LOGISTICS IMPLICATIONS OF MANEUVER WARFARE

VOLUME 3: SOVIET OFFENSIVE CONCEPTS AND CAPABILITIES

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PREFACE

As part of its FY87 independent research and development program, the Logistics Management Institute (LMI) examined the logistics implications of a new maneuver-oriented operational concept – AirLand Battle – being adopted by the U.S. Army.

LMI undertook this study for three reasons. First, even though more than 5 years have passed since AirLand Battle was promulgated as formal Army doctrine, misperceptions and uncertainties about its execution still exist. Second, neither the Army nor the Defense community has yet developed a good understanding of the implications and ramifications of AirLand Battle. Third, and most important, the combat service support requirements, which largely determine the extent to which AirLand Battle doctrine can be executed, are not well defined or understood.

The results of this study are presented in six volumes. Volume 1 sets the stage for the examination of AirLand Battle doctrine and lays out the focus and scope of the study; Volume 2 reviews NATO's defense posture, including operational concepts and capabilities; this volume, Volume 3, describes the military command structure, operational concepts, and capabilities of the Soviet Union; Volume 4 summarizes the various arms control negotiations that have taken place between East and West to solve NATO's security problem peacefully; Volume 5 illustrates the need for NATO to shift toward a maneuver-oriented defense concept, analogous to AirLand Battle doctrine, if it is to maintain a credible conventional defense; and Volume 6 details the specific logistic improvements that are required to support maneuver defense in a NATO environment. The material in these volumes is interrelated so the reader is cautioned not to interpret individual volumes as stand-alone documents.

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LOGISTICS IMPLICATIONS OF MANEUVER WARFARE

VOLUME 3: SOVIET OFFENSIVE CONCEPTS AND CAPABILITIES

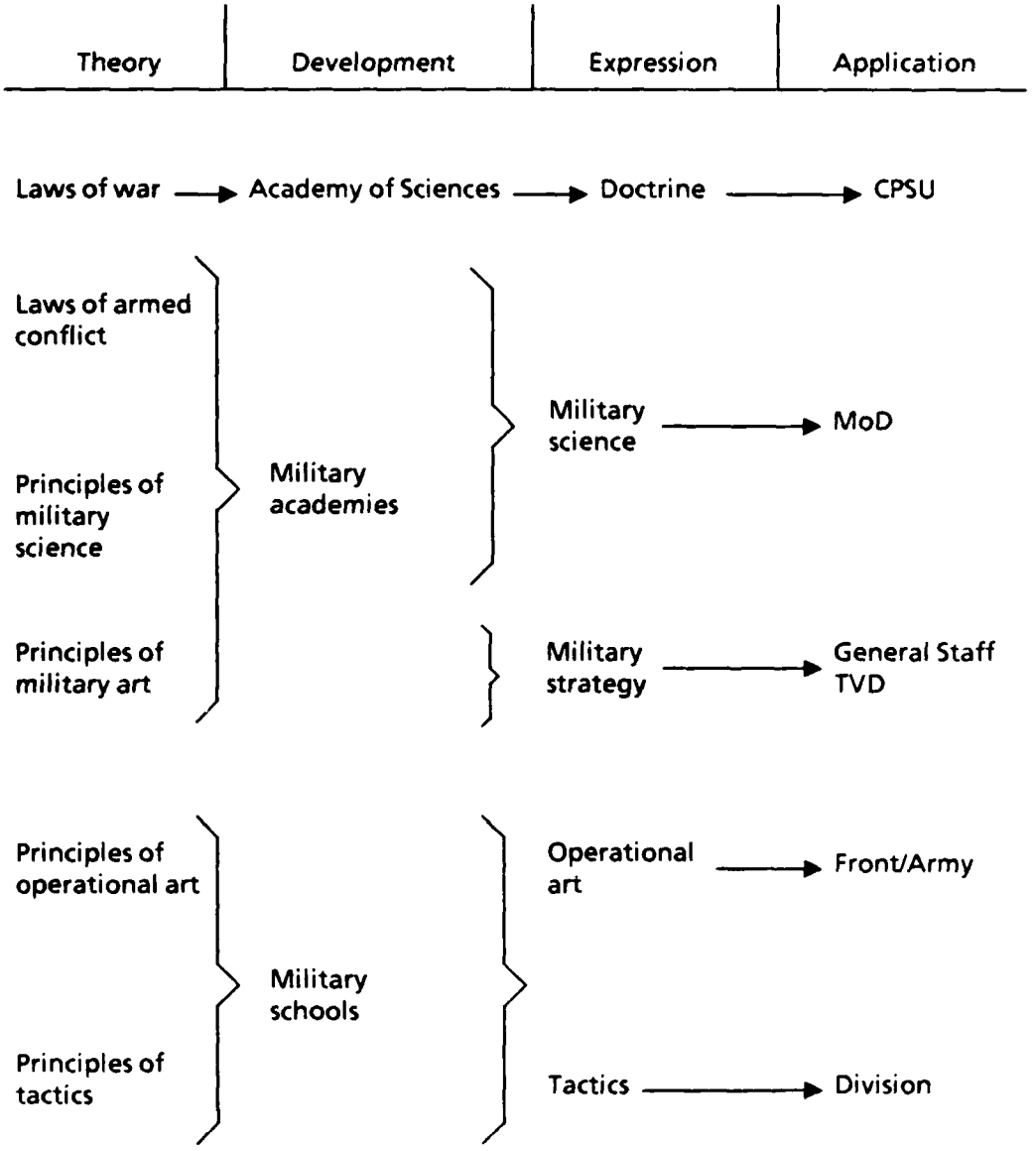
This volume presents an overview of the conventional threat posed by the Warsaw Pact. It summarizes Soviet principles of "military art" and describes its military command-and-control structure, operational concepts for an offensive against NATO, and available ground maneuver forces opposite NATO's Central Region. It concludes with an assessment of Soviet capabilities to execute those concepts in a limited war scenario.

MILITARY ART

Soviet military theory is described by Colonel William Baxter in terms of a highly structured model that provides for systematic evaluation of politico-military problems, coordination of decision-making, and centralized enforcement of decisions at all levels.[1] That structure is illustrated in Figure 1. Its foundation consists of "laws of war" that express the political philosophy of the leadership of the Communist Party of the Soviet Union (CPSU) in the military domain. Those "laws" are statements of the factors that are believed to determine the world "correlation of forces" and thereby the course and outcome of future wars, based upon the current leadership's interpretation of Marxist-Leninist ideology as it applies to military affairs.

Soviet military doctrine is the elaboration of the laws into a unified, Party-determined view on the basic questions guiding force development and weapons acquisition programs: enemy, kind of war, forces required, preparation efforts, and methods of warfare. Furthermore, Soviet military doctrine focuses on future wars and represents official Soviet policy, which is formulated on political-ideological grounds with little direct input by the armed forces and which is legally binding on the military; Party discipline demands unquestioned acceptance of that

[1]See: Ltc. William P. Baxter, *Soviet AirLand Battle Tactics* (Novato, Calif.: Presidio Press, 1986). This section borrows heavily from this excellent source. The title of his book, Ltc. Baxter explains, is not to suggest there is a Soviet version of U.S. Army's AirLand Battle doctrine, but to describe the Soviet concept opposing the AirLand Battle doctrine. The proper Soviet term would have been Combined Arms Tactics.



Source: Ltc. William P. Baxter, *Soviet AirLand Battle Tactics* (Novato, Calif.: Presidio Press, 1986).

Note: MoD: Ministry of Defense; TVD: theater of military operations.

FIG. 1. STRUCTURE OF SOVIET MILITARY THEORY

doctrine without controversy or debate by the military. While the laws of war are evolving only very gradually and incrementally, military doctrine is subject to changes depending on the world view of the Soviet national leadership, technological advances, and other factors. The political nature of military doctrine in the Soviet

Union is clear from the following statements by Marshal N. V. Ogarkov, who when he made these statements was Chief of the General Staff:

> Soviet military doctrine is a system of guiding principles and scientifically substantiated views of the CPSU and the Soviet government on the essence, character, and methods of waging a war which might be forced on the Soviet Union by imperialists, as well as the military organizational development and preparation of the Armed Forces and the country to crush the aggressor.
>
> The content of Soviet military doctrine in its most general form reduces to this: Predatory wars are alien to the Soviet Union as a socialist state; it has never attacked and does not intend to attack any state . . . to impose its rule or to change the existing social structure in them. The Soviet Union does not need to expand its borders. But that which belongs to the Soviet people and has been created by their labor, it will defend with complete decisiveness. . . . And therefore the peaceloving nature of the foreign policy of the Soviet state and its constant readiness to deal a crushing repulse to any aggressor are blended together in Soviet military doctrine.[2]

Baxter provides further elaboration on Soviet military doctrine that may be summarized as follows: It asserts that the offensive is the decisive means of military activity; forces must be highly maneuverable; the outcome of the war will not be determined by pitched battles of attrition but rather from a series of battles on a nonlinear battlefield (i.e., one whose front-lines are not defined); and large standing forces are required to achieve victory in this type of combat even though current Soviet doctrine no longer asserts that only standing forces will count in deciding the outcome of war.

The next level in the Soviet model of military theory, "military science," is defined as "a system of knowledge on the nature and laws of war, the preparation of the armed forces and the country for war, and the methods of its conduct."[3] Another and perhaps more authoritative definition [in the Soviet counterpart to the U.S. *JCS* (Joint Chiefs of Staff) *Pub 1*] is given below:

> A system of knowledge concerning the nature, essence, and content of armed conflict, and concerning the manpower, facilities and methods for

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[2]Marshal N. V. Ogarkov, *Vsegda v Gotovnosti K Zashchite Otechestva* (tr. *Always in Readiness to Protect the Fatherland)* (Moscow: Voenizdat, 1982). As cited in Harriet Fast Scott and William F. Scott, *The Armed Forces of the USSR*, 3rd ed. (Boulder, Colo.: Westview Press, 1984).

[3]*Voyennyy Entsiklopedicheskiy Slovar'* (tr. *Military Encyclopedic Dictionary*) (Moscow: Voenizdat, 1983). The Russian term for science in the original (nauka) has a narrower meaning than its English translation; it stresses the application of knowledge rather than the discovery of (new) knowledge; it connotes technical skill rather than research.

> conducting combat operations by means of armed forces, and their comprehensive support.[4]

Since it is concerned with combat operations, military science, in contrast to military doctrine, is under the jurisdiction of the Ministry of Defense (MoD). Unlike military doctrine, military science is open to differences of opinion among the senior leadership of the armed forces; differences or controversy may be even encouraged at times within the confines of official Party policy expressed in military doctrine. In fact, military science is a major field of study and has a significance in the Soviet Union unknown in the United States. It encompasses six major fields: military organization, training, art, history, geography, and technology. The most important field is "military art," which is concerned with the organization and conduct of combat operations and defined as follows:

> [Military Art is] the theory and practice of engaging in combat operations and armed conflict as a whole, with the use of all the resources of the service branches and services of the armed forces, and also support of combat activities in every regard. Military art, as a scientific theory, is the main field of military science, and includes tactics, operational art, and strategy, which constitute an organic unity and are interdependent.[5]

Baxter lists 11 "principles of military art" that reflect current Soviet military consensus on the most important principles guiding military commanders in planning, preparing, and waging war, as defined in the *Soviet Military Encyclopedia*.[6] Those principles do not reveal any startling new ideas, but in combination they provide some insight into the Soviet style of waging war, considering both their ranking in importance and the inferences that may be drawn from them. The 11 principles are as follows:

- *High Military Preparedness.* Requires a large standing force and well-developed plans, procedures, and force dispositions to meet contingencies.
- *Surprise and Decisive Action To Achieve and Retain the Initiative.* Supports the doctrinal emphasis on the offensive; surprise implies both active and

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[4]*Dictionary of Basic Military Terms* (Moscow: Voenizdat, 1965). Translated by Translation Bureau, U.S. Department of State, and published under auspices of the U.S. Air Force.

