. This possibility will increase many times if nuclear weapons are deployed in outer space, according to the U.S. 'Star Wars' concept" (Gorbachev, 1987b: 2).

The "policy of confrontation has no future" (Gorbachev, 1986c: 2); a "comprehensive system of international security" is needed, as "no one single state...can insure its own security at the expense of the security of others"; the "realities of the nuclear space age demand new political thinking and renunciation of the use of force in international affairs (Ryzhkov, 1986c: 4); this comprehensive system of international security needs to cover political-military, economic, environment, and humanitarian issues to be effective (Shevardnadze, 1987b: 4).

The Soviet Union wants to end nuclear arms competition and the possibility of nuclear confrontation"; "Should the game of nuclear roulette continue? But even now it is clear that sooner or later it could push us to collective suicide"; the world should "stop playing for insane stakes with no prospect of winning for anybody" (Shevardnadze, 1986b: 2).

Table 15.2 (cont'd)

"The arms race is becoming an increasingly heavy and unbearable burden on the peoples of almost all the countries and continents"; "The rapid growth of military spending diverts enormous resources, and hampers economic and social progress" (Gorbachev, 1987c: 2); taking active steps to reduce arms and arms competition "is also a necessary prerequisite for resolving ever-worsening global problems," such as the destruction of the environment, the search for alternate energy sources, and the struggle against hunger and disease (Gorbachev, 1986b: 2).

Reconceptualizing International Relations: Greater Global Interdependence

"The nuclear space age has completely reshaped the notions of time and space, cancelled the remoteness factor and faced the entirety of mankind with the need to make a choice. I wish to stress, the whole of mankind"; "The trouble and problems of many countries also concerns everyone. The consequences of deep economic stagnation can have unpredictable effects for the whole world economic system" (Shevardnadze, 1986c: 5).

"The social changes of the century are altering the conditions for further social development. New economic, political, scientific, technical, internal, and international factors are beginning to operate. The interconnection between states and between peoples is increasing. And all this is presenting new, especially rigid, demands for every state..." (Gorbachev, 1986c: 2).

"We are firmly convinced that Europe's future lies in lasting security with minimum arms on both sides, in broad interstate cooperation, in contacts and exchanges along all levels" (Gorbachev, 1987c: 3).

Two perspectives should be foremost in important in current Soviet thinking on foreign affairs. One is that mankind, in the nuclear space age, "is now facing the problem of its survival." The other is the fact that "the modern world is an extremely contradictory whole, but at the same time...deeply interconnected in all its parts. Consisting of a large number of fragments, it is at the same time a single whole, and is linked by the commonality of its fate" (Shevardnadze, 1987a: 27).

Table 15.2 (cont'd)

"In general, if one looks at the progress of science and technology, it is bringing more closely together and is linking us more closely than ever. We are increasingly dependent on each other, and we are becoming essential to one another"; This is an "enormous world with its own enormous interests and with an accumulation of major problems"; the Soviet Union realizes it cannot solve all these problems by itself and that it needs to work with other countries (Gorbachev, 1987e: 1).

"The world is in the middle of a process of rapid change, and nobody is capable of preserving an eternal status quo in it. It consists of many dozens of states, each of which has its own, quite legitimate interests" (Gorbachev, 1986c: 7-8); "there is an increasing awareness of the interconnection and interdependence on all parts of the international community today" (Vystrecha, 1989b: 4)

Table 15.3: Summary of Tables 15.1 and 15.2

Internal

General Domestic Issues and
Domestic-International Linkages
Defense expenditures have become too burdensome for Soviet society; they have received too much of the budget and have drained a wide range of resources from the civilian sector
Soviet economic and scientific-technical development would profit through international contacts and from a new international security system to ensure the stability of those contacts
Gorbachev and other enlightened politicians have been key backers of reform

Aspects Specifically Related to Economic Reform
Soviet foreign policy stems from domestic policy more so than ever before, and a peaceful world is necessary to pursue internal reform
The USSR needs international economic ties to help perestroyka, especially in scientific and technical areas, and previous leaders ignored connections between the domestic and international economic systems.

The Superpower Relationship
There earlier was a stagnation in thinking and an inertia in the top leadership that led to increasing procurement, stockpiling of arms, and distrust in our relations with the U.S. This approach is being thoroughly revised.

Political Dimensions of Perestroyka
The Soviet people now have an input into Soviet foreign policy and can effect its course.

External

General Philosophical Dimensions
The survival of humanity is at stake now in a way it was not before.
Socialism supports free choice of social system orientation; Soviet leaders now perceive that human values are the most important.
New thinking, free of ideology, is needed to solve the wide variety of important global problems; if capitalism does not respond to these problems, socialism must.
Capitalism and socialism are both changing, and the Soviet Union must respond to these changes; it is now time to rid ourselves of old ways of thinking.

Table 15.3 (cont'd)

Reducing Arms Competition and Expenditures
Arms expenditures are too draining on the Soviet economy and on the economies of other countries.
The Soviet Union wants to avoid confrontation by accident, particularly nuclear confrontation, through arms reductions.
The Soviet Union seeks to pursue policies that foster the resolution of conflicts by political rather than military means.

Greater Global Interdependence
The world is composed of many states with legitimate interests. These interests must be respected.
States cannot solve international problems without cooperation because of the interdependency of states with one another. These linkages are tighter than earlier.
Security of nations is interdependent in a way it was not earlier.

Table 15.4: Comparison of Reasons for Doctrine Shift Based on the Independent Variables With Reasons Cited by Soviet Officials

Reasons from Independent Variables	Soviet Officials' Reasons
Internal	Internal
Economic constraints (yes; even though unimportant historically)	Economic constraints (yes)
Leadership change (yes)	Leadership change (yes; but not as central as I suggest)
Technology advances (no)	Technology advances (no; but much discussion of perceived threat of SDI--both a military and an economic concern)
External	External
U.S./NATO doctrine change (no)	U.S./NATO doctrine change (yes; largely a concern about U.S. defense spending)
Sino-Soviet tensions (no)	Sino-Soviet tensions (no)

CHAPTER XVI

FINAL CONCLUSIONS

As one compares the conclusions in Chapters Ten and Eleven on the internal and external variables with Soviet leaders' discussion of doctrinal issues in Chapter Fifteen, several differences become apparent. I have already noted some of these differences briefly at the beginning of Chapter Fifteen.a I will examine these differences here in more depth, focusing on their implications for future Soviet doctrinal formulation.

