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The Professional Journal of the US Army

August 1982

"The Policy of Russia is changeless . . . Its Methods, its Tactics, Maneuvers may change, but the Polar Star of its Policy—World Domination—is a Fixed Star."

Karl Marx, 1867

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THE SOVIET THREAT

The Army today faces a new era of strategic realities. In the 1950s and 1960s, the United States not only carried most of the military responsibilities of the Western world, but it also possessed the lion's share of the economic power. Its strategic military superiority was unquestioned, and its lead in economic development and technology was awing. By the 1970s, four changes had occurred that created a new strategic context for the post-World War II international order. First, and most important, has been the new arms levels achieved by the Soviet military buildup. Second, a diffusion of economic power has taken place within the world, caused both by the distribution of energy resources, primarily oil, and by the successful economic development in Europe and East Asia. Third, the internal and external (mainly Soviet) threats to vital Western interests have made the Southwest Asia region strategically critical. Finally, the normalization of US-PRC relations has changed the configuration of the East-West strategic and political balance. The developments have created a qualitatively different character for East-West relations in the 1980s and 1990s.

This edition of Military Review addresses the most important of these four changes, the sustained Soviet military buildup. The Soviet Union continues to modernize its armaments, frequently relying on technology transferred from advanced Western economies. The Soviet Armed Forces are adapting their organizational structure to accommodate the demands modern weapons place on mobility, firepower, and C^3I, especially intelligence. In previous decades, we enjoyed a comfortable strategic margin, and we could, without serious risk, pay less attention to Soviet tactics and operations; we can no longer do that. Nor can our combat arms officers leave the task of understanding the Soviet military only to intelligence officers. All Army officers must make this task a key part of their professional education. An enormous unclassified Soviet literature is available, as this edition of Military Review reveals. Therefore, I commend these articles to all officers' attention, not only to know better a potential adversary, but also as a source from which to borrow and adapt ideas about tactics and operational art. The ideological rhetoric of Soviet military literature should not blind us to its richness; it holds much worthy of our close professional scrutiny.

Military Review is to be commended for this edition.

WILLIAM E. ODOM
Major General, USA
ACofS for Intelligence

We solicit your comments on this—our Soviet threat—issue.

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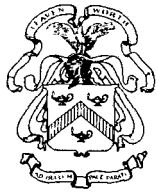
Each month, along with our subscription card, we publish a card asking for your comments. The response has been outstanding in volume.

First of all, our thanks for the bouquets. It is always good to hear when you think we have done particularly well on something. But we also have received, and need to hear, your critical comments too, even when they are in areas we cannot entirely resolve. Those we can resolve help us to set our goals. But all responses from you let us know what you are thinking.

Your comments have been a learning experience for us and are of inestimable value in guiding our future efforts. All comments help us to grow and, we hope, to give you the best magazine we possibly can. We hope you can see the results.

To you—our authors, subscribers, readers—who have taken the time and made the effort to reply, both by letter and by card, we thank you. To those who have not, we hope you will. To all of you, we extend a continuing invitation to *keep those comments coming*!



Articles to Watch For:

Engineer Combat Multipliers for the Maneuver Force

Colonel James R. Whitley, US Army,
Lieutenant Colonel (P) James H. Andrews, US Army,
and Major Michael Diffley, US Army

■

On Omens and Oracles

Colonel Gerald C. Brown, US Army

■

Making Command Selection Work Before and After Command

Lieutenant Colonel (P) David E. K. Cooper, US Army,
and Lieutenant Colonel Gilbert M. F. Brauch Jr., US Army

Over the years, Western analysts have given much thought to the intentions of the USSR. In this article, the author considers conditions facing the USSR today and speculates about strategic objectives it may attempt to achieve by the end of the decade.

Lieutenant Colonel Robert F. Collins, US Army

Soviet Strategic Objectives in the 1980s

WHAT *is* the USSR up to? This question, posed in innumerable ways by political scientists, government officials, media analysts and academicians alike, is currently the single most important question that US policymakers must address in developing a coherent, comprehensive and effective foreign policy.

This is not to imply that answering this question accurately guarantees success in US foreign policy. Obviously, this is not true. However, despite an increasingly apparent trend toward regionalization

and multipolarity in global politics, US-Soviet relations remain the cornerstone of US foreign policy. Consequently, it is worth the effort to examine what the USSR, our quondam partner less than 40 years ago, is doing in the international arena today and identify a number of Soviet strategic objectives for the rest of this decade.

In the quotation on the front cover, Karl Marx articulated the basic tenet of what today is called the "grand design" school of Soviet actions. This school of thought focuses on the idea that all Soviet actions are part of a carefully designed, researched, evaluated and advantageous (to the USSR) "master plan." The final objective for the USSR, according to this view, is a Socialist world led by a political elite centered in Moscow. Specific successes and failures by the USSR in various parts of the world can be accommodated in this view as being only bits in a *patterned* mosaic of Soviet behavior.

Even contradictory actions by the USSR (supporting both opposing factions in a dispute) can be explained by noting that short-term transitory goals must sometimes be sacrificed to broad, long-range objectives. The activist ideology of Marxism-Leninism, uniquely influenced by the Soviet interpretation, is devoted to restructuring a world in its own image. Soviet foreign policy in this view is usually characterized as aggressive, coherent, deliberate, long-range and inimical to US interests. There are no time limits in which the USSR will accomplish its overall plan.

The opposing view to this grand design is found in the "opportunistic/pragmatic" school of Soviet actions. This school focuses on the idea that the USSR acts in a manner at least similar to that of other states in the international arena. The USSR is interested in promoting its interests and will seize opportunities to improve its power position as these situations occur. Rather than follow a well-conceived scheme to achieve its objectives, the USSR attempts to study specific situations. Having weighed the relative costs, risks and benefits, it will then take appropriate action.

This school can also accommodate the view that, in some instances, the USSR simply "falls into situations" with no prior planning or expectations. Proponents of this school will argue that today's increasingly complex political order presents a great number of opportunities for the USSR to "test the waters" in individual countries.

The adherents to this view are likely to argue that the USSR has lost most of its revolutionary zeal, has now achieved a vested interest in world affairs and a degree of stability, and has been giving less importance to ideology in favor of pragmatism. Further, they may argue that the USSR will not make any radical shifts in foreign policy even though new leaders will take over the reins of power, is interested in avoiding nuclear war and views itself as one of two major participating members of the world community. Soviet foreign policy and objectives in this view are usually characterized as opportunistic, pragmatic, reactive, short-range, defensive, flexible, cautious and inimical to US interests, although not quite as inimical as advocates of the grand design school would have us believe. There is no time schedule associated with the pace and implementation of certain programs.

The attempt to identify Soviet strategic objectives in the coming decade compels the analyst to lean more toward the grand design school than the opportunistic school. The analyst must a fortiori buy into a view that by definition presupposes a purpose and direction to Soviet foreign

policy. This, in turn, lends itself to an identification of specific long-range interests and objectives. Unfortunately, neither school by itself fully explains Soviet actions. Compelling and cogent arguments can be made on both sides of this question. Specific examples to add weight to each sides' arguments abound.

Paradoxically, both sides, in some instances, will choose to cite the same example to "prove" their differing views of Soviet actions. Clearly, the analyst must accept elements of both schools of thought to provide the best framework with which to study both specific and general Soviet actions. The critical element that was missing in the past, and that is still missing today, is a clear understanding of Soviet intentions and motives.

By necessity, the Western analyst examines Soviet actions from a Western perspective with his unique biases. Attempts are made to examine issues and objectives from a Soviet perspective or Soviet mind-set by Western analysts, but these attempts generally have not been successful. However, even having realized these limitations, there is value in making the effort to examine Soviet strategic objectives. Hopefully, the analysis clarifies and illuminates both the Soviet and US approaches and rationale on a number of key issues.

Strategic objectives of the USSR are subject to change just as interests of a nation-state are subject to change. It is unwise to consider a nation's strategic objectives divorced from the time period and the conditions under which these objectives are sought. It follows that Soviet objectives and actions must be examined against the larger backdrop of current East-West relations, of the perceived success or failure of previous objectives, of resource constraints and of the Soviet perception of future developments in the world community.

US-Soviet relations are in a period of transition. Detente or at least the Western expectation of what detente should be is moribund. It is not clear whether future great-power relations will be confrontational or conciliatory. A persuasive argument can be made that conditions are "right" now for the USSR to pursue actively a renewed policy of detente with the West and the United States in the immediate future. Conditions that led to a Soviet *démarche* for detente in the late 1960s and early 1970s are similar, in many respects, to conditions today. Clearly, the USSR will pursue those policies associated with detente again only if these policies are perceived to be to its advantage.

Strategic objectives of the USSR are subject to change just as interests of a nation-state are subject to change. It is unwise to consider a nation's strategic objectives divorced from the time period and the conditions under which these objectives are sought.

Reasons generally cited for the Soviet willingness to enter into detente in the late 1960s are:

- The Sino-Soviet split—Moscow had become convinced that the rift was permanent and wanted to hedge its bets against a Sino-American conspiracy.
- The absolute dominance of Leonid I. Brezhnev as the first among equals—a

policy of detente with such explosive potential to disrupt the leadership could be fatal to an unclear hierarchy.

- The faltering Soviet economy—detente appeared to promise an influx of Western technology and economic assistance.
- A perception that Soviet military strength had finally reached parity with US military strength—strategic arms control could now be conducted on a basis other than from a position of inferiority.

The USSR, as well as the United States, had high hopes for the anticipated benefits of this new relationship. Both sides were keenly disappointed.

Today, the USSR might again perceive conditions that demand a softening of its line toward the United States. The USSR, relatively speaking, is less-well-prepared today to pursue a confrontation policy with the United States than it was 10 years ago. The USSR is beset with a number of crises that may be beyond solution. Following are the most important of these, with a brief explanation of each.

The economic crisis. The Soviet economy today, especially the agricultural sector, can, at best, be called a "basket case." In an unprecedented statement from a Soviet leader, Brezhnev declared that agriculture is his country's number one problem. Inefficiency, overregimentation, declining output despite increasing input, waste, overcentralization, a bloated bureaucracy, lack of personal initiative and innovation, a decreasing labor force, increasing inaccessibility of resources, absence of requisite cold-weather extraction technology, absence of computers for information dissemination, complete party control of the economy and the burden of military spending on the economy have all been documented and have led to economic stagnation. It is a problem that can only get worse unless the USSR makes radical changes in its economic system.

Sino-US rapprochement. Despite Soviet efforts, Sino-US ties have markedly increased and improved in the past five years. Even closer Sino-US relations, as well as the realization that the People's Republic of China (PRC) is on the way to modernization, have to be a constant nightmare for Soviet planners.

Troop deployment crisis. The USSR finds itself almost in a "no-win" situation in Afghanistan. Despite the deployment of more than 90,000 troops, the USSR has control of only limited urban areas. The countryside belongs to the indigenous insurgents. There is no easy way out for the USSR and, at the same time, no easy way to prosecute the invasion successfully.

Revolt among Socialist countries. Poland is only "the vanguard of revolt" in the Socialist camp. Even if the workers' movement is brutally suppressed, more revolts will occur in the future. Other Socialist countries have watched developments in Poland with avid interest. By allowing Poland to institute democratic reforms within the country, the USSR must admit the bankruptcy of its entire ideology. There is no provision in Marxism-Leninism for the workers throwing off the chains of socialism. On the other hand, the USSR is likely to suffer harshly in world opinion and economically through various sanctions by Western countries if the decision to invade Poland militarily is carried out. Even prodding Polish authorities to crack down on its citizens runs some risks for the USSR. It is a dangerous situation for the USSR both in the short term and the long term.

Orderly change in government crisis. Totalitarian governments such as the USSR are generally characterized by the lack of a mechanism to ensure the orderly change of government. Brezhnev, despite

reports of his impending death for the past 15 years, is in firm control. However, Brezhnev was 75 years old on 19 December 1981; even "the keeper of truth" cannot live forever. The USSR must cope with a change of leadership without knowing how to handle this potentially destabilizing situation. If the past predicts the future, there will be a lengthy period required to complete an orderly changeover of power. The USSR has traditionally become more inward-looking during these periods.

These considerations would seem to argue for a Soviet desire to seek a period of peaceful, nonthreatening relations with the United States.[1] However, that is a logical assessment from the Western standpoint, not the Soviet standpoint. Analysts in the past have relied on what seems to be a logical, rational method of predicting Soviet actions only to be completely surprised by the course of action taken by the USSR.

... *Soviet objectives and actions must be examined against the larger backdrop of current East-West relations, of the perceived success or failure of previous objectives, of resource constraints and of the Soviet perception of future developments in the world community.*

Just as Soviet strategic objectives are influenced by domestic concerns, strategic objectives are influenced significantly by how a country views its place in the world community. Here, it is useful to examine the Soviet term *sootnosheniye sil*, usually translated as "correlation of forces."[2] This is a macroterm that encompasses much more than just balance of power. Robert Legvold, a senior research fellow on the Council of Foreign Relations, has summarized the Soviet view of correlation of forces as follows:

> *To the Soviet Union it stands for virtually the whole of an era—not merely the growth of Soviet power or the deterioration of the West's, but the vigor of the 'national liberation movement', the elan of the peace movement, the fortunes of the Left in Western Europe and even the militancy of the capitalist trade unions. It is decidedly not the single comparison of power, still less of military power, that many in the West assume.*[3]

In the most authoritative statement on the Soviet view, G. Shakhnazarov has listed four main categories, as well as subelements in each category, that compose some of the factors used in assessing the correlation of forces on a global basis:

- *Economic factors*—per capita gross national product, labor productivity, dynamics of economic growth, level of industrial output, labor technology, resources, manpower skills, number of specialists and level of development of theoretical and applied sciences.
- *Military factors*—quantity and quality of arms, firepower of the armed forces, combat and moral qualities of the soldiers, training of command personnel, forms of organization of the force and their experience in combat, nature of military doctrine and methods followed in strategic, operational art and tactical thinking.
- *Political factors*—breadth of social base of the governmental system, method of organization of the governmental system, level of ability to make operative de-

cisions and the extent and nature of popular support of domestic and foreign policy.

• *International factors*—degree of unity among social systems of other states, quantitative composition of states in the international arena, status and development of international economic and military organizations, status of progressive change in international alliances and position of progressive elements in the political life of individual countries.[4]

Soviet authors admit the difficulty and complexity of making a precise analysis of shifting factors that sometimes behave in an unpredictable manner. The factors are not weighted equally, and it is the responsibility of the Communist Party not only to interpret these factors "scientifically" but to utilize these factors to the best advantage. For the United States to understand Soviet actions, these factors themselves are probably not as important as is an appreciation for how the Soviet leaders view the composite results of these factors.

According to Soviet statements, the correlation of forces has undergone three radical moves since 1917, and each has resulted in a more favorable position for the USSR vis-à-vis the West. The three shifts occurred in 1917 as the Bolshevik Party overthrew the czarist regime; in 1945 as the USSR defeated Nazi Germany and led the formation of new Socialist states; and in 1969-70, the time frame Soviet statements indicate the USSR had finally achieved military parity with the United States. According to the Soviets, these trends are irreversible. In other words, the trend is in the USSR's favor and gradually becoming even more so. This perception has led to Soviet statements such as the following:

To sum it up, the balance of world forces had further shifted in socialism's favor by the early 1970's as evidenced, for example, by the attainment of Soviet-American nuclear and missile parity and the awareness by the USA of its limited possibilities to influence diverse events in the world by means of military forces. This made the US ruling class start a 'reappraisal of values' and acknowledge the need 'to reconcile the reality of competition' between the two systems with the imperative of coexistence. As a result of this reappraisal, the US switched over from the policy of confrontation to a policy of negotiation with the USSR and other socialist countries.[5]

To whatever extent this view is really believed by the Soviet leadership necessarily impacts on how the USSR frames its strategic objectives for the 1980s.

The actions taken to promote Soviet strategic objectives will be more easily identified in the Third World—primarily Africa and Latin America—than any other location in the 1980s. This does not imply that less-developed countries (LDCs) are the highest priority concern for Soviet planners but, rather, that the LDCs offer more opportunities with less constraints and risks for actions by the USSR. The regional focus of the USSR's vital concerns in the coming decade will be the same as in the past decade—Europe, the PRC and the Middle East. Gains in these areas or even the possibility of gains will be more actively sought and resources more willingly expended by Soviet decisionmakers than in any Third World area. However, it will be more difficult to realize gains in Europe, Asia and the Middle East than in the LDCs.

The following list of Soviet strategic objectives is neither comprehensive nor inclusive but, rather, an identification of probable sought-after objectives in the midterm (five to 10 years). The objectives are not mutually exclusive. Indeed,

generally speaking, the objectives are mutually reinforcing.

The priority assigned to each objective will vary as global situations change, precisely because strategies for nation-states are dynamic and subject to change based on a multitude of factors. The view often expressed in the West that USSR policies, programs and objectives are inflexible, resistant to change and driven by a strict adherence to an unchanging ideology cannot be substantiated. The hallmark of Soviet foreign policy the past 10 years has been a willingness to adapt to new situations, a growing sophistication in dealing with both developed and undeveloped countries and an ability to profit from past mistakes and experiences. There is no evidence to indicate the USSR will not continue to operate in this same manner. Major Soviet strategic objectives include:

- Hold Europe hostage.
- Impede PRC modernization efforts.
- Promote Middle Eastern countries' dependence on the USSR to solve Middle Eastern problems.
- Reduce and eliminate the influence of the United States and the West.
- Project the power of the USSR.
- Attain leadership of the Third World.
- Seek leadership of world socialism.
- Seek world hegemony.
- Seek to prevent a nuclear war.
- Develop the capability to feed its population.

The objective of holding Europe hostage has not markedly changed since the end of World War II. Europe continues to receive the major share of Soviet resources spent outside the USSR. This objective encompasses both Eastern and Western Europe. Europe is still looked upon by Soviet leaders as a major prize for its technology and industry and as an area that inevitably will become part of the Soviet empire. A precarious balance of sorts has been achieved in the past decade, but potential flash points (Berlin, Poland, Greece and Turkey) are still present. A host of Soviet actions are designed to achieve this objective in Europe:

- Sponsorship of "peace movements."
- Continuing deployment of *SS20* intermediate-range ballistic missiles.
- Continuing sophistication and modernization of Warsaw Pact forces.
- A demonstrated willingness to use military force in Europe.
- Making Europe the location of the largest network of Soviet intelligence operatives.
- Willingness to support European Communist Parties even though these parties sometimes espouse different programs antithetical to Soviet interests.
- Continuing efforts to tie Europe to economic dependence on the USSR.
- An increasingly active program to portray the USSR as a "seeker of peace" in the world.

The USSR is extremely apprehensive about the PRC's stated goals of modernization by the year 2000. The specter of a two-front war is gradually coming

The [Soviet] objective of holding Europe hostage has not markedly changed since the end of World War II. Europe continues to receive the major share of Soviet resources spent outside the USSR. This objective encompasses both Eastern and Western Europe.

into clearer focus. The USSR, in its view, is now forced to allocate approximately one-fourth of its war-making capability to the PRC border areas. The growing modernization of the PRC, with its allied programs of improving Chinese relations with the United States, Japan and other Asian neighbors, is directly opposed to Soviet interests and objectives.

Besides strictly military concerns, the USSR must also actively compete with the PRC in other vital political and ideological areas—for example, leadership of the Third World, leadership of world socialism and regional leadership in Asia. The USSR will attempt to impede the PRC's modernization in a variety of ways—diplomatically, economically, militarily and politically. The USSR will also be eager to seize any opportunity to exploit a cooling of relations between the PRC and the United States. A warming US-Taiwan relationship might cause the PRC to reappraise its position on resumption of talks with the USSR.

For a number of reasons, the Middle East is assuming greater importance in overall Soviet foreign policy objectives. Various estimates have predicted Soviet energy problems in the coming decade. There is a possibility that the USSR will be a net importer of oil by 1990. This will have serious consequences for USSR programs that supply energy needs to Europe. The Soviet move into Afghanistan with its concomitant costs and benefits has brought the USSR into direct contact with the Middle East. The "fires of Islam" threaten to singe the USSR.

The most effective method to hold Europe hostage would be to turn off the oil spigot from the Persian Gulf. The USSR would like to play a greater role in this particularly complex and troubled region of the world. The ideal outcome for the USSR would be to shape the attitudes of Middle Eastern leaders to the point that these leaders will look to the USSR to assist them in solving regional and local problems. If that objective is achieved—admittedly this has a low possibility of occurring—the USSR will have the capability to deal Western capitalism a death blow by strangulation.

Globally, the USSR is interested in reducing and eliminating the influence of the West and the United States. Ideological considerations of the capitalism-versus-socialism struggle aside, the USSR has definite aims in reducing US/Western influence. These include specific aims in the Third World of denying vital strategic minerals to the West, denying Third World markets to the West, eliminating as much as possible the political influence of the West in Third World countries and undermining the possibilities of negotiated settlements and peaceful changes favorable to the West. In other global areas, reducing Western influence assists the USSR by increasing the possibility of success of other strategic objectives.

The USSR is actively pursuing programs to project its power worldwide. This is best illustrated in the Third World where the USSR has sought forms of local support that would facilitate the projection of global power and prestige. This has primarily involved logistic support (bunkering, repairs and refitting, foodstuffs, and so forth) for naval forces and merchant shipping, overflight and landing rights for naval air and military transport aviation, and commercial air routes and support facilities for *Aeroflot*, Moscow's civil air organization.

Projection of power also substantiates Moscow's claim that it is a true superpower that has global status and global reach. In the Soviet view, military power has been the means through which the USSR has achieved its superpower status. The

military sector more so than any other sector proves the maxim that, for the USSR, "too much is not enough." There is no indication of a change in the USSR view that sees a continuing military buildup and military presence as necessary to achieve Soviet objectives.

The USSR is interested not only in attaining leadership of the Third World, but also in being openly acknowledged as the leader of the Third World by leaders of both developed and undeveloped countries. Several benefits would accrue if this occurs. The USSR will develop a constellation of pro-Soviet Marxist states that, in Moscow's view, will serve as the vanguard for social change throughout the continent; the USSR economic development model and revolutionary model will be validated for use by LDCs; and Moscow will gain resources and develop relationships of economic dependency. This economic dependency would not only create permanent economic ties between the USSR and the Third World, but it would also lend to the strengthening of political ties.

Moscow is actively seeking leadership of world socialism. Under this aegis, Moscow hopes to reduce PRC presence and influence both regionally and globally while discrediting PRC claims to leadership of the Third World. In Moscow's view, the PRC is embarked on an active program of discrediting the USSR and, consequently, is in active competition for control of the LDCs. Part of Moscow's campaign is to attempt to discredit the PRC ideologically and convince the LDCs that Chinese revolutionary and developmental models are inappropriate for developing countries.

Moscow's long-range strategic objective is to seek world hegemony. The ongoing struggle between capitalism and socialism verifies Marxist-Leninist laws predicting the global transition to socialism. Marxism-Leninism is the foundation of the Soviet world view, governs the belief system of the ruling elite and is a framework for perception and interpretation of all matters, foreign and domestic. Temporary setbacks are acceptable, and there is no contradiction between Soviet interests and those of the world revolutionary movement. The move to world socialism is "inevitable" based on "scientific laws," and the USSR will lead and dominate this global movement.[6]

The USSR is actively pursuing programs to project its power worldwide. This is best illustrated in the Third World where the USSR has sought forms of local support that would facilitate the projection of global power and prestige.

Moscow will work actively to prevent a nuclear war. Despite Moscow's nuclear "war-winning" strategy, there is no substantial evidence to indicate Moscow seriously considers the use of nuclear weapons to achieve its objectives. Indeed, nuclear weapons seem to be the only means of warfare the USSR has willingly chosen to avoid in its quest to achieve its objectives. The USSR sees no contradiction in trying to improve relations with the United States while, at the same time, actively providing arms to "wars of national liberation." Despite the fact that Moscow has gone farther than the United

States in planning warfare under nuclear conditions, the USSR is not willing to risk its many gains by resorting to the unknown and unpredictable vagaries of nuclear war.

The USSR has made feeding its people a strategic objective for the 1980s. The agricultural sector in the USSR shows every indication of becoming even more militarized. Claims of a "worker's paradise" ring more hollow each year as the USSR has suffered one disastrous harvest after another. The USSR has become increasingly dependent on foodstuffs from free world economies. The Soviet leadership realizes all of the other strategic objectives may be placed in jeopardy if it cannot feed its population. Consequently, renewed efforts and, if necessary, a change in direction to devote even more resources to agriculture at the expense of *defense spending* are possible in the 1980s. This would be a significant departure for the USSR and underscores the importance of this strategic objective.

Moscow realistically has not set a timetable for fulfillment of these objectives. The priority assigned to each objective, and the resources and efforts devoted to each objective, will vary as situations change. Soviet foreign policies at times will seem to work against some of these objectives. However, the objectives are in place, the USSR has a commitment to long-range goals and world domination is a fixed star as Marx stated. The US/Western policymakers are best served by attempting to understand Soviet objectives and then utilizing this understanding in the decisionmaking process on foreign policy.

NOTES

1 For a persuasive argument that the USSR is now operating from a position of relative weakness and will seek a renewed form of detente see Joseph L. Nogee, *Soviet Foreign Policy in the Early Eighties* Strategic Issues Research Memorandum, US Army War College, Carlisle Barracks, Pa., October 1981

2 For an excellent Western interpretation of the Soviet use of "correlation of forces," see Michael J. Deane "The Soviet Assessment of the Correlation of World Forces: Implications for American Foreign Policy" *Orbis*, Fall 1976

3 Robert Legvold, "The Concept of Power and Security in Soviet History," *Prospects of Soviet Power in the 1980s* Archon Books, Hamden, Conn., 1980, p 9

4 For the Soviet view, see G. Shakhnazarov "On the Problem of the Correlation of Forces," *Kommunist*, February 1974, p 86

5 Trofimenko "From Confrontation to Coexistence," *International Affairs* October 1975, p 38

6 Several ideas on Soviet motives in the Third World are based on unpublished research conducted by Lieutenant Colonel David Twining, one of the Army's most qualified foreign area officers now working for the US Defense Intelligence Agency. For an interesting treatment of Soviet policies in the Third World see William E. Griffith, "Soviet Power and Policies in the Third World: The Case of Africa," *Prospects of Soviet Power in the 1980s*, Archon Books, Hamden, Conn., 1980

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The Principle of Mass in Soviet Tactics Today

from *Review of the Soviet Ground Forces*

Major John G. Hines, US Army

Soviet use of the principle of mass has changed considerably over the past four decades. This article reviews what the Soviets have done previously and what they would be expected to do today. Additionally, the author attempts to clarify areas of confusion among Western observers.

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THE manner in which the Soviets intend to apply the principle of mass in offensive operations on the modern battlefield is frequently misunderstood by Western military tacticians. This can be attributed, in part at least, to their failure to adequately examine what the Soviets themselves say about the subject. Even students of Soviet tactics are tempted to project Western concepts onto Soviet discussions of their own doctrine. More commonly, they tend to automatically apply previously developed and widely accepted Western interpretations to their reading of Soviet doctrine, even when the evidence suggests that such interpretations are partially or completely invalid.