[5]*Ibid.*

[6]*Sovetskaia Voennaia Entsiklopediia*, Vol. 6 (Moscow: Voenizdat, 1978). The Soviet Military Encyclopedia is an 8-volume standard reference published from 1976 through 1980. It is treated in the Soviet Union as authoritative in contrast to Western connotations of the term encyclopedia.

passive measures (concealment) in combination with careful planning, not spur-of-the-moment operations.

- *Full Use of All Available Means To Achieve Victory.* Demands efficient use of all assets, implying well-planned coordination among the Services. This principle is the opposite of "economy of force," a notion popular in the West.

- *Coordinated Application and Close Cooperation of Major Units.* Requires that all operations have a single commander who controls the combat actions of all Services participating in the operation and integrates their missions into a unified plan. In the West, this is called "unity of command" and "joint operations."

- *Concentration of Force At the Needed Time in the Right Directions.* Indicates Soviet concerns about unnecessarily presenting a lucrative target for weapons of mass destruction; orchestrating troop concentrations at the proper times and in the directions most important to achieving their objectives implies high mobility and significant command-and-control capabilities.

- *Destruction of the Enemy Simultaneously Over His Entire Operational Depth in the Shortest Possible Time Through Maneuver and Shock.* Calls for rapid maneuver, extreme violence, and intense combat on a deep battlefield lacking clearly defined front-lines. The peculiar Soviet term "shock" (*udar*) refers to both the physical and psychological effects of violence on the enemy's defense capability; it is the combined effect of surprise and violence inflicted by "nuclear shock," "fire shock" (conventional munitions delivered by air and ground weapons), and/or "troop shock" (massed armor).

- *Full Exploitation of the Morale-Political Factor.* Includes extensive use of propaganda to motivate Soviet troops and psychological warfare to demoralize enemy troops.

- *Strict and Uninterrupted Leadership.* Implies, according to Baxter and others, that mission-type orders (e.g., allowing subordinate commanders wide latitude in the conduct of operations to achieve the commander's objectives and intent) are foreign to the Soviet military. Some believe the Soviet military has relaxed this principle, but the next principle reinforces Baxter's interpretation.

- *Steadfastness and Decisiveness in Fulfilling Assigned Missions.* Presents a strict interpretation of the superior-subordinate relationship, telling subordinates to carry out the spirit and letter of the commander's orders. Baxter notes that personal initiative to the Soviets means finding ways to execute orders as written in spite of difficulties and not to deviate from those orders to meet changed circumstances. Our interpretation is different; there is clear evidence that recent changes in military art have introduced the

principle of mission-type orders encouraging commander's initiative down to battalion commander level.

- *Comprehensive Security of Combat Activity.* Complements the principle of surprise and affirms traditional concerns with secrecy and risk-taking. Both active and passive security measures are an integral part of Soviet operational plans.

- *Timely Restoration of Reserves and Force Capabilities.* Reflects the Soviet view of intense combat that will rapidly deplete supplies and forces so that resupply and reconstitution are major concerns. Operational plans can be expected to include steps to satisfy those concerns, including the Soviet concept of echelonment.

The three levels of military art – strategy, operational art, and tactics – are interdependent in the sense that tactics describes *how* to use physical force on the battlefield, operational art explains *where* and *when* to use it, and strategy defines *why* (i.e., the goal or ultimate objective). Their formal definitions are as follows:[7]

- *Military Strategy.* The highest level in the field of military art, constituting a system of scientific knowledge on the phenomena and laws of armed conflict.

- *Operational Art.* A component part of military art dealing with the theory and practice of preparing for and conducting combined and independent operations by major field forces or major formations of Services. Operational art is the link between strategy and tactics. Stemming from strategic requirements, operational art determines methods of preparing for and conducting operations to achieve strategic goals, and it gives the initial tactical data that organize the preparation for, and waging of, combat in accordance with the goals and missions of operations. Besides the general theory of operational art, which investigates the general principles of conducting operations, each Service has its own operational art.

- *Military Tactics.* In the theory and practice of military art, a special field that studies the objective laws of combat and develops methods of preparing for combat and conducting it. Military tactics occupies a subordinate position with respect to operational art and strategy, acting in their interests, and serving to achieve the goals set for it by the operational art. Each Service and branch, by virtue of its intrinsic peculiarities, has its own theory and practice for the organization and conduct of combat and, consequently, its own tactics too, which are called Service or branch-arm tactics.

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[7] *Dictionary of Basic Terms*, *op. cit.*, as cited in Baxter, *op. cit.*

The Soviets categorize the tasks of military strategy into three groups: developing the strategic concept and plans for the preparation of the whole country for war, developing guidance for the preparation of the Services for war, and developing the principles of leadership over the armed forces during execution and the associated command-and-control structure.[8] Much information on the specifics of Soviet military strategy is available to the West from the open literature provided by the various military publishing houses in Moscow. For several reasons, however, the veracity of that information is questionable.

First, in a recently updated book on the Soviet military establishment, Harriet Fast Scott concludes from Soviet writings that "military strategies and policies expressed by Soviet planners in the 1980s do not differ fundamentally from those given in 1961 and early 1962, before the Cuban missile confrontation."[9] Such a conclusion is surprising when one considers the drastic changes that have taken place over that time; a possible explanation for this apparent contradiction, she suggests, is that Soviet military strategy has in fact changed since Sokolovskiy's days (i.e., pre-1970s) but that change has been more closely guarded.

Second, the West evidently underestimates the role of deception in and by the Soviet Union. For example, in her description of the Soviet General Staff (the key activity on military strategy), Scott lists 10 directorates but misses a secret organization, the Directorate of Strategic Deception, which, according to a Soviet defector, Viktor Suvorov, is the most important, powerful, and largest of all directorates of the General Staff.[10] According to Suvorov, the Chief Directorate of Strategic Deception is responsible for all military censorship, which is not just the protection of classified information, as the term is understood in the West, but also the fabrication of material to distort the true picture of Soviet military strategies, capabilities, and plans. It employs tens of thousands of highly qualified specialists;

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[8]V. D. Sokolovskiy, *Soviet Military Strategy*, 3rd ed., edited with an analysis and commentary by Harriet Fast Scott (New York: Crane Russack & Co., 1975). This edition contains material from all three Soviet editions of *Voyennaya Strategiya* published in 1962, 1965, and 1968. The standard English translation of the 1st edition, including commentary, was prepared by Herbert S. Dinerstein, Leon Gouré, and Thomas W. Wolfe and published by Prentice-Hall in 1963.

[9]Harriet Fast Scott and William F. Scott, *The Armed Forces of the USSR*, *op cit.*, p. 91.

[10]Viktor (pseudonym) Suvorov, *Inside the Soviet Army* (New York: Macmillan Publishing Co. Inc., 1982), pp. 100–107. The author is a Russian officer who defected to the West in the 1970s. His credibility, according to some British defense experts, is questionable; the available facts do not always support his conclusions.

runs the military publishing house of the Soviet MoD (Voenizdat); controls all military construction and troop movements; monitors U.S. satellites and their observation "windows" over the Soviet Union; and controls all contacts or relations with military attachés of foreign countries as well as journalists abroad, among other activities. If Suvorov is correct, then we must conclude that Soviet writings on military strategy in the open press – and thus Western knowledge based on those writings – are suspect.

Keeping the above two caveats in mind, it is generally believed in the West that two key changes in Soviet military strategy occurred in the decade of the 1970s. It was around 1970 that Sokolovskiy's notion of a cataclysmic war (i.e., one that would be inevitably nuclear, global, unlimited, and of short duration) was superseded by the concept of "limited nuclear war": war remained nuclear and global, but escalation from selective counterforce targeting to extensive countervalue targeting was only a possibility and no longer deemed inevitable. In the late 1970s, a notion of "limited war" emerged: war did not necessarily have to be nuclear, global, nor unlimited.[11] Under that notion, while World War III would probably escalate to nuclear war, it would start with a long conventional war phase, lasting from a few weeks to perhaps 2 or 3 months. During that initial phase, victory would be achievable at the operational level without reliance on nuclear weapons by exploiting new technologies offering "conventional means of qualitatively new and incomparably more destructive forms than before"[12] and "coming close to nuclear weapons in power, range, and accuracy."[13] In keeping with this change in view, starting around 1975, the Soviet Union began a major buildup of its logistics system that it previously had ignored under its short-war strategy.

The same cautions about the veracity of information on Soviet military strategy apply, we believe, to recent assertions by the Soviet leadership of a fundamental shift from an offensive to a defensive military doctrine (in the Soviet sense of the word) and the adoption of a concept of "reasonable sufficiency" for defense planning.

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[11]See, for example: James M. McConnell, "Analyzing the Soviet Press Spot-Reading No. 1: The Irrelevance Today of Sokolovskiy's Book *Military Strategy*" (Alexandria, Va.: Center for Naval Analysis, May 1985).

[12]Ogarkov, *op. cit.*

[13]Marshal S. Akhromeyev, (Chief of the General Staff), "The great victory and the lessons of history," *Novyi Mir*, May 1985, cited in Phillip Petersen, "The Modernization of Soviet Armed Forces," *NATO's 16 Nations*, Vol. 31, No. 4, Jul 1986.

The first signal of a possible change was General Secretary Mikhail Gorbachev's statement in February 1986 that he favored "restricting military potential within the bounds of reasonable sufficiency" and "using political means to resolve or avoid military conflict." In recent talks (July 1988) between Soviet and American defense officials, the Soviets asserted that the Soviet Defense Council (whose responsibilities are described below) spent 2 years working out the new "defensive" military doctrine. However, both Admiral William J. Crowe, Jr., Chairman, JCS, and Secretary of Defense Frank Carlucci both countered that they have not seen any evidence of such a doctrinal shift.

Moreover, news accounts indicate that the proposed policy changes are controversial within the Soviet Union, both at the political (i.e., CPSU) level and in military (i.e., MoD and Services) circles. For example, Soviet Minister of Defense Yazov, in an October 1987 pamphlet for distribution among students at military academies, states "it is impossible to rout an aggressor with defense alone ... [so that] troops must be able to conduct a decisive offensive." Other military officials have been cited as either decrying "the dissemination of pacifist ideas ... by naive people who have taken the bait of imperialist states [bent on] weakening the combat capability of the armies of the socialist countries," or as subtly negating any real reforms by insisting "Soviet military doctrine has always been defensive."[14]

One possible explanation for these conflicting positions is that the current Soviet leadership believes it is getting close to achieving one of its long-acclaimed objectives, that of uncoupling Western Europe from the United States. Witness the following remark by a high party official:

> The distancing of Western Europe from U.S. strategic plans in the near future is neither an excessively rash fantasy nor a nebulous prospect. It is dictated by objective factors having to do with the rational guarantee of all of their political and economic interests, including security.[15]

Such an accomplishment would eliminate the need for an offensive posture because an armed assault would no longer be necessary for the Soviet Union to achieve its

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[14]The three citations are from R. Jeffrey Smith, "Soviets Debate Basic Military Posture," *Washington Post*, 1 Aug 1988. For a comprehensive analysis of this doctrinal debate and the potential implications, see Stephen M. Meyer, "The Sources and Prospects of Gorbachev's New Political Thinking on Security," *Internal Security*, Vol. 13, No. 2, Fall 1988, pp. 124 – 163.