As one can note in Table 1, the factors I list leading to the current change in doctrine and their rankings are basically similar to the Soviets' perception of these factors and their importance. Of course, as is obvious from Chapter Fifteen, the Soviets discuss a broader range of contingent issues than I. My goal, however, has not been to elaborate all the potentially important factors in a doctrine and strategy shift but rather the few that have seemed most important over time. It is certainly the case that other factors may loom more important for doctrinal

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aSee Table 4 of Chapter Fifteen, included in this chapter as Table 1.

development in the future, but for the first four post-war decades, the ones I have identified seemed to have been the most significant.

There are three principal issues which I need to address: the differences in the assessments of the leadership and economic constraint variables, the change in importance for this period of the economic constraints variable, and the differences regarding technology and NATO.

Doctrine Change and Economics

As I mentioned in Chapter Fourteen, it is difficult to differentiate in the significance one assigns to the variables of economics and leadership change; both are clearly critical to the current doctrinal shift. Apart from the reasons of propriety I note in the previous chapter as to why the Soviets have not said more about the importance of leadership change for the current shift in doctrine, one could argue that further commentary is unnecessary because the importance of leadership change is inherently obvious in the political discourse of the current regime. It is very likely the case that current leaders perceive it unnecessary to explain how the change in leadership has been central for the change to mutual security, since the radically different views on security affairs articulated frequently by the current leadership

is quite sufficient evidence of the importance of new leaders.

Additionally, the current leadership faces the daunting task of trying to convince the populace, not to mention disaffected members of the Party and Government, of the legitimacy of their approach to security affairs. Therefore, it makes sense, because of the importance of this advocacy challenge, that these leaders would devote most of their attention in speeches and articles to the stark realities of the system's economic problems--the problems most visible and immediate to their audiences.

Concerning the effects of economics on the basic directions of military doctrine, it is interesting to note that for nearly all of the Soviet Union's post-war history, economic constraints have played a relatively minor role. In the middle 1950s, Khrushchev and his supporters [somewhat like Eisenhower and his advisers] realized that shifting to a nuclear-oriented posture would free important material and human resources for non-military sectors of the economy. The evidence does indeed suggest that Khrushchev used these resources for other sectors of the economy--for example, to help subsidize the Virgin Lands program and to increase investment in consumer commodities.

At the same time, it is also quite clear that one of Khrushchev's central investment priorities was military R&D, to fulfill his objective of building a Soviet strategic nuclear force posture as early as possible (note the principal climb and peak in R&D investment in Figure 4). Consumption did not remain a high priority, nor did investment in agriculture. Indeed, by the early 1960s, defense spending--at this time largely for strategic force procurement--grew steeply while consumer and agriculture investment dropped. Consumer investment increased again during the early years of the Brezhnev regime, but the rate of growth of investment in this sector and in R&D dropped after 1970.

While it would be difficult to link the decrease in investment in these sectors closely with the drop in factor productivity, the connection here is very plausible. Additionally agricultural production dropped during the early Brezhnev years, in spite of increased agricultural investment. Whatever may have been the specific reasons for the decline in factor productivity, the drop in the early 1960s and the continuous drop since the early 1970s suggests that people as well as equipment are not working efficiently. Most likely, if defense spending had been reduced more, additional resources could

have been made available to help improve factor productivity.

The principal structural dynamic here is that the Soviet government has been a closed system, relatively unresponsive to public opinion. Had leaders been thus responsive, they would have had to make investment decisions to improve the standard of living. If such decisions had been taken, it is unlikely that factor productivity would have declined as it did. While one cannot yet say that current Soviet leaders are as responsive to public opinion in economic policy as leaders of most Western countries have to be to stay in office, this aspect of leadership politics in the Soviet Union is clearly changing.

As the current leadership opens itself to these concerns and tries to get Soviet citizens involved in its economic reform program, it will have to pursue investment decisions that will improve motivation for the labor force, increase opportunities for entrepreneurs, and provide a financial safety net for individuals and sectors of the economy that are adversely affected by the transition in the country's economic system currently under way.

One important, if not already manifest, implication of such change in fiscal policy management is that investment

in defense will have to be severely reduced. Even when spin-off technologies, etc. are factored in, defense investment is generally recognized as having much less of a multiplier effect on economic growth than investment in the civilian sectors of an economy: weapons are simply not productive capital stock. As noted in Chapters Fourteen and Fifteen, Soviet leaders have already begun to address themselves to such reductions.

Another important implication of the leadership's opening itself to citizen concerns in order to enlist their support for economic and political reform is that the leadership will have to listen to Soviet citizens express their views on a wide range of issues, including on foreign and security policy topics. Such is one of the obvious dimensions of glasnost' and a responsibility noted already [by Shevardnadze] as cited in Chapter Fifteen.

There are at least three major net effects on security policy of leadership concern for public opinion in the areas of economic and foreign policy. One is that it will not be economically or politically feasible for the Soviet leadership to emphasize the military component of foreign policy nearly as much as in the past. Indeed, Gorbachev and his supporters have thoroughly acknowledged this implication. Second, security policy in general will

probably evolve more slowly and incrementally as public debate becomes a more important aspect of the foreign and security policy process. Third, it is likely that military doctrine and strategy in the future will evolve more incrementally for the same reasons.

Publics, even in representative democracies, are not usually interested in the details of military doctrine and strategy, so just as in the West, strategic planning offices within service branches and at higher levels of the military will be able to formulate new doctrinal ideas without extensive concern for public opinion on operational particulars of those ideas. At the same time, those planners will have to be aware of how feasible their plans will be when political leaders begin to discuss doctrinal policy change in public.