To rectify this shortcoming in an area that is critical to Western defensive planning, unclassified Soviet military writings on those subjects that bear most directly on the Soviet application of the principle of mass at the tactical level have been closely re-examined and the findings presented. Wherever possible, the text has been illustrated with diagrams based upon graphics taken from Soviet textbooks and journals.[1]

To accurately comprehend how the Soviets intend to apply the principle of mass in modern combat, the Western analyst must correctly understand several other concepts central to Soviet offensive tactics. Obviously, it is important to understand the nature and role of force ratios in Soviet offensive planning. However, an accurate understanding of force ratios requires a knowledge of how the Soviets intend to reconcile conflicting requirements which specify that attacking forces must concentrate to break through enemy defenses but, at the same time, remain sufficiently dispersed to avoid wholesale destruction from enemy tactical nuclear strikes.

Echeloning is another important concept, closely related to those already mentioned. It is important to understand how Soviet military planners intend to echelon their forces in offensive operations in order to maximize the combat effectiveness of their attacking formations while again minimizing their vulnerability to enemy nuclear countermeasures. All of these concepts will be examined and explained insofar as they clarify the Soviet concept of mass in offensive tactics.

FORCE RATIOS

During World War II, the Soviet ground forces achieved favorable force ratios as formidable as 17-to-1 in tanks, 10-to-1 in artillery and 4-to-1 in personnel (Figure 1a). After the war, but prior to the introduction of tactical nuclear weapons and the complete mechanization of the Soviet army, Soviet military planners routinely weighted breakthrough sectors of the main attack with force ratios of 3 to 5-to-1 in tanks, 6 to 8-to-1 in artillery and 4 to 5-to-1 in personnel. At the operational level, aggregate numerical advantages of at least 3-to-1 were considered to be necessary for successful breakthrough operations.[2]

The Soviets have certainly not abandoned the principle of building favorable force ratios in selected breakthrough sectors for the purpose of penetrating enemy defenses. However, the manner in which they apply that principle has changed considerably over the past 20 years.[3]

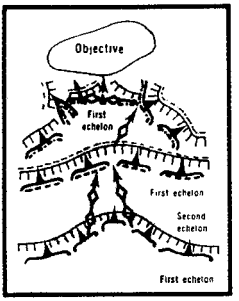
Two major developments in the 1950s brought about a rapid and significant evolution in Soviet tactical offensive doctrine as it pertained to force ratios and the application of massed forces against enemy defenses.[4] First, the introduction

Soviet Offensive Operations, Yesterday and Today

Phase 3
Exploit

Phase 2
Penetrate

Phase 1
Attack



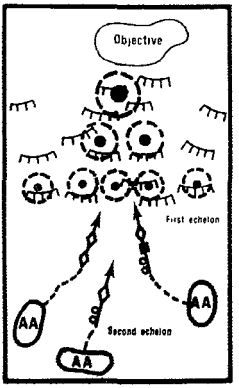
Attack

a. World War II

The "classical breakthrough": overwhelming force is concentrated in the first echelon against the weakest sector of the enemy defenses for the purpose of making and securing a penetration. The second echelon attacks through the penetration toward the enemy reserves, command and control centers and logistic support area.

Phase 2
Exploit (with maneuver forces)

Phase 1
Attack and penetrate with tactical nuclear strikes



Attack

b. Modern Battlefield: Soviets Employ Nuclear Strikes

The Soviets will strike the enemy defenses at their strongest point with tactical nuclear weapons. The first and second echelons will then attack through the resultant gap or gaps.

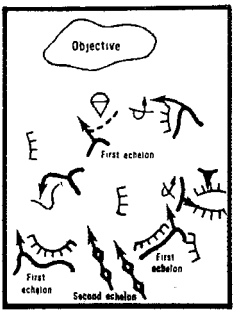
Note. The Soviets might employ the number of nuclear strikes shown here in an operation conducted at army level or higher. A division would probably use three to five strikes in the breakthrough and exploitation.

Phase 4
Exploit

Phase 3
Secure penetration

Phase 2
Attack and block when necessary

Phase 1
Bypass



Bypass

c. Modern Battlefield: Soviets Do Not Employ Nuclear Strikes

When the Soviets do not use nuclear weapons, they will avoid strong enemy defensive positions whenever possible. They will strive to quickly seize and destroy enemy nuclear weapons and warheads, critical command and control centers and logistics stores, and they will attempt to seriously disrupt lines of communication in the enemy rear area. Follow-on echelons will both exploit the penetration as described above and reduce bypassed enemy forces as time and the tactical situation allow.

Note: See legend for identification of symbols

Figure 1

of tactical nuclear weapons into the conduct of modern ground warfare ended forever the Soviet practice of concentrating large, dense formations of men and equipment to force breakthroughs in enemy defenses. Second, the great increase in the mobility of modern armies brought about by their total mechanization both supported and amplified the fluid nature of combat necessitated by the use, or threat of use, of tactical nuclear weapons on the battlefield.

The Soviets adapted their offensive doctrine to these changes by adopting the tactical nuclear strike as their primary instrument for effecting the breakthrough—replacing, in effect, the densely concentrated first-echelon force. The Soviets would then mass nuclear fires instead of troops and equipment and in so doing create excellent conditions for exploitation by forces attacking in relatively dispersed formations.

The increased mobility and armor protection of motorized ground forces would enable the Soviets to better exploit the effects of nuclear strikes while reducing the attacking troops' exposure to nuclear radiation. At the same time, this newly acquired mobility would reduce their vulnerability to enemy weapons by allowing them to move rapidly in open formation and to concentrate quickly and briefly when necessary.

The Nuclear Battlefield— The Soviets Attack Using Tactical Nuclear Weapons

The Soviet approach to tactical nuclear offensive operations is quite simple in both concept and execution. Nuclear strikes are directed against the strongest sector of the enemy's defenses. Troops then conduct a mounted attack through the newly created gaps, moving, if possible, in prebattle[5] or even march formation deep into the enemy rear area and destroying what might remain of his reserves.

Under these conditions, the penetrating force probably would attack in two echelons—primarily to take full advantage of the speed of advance they expect to achieve. The first and second echelons are normally considered to be the breakthrough and exploitation forces respectively. However, when nuclear weapons are used, they would be more accurately described as the initial exploitation force (first echelon) and the follow-on or relief exploitation force (second echelon). In this situation, the first echelon probably would be tank-heavy (Figure 1b).

The Nuclear Battlefield— The Soviets Attack Without Using Tactical Nuclear Weapons

Soviet planning always assumes that the enemy may use tactical nuclear weapons at any time even if the Soviets themselves have decided to attack with conventional weapons only. This situation imposes on the attacker most of the constraints of a nuclear combat environment while allowing him few of its advantages. The attacker still must somehow achieve a force advantage in selected sectors of the enemy defenses in order to force a breakthrough, but he cannot concentrate men and equipment without exposing them to the unacceptable risk of an enemy tactical nuclear strike. To resolve this dilemma, the Soviets were forced to modify their traditional breakthrough tactics in several ways.

- *Bypass.* The only real benefit gained by the attacker who uses only conventional weapons on the nuclear-threatened battlefield is that the enemy must also

avoid concentrating forces. The defender must leave gaps and/or lightly manned sectors between his units. Whenever possible, the Soviet commander will direct his main attack against these undefended or lightly defended areas, thereby achieving a favorable force ratio in the attack sector without massing his own forces.

Soviet planning provides for this by assigning commanders relatively wide attack zones. This practice allows them to select attack sectors within the assigned zones that will allow them to bypass rather than confront strong enemy defensive positions. Figure 1c presents a Soviet concept of how attacking forces might bypass enemy defenses in a nuclear-threatened environment.

- *Concentrate fires, not troops.* When the Soviets must attack well-defended positions, they will attempt to achieve superior combat power in the breakthrough sector by massing fires from artillery and increasing tactical air support rather than by concentrating troops and equipment.[6] The greater ranges and increased mobility of modern artillery weapons enable Soviet artillerymen to mass fires against a target without concentrating the weapons themselves. This capability reduces their vulnerability to a nuclear strike and makes it more difficult for the enemy to determine long in advance where the main attack will be made.

The Soviets are also giving much more attention to the integration of fires from combat helicopters and close-air-support fixed-wing aricraft into their overall fire planning. This again enhances the Soviets' ability to focus a great deal of firepower on a breakthrough sector without putting masses of troops at risk to an enemy nuclear strike. It is the Soviets' goal to substitute massive conventional fires for tactical nuclear strikes when the latter are not employed. In this way, they would seek to maintain the rapid tempo of advance considered to be central to the success of their offensive tactics.

MULTIPLE PENETRATIONS

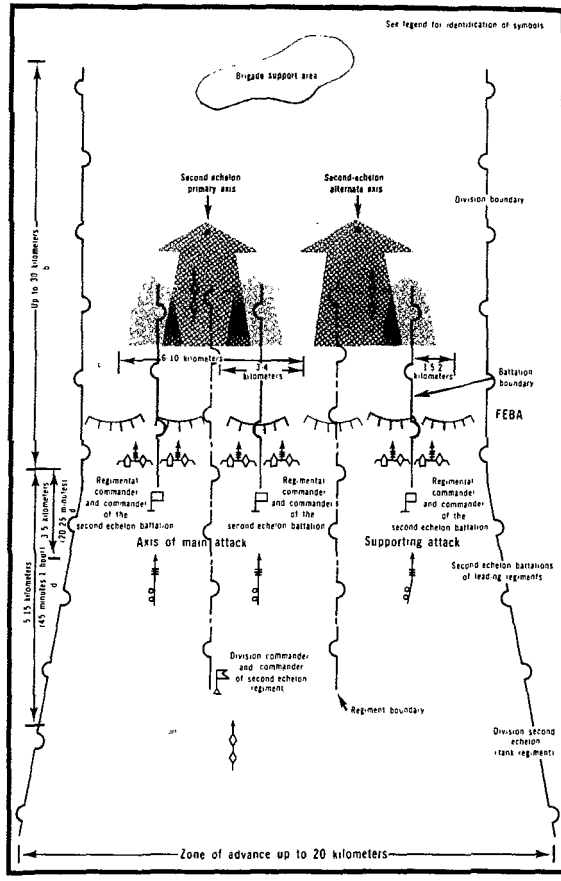
When the Soviets do concentrate forces, they are likely to do so in several locations along the forward edge of the battle area (FEBA) and in relatively small numbers in any one sector. They accomplish this by narrowing the width of any one breakthrough sector to achieve superior force ratios at several points along the FEBA without exposing masses of troops and equipment to a nuclear strike

The Soviet commander is more likely to use this tactic of multiple, narrow penetrations when he has a clear numerical advantage over the enemy across his entire front and the enemy has positioned the bulk of his defending forces forward. When enemy defenses are echeloned in depth, the Soviets will tend to use a larger breakthrough force echeloned in greater depth in order to maintain the momentum of the attack after the initial breakthrough.

Figure 2 illustrates one variant of a motorized rifle division attacking along multiple axes. It should be noted, however, that a division organized for combat in this manner might be located on the axis of the main or supporting attack of a combined arms army. The composition and number of divisions and the amount of artillery moving behind such a first-echelon division might be the only indicator of whether it is leading the main thrust of an army or *front* operation

Given these considerations, the Soviet commander will still strive to achieve as

Division Attack Formation—Multiple Penetrations (Variant)



Notes:
If enemy defenses are very thin and most defending units are emplaced forward, the division would probably attack in one echelon with a battalion in reserve. When attacking in one echelon, the division would attempt to penetrate in at least one additional location along the FEBA (forward edge of the battle area).

a. Alternate axes of advance for the second-echelon regiment. Where and when the second echelon is committed will depend upon the success of first-echelon forces on the main and secondary axes and the manner in which the enemy uses his reserve.

b The depth to which the second echelon will advance will be determined by the depth of the objective rather than by some arbitrarily predetermined rate of advance.

c The attack frontage of a fully equipped, fully manned motorized rifle battalion accompanied by reinforcing tanks and antitank weapons will rarely be less than 1,400 meters. Should the regiment attack in one echelon, the regiment's attack frontage would vary from 4,500 meters to as much as 8,000 meters (allowing for intervals between battalions).

d The time required to commit the second echelon to battle is the primary determinant of the distance at which it will move behind the first-echelon forces. For example, the regimental commander normally must be able to commit his second-echelon battalion into combat within 20-25 minutes from the time he has made the decision. He will establish the following distance based upon his estimation of how the terrain and weather will affect the mobility of the second-echelon force

Figure 2

favorable a force advantage as possible within his attack sector when he must penetrate the enemy defenses without using tactical nuclear weapons. However, for a Western military tactician to correctly evaluate the Soviets' intentions as they prepare to conduct breakthrough operations, it is important that he understand the following concepts:

• *Defining the "force" in force ratio.* When Soviet military writers discuss a favorable force ratio of 3-to-1 in offensive operations, they refer to more than the cumulative number of Soviet first-echelon tanks and troops in a given sector relative to the number of enemy tanks and troops opposing them. It is, instead, a somewhat more sophisticated calculation that refers to the *total force*, to include all maneuver units and ground and air fire support elements, *that a given commander can bring to bear to accomplish his assigned mission* relative to the *total force* that the enemy can bring to bear to oppose him.

Thus, in computing his strength relative to that of the enemy, a Soviet battalion commander will include the artillery and air support he receives from regiment and division. He will also include all of his organic and attached maneuver units, regardless of whether those units are deployed in his own first echelon, second echelon or reserve.

When the attack begins, a battalion commander's actual strength advantage in troops and weapons at the FEBA could be as small as 2-to-1 or even less. The remainder of his force often will not be readily "visible" to defending enemy units. Massive artillery and air strikes will pour down on defensive positions from remote locations, and his second-echelon units might still be in approach march or prebattle[7] formation approaching their line of commitment. Nevertheless, the battalion commander considers this entire force—which may give him an advantage of 3-to-1 or 4-to-1 over the defender—when planning the execution of his mission to penetrate the enemy's first-echelon defenses.

• *Dispersion and concentration.* The dispersion guidelines that the Soviets have established for the nuclear-threatened battlefield require that the distance between subunits[8] should be such that no two subunits of comparable size and type—for example, combat, combat support—could be even partially destroyed by a single tactical nuclear weapon capable of destroying an entire subunit of

that size. (Figures 3a and 3b.)

If necessary, distances may be decreased to the extent that two subunits of similar size and type may suffer partial (but not complete) destruction from such a nuclear strike (Figures 3c and 3d). The Soviet commander may depart from these guidelines and temporarily decrease his unit's dispersion even further to achieve the best possible force advantage in the sector he has selected for the penetration and breakthrough. Even when he does concentrate forces in such a situation, he will rarely, if ever, mass his troops and equipment to the densities that were accepted as doctrine before the advent of tactical nuclear weapons.

• *Method of concentration.* When the Soviets concentrate for a breakthrough, they do so for as brief a time as possible. Units approach the line of attack in the selected breakthrough sector from dispersed positions, timing their arrival so that they can immediately join in a coordinated attack when they have achieved maximum concentration. Whenever pos-

Soviet Dispersion Guidelines—Nuclear-Threatened Battlefield

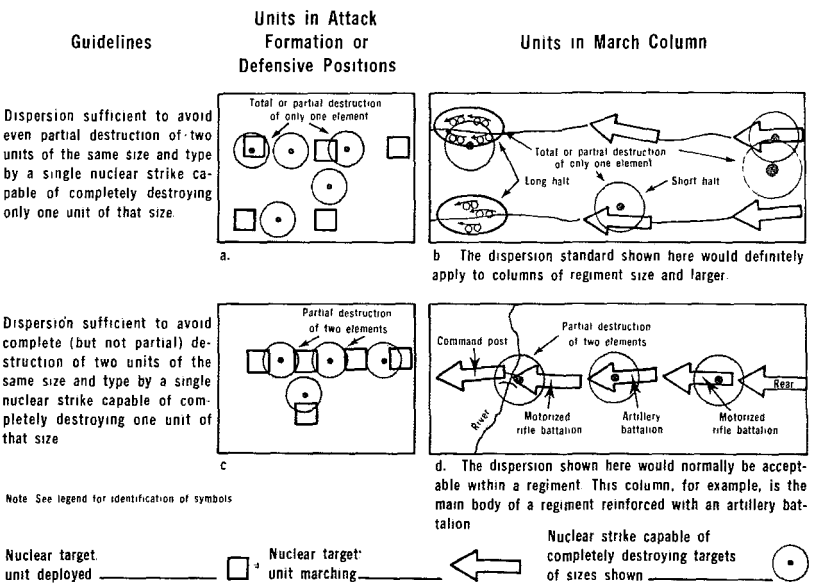
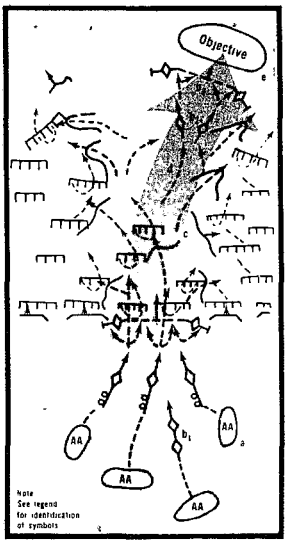


Figure 3

Tactical or Operational Breakthrough



Notes:

a. The dispersion of the assembly areas and dispersion within each assembly area will normally be consistent with the guidelines shown in Figure 3.

b The second-echelon force is likely to be a tank-heavy unit when the Soviets plan to attack without using tactical nuclear weapons. Ideally, this unit will move in approach march formation some distance behind the first echelon in the main direction of attack and will deploy into prebattle formation (two columns abreast—see b_2 at top of diagram) as it enters the penetration. The unit will march through the penetration in prebattle formation and deploy into attack formation (line formation) as it approaches the planned line of attack in front of its own objective in the enemy rear (b_3). The second echelon may deploy into attack formation earlier or change its direction if the first echelon fails to achieve the penetration as planned. It might also be required to fight a meeting engagement if the enemy is able to mount a counterattack.

c First-echelon units must make the penetration. To do this, each unit within the first echelon is normally echeloned within itself and must accomplish its own immediate and subsequent missions.

d First-echelon maneuver and support elements that remain combat effective and are available after making the penetration are integrated into the second-echelon force in a support or reserve role.

e. The extent to which the second-echelon forces deploy upon reaching the objective will depend, in part, upon the strength of the enemy's defenses in the rear area. If the enemy is poorly prepared, then the second echelon may march over the objective in prebattle formation.

Figure 4

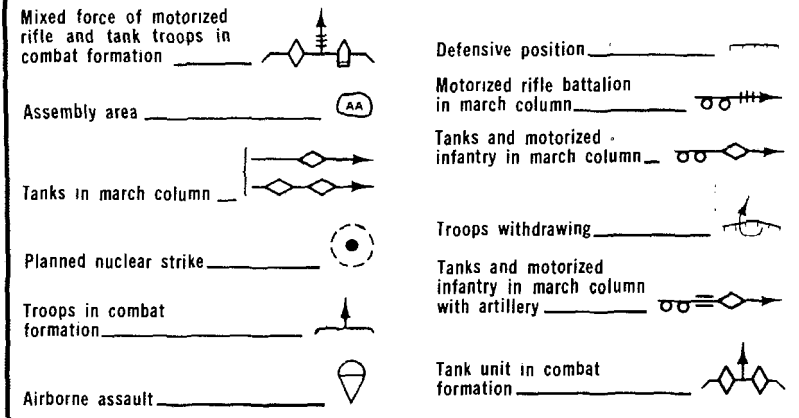
sible, this line of attack (sector of maximum concentration) is located close enough to the enemy's defensive positions to deny him sufficient time to strike the attacking force with a nuclear weapon before its detonation would endanger the defenders themselves. Following a successful penetration, the attackers disperse again in the enemy rear area as quickly as the tactical situation will allow (Figure 4).

• *Echeloning—dispersion of depth and speed.* Soviet echeloning practices allow the Soviet commander to disperse his unit in depth while enabling him to rapidly apply a sizable part of his force where and when he wants it, based upon the developing tactical situation. During the attack, follow-on echelons remain in fast-moving maneuverable march or prebattle formations several minutes behind the leading echelon.[9]

If the first echelon has adequately secured a sizable penetration of the enemy's defenses, the second echelon will move in prebattle formation or perhaps approach march formation through the penetration and will not deploy into combat formation until it is 1,000 to 300 meters from the defensive positions of the enemy second echelon or reserves.[10] The commander always has the option of applying the com-

Legend:

Solid black symbols on exercises indicate Warsaw Pact forces.
Shaded symbols indicate opposing forces.



bat power of his second-echelon force where he perceives the enemy to be most vulnerable—even if it means that he must maneuver them outside of the planned breakthrough sector. Figure 4 portrays a breakthrough operation that illustrates many of these principles.

CONCLUSION

The way in which the Soviets apply the principle of mass has changed considerably over the past 40 years. The Soviet use of mass in today's offensive operations is largely controlled by the threat of tactical nuclear weapons on the battlefield. This factor, combined with the greatly increased mobility of modern weapons system and combat forces, has drastically changed the nature and appearance of Soviet offensive operations, especially in their effect on the density and speed of attacking formations.

Western commanders facing a Soviet breakthrough operation will still see elements of Soviet battalions, regiments and even divisions concentrate for an attack, possibly even to the extent necessary to achieve force ratios of 3-to-1 or 4-to-1. Certainly, the sheer numbers of forces that the Soviets can mass is awesome and has engendered an equally awesome image in the minds of many Western tacticians. Much of what is written in Western military literature implies a scenario in which large, dense formations of troops, tanks and artillery swarm into an attack zone at a great distance from the FEBA.

They subsequently pour down a long, narrow breakthrough corridor in wave after wave of men and machines marching abreast into a "battle of attrition" against well-prepared defenses.

In reality, when the Soviets do not use tactical nuclear weapons, they will try to bypass rather than assault strong defenses. Soviet commanders will rarely, if ever, sacrifice dispersion for concentration on a large scale and, when they do concentrate, it will only be briefly. They will tend to disperse their units in depth and to exploit the flexibility inherent in their echeloning practices. As a consequence, it could very well be that a Soviet force "concentrating" for a breakthrough may not appear to be such to the defender until the attack is already underway.

In planning for defense against Soviet offensive tactics, Western tacticians must seek to achieve an accurate picture of the Soviet perception of the demands and "opportunities" of modern combat. Western military planners need to be especially attentive to changes in the way in which the Soviets intend to mass forces in offensive operations. It appears that Western perceptions of Soviet tactical thinking in this area are changing much more slowly than Soviet thinking itself. As a consequence of this apparent discrepancy between Western perception and Soviet reality, Western ground forces might find themselves prepared with defensive tactics that are inappropriate for the type of Warsaw Pact offensive they will actually encounter.

NOTES

1 The author has used the original Russian text of *Tactics* (*Taktika*) edited by V G Reznichenko Military Publishing House of the Ministry of Defense of the USSR Moscow USSR 1966 and other Soviet books and articles There are several misleading errors in the machine translation of *Tactics* that is available through the Defense Documentation Center

2 "Operations" are conducted by armies and *fronts*

3 The authors of *Tactics* state that combat experience has shown that a two- or three-to-one advantage over the defender is completely adequate for successful accomplishment of the (offensive) combat mission even when a nuclear strike is not used

4 These changes were refined in the early 1960s and were eventually formulated in *Taktika*, *op cit* Improvements in antitank guided missile technology and infantry fighting vehicles have caused further refinements since *Taktika* was published

5 In prebattle formation a battalion is marching in company or platoon columns and a regiment is marching in battalion or company columns

6 The Western press has cited reputable sources who indicate that the Soviets are augmenting each tank regiment with tube artillery units and perhaps multiple-rocket launchers This would be consistent with the current trend in the Soviet ground forces to increase the amount of conventional artillery available to maneuver unit commanders

7 A company in prebattle formation is marching in platoon columns

8 Subunit (*podrazdeleniye*) in the way in which it is used here would normally refer to a unit of battalion size and smaller

9 See Figure 2 for examples of time considerations

10 The exact distance would depend upon the terrain and the extent of the enemy's defensive preparations

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The stereotypical Soviet commander, as seen in the West, is one who rigidly conforms to his assigned mission regardless of the conditions actually encountered on the battlefield. The author questions the wisdom and validity of such an assumption.

ONE of the least understood features of Soviet ground forces tactics is flexibility. Many of us are convinced that Soviet commanders are inflexible and rigidly adhere to "the plan" regardless of changes in the battlefield situation. Many of us believe that a society as dogmatic as the Soviet cannot produce military leaders who can think on their feet and effectively react to the demands of a rapidly changing battlefield. An abundance of Western military literature supports and perpetuates beliefs such as these.

The words in the title of this article, "*Ne Po Shablonu*," are a transliteration of a Russian phrase encountered in Soviet military writings. In English, it means not by pattern or not by stereotype.

The phrase is used most often in writings on tactics, weapons firing and field exercises to criticize commanders who maneuver their forces or conduct training in a predictable, unimaginative manner.

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Ne Po Shablonu: Soviet Tactical Flexibility

Such conduct, say the critics, does not incorporate the realism of modern combat. Accomplishment of the task by rigid adherence to a scenario is apparently not good enough. Commanders are urged to display creativity and to train themselves and their troops to react to situational contingencies.

Is this, by itself, significant? Can we attribute an element of flexibility to Soviet military art based on proclaimed condemnation of rigidity in thought and action? Probably not. Soviet military writers often focus attention on problem areas. A wealth of articles on the virtues of military discipline, for example, could mean there is a rash of disciplinary problems in the ranks. An above-average number of articles praising initiative could indicate a perceived weakness in leadership.

The mere fact that a topic is discussed, however, demonstrates that it is at least recognized. If it is a problem area or a perceived weakness, it is not likely that the Soviets will sit back and do nothing about it. *Ne po shablonu* has been around for some time. It is not likely to have been ignored. It is also, for us, one of several indicators we can use to reach a better understanding of Soviet tactics.

Perceptions

One reason why we perceive Soviet tactics to be rigid is that we have allowed ourselves to be overly and incorrectly influenced by history, especially "the way they did it in World War II." We envision peasant-like soldiers who fight tenaciously, who endure inhuman suffering, but who are not too bright and are driven by herd instincts and brute force.

We see Soviet officers who are dull and unimaginative, and who doggedly lead their troops in massive meat-grinder attacks. Most importantly, we see a thing called "breakthrough." However, the Soviet army of the 1980s, to include its organization, equipment, tactics and people, is far removed from the Red army of the 1940s.

The word breakthrough is particularly responsible for our perception of Soviet tactical rigidity If asked to name the types of Soviet ground forces offensive combat, most US Army officers would probably say, "meeting engagement, breakthrough and pursuit." They would say this because this is what they were taught in their service schools, and this is what they read in many of our "How to Fight" field manuals. And when they say breakthrough, they envision Soviet troops and weapons, shoulder-to-shoulder and hub-to-hub, massed across a narrow zone of attack to bludgeon their way through enemy defenses.

There are several reasons for this. First, the Soviets did it in World War II, and it worked. They never throw anything away, right? Second, the Soviets enjoy tremendous numerical advantages in ground forces. It is tempting and convenient to translate mass in fighting potential to mass in tactics. Third, breakthrough is nice and tidy, all in one box and predictably arrayed. In concept at least it is "manageable."