[15]Aleksandr Yakovlev, (Secretary of the Central Committee CPSU) quoted in *Foreign Policy*, No. 65, Winter 1986 – 87, p. 8.

aim of controlling events in Europe. Without the "extended deterrence" offered by the U.S. strategic nuclear arsenal and guaranteed by the U.S. forces stationed in Europe, Western Europe would be defenseless against any Soviet military aggression and every nation involved recognizes that fact. This prospect also suggests what the Soviet aims are for the Conventional Stability Talks that are scheduled to start in late 1988.

Another, less dramatic, explanation for the doctrinal debate is that of public posturing, as part of Gorbachev's "peace offensive" with the aim of restructuring the Soviet war economy, rather than a real change in doctrine. Importantly, even a defensive doctrine, in Soviet terms, does not imply a defensive strategy and operational art.

In principle, the argument of deception also applies to Soviet writings on operational art and tactics, but for several reasons the consequences may be less serious. First, the sheer volume of available research material is such that any deception campaign would be virtually impossible without being obvious; second, much of the material is overtly intended for Soviet use (e.g., manuals, textbooks, and instruction materials for military academies and schools; journal articles conducting open debates about new concepts), not Western consumption; third, the topic is under the jurisdiction of the Services, not the General Staff, and is considered less important than strategy; and fourth, it is apparent that specific individuals and institutions in the West, particularly in the UK and the United States, have acquired considerable expertise in the critical analysis of available Soviet research materials. One point, stressed by those experts without exception, is the goal-orientation of Soviet operational concepts (our generic term for operational art and tactics); i.e., a gap exists between required and actual capabilities to execute the concepts that have been adopted. We take up this critical issue later in this volume.

Lets now turn our attention to the peacetime organization and wartime command structure of the Soviet Armed Forces.

ORGANIZATION OF SOVIET FORCES

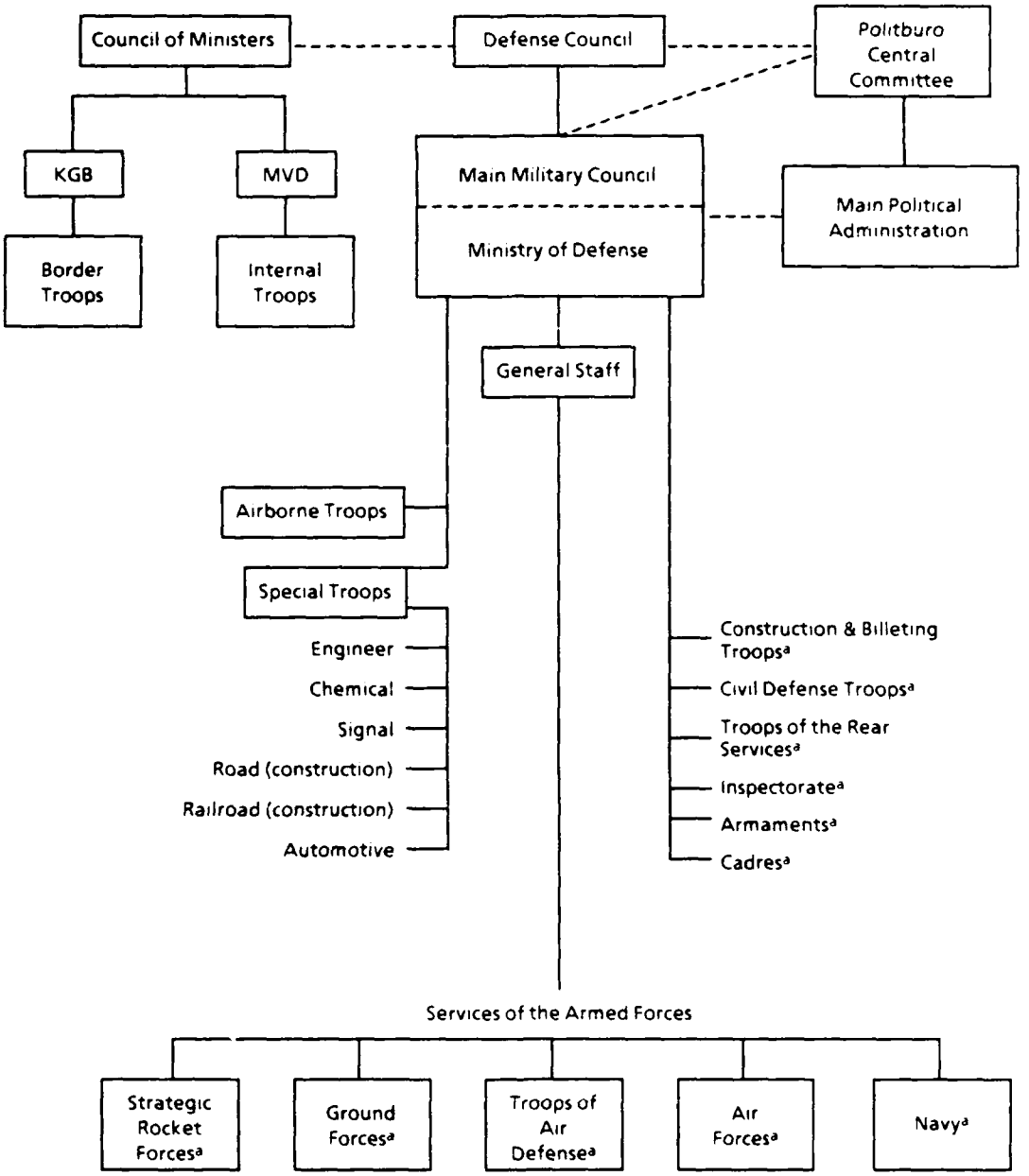
The peacetime organization of the Soviet Armed Forces is shown in Figure 2. It is the outgrowth of the "Workers and Peasants Red Army" created in 1918. Although the term Red Army was formally abolished with the reorganizations in the mid-1930s, it is still frequently used as the colloquial name for what is officially

called the Armed Forces of the USSR. Those forces consist of five Services, various Supporting Services and Special Troops, Border Troops, and Internal (Security) Troops. The latter two are under control of the Committee of State Security (KGB) and Ministry of Internal Affairs (MVD), respectively, while the others are controlled by the MoD, either directly (Supporting Services) or through the General Staff (Armed Services).

The Ground Forces is the oldest, largest, and most diversified of the Services. Its peacetime strength of approximately 2 million accounts for 35 percent of the 5.7 million Armed Forces total. Under mobilization, the strength of the five Services would almost double to 10 million within 2 days and grow to 14 million (according to Harriet Fast Scott) or 21 million (according to Suvorov) within 10 days, with most of the increase concentrated in the Ground Forces. Until the recent reorganizations, the Ground Forces included seven branches or arms of Service: Motorized Rifle Troops, Tank Troops, Artillery and Rocket Troops, Troops of Troop Air Defense, Airborne Assault Troops, Diversionary Troops (better known as *Spetsnaz*), and Fortified Area Troops. In the open literature, little information is available on the latter branch beyond Suvorov's account of their deployment and mission in the Far Eastern theater. Further, some confusion exists with regard to the Airborne Assault Troops. Several authors believe they are part of the Airborne Troops that are under direct control of the MoD as an independent branch but administratively under the Ground Forces; others, like Suvorov, insist the two are separate (although with identical uniforms and training), with Airborne Assault Troops organic to and under control of the Ground Forces and the Airborne Troops under the MoD.

Major reorganizations of the Soviet Armed Forces began in 1980 and are still continuing today. Those reorganizations have confounded Western understanding of the organizational structure of the Services. In 1980, Troop Air Defense of the Ground Forces was disestablished as a separate branch, with all schools and headquarters staff transferred to a separate Service, Troops of Air Defense.[16] That Service, previously responsible only for *national* air defense, also administers air defense units attached to combined-arms formations abroad. It includes the following branches: Radio-Technical Troops (responsible for ground radars and

[16]In late 1986, however, there were indications that this change might be reversed and Troop Air Defense of the Ground Forces reestablished; see "Organization of the Soviet Armed Forces," *Air Force Magazine*, Mar 1987, p. 60.



Source: Revised and adapted from Harriet Fast Scott and William F. Scott. *The Armed Forces of the USSR*, 3rd ed. (Boulder, Colo.: Westview Press, 1984).

[a] Each headed by a Deputy Minister of Defense.

FIG. 2. ORGANIZATION OF THE SOVIET ARMED FORCES

communications systems supporting the aircraft and missiles of the Service), Surface-to-Air Missile Troops (the literal translation is "Zenith Rocket Troops"), Antispace/Antirocket Defense Troops, and Aviation of Air Defense.

Since 1981, Aviation of Air Defense has lost about 45 percent of its aircraft (approximately 1,000 interceptor aircraft) to the Air Forces, with the merging of air defense aircraft in border regions of the USSR with tactical aircraft into the "Air Forces of the Military Districts" in those areas. (Aviation of Air Defense still has about 1,200 interceptor aircraft based in interior regions.) The Air Forces, which traditionally consisted of three branches (Long Range Aviation, Frontal Aviation, and Military Transport Aviation), was reorganized with the first two branches merged into five "Air Armies" (comprising all long- and medium-range bombers and about 50 percent of Frontal Aviation) and the remaining tactical air into Air Forces of the Military Districts and of Groups of Forces Abroad. In 1986, however, the helicopters, previously part of Frontal Aviation, were transferred to the Ground Forces. Furthermore, recent Soviet writings refer to Troop Aviation, which is believed to refer exclusively to helicopters (both attack and transportation), as a new branch of the Ground Forces. More recently, new organizational designations appeared for the Air Forces of Military Districts and Groups of Forces Abroad, with Frontal Aviation for air superiority and deep interdiction missions and "Army Aviation" for ground attack to tactical depth in support of Ground Force units. Military Transport Aviation was left untouched by these reorganizations. It continues to provide strategic and tactical airlift – using both fixed-wing aircraft and helicopters – to the other Services. The large inventory of civilian passenger and cargo aircraft operated by Aeroflot represents the major military airlift reserve for wartime.