Political leaders who may develop new doctrinal ideas [most likely as derivative of new foreign policy preferences] will be aware even more readily of public concern as they discuss these ideas with their advisers and staff. These leaders will need to be concerned about getting reelected, so they will need to be careful lest some new foreign policy or doctrinal innovation they generate be unfavorably received by their constituency. Also, leaders will no doubt bring to their doctrinal thinking and decisions the concerns and influence of

their constituencies, thus expanding further the new influences on doctrinal development. The focus of the analysis in this study has been on conventional doctrine, but these conclusions about the changing nature of military doctrine formulation would apply to any aspect of doctrine.

What seems to have been the case in the past, therefore, is that economic constraints generally had little effect on the actual direction or shape of doctrine, but rather on whether more or fewer weapons were procured to implement doctrine as the leadership had developed it conceptually. Historically for the Soviets, it appears that military considerations vastly overrode economic considerations, at least until the mid-1970s, when the rate of growth in procurement began to flatten. One could well argue that military considerations were still prior even after that point, but that there was simply less need to fund the military at as high a level as previously.

One could also say for the past that if Soviet leaders perceived a possible doctrinal alternative as clearly requiring a minimum force posture beyond the regime's ability to procure it, that that alternative would not have been selected as the nation's doctrine. The likely scenario was probably that the Soviet leadership, in

considering adopting a doctrine and strategy, would only have avoided adopting the doctrinal alternative if economic conditions in the foreseeable future clearly would have precluded the choice. Such decisions were no doubt easier for Soviet leaders during decades when they did not have to be responsive to pressure from an electorate.

Doctrine and Leadership Change

Leadership change will probably continue to be important for military doctrine development, though in a different way than in the past. Military doctrine may change after new leaders in key security policy posts take office, but it is unlikely that the pattern in the past will continue--the pattern in which doctrine changed after almost all successions involving the General Secretary.

Several factors will combine to make this so. One is that the international security system in the next several decades will probably change less rapidly than it did in the first three decades following World War II. Both superpowers have substantial nuclear and conventional force postures, and their basic parity with these capabilities will render the procurement process more or less stable. New military technologies will be developed, but it is unlikely, for example, that a technology would

revolutionize military doctrine to the degree that as nuclear weapons did.

Second, one reason doctrine changed in the past almost uniformly with the replacement of the General Secretary is that these leaders had been in power long enough and had exercised enough control over the doctrinal process that they could and often did retard doctrinal developments. Now, most high-level leaders have fixed terms, and the aforementioned public debate about foreign policy means that doctrine will evolve more openly and incrementally. Doctrine may change with a new leadership, or it may not. It will not be the case, as in the past however, where a leader holds power for a long time and delays the transition in doctrine enough that almost could almost anticipate a doctrine change after a leadership change.

Additionally, the fact that new leaders will be elected rather than appointed will probably have some subtle effects on the nature of doctrine. A leadership which is, to an extent, inbred in terms of its dominant political goals--the case with the Soviet leadership in the past--is likely to have a greater similarity of views than a leadership not so thoroughly constituted. This greater diversity of views should at least make for a more creative and variegated doctrine decisionmaking process.

The Variables Individually

Next, while the variables I discuss are important, it is clearly not these variables by themselves that have generated and guided changes in the actual content of doctrine on conventional warfare. Rather, it has been the leadership's perception of the world that has been the filter through which changes in these variables have been viewed. U.S./NATO doctrine changes or military technology changes, etc., were earlier perceived through a filter which saw the international environment as hostile. It is that filter that has undergone a key change in the recent past--that has channeled doctrinal thinking towards mutual security rather than toward a strong conventional or nuclear orientation. This filter would be the "Interests" box of Figure 1.

In the past, for example, Soviet leaders probably perceived that if they did not react quickly enough to an important development in military technology or in US/NATO doctrine, etc., the Soviet Union might soon find itself at an irreparable disadvantage. If, in the future, Soviet leaders' views of the world are not as apprehensive or fearful, it is likely that one will not be able to link doctrine change in substance or time as closely to the independent variables as I do here.

In passing, I would note that this perceptual filter to which I refer helps explain the apparent influence of

the development of SDI and of PD-59, LNOs, and the P-II/GLCM on Soviet doctrine. The methodology I employ here addresses U.S./NATO doctrine change, not changes in general U.S./NATO military policy (which would include force posture enhancement). Even though these new statements or weapons systems did not signify a clear change in doctrine, they were still perceived as threatening to Soviet security. Similar developments would probably still be perceived as threatening within a mutual security orientation, but the reaction is not likely to be as sharply negative.

This study has been focused on changes in independent variables associated with changes in the dependent variable, but further insight on the likely continuing influence of these variables may be gained by exploring when the independent variables changed but the dependent ones did not. I asserted in the methodological discussion for this study that I was concerned with correlation rather than causation involving the independent and dependent variables, since proving causation would be impossible with the available information. At the same time, the correlation I have investigated could assume further credibility if I could show that these independent variables did not change together at points unrelated to doctrine changes.

Figures 2-7 demonstrate that this point is basically credible. These figures provide a visual representation of when changes in the independent variables occurred during period covered in this study [1946-1989]. Figure 2 displays the number of appointments per year to the positions in the Defense Council, Ministry of Defense, and General Staff that have been tracked for the discussions of leadership change. This figure reveals several important points. First, it shows that changes in the two most important positions [General Secretary and Minister of Defense] only occurred together, or within a space of a few years of one another, around the time of a doctrine change. The same could be said for changes in the position of Minister of Foreign Affairs. Changes in the Chief of the General Staff were more frequent, but this position has been categorized as less important for the analysis.