For unknown reasons, breakthough has been included for many years in our version of the categorization of Soviet combat action. This has led to the delusion that the most probable type of Soviet offensive action, other than perhaps the celebrated meeting engagement, would be a ponderous, predictable, heavily massed "breakthrough attack." Why this myth has been perpetuated is difficult to understand, especially since breakthrough, as a cate-

gory or type of combat action, does not even exist in the Soviet categorization.

The present Soviet categorization is shown in the accompanying figure.[1] Notice there is no breakthrough.[2]

What does categorization have to do with flexibility? Besides giving us the basis from which any examination of Soviet tactics must begin, it shows us that breakthrough (and its associated mentality) is not honored by its own hierarchical niche. By giving breakthrough a niche in our own version of the categorization, we have obstructed our understanding of Soviet tactics. Our fixation with breakthrough is greatly responsible for our perception of Soviet inflexibility.

If breakthrough is not a Soviet category or type of combat action, what is it? There is a Russian word, *proryv*, a noun, which may be translated as breach, break, breakthrough or penetration. Most often, it has been translated as breakthrough, and this has sometimes been correct. When discussing Soviet operations (*front* and army level), breakthrough is the best translation. At tactical level (division and lower), a better translation is penetration.

At either level, *proryv* is a mission rather than a method, an end versus a means. In the military sense, *proryv* is that something achieved when an attacker succeeds in punching through a prepared enemy defense.[3] Rather than being a category or type of offensive combat, *proryv* is, instead, the *result* of a successful attack against a defending enemy.

At the operational level, the achievement of a *proryv* would be a likely mission of an army participating in a *front* offensive. Within that army, at the tactical level, the perspective would be different. From the point of view of the commander of a first-echelon division in that army, his division would not be conducting a breakthrough attack (our term), but an attack against a defending enemy (his term).

This distinction in terminology may appear, on the surface, to be a splitting of hairs. Would it really matter to our *TOW*

Categories of Soviet Combat Action

Offense	Defense
Attack against a defending enemy	Hasty defense
• Attack from the march (preferred)	Prepared defense
• Attack from a position in direct contact	Withdrawal
Meeting engagement (both sides on offense)	
Pursuit (enemy is withdrawing)	

gunner in our covering force what *they* call what *they* are doing? It might because the outcome of his fight depends, a great deal, on how well his commander understands what is happening on the other side. The key to such understanding is in the terminology. In between the two well-publicized extremes of meeting engagement and breakthrough (our terms) lies a spectrum of other options known as attack against a defending enemy.

At the tactical level, attacking Soviet forces would be attempting to achieve penetration. If the enemy defenses are not well-prepared in depth, such as could be encountered in NATO, the Soviets can do something other than punch their way through with the rigid mass we associate with breakthrough.

For many years, at least since Major General V. G. Reznichenko's *Taktika* of 1966, the Soviets have been saying that mass on a nuclear battlefield is to be achieved by massed fires rather than by massed troops. Holes are to be blown in enemy defenses by massed nuclear and conventional fires for exploitation by rapidly massed and subsequently dispersed maneuver units. In other words, the maneuver plan is to be subordinate to the fire plan. On a battlefield that is non-nuclear but nuclear-scared, they could not achieve mass through nuclear fires, but would be hesitant to mass troops because of the potential nuclear threat.

How would a Soviet division commander conducting an attack under such a circumstance view the situation before him? His goal is to carry the battle swiftly and violently into the enemy rear. He cannot use nuclear weapons to blast a hole in enemy positions and is reluctant to subject his forces to the threat of enemy weapons of mass destruction.

Moreover, if he is opposing NATO, he is probably faced with enemy defenses that are less than deep, are not well-prepared by his standards and exhibit exploitable weaker points. Assuming this division commander even has some reasoning ability (it is nonsensical to assume he has less than that for which we give ourselves credit), he would likely keep his forces dispersed, probe for those weaker points, gain footholds where possible and exploit the best opportunity to drive into the enemy rear

Requirements

To do this, the division commander would have to deploy reconnaissance and maneuver elements forward to locate weak points and develop penetration where possible. He would also need to keep enough maneuver force in his rear to exploit the most promising probe or penetration.

The division's first-echelon regiments, dispersed and attacking on several axes, would have the job of probing and penetrating, while the second-echelon force would be held in readiness to strike on the most opportune axis. Rather than being committed on a predetermined axis at a predetermined time, the combat power of the second-echelon forces would be applied by the commander where and when it could best contribute to success. But then this would require a certain amount of flexibility on the part of Soviet tactical leaders and their troops.

The element of flexibility has been inherent to stated Soviet doctrine for at least 15 years. Either we have not seen it or refused to believe it. Reznichenko (1966), A. A. Sidorenko (1970) and a host of other Soviet military writers and theoreticians since them have emphasized the need for:

- Rapid concentration and dispersal of combat power on a rapidly changing battlefield.
- The rejection of a breakthrough achieved by massed troops.
- Attacking on multiple axes and the lack of a continuous front.
- The exploitation of weak points in an enemy defense.
- The swift transfer of combat power from one point on the battlefield to another.
- Speed in the attack.
- Independent action by commanders.
- Carrying the battle deeply into the enemy rear

This is not descriptive of a rigid attack doctrine, but of one that is mobile and flexible.

Preconceptions

We have not recognized a flexible element in Soviet tactics because we continue to embrace a neat, manageable concept of breakthrough. In it, Soviet units and formations are rigidly arrayed in space and time. We pretend to understand the principles of Soviet echelonment, but we continue to portray "two up and two back" with second-echelon units committed on the axis of the first-echelon unit they follow, when that first-echelon unit is chewed up, or when some arbitrary period of time has elapsed.

The result is a Soviet force that follows a linear pattern, is predictable and easily quantified, and is easily fed into computers. We even go so far as to develop doctrine of our own based on the assumption that the Soviets will be so kind-as to make it easy for us.

They are not that dumb. Soviet officers today are too well-educated and trained to be that consistently artless. The great majority of them are career professionals and graduates of branch schools where they received a college education plus intensive training in their branch specialties. They do not attend an "officer basic course" after commissioning because they spend three or four years learning branch skills before commissioning. They belong to a society in which education is highly revered and diligently pursued.

Though their world outlook is warped by a lifetime of manipulated information, half-truths and political dogma, they are neither ignorant nor incapable of professional military judgment. It is true that the nature of Soviet society does not encourage free thought and action. But, on the other hand, it is ridiculous to believe that it creates a caste of military lemmings who blindly adhere to a plan regardless of failure or opportunity. With regard to military skill, the Soviet officer today is probably just as capable of observation, analysis and decisionmaking as is his Western counterpart.

Let us return to the Soviet division commander and his postulated concept of attack. Even if we are ready to allow his rational thought and action, we are still faced with violations, in his concept, of some of our basic beliefs of Soviet tactical doctrine. Most of these have to do with our perceptions of Soviet missions and echelonment. There is not much problem with accepting a first echelon that attacks across a wider frontage on multiple axes to achieve penetration. We might, however, have trouble accepting a second echelon that does not have a predetermined, fixed role to play.

The traditional difference between a second-echelon force and a reserve force has been in mission. Second echelons are supposed to have assigned missions; reserves have none and are meant to be

contingency forces. In Soviet military writings, there appears to have been a melding, or at least an obscuration of distinction, between a second echelon and a reserve.

It is common to see the Russian phrase for "second echelon (reserve)," implying an overlap or convergence of function between the two elements. This probably means that the second echelon has taken on more of a contingency role. Rather than entering the fight with a predetermined, "pile on" notion of where and when follow-on forces will be committed, the commander waits until the first echelon develops the fight, then commits his follow-on forces dependent on the situation.

In other words, commitment of the second echelon is not automatic in space or time. Neither need it be automatic in direction.[4] Terrain permitting, it could be committed in any direction, not just in the direction it might be observed moving prior to commitment. A second-echelon unit moving on the same axis as a preceding first-echelon unit could be committed on that axis or any other axis. It may have an on-call mission on its axis of movement or on an adjacent axis. It could also be dispersed laterally and advance in a wide zone encompassing several axes.

Unlike our templates, by which Soviet second-echelon forces are disposed at fixed distances and follow an attack along axes of first-echelon forces at predetermined times or after achievement of certain objectives, battlefield reality would be more fluid and less hierarchical. This is particularly true of Soviet tactical mis-

With regard to military skill, the Soviet officer today is probably just as capable of observation, analysis and decisionmaking as is his Western counterpart

sions. It should not be automatically assumed, for example, that first-echelon regiments seize the parent division's immediate objective and second-echelon forces seize the division's subsequent objective. This may occur, of course, but not necessarily *pro forma.*

Priorities

For one thing, there is no Soviet tradition of stopping on and "consolidating" objectives in the US tactical sense. At subunit (battalion and lower) level, when "organized" enemy resistance has ceased on an immediate objective, a mounted attack into the depths of enemy defenses is to be undertaken immediately, without pause.[5] Carrying the battle swiftly and violently to the enemy rear is more important than adhering to a hierarchy of objectives.

What this means is that first-echelon forces would not automatically stop on immediate objectives so that second-echelon forces could continue to attack to seize subsequent objectives. First-echelon forces can be expected to continue the attack as long as they are combat capable. If the first-echelon battalions of a regiment are enjoying success and are capable of accomplishing both the immediate and subsequent objectives of the regiment, it is possible that the regiment's second-echelon battalions might not be committed regardless of any preassigned mission. The accomplishment of subsequent missions by follow-on forces is probably viewed as normal but not absolute.

The usual two up and two back form of Soviet echelonment so often seen in our templates is also not absolute. A division conducting an attack on multiple axes would need a heavier first echelon. It could have three regiments in its first echelon to probe, penetrate and carry the attack as far as possible. The division's second echelon would be of regimental size and disposed in a manner that would best influence the battle. As it is on our side, battlefield arrays on the Soviet side are likely to be varied according to the situation. They could be two up and two back, three up and one back, three and one-half up and one-half back or any combination of one, two or three battle lines or echelons.

Soviet organization for combat and attack formations are, by necessity, ruled by the factors mission, enemy, terrain, troops and time. Terrain plays a dominant role. Open terrain permits more dispersion and affords more axes of attack. Restrictive terrain limits the number of axes. The attack formation used would be a synthesis of doctrinal principles and such variables.

There is also no absolute link between the Soviets' initial attack formation and the conduct of the attack. The array would change based on variables arising during the attack. Adjustment of combat formation and the rapid shifting of combat power is a common topic in Soviet writings.

Today even more favourable conditions exist for shifting efforts from one direction to another, and a skillful commander can exploit them to the fullest. By shifting his efforts, the attacker can build up superior forces, hold the initiative and cope rapidly with all the various tasks that suddenly arise on the battlefield. The need to undertake manoeuvre can be established by assessing the situation, and, more specifically, by analysing the enemy position and terrain. The attacker himself may prepare the ground for manoeuvre in the course of the offensive, for example, by simulating concentration of forces in a given sector in

the hope that the enemy, upon detecting this, will bring up his reserves, allowing the attacker in the meantime to perform manoeuvre and strike from another direction which offers the best prospects. . . . A second echelon (general reserve) provides the best conditions for shifting efforts from one direction to another, making it unnecessary to involve the forward-echelon troops already in action. . . . The commander keeps close watch on the development of the attack, deciding whether to commit the second echelon or to change its direction so as to have it as close as possible to the forward-echelon troops at the moment it is needed most.[6]

The fully mechanized Soviet ground forces are very well-suited to the demands of a rapidly changing, mobile battlefield. The ongoing program of equipment expansion and reorganization in Soviet ground forces, including the Group of Soviet Forces in Germany, increases their capability for swift, effective, fluid combat even more. The addition of an organic artillery battalion to tank regiments of tank and motorized rifle divisions and the expansion of the motorized rifle company to a battalion with tank regiments of tank divisions[7] not only increases firepower. It also increases the ability to operate with more autonomy as a more versatile, combined arms force capable of a greater variety of missions. These improvements increase the capacity for both tactical and operational flexibility.

The degree of flexibility demonstrated by Soviet ground forces probably increases with the size of the force and the rank of the commander involved. Tactics at subunit level, at least at platoon and company level, are likely to be limited to well-rehearsed, conditioned responses or battle drills. It is probably at regimental level where any real tactical flexibility occurs. The regiment is the smallest, basic, fully combined arms force capable of semi-independent action. It contains tank, motorized rifle, antitank, artillery, reconnaissance, engineer, chemical and other support subunits.

Commanders' Roles

While combat subunits might react to orders of the regimental (or battalion) commander with a drilled response, the sum total of these actions need not manifest itself as a rigid, predictable whole, but as an orchestration of numerous, well-rehearsed, lower level actions tailored to the situation at hand. Battle drills at subunit level should be viewed as a tactical asset rather than as a weakness. The regimental commander *knows* what his subunits will do. The challenge facing him, of course, is bringing it all together in proper combination of reliability and flexibility to achieve success in a rapidly changing environment.

The most threatening aspect of an element of flexibility in Soviet tactics is that we have not been trained or conditioned to deal with it. What does a US commander do when faced with multiple, sizable penetrations, none of which is an evident main attack?

The commander of a US brigade being attacked by a Soviet division could find himself confronted with two or three regimental-sized penetrations, each of which threatens the integrity of the brigade's main battle area. In order to maintain integrity, the US brigade commander could be forced to commit his reserve even before the Soviet commander decides which of his penetrations is to be his main attack. The Soviet commander would have achieved a highly touted goal—that of forestalling the enemy.

There are bound to be differences between what the Soviets say they do, or should do, and what they can do. We can take this for granted. But to continue denying them flexibility because of our own bias is foolhardy. The amount of flexibility in Soviet tactics is not quantifiable. It can only be determined on a real battlefield. If we are forced to face them in battle, we cannot afford the luxury of assuming they will do what we expect them to do.

We need to look deep and fight deep, but not with preconception. When we look deep we should do it with the understanding that what we see back there may not agree with certain of our conceived notions. What we see may not resemble a template or stereotype. Maybe we should view the battlefield *ne po shablonu.*

NOTES

1 The categorization of Soviet combat actions has evolved from its 1966 appearance in *Taktika*, edited by Major General V G Reznichenko Military Publishing House of the Ministry of Defense of the USSR Moscow, USSR to its present form This can be traced through the following sources

Colonel A A Sidorenko *The Offensive (A Soviet View)* Superintendent of Documents, US Government Printing Office Washington, D C 1970

The Meeting Engagement *Sovetskaya Voennaya Entsikolpedlya (Soviet Military Encyclopedia)*, Military Publishing House of the Ministry of Defense of the USSR, Moscow USSR Volume 2, 1976 p 407

The Offensive *Sovetskaya Voennaya Entsikolpedlya (Soviet Military Encyclopedia)* Military Publishing House of the Ministry of Defense of the USSR Moscow USSR Volume 5 1978 pp 518 19

Marshal A Babadzhanyan *Tanki i tankovye voyska (Tanks and Tank Forces)*, Military Publishing House of the Ministry of Defense of the USSR Moscow, USSR p 306

Major General N Rimsky Korsakov *Osnovy sovremennovo nastypatel novo boya* ("The Fundamentals of Contemporary Offensive Combat") *Voennyi Vestnik (Military Herald)*, Ministry of Defense of the USSR March 1981, p 13

In none of these publications does breakthrough appear as a category or a type of combat action In Babadzhanyan *op cit*, it is said that in the final analysis, there are only two diametrically opposed categories of combat action offense and defense The following other subcategories occasionally appear in the Soviet categorization attack at night, forcing of water barriers withdrawal, counterattack and counterblow

2 Note also that the Soviets do not use the terms deliberate attack, hasty attack or movement to contact These are US tactical terms which have been incorrectly used to describe Soviet tactics, leading to misconceptions and confusion especially between a meeting engagement and an attack from the march

3 *Dictionary of Basic Military Terms (A Soviet View)*, Superintendent of Documents, US Government Printing Office Washington, D C 1965

4 Colonel M Log nov, In the Second Echelon, *Soviet Military Review* Number 6 1981 p 15

5 Major General P Rodionov *Posobiye dlya ofitserov zapasa motostrelkovykh i tankovykh voysk (Manual for Motorized Rifle and Tank Officers of the Reserves)*, Voenizdat Moscow USSR 1971 pp 206-07 and G Garbuz D Loza and I Sazanov *Motostrelkovyy batal on v boyu (Motorized Rifle Battalion in Combat)* Voenizdat Moscow USSR 1972 p 133

6 Yu Novikov and F Sverdlov *Maneuver in Modern Land Warfare* Progress Publishers Moscow USSR 1972 pp 63-65

7 US Army Training and Doctrine Command Weekly Intelligence Bulletin Number 23-81 (Unclassified) 12 June 1981

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Knowledge of a potential enemy commander and his way of thinking is beneficial in the development of plans aimed at defeating military forces under his command. This article considers the typical Soviet regimental commander; his background and the environment in which he operates.

Major (P) Donald L. Mercer, US Army

The Soviet Regimental Commander

DURING the recent *GALLANT KNIGHT 82* command post exercise held at Fort Bragg, North Carolina, this writer played the role of a Soviet commander of several Soviet divisions in an offensive against US units. From the US company commander who was adamant that the Soviet *Hind-D* helicopter could not fire an antitank guided missile from a hover, to the US brigade commander who coined what became a popular phrase: "They can't do that!," it was clear that there was widespread ignorance and misunderstanding of the Soviet military. There is a need for correction of these false "mental templates."

Focusing on the Regiment

This article is intended to provide a profile of a typical Soviet regimental commander. Of course, each commander—US or Soviet—is an individual, and generalizations are fraught with inaccuracies.

However, there are many characteristics that distinguish the Soviet commander's psycho-sociopolitical orientation from that of his US counterpart and which provide a beginning to understanding our most advanced potential enemy.

The regimental commander was chosen as the focal point for this article for several reasons. First, the Soviet army is historically an army of regiments: Unit colors and hence a unit's lineage begin with the regiment. Second, the Soviet concept of combined arms organization begins at the regimental level. Whereas the US brigade organization varies with the division commander's desires, the Soviet regimental organization is fixed as shown in the accompanying figure.

Finally, as scientists are aware, in many disciplines there is a problem with the level of analysis: The results of an inquiry are dependent upon the level at which the inquiry is focused. If we focus our analysis on the Soviet battalion or lower level commander, then many (but certainly not all) of the old stereotypes have some basis in fact. At this level, a strict adherence to the plan, with commanders showing little initiative or innovation by US standards, is the rule. However, at the regiment and higher levels, the old stereotypes are not only outdated but dangerous considering the steadfast adherence held to by many US commanders and doctrine writers.

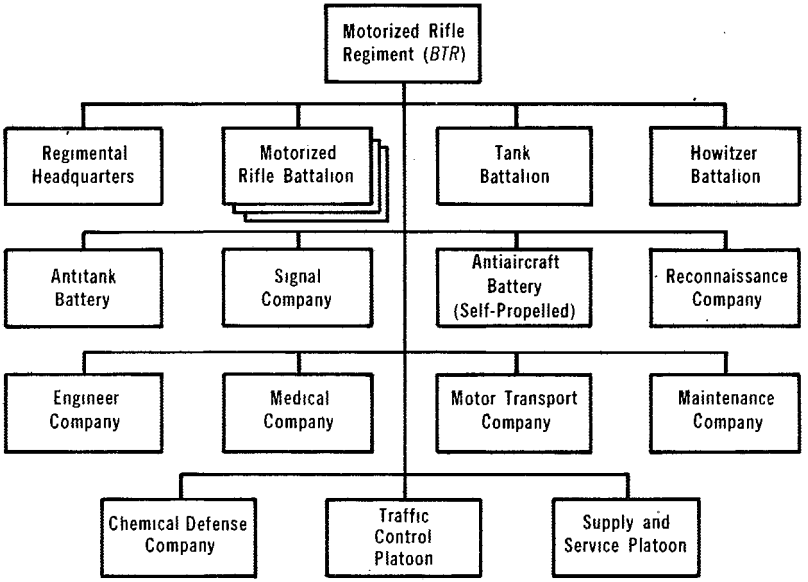
Background and Education

The Soviet commander comes from a society that is almost impossible to measure by Western yardsticks. It is a society whose citizens cannot live or work where they want without permission from the state. One-third of the population lives and works on farms where they are tied to the land much as they were in the time of the czars. It is a society in which old women in their 60s sweep the streets and dig ditches to earn money because they cannot exist on the state pension. It is a society which stifles individualism yet produces genius in science and medicine. It is a society that builds the world's best tank but cannot feed its population.

The Soviet commander typically comes from a middle-class family. His parents have been able to secure status and power in a society which is classless in theory only. If he were unable to obtain a position in a military school through merit, his parents probably succeeded in obtaining his entrance by bribing the school's officials.

The Soviet commander's military education begins shortly after birth. World War II is relived every day on the television, in speeches and on wall posters. The media constantly reminds children of the sacrifices made by their forefathers and the obligation they have to keep the homeland free from foreign invasion. In high school, he and his sister take 140 hours of military training. During the summer, he participates in war games involving millions of Soviet youth across the country. For extracurricular activities, he joins government-sponsored and controlled youth organizations. Through these organizations, he might learn several skills with military application: flying, scuba diving, marksmanship, parachuting or radio operations.

Formal military education begins at the age of 18 with admittance to one of 142 military universities. These Soviet commissioning schools turn out 40,000 to 60,000 officers each year from programs lasting four to five years. Each school is branch-oriented but with some general education courses. Graduates are branch-



trained, and a Soviet officer usually serves his entire career in a single specialty

The most important phase of an officer's education comes at about the rank of major when he competes for selection to one of 18 military academies. Courses last five years for technical branches and three years for the command courses. The best known of these command schools is the Frunze Academy in Moscow. About 135 students enter each year for the three-year course. Graduates command regiments or are assigned to the division staff.

The Military Academy of the General Staff is the senior military school. The course of study is two years, and approximately 100 colonels and one-star generals enter each year. A graduate has typically spent six to eight years in military schooling after commissioning as compared to a US war college graduate who has spent less than three years

Social and Military Position

A Soviet officer accedes to considerable position and prestige in his society. From the moment the officer accepts his commission, he becomes a member of the elite Soviet society. His salary as a new lieutenant is already higher than the average worker. In addition, a commander re-

ceives "position pay" which may amount to more than his regular salary. The Soviets have recognized the harder work required of its commanders and certain specialists and pay them accordingly. The Soviet officer's retirement benefits are equaled in the Soviet Union only by those of senior party members.

A regiment is authorized a lieutenant colonel as commander, but the position is often filled by a major. One of the prerequisites of promotion is that the Soviet officer occupy a position calling for the next highest rank. The regimental commander will serve in his position for four or five years. He may be junior in rank to members of his staff since they progress through separate heirarchies.

Whereas in most Western armies officers and noncommissioned officers (NCOs) constitute a professional cadre, the Soviet professional cadre is almost all officer. Officers account for 20 percent of Soviet military manpower. The junior officers often perform duties that are usually the responsibility of junior NCOs in the West.

A Soviet officer is inclined to hold enlisted men in contempt as lower class, and contacts with enlisted men are minimal. His behavior toward enlisted men is typically bellicose and belligerent. Although the officer has responsibilities for troop health, welfare and morale, the degree to which he is accountable is much less than for his American counterpart.

In garrison and in the field, the officer is fed a better diet than the men he supervises. Physical training is conducted by enlisted men en masse, but Soviet officers are allowed to take physical training on their own. This tends to result in a considerable population of portly field grade officers, and it probably degrades the senior officers' stamina under stressful conditions.

Politics

The Soviet officer is very politically aware. Only 6.2 percent of the Soviet population belongs to the Communist Party, yet the majority of military officers are party members. Although the Soviet officer's views are colored by the controlled media, he is, nonetheless, as aware of international events and their importance as his Western counterpart. In discussions with Westerners, he is a shrewd and informed debater.

The Soviet officer is also politically aware from another perspective—his actions are continuously monitored and recorded by the *KGB* (Committee of State Security). *KGB* officers are assigned at division level and monitor the actions and political reliability of all personnel. A Soviet officer cannot be promoted or receive a favorable duty assignment without the approval of the *KGB*. Since informers are recruited at all levels, the Soviet officer never knows to whom he is really talking.

Most Soviet officers are aware of what the West has to offer. With luck, they may acquire Western goods which bring a great deal of prestige to the owner. The officers may even be envious of some portions of the "Western way." On the other hand, the Soviet officer is a believer in his system as *the* system of the future. To get to where he is, the Soviet officer cannot fake allegiance; he has to be a "true believer"; his country is worth fighting and dying for. He has lived in a media-controlled, Communist-designed propaganda environment all his life, and it has produced a legion of guardians of communism. The officer has a vested interest in ensuring that the system survives intact.

Capabilities

The Soviet experience in Afghanistan has shown a high degree of innovation in tactics and a willingness to experiment with new organizations and equipment. One lesson to be learned from Afghanistan should be that the Soviets are capable of a great deal more flexibility than we have previously credited them.

The typical regimental commander acts with confidence and self-assurance, stemming from a personal as well as a national feeling of superiority. The regimental commander can be expected to make well-calculated decisions and receive immediate and devoted support from his staff and subordinate commanders. He will take advantage of opportunities for success as they occur and will act quickly to change his plans in the face of strong opposition or to exploit success.

Although the regimental commander is less inclined to take risks than his US counterpart, he learns quickly to adjust to changes in US tactics. He understands Field Manual 100-5, *Operations*. After all, he has been developing his capabilities and doctrine to fight the deep battle for more than 20 years. He likes the US defend-well-forward concept since it thins the defense in depth, and he is convinced that, with multiple probes, he will achieve exploitable success in several directions and prevent the lateral movement of the defending forces.

Conclusions

Many of the regimental commander's traits described here are the same ones we would value in US commanders; some are clearly different. When dealing with the Soviets on any level, we should remember that, although they do some things similar to the way we do them or the end result of some action is similar to ours, we should not assume that the thinking and reasoning process that brought them to that point is similar to ours. They do not think as we do! And they are different!

Further evidence of the regimental commander's excellent capabilities on the dynamic multidimensional battlefield lies in the other articles in this issue. There is no attempt to depict a 10-foot-tall Russian, but, by the same token, there is no attempt to hide or rationalize away the facts. A US Army aware of the facts is less likely to be surprised in combat and realize too late that "They *can* do that!" MR

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The Development of Soviet Military Doctrine

from *International Defense Review*

C. N. Donnelly

This article examines the development of military doctrine in the Soviet Union. The author considers the effects of ideology, environment and the past on doctrine. He also looks at readiness, discipline, Soviet use of technology, as well as considerations used in the design of military equipment.

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THE USSR is run according to the ideals of Marxism-Leninism by the Communist Party. It is, the party believes, its historic mission to bring the USSR to full communism and to assist the spread of Soviet-style communism throughout the globe.

In pursuance of this goal, the party claims the right to control every aspect of human affairs in the USSR and to direct every sector of Soviet society. The Soviet armed forces are no exception. Indeed, because they are and always have been the party's main implement of policy, the Soviet armed forces must be considered as one of the most important elements of Soviet society. As such, they receive the special attention of the party.

The party's direct control of the armed forces is exercised through *GlavPUR* (the Military Political Corps), through the *KGB* (Committee of State Security) and through direct party participation via its membership of the officer corps. More important in determining the shape of the Soviet military system, however, is the unifying and integrating effect of party control and the existence of a military doctrine.

"War," said V. I. Lenin, repeating Karl von Clausewitz, "is a tool of Policy."