WARSAW PACT

The political and military organizational structure of the Warsaw Pact provides a vivid illustration of Orwellian "doublespeak": things are not what they appear to be. The Warsaw Pact is not a multilateral defense organization as it professes to be, but a unilateral Soviet-imposed and -dominated organization for the integration of non-Soviet Warsaw Pact military forces into the (Soviet) Red Army. Created in 1955, ostensibly as a "voluntary" military alliance in response to NATO, it served to consolidate and camouflage the existing Soviet domination over Eastern Europe. In the Warsaw Pact's first 13 years, defense ministers of the non-Soviet states were subordinate to the Commander-in-Chief (CINC) Warsaw Pact Forces, a Soviet marshal with the position of First Deputy Minister of Defense of the Soviet Union. After the Soviet invasion of Czechoslovakia in 1968, the Political

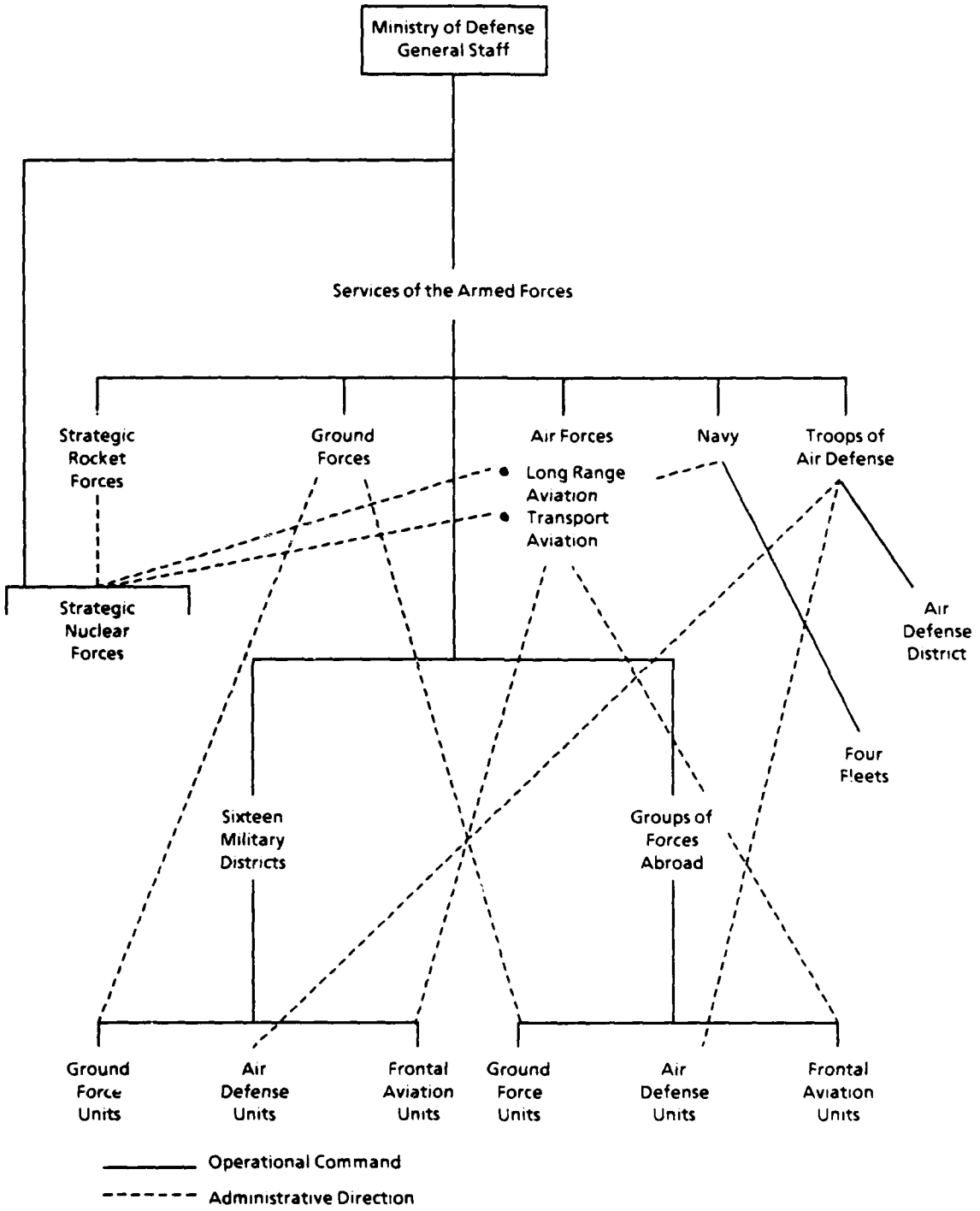
Consultative Committee was created, ostensibly as a vehicle for "democratic" decision-making on military affairs but in actuality as a "show piece" whose only function was to approve the decisions made by the Soviet military leadership. Defense ministers and military staffs of the non-Soviet Warsaw Pact nations have only administrative responsibilities. Operational command and control of their forces in wartime is exercised by the Soviet military hierarchy with Soviet officers commanding non-Soviet divisions deployed as elements of Soviet Army and larger formations.

COMMAND AND CONTROL

Each of the Armed Services of the USSR is headed by a CINC who derives authority from being chairman of the Military Council of a particular Service. Service Military Councils are active in all aspects of military life and are accountable for the combat readiness of assigned troops to the next higher military council, the MoD, and the Central Committee of the CPSU. (Each lower echelon within the Services – Military Districts and Groups of Forces Abroad – has additional layers of military councils.) Thus, the Service CINCs and Military Councils perform administrative functions; they have no operational authority either in peacetime or wartime, with the exceptions of the Navy CINC and Troops of Air Defense CINC, as noted in Figure 3.

Operational command and control of forces in peacetime is exercised by the Main Military Council through the General Staff and the Commanders of the 16 Military Districts, 4 Naval Fleets, and 4 Groups of Soviet Forces in Eastern Europe. The Main Military Council USSR, also known as the "Collegium of the MoD," is chaired by the Defense Minister, and its membership includes the chairman (or his deputy) of the Defense Council; the 3 First Deputy Ministers of Defense (Chief of the General Staff, CINC Warsaw Pact Forces, Chief General Affairs); the Chief Main Political Administration (MPA);[17] and 11 Deputy Ministers of Defense (including the Service CINCs). The Main Military Council is responsible for the "strategic direction and leadership" of the Armed Forces in peacetime, and its decisions are executed by the General Staff. The General Staff has a much broader

[17]The MPA is the key organization in the Party-military structure; it is the channel through which the Party influences and controls all aspects of the Armed Forces; it is accountable to the Central Committee and is represented on military councils throughout the organizational structure of the Services.



Source: Harriet Fast Scott and William F. Scott, *op.cit.*

FIG. 3. COMMAND AND CONTROL IN PEACETIME

scope than does the JCS in the United States; it encompasses most of the functions performed by the OSD, JCS, National Security Council, and the headquarters of the Military Departments in the United States.

In turn, the Main Military Council is responsible to, and under direction of, the Defense Council, the highest political-military decision-making body in the Soviet Union. Known in the past under various different names and infrequently mentioned in the open literature, the Defense Council's existence was formally established in 1977 through a change to the Constitution of the USSR. It is composed of the General Secretary CPSU, the first deputy (the "Chief Ideologist"), and representatives of the three pillars of Soviet security: KGB, CPSU, and the Army. Its members constitute the most powerful inner circle of the Politburo. The Politburo is the decision-making body of the Central Committee and possesses total and absolute power in the Soviet Union, including legislative, executive, judicial, administrative, religious, political, and economic power. Currently the Central Committee includes members of the Main Military Council (except for two deputy ministers), CINCs of the two most important Groups of Forces Abroad (Germany and Far East), Commanders of the most important Military Districts (Moscow, Belorussia, and Far Eastern), and First Deputy Chiefs of the General Staff. In summary, the top leadership of the Armed Forces consists of a number of interlocking, collective decision-making bodies with overlapping memberships such that a select few are in total control.

In wartime, the Defense Council continues to exercise centralized political direction of all military efforts. The Main Military Council transforms into the headquarters of the Supreme High Command (*Stavka VGK* in Russian) and the General Staff becomes the "working organ" of the Supreme High Command. The next lower level of command becomes an "intermediate organ of strategic leadership," which, depending on the size of the combat forces involved, may be an established High Command of Forces (HCOF, or *GK* in Russian) or a representative of the *Stavka VGK*. This intermediate command echelon is designed to extend operational command and control by the Supreme High Command in Moscow over the commanders of major combat formations (e.g., Front Commanders). It possesses the delegated authority of the Supreme High Command for combat operations in a designated geographic area and is responsible for the coordination of air, sea, and land operations in executing strategic-operational plans approved by the Supreme

High Command, the implementation of directive orders issued by the General Staff, and the operational control of resources transferred into its geographic area in support of the strategic operational plans.

In a Soviet offensive against NATO, the Soviet Union would divide its Western Theater of War into three continental geographic regions – the Northwestern, Western, and Southwestern TVDs. (TVD stands for *teatr voyennykh deystviy*, which has been translated as theater of strategic military action or theater of military operations.) Each TVD contains one or more "strategic directions," defining the general direction and depth of a strategic offensive by joint military forces. Each strategic direction, in turn, comprises one or more "operational directions," representing the axes of advance for operational-level formations that would be specified in strategic-operational plans. Figure 4 illustrates the concept of strategic and operational directions. The basic combined arms formation for theater operations is the Front, which is comparable to a NATO Army Group. The mission of a Front is defined in terms of its operational direction. Multiple Fronts operating in the same TVD would be coordinated and controlled by the HCOF for that TVD, whose mission would be defined in terms of its strategic direction. Although the exact boundaries of TVDs are unknown, Figure 5 illustrates what some observers believe to be the approximate geographic area constituting the Western TVD and provides some approximate statistics (as of late 1985) on the forces available to the CINC Western TVD.

The Soviet system of command and control in wartime as described in this volume is no longer speculation.[18] It was confirmed by the establishment in 1985 of four TVD High Commands (Western, Southwestern, Southern, and Far Eastern). That event was viewed in the West with great concern because it not only demonstrated the thoroughness and scale of Soviet military planning but also their capability of rapidly transitioning to war through this peacetime institution of