Second, and just as important, this figure shows that the most numerous changes in the political-military elite only occurred during periods of doctrine change, with most of those changes coming during the specified eighteen-month period prior to the first major indication of a shift. There was no time when a major leadership change occurred that there was not a doctrine shift. The secondary peaks of leadership change--in the late 1950s,

1970, and 1974--are only associated with changes at the deputy level, with the exception of the appointment of Chief of the General Staff in 1960. This evidence underlines the importance of leadership change for developments in doctrine.

Figure 3 on technology change suggests that major new technologies having an important effect on force posture did precede doctrine change. At the same time, there were few technological developments during the years surveyed important enough to have a major impact on force strucuture. For the military technology variable, key changes were in the 1946-1955 period and early in the 1956-1965 period with the advent of nuclear weapons. As discussed in Chapters Four and Eleven, other major new technologies, such as MIRVs or OTH radar, enhanced a current force posture but did not lead to a fundamental modification. Therefore, improvements associated with these technologies cannot be taken as counterinstances of technology developments unassociated with doctrine change.

Change in economic constraints is more difficult to judge because such change is more continuous. There are two major points to be inferred from Figures 4 and 5. One is that the rates of growth in most of the major

production indicators--industry,b GNP, and agriculture--plateau in the mid-1960s and begin their precipitous drop by the early 1970s. Slow growth in these indicators--the situation by the mid-1960s--should have been a warning sign. The rate of decline after the early 1970s is especially problematic, obviously, and efforts should have been pursued to correct this problem sooner.

A second major point is that the parallel drop in factor productivity and total consumption from 1960 to 1965 should also have been an important warning sign that attention needed to be given to improving human and working capital efficiency in the economy. Both these indicators do experience a positive turn for the last half of the 1960s, but the continued drop after that point indicates that not enough attention was given these areas.

These points suggest that by the mid-1960s, and certainly by the early 1970s, leaders should have considered reducing growth in the military budget more than they did and increasing investment in areas such as R&D and the consumer sector in order to try to improve the trend in factor productivity. Before the mid-1960s, however, economic constraints were not that critical. By

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bThe drop in rate of growth in industrial production from the early 1950s until the early 1960s is probably due in large part to a scaling back the rebuilding effort after the war. Note that the slope of this line follows that of the industrial investment line for the 1950-1965 period.

the mid-1950s, for example, there was no clear indication of economic problems that would benefit by a shift to a less costly doctrine. Economic constraints, therefore, called for a less expensive approach to defense policy by the mid-1960s and pointed ever more strongly in that direction afterward. As mentioned earlier, the key factors leading to the importance of economics were the severity of the problems--which the leaders decided they could no longer ignore--and the evolution of the Soviet polity into a more open system--which caused the leaders to become more aware of citizen opinion and votes.

Although the time-line on U.S. and NATO doctrine change [Figure 6] provides a significant amount of historical information, the principal shifts in doctrine are indicated on the bottom line of commentary. These remarks note that the principal shifts in U.S./NATO doctrine began to take place in the early 1950s--toward a nuclear orientation--and in the early 1960s--toward a conventional orientation. The developments noted with asterisks in the right half of the bottom line suggest enhancements of existing doctrine rather than change in doctrinal direction, so the only principal changes in U.S./NATO doctrine were ones that preceded related changes in Soviet doctrine.

The time line for Sino-Soviet tensions (Figure 7) suggests what was explained in Chapters Seven and Twelve, which is that there were no real tensions before the late 1960s, which was after the first shifts in Soviet doctrine, and relations had improved by the mid-1980s, when the most recent shift began. The evidence from this figure suggests once more that the variable of Sino-Soviet tensions was not important for change in Soviet doctrine.

Continued Significance of the Independent Variables

In the future, these independent variables are likely to be important, but in somewhat different ways than before. In addition to what has already been said about economics and leadership change, one might add that it will probably be a long while before the Soviets have enough economic capacity to spend notable amounts of it on military forces. Potentially, for example, if the country's economic system improves and they face hostile independent Baltic or Central Asian independent countries, the Soviets could conceivably move back to a conventionally oriented posture. To the extent leadership change has an effect on future doctrine, change in top four positions (with the substitution of President for Communist Party head) will probably still be important for doctrine. Military technology developments may also be

important, though not likely as galvanizing as they have sometimes been in the past.

Changes in U.S./NATO doctrine might be important for further Soviet doctrinal considerations. Nevertheless, what has been problematic for the Soviets is that the U.S./NATO relationship has been the vehicle for the principal security threat the Soviets have perceived. If the Warsaw Pact cooperates more closely with NATO or if the Pact disappears as a military organization, it will signify that the U.S./NATO relationship is no longer perceived threatening to the Soviet Union. Similarly, the variable of military tensions in the Sino-Soviet developments was important because it represented the military manifestations of a foreign affairs crisis. If the Sino-Soviet relationship continues to improve, military tensions on the Sino-Soviet border will become an irrelevant point for assessing doctrine change.

To develop an appropriate perspective for future doctrinal development, one would first have to assess the nature and extent of the challenge posed to Soviet security, and then examine the independent variables to understand how these variables would enhance or attenuate this challenge. Hopefully, the background here for interpretation of these variables would provide a useful context for decisionmaking in such a situation.

Implications_for_NATO

This issue of the context for future doctrinal change is central to the issue of the implications of these findings for U.S. and NATO policy. For the reasons noted above, U.S. and NATO policymakers should be prepared to see Soviet doctrine change on a more incremental basis than before and should familiarize themselves with the different ways in which the main Soviet leaders involved in doctrinal decisionmaking approach foreign policy issues. With the greater diversity of views one can now anticipate from the Soviet leadership, the foreign policy concerns which individual Soviet leaders bring to their conceptualization of security policy will be important to understand.