The function of Soviet military doctrine is to produce a military machine capable of implementing Soviet policy by means of war. To this end, Soviet military doctrine serves to determine the size and shape of the armed forces and to ensure the integration of organization, tactics, training and equipment to enable the armed forces to wage successfully the type of war the Communist Party will demand of it.

Soviet military doctrine is not just a set of tactical regulations (as it is often misrepresented in the West). It is an all-embracing military philosophy which is applied to the whole military system as the military element of Marxist-Leninist doctrine.

Thus, the principles of Soviet military doctrine, its lessons drawn selectively from history, the methodology of research (and even the very attitudes, prejudices and ideals inherent in the Russian as in any national outlook) are all applied consistently and uniformly across the whole spectrum of military affairs. The principles of war which the young officers learn at military academies are not only the same for all arms and services, but they are also the same as those taught to weapon designers or research staffs in academic institutions, or made available to members of the Central Committee of the Communist Party or taught to all 16-year-olds in every school in the USSR during their obligatory preservice military training.

We must stress that military doctrine is not just applicable to the battlefield. It encompasses the whole spectrum of the Soviet state's preparation for war: the psychological preparation of the population for war; the nature and organization of the economy and the ease with which it can be mobilized for war; and the principles of foreign policy and the type of war in which the state might become involved or might seek to start.

The Marxist approach, furthermore, stresses the interrelationship and interdependence of all elements of this doctrine. A change in one element interacts to alter all other elements. The doctrine is essentially very stable, but, at the same time, it is in a constant state of change, seeking equilibrium. Conformity, therefore, cannot be absolute, but inconsistencies will be minimal and will always tend to be resolved by the pressures of the system.

The effect of this military doctrine on

the Soviet armed forces is often misunderstood in the West. Doctrine is widely viewed as a rigid and restricting set of regulations which destroy initiative and create a stereotyped commander totally unable to think for himself. Many Western armies, in contrast, pride themselves on the ability of their commanders to display initiative and inventiveness, to be versatile and to introduce their own ideas into their style of command. For example, the commander of the 1st British Corps in Germany has enormous authority and can virtually implement a change in his corps' concept of operations if he so wishes. The commander of the Soviet 3d Shock Army across the border in East Germany has no such authority.

The Russians do not see it this way. They deride the British and American reliance in war on what they term scathingly "native wit." This is valuable in its place, say the Russians, but not as a substitute for a well-thought-out plan. The Soviets consider their military doctrine to be one of their greatest assets. It is the concentration and distillation of military wisdom and experience and is constantly being refined, amended and improved by experiment, exercise and re-evaluation.

To the Russians, it represents an ideal: the best military philosophy imaginable. All other approaches to the problem of dealing with and preparing for war—as practiced by capitalists, non-Russians and other lesser mortals—are, at best, a poor imitation. The strength of this conviction adds further to the overwhelming effect that the doctrine has on the Soviet military system.

The Russians are not, on the other hand, blind to the deficiencies of their armed forces. On the contrary, their doctrine draws constant attention to these: Stereotype and lack of initiative are commonly identified as failings on the battlefield, reluctance to innovate as a failing in defense industries, and so forth. However, these failings are always attributed to personal qualities or to malfunctions of the system rather than to inadequacies of the system itself.

We can identify four main factors which have contributed to the mold of modern Soviet military doctrine. These are Marxist-Leninist ideology, the effects of the Russian environment and the czarist tradition, the experience of the Revolutionary War and of the 1941-45 war, and the impact of modern technology. The exact balance of these elements has varied over the years. Nevertheless, there has been a remarkable degree of overall consistency and continuity in the Soviet approach to war and to the battlefield.

The Role of Ideology

Ideology is often underestimated as a force in present-day Soviet affairs. It is true that, for the vast majority of Soviet citizens or soldiers intent on pursuing a day-to-day existence, the Communist ideal is not always in the forefront of their minds. However, it is always in the background, and it does provide a broad moral basis from the standpoint of which everything else is judged.

The concept of a "nation-in-arms" has been a basic tenet of Marxism-Leninism since the revolution. The whole population must take up arms to defend the revolution and the Socialist state. This does not mean just the maintenance of a large conscript army, but the militarization of the whole society. The main aim of this is to create a state with a great capacity for waging war, first, to defend the revolution from the expected capitalist onslaught and, second, to export revolu-

tion by war when circumstances are appropriate. The complete centralized control of the Communist Party, with party cells in every section of Soviet society, provides an unparalleled coordination and integration of the various elements of that society and facilitates its effective militarization.

The readiness of the Soviet population to accept the militarization of their economy is only obtained by the maintenance of a high level of military awareness among the population itself. Through the semimilitary Pioneers and *DOSAAF* (Voluntary Society for Cooperation With the Army, Air Force and Navy) organizations, preservice military training in schools and factories, the civil defense program and the *BGTO* ("Be ready for Labor and Defense") sports program, the young Soviet citizen is conditioned from the age of seven to accept the military involvement in society as natural and desirable.

The constant publicity given to the Soviet armed forces, a constant and visible presence through parades and ceremonies, the honoring of war dead, and the massive cemetery-museums to which schoolchildren and newlyweds make solemn pilgrimages add to the atmosphere of a nation at war. And they keep the population constantly aware of the threat posed by the enemies of the Soviet state and the need to prepare for war against them.

Detente has been presented to the Soviet people as a reduction in international tension designed to reduce the likelihood of major war between the superpowers so as to permit the gradual triumph of Soviet-style socialism without the risk of an Armageddon. The more the "correlation of forces" tilts in favor of the Socialist block (that is, the greater their preponderance of military might over the West's), the more irreversible will become the process of detente and the less likelihood will there be of the West launching an aggressive war to destroy socialism. Detente, therefore, requires an increase in the relative military strength of the USSR, not a reduction. There is to be no "balance of force."

The Soviet economy, developed and maintained with the requirements of war uppermost, is often criticized in the West for its inefficiency. Indeed, in terms of pure output, Soviet industry *is* inefficient. But, if it is measured purely in terms of its capacity for rapid mobilization, then the Soviet economy is very efficient indeed.

The same is true of the armed forces. To maintain a large standing army would take so much of the national manpower that the economy would be able to make no progress at all toward the Communist ideal. Consequently, the basis of the Soviet army in peacetime is a cadre army, with the vast majority of its divisions maintained only at 30-percent strength, and relying on mobilization for their effective deployment. Only about one-third of the available divisions are kept fully deployed although the enormous importance of this third will be referred to below.

Ideology makes two further important contributions to Soviet military doctrine. In terms of direction of the armed forces in war, the unchallenged leadership of the party reinforces the Russian tendency toward authoritarianism and reduces the scope for individual initiative. It is in strategy, however, that Marxist ideology makes one of its most important contributions to military doctrine.

In war, the ideologically offensive revolutionary spirit has been evident in strategic thinking from the earliest days of Soviet power. In his *Basic Character of*

Operations of Modern Armies, published in 1927 (some years before the term *blitzkrieg* came into use), V. K. Triandafillov propounded the concept of "deep operations" whereby the enemy would be quickly defeated by rapid, concentrated armored thrusts and coordinated air strikes penetrating deep into his territory in order to undermine his defense, neutralize his war economy and shatter the fabric of his society. The value of war as a revolutionary tool and the revolutionary effect that the strains of war have on the nature of society convinced the Soviets of the immense value of achieving a quick and total vicitory by an offensive which maximized the shock to the enemy's social system while minimizing the shock to their own social system.

The advent of nuclear weapons has served to increase the importance of this strategy in Soviet eyes. A modern war must be started suddenly so as to take the enemy by surprise and thereby reduce his ability to prevent the disintegration of his social and military system. Just as war is a manifestation of the demands of policy, then strategy must itself be determined by these demands, and the organization, equipment, training and tactics of the armed forces must also logically be determined by the demands of policy. It follows, therefore, that the shape and form of the armed forces must, according to Marxist-Leninist military doctrine, reflect whatever tasks they have been set by the Soviet Communist Party, for which they constitute merely an instrument of policy.

In modern terms, we interpret one of the main aims of Soviet military doctrine as being to prepare the Soviet armed forces to win a general campaign against NATO or against China. (This is not to say that the Soviets want a war against either NATO or China at the present moment. In our view, the Russians would far prefer to achieve their declared long-term aims of a Soviet-style Communist world by peaceful means rather than by methods which bring with them a risk of disastrous war. However, if war is to be used to achieve this policy in Europe or elsewhere, whatever the cause of its starting, it will clearly be the Soviet aim to win it and thus to achieve their policy objectives.) In both cases, and particularly in the event of war confined to the European theater, it will be the Soviet intention to bring the campaign to a successful conclusion before it escalates into an all-out exchange of strategic missiles between the United States and the USSR.

In the European theater, this will only be possible given favorable political circumstances and if the Soviet armed forces achieve the very rapid political and military destruction of NATO and NATO forces. In order to achieve this rapid destruction, it is essential, the Soviets insist, to achieve surprise, to pre-empt NATO's deployment, to shatter the NATO defense by a high-speed offensive in depth, ultimately to destroy NATO's armed forces and to neutralize the Western economy. If this can be achieved without the use of even tactical nuclear weapons, then clearly the risk of escalation to strategic nuclear release is reduced.

Consequently, the Soviet armed forces have to be tailored to fight a campaign with these features if they are to have the best chance of success. It is our conviction that, if the required favorable political circumstances do not exist, and if the Soviet Union is not convinced of its ability to achieve surprise or a rapid end to the war, then the Russians will never start a war in Europe. Rather, they will continue to resort to "peaceful" means to achieve their policy objectives.

The principles of operational art and tactics, as outlined by Soviet military theoretician V. E. Savkin in 1972 (see accompanying figure), appear to us to be a logical development of this line of thinking. If speed and surprise are essential for victory, then the army must be capable of achieving both if it is to win victory.

There can be no time to train a soldier just before a campaign. To try to do so would jeopardize surprise. In a short campaign, there will be no time to train men. As this is not totally consistent with an army entirely composed of reserve divisions, a certain number of divisions—those in the most sensitive strategic locations—must be fully combat ready and prepared for war at any moment so as to be able to pre-empt the enemy's mobilization and win the war in the initial period—that is, while the enemy is still mobilizing. This requirement is reflected in the high state of readiness maintained in the Groups of Soviet Forces in Eastern Europe.

The Soviet Principles of Warfare at Operational and Tactical Level

1. Speed: The achievement of mobility and the maintenance of a high tempo of combat operations.
2. The concentration of the main effort and the creation thereby of superiority in men and equipment over the enemy at the decisive place and time.
3. Surprise.
4. Aggressiveness in battle—no letup in the attack, breakthrough and pursuit.
5. The preservation of combat effectiveness among one's own troops by:
   - Being properly prepared and efficiently organized.
   - Maintaining at all times efficient command and control over one's forces
   - Maintaining morale and the will to fight among the troops.
6. Realistic planning: Ensuring that the aim and plan of any operation conforms to the realities of the situation, attempting neither too much nor too little.
7. Ensuring cooperation of all arms of the service and ensuring the coordination of effect toward achieving the main objectives.
8. Depth: Attempting simultaneous action upon the enemy to the entire depth of his deployment and upon objectives deep in his rear, including action to weaken his morale.

Note: Soviet principles of warfare at all levels stress the primacy of the offensive as a means of waging war.

Influence of the Russian Environment and Past Experience

The environment of the European USSR, and the fact that by far the most formative experience of the Russian imperial armies and of the Soviet armies has been wars fought over this section of the globe, has done much to shape the Russian and Soviet styles of war. Also, it goes a long way toward explaining the remarkable continuity in style over the years. Russian and Soviet tactics and certain principles of organization have been evolved over the decades to suit the Russian terrain. This is not to deny that imperial Russian military thought owes a great deal to Napoleon or to Prussian Germany. Rather, it is to point out that the Russians chose to adopt and adapt from foreign military specialists those ideas which proved applicable to their own situation. This they continue to do to this day although, since the 1930s, their attention has been focused on Western technology rather than military doctrine as such.

The two principal environmental features of the European USSR from a military point of view are, first, extreme size—the area is about equal to the whole of the rest of the Western European mainland—and, second, extreme flatness, with few significant relief features other than wide, slow rivers. Only in the Carpathians and the Caucasus, both axes of secondary importance in the last war, is there anything which could even remotely be considered as mountains or upland country.

The effect of this has been severalfold. First, because of the lack of geographically distinct boundaries, there has been little scope for the development of strategies based on defense of major terrain obstacles. Defensive positions, when established, had to be sited on almost completely flat ground. Likewise, attacks had to be put in without benefit of the cover of terrain. The extent to which subunit and unit commanders had any scope to exercise inventiveness in the use and exploitation of terrain was, therefore, often extremely limited.

Second, the extreme size added to the flatness made very large armies an absolute necessity. Even so, the largest armies could be swallowed up by the vastness of the country. If the armies were dispersed

BTR70 armored personnel carriers (APCs) and *T72* battle tanks pass in review during the Soviet Exercise *WEST 81*. Continued production of large numbers of modern wheeled APCs, in addition to tracked types, indicates the continuing influence on design of the huge expanses of flat terrain in the USSR where wheels generally provide better speed and mobility than tracks.

over the whole front, they would be so thinly spread that any enemy, with no effective hindrance to movement, could concentrate his forces at a given point to smash through the defensive line easily. The ability to maneuver one's forces over great distances, to concentrate them in the face of an enemy threat, therefore became of paramount importance to the Russians. The ability to do this on a large scale became so important that, to a large extent, this requirement overrode ideals of low-level initiative.

It proved far more important for the army or army group (*front*) commander to be able to deploy his forces rapidly and effectively, as a large military machine, than it was for the junior commander to be able to demonstrate initiative in the siting and running of his subunit: If a machine is to run like clockwork, then a cog must remain a cog. Any tendency to imaginative thinking will clog up the works.

So essential is this concept of scale to the Russians that it has become a distinct branch of Soviet military art, which has no equivalent in Western military thinking. Thus, whereas in the West we are content with tactics and strategy, Soviet usage has a third, intermediate level, that of the operation. Tactics (*Taktika*) is defined in Soviet military doctrine as combat action up to and including a division in scale. Operational art (*Operativnoe Iskusstvo*) is combat action at army or army group level. The term strategy (*strategiya*) is reserved for activity at theater scale and above. Thus, in Soviet terms, an operation is action on a specific scale.

The main significance of this is in its effect on organization. First, the armies had to be highly mobile to achieve any operational advantage over an enemy. This meant that they had to be structured in order to make for ease of movement. Also, weapons and vehicles had to be designed with a high degree of mobility in mind, especially in terms of range, river-crossing ability, and so on. The fighting troops could not afford to be encumbered by large logistic trains, nor could they be constrained by the need to maintain restrictive umbilical logistic supply lines.

Second, the concentration of such power in the hands of the operational commander made for an extremely high degree of operational flexibility in that it permitted the switching of effort rapidly from one axis to another. This necessitated the retention of a large proportion of available forces as operational reserves, to be committed to required axes as deemed necessary, before or during the operation. In the defense, this was done to reinforce weaknesses and to counter enemy breakthroughs. In the offensive, it was done to reinforce success and to exploit breakthroughs by friendly forces. Given these considerations, which led to the development of a highly mobile army, it is hardly surprising, especially when coupled with Russia's revolutionary heritage, that Soviet military doctrine became so firmly wedded to the primacy of the offensive as a means of waging war, whether for strategically defensive or aggressive aims.

This, in turn, affected tactics and the design of weapon systems and vehicles, especially when the physical features of the terrain were also taken into consideration. The concept of the encounter battle assumed a great deal of significance in Soviet tactics and the consequent ability of all armored fighting vehicles (AFVs) to deliver effective fire on the move (or, rather, at the short halt) was recognized at a very early stage.

It is interesting in this regard to compare the firepower of the *BMP* infantry

combat vehicle, first deployed in 1967, with that of the *M113* or the *FV432* armored personnel carrier with which the US and British Armies were then, and still are, largely equipped. Experience likewise convinced Soviet tank designers that low silhouette was more important than gun depression or habitability in ensuring a tank's survival in the attack over flat terrain. Further, a greater chance of survival of the vehicle and crew as an effective weapon system was afforded by good all-round armored protection, rather than armoring the crew compartment at the expense of the engine compartment.

In other words, what the Soviet experience has never shown a need for is versatility either in weapon systems or army organization or even in the abilities of the officer and soldier. It is this writer's contention that often when Western military specialists refer to their armies as flexible they really mean versatile. It is interesting to note that the authoritative *Dictionary of the Russian Language (Ozhegov)* clearly gives to the Russian word *mobilnost* two meanings: The one is mobility, the other flexibility. *Mobilnost* is given by Savkin as the first principle of operational art and tactics.

Given the scale and topography of the battlefield on which the Soviet army has gained its most formative experience, it is easy to see how the more tailored a weapon system became to a particular requirement (that is, the less versatile it became) the greater the flexibility it gave to the operational commander when planning, say, the switching of his main effort from one axis to another.

The ability to create cover by producing smoke screens is an important feature of Soviet AFV design, for the simple reason that so often in the last war no other type of cover (for example, terrain) was available. At divisional level, it became important (because of the need for light divisional logistic tails) to incorporate a high degree of reliability into the design and production of vehicles and weapon systems. Major maintenance and repair tasks could only be carried out at army or *front* levels. It was impracticable to attempt the replacement of casualties at unit or subunit level on an individual basis.

Repaired unit equipment would be used to form new or composite subunits and would be fed into the battle as reinforcements re-created at operational level. Repair teams and workshops at every tactical and operational level were constantly relocated forward during the operation, always being deployed in the area of greatest casualties. At each level (regiment, division and army), the mechanics' task was to repair the least damaged equipment first so as to return as much of it to the battlefield as was possible in the time available to them.

What equipment remained unrepaired by the regiment was left for the division teams; what they left was attempted by army or *front* workshops. Thus, there was no pressure to design a tank with the facility for a quick engine change at regimental or divisional level. Those levels could not carry the facilities to undertake that replacement, could not carry sufficient spare engines and could not repair the damaged engines removed in sufficiently short time to enable the vehicle to be fed back into the unit from which it had originally come.

At army and *front* level, the tank and its components could be repaired by specialized mobile workshops or subassembly repair workshops *(Ptarz)* and reincorporated into composite units. During the offensive operations of 1944-45, approximately 30 percent of battlefield tank casualties were the result of mechan-

ical breakdowns. To increase the overall survivability of the tank as a weapon system, there was pressure, therefore, to create very reliable automotive components for tanks, to enable them to cover the extensive distances involved in the Russian campaign, and to afford automotive parts as high a degree of protection as crew.

Exactly the same principles of organization and treatment are applied to medical casualties. Treatment facilities are deployed to the area of greatest casualties and not vice versa. The treatment at each stage is designed to return as many men to the battlefield as possible. Very serious casualties receive only lifesaving treatment until they get to a general or specialized army field hospital.

The Application of Modern Technology

Technology has always assumed great importance in the eyes of Soviet military thinkers due, in no small part, to Russia's traditional technological backwardness vis-à-vis the West. Russia has always looked at Western technology with awe and envy—in the time of Peter the Great just as in the time of his successor, Leonid I. Brezhnev. It is not surprising, therefore, that Soviet military thinkers have been obsessed with technological innovation, fearing particularly the West's achievement of a technological breakthrough which would undermine their defense effort.

As a consequence, the Soviet military machine gets absolute priority in the field of technological research production. Western technological developments are closely studied and are copied in those areas where they are considered of value. For example, readers of the Red army's magazine *Motorizatsiya i Mechanizatsiya* during the 1920s and early 1930s will recall, among other things, the detailed study and discussions of the relative merits of Western tank suspension systems, which culminated in the adoption of the American *Christie* system as being most suited to Soviet requirements.

This is not to be taken as proof that all advanced Soviet technology is copied from the West but, rather, as evidence of Soviet preparedness to investigate and exploit technology, even if it was "not invented here." Indeed, this inquisitive attitude toward technology has become one of the features of Soviet military doctrine.

The net result is to ensure that, although the USSR remains technologically behind the West, due to the fact that the Soviets are prepared to invest first in the military application of new technology, that technology is incorporated into battlefield systems far earlier than is often the case in the West during peacetime. The consequent differences in the technological level of equipment *actually in service* in NATO and the Warsaw Pact do not, therefore, correspond to the differences between the overall technical levels of Eastern bloc and Western societies.

Conscription versus Readiness

The scale of Russia's terrain (which was already vast before the Communist conquest of this century) and the size of Russia's potential enemies have always impressed upon its leaders the need for large armies. Equally, the czars and the Politburo alike have also recognized the value of large armies in peacetime as a very valuable political tool with which to intimidate other nations. The experience of the 1941-45 war, with its vast toll of

casualties, further emphasized the need for huge numbers of men and modern equipment for them.

In Soviet eyes, the small professional regular army is not, therefore, a realistic alternative to mass conscription. There is, however, an element of contradiction between the requirement for a mass conscript army in peacetime and the need for immediate readiness of the army for war. With the increased deployment of complex equipment on the battlefield, this contradiction has become sufficiently important to require resolution.

If the army is mainly composed of conscripts, and the modern equipment with which the army is supplied requires a high level of training, then a large percentage of the army in peacetime is never going to be properly trained. In the event of a surprise war, it would have to take to the field without being properly trained. Moreover, it is nowadays considered essential for the Soviet soldier to be able to do not just one but several jobs so that casualties do not destroy the viability of technical subunits at an early stage in the war. These requirements create pressures on the system to reduce training time in all its aspects.

Added to this, there is the problem of the ethnic composition of the Soviet armed forces. For reasons of security, the many nationalities of the USSR are systematically dispersed throughout subunits. As many as a dozen different races are represented in a single platoon at times. The fact that these non-Russian nationals are doing their military service in a foreign language (Russian) further reduces the training demands that can be made of them.

All these influences tend to produce a requirement for equipment which is simple to operate, highly robust and on which it is relatively simple to do battlefield maintenance and repair. Detailed technical maintenance and repair will not, however, be attempted by combat troops on the battlefield. This must be left for specialized formation teams.

Even in peacetime, these influences will provide pressure toward the same end. A tank regiment of the Group of Soviet Forces in Germany (GSFG), composed mainly of conscripts, will be able to undertake only limited domestic repairs to its vehicles. Major repairs, or even a high volume of limited repairs, will require formation assets which in peacetime are not so free to move locations as in war. Furthermore, constant hard use of Soviet vehicles is seen to degrade their performance and hence reduce their combat readiness. The preferred solution appears to be to move the personnel of tank regiments by rotation to special training units for exercises on vehicles designated for training, actually located on a training area and supported by a substantial repair facility. Not only is the maintenance problem solved, but considerable savings in fuel and other costs associated with road movement are effected.

Maintenance of a large standing army imposes a high cost on Soviet society, especially in terms of the economy. The Soviet economy is efficient only when measured by its ability to mobilize resources for war. By this yardstick, it is extremely efficient. In most other terms by which national economies are judged, however, it is grossly inefficient due, in no small part, to Soviet insistence on the primacy of military preparedness. Because of this overall inefficiency, shortages are a common feature of all aspects of Soviet life, even in the military sphere. In service units, thrift is constantly emphasized, and resources for training are extremely limited.

International Defense Review photos

Deliberate mixing of Soviet ethnic groups in units is illustrated by this photo of a gunner, commander and driver of a *BMP* infantry combat vehicle. Since all training is conducted in Russian, such mixing often leads to language problems.

Constraints on Equipment Design

In industry, the running of the economy by plan and quota, the measuring of performance chiefly by volume of production, the overall inefficiency and the low overall level of technology all militate against innovation and the introduction of new ideas, materials and methods. At least this is true in those cases where the old existing ideas continue to prove adequate or can be accommodated in the design process by trade-off elsewhere.

The same need for economy is a great spur to the traditional Russian mental quality of resourcefulness. This is not originality of thought but cleverness. It is the same quality of mind shown by the Russian peasant of 19th-century literature whose cunning and ability to "get a quart out of a pint pot," particularly when under pressure, was almost legendary and provided Russian authors with a great source of material.

Forced, then, in design terms to face a technical problem, the Soviets do not, as a rule, expect to solve it by a technological development. Rather, they might solve it by a more clever use of existing technology, by an alteration of deployment pattern, by an increase in quantity or by a combination of all these points.

If one adds to all these considerations the stability of concepts in the military doctrine and the permanency in office of senior officers, politicians and industrialists which is characteristic of the Soviet system (as it is of any stable dictatorship), the result is a very high level of ingenuity and continuity in design practices. The latter quality, in particular, tends to increase the interoperability of equipment of varying ages which, in turn, makes it easier to operate a cadre unit mobilization system.

In the Soviet system, the bulk of formations garrisoned in the USSR (as opposed, for example, to the GSFG) are maintained considerably below strength, with much of their equipment mothballed. Reser-

vists, recalled several years after their conscription, may still find themselves operating equipment on which they were first trained. However, even if they do not, the earlier or later models of equipment will have remarkably similar operating characteristics due to the continuity in the design and manufacturing process.

The constant need to economize is a further pressure on the designer to produce equipment which is easy—and, therefore, cheap in Soviet terms—for the manufacturer to produce. This is another reason for the maintenance of simplicity and standardization in design.

In many Western armies, the organization of military units, the very functioning of the armed forces and even the design of equipment has come to reflect peacetime requirements rather than warfighting requirements. The Soviet armed forces have been very successful in resisting this trend. Peacetime military organization reflects wartime organization to a very high degree indeed.

The GSFG, for example, is structured almost to war readiness and, in the event of sudden war, would have far less reorganization to accomplish, far fewer families to evacuate, far fewer troops absent on leave, and so forth, than would the British or US Armies in Germany. Likewise, Soviet equipment, in its habitability, planned life expectancy and planned peacetime use, is very specifically designed with all the principles of the battlefield learned during the 1941-45 war still fresh in the mind of the designer. The Soviet army has not had to learn restraint in the use of force and still remembers that the prime object in war will be to kill men, to destroy the enemy as quickly and as efficiently as possible while preserving the viability of its own forces.

In his continual reading of the Soviet military press, this writer is constantly struck by the tone and attitude of the articles. They are very similar to the tone and attitude of writing on military themes which was current in Britain and the United States just after the war but is now no longer so. It is the West, in this instance, which has chosen to forget the lessons learned by 1945.

Discipline and Initiative

A final element in the equation is provided by the traditional Russian attitude toward discipline, itself a product of the environment and of history. Nine hundred years of almost unbroken rule by a dictatorship of one form or another has left its mark. The Russian has come to accept force as a valid method of rule. Further, he has come to expect and to respect force, and to respect a ruler who rules by force. This is not to say that the average Russian likes being subjected to a strict rule, but simply that he accepts and responds to it more positively than do most Westerners nowadays. This attitude is nowhere more evident than in the military disciplinary system.

In wartime, Soviet military discipline is draconian—execution of a soldier is a punishment meted out by his company commander (as is the case in the Turkish army). Between 1941 and 1945, the Soviets executed or reduced to the rank of private in a penal battalion upward of 230 generals for breaches of discipline, failure to carry out orders, incompetence, and so on. This enforced responsibility is the prime reason why senior officers are loathe to allow initiative to juniors and insist on rigid adherence to orders, which tends to create stereotype and a lack of low-level flexibility. In the tactical sphere, this is probably one of the most

important problems the Soviet General Staff faces today in its attempts to prepare the armed forces for the battlefield of tomorrow when, they insist, a certain degree of initiative will be essential.