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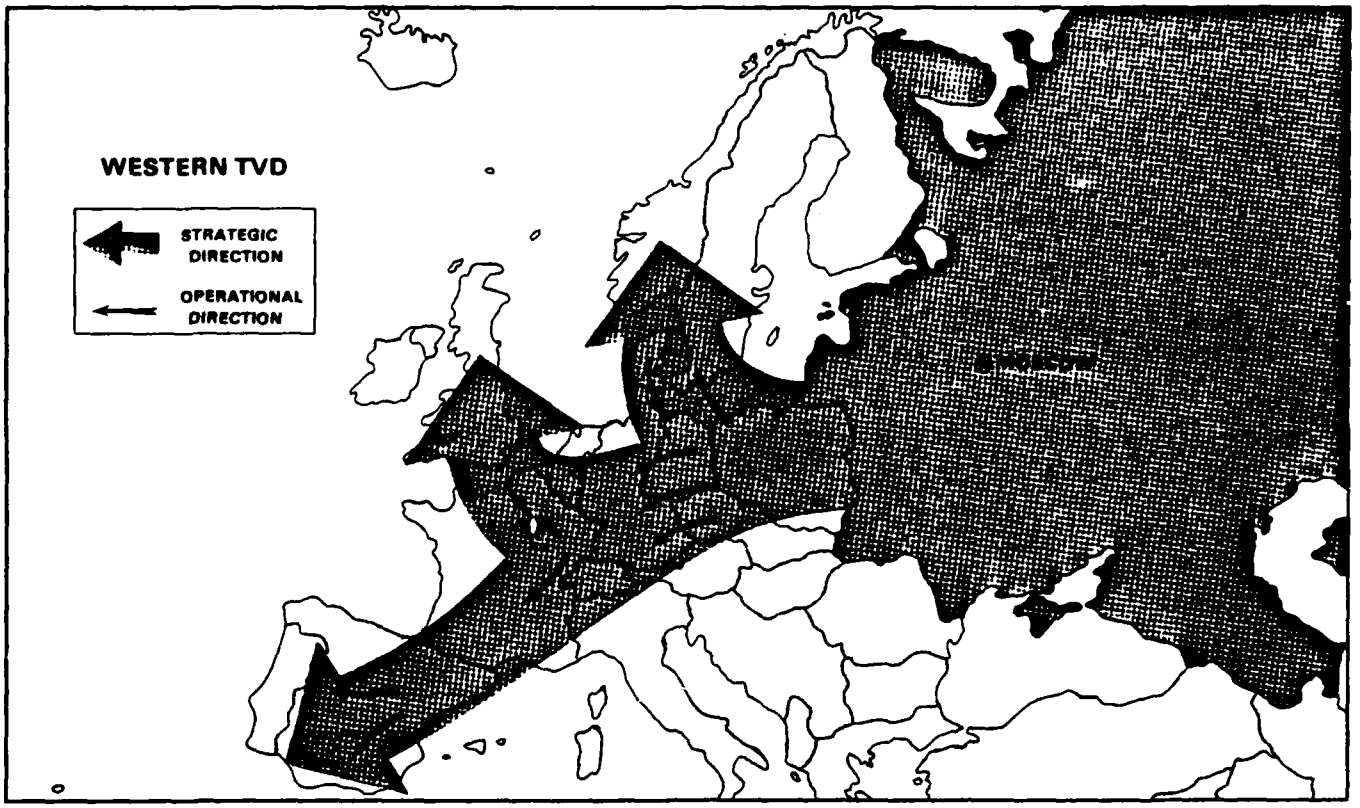
[18]See the authoritative article by Ltc. John G. Hines and Phillip A. Petersen, "Changing the Soviet System of Control," *International Defense Review*, No. 3/1986, pp. 281 – 289. The analysis of these authors differs somewhat in detail from the account provided by Viktor Suvorov, "Strategic Command and Control: The Soviet Approach," *International Defense Review*, No. 12/1984, pp. 1813 – 1820. We refer to these sources for additional detail. However, Harriet Fast Scott, *op. cit.*, cautions against jumping to conclusions; she believes the evidence on the peacetime existence of an HCOF Western TVD is ambiguous while only that for the Far Eastern TVD is certain. She is the exception, however; most people agree that the account by Hines and Petersen is accurate.

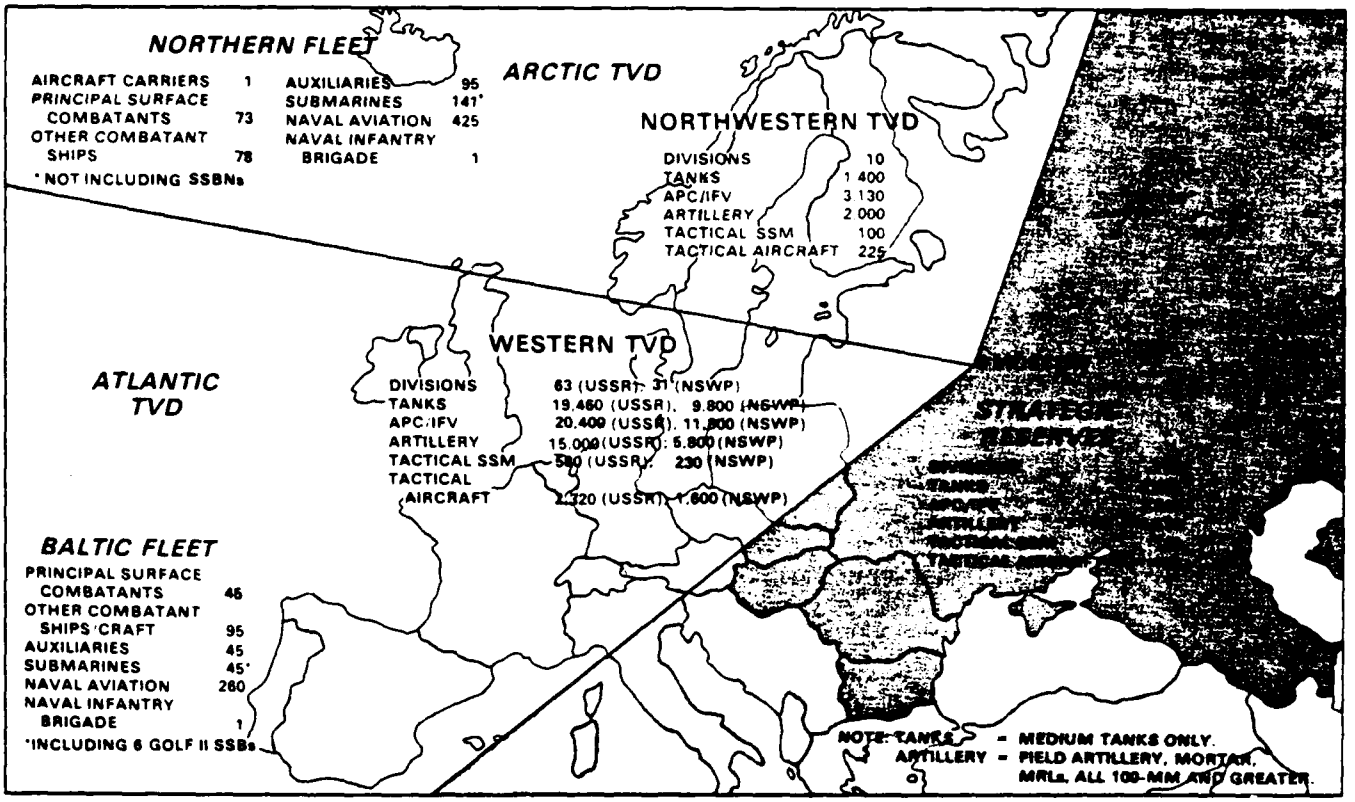


Source: Soviet Military Power, 5th ed. (Washington, D.C.: U.S. Government Printing Office, Mar 1986). The Southwestern TVD (not shown) includes part of NATO's Southern Region and is bounded by a line drawn from Moscow in a south/southeast direction. The USSR border with eastern Turkey lies in the Southern, not the Western Theater

FIG. 4. STRATEGIC DIRECTIONS IN THE WESTERN TVD

wartime commands. The CINC Western TVD controls all forces that would conduct or support an offensive against NATO's Central Region as well as Denmark (which is part of NATO's Northern Flank). The Northwestern TVD involves only one Front plus the Northern Fleet and thus does not need an HCOF; it would be controlled through a *Stavka VGK* representative.

In summary, the command-and-control picture that emerges is the one shown in Figure 6. The Supreme High Command is responsible for direct leadership of the Armed Forces both in peacetime and wartime, subject to the centralized political direction of the Defense Council, the top decision-making body for all security matters. Headquarters of the Supreme High Command (*Stavka* in wartime, Main Military Council in peacetime) consists of the top military leaders, including the Minister of Defense (who is also a member of the Defense Council), Chief of the General Staff, First Deputy and Deputy Ministers of Defense, and CINCs of the five Armed Services. The General Secretary CPSU is both Chairman of the Defense Council and Supreme High Commander. The General Staff is the executive agent of the Supreme High Command. Continental TVDs requiring more than one Front are



Source: Ibid.

Note: ACP/IFV: armed personnel carriers/infantry fighting vehicles; NSWP: Non-Soviet Warsaw Pact; SSM: surface-to-surface missiles; SSBNs: strategic submarines.

FIG. 5. COMBAT FORCES IN THE WESTERN TVD

under operational command and control of a CINC responsible for coordinating Front and Fleet operations, executing approved strategic-operational plans, and implementing directives from the General Staff. Smaller or less important TVDs are controlled by a *Stavka* representative. A fourth level of operational control is provided by a system of General Staff representatives down to the division level to monitor the operational situation and serve as a conduit for communications up the chain of command. Although the position of CINC Western TVD is comparable to that of CINC Allied Forces Central Europe, the command authority and control exercised by the Soviet CINC goes well beyond that of the NATO counterpart.[19]

Reportedly, the peacetime headquarters of the CINC Western TVD is collocated with the headquarters of the Northern Group of (Soviet) Forces at Legnica, Poland. In wartime, it would transfer to Zossen-Wünsdorf (just south of Berlin), which is the peacetime headquarters of the Group of Soviet Forces in Germany (GSFG). The wartime command structure, however, is in place today.

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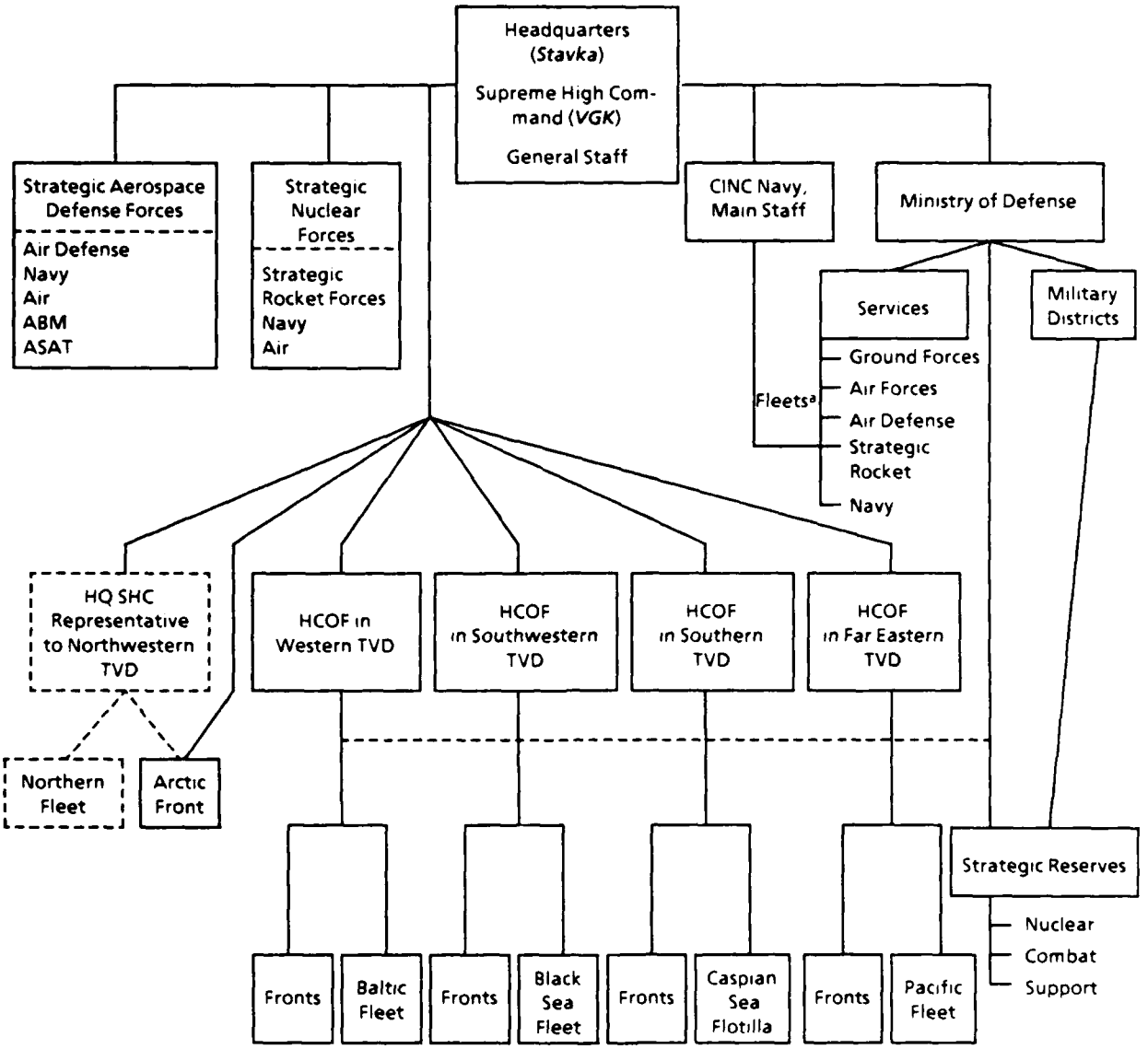
[19]See Ltc. John G. Hines and Phillip A. Petersen, "Is NATO Thinking Too Small?" *International Defense Review*, No. 5/1986, pp. 563–572.