U.S. and NATO leaders should also realize that U.S./NATO doctrine is only one of several factors affecting Soviet doctrine development and that they should not necessarily anticipate a cause-and-effect relationship between U.S./NATO doctrinal developments and Soviet doctrinal change, either in terms of substance or timing. Even during the decades when the Soviets and the Warsaw Pact clearly perceived the U.S. and NATO as a strongly threatening adversaries, the linkages between U.S./NATO doctrine change and Soviet doctrine change were not altogether tight. When the Soviet Union moved in the

mid-50s to a nuclear orientation and in the mid-60s to a conventional policy after previous U.S./NATO moves in those respective directions, there were very good reasons why the Soviets might conceivably have done the same regardless of the U.S./NATO moves. The Soviet shift appeared to be a mirror image, but there are reasons to question whether that metaphor is actually appropriate for those developments. Still, one could make a credible argument that since the Soviets during these years viewed the U.S. and NATO as key adversaries, it is reasonable to expect that the Soviets would be particularly attentive to shifts in U.S./NATO doctrine and would likely respond somehow to those shifts.

In a period when the U.S. and NATO may not be viewed as being as threatening as was earlier the case, one must be especially careful about inferring linkages in U.S./NATO and Soviet doctrine change.c As noted above, one key factor to consider is what the Soviet leadership perceives to be the main threat[s] to the country's security; assessment of Soviet doctrine change would appropriately proceed from that particular point.

Furthermore, as was also mentioned, the importance of factors such as technology advances, leadership change,

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cA significant part of this diminished perception of the U.S./NATO threat is that the Warsaw Pact has recently been dissolving as a military alliance.

Sino-Soviet relations, etc., would vary in importance with regard to whether developments in these areas contributed or not to the perceived level of threat. If U.S. or NATO analysts could determine that the Soviet leaders did not perceive these factors as enhancing the principal threat, those analysts need not take these factors into account in trying to project the future character of Soviet military doctrine.

For example, if Soviets faced continuing low-level violence from a independent Baltic or Central Asian country that had formerly been a U.S.S.R. republic, Soviet military leaders might modify their doctrine to focus more on conventional or guerilla warfare. In such a case, Soviet economic conditions would be important to consider because of the procurement expense for the necessary force posture, and public opinion about such military activity might also be important, lest the government give the impression it might be getting involved in another Afghanistan-like conflict. Developments in U.S./NATO doctrine, changes in the Soviet leadership, or in Sino-Soviet relations might be virtually irrelevant for such decisionmaking.

Comparative foreign policy implications

The Soviet Union is one of the few countries in the world with a well-articulated and -codified military

doctrine.d This doctrine has largely been shaped by elites, and it has largely changed as a result of shifts in elite politics, as those elites have taken account of change in important variables such as their political and military relations with the West, the country's economy and advances in military technology.

Similarly in the U.S.. military plans at the level of decisionmaking that the Soviets would label doctrine have shifted with different foreign policy orientations of Presidents and Secretaries of Defense and State. In these decisionmaking processes, however, these U.S. leaders have had to be responsive to a much broader range of concerns in developing new doctrinal directions. Sometimes those concerns relate to defense issues; sometimes they may even be more closely tied to the kind of political or economic conditions the leader wants to create for the U.S. polity by the time of the next presidential election. At other times, U.S. leaders' doctrinal considerations may be shaped by preferences or limitations sought by European or Asian allies, allies to whose needs U.S. leaders need to be sensitive as part of the political give-and-take of relationships among sovereign entities.

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dHorelick (1974: 193) remarks that ideological regimes historically have seemed to devote a particularly great amount of effort to clarifying and systematizing their military doctrine.

Soviet decisionmakers have generally not had to respond to this breadth of pressures. Soviet decisionmakers who ponder doctrinal issues have certainly dealt with important pressures, but they have not had to balance the multiplicity of pressures their U.S. counterparts have.

Therefore, if the Soviet political system continues to become open, doctrinal decisionmakers will have to deal more regularly with the variety of constraints, resources, and expression of diverse political and foreign policy views that politicians and military thinkers in the West have faced for a long time.

It is also interesting to note that for either superpowers, this variety of considerations will, of course, not be as extensive the considerations in doctrinal decisionmaking necessary for leaders of smaller states. Such leaders often weigh heavily the differential capabilities of possible adversaries of different-sized countries, or they may have to take into account the conflicting preferences of a superpower ally on which they depend for aid.e These considerations would be in addition to ones discussed in this study such as internal leadership change, economics, etc.

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eSee the discussions on military doctrine development in India [Kapur, 1974], France [Kolodziej, 1974], and the Scandinavian countries [Orvik, 1974].

In a comparative sense, then, while Soviet doctrinal decisionmaking in the future will be more complex and probably more stressful, as leaders get used to the pressures of an openly competitive political system, the country's status as a superpower will continue provide its leaders an important margin of flexibility in the formulation of doctrine.

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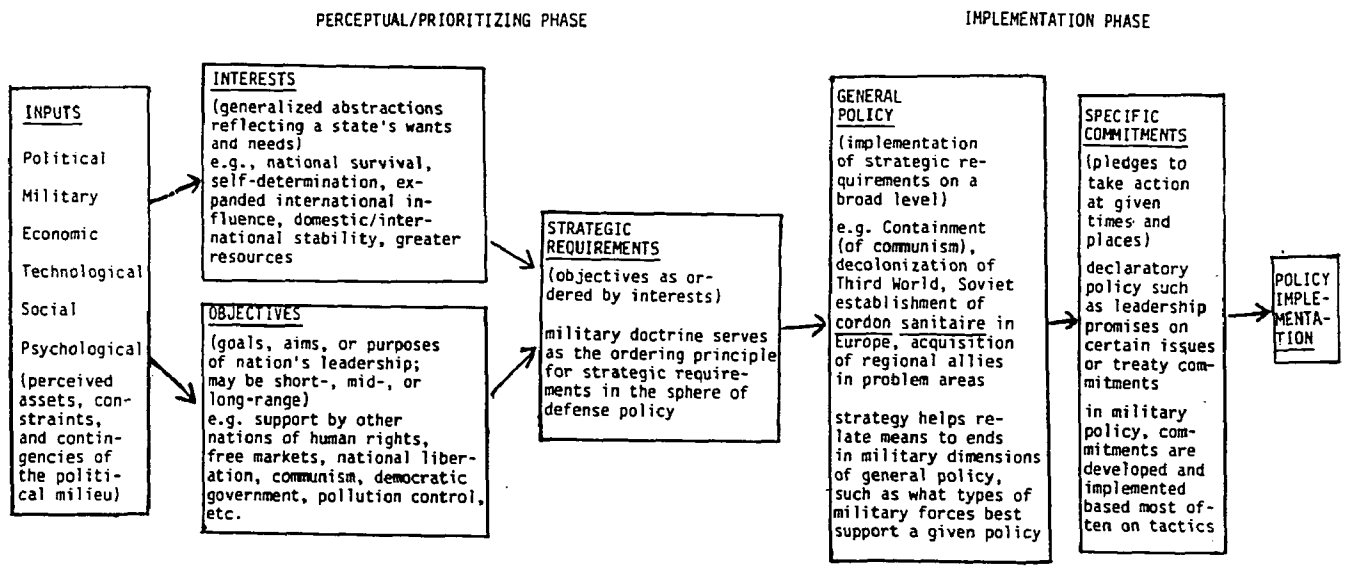
APPENDIX