This attitude of authority toward an individual's culpability for the failure of men or machines under his command has a marked effect on training. If Soviet soldiers damage equipment which they have been taught to operate, either through negligence or carelessness, they or their officers are punished or made to pay for the necessary repair. Under such a threat, the average Soviet soldier will work hard to acquire a basic skill. The Soviet designer, who knows this, will not be so tempted to increase the complexity of the equipment (at the expense of reliability or cost) to make, say, the tank driver's job easier as would the Western designer in a similar situation. This has its limits, of course. The most efficient equipment is useless if it is so demanding of the operator that men cannot be trained to use it. However, it does enable a distinct line to be drawn between what is absolutely necessary and what is merely desirable.

It may be argued at this point that all our references have been in terms of a large-scale land battle and that we have paid no attention to the air or sea environment. This is because all the Soviet Union's crucial battles have been large-scale land battles in which air power or sea power played merely a subsidiary role. There have been no Soviet equivalents of the Battle of the Atlantic, no long history of a reliance on sea power, no equivalent of the World War II bomber offensive or the Battle of Britain. Land warfare has always dominated Soviet military thinking, and, consequently, land warfare concepts form the basis of Soviet military doctrine. With remarkable consistency, many of the principles of land warfare are reflected in naval and air force weapon systems and tactics. The design priorities of the *Mi-24 Hind* helicopter, the *BMP* infantry combat vehicle and the *Kashin* class destroyer show a remarkable similarity. The tactical principles governing the deployment of a naval task force or of a heliborne assault force in terms of reconnaissance, protection of movement, fire support and constituent elements are almost identical to the tactical principles governing the deployment of an army unit.

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3d Infantry Division Reunion to Be at West Point. The Society of the 3d Infantry Division, US Army, will hold its 63d annual reunion from 9 through 12 September 1982 at the US Military Academy, West Point, New York. The society is composed of soldiers who served with the division during World Wars I and II and the Korean War, as well as those currently serving in the division as a part of the NATO peacekeeping force in Germany.

Anyone desiring further information on reservations should telephone (516) 538-9067 or write to Tom Murray, 300 Chester Street, Uniondale, NY 11553.

The Continuing Evolution of the Soviet Ground Forces

Donald L. Madill

It is generally acknowledged that considerable progress has been made in recent years toward upgrading the fighting capabilities of the Soviet ground forces. This article traces the development of the ground forces and examines how changing doctrine has influenced the makeup of organizations and the development of equipment.

THE recent US Department of Defense assessment, *Soviet Military Power*, characterizes the Soviet ground forces as "the most powerful land army in the world" with "unprecedented flexibility, mobility and firepower."[1] Although our European allies and others have criticized the Department of Defense booklet for the manner in which it portrays the military balance, the military leaders of our NATO partners are, nevertheless, in full agreement that there is a real and growing threat on a global basis and especially in Europe.

For instance, General Dr. Ferdinand von Senger und Etterlin, commander in chief, allied forces, Central Europe (CINCENT), recently described the trend over the past decade:

What we have seen is nothing less than a dynamic and systematic all-around increase in Warsaw Pact military capability. . . . Whereas previously the trend of Warsaw Pact superiority had only been apparent in terms of quantity, now we see an improvement in both quantity and quality.[2]

General Sir Michael Gow, commander of NATO's Northern Army Group (NORTHAG), shares the CINCENT's assessment:

The Warsaw Pact capability to wage offensive war against NATO continues to improve year by year. The time has long since gone when Soviet military equipment could be considered rudimentary and out of date. New and high quality equipment continues to reach their divisions at an impressive rate.[3]

Gow, whose NORTHAG forces would expect to bear the brunt of the main strike in an offensive against Western Europe, is particularly concerned about the buildup of Warsaw Pact (primarily Soviet) ground forces opposite NORTHAG in the last two years. He also offers some insight into the doctrinal requirements which led to the upgraded force structure and the tactical advantages the Soviets hope to derive from it:

Heavy emphasis is now being laid on all arms cooperation. The tactics of infantry supporting tanks, artillery suppressing antitank weapons, and the coordination of attack helicopters and fixed wing close air support for ground forces are now routine. The use of airborne and heliborne forces allows a more flexible approach to land operations whilst electronic warfare is fully exploited. Warsaw Pact formations are well trained and equipped to fight a conventional war, however we should not forget that most of their equipment is designed to operate under nuclear conditions and that their troops regularly train to fight in a nuclear environment.[4]

Soviet Military Power, on the other hand, discusses new ground forces equipment and reorganization in relative isolation from doctrine and tactics. It does, indeed, take note of the general purpose of the changes: "Since the mid-1960s, the Soviets have engaged in a program of modernization and upgrading ground forces to ensure the capability for carrying out offensive doctrine." It concludes: "Each of these deployments increases the Ground Forces' capability to launch a rapid thrust through Europe, the central theme of Soviet military thought."[5] However, its discussion of combined arms warfare concentrates on the interaction of naval, air and ground forces rather than on the lower level interaction of small units and individual weapon systems as described by Gow.

THE COMBINED ARMS CONCEPT

The key to understanding the continuing evolution of the Soviet ground forces is the concept of combined arms. Although we have a tendency to equate "combined arms" with the Western idea of "cross-attachment" or "cross-reinforcement," the Soviet concept represents much more than that. It is based on the close and uninterrupted interaction of all forces participating in an operation or battle in order to most fully exploit their combined combat capabilities.[6] In the process of interaction, each arm (for example, tank, motorized rifle, artillery, air defense or tactical air) provides strength or

protection where another arm is weak or vulnerable, thus producing a synergistic effect which leads to success.

Although the concept of combined arms goes back to the early days of the Red army, it has gone through several evolutionary stages on the way to the present Soviet understanding of it. Even now it continues to evolve new forms and applications. The concept was clearly ahead of its time in the 1920s and 1930s, and, even in World War II, limited motorization and shortage of firepower prevented the Red army from realizing the full potential of combined arms.

With the end of the war and the advent of nuclear weapons, the Soviets analyzed the lessons learned and the impact of new technology. They concluded that the concept of fully mechanized combined arms operations would have increased validity on the modern battlefield and began reorganizing and re-equipping their forces accordingly.

When the Red army was redesignated the Soviet army in 1946, it consisted of two basic formations: rifle armies and divisions (two-thirds rifle and one-third mechanized) and mechanized armies and divisions (one-half mechanized and one-half tank). In the mid-1950s, the Soviet view that any war would inescapably involve nuclear weapons necessitated a radical reorganization of the ground forces. The old rifle and mechanized formations were too unwieldy and lacked sufficient mobility for the high-speed operations demanded for success on the modern battlefield.

So, the new building blocks of the ground forces became the motorized rifle division and the tank division. These could be formed with relative flexibility into combined arms armies (predominantly motorized rifle divisions) or tank armies (predominantly tank divisions), both designed to provide the shock power and mobility required for maneuver-oriented actions after the initial nuclear exchange. Although the Soviets already possessed a great number of tanks, they began to develop better tanks and to develop and produce large numbers of armored personnel carriers to enable the infantry to keep up with the tanks.

A fundamental doctrinal change occurred in 1964 when the Soviets began to redefine combined arms application in terms of a more balanced view of the complementary role of nuclear and conventional forces. By the end of the 1960s, they had concluded that any war in Europe must be won quickly—before the enemy could escalate to strategic nuclear war. The only way to win such a "short war," they determined, was by means of an offensive with emphasis on surprise and high rates of advance combined with overwhelming firepower.

In case of an initial nuclear strike by the Soviets, combined arms forces would still be used as an exploitation echelon to maximize the results of the nuclear blow. Otherwise, they could operate initially in a purely conventional mode but be prepared to switch from conventional to nuclear warfare at some subsequent stage. Although the Soviets would prefer to achieve victory with conventional means alone, they realize that situations may arise where tactical nuclear, biological and chemical (NBC) weapons are used against them or need to be used by them. The Soviet aim of making such a transition without major adjustment eliminates the need for separate doctrine for nuclear and nonnuclear combat. The use of nuclear weapons might change some of the details of Soviet operations but not the fundamentals.[7]

Considering this doctrinal shift, the

Soviets recognized, in the early 1970s, that the tactics, organization and equipment of their ground forces were not adequate for the tasks of the modern battlefield. Accordingly, much debate ensued in an attempt to refine and perfect a constantly evolving tactical doctrine. The results of this debate may be summarized as follows:

Whenever possible, the Soviet ground forces will avoid attacking enemy strongpoints preferring, instead, to seek out exposed flanks, gaps between strongpoints and lightly defended areas. Through these gaps, they can penetrate rapidly into the enemy rear, destroying the enemy's nuclear delivery means and bringing about a political collapse before the enemy can decide to use such weapons.

When a prepared defense poses an obstacle to the desired rapid tempo of the offensive, the Soviets will conduct an "attack of a defending enemy" in order to remove a part of the obstacle and create a gap. This is most commonly an attack from the march characterized by speed, multiple march routes and "nuclear-scared" dispersal In the attack itself, the basic combat organization will often be the regiment which is assigned an immediate objective, a subsequent objective and an axis for further advance Once past the obstacle, Soviet forces may turn to attack surviving defenders from the flank and rear, or they may push on rapidly toward objectives deep in the enemy's rear area.

In either case, the Soviets intend to continue the offensive at a rapid tempo before the enemy has time to reconstitute an effective defense. The main threat to Soviet forces as they move rapidly deep into enemy rear areas will be from reserves moving forward to block a gap in the defense. The collision of the two forces will result in a form of offensive action called the "meeting engagement."

As this tactical doctrine was emerging, the Soviets also began a program of modernizing and upgrading their ground forces to give them the capability to carry out the evolving offensive doctrine. Now, after more than a decade of observing the trends in Soviet military writing and exercises, the introduction of new equipment and, more recently, the signs of reorganization, we are able to draw some conclusions about what is taking place in the Soviet ground forces and why.

ORGANIZATION AND EQUIPMENT FOR THE MODERN BATTLEFIELD

The characteristics of the currently evolving Soviet offensive doctrine necessitate the application of the combined arms concept, especially at regiment and battalion level where each arm is extremely vulnerable on its own. To build such a combined arms capability, the Soviets have steadily upgraded ground forces organization and equipment to produce both quantitative and qualitative improvements along four main lines: maneuver (tanks, infantry and reconnaissance), organic defense (antitank and air defense), suppression (artillery and tactical air) and combat support (which in the Soviet definition includes such things as logistics and engineers).

Tanks

The keystone of the Soviet high-speed offensive is the tank. Although the experiences of the 1973 Middle East War cast some doubt in Western circles about the future of the tank, the Soviets still view it as the most versatile and survivable weapon and above all as the best

counter to enemy tanks. However, the advent of modern antitank weapons which outrange the tank's own gun has made the primacy of the tank dependent on the combined arms concept, especially in an attack of a defending enemy.

Proof of the Soviets' continuing commitment to the tank are the current *T64* and *T72* medium tanks, both introduced in the early 1970s. After some initial confusion between the two tanks, the *T64* is now recognized as "the first and most sophisticated of their modern family of main battle tanks."[8] While the *T64* is only known to have been issued to first-line Soviet units in the Group of Soviet Forces in Germany (GSFG) and the Southern Group of Forces in Hungary, the *T72* is a less-expensive, high-production tank chosen for deployment in the western military districts of the USSR and for export to Warsaw Pact armies and others.[9]

Comparing the new Soviet tanks to their NATO counterparts, von Senger und Etterlin states:

Although NATO tanks are generally superior in quality, they are not superior to the T-72 now being issued to Soviet forces. Advanced technology, especially the improved armour of the T-72, improves the survivability of Warsaw Pact armoured forces.[10]

Unless the CINCENT is still confusing the *T72* with the more sophisticated *T64*, this indicates that both new Soviet tanks are superior to NATO main battle tanks.

The basic models of both tanks incorporate several innovative features, including a 125mm smoothbore main gun with automatic loader, as well as unconventional (layered or laminated) frontal armor and upgraded power plants.[11] This generation of tanks is also the first to employ the collective chemical and biological protection (air filtration and overpressure) system common to most Soviet combat vehicles introduced since 1966, along with the *PAZ* radiological protection system common to tanks built or retrofitted since 1960. They are also equipped with an antiradiation liner in the turret (except on export models of the *T72*).[12]

In the past two years, the Soviets have also fielded (or experimented with) several variants of both tanks, featuring full-length standoff skirting for added flank protection, overhead armor protection for the engine compartment and possibly a laser rangefinder for enhanced firepower.[13]

As if this were not enough, it is only a matter of time until the Soviets field their next series-production tank which has been undergoing field trials since 1977. Arbitrarily called the *T80* in the West, the new tank will probably retain the 125mm gun and basic configuration of the *T64* and *T72*, but will have even better armor protection and an even larger engine to propel it faster against enemy defenses or toward objectives in the enemy's rear area.[14]

Compared to earlier tanks, the *T64*, the *T72* and especially the *T80* possess speed and unrefueled cruising range more compatible with those of the *BMP* and *BTR*. This greatly enhances the potential for combined arms integration during either the assault or exploitation phase of the high-speed offensive.

In the attack of a defending enemy, tank platoons normally lead the assault, closely followed by dismounted infantry and then by *BMPs* or *BTRs*. As this combined arms team approaches the enemy strongpoint, the initial fire suppression by air and artillery is lifted, and the attackers provide mutual protection from potentially devastating enemy antitank weapons by continuing effective suppressive fire with tank guns, antitank guided

missiles (ATGMs) and small arms.

Larger tank units are normally found in the second echelon of the assault formation, earmarked for quick exploitation of gaps created by the combined arms action of first-echelon forces. If the enemy defense is weak or reduced by nuclear or conventional weapons, these tank forces may be committed along with motorized rifle troops in the first-echelon attack.

In the meeting engagement, tanks must keep pace with *BMPs* and *BTRs* during the rapid advance into the enemy's rear area and are normally expected to conduct the widest maneuver and attack the enemy flank and rear. Under such circumstances, tanks are less likely to have true combined arms support, but it appears that the current generation of Soviet tanks is quite capable of operating on its own against an enemy who has not had time to establish an effective antitank defense. The 125mm tank gun itself is a formidable antitank weapon although the basic load contains a high proportion of high-explosive rounds (22 out of 40) well-suited for the suppression role normally performed by artillery and supporting infantry.

Infantry

Anyone who doubts the importance of speed in Soviet offensive doctrine needs only to look at the development of armored combat vehicles for proof. Although the original purpose of introducing armored personnel carriers *(BTRs)* into the Soviet ground forces was to enable the infantry to keep up with tanks, the shoe was on the other foot by 1961 when the *BTR60P* series was introduced along with the *T62* tank. The open-topped *BTR60P* was followed in 1964 by the *BTR60PA* which added overhead armor cover and, in 1966, by the *BTR60PB* which added turret mounting coaxial 14.5mm and 7.62mm machine-guns.

The appearance of a new infantry fighting vehicle *(BMP)* in 1967 further compounded the problem of tanks not being able to keep pace with the infantry. Not until the introduction of the *T64* and *T72* in the early 1970s did tanks again begin to approach the speed of the *BTRs* and *BMPs*.

The introduction of the *BTR70* in 1978 put an end to speculation that all motorized rifle units would eventually be equipped with *BMPs*.[15] Two regiments in each motorized rifle division remain equipped with wheeled *BTRs*, while the third has *BMPs*. *BMPs* are also employed in the motorized rifle regiment of the tank division and in the reconnaissance battalion of either type of division. A brief look at the characteristics of the two vehicles will make it clear why each is suited for its particular role on the battlefield.

BTRs have less combat power than *BMPs* but are faster on roads. The *BTR70* appears to have an enlarged engine compartment and, presumably, even greater speed than the *BTR60PB*. A wheeled *BTR* requires less maintenance than a tracked *BMP* but lacks the *BMP's* capability to go wherever tanks can go. *BTRs* do, however, perform well cross country in conditions that favor wheels. *BTRs* cost less to produce but pay the price in the form of reduced protection. Like *BMPs*, they have a collective air-filtration and overpressure system for chemical and biological protection, but they have extremely light armor, making them vulnerable to high-explosive fragmentation, as well as small-arms fire.

Although both the *BTR60PB* and *BTR70* have firing ports for the mounted infantry squad, the infantrymen must be prepared to dismount to provide small-

arms cover for tanks or the *BTR* itself. However, the location of troop exit hatches (on top of the *BTR60PB* hull and on the lower side of the *BTR70*, between the second and third wheels) makes the dismounting squad vulnerable to enemy fires. The *BTR* turret machineguns provide some fire suppression, but the *BTR* and its squad are better employed where there is heavy suppression by tactical air and artillery—that is, in the first echelon of an attack of a defending enemy.

The *BMP*, on the other hand, with its rear exit doors, heavier armor and greater firepower, is much better suited for operating in the enemy rear. It was originally designed for an exploitation role after enemy defenses had been reduced or totally breached by an initial nuclear strike. Not only its collective protection system but also its cross-country performance and capacity for independent operation made it ideal for operation in NBC conditions.

However, renewed emphasis on conventional warfare in the late 1960s and the vulnerabilities demonstrated by the *BMP* in conventional combat in the 1973 Middle East War cast a shadow on the future of the Soviets' first true infantry fighting vehicle. Opponents discovered that the *BMP's* relatively thin armor provides protection against .50-caliber armor-piercing rounds only over the 60-degree frontal arc and that the vehicle is extremely vulnerable to ATGM and tank fire. In the mid-1970s, therefore, there was an extensive debate in the Soviet military press on ways to make maximum use of the *BMP's* mobility and firepower while minimizing its vulnerability to enemy fire.[16]

The Soviets concluded that the *BMP* was still best-suited for exploitation, avoiding prepared enemy defenses and penetrating rapidly into the enemy rear. Therefore, *BMP*-equipped units are normally found, along with tank units, in the second echelon of an attack of a defending enemy. Once in the rear, they are most likely to encounter an enemy on the move. In the meeting engagement which follows, the *BMP*, with its considerable speed, cross-country maneuverability and integral firepower, is eminently well-suited for engaging and routing the enemy before he can establish a defense.

Thus, we see that the role of the *BMP* has become closely linked to that of the tank. It is not surprising, therefore, to see an increase in the number of *BMPs* in a

The *BMP1* infantry fighting vehicle

Jane's Weapon Systems, 1979-80

tank division. Until recently, each tank division had one *BMP*-equipped motorized rifle regiment, and each of the division's three tank regiments had a *BMP* company. The three *BMP* companies have now been expanded to battalions, giving the tank division, oddly enough, twice as many *BMP*-equipped battalions as a motorized rifle division. This expansion, along with the addition of a howitzer battalion in each tank regiment (see below), has, for the first time, given the tank division a combined arms capability down to regiment and perhaps even battalion level.[17]

Rather than reinforcing each tank regiment with one battalion from the *BMP* regiment, the division commander now has four full regiments at his disposal for combined arms action during exploitation and meeting engagements. It would also be possible to use such a tank division in the first echelon of an assault on a prepared defense by splitting the division's six *BMP* battalions among the two first-echelon tank battalions of each tank regiment. In either case, the reorganization has greatly enhanced the role of the tank division in high-speed, combined arms operations.

As a final note on infantry combat vehicles, we must mention the *BMD*, the airborne equivalent of the *BMP*. Introduced around 1970, the *BMD* has the same turret armament as the *BMP*, but it is smaller and lighter to facilitate airdropping. Like the *BMP*, it is intended for operations in enemy rear areas, but it seems to be best suited for mounted engagements. As partial compensation for its smaller squad size, the *BMD* has two additional bow machineguns. Because of its specialized role in rear area operations, the Soviet airborne division is now in the process of equipping all three of its regiments with *BMDs*.[18]

Reconnaissance

Reconnaissance units also play a vital role in the Soviet high-speed offensive, screening in front of the main force and providing a continuous and timely flow of information on the enemy and terrain. In an attack of a defending enemy, they must locate strongpoints and gaps in enemy defenses. In a meeting engagement, they must conduct deep and aggressive reconnaissance in order to enable the main force to react quickly and seize the initiative. During the past decade, new equipment and organizational changes have added quantitatively and qualitatively to the mobility and firepower necessary for reconnaissance units to carry out these tasks.

The only familiar faces in the division-level reconnaissance battalion are in the scout car reconnaissance company. In the mid-1970s, the seven *PT76s* of the light tank company began to be replaced by a *BMP* reconnaissance company with 12 standard *BMP1s* and three new *BMP M1976* armored reconnaissance vehicles. The *BMP M1976* variant has an enlarged, two-man turret which mounts the standard 73mm *BMP* gun, but it lacks the ATGM launcher.[19] More recently, a new, tracked NBC reconnaissance vehicle has begun to replace the aging *BRDM/BRDM2rkh* in the scout car and *BMP* reconnaissance companies.[20] The regiment-level reconnaissance company is now equipped with four *BRDM/BRDM2* scout cars, three *BMP1s* and one *BMP M1976*.

However, the most striking organizational change has been the addition of six medium tanks to the reconnaissance battalion.[21] In the past, reconnaissance units have generally not engaged in combat but have sometimes been reinforced with motorized rifle or tank elements in order to seize and hold key terrain in an assault

or to engage small enemy units encountered in a meeting engagement. Now, with its own organic *BMPs* and medium tanks, the division-level reconnaissance battalion possesses, without reinforcement, the combined arms force needed to conduct aggressive reconnaissance to include limited combat.

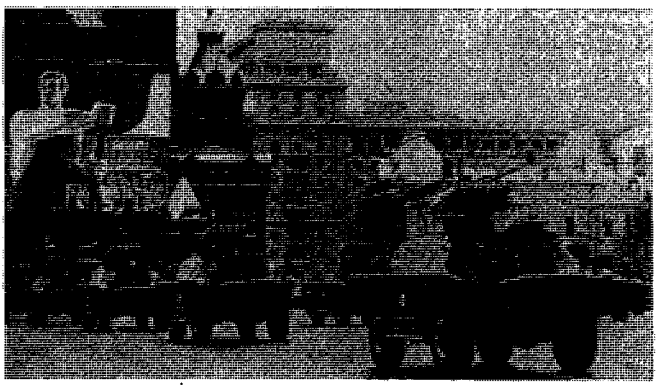
Antitank Capabilities

Although tanks and *BMPs* have the capability to protect themselves from their enemy counterparts, they also need additional protection from organic antitank weapons. *BTRs*, lacking an antitank punch in their turret armament, are even more dependent on external support. In order to provide more flexible antitank coverage for combined arms operations, the Soviet ground forces have upgraded their inventory of antitank weapons, virtually from top to bottom, during the past decade.

The only antitank weapons not upgraded in the 1970s were the 73mm recoilless antitank gun *SPG9* (virtually identical to the *BMP* main gun) in *BTR* battalions and the 100mm antitank gun *T12* with a range of 2,000 meters. In 1980, however, reports from normally reliable sources indicated that the *T12*, in service since 1965, would be replaced by a 125mm antitank gun using the same tube and ammunition as the new Soviet tanks. Like the *T12*, this gun, which may have a self-propelled version, will provide flank defense in the antitank battalions of motorized rifle divisions and *front*-level artillery divisions.[22]

During the 1970s, the Soviets also introduced a family of second-generation, canister-launched ATGMs with semiautomatic command-to-line-of-sight (SACLOS) guidance. The SACLOS systems increase accuracy and require the operator only to keep his sight on the target. The new ATGMs have shorter times of flight and greater armor penetration than their predecessors. Further, they offer a wide assortment of ranges.

***BRDM2s* on parade armed with five-tube *AT5 Spandrel* antitank missile launchers**



Jane's Weapon Systems, 1979-80

The *AT4 Spigot*, introduced in 1972, has a range of 2,000 meters and is replacing the manpack *AT3 Sagger* in the ATGM squad of *BTR* battalions. The *AT5 Spandrel*, with a range of 4,000 meters, followed around 1977 and replaces the *BRDM2*-mounted *Sagger* in the antitank battery of motorized rifle regiments. Around 1978, the *AT6 Spiral*, with a range of 5,000 meters (double that of the *AT2 Swatter* on the *Hind-D*), appeared on the *Mi-24 Hind-E* helicopter.[23] To improve short-range antitank protection, the Soviets introduced two new antitank grenade launchers in the late 1970s. Each motorized rifle squad now has an *RPG16* with greater armor penetration and range than the old *RPG7* (330mm at 500 meters). The *RPG18* is a lightweight, throwaway model with a range of about 200 meters.[24]

Air Defense

Realizing that the enemy will try to use his air forces to halt and defeat any offensive, the Soviets have made tactical air defense an integral element of combined arms operations. Its mission is to deter or destroy enemy fixed-wing aircraft and helicopters that have penetrated into the air space of Soviet maneuver units Therefore, maneuver units are equipped with a variety of organic surface-to-air missiles (SAMs), antiaircraft guns and associated equipment which form a comprehensive, all-around air defense system.

Air defense weapons are normally located in the forward echelons in order to provide the earliest possible detection and engagement of enemy aircraft as they approach the Soviet forces. Mobility and survivability, therefore, take on added importance since air defense units must be able to maneuver with tank and motorized rifle units during rapid movement.

In recent years, tactical air defense has joined in the overall trend in the Soviet ground forces toward mobility, survivability, flexibility and at least a limited capability for autonomous operation. New weapons in the air defense umbrella have also improved firepower and target-handling capability, enabling them to engage targets at greater ranges and at lower altitudes than was previously possible. All the new self-propelled air defense weapons have about the same amount of armor protection as a *BTR* and are equipped with air-filtration and overpressure systems for collective chemical/biological protection.

The Soviets' first mobile SAM system was the *SA4 Ganef*, introduced in 1967. It is deployed in *front* and army-level SAM brigades to engage aircraft that escape divisional air defense systems. At army level, it may also be used to augment divisional assets in the forward area. The *SA4* system is, therefore, mounted on a tracked transporter-erector-launcher (TEL). Although the TEL has no on-board radar, the associated systems are also mounted on highly mobile, tracked vehicles.

A possible replacement for the *SA4* is a new SAM called the *SA12*. Recent reports credit the *SA12* with a range of 100 kilometers (versus 80-plus kilometers for the *SA4*) and a minimum altitude variously estimated at 30 or 90 meters (versus 150 meters). The *SA12* is also said to have a phased-array radar capable of handling multiple targets.[25]

Air defense regiments in maneuver divisions, previously equipped with *S60* towed 57mm antiaircraft (AA) guns, have now been upgraded to SAM regiments. The *SA6 Gainful*, in service since 1967, was the star of the 1973 Middle East War, but, in 1974, it was joined in the Soviet

forces by the *SA8 Gecko*. The tracked *SA6* TEL has no on-board radar, but the wheeled, amphibious *SA8* transporter-erector-launcher and radar (TELAR) has integral acquisition and fire-control radars, allowing more independent action. *SA6* regiments provide greater depth of coverage, especially against aircraft employing standoff weapons, while *SA8* regiments are especially suited for employment in exploitation operations. In recent years, both types of divisional SAM regiments have been upgraded with improved systems.