Source: Ltc. John G. Hines and Phillip A. Petersen, "Changing the Soviet System of Control," *International Defense Review*, No. 3/1986, p. 287. (We have replaced the acronym TSMA, used in the original to define theater of strategic military action, by the Russian acronym TVD, with the same meaning, to be consistent with our text.)

Note: ABM: antiballistic missile; ASAT: antisatellite; HQ: headquarters; SHC: Supreme High Command.

[a] Normally planning and coordination plus control of Northern Fleet elements are not controlled through strategic nuclear forces.

FIG. 6. COMMAND AND CONTROL IN WARTIME

LAND FORCES

The ground maneuver forces that are available to the CINC Western TVD to execute the strategic-operational plan are summarized in Table 1. The table also shows the considerable impact of mobilization on available forces: 56 maneuver

divisions are available for a "standing-start" attack, whereas a 60-day mobilization would almost double the force. Those forces, in turn, are only a portion of the total force structure for global war that consists of 246 maneuver divisions (193 Soviet, 53 non-Soviet Warsaw Pact), 7 airborne divisions, 16 artillery divisions, and numerous brigade- and battalion-sized combat support and combat service support units.

TABLE 1

WARSAW PACT GROUND MANEUVER FORCES (WESTERN TVD)

Location	Nationality/ Identification	Tank/Armor Divisions[a]			Motor Rifle/Mechanized Infantry Division[a]			Total Count
		Cat. 1	Cat. 2	Cat. 3	Cat. 1	Cat. 2	Cat. 3	
GDR	Soviet (GSFG)	10	–	–	9	–	–	19
	German (NVA)[b]	2	–	–	4	–	–	6
Czechoslovakia	Soviet (CGF)	2	–	–	3	–	–	5
	Czech	1	2	2	3	1	1	10
Poland	Soviet (NGF)	2	–	–	–	–	–	2
	Polish	5	–	–	3	–	5	13
USSR[c] (Western MDs)	Baltic MD	1	1	1	2	2	2	9
	Belorussian MD	2	1	7	1	1	2	14
	Carpathian MD	1	1	2	2	1	5	12
USSR[c] (Strategic Reserve)	Moscow, Ural, and Volga MDs	2	1	2	1	4	9	19
	Total	28	6	14	28	9	24	109

Source: International Institute for Strategic Studies, *The Military Balance 1986–1987*, Autumn 1986, with revised estimate of strategic reserve based on DoD, *Soviet Military Power*, 6th ed., Mar 1987

Note: CGF: Central Group of Forces; NGF: Northern Group of (Soviet) Forces; MD: Military District; NVA: National People's Army.

[a]Combat readiness categories are: Category 1 = full strength and complete equipment; Category 2 = 50–75 percent manned, complete equipment, fully manned in 3 days, operational in 30 days; Category 3 = cadre unit, older equipment, fully manned and operational in 60 days. This system is being changed to "full strength" and "cadre units."

[b]Not shown are four additional Motor Rifle Divisions that can be activated combat ready in 48 hours from reserve forces.

[c]Specific readiness category data unavailable but derived from overall estimate of 25 percent Cat. 1; 15 percent Cat. 2, and 60 percent Cat. 3.

The peacetime deployments of Warsaw Pact ground maneuver forces that would constitute the spearhead of Western TVD troop formations are shown in Figure 7: Figure 7(a) shows the locations of GSFG units; Figure 7(b), those of East-German army units (the acronym NVA is German for "National People's

Army"); and Figure 7(c), those of the (Soviet) Central Group of Forces in Czechoslovakia and the Czechoslovakian People's Army.

To provide some idea of the unprecedented peacetime concentration of military forces along the inner-German border and the border between the Federal Republic of Germany (FRG) and Czechoslovakia, we have estimated the active manpower levels for ground and air forces as shown in Table 2. The table applies only to forward deployed forces in what is known as the MBFR (Mutual Balanced Force Reductions) Zone; i.e., the Benelux (Belgium, The Netherlands, and Luxembourg) countries and FRG on one side; the German Democratic Republic (GDR), Poland, and Czechoslovakia on the other side. Of the total of approximately 2¼ million men under arms, Warsaw Pact has close to 58 percent, NATO 42 percent. This gap would nearly close if France's active army and air force units were included.

OPERATIONAL CONCEPTS

Soviet operational concepts are based on combined-arms operations and emphasize several well-known principles: *surprise* (as to place, date, time, choice of axis for the main blow, and new weapons or methods of warfare); *speed of maneuver; decisiveness of action; weight of blow* ("shock"); and *swift paralysis* of the opponent's vital nerve centers (nuclear storage/launch facilities, airfields, command-and-control centers, supply depots, capital cities, and seaports, in priority order). The term "blitzkrieg" is often used to characterize the Soviet concept of warfighting.

Many defense experts in the West believe that the Soviet Union would not initiate a war against NATO unless convinced that it could achieve its objectives within a short time (counted in weeks, not months). Peter H. Vigor, in an excellent discussion on this subject, provides the following reasons for the Soviet requirement for a short war:[20]

- *Soviet conviction that victory accrues to the side that possesses the greater economic potential, provided the duration of war is long enough for that greater potential to be realized.* In past wars, it took the ultimate victors several years to replace their losses suffered in the initial phase of the war and to realize their industrial potential. The Soviets are conscious they are economically inferior to the West so that they would lose in a long war.

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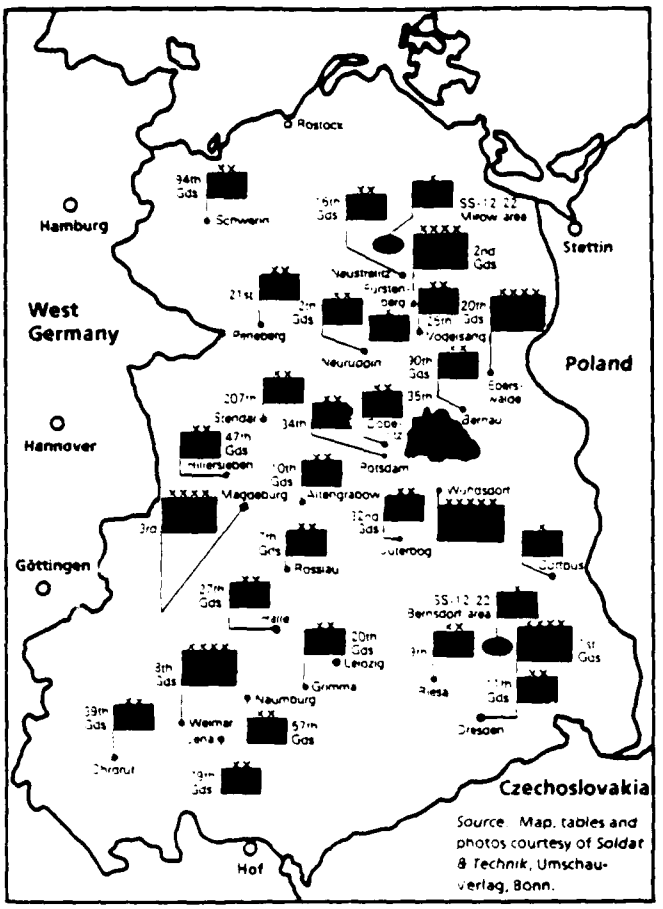
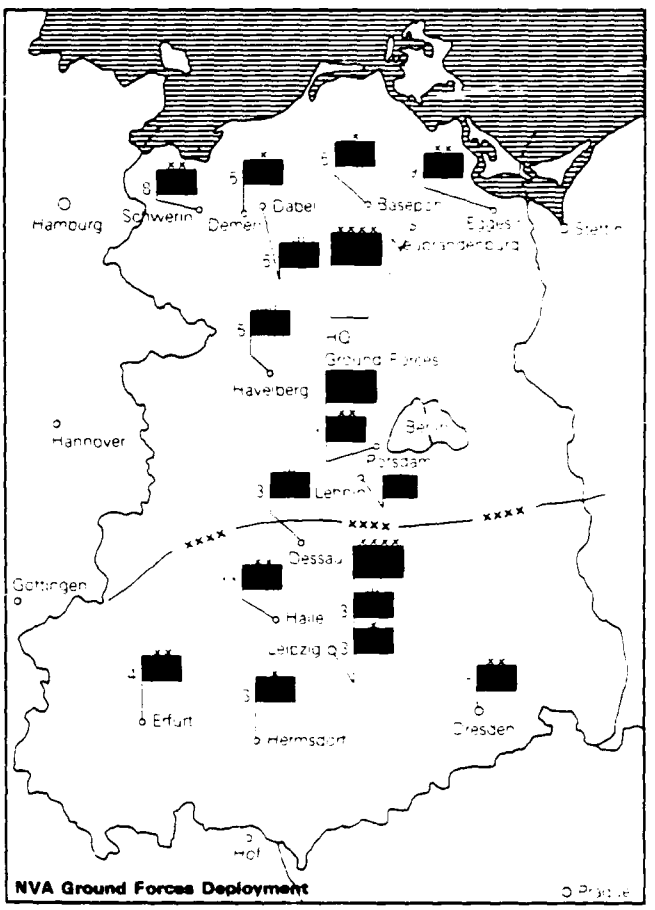
[20]Peter H. Vigor, *Soviet Blitzkrieg Theory* (New York: St. Martin's Press, 1983).