Table 16.1: Comparison of Reasons for Doctrine Shift Based on the Independent Variables With Reasons Cited By Soviet Officials

Reasons from Independent Variables	Soviet Officials' Reasons
Internal	Internal
Economic constraints (yes; even though unimportant historically)	Economic constraints (yes)
Leadership change (yes)	Leadership change (yes; but not as central as I suggest)
Technology advances (no)	Technology advances (no; but much discussion of perceived threat of SDI--both a military and an economic concern)
External	External
U.S./NATO doctrine change (no) largely a concern about U.S. defense spending)	U.S./NATO doctrine change (yes;
Sino-Soviet tensions (no)	Sino-Soviet tensions (no)

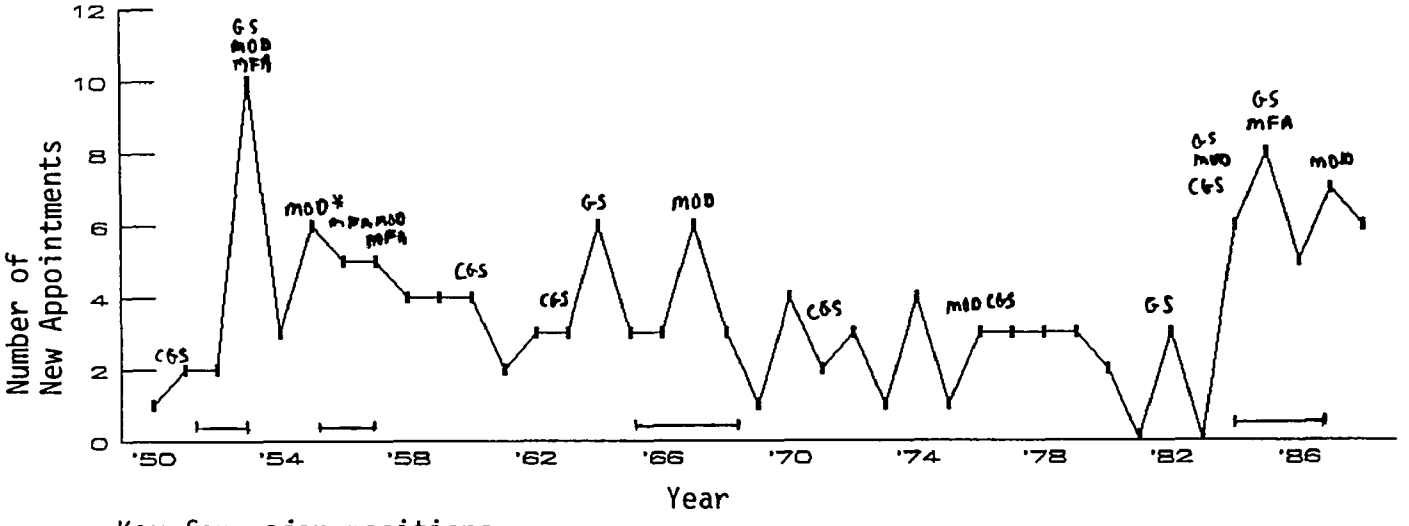
Transition Period		1953-1954	1955-1956	1965-1967	1986-1987	
Dependent Variables	Military Doctrine	Toward Consideration of Nuclear Weapons	Toward Predominance of Nuclear Weapons	Toward Predominance of Conv. Weapons	Toward Mutual Security	Evaluation of Impact
INDEPENDENT VARIABLES — INTERNAL	Leadership Change	X	X	X	X	Major Significance (MS)
						Contributory Significance (CS)
						Negligible or No Significance (NS)
	Technology Advances	X	X			MS
						CS
				X	X	NS
	Economic Constraints				X	MS
						CS
		X	X	X		NS
INDEPENDENT VARIABLES — EXTERNAL	U.S./NATO Doctrine Shift					MS
		X	X	X		CS
					X	NS
	Sino-Soviet Military Tension					MS
						CS
		X	X	X	X	NS

Figure 16.1: Summary of Variables and Their Significance in Doctrine Transistions



Source: Based on Collins (1973: 2)

Figure 16.2: National Security Policy Process Schema



Key for major positions:

GS: General Secretary
MOD: Minister of Defense
MFA: Minister of Foreign Affairs
CGS: Chief of the General Staff