Around 1979, the *SA11* began to appear alongside the *SA6* in batteries of divisional SAM regiments. The tracked *SA11* has a maximum range similar to that of the *SA6* (25 to 30 kilometers) but has a lower minimum altitude (30 versus 100 meters). Target acquisition can be performed by a separate radar, as for the *SA6*, or the *SA11* can operate independently for surveillance as does the *SA8*. This gives a higher degree of autonomy and mobility to *SA11*-equipped units.[26]

The *SA8B* variant, first seen in 1980, uses the same wheeled TELAR as the *SA8* but carries six missiles in canisters instead of four rail-mounted missiles. The use of canisters increases the number of ready missiles, improves missile survivability and facilitates resupply and reloading.[27]

The air defense battery of maneuver regiments is equipped with four *ZSU23-4* 23mm self-propelled AA guns and four *SA9 Gaskin* SAM systems. Although maneuver battalions have no organic air defense units, two *ZSU23-4s* may support each of the regiment's two first-echelon battalions, while *SA9s* deploy between the first and second echelons of the regiment in order to support both echelons.

The *ZSU23-4*, in service since 1966, is mounted on a tracked (although not amphibious) chassis with an on-board *Gun Dish* fire control radar. It is able to keep pace with rapidly advancing tank and motorized rifle units, but its relatively thin armor makes it vulnerable to enemy ground fire when deployed well forward. In such situations, the *ZSU23-4* is well-suited for engaging ground targets in self-defense since it has a horizontal range of 7,000 meters and can destroy lightly armored vehicles at ranges up to 1,000 meters. Despite its good record, the *ZSU23-4* is expected to be replaced, perhaps as early as 1982, by a 30 to 40mm gun with improved range (3,800 meters versus 3,000 meters), rate of fire and fire control equipment.[28]

The *SA9*, mounted on a modified *BRDM2* amphibious vehicle with no on-board radar, was first seen in 1968. In recent years, however, the *SA9* has begun to be replaced by the new *SA13* mounted on a modified *MT-LB* tracked amphibious vehicle. Like the *SA9*, the *SA13* TEL carries four canister-launched missiles (some may have six), but the new missiles incorporate a cooled infrared seeker (*SA9* seekers are uncooled) and operate in dual-frequency bands to better discriminate against countermeasures. The maximum effective range of the *SA13* has been reported as 5 to 7 kilometers although it seems unlikely that the new missile would have a shorter range than the 8 kilometer *SA9*. Another feature which dramatically improves the reaction time of the *SA13* is the surveillance and ranging radar mounted on the TEL.[29]

At company level, most Soviet tanks (except command variants) have a turret-mounted 12.7mm AA machinegun. *T64s* and *T72s* mount a new *Kalashnikov* 12.7mm model which is presumed to have the same range as the previous model (1,000 meters AA or 1,500 meters against ground targets) but may fire improved

ammunition.[30] Each motorized rifle company, on the other hand, is equipped with three shoulder-fired *SA7 Grail* systems. The *SA7*, with a maximum range of 5 to 6 kilometers and a minimum altitude of only 45 meters, has been in service since 1966 and may soon be replaced by a new man-portable SAM.[31]

The current trend of improving air defense coverage by introducing new and modified systems is expected to continue as improved technology is developed. For example, it is estimated that the Soviets may be able to field a tactical air defense laser weapon by the mid-1980s.[32]

Artillery

For all the talk about tanks, infantry and organic defense, it is, in the end, the ability to suppress enemy weapons which will largely determine the success or failure of the Soviet high-speed offensive. During the attack, there must be continuous and effective suppressive fire. First, it must be by air and artillery (or nuclear weapons), then by the attackers' own heavy weapons (tanks and ATGMs) and, finally, by the attackers' small arms and machineguns. Although the Soviets view nuclear weapons as the best means of suppression, they would prefer to achieve their goals with conventional weapons if possible. When nuclear weapons are not used, artillery becomes vitally important in ensuring the required rapid rate of advance. The Soviets consider artillery more effective than tanks for suppressing all antitank weapons other than tanks.

Artillery support of maneuver units involves three phases. In the preparation phase, as Soviet maneuver units approach enemy defensive positions, artillery fires must suppress or destroy enemy nuclear means and artillery (including antitank guns), other antitank weapons of all kinds (including armored vehicles), command posts, radars, communications equipment, and so forth.

The support phase, during the assault, must assist troops to deploy and penetrate enemy defenses by moving barrages ahead of attacking troops and firing on targets offering resistance to attackers (including obstacles and minefields). In the accompaniment phase, individual guns and units must follow closely behind tanks and motorized rifle troops through gaps into the enemy rear to provide continuous and effective fire support during exploitation.

The evolving Soviet artillery force structure, especially the replacement of towed weapons with self-propelled artillery, is an excellent example of doctrine determining force structure. Particularly in the accompaniment phase, only self-propelled artillery has the cross-country mobility necessary to keep up with tanks and other combat vehicles and the capability to operate independently deep in the enemy rear. In other phases of fire support, however, towed weapons may be equally as effective and are, therefore, kept in the inventory of even first-line Soviet units. In order to meet the needs of the modern battlefield, Soviet artillery continues to be upgraded in both quantity and quality.

In the current Soviet view of nuclear and conventional warfare, it is natural to find a number of dual-capable systems in the force structure. The Soviets rely on such systems for most of their shorter range nuclear and chemical delivery capability. Their short-range ballistic missiles and rockets are capable of firing nuclear, chemical or conventional (high-explosive) munitions.

The *FROG7* unguided rocket, which has been standard equipment in division-

level *FROG* battalions since 1965, is mounted on a *ZIL135* eight-wheeled TEL and has a maximum range of 70 kilometers. Oddly enough, the TEL vehicle provides no NBC protection for the crew. However, it is now being replaced by the *SS21* tactical ballistic missile which has greater range (120 kilometers), as well as probable improvements in reaction time, missile reliability, accuracy and handling characteristics.

Since it is mounted on a six-wheeled TEL similar to that of the *SA8 Gecko* SAM system, the *SS21* also has improved cross-country capability and is possibly amphibious. Like the *SA8*, it probably has an air-filtration and overpressure system for collective chemical and biological protection. The *SS21* was first deployed in 1976 in the USSR and was reported in the GSFG in 1981.[33]

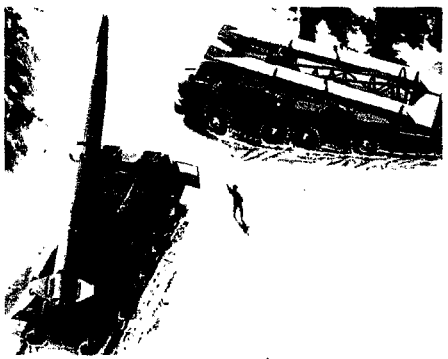
At *front* level, the *SS12 Scaleboard* has been in service since 1969. The *Scaleboard* is mounted on an *MAZ543* eight-wheeled TEL vehicle and can deliver a 200-kiloton nuclear warhead at ranges of up to 900 kilometers with a circular error probable of 900 meters. It is now being replaced by the new *SS22* introduced in 1979. The new missile offers greater range (possibly up to 1,000 kilometers), improved accuracy and a heavier payload.[34]

The *SS1C Scud-B* has been in the inventory at both *front* and army levels since 1961. Also mounted on an *MAZ543* TEL, it has a maximum range of 280 kilometers. In the early 1980s, it will be replaced by the *SS23* which has greatly improved range (500 kilometers), increased accuracy and payload, and reduced reaction and refire times.[35]

Until recently, *front*-level heavy artillery brigades in the USSR were equipped with two very old, towed artillery systems adapted to fire nuclear projectiles: the 203mm howitzer *M1931 (B4M)* and the 240mm mortar *M1953*. During the 1979s, however, these towed weapons began to be replaced by new self-propelled models. Little is known about the new 203mm self-propelled gun except that it has a lengthy gun tube and is mounted on a tracked chassis.[36] The 240mm self-propelled mortar is reported to be mounted on a chassis similar to that of the 122mm self-propelled howitzer and is said to have a rapid reloading capability.[37] We can presume that both gun and mortar have ranges as great as or exceeding those of their predecessors—18,025 meters and 9,700 meters respectively.

Another recent arrival at *front* level is the 240(?)mm multiple-rocket launcher *BM27*. Mounted on a *ZIL135* eight-wheeled chassis similar to the *FROG7* TEL, the *BM27* has a 16-tube launcher for rockets with fragmentation, high-explosive, chemical and possibly scatterable-mine warheads. Since 1977, it has appeared in the rocket-launcher brigade of *front*-level artillery divisions replacing 122mm *BM21s*.[38]

The *FROG* tactical nuclear surface-to-surface missile



Soviet Military Power

At division level, the artillery regiment has recently undergone a minor reorganization. The previously independent *BM21* multiple-rocket-launcher battalion has now been integrated into the artillery regiment, along with two battalions of 122mm *D30* towed howitzers and a battalion of 152mm *M1973* self-propelled howitzers.[39] This move should improve the level of centralized fire planning for the preparation and support phases of artillery operations.

The biggest change in artillery force structure, however, is at the regimental level. Motorized rifle regiments, which in the early 1970s had only a battery of six 122mm howitzers, now have an 18-tube howitzer battalion. And tank regiments, which previously had no organic artillery at all, have recently begun to follow the same trend.[40]

BTR regiments are equipped with the towed 122mm howitzer *D30* which has the on-road speed (80 kilometers per hour) to make it compatible with the fast-moving *BTRs*. Likewise, it is no accident that *BMP* regiments are accompanied by the 122mm self-propelled howitzer *M1974*, mounted on a chassis of the same *PT76* family from which the *BMP* itself was derived. This connection is further emphasized by the supporting systems associated with the *M1974:* The armored command and reconnaissance vehicle *M1974*, the *BMP M1976* variant with the *Small Fred* battlefield surveillance radar and the artillery-associated *MT-LB* radar vehicle variant are all members of the highly mobile *PT76* family.[41]

This new equipment enables self-propelled artillery units to operate closer to the enemy, in either an attack of a defending enemy or a meeting engagement, suppressing enemy antitank weapons with both direct and indirect fire. It also allows the Soviets to achieve combined arms integration at a lower level. Regiment, battalion and even company commanders can now have artillery support that can go anywhere their tanks and *BMPs* can go.

If the question is then raised, why tank regiments are now in the process of adding a battalion of *D30s* rather than self-propelled *M1974s*, the answer must be that this is only an interim measure. Even in the GSFG, self-propelled artillery units are still in the minority. The new howitzer battalions in tank regiments may very well be composed of *D30s* made available when *BMP* regiments converted to *M1974s* or when one of the three *D30* battalions in the artillery regiment of the tank division was replaced by 152mm self-propelled howitzers It is quite likely that when enough additional *M1974s* become available, they will go into tank regiments before *BTR* regiments

Tactical Air

Soviet tactical air has essentially the same suppression role as artillery, but it has added range and flexibility. Ground attack aircraft, such as the third-generation *Su-17 Fitter C*, *Su-24 Fencer*, and the *MiG27 Flogger D J*, all introduced in the early 1970s, often conduct attacks simultaneously with the artillery's preparation fire but aimed at deeper targets Attack helicopters, however, are usually employed after the artillery preparation One of the most important missions of attack helicopters is "air accompaniment" (what we might call "close air support") of Soviet maneuver forces during meeting engagements. Soviet training, especially since 1976, has been designed to weld tank, motorized rifle and attack helicopter units into mutually supporting combined arms teams.[42]

Not just coincidentally, 1976 also marked the appearance of the *Mi-24 Hind-D* attack helicopter, redesigned for a primary gun-ship role. Its armament includes a four-barrel 12.7mm *Gatling* gun in the nose, as well as four 32-shot 57mm rocket pods and four *AT2 Swatter* ATGMs mounted on its stub wings. The newest *Mi-24* variant, the *Hind-E*, carries the same armament except that it mounts four new SACLOS-guided *AT6 Spirals* which have double the range of the *Swatters*.

With the increasing use of attack helicopters in support of ground forces operations, it is important that the Soviets currently seem to be in the process of reconstituting a pre-World War II entity known as *armeyskaya aviatsiya* (army aviation). As opposed to the Frontal Aviation organization in which all fixed-wing and helicopter assets are subordinate to the *front* commander, the re-emergence of army aviation would place helicopter assets under the direct control of combined arms army and tank army commanders. If helicopters thus become, in effect, a component of the ground forces, they may in the future become organic to ground force divisions. They could then be easily attached to motorized rifle or tank regiments or even to battalions for combined arms operations.[43]

The *Mi-24 Hind-D* with turreted *Gatling* gun

Combat Support

While the focus of this article is primarily on maneuver, organic defense and suppression, we cannot ignore the fourth basic element of the combined arms equation. Since timely delivery of fuel and ammunition is essential for maintaining high rates of advance, it is significant that the Soviets have expanded their stocks of both of these items in the forward area in the last year or two. In 1978, GSFG stocks were estimated to consist of enough ammunition for 37 days and fuel for 16 days without drawing on strategic stocks in East Germany itself.[44]

New Soviet logistic vehicles available to move these supplies include the *KAMAZ4310* six-wheel-drive truck with a 5-metric-ton cross-country payload capacity.[45] The *TUM150* automatic pipe-laying machine is capable of laying tactical pipelines from *front* to army level in an offensive operation and even down to division level in a static situation.[46] Another piece of equipment which contributes to the high-speed offensive is the new *MTP* armored maintenance and recovery vehicle, mounted on a *BTR50P* chassis. The *MTP* is designed to accompany *BMP*-equipped motorized rifle units with the capability of repairing and even refueling *BMPs* on the battlefield and under NBC conditions.[47]

The Soviet ground forces also deploy a wide range of new combat engineer equipment designed to cope with the effects of both nuclear and conventional weapons. Soviet assault bridging has always been second to none. Without this equipment, the tactics previously discussed would not be feasible.

Electronic warfare is a possible fifth

element in the mix of combat and support functions. In the last 10 years, there has also been a steady improvement in electronic warfare potential as an integral part of combined arms operations. The Soviet ground forces continue to introduce new jammers, as well as a new series of improved signals intelligence vehicles.[48]

CONCLUSION

In general, the newest weapons in the Soviet ground forces demonstrate a trend toward improved mobility (sometimes emphasizing maneuverability over speed), increased survivability and a greater capability for autonomous operation. While Soviet tactical doctrine attempts to take advantage of combined arms interaction wherever possible, there are situations, especially when operating in the enemy rear, which dictate independent action by the individual unit or weapon system.

It must also be pointed out that the combined arms buildup in the Soviet ground forces has not been a process of even growth among the various arms. Although the chief beneficiaries of the modernization and reorganization until a few years ago were the motorized rifle regiments and divisions, with artillery coming a close second, the most recent developments seem to be aimed at enhancing the combined arms capabilities of tank regiments and divisions.

While not all the changes discussed have yet been accomplished in all units across the board, it is safe to assume that the evolution of Soviet ground forces doctrine will continue in the 1980s, along with the comprehensive growth in force structure—both in numbers and in quality—required to implement it. This article represents a 1982 snapshot in the Soviet combined arms family album. It is important to remember that not all members of the family were present when the snapshot was taken and that new additions not yet pictured here are on the way or may already be present, but just not visible in the photo. This year's snapshot, like last year's, will soon become out-of-date as the Soviet ground forces continue to evolve.

NOTES

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3 General Sir Michael Gow. "The Defence of the Northern German Plain." *NATO's Fifteen Nations*. Special Issue 2. 1981. p 35.

4 *Loc. cit.*

5 *Soviet Military Power*. *op. cit.*, pp 28-29.

6 John Erickson. "Soviet Combined-Arms Theory and Practice." *Defence Studies*. September 1979, especially pp 1-4. Pages 70-86 of this article are reprinted as "An Evaluation: Soviet Combined Arms Operations." *Armor*. May-June 1980. pp 16-21; and Professor Erickson is also the author of "The Combined Operations of the Soviet Army." *Armies & Weapons*. December 1977-February 1978. pp 24-25. April 1978. pp 35-37. May 1978. pp 20-22; and June 1978. pp 20-23.

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8 *Soviet Military Power*. *op. cit.*, p 29.

9 *Ibid.* pp 28-30. Captain Gerald A. Halbert. "World Tank Production." *Armor*. March-April 1981. p 45, estimates the cost of a *T72* as $1,250,000 and that of a *T64* as $1,375,000 (1980 dollars); and cites (p 43) yearly production rates of 600 *T64s* and over 2,000 *T72s*. *Soviet Military Power*. *op. cit.*, p 12, estimates a continuous output of 500 *T64s* per year from 1976 to 1980 and figures of 1,500 *T72s* per year from 1976 to 1978, 2,000 in 1979 and 2,500 in 1980.

10 Von Senger und Etterlin. *op. cit.*, p 17.

11 *Soviet Military Power*. *op. cit.*

12 *Chemical Warfare Capabilities—Warsaw Pact Countries*. AST 1620S 104-79. US Army Foreign Science and Technology Center. Charlottesville, Va. 31 October 1979. p 29; and "Soviet Army T-72 Special Features." *International Defense Review*. Number 1. 1980. pp 22. The *T80* will probably have the same type of nuclear, biological and chemical (NBC) protection.

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18 *Ibid*.

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28 "Tactical Modernization," *Aviation Week & Space Technology*, *op cit*.

29 *Ibid*.; "World Missile Survey," *Flight International*, *op cit*., and "New SA-13 SAM System Deployed," *International Defense Review*, Number 8, 1981, p 705.

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31 Handbook 550-2, *Organization and Equipment of the Soviet Army*, *op cit*., Change 1, 1 July 1981, pp 4-7 and 5-38.

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37 "Soviet 240mm SP Mortar," *Jane's Defence Reivew*, Number 5, 1981, p 390.

38 "*BM-27 geheimgehalten: Der neue 240-mm-Mehrfachraketenwerfer der Sowjetarmee*," ("BM-27 Kept Secret: The New 240-mm Multiple Rocket Launcher of the Soviet Army") *Soldat und Technik*, July 1981, p 372.

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40 Coordinating Draft FM 100-2-3, *Soviet Army Troops: Organization and Equipment*, *op cit*.

41 Isby, *op cit*., pp 199-203; and *Warsaw Pact Ground Forces Equipment Handbook: Armored Fighting Vehicles*, *op cit*., p 3-88.

42 *Soviet Air Support to Ground Troops*, DDB-1300-147-79, DIA, Washington, D.C., June 1979, pp 19 and 22; and James H. Hansen, "The Development of Soviet Aviation Support," *International Defense Review*, Number 5, 1980, pp 681-85.

43 Basil Epatko, "Will the Soviets Recreate an Organic Aviation Arm of the Ground Forces?" *Review of the Soviet Ground Forces*, DIA, Washington, D.C., January 1980, pp 3-4; and Colonel Lynn M. Hansen, "Soviet Airpower Behind the Buildup," *Air Force*, March 1981, pp 68-72.

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46 "Pipe-Laying Training," *Review of the Soviet Ground Forces*, DIA, Washington, D.C., May 1980, p 17.

47 "Sowjetischer Instandsetzungs- und Bergepanzer M1P," ("The Soviet Armored Maintenance and Tank Recovery Vehicle MTP"), *Soldat und Technik*, November 1979, p 492.

48 *Soviet Military Power*, *op cit*., p 37.

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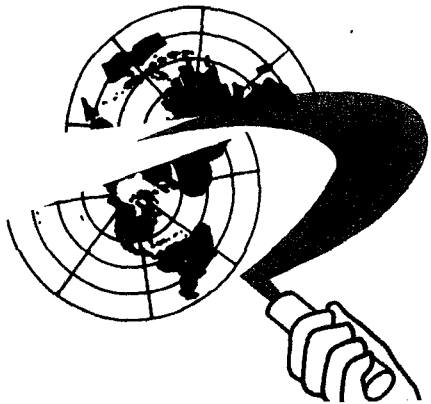
Western observers have devoted considerable attention to Soviet use of echelons in military formations. This article, by a noted Soviet analyst, explains the Soviet concept of echelon, its difference from the reserve and how the Soviets have employed echelons in the past.

P. H. Vigor

Soviet Echeloning



BRITISH and American officers are repeatedly told that an important objective for NATO forces must be the Soviets' second echelon. Therefore, they devote a great deal of time and effort to working out how to recognize this echelon and, then, having successfully recognized it, how to destroy it.

I do not wish to suggest for a single moment that a second echelon is not a desirable objective. But I do believe very strongly that there is in the West a lot of muddled thinking about what a Soviet second echelon is and what its principal functions are. The muddle is made all the greater because the English language, whether English-English or American-English, is very imprecise about what is meant by "echelon." Further, we British and Americans add to the confusion by being imprecise in our use of it. This article is an attempt to do a little toward clearing up some of the confusion.

The Russian word is *eshelon*. The standard dictionaries translate the word as "echelon," but its true significance is sketched in outline in the *Soviet Military Encyclopedia*. What follows is based upon

that article, supplemented by reference to Soviet military manuals and military histories of various kinds.

First, the Soviets draw a clear distinction between an echelon and a "reserve." At least Soviet military theorists draw this clear distinction. Soviet military practitioners (generals, admirals, and so on) have sometimes been known to blur it. Properly speaking, however, a second echelon (or a third echelon or a fourth echelon, for that matter) is a unit or formation designed to take over from the unit or formation ahead of it when the leading unit's attack is running short of steam.

Giving the enemy no respite, no time to rest, no time to redeploy his troops or reinforce them considerably increases the chances of success for an attack. An attack which might fail if delivered in stages, with periods of inactivity separating one stage from another, may well end up victorious if there are no separate stages and no periods of inactivity, and if unremitting pressure is exerted upon the enemy from the start until the triumphant finish.

The Soviets know this. Their concept of the attack (or, at a higher level, of the offensive) is based upon the acceptance of this point. Victory depends upon keeping up the pressure, so a means of doing this must be found. The means that the Soviets have chosen to adopt is echeloning.

Second echelons (and, where appropriate, subsequent echelons) are the means they have decided upon for keeping up the pressure. As has already been said, they are designed to take over from the first echelon when that unit or formation has become exhausted and is no longer making headway. Obviously, some offensives or attacks will be so speedily successful that the first echelon does not become exhausted. Under such circumstances, it does not merely weaken the enemy's defenses, which is all that many a first echelon has ever managed to do, but it overcomes those defenses and wins the day.

In which case, up to that moment, the second and any subsequent echelons will have had no part to play in that battle. They will no doubt have plenty to do in later battles or in later phases of the same battle if the battle has been planned in phases. But the objectives given to the unit or formation have, we are supposing, been attained by the first echelon, so the second and any subsequent echelons will obviously have been passive.

But this happens when everything goes well. A wise commander will recognize that, in war particularly, all seldom goes well. Before ordering the attack, therefore, he will assume that, in this instance too, things will tend to go wrong. He will also avoid the error of underestimating the enemy, and he will base his plans upon the likelihood of the enemy fighting effectively. If this happens, his original attack will not sweep on victoriously to its assigned objectives but, at one point or another, will become bogged down. Troops bogged down are obviously unable to exert much pressure on the enemy. They have probably suffered casualties and are short of men and supplies. It is best to withdraw them and replace them with fresh troops.

The fresh troops are the second echelon, and these take over the attack from the by-now-exhausted first echelon. It is important that they should do this as soon as possible after the first echelon has proved itself exhausted. If they do not, there will be a period of time when the enemy is *not* being hammered, and he will have that opportunity for regrouping and reinforcement. Such a situation is to be avoided. We will assume that our imaginary

Soviet commander has succeeded in avoiding it so that pressure upon the enemy is continued.

This means that the second echelon will itself have embarked on the attack and will continue with it until it, in turn, becomes exhausted and needs to be relieved by a third echelon. This should seldom happen. Soviet theory and Soviet practice concur in emphasizing that even a third echelon should be required only very rarely. As for a fourth echelon, although that is intellectually conceivable, the history of Soviet warfare will provide us with precious few examples of it occurring in practice. The point is that neither will be required unless the enemy defenses are extremely strong and are themselves deeply echeloned. Under such circumstances, it is understandable enough that two echelons would not be sufficient to see the matter through and that a further echelon or couple of echelons would be necessary. But this would be an infrequent occurrence.

I hope that what is emerging is a picture of a second echelon (or a third or subsequent echelon) as a unit or formation whose job it is to do *the same job that was being performed by the echelon in front of it, but to take over and complete that job when the preceding echelon has been unable to bring it to completion.* It is also the hallmark of a second echelon that it will have been assigned this task by the commander *before the attack ever begins.*

This distinguishes it from the reserve. A reserve is a unit or formation which is kept back by the commander to undertake whatever task may be dictated by the needs of the moment. In other words, the reserve can never know ahead of time what actual job is in store for it. It may be sent to keep up the momentum of the attack—in which case, it acts in a fashion indistinguishable from a second echelon. Or it may be sent to plug a gap between two subunits or subformations of the attacking commander's forces—in which case, it may well happen that its role is to

Born to Battle

act on the defensive. It also may be employed in the counterattack if the enemy should assume the offensive.

In all cases, the reserve's commander cannot know before the operation begins what part he will be required to play in it. This is the key distinction between him and the echelon commander. The latter knows *before the start of the operation* what tasks he has to perform.

The size of the forces traditionally assigned by the Soviets to the echelons and the reserve respectively is worthy of remark. To put it in a nutshell, the echelons do well, while the reserves do extremely badly. This is probably an irrational way of putting it. It would be better to say that a typical second echelon is a great deal larger than a typical reserve.

One or two examples from the history of the Great Fatherland War may be adduced to prove this point. Thus, in the *Vistula-Oder* operation of 1945, Marshal Ivan Konev's 1st Ukrainian Front had, as its first echelon, the 13th, 52d and 5th Guards Armies, together with the 25th, 31st and 4th Guards Tank Corps and parts of the 3d Guards and 60th Armies. Its second echelon consisted of the 21st and 59th Armies, and its reserve consisted of a couple of corps.[1]

In the Smolensk offensive of 1943, the Western Front had, as its first echelon, the 31st, 5th, 10th Guards, 33d, 49th, 10th, 50th and part of 39th Armies. Its second echelon consisted of the 21st and 68th Armies, and its reserve consisted of just one cavalry corps.[2] To move to a somewhat lower level, the 59th Army in the same year had two rifle corps, two rifle brigades and a mixed formation in its first echelon; two divisions in its second echelon; but no reserve at all.[3]

From what I have written so far, the reader is likely to gain the impression that Soviet forces engaged in the offensive will always have second echelons and that those forces which adopt them are exclusively the front-line troops. Neither impression is correct. The purpose of echeloning is to revitalize flagging effort, and it is a very good way of doing this. But, as with most things in life, a price must be paid for the privilege.

In this instance, the price to be paid is the removal of the firepower of the second echelon from the first stage of the battle. If it is not committed until the first echelon is suffering from exhaustion, it is doing nothing at the start of the battle to help defeat the enemy. In other words, the enemy is not being clobbered by the whole weight of the attacker's forces but only by that of the forces of his first echelon. This is a grave disadvantage. Often, however, it has to be accepted because the strength and the depth of the enemy's defenses demand that the attack be echeloned.

But suppose that the strategic or tactical situation is different; that the enemy's defenses are not so strongly manned or in such depth; that a real possibility of securing initial surprise over the enemy is seen to exist; and that the real problem for the attacking forces' commander, having secured that surprise, is to exploit it to the maximum. The best way of doing this is to hit the enemy as hard as possible in the first few hours of the battle. But this demands that every man should be committed to the battle right from the outset which, in turn, demands that the attacker's forces should be deployed in a single echelon.