(a)



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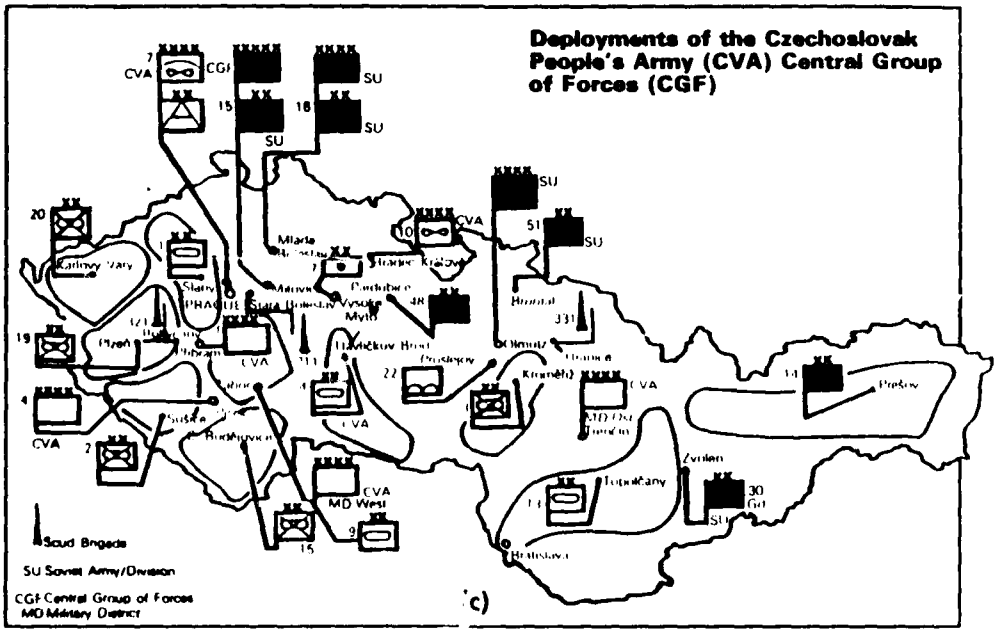

(c)

Source: "The East German Army - An Integral Part of the Conventional Threat to NATO," *International Defense Review*, No. 4/1987, pp. 401 - 403. Günter Lippert, "GSFG - Spearhead of the Red Army," *International Defense Review*, No. 5/1987 pp. 553 - 563. Peter Weiss, "The Czechoslovak People's Army," *International Defense Review*, No. 6/1987, pp. 739 - 743.

FIG. 7. PEACETIME DEPLOYMENTS OF WARSAW PACT GROUND MANEUVER FORCES (WESTERN TVD, FORWARD ECHELON, 1986)

TABLE 2

ACTIVE FORCE MANPOWER LEVELS IN MBFR ZONE (1986)

West			East		
Nationality	Ground	Air	Nationality	Ground	Air
United States	211,100	44,600	USSR	500,000	49,000[a]
Canada	4,200	2,700	Poland	295,000	88,000
UK	59,000	10,600	Czechoslovakia	145,000	56,000
FRG	340,800	108,700	GDR	123,000	40,000
The Netherlands	66,200	18,000			
Belgium	67,400	19,500			
Total	748,700	204,100	Total	1,063,000	233,000

Source: *The Military Balance 1986 – 1987* (London: International Institute for Strategic Studies, Autumn 1986).

[a] Source does not provide estimate. LMI estimate derived from source data by applying the ratio of forward-deployed Soviet combat aircraft (800 out of 5,100 total) to total Soviet manpower for combat air (313,100).

- *The shorter the war, the fewer the opportunities for things to go wrong.* Unless the campaign is won in the initial phase (i.e., before the enemy has fully prepared its defenses), which can be carefully planned, the aggressor loses the initiative and operational plans must be revised in reaction to the enemy's responses. The Soviets are concerned about their ability to react quickly and decisively, because of weaknesses in command and control and commanders' initiative.

- *Significant advantages of winning the war in the initial phase.* A quick win offers many advantages: the probability of winning the war is higher if one can win in the initial phase, casualties are likely to be far less, and the strain on one's economy is significantly reduced.

- *Soviet concerns about the revolutionizing effects of war.* The Soviets believe that citizens of the Warsaw Pact countries and the USSR would support the war effort if victory was achieved within a few weeks but that morale would suffer if it came to a long war; they might even rebel.

- *Soviet concern about expansion of war – the China "card."* In a protracted war, other countries such as China might enter the conflict with unpredictable consequences for the Soviet Union.

- *Soviet concerns about nuclear escalation.* The Soviets fear the danger of escalation if the war is not won in the initial phase. In spite of "hawkish"

views in the West, most observers agree the Soviet Union does not want a nuclear war. Soviet soldiers appear to be as frightened of the prospects of fighting a nuclear war as are soldiers in the West; and casualties in a nuclear war would be enormous. The Soviets believe that the United States, faced with a *fait accompli* in Europe, would accept the uncoupling of NATO-Europe rather than engage in mutual strategic nuclear suicide.

It is clear then that the challenge for the Soviet Union is to develop its war-fighting capability to a level that would enable it to win an attack against NATO in the initial phase. That process began in earnest in 1969 and is continuing in a most systematic way. The four operational concepts that are key to a successful Soviet offensive against NATO are air operation, integrated fire destruction, echelonment and maneuver, and deep battle – terms that have specific meanings and connotations in Soviet military art. In the balance of this section on operational concepts, we explore these concepts in some detail; in the next section, we follow a parallel structure in assessing where Soviet capabilities stand today.

Air Operation

The Soviet air operation is a preemptive strike designed to achieve four results:

- Create and consolidate secure corridors by destroying NATO's surface-to-air missile (SAM) sites and warning radars
- Achieve air superiority by destroying NATO's airbases, air forces, and tactical air command-control-communications (C^3) nodes
- Suppress NATO's nuclear escalation option by attacking theater nuclear warfare storage sites and launch facilities
- Perform deep-interdiction by attacking important military targets in NATO's rear, specifically logistics facilities, transportation hubs, and ports of debarkation.

The strike would precede, by several hours, the advance of ground maneuver forces across the inner-German border. It could last for 2 or 3 days depending on the concentration of resources committed by the CINC Western TVD and NATO's defensive and offensive counterair operations. The air operation is deemed critical by the Soviets to the success of their ground offensive, which demands local air supremacy. It would involve TVD-level coordinated strikes by conventionally armed ground-based surface-to-surface missiles (SSMs); by Air Armies comprising electronic warfare aircraft, attack aircraft with standoff air-launched antiradiation

missiles and conventional ordnance, fighter-interceptors, and medium-range bombers; by airborne operations involving both regimental-sized airborne units (from airborne divisions transferred from Supreme High Command to Western TVD) and battalion-sized air assault units (from air assault brigades organic to each Front); and by *Spetsnaz* and sabotage teams. Thus, it would be a large-scale, combined-arms operation that has been described in many publications.[21]

The character of the air operation apparently has changed in recent years: through the early 1980s the decisive role was played by air power throughout the operation; since the mid-1980s indications are that the air role in the initial phase of the operation would be defensive, not offensive, thus levying most of the first task (creation of secure air corridors) on branches other than Frontal Aviation. This change is generally attributed to improvements in NATO's air defense, but it has apparently been ignored by many analysts in the West who continue to view the air operation as an air force operation.

NATO analysts expect that the Soviets would attempt to clear two or three separate air corridors per Front, each 40 km wide and 200 km deep.[22] In a plausible scenario, with three Fronts in the first strategic echelon opposite NATO's Central Region, a successful air operation would thus establish six to nine air corridors across the FRG and inflict devastating damage in NATO's rear before the first battle at the border had been decided.

Integrated Fire Destruction

The second important operational concept that is key to a successful Soviet offensive against NATO, "integrated fire destruction," refers to the Soviet view of the dominance of firepower on the modern battlefield (as a fundamental technology-driven trend) and the need for overwhelming firepower support to ground maneuver operations. The concept involves coordination, concentration, and

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[21]See for example: Col. Alexander Musial, "The Character and Importance of Air Operations in Modern Warfare," *Air Force and Air Defense Review (Polish)*, Mar 1982, Translation No. 138, Soviet Studies Research Center, Sandhurst, UK.

[22]NATO seminar in Bonn, FRG, Jul 1984, as reported in *Aviation Week and Space Technology*, 16 Jul 1984. We note that U.S. intelligence indications of a shift in Soviet strategy toward an initial defense orientation for the air forces in their air operation were first publicly disclosed by the Air Force Secretary in prepared remarks to the annual meeting of the American Institute of Aeronautics and Astronautics, Apr 1987.

integration of fire from all platforms against selected defense sectors so as to achieve effects similar to those of a nuclear strike. This density of firepower is calculated to achieve 60 percent destruction of all major enemy weapons systems (artillery, tanks, and antitank weapons) on the main axis of attack of a Soviet Front by the time the supported maneuver units engage in battle.

The concept has been extended in recent years to include four phases.[23] The first phase, "fire support of advance from the depth," provides offensive and defensive fire support to troop formations as they move forward from assembly areas in the rear (i.e., about 60 km from the inner-German border) and is functionally similar to the TVD-level air operation; it is executed by ground-based missile systems and fighter-bombers subordinated to the Front. The second phase, "fire preparation of the attack," is executed by medium- and short-range Front and army artillery shortly before attacking forces make contact with enemy defenses and is aimed at maximum destruction of the enemy's artillery assets. The third phase, "fire support of the attack," follows immediately as first-echelon units proceed to attack and seek to penetrate enemy defenses; the aim is to destroy the stability and recovery capability of the defense and to establish and maintain firepower superiority over the enemy, requiring the combined efforts of all firepower assets at Front, army, and division levels (Frontal Aviation, artillery, multiple rocket launchers, and attack helicopters). The fourth phase, "fire accompaniment," is designed to follow through with firepower support for maneuver units as they exploit penetrations into the enemy's rear area.

Echelonment and Maneuver

The third concept, echelonment and maneuver, is a fundamental feature of Soviet offensive and defensive operations and tactics that frequently causes the West confusion because it has no equivalent. The concept, however, can be easily understood by grasping the three main reasons for echelonment. The first is the idea of "usable mass" as defined by force-to-space relationships and terrain features. For example, a 1980-era Soviet Tank Army represents a combat formation of approximately 54,000 soldiers; 2,450 main tactical tracks (armored personnel carriers/ infantry fighting vehicles and tanks); about 900 artillery pieces (howitzers, guns,

[23]For an authoritative account, including numerous Soviet source references, see Phillip A. Petersen and Ltc. John G. Hines, "The Conventional Offensive in Soviet Theater Strategy," *Orbis*, Vol. 27, No. 3, Fall 1988, pp. 695 – 739.

mortars, and multiple rocket launchers); 300 SAM launchers and antiaircraft guns; and 42 SSM launchers. One analyst has calculated, in normal march formation, a Soviet Tank Army would stretch from Berlin to Aachen, a road distance of 560 km (350 miles); with the normal portion of frontal troops and specialist units added to the formation, it would stretch past Brussels, a road distance of 690 km (430 miles).[24] Obviously, conducting army-level maneuvers in the space available along the inner-German border is neither possible nor planned; a natural limit of around 500 main tactical tracks is generally accepted as the largest mechanized force that can be maneuvered as a single entity, which equates roughly to a Soviet division or air-assault brigade. *Echelonment is thus necessary for maneuver.*

The second reason is Soviet insistence on continuous, 24-hour combat operations because of their view that surprise and speed are the most important combat force "multipliers." Echelonment permits relief of combat units that need rest, resupply, or reconstitution while fresh units continue the offensive and keep the pressure on the enemy around the clock. *Echelonment is thus necessary for speed.*

The third reason, closely related to the first two, is the need for units to exploit a breakthrough, consolidate gains and mop up bypassed strong points or cities, defeat counterattacks, shift the axis of attack, or envelop or outflank enemy forces that are pinned down by a holding force. *Echelonment is thus essential to Soviet tactics.*

All units, from Front down to battalion, are normally organized in two echelons and a reserve, but this standard organization is adjusted as conditions mandate. For example, three echelons are used for breakthrough attacks against prepared defenses (the "steamroller" attack in popular descriptions) or when terrain constricts maneuver space or speed of advance is paramount; a single echelon is used against unprepared defenses offering only light resistance.[25] Echelonment in a combat formation is seldom uniform since commanders at each echelon decide their own organization for combat.[26] To illustrate, an army may deploy its subordinate divisions in two echelons; the first-echelon divisions normally deploy their subordinate

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[24]Richard E. Simpkin, *Race to the Swift* (London: Brassey's Defence Publishers Ltd., 1985) p. 44.