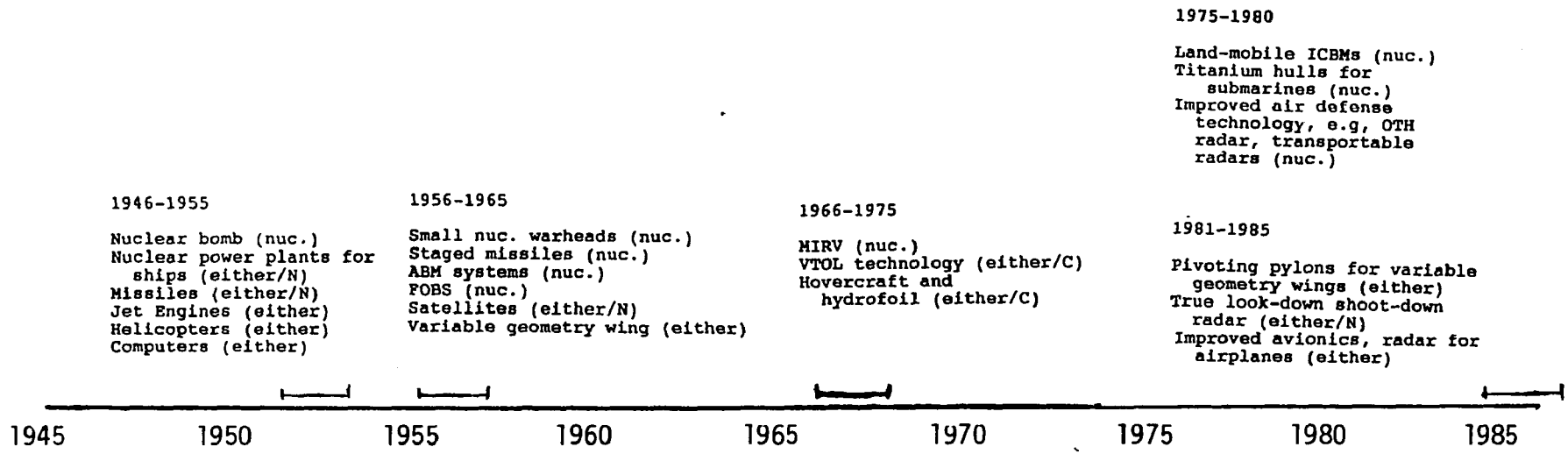
Source: Chapter III, Table 6 (Positions recorded in this Figure are only those tracked in Chapter XIII.

*Although the General Secretaryship did not change hands in 1955, Khrushchev is acknowledged to have consolidated his power significantly with Malenkov's ouster as Chairman of the Council of Ministers.

⊢⊣ = period of doctrine change (in this Figure and in Figures 4-7)

Figure 16.3: Changes in the Soviet Political-Military Leadership, 1950-1989

NB: This chart and the ones following should be viewed next to one another in a column (top of one against bottom of next).