The Soviets acknowledge the truth of this line of reasoning. Often, during the last war, they attacked with only one echelon. Provided that they had chosen well and that the enemy's situation indicated the likely advantages to be gained from a single-echelon offensive, they were very often successful. Soviet failures with

this kind of attack were generally the result of faulty preliminary assessment rather than any detectable weakness in the form of attack itself.

Of course, in addition to the enemy's circumstances, the terrain must also favor this form of attack. An army attacking with two divisions in a first echelon and its other two divisions in a second echelon will occupy only half the width of the front that another army will occupy if it attacks with all four of its divisions in a single-echelon deployment. In some parts of the world—the Russian Steppes, for instance—this geographical requirement presents no difficulty. In other parts, such as perhaps the Harz Mountains, the terrain forbids an extended lateral deployment. Then, the single-echelon deployment which the commander would have chosen had the ground permitted will have to be reluctantly abandoned in favor of a narrower front.

The commander may fume with frustration at being forced to adopt a two or even three-echelon deployment which on other grounds, in view of his assessment of the enemy and his defenses, he would have rejected as inappropriate. But terrain is a hard taskmaster. If the commander has no option but to traverse that particular terrain, then he must accommodate himself to the constraints it puts upon him.

The echeloning of armies makes a good introduction to a consideration of the second misconception. We all know that the Soviets employ echeloning at the very lowest levels, but they also employ it at the highest. Indeed, they employ it at *all* levels.

The army group commander deploys his armies in one or two echelons according to the principles that have been outlined in the preceding paragraphs. The army commanders deploy their divisions according to the same principles. The fact that the army group commander has chosen, let us imagine, a single-echelon formation by no means obliges the army commanders to deploy their divisions similarly. Each division will have been allotted its own specific task. The task, or the terrain which the division has to traverse, may be such as to impose a two-echelon deployment upon that particular division, or upon all of the divisions in that army or upon none. By contrast, if the army group commander is deploying his armies in two echelons, it is open to an army commander to deploy his divisions in one.

The same holds good for a divisional commander deciding upon the deployment of his regiments and for a regimental commander deciding upon the deployment of his battalions. Thus, the 14th Rifle Corps formed up for an attack near Novgorod in one echelon only, and each of its regiments and battalions was also in a single echelon. Other examples could be cited where the corps had its divisions in two echelons; where the divisions were mostly in two echelons but occasionally in one; and where the division in one echelon had its regiments in two echelons, but the regiments had their battalions in one

Perhaps this article will clear up some of the confusion that haunts the language of Western military discussion of the subject of echelons. However, so far the article has been concerned with only one of the two categories of echelon with which the Soviet military are familiar. That category is termed "the echelon as an element of tactical or operational deployment." As we have seen, forces can be deployed tactically or operationally in one, two or more echelons.

But the Soviet military know of a second category, the *strategic echelon*, intended to accomplish *strategic* tasks in

war. The strategic echelon is divided into a first and second strategic echelon, the first usually being intended for carrying out the first operations of the war. The second strategic echelon comprises those formations or groups of formations which are already fully complemented but are stationed back in the depths of their own country or which may be only in the process of being formed when hostilities commence.

It was the advent of mass armies and the consequent impracticability of winning the whole war in its early stages in one almighty "general engagement" which produced the need for a second strategic echelon. Its function is to make up the first strategic echelon's losses, to supplement its efforts when it is running out of steam and to carry out "other tasks."

It is reasonable to suppose that the Group of Soviet Forces in Germany, the Northern Group of Forces, the Central Group of Forces and the Southern Group of Forces compose, taken together, the Soviet ground forces' *first strategic echelon*. Those other Soviet formations which, when the war breaks out, are stationed fully ready in the military districts of European USSR make up, one supposes, the Soviet ground forces' *second strategic echelon*, as also do those other formations which are not yet fully formed.

So, there are second echelons and second echelons—some at the tactical, some at the operational and some at the strategic levels. It would clearly be valuable for NATO to prevent those echelons at whatever level from joining up with their first echelons. But NATO's chances of doing this would be increased, I think, if, when we talk about echelons, we are all a little clearer on what we are talking about. The task of destroying the whole vast second strategic echelon on its way from Minsk to Manchester is clearly different from, and will demand different measures than, that of destroying the second echelon of a motor-rifle regiment engaged in supporting a Soviet effort to cross the Weser River up near Hamelin.

NOTES

1. *IVOVSS* Volume 5 pp 60-61
2. *Smolenskaya Nastuplatel'naya Operatsiya*. Moscow USSR 1975
3. *Novgorodskaya-Luzhskaya Operatsiya*. Moscow USSR 1960

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MR REVIEWS

Nuclear Weapons and the Atlantic Alliance

By McGeorge Bundy, George F. Kennan, Robert S. McNamara and Gerard Smith
Foreign Affairs, Spring 1982

Since the advent of the policy of nuclear deterrence, the United States has asserted its willingness to use nuclear weapons to defend against Soviet aggression in Europe. This has been a fundamental aspect of the NATO Alliance. But, according to the authors:

The time has come for careful study of the ways and means of moving to a new Alliance policy and doctrine: that nuclear weapons will not be used unless an aggressor should use them first.

In effect, the authors are suggesting the establishment of a policy of no-first-use of nuclear weapons. They collectively believe that our current first-use policy is now too costly both in terms of unity within the NATO Alliance and in the threat it poses to the safety of the world. These costs are even more absurd when one considers that, while the risks from the current policy are rising, its deterrent credibility is declining.

What effect would such a no-first-use policy have on the NATO Alliance and its deterrent posture? Would the Europeans feel abandoned if the United States no longer provided the nuclear guarantee that has been in effect since 1949? The authors believe otherwise. They believe that the deterrence posture would be strengthened through having a unified, credible and precise nuclear policy and also through a greater attention to the development and maintenance of the conventional NATO forces.

With the establishment of a no-first-use policy, less money would be required to develop new, costly and more awesome first-strike nuclear weapons. The savings achieved could be used to better equip and maintain a viable conventional force. Although many commanders might initially believe that such a policy would put an uncalled-for limitation on their nuclear option, the authors believe that commanders would eventually support such a policy from a strictly military point of view as they would soon agree that "any other course involves unacceptable risks to the national life that military forces exist to defend."

Would this policy mean the end to the possibility of nuclear war in Europe? The authors say no. Obviously, no one can "guarantee beyond all possible doubt that if conventional warfare broke out on a large scale there would in fact be no use of nuclear weapons." They also state that, "As long as the weapons themselves exist, the possibility of their use will remain."

The authors are not advocating the doing away with nuclear weapons. They emphasize that it is important to avoid misunderstanding on this point. They state that "it is clear that large, varied, and survivable nuclear forces will still be necessary for nuclear deterrence." They also believe, however, that:

A posture of effective conventional balance and survivable second-strike nuclear strength is vastly better for our own peoples and governments, in a deep sense more civilized, than one that forces the serious contemplation of 'limited' nuclear scenarios that are at once terrifying and implausible.

The authors reason that today there is too much reliance on a "nuclear strategy."

Such reliance, if ever coupled with a destabilizing political situation, could lead to panic or adventurism on either side and to eventual catastrophe. The no-first-use policy could lessen this possibility by changing the current nuclear arms direction and:

. . . would bring new hope to everyone in every country whose life is shadowed by the hideous possibility of a third great twentieth-century conflict in Europe—conventional or nuclear.—SIK.

Our Gray War With Russia

By Captain Joseph C. Fox,
US Coast Guard, Retired
The Retired Officer, March 1982

The United States is heavily dependent on foreign countries for many of the strategic minerals and fuels which are crucial to American industry. Growing Soviet influence in Southern Africa and the Persian Gulf threatens to reduce or even choke off our supply of these essential ingredients. Clearly, the United States must take steps to ensure the uninterrupted industrial output of this country, but how?

Captain Joseph C. Fox, US Coast Guard, Retired, discusses this problem and offers several suggestions. He refers to the Soviet-US contention for the strategic materials as a "gray war" which, although "neither peaceful nor often blatantly hostile, . . . is there—ominous, threatening. . . ." The "battlefields" were clearly defined by Soviet leader Leonid Brezhnev in 1973 when he said: "Our aim is to gain control of the two great treasure houses on which the West depends . . . the Persian Gulf and . . . central and southern Africa."

Americans are already aware of their reliance on foreign oil supplies, a legacy of the 1974 Arab oil embargo. But our need for petroleum far exceeds the gasoline we use for automobiles. Our plastics industry depends on it, and about half of all US energy is derived from petroleum. This is significant when it is realized that we continue to import roughly 50 percent of the oil we use.

The author does see brighter prospects in the near future for alternative fuel sources, stating that:

It is estimated that by the end of this decade, the synthetic fuel industry can start contributing to our domestic energy supply and become a reliable energy source in the 1990s.

The future is not nearly so promising for procuring vital minerals or finding substitutes. We depend on other countries for more than half of the 36 strategic minerals used extensively by American industry. Fox notes that there are no known substitutes for many of the minerals.

Fox views Alaska as a potential bifold solution to a big part of the problem. Thirty-three of the strategic minerals have reportedly been found there, and Alaska sits on plentiful oil reservoirs. In the author's opinion, the overly restrictive regulations, cost and environmental considerations which have hampered research and development efforts elsewhere are a major barrier to any significant Alaskan role in yielding the vital natural resources it possesses.

The United States is blessed with vast quantities of natural gas and coal. We provide 30 percent of the world's coal, and, according to Fox, "it could provide substantial leverage in the trade for other minerals and fuels." He points out that our outdated ports and merchant marine fleet would have to be upgraded before we would be able to export coal in quantity.

Included among the actions Fox advocates as necessary to win this "gray war" are:

- Deregulating and relaxing environmental policy to aid in the development of potential new mineral sources.
- Encouraging research to provide new

substitutes and synthetic fuels.

- Increasing our stockpiles of strategic minerals.
- Supporting countries which supply strategic minerals to the West.—PRD.

Major Issues Facing NATO

By Stanley R. Sloan
National Defense, March 1982

"This year could be viewed as one of opportunities as well as of challenges for NATO," according to Stanley R. Sloan who also believes "the Alliance has clearly entered a new crisis phase characterized by deep policy differences between the United States and Europe." Sloan says this crisis phase is due in part to Europe's political and economic maturity that breeds a more independent attitude and "the confidence to challenge the wisdom of US policies."

This attitude may lead to possible confrontation on three major issues facing NATO. These issues are:

- Can NATO rebuild the credibility of its nuclear posture?
- To what extent will burden-sharing and arms sales issues be divisive factors in the relationship?
- Will out-of-area problems, such as in the Middle East and the Persian Gulf, be a source of further disarray in the NATO Alliance?

The author, a specialist in US alliance relations for the Congressional Research Service, believes the first of the three issues is currently the most divisive. This issue involves the deploying of new long-range theater nuclear weapons in Europe. Originally seen as necessary to "solidify the credibility of the U.S. nuclear guarantee to Europe," its support since announced in December 1979 has been eroding, and, furthermore, "growing anti-nuclear sentiment in a number of European countries has called into question the original deployment plan."

To prevent a further eroding of this plan, the United States has agreed to try and negotiate down to a "zero-option" in which no new US missiles would be deployed. But the United States would like some reciprocal action on Moscow's part The Soviets, however, have only indicated a willingness to reduce their missile force in Europe and only if the United States abandons its plans to deploy *Pershing IIs* and cruise missiles.

The solution to this issue lies in Europe and the United States maintaining a cohesive front in negotiations with the Soviets, as well as developing alternative means to resolve current NATO defense deficiencies The author suggests that, "A serious approach to their own security [Europe] is a prerequisite for continuation of a significant American role in European defense arrangements."

Burden-sharing of the cost for defense touches the very basis of the alliance. The US Congress, according to Sloan:

. . . has accepted fully the American commitment to NATO, [but] it never has accepted the indefinite presence of large contingents of American forces in Europe.

The author believes that Congress wants the European allies to do more for their own defense. The Europeans, however, believe that the United States is realizing major economic benefits from the alliance and argue that:

. . weapons trade between Europe and the United States has largely been a one-way street, with Europe buying ten times as much from the United States as we buy from Europe.

Both sides of the burden-sharing question make for a divisive debate on the costs and benefits of this alliance both in the United States and in Europe.

The last major issue, that of vulnerabilities outside of NATO's formal boundaries, is a complex issue that grows "out of differing U.S. and European threat perceptions, world roles, capabilities and historical experiences." The author be-

lieves that NATO currently serves very well as a vehicle for discussion of these other challenges. He emphasizes, however, that these vulnerabilities need to be settled outside of the formal NATO institutions.

In summary, Sloan believes the success of NATO in resolving these issues may "be revealed in the streets of European cities, around the negotiating tables in Geneva, and at allied councils in Brussels."—SIK.

America Overcommitted

By Donald E. Nuechterlein
Foreign Service Journal, March 1982

There is no question that the United States must protect the North American region from outside aggression. But what about other regions? Are we overcommitted in some areas we cannot or are not willing to defend? Donald E. Nuechterlein, professor of international affairs at the Federal Executive Institute in Charlottesville, Virginia, believes we are and urges that we reassess our national interests and international commitments.

Nuechterlein suggests that the level of national interest can be assessed as: *survival* interests, when the very existence of our country is in jeopardy; *vital* interests, when serious harm will likely result unless strong measures, possibly military force, are used; *major* interests, when political, economic and social well-being may be adversely affected by external events or tends; and *peripheral* interests, when harm may come to the overseas arms of US corporations.

The policymakers must decide whether an issue constitutes a *vital* or *major* national interest. Central to this decision-making process is the question: "Is the issue . . so important to the well-being of the United States that the president must be prepared to use force . . .?" If the answer to that question is yes, we have a vital interest; otherwise, a major one.

In the author's opinion, some US allies are not doing their part in maintaining security, assuming that the United States will take up the slack. Some NATO countries have refused to increase defense spending or allow deployment of theater nuclear weapons on their soil to counterbalance Soviet forces. Similarly, European reluctance to defend Middle East oil while relying on the United States to do so belies any sense of burden-sharing on their part.

Concluding that the United States is an "overcommitted giant," the author cites several of our existing commitments which he feels should be reanalyzed. Defense commitments of 30 years ago to protect Western Europe, Japan and Korea were made at a time when these countries were weak and vulnerable. They are now capable of defending themselves from conventional threats, yet we continue to base large conventional forces there.

Nuechterlein asserts that:

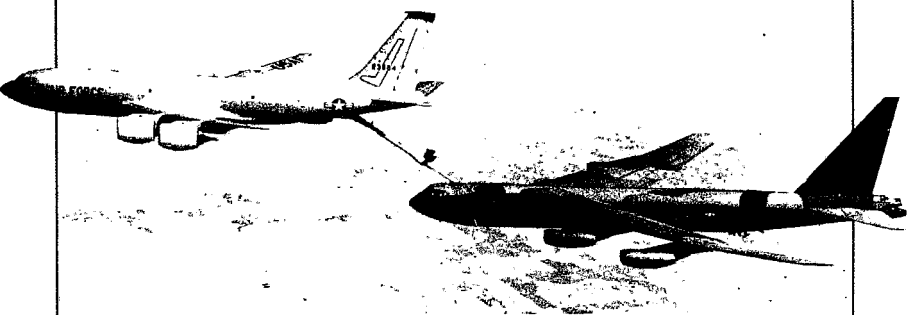
It is clearly time . . . to reduce U. S. conventional forces in Europe and in Japan and Korea while finding political bases for building a U. S. presence in Egypt, Saudi Arabia, and Israel. . . . Reducing the range and the cost of world-wide U. S. commitments is long overdue, and the Reagan administration should not flinch from making the hard decisions to do so.—PRD.

These synopses are published as a service to the readers. Every effort is made to ensure accurate translation and summarization. However, for more detailed accounts, readers should refer to the original articles. No official endorsement of the views, opinions or factual statements in these items is intended or should be inferred.—Editor.

MR NEWS

UNITED STATES

KC135 MODERNIZED

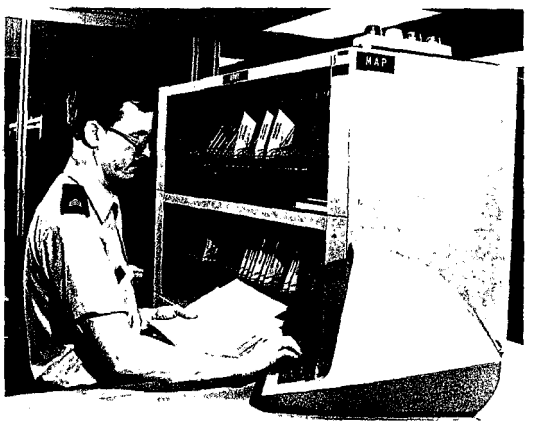


Nine US Air Force *KC135* tanker aircraft will be upgraded with *CFM56* engines under a $206.2 million contract. The Air Force contract is with Boeing Military Airplane Company.

Re-engining of the *KC135* will reduce fuel consumption by 25 percent and provide more than 60 percent additional takeoff thrust, allowing operation from 20 to 40-percent shorter runways at maximum gross weight. These improvements permit the tanker to provide significantly greater fuel offload for fighter and bomber aircraft.

In addition, the *CFM56* provides lower engine maintenance costs and meets the noise and emission characteristics required by 1985 commercial standards. The French air force is participating in the *CFM56* re-engining development program and plans to re-engine its 11 *C135F* tankers.

At least 300 US Air Force *KC135s* will be upgraded with advanced-technology *CFM56* engines. The first flight of the tanker with its new engine is scheduled for August.



PENTAGON AUTOMATES MESSAGES

An automated printing system that can process, print and sort messages for all branches of the Armed Forces has been installed at the Pentagon. The Multiple Automated Printing System (MAPS) was developed by Xerox Electro-Optical Systems for the US Army Communications System Agency, the project manager for the Pentagon Consolidated Telecommunications Centers System. The high capacity of the MAPS has made it possible to consolidate message printing for the Army, Navy, Air Force, Marine Corps, the Joint Chiefs of Staff, the Defense Intelligence Agency and the Office of the Secretary of Defense.

Fifteen modified Xerox 9700 electronic printing systems equipped with 75-bin sorters are used. Each of these printers can produce up to two pages per second, printing on standard 8 1/2 by 11-inch plain paper. The printers generate the images electronically, and the printed output can vary from page to page For example, dozens of copies of a message could be printed, each with a different address code, without operator intervention This makes possible the elimination of many operations that had been done manually

Messages arrive at the telecommunications center from all over the world through several communications networks. They are received by the center's message-processing system and then transferred to the system controllers associated with the MAPS printers. The required number of copies of each message are printed and automatically delivered to the appropriate bin of the sorter, according to the distribution code assigned when the message is received at the telecommunications center. Audio and visual alarms alert the operator when messages require special attention or are of high priority.

WATER CHILLER DESIGNED

A small, mobile water chiller, designed to military specifications as part of the water supply system for the Rapid Deployment Joint Task Force, has passed operational tests.

The chiller, developed by the US Army Mobility Equipment Research and Development Command (MERADCOM), Fort Belvoir, Virginia, because of the nonavailability of suitable commercial hardware, was tested for performance, feasibility and transportability at Fort Bragg, North Carolina. It was environmentally tested at MERADCOM and road tested with the 400-gallon water trailer at Aberdeen Proving Ground, Maryland.

The water chiller is designed to be used with the 400-gallon water trailer and the 250 and 500-gallon collapsible water drums. It can cool 40 gallons of water per hour or 800 gallons of water per day from 120 to 60 degrees Fahrenheit. The chiller can be used in a recirculation or single pass mode to cool water. The entire system is mobile, efficient and capable of supporting company-sized units by providing 4 gallons of water per man per day which is the daily consumption in desert environments.

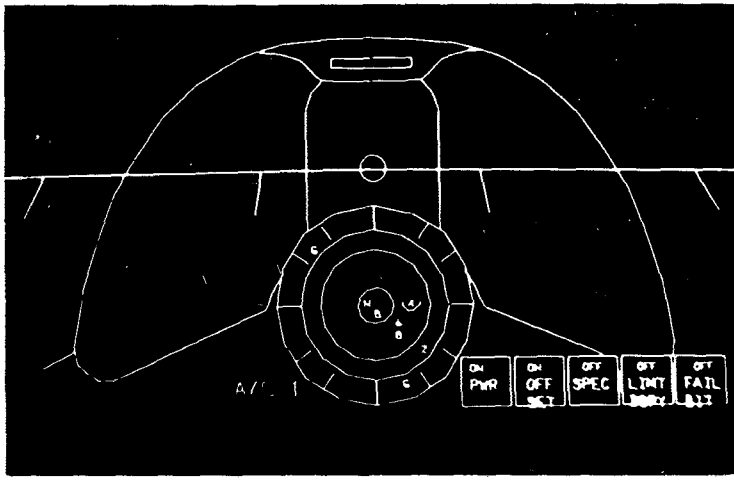
TACTS DOES IT GRAPHICALLY

New computer software that will train US aircrews to recognize and suppress attacks by enemy missiles was demonstrated for the first time earlier this year at the Marine Corps Air Station, Yuma, Arizona.

The electronic warfare (EW) software is a new developmental capability of the Tactical Aircrew Combat Training System (TACTS), developed and produced by the Cubic Corporation's Defense Systems Division for the US Navy. The system is used to train fighter aircrews in all aspects of tactical air warfare.

The new system teaches pilots how to evade and destroy ground-based threats and radar-equipped surface-to-air missile and gun sites when flying over enemy territory. Previously, this kind of training was available only on a few specialized ranges equipped with costly, often stationary weapon sites that allowed pilots to memorize their locations quickly, thereby decreasing training effectiveness.

In addition to displaying real ground-based threats, the new capability simultaneously simulates additional threats that can be changed at will, creating countless configurations and enhancing training. A pilot can fire a simulated missile at the threat, scoring a hit or miss. These simulated threats are realistically displayed to the pilot in the cockpit. This data is then downlinked for viewing by a range training officer on the ground, where it is displayed in three dimensions on large color screens. The photograph shows the real and simulated ground and airborne threats on the pilot's indicator in the center of the photo. The horizontal line is the horizon.



NORWAY

NEW NIGHT OBSERVATION DEVICE

A hand-held passive night observation device which combines high performance with simple operation was recently ordered by the Norwegian army following competitive evaluation of similar equipment. Developed jointly by Bofors Aerotronics AB of Sweden and Simrad Optronics A/S of Norway, the device can be used much like binoculars.

Designated the *NK23* by Bofors and the *KN150* by Simrad, the instrument incorporates a large aperture (f-stop 1.3) catadioptric objective lens and a second-generation, high-resolution microchannel image-intensifier tube. The focusing range of the *NK23/KN150* is from 25 meters to infinity. Tank-sized targets can be observed at 1,500 meters.

To minimize training requirements, only two controls are included: an "on" switch and a focusing adjustment. Binocular eyepieces were used after tests demonstrated that monocular viewers caused greater eye fatigue. Using both eyes, it is possible to maintain continuous surveillance for long periods. Two standard 1.5-volt dry cells power the device for up to 40 hours.

An automatic brightness-gain control is incorporated into the device to reduce the amplification of bright lights, thereby preventing the operator from being temporarily startled. Normal operation is restored in less than one second after a sudden flash from an explosion or from vehicle lights.

JAPAN

FIRST *P3C ORIONS* DELIVERED

Japan has taken delivery of three Lockheed *P3C Orions*, the first of 45 planned for service with the Japanese Maritime Self-Defense Force. The three *Orions* are equipped with anti-submarine defense equipment.

Although these aircraft were built and assembled at Lockheed's Burbank, California, facility, four of them will be delivered as knock-down kits and assembled by Kawasaki Heavy Industries at its facility in Gifu, Japan. The remaining 38 aircraft will be built with mostly Japanese-manufactured parts at the same plant.

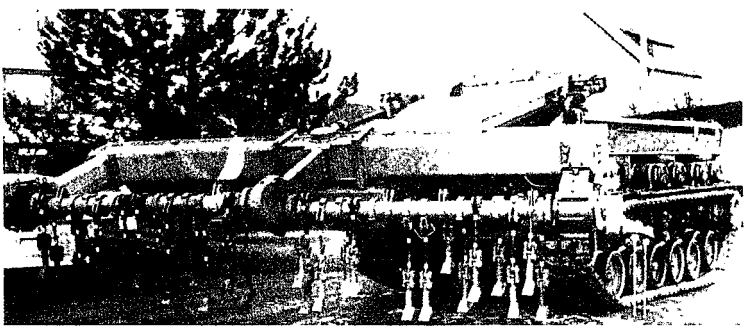
The initial delivery was the result of an international military sales agreement negotiated by the US Navy. The other 42 aircraft were purchased under a separate licensing contract between Kawasaki Heavy Industries and Lockheed.—*Navy International*, © 1982.

FEDERAL REPUBLIC OF GERMANY

MINE-CLEARER BEING DEVELOPED

A new vehicle for clearing antitank mines is currently being developed as a cooperative project between the Federal Republic of Germany and France. The device, shown here mounted on an *M48* tank chassis, can reportedly clear a 15 1/2-foot-wide path for a distance of 395 feet to a depth of 10 inches in only 10 minutes.

The device should be ready for general use in the mid to late 1980s. The rotating elements dig out material at a 20-degree angle to the left, thereby slinging exposed and concealed mines aside. The mines can then be smashed or detonated.—*Wehrtechnik.*



1st Cavalry Division's 35th Reunion. The 1st Cavalry Division is headed for Washington, D.C., 19-22 August 1982. All troopers, past and present, who have served with the 1st Cavalry Division are invited to attend the association's 35th reunion. There will be multimedia presentations of the history of the First Team, a State of the Cavalry address by Major General Richard D. Lawrence, demonstrations by the Horse Platoon and numerous social functions for everyone to renew old friendships and make new ones. For more information, write to Lieutenant Colonel Joseph Whitehorne, 1st Cavalry Division Association, George Casey Chapter, Post Office Box 1262, Springfield, VA 22151, or call the association's headquarters at 817-547-6537.

MR LETTERS

The Importance of Morale

In the present discussions over appropriations for the Defense Department, few consider the great advantage of having superior units rather than mediocre ones in our Armed Forces. It is easy for those not in the military service to help create such units. The cost is minimal.

What is the essential difference between mediocre and superior units? It is the morale of personnel. In 1954, Congressman Gerald Ford visited my I Corps command in Korea. He said that he was checking on "soldier morale." After discussing what was involved in the term, we agreed that these three factors were important:

- The soldier must be made to feel that he has an important job to do for his country.
- He must feel that he is equipped and trained to do it well.
- He must feel that the American people appreciate his sacrifices.

If a football coach assembled his squad and tried to teach his players how to run, pass, kick, catch, block, tackle, run plays and defend, without being able to point to any scheduled games, he would have a very difficult job of motivating his squad. The military commander is faced with a similar problem as he works for the readiness of his unit. He needs our help to create an outstanding unit, especially in peacetime.

I often recall Napoleon's statement about the morale of his soldiers, "The morale of a soldier is to his materiel as three is to one."

I believe it also applies to American service personnel. Their commanders work constantly to establish all three factors in morale. But they need the help of the administration, the Congress and the people. The better our military units are in peacetime, the greater influence they have on deterring war.