[25]See David C. Ishby, *Weapons and Tactics of the Soviet Army* (New York: Janes' Publishing Inc., 1981).

[26]William P. Baxter, *op. cit.*

regiments in one echelon; those regiments may deploy their subordinate battalions in one, two, or even three echelons; and the battalions normally deploy subordinate companies in one echelon. Importantly, units in-echelon are considered as committed forces, whether or not they are in contact with the enemy. In contrast, reserve units do not have a specific mission and are used only in emergencies. Each battalion-level commander and above has a reserve unit under direct command (identified as "independent" in the unit's table of organization). The reserve is two levels down: a battalion has a platoon, a regiment has a company, a division has a battalion, an army has a regiment that is normally not an extra regiment but one from a division in its second echelon,[27] and a Front has a division. The reserve unit is typically deployed in one echelon (at least in the offensive) and collocated with the unit's main headquarters. The reserve is always a tank unit, supplemented (at regiment and above) with additional antitank troops. This small reserve, compared to the traditional "two up, one back" deployment of triangular formations in Western armies (where the "one back" is a reserve, not a second echelon) again shows the offensive orientation of Soviet military art. As Ishby notes, the Soviet concept "allows tactical or operational units to depend on units echeloned behind them to perform functions that the larger and more self-sufficient Western units would rely on their (own) reserves to perform."

The Soviet system of unit frontages and objectives is shown in Table 3. Each unit is assigned a sector to attack or defend; divisions and above have both a main and secondary axis of advance within their assigned sector; frontages and intervals between units are adjusted to concentrate forces at the main axes only at the decisive moment in order to achieve the destruction norms required for victory. Units of battalion size and above are assigned immediate and subsequent objectives, with the immediate objective of a parent unit normally identical to the subsequent objective of its first-echelon component units. When the latter achieve their immediate objectives, the parent unit commits its second echelon to seize its subsequent objective, which is the immediate objective of the next-higher parent unit. Ishby describes it as a "telescoping, expanding system of exploitation . . . that will provide the momentum, the fresh troops and high combat power that the high-speed offensive requires in mobile warfare." The image that comes to mind is, of course, the notion of

[27]The exception is the organizational structure of GSFG armies which since 1982 have included an independent tank regiment.

expanding torrent, first formulated by Sir Basil H. Liddell Hart as one of the key concepts in maneuver theory.

TABLE 3

SOVIET DOCTRINAL FRONTAGES AND DEPLOYMENTS

(in kilometers)

	Company	Battalion	Regiment	Division	Army	Front
Attack sector	1	2 – 3	5 – 10	20 – 40	100 – 200	200 – 500
Main frontage	0.75	1 – 2	4 – 7	10 – 15	40 – 80	80 – 250 +
Depth (immediate objective)	–	2 – 4	8 – 15	20 – 30	100 – 150	250 +
Depth (subsequent objective)	–	8 – 15	20 – 30	50 – 70	200 – 250 +	300 – 500
Defense frontage	1 – 1.50	4 – 7	8 – 16	20 – 30	100 – 150	250 – 350
Defense depth	0.50 – 1	1 – 3	7 – 10	16 – 20	100 – 130	200 – 250
Rear boundary (from front)	–	–	10 – 15	30 – 40	75 – 110	150 – 160
Distance between echelons (attack)	–	1 – 3	5 – 15	20 – 30	30 – 35	40 – 80 +

Source: David C. Ishby, ***Weapons and Tactics of the Soviet Army*** (New York: Janes' Publishing Inc., 1981).

Note: If nuclear, biological, and chemical (NBC) weapons are not expected to be used, Fronts and armies have their sectors reduced by 40 percent, their attack frontages reduced by about 10 percent, and their immediate objectives reduced by about 40 percent. Units normally operate only over a portion of their attack sector for the main attack; e.g., a division on the main axis would attack on a 6-km frontage, while the rest would be ignored or covered by holding attacks. This results in gaps between Soviet penetrations.

Deep Battle

The fourth Soviet operational concept is "deep battle," which is a merger of preemptive raiding and deep exploitation concepts that have received much attention in recent years. That attention was primarily triggered by C. N. Donnelly's famous article on the "Operational Maneuver Group" (OMG), which initiated a debate in military journals in the West that has continued to date.[28] That article was based on the author's analysis of the historical "mobile group" used in Soviet army operations in World War II and contemporary concepts discussed since 1977 in Russian and Polish military journals. It outlined an evolving operational concept for

[28]C. N. Donnelly, "The Soviet Operational Maneuver Group: A New Challenge for NATO," *International Defense Review*, No. 9/1982, pp. 1177–1186. Within hours of publication of this article, the author was denounced by Tass; within days, General Bernard Rogers, as Supreme Allied Commander, Europe, saw the need to confirm in a public speech the accuracy of Donnelly's analysis; and the fairly open discussion of OMGs in the Polish military journals ceased. The author is associated with the Soviet Studies Research Center, Royal Military Academy, Sandhurst, UK.

a rapid Soviet victory in a conventional war against NATO. The OMG concept may be easy to grasp in principle: the idea is to move the battle rapidly into NATO's rear, away from the front-line. Its significance and the operational-tactical implications, however, are more difficult to understand and have caused some confusion in the West.

The concept may be viewed as a change in offensive tactics from *smashing* to *slashing* through the enemy's defenses: The traditional Soviet approach involved a massed frontal attack on defense positions to create gaps for exploitation by follow-on echelons; the new concept is to find weak spots in the enemy's defense, to penetrate immediately, and to insert OMGs (combined-arms combat formations of division-size or larger) through those gaps into the enemy's rear to seize objectives and cause disruption. The OMG is not designed to fight enemy forces in prepared defense positions (its organic artillery is insufficient for that purpose), but rather to fight "encounter battles" (termed "meeting engagements" in NATO and defined as "combat action that occurs when a moving force, incompletely deployed for battle, engages an enemy at an unexpected time and place"), which is the Soviets' preferred way of combat.

To appreciate this concept as an evolution, not revolution, in Soviet military art and to understand its operational foundation, some historical perspective is necessary. The following subsections describe the historical evolution of deep battle, followed by a discussion of penetration and raiding concepts, and the rationale for the recent emphasis on OMGs in Soviet operational art. We conclude this section by answering the key questions that the public debate has focused on in recent years.

Historical Perspective

Our account borrows heavily from an incisive article by Colonel David M. Glantz.[29] Glantz views the OMG as a full reflection of the Soviet's long tradition of structuring and deploying their forces for offensive action and as the final culmination of deep battle concepts that were first articulated in 1927 by Triandafillov in his book *Basic Character of Operations of Modern Arms* and developed in the 1930s

[29]Ltc. David M. Glantz, "Soviet Operational Formation for Battle: A Perspective," *Military Review*, Feb 1983, pp. 2–12. The author is fluent in Russian, a student of Soviet military history and developments, highly regarded and knowledgeable, and a prolific writer.

by Marshal Tukhachevsky and his associates.[30] He supports his point by citing from the Red Army's "Instructions on Deep Battle," issued in March 1935:

> Deep battle is battle with the massive use of new mobile and shock forces for the simultaneous attack of the enemy to the entire depth of his combat formation with the aim of fully encircling and destroying him. . . . The new means and tactics of deep battle increase the importance of surprise.

Similarly, he cites the field regulations of 1936, written by Tukhachevsky, to define the nature of deep battle:

> Simultaneous assault on enemy defenses by aviation and artillery to the depths of the defense, penetration of the tactical zone of the defense by attacking units with widespread use of tank forces and violent development of tactical success into operational success with the aim of complete encirclement and destruction of the enemy. The main role is performed by the infantry, and the mutual support of all types of forces is organized in its interests.

Glantz proceeds with describing the operational formation that evolved in theory to implement deep battle at army and Front levels: a *shock group* (two-thirds of the force), composed of rifle divisions in two or three echelons with regiments abreast operating on the main strike axis; a *holding group* (one-third of the force), composed of rifle divisions deployed in one echelon conducting supporting attacks on secondary axes; both groups to be supported by organic tank battalions and artillery, and by attached aviation; and a *mobile group*, not organic to the operational formation but controlled by the army or Front commander, consisting of a tank (mechanized) brigade or corps, respectively. The function of the shock group was to penetrate (or envelop) the enemy's defenses; while that of the mobile group was to exploit to tactical (army-level) and operational (Front-level) depth and pursue the

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[30]As a point of historical interest, we note that Tukhachevsky was Russia's main military theoretician throughout the 1920s and 1930s. His ideas and work far surpassed those of his more famous contemporaries in the West, the Englishmen Major General John Frederick Charles Fuller and Sir Basil H. Liddell Hart. Neither were successful in bringing their ideas to fruition: the former was liquidated in Joseph Stalin's purges during 1938, whereas the latter two were ignored by the British military establishment until well after 1940. All three occupy a lasting place in the evolution of maneuver theory for mechanized warfare, with the German Army being the first to apply those concepts brilliantly (from a pure military perspective) in its 1940 blitzkrieg operation on the Western front for which General Guderian was the main architect. The U.S. Army at that time did not have the same caliber of thinkers, but during World War II, it provided some outstanding practitioners, especially General George S. Patton. The French lacked both theoreticians and practitioners until General Charles de Gaulle emerged in the post-World War II era. An overview of the evolution of maneuver concepts in Western armies can be found in Field Marshal Lord Carver, *The Apostles of Mobility: The Theory and Practice of Armoured Warfare* (New York: Holmes & Meier Publishers, 1979).

enemy. This mobile group consisted of cavalry, tank, and motorized infantry (in those days the main force infantry was on foot). Even though implementation of the theoretical model went nowhere until late 1942 (because of waning faith in the theory, shortage of equipment, a decimated officer corps caused by Stalin's purges, and the initial onslaught by the German offensive in June 1941), it served as the basis for later developments.

As armaments production geared up in 1942, the Soviets began to implement the above theory and with combat experience, the mobile groups increased in size. By mid-1943, the Front-level mobile group became an entire tank army (consisting of two tank corps and one mechanized corps comprising close to 800 tanks), while the army-level mobile group became a separate tank or mechanized corps. In the battle of Kursk, USSR, (July 1943), those larger mobile groups were tested for the first time in battle; and they remained the standard model until 1945, when mobile groups were again increased in size. Throughout the Soviet counteroffensive against Germany, mobile groups usually attacked from the second echelon. One of the key refinements to the basic model that emerged during those years of combat experience was the increasing use of "forward detachments," i.e., mobile units varying in size from reinforced tank brigades to tank corps, whose missions were to penetrate the depth of the defense to capture important objectives in order to facilitate the advance of main force units. Initially, forward detachments were primarily used in meeting engagements (or during the pursuit of a retreating enemy force), but by 1945 they were also used to initiate offensive action. In other words, their role became operational as well as tactical.

In the postwar period, with the reorganizations in the mid-1950s and the complete mechanization of army units, the distinction between mobile groups and other groups disappeared. The function of exploitation, however, remained a valid mission and it was assumed by tank or motorized rifle units in second echelons. In the 1960s, with the focus on nuclear warfare and the growing importance of rapid