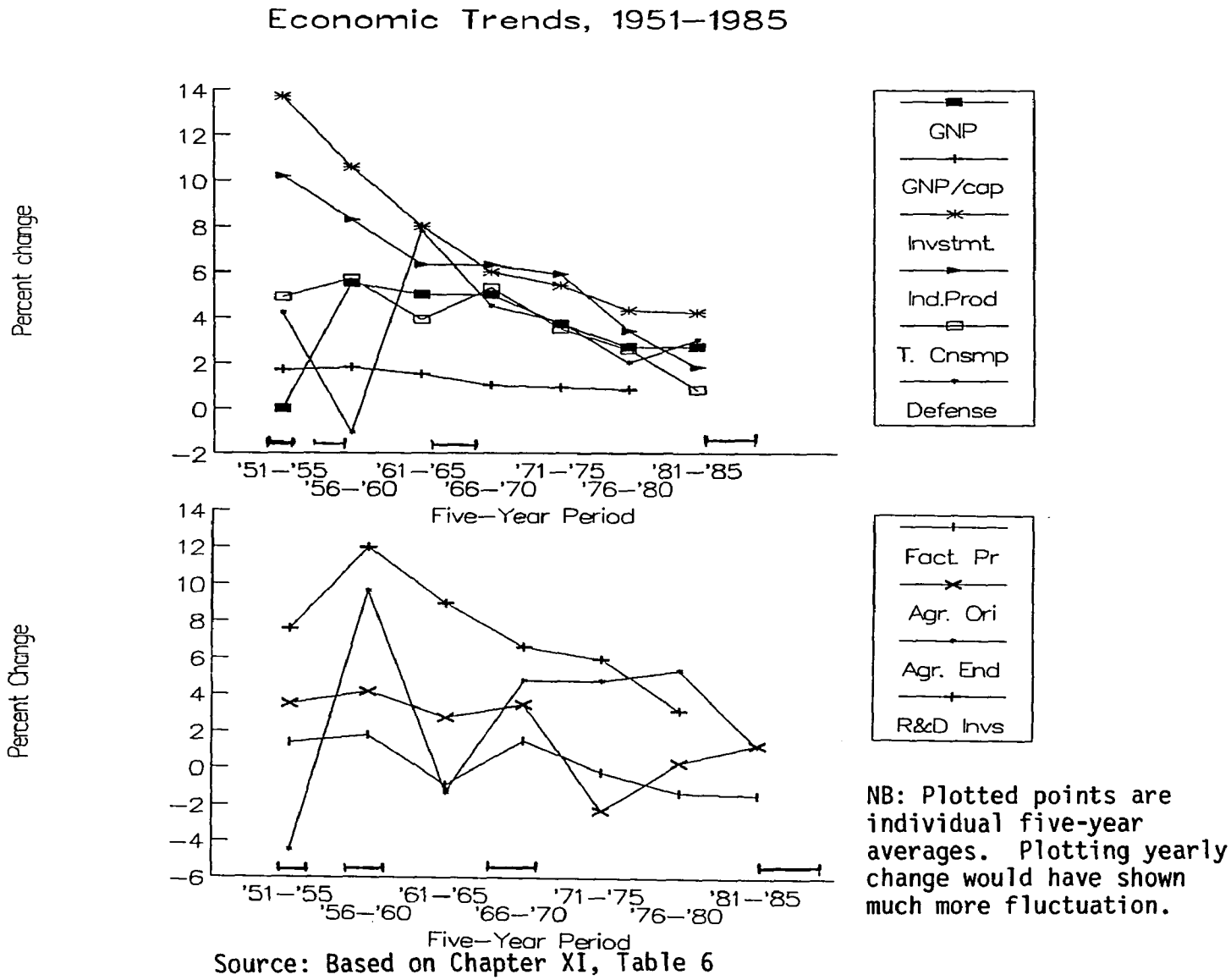
Key

either/N: Primarily nuclear application of technology

either/C: Primarily conventional application of technology

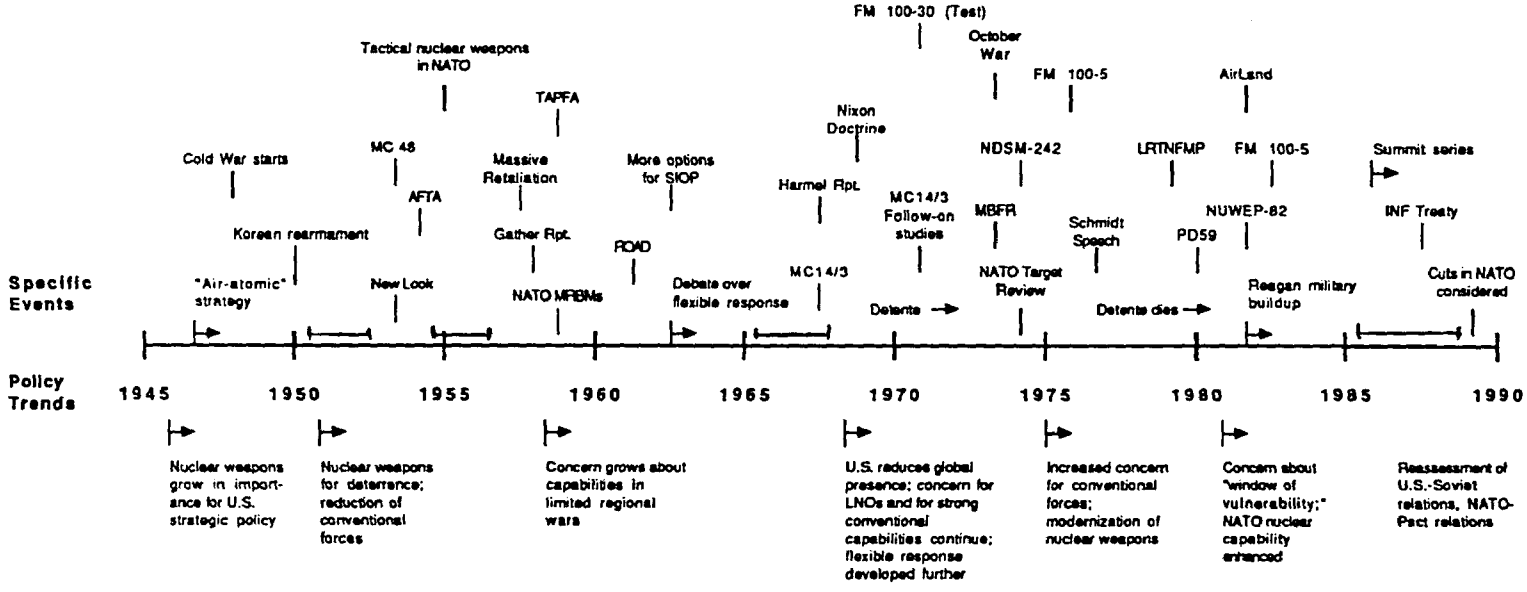
Source: See Chapters IV, XI

Figure 16.4: Major Military Technology Advances



Source: Based on Chapter XI, Table 6

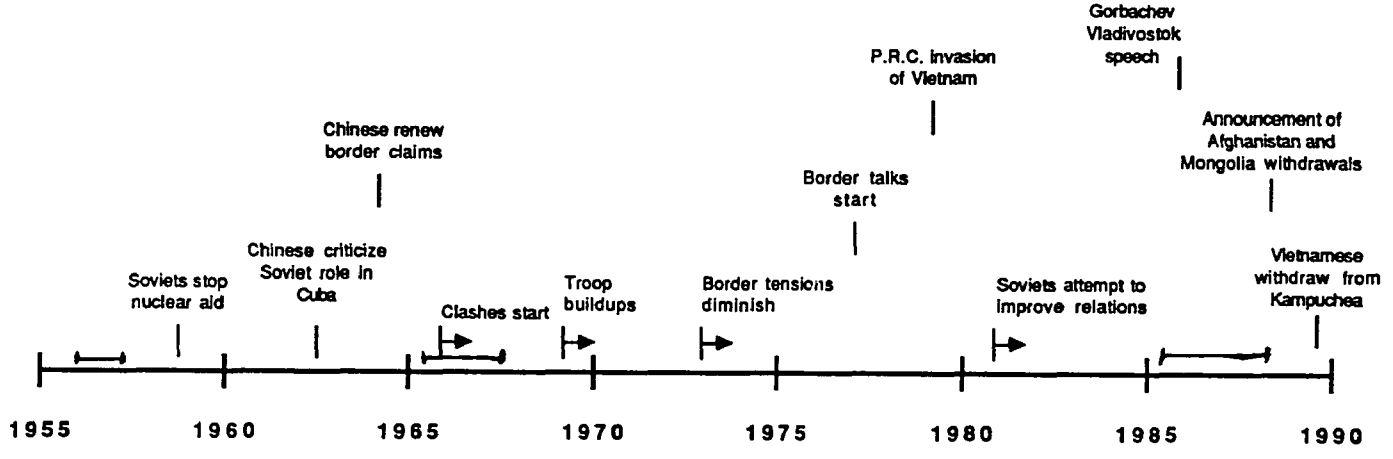
Figure 16.5: Economic Trends, 1951-1985



* These comments are in brackets because they signify shifts in U.S./NATO operational planning rather than changes in doctrine or strategy.

Source: See Chapters VI, XII

Figure 16.6: Major Trends in U.S./NATO Policy



Source: See Chapters VII, XII

Figure 16.7: Sino-Soviet Developments

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