Frederick the Great is reported to have said, "Diplomacy without the military is like an orchestra without instruments." This thought gives rise to the importance of our nation's diplomatic-military team in peacetime as it confers with other nations in an effort to prevent war.

It follows that the morale of our service people is very important in our efforts to accomplish the purpose of our Defense Department's appropriations. Every taxpayer should have an interest in the results and an interest in the three factors that produce good morale in our military personnel.

General Bruce C. Clarke, *USA, Retired,*
McLean, Virginia

Stands Up for the Guard

I am writing my first "good news, bad news" letter to your journal. First, I enjoy reading your journal and believe that *Military Review* has articles that all personnel should read.

My objection, however, is the article, "The Militia of the United States: An Analysis" by John M. Lane (*Military Review*, March 1982). Although the author wrote an intelligent, well-researched article, he is not familiar with the "militia." He did not mention that the term Nation-

al Guard has symbolized the modern militia from about 1903 on. His analysis does not once mention the current strength of the Army or Air National Guard or our future use on the battlefield. He neglects to mention capstone or even round-out, two programs which are indicative of our close and active training role with the US Army. He also does not mention the fact that the National Guard is, in fact, "certified" ready to fight by our Active counterparts.

My biggest gripe, however, is that the author, although very well-meaning, missed the point about the modern National Guard and the important role we train for in our nation's defense. It is this missed opportunity to discuss the National Guard's role that compelled me to write this letter. I guess I feel that it is what is said, and, even more importantly, not said but should be said, that is important

1st Lt Richard P. Ugino,
New York Army National Guard

Active Defense Comments

Lieutenant Colonel Barry R. McCaffrey's article, "The Battle on the German Frontier" (*Military Review*, March 1982), is the most sensible and constructive criticism of the active defense I have ever read.

The "old" doctrine of area and mobile defenses was described as "how we would like to fight," and the new active defense was touted as being "how we will have to fight." On paper, the active defense looks good provided you do not think too deeply about the assumptions on which it is based. McCaffrey touched on one of the biggest weaknesses of the active defense. The weakness is assuming that company teams and task forces can be easily moved about the battlefield from reserve positions, or by disengaging from light contact areas, and plugged into areas of heavy contact, usually with an altogether different parent unit.

Communications are assumed to work perfectly. The extremely difficult tasks of disengaging from even light enemy contact and then moving laterally to occupy a different defensive position in another unknown sector are assumed to be accomplished with facility. It is assumed that the logistic aspects of ammunition, fuel, food, water, evacuation, and so forth (difficult, at best, with your parent unit) are not significant problems with the new unit.

Further, teams and task forces moving about the battlefield are assumed to arrive at the correct location, intact, in spite of overwhelming enemy artillery fire, smoke, confusion, rear area clutter and unfamiliar terrain. It is assumed that task force and brigade commanders have no difficulty in controlling and directing five, eight or more subordinate elements in their sectors. Boundary changes and forward or rearward passage of lines under enemy pressure are assumed to take place as easily as grease pencil changes on a mapboard.

The preceding are but some of the reasons that "the active defense does not work on the ground the way it promises in the manuals."

McCaffrey alludes to the crux of the problem: The active defense concept is the child of a political decision to fight well forward in order to give up as little territory as possible. Unfortunately, politicians, rather than telling the military merely when to fight, are now, in more modern times, involved in telling us how to fight, with predictably disastrous results (Korea, Vietnam). If we must fight the next war in Europe politically, then McCaffrey's comments and recommendations should be accepted and our doctrine changed accordingly.

I would prefer, however, to see us try a different approach. We in the military must convince the politicians that there is a greater risk of actually being overrun

and defeated by defending "actively" far forward. Reasons are extended supply lines and lines of communications, greater territory to cover and defend, distances units must travel from home bases to deployment positions and tactics required for such a defense. We must convince the politicians that there is a better chance of winning, and thereby preserving the nation's existing boundaries, if commanders are given the flexibility to delay when and where necessary and to choose more favorable terrain on which to build an all-out defense followed by an all-out offense.

Maj (P) Douglas S. Thornblom, *USA,*
Commander, 4th Battalion (Mechanized), 31st Infantry,
Fort Sill, Oklahoma

Anecdotes, Please

I have been commissioned by the Oxford University Press in Great Britain to edit an anthology entitled *The Oxford Book of Military Anecdotes.* In the course of this project, I am anxious to include as many as possible of the best American military anecdotes, above all those relating to the Civil War.

I shall be more than grateful to any of you who are able to draw my attention to any stories that sound suitable for inclusion in this work. Please write to me at: Guilsborough Lodge, Northamptonshire, Great Britain.

Max Hastings,
Northamptonshire, Great Britain

Letters is a feature designed expressly to afford our readers an opportunity to air their opinions and ideas on military topics It is not restricted to comments or rebuttals on previously published material but is open to any variety of expression which may stimulate or improve the value of thought in the military community

The right to edit is reserved by the staff of the magazine and exercised primarily in deference to available space —Editor

Maglev Levitates at 250 MPH. Maglev is a completely new type of ultrahigh-speed passenger transport system using railcars which are magnetically levitated and propelled at speeds in excess of 250 miles per hour (MPH) along elevated guideways. The guideways can be built over existing highways, and the system is fully operational in any type of weather. The train is powered by the traveling magnetic field created when the electromagnets of the vehicle interact with the linear motors of the track. Described as "flying at ground level," the propulsion system converts energy directly into motion, and there are no moving parts to cause vibration. A test system is presently operating in the Federal Republic of Germany, and the concept is being discussed with transit authorities in the United States and Latin America.

MR BOOKS

RICKOVER by Norman Polmar and Thomas B Allen 743 Pages Simon & Schuster, N Y 1982 $20 75

This is the revisionist biography of Admiral Hyman G. Rickover, tracing the development of his 30-year independent fiefdom within the Department of the Navy This small, introverted, physically inept, almost arch antihero prototype of an Annapolis man had more impact on 20th-century naval development than any contemporary as he developed his own nuclear Navy. For years, he defied and openly vilified the "real Navy." Such a military anachronism is worthy of study.

This unlikely outsider, by hard work, dedication, intelligence and refusal to admit limitations from ordinary strictures, managed to work around the military system and become the "Admiral of the Hill." His power base was Congress. Rickover wore two hats: one as an official of the Atomic Energy Commission, and the other as a senior naval officer. When one hat began to constrict, he shifted to the other, flanked the opposition which he usually managed to destroy and almost invariably achieved his goal.

He was ruthless to the point of personal and professional sadism according to this thoroughly recorded and documented history. He left a swath of ruined careers and programs in his path. It will take longer historic perspective to determine the relative cost and benefit (a concept Rickover despised) to the country, but there is little doubt that, like most creative people, he could not have achieved his goals without such dedication and sacrifice

The authors, appreciating the highly critical nature of their book, have taken exquisite pains to document their many charges against Rickover's unorthodox and often destructive methods. Rickover understood power—both legislative and nuclear—using the former to harness the latter to drive Navy ships, both on and beneath the sea Rickover's career is a fascinating study of managerial power. As strange as it may seem, this small man in an oversized shirt and an ill-fitting, baggy civilian suit, was a genius in public relations.

By flattering and cajoling various committees in Congress, he, like J. Edgar Hoover and the Federal Bureau of Investigation, created a position above and beyond any government control He defied seven presidents, innumerable secretaries of the Navy and of defense and, of course, the entire regular Navy command, most of which were powerless to get rid of him. One wonders whether an entirely different type of person with heinous political ambitions could not use the same techniques to become a destructive man on horseback.

In addition to being a biography, this inevitably is an account of the development of the US nuclear Navy, 1946-80 Although Rickover was only responsible officially for the nuclear power plants, he, in fact, dominated the entire ship design, the personnel and even the operations of the nuclear Navy. He did so by controlling the budget. The "nukes" were Rickover's. This book, based on a good deal of newly declassified material, traces details of ship design and tactical objectives of the Navy, as well as the backstairs politics in this important area of nuclear naval history. Some chapters are more devoted to the politics behind the development of the *Poseidon*, *Trident* and other nuclear programs than to the biography of Rickover. But the two are inseparable.

This 743-page book is excessively long

and often repetitious. The best biographers are selective. These authors, instead of choosing illustrative episodes, have created more of a legal casebook largely against, but occasionally supporting, their subject. Undoubtedly, they sense the emotional, intellectual and historic importance of their revisionism and feel the need to support their case for future historic reference. This makes for difficult reading. The book could easily be debrided by 20 percent by more precise editing to avoid parallel chapters that were probably prepared separately by the authors.

Even without Rickover, the US Navy would eventually have gone nuclear, but the changeover would have been much slower and probably much less efficient. This in itself may justify the confusion he casued in other areas of our national defense. Rickover deserves the title of "Father of the Nuclear Navy." His antagonists and competitors undoubtedly used other rubrics to describe his parentage. Like "Jackie" Fischer in England, he was effective but abrasive in developing his country's Navy. It probably requires such a dedicated eccentric to make quantum changes.

Future biographies will probably be less highly charged and better organized when Rickover's niche in naval history settles down. Meanwhile, this is an important contemporary biography that deserves the serious attention of students of naval, military and governmental power.

RADM Ben Eiseman, *USNR, Retired*

NATIONAL DEFENSE by James Fallows 204 Pages Random House, N Y 1981 $12 95

A much-acclaimed book, *National Defense* may be the defense book of the 1980s. Written for the layman rather than the military professional, the work is centered around three themes:

First and foremost is the warning that the theory of the think tank is carrying our national defense away from the reality of history, common sense and demonstrated facts.

Second is the thought that war, and all of its associated activities, is different, and, therefore, it must be understood on its own terms. Military service is not just an employment alternative, and waging war is not simply a resource transfer process open to increased efficiency from systems management and technological substitution.

The third theme is that the truly important military questions cannot be answered by spending alone Security will come not from more spending but from a change in the patterns of spending.

The weaknesses in this book are not in its messages, rather they are in the support of those messages. James Fallows draws upon the 1976 issue of Field Manual 100-5, *Operations*, which has been significantly amended. He uses other out-of-date figures in discussing the educational makeup of the Army and frequently quotes "Cincinnatus," despite that author's tarnished credibility. Fallows writes at great length about the capabilities of weapons, their procurement and the technology behind them, but it is difficult to determine whether he really understands the purpose and capabilities of some of these systems such as the *TOW* and the *Abrams* tank.

Fallows does recognize the problem of what he calls the "cult of procurement" and calls for its exorcism from the Pentagon. Technology must be pursued as an instrument of military purpose rather than for its own sake. One good way to achieve this is through ruthlessly honest and realistic testing programs.

However, when Fallows turns to discuss the intangibles of war—what Karl von Clausewitz called "friction"—he excels. Drawing upon Bruce C. Clarke, George S. Patton, Napoleon and others, he provides excellent insights into the realities which must be faced by defense

managers and leaders. He also uses the expertise of Charles C. Moskos Jr. and Edward N. Luttwak to good stead.

In his chapters on "Employees," "Theologians" and "Changes," the author is at his best in trying to make order out of the seeming chaos. His discussion of nuclear conflict and the means to avoid it or wage it are critical to the book's value. Fallows has thought about these things at length and in detail. In the end, he asks the defense establishment to look toward four goals: military spirit, austere but effective weaponry, nuclear realism and coherence.

This is recommended reading for all who are interested in our national defense, for it contains much of value to them all.

Maj Richard L. Strube Jr., *USA*

THE PACIFIC WAR by John Costello 742 Pages Rawson Wade Publishers, N Y. 1981 $24 00

John Costello's book appeared as Americans and Japanese reflected on the 40th anniversary of the Japanese attack against the US naval base at Pearl Harbor, Hawaii. The book jacket announces that Costello's account is based on "hitherto secret archives," notably the recently declassified Ultra intelligence documents. In fact, with the exception of a single chapter, the author relies on several popular secondary accounts of the war and an official history of Ultra to piece together this account Such overreliance on relatively few general sources dilutes the claim that this book constitutes a "newly revealed history."

As for the secret archives, it appears that Costello used the official account, *History of U.S. Army Ultra Intelligence*, for his first 36 chapters. He contents himself with generalizations and fails to probe the implications of the influence of intelligence on the conduct of military operations.

For example, one learns that, from August 1943 forward, the US military intelligence services knew every movement of each Japanese division. This is an important revelation, but the author neither elaborates nor analyzes the significance of his information. The references to Ultra scattered throughout the text convey the impression that Ultra comes as an afterthought. The reader, in turn, is left to mull over the nature and extent of Ultra revelations on the conduct of land warfare during the Pacific campaigns.

The historical interpretations of the antecedents of the Pacific war and the conduct of Japanese strategy are dated because the author failed to consult several recent scholarly works which illuminate the Japanese military-political decisionmaking process. Again and again, Japanese generals and politicians act to "save face" and not in the interests of rational statecraft. Such condescension may have sufficed 40 years ago, but hardly is satisfying today.

Furthermore, there are numerous mistakes in the romantization of Japanese proper names and the dates assigned to a battle or incident, and there is confusion about military ranks. This series of minor errors, in turn, leaves this reviewer questioning the accuracy of the author on other, more controversial, matters. All of these shortcomings are the more lamentable because Costello does write well and can carry a 700 plus page narrative without losing his reader.

In his final chapter, a reassessment of the Pearl Harbor disaster, Costello offers a new "devil theory." However, it is based on proof by negative inference, meaning that Costello lacks documenary evidence to substantiate the conspiracy theory which he posits. The book accordingly ends with speculation in lieu of conclusions. Nevertheless, this is surely the best chapter of his book because it is the one chapter in which Costello integrated intelligence information and analyzed it in comparison to previous historical inter-

pretations in a comprehensive manner. If he had chosen to weave such documentary evidence throughout his entire narrative, the result might have been an appropriate history to commemorate the epic confrontation between East and West.

Edward J. Drea, *Combat Studies Institute, USACGSC*

KENNEDY, KHRUSHCHEV, AND THE TEST BAN by Glenn T Seaborg with the assistance of Benjamin S Loeb Foreword by W Averell Harriman 320 Pages University of California Press, Berkeley, Calif 1981 $16 95

Glenn T. Seaborg offers us a fascinating insight into the vagaries and uncertainties of international diplomacy as they related to a central question of the Kennedy administration: negotiations for a limitation of the arms race. The reader who lived through this era of the Berlin Wall, the Bay of Pigs and the Cuban missile crisis experiences a sense of déjà vu as the old, familiar names of George W. Ball, a young Harold Brown, Hubert H. Humphrey and Edward R. Murrow leap from the transcripts of near-endless White House discussions. While we knew that Kennedy-Khrushchev negotiations for a limited test ban were complex, only with Seaborg's study do we glimpse both the hopes and suspicions of the American perspective.

Murrow's presence at key strategy meetings confirms Kennedy's appreciation of propaganda advantages to be gained. During the lengthy East-West talks on nuclear constraint, we encounter John F. Kennedy's use of the "back channel" to the Soviets, a harbinger of later efforts by Henry A. Kissinger to reach agreements with Moscow independently of ongoing negotiations. Yet, for all these machinations, and aware of the awesome dimensions of the nuclear issue of the time, the reader cannot help but feel we were in safe hands, that US leaders despite their uncertainties and fears were a most competent bunch, capable of steering the ship of state to safety. One finishes this book with a sense of loss for a more secure era long past.

Seaborg introduces his study with a brief review of America's arms control policy from the Baruch Plan through the Eisenhower administration. With the advent of President Kennedy and Seaborg's appointment as chairman of the Atomic Energy Commission, the study becomes more detailed. The judicious use of Seaborg's copious journal entries for the period and the author's reflective analysis of the issues then at stake, produce a comprehensive account of the negotiations which gave the world the first major arms limitation treaty.

Perhaps only a participant such as Seaborg, aware of the political problems of arms control and uniquely qualified to understand the technical issues involved, could write such a study. This book will be of great value for those interested in the dynamics of East-West negotiations and for those curious about the evolution of America's arms control policy. Its greatest value, however, may lie in the author's persuasive belief that future and further limitations of the nuclear arms race may yet be achieved.

Michael M. Boll, *San Jose State University*

FROM SAVANNAH TO YORKTOWN: The American Revolution in the South by Henry Lumpkin 332 Pages University of South Carolina Press, Columbia, S C 1981. $19 50

Bicentennial activities concerning the end of the Revolutionary War have ended, but good books about the conflict have not stopped being printed.

This is one of the latest. For anyone wanting more information about the war in the South, this book should supply the information. Its chapters are short and numerous (20), and each concerns a different battle or background information.

The book is quite comprehensive in its

coverage of the war in the Carolinas, Georgia and Virginia. It shows the ebb and flow of the war as priorities shifted and different personalities changed to influence the fighting.

One of the interesting chapters is about the weapons and uniforms from all participating nations. This chapter, and the rest of the book, is illustrated throughout by color plates, black and white drawings and actual photographs of many of the weapons used.

There is a good chronology in the back for readers who are in a hurry to read what happened when. A 32-page appendix follows this, and it contains an excellent order of battle for each major Southern action.

Although the book is not footnoted, it has a nine-page bibliography with 162 references listed. These are nicely categorized in case the reader seeks more information about a specific subject.

Finally, it has a detailed index which is most helpful to the researcher in a hurry. The book does not read like a reference book, but it has enough easy-to-find information in it to be used as one. For a dandy look at a not so widely known theater of the Revolutionary War, this is an excellent one-volume source.

Maj John A. Reichley, USA,
Directorate of Academic Operations, USACGSC

WARRIORS AT SUEZ by Donald Neff. 479 Pages. Simon & Schuster, N.Y. 1981. $17.95

Fascinating and absorbing are only two of the many superlatives that can be used to describe this book. Donald Neff's use of the anecdotal approach to history has developed a most engaging narrative that vividly lays out before the reader one of the more bizarre episodes of international conflict—the joint French, British and Israeli attack on Egypt in November 1956.

This attack takes on the portentous overtones of a major power standoff, in that it occurred at the same time that the Soviet Union was engaged in a blood bath in putting down the Hungarian revolt and the United States was in the middle of an election campaign which resulted in the re-election of President Dwight D. Eisenhower. Confusion was so rampant that the commander of the US 6th Fleet in the Mediterranean asked, "Who is the enemy?" The chief of naval operations, Arleigh A. Burke, later admitted that, "I did not know who the damned enemy was." Such was a situation in which friends became adversaries, and adversaries became collaborators.

The author points out that "Suez was a hinge point in history. It spelled the end of Western colonialism and the entry of America as the major Western power in the Middle East." And he says that "The Soviet Union secured its presence in the Middle East after Suez." An understanding of these events is mandatory for anyone studying the current situation in the Middle East. The reading of this book is probably the best way of obtaining this understanding.

The events and decisions that led to the invasion of Egypt are discussed through examining the major political and military leaders who became involved. Eisenhower, Anthony Eden, David Ben-Gurion, Guy Mollet, Nikita S. Khrushchev, Gamal A. Nasser, John F. and Allen W. Dulles, plus many more are dissected. Few, if any, of these leaders emerge from this episode the better for it except perhaps for Nasser. The author states that Eisenhower's instinct to take advantage of the opportunity was sound. However, Neff says:

He let inertia take its course. He failed to follow through. . . . In his second term, as he grew into old age, he had neither the energy nor the imagination that he had displayed in his first term—and the Middle East and America are paying for it today.

But perhaps the most tragic figure to

emerge is Anthony Eden, the British prime minister. He, of all the actors, was the major prime mover in orchestrating the events that led to the invasion. The story of how his medical condition affected his judgment is illuminating—and frightening. After his death, it was said that "he was the last prime minister to believe that Britain was a great power and the first to confront a crisis which proved she was not."

The present attitudes, intentions and aggressive (sometimes belligerent) actions of Israel are better understood after reading about the policies and strategies adopted by Ben-Gurion. Another interesting viewpoint from this book is the misunderstandings, misperceptions, miscalculations, mindsets and blunders that supposedly adept statesmen and professionals committed throughout this period—the Central Intelligence Agency included. Neff has done a masterful job in researching and writing this book. It was a delight to read, and I highly recommend it.

Col Earl E. Perry, *USA*,
Senior Army Adviser, Arkansas National Guard

PRUSSIA'S GLORY: The Rise of a Military State by S Fischer-Fabian 314 Pages Macmillan Co , N Y 1981 $19 95

The virtues of the Kingdom of Prussia have, the author informs us, "remained valid through the centuries." Fortunately, *Prussia's Glory* deals with much more than the virtues of the state. The book is a well-rounded account of both the virtues and vices which characterized that conglomerate nation in its brightest years.

The ambivalence of feeling with which Prussia is viewed has been summed up by the poet, Theodor Fontane, who stated that "Prussia is a state . . . to be much loved and also much hated." The reader of *Prussia's Glory* is treated to an in-depth exposure of the reasons for both points of view.

With sufficient background exposition to ensure clarity, *Prussia's Glory* is a tightly focused, behind-the-scenes look at the genesis, consolidation and establishment of the Kingdom of Prussia. The book spans the period 1701, the year in which Frederick I was crowned as Prussia's first king, through 1786 and the death of Prussia's third ruler, Frederick the Great. The contrasts were great in the style, motivation and ability of the three Fredericks who ruled during that 85-year epoch. S. Fischer-Fabian sets forth those contrasts with remarkable impartiality.

The most absorbing portion of this interesting work of history, particularly for the military reader, deals with the reign of Wilhelm's son, Frederick II. Frederick II succeeded to the throne of Prussia in 1740, fiercely determined to outdo his father in all ways. His determination was his principal strength. Academically, he was ill-informed; intellectually, he was ill-prepared to become King of Prussia.

Nonetheless, in the first year of his rule, Frederick II abandoned the court of Berlin, placed himself at the head of a disciplined army and succeeded in expanding the territory of Prussia southward by the taking of Silesia. Collectively, the other nations of Europe began to take heed of the threat of Prussia under the relentless guiding hand of its new king. Alliances which were quickly formed against him were to no avail; he remained victorious.

Militarily, Frederick II proved to have no peer. During the Seven Years' War, he disregarded the odds of 80 million people who opposed Prussia's four million and demonstrated, for all time, the effectiveness of preventive attack by highly disciplined, well-led troops. His tactics of "Attack! Attack!" created a "terrifying aura . . . which was worth whole armies of manpower." In the end, Frederick II had changed the map of Europe and, by virtue of always being in the van where the fighting was heaviest, earned the sobriquet, Frederick the Great. Without doubt,

he was a military superstar.

Pragmatic man of action, a high-stakes gambler on the political and military stages, Frederick II was always a realist. On his deathbed he stated, "I look ahead and see that . . . in thirty years from now, no one will speak about Prussia, or the House of Brandenburg." As the author points out, "A prophetic speech."

Fischer-Fabian is the author of several popular history books that have been best sellers in Germany. *Prussia's Glory*, which may be another best seller, is a sensitive treatment of an important third chapter in Germany's history. This reviewer hopes there will be more.

Maj Gen Stan L. McClellan, *USA, Retired*

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Books are not offered for sale through the *Military Review*.

UNITED STATES FOREIGN RELATIONS UNDER WASHINGTON AND ADAMS: A Guide to the Literature and Sources by Ian Mugridge. 88 Pages. Garland Publishing, N.Y. 1982. $16.00.

DEFENSE & FOREIGN AFFAIRS HANDBOOK by Gregory R. Copley. 903 Pages. Copley & Associates, S.A., Washington, D.C. 1981.

OFF THE RECORD. The Private Papers of Harry S. Truman. Edited by Robert H. Ferrell. 448 Pages. Penguin Books, N.Y. 1980. $6.95.

JAPAN BEFORE PERRY. A Short History by Conrad Totman. 246 Pages. University of California Press, Berkeley, Calif. 1981. $6.95.

THE WEST BANK STORY by Rafik Halabi. Translated by Ina Friedman. 304 Pages. Harcourt Brace Jovanovich, N.Y. 1981. $12.95.

AMERICAN-SOVIET RELATIONS: From 1947 to the Nixon-Kissinger Grand Design by Dan Caldwell. 283 Pages. Greenwood Press, Westport, Conn. 1981. $27.50.

THE AMERICAN MAGIC: Codes, Ciphers and the Defeat of Japan by Ronald Lewin. 332 Pages. Farrar, Straus and Giroux, N.Y. 1982. $14.95.

AFTER SAIGON FELL: Daily Life Under the Vietnamese Communists by Nguyen Long with Harry H. Kendall. Foreword by Robert A. Scalapino. 164 Pages. Institute of East Asian Studies, Berkeley, Calif. 1981.

CRISIS IN AFRICA: Battleground of East and West by Arthur Gavshon. 320 Pages. Penguin Books, N.Y. 1981.

ARTILLERY OF THE WORLD: Second Edition Revised. Edited by Brigadier Shelford Bidwell. 246 Pages. Brassey's Publishers Ltd., N.Y. 1981. $29.50 clothbound. $15.00 paperbound.

LESSONS FROM AN UNCONVENTIONAL WAR: Reassessing US Strategies for Future Conflicts. Edited by Richard A. Hunt and Richard H. Schultz Jr. 236 Pages. Pergamon Press, Elmsford, N.Y. 1982. $25.00.

STRATEGIC MINERALS: A Resource Crisis. 105 Pages. Council on Economics and National Security, Washington, D.C. 1981. $5.95.

NUCLEAR ILLUSION AND REALITY by Solly Zuckerman. 154 Pages. Viking Press, N.Y. 1982. $10.95.

MUSSOLINI UNLEASHED, 1939-1941: Politics and Strategy in Fascist Italy's Last War by Macgregor Knox. 385 Pages. Cambridge University Press, N.Y. 1982. $29.50.

THE NUCLEAR BARONS by Peter Pringle and James Spigelman. 578 Pages. Holt, Rinehart & Winston, N.Y. 1981. $16.95.

NIGERIA IN SEARCH OF A STABLE CIVIL-MILITARY SYSTEM by J. Bayo Adekson. 164 Pages. Westview Press, Boulder, Colo. 1981. $23.75.

NAVAL SURGEON: The Voyages of Dr. Edward H. Cree, Royal Navy, as Related in His Private Journals, 1837-1856. Edited with an introduction by Michael Levien. Illustrated by Dr. Edward H. Cree. 275 Pages. E.P. Dutton, N.Y. 1982. $24.75.

MILITARY SERVICE IN THE UNITED STATES. Edited by Lieutenant General Brent Scowcroft, US Air Force, Retired. 226 Pages. Prentice-Hall, Englewood Cliffs, N.J. 1982. $14.95 clothbound. $7.95 paperbound.

ISLAM IN TRANSITION. Muslim Perspectives. Edited by John J. Donohue and John L. Esposito. 322 Pages. Oxford University Press, N.Y. 1982. $22.95 clothbound. $8.50 paperbound.

LIGHTNING BUGS. And Other Reconnaissance Drones by William Wagner. 222 Pages. Aero Publishers, Fallbrook, Calif. 1982. $18.95.

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THE IDEA OF DISARMAMENT: Rethinking the Unthinkable by Alan Geyer. Foreword by Lawrence D. Weiler. 256 Pages. Brethren Press, Elgin, Ill. 1982. $11.95.

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WASHINGTON INFORMATION DIRECTORY, 1981-1982. Edited by Mary M Neumann 930 Pages Congressional Quarterly, Washington, D C 1981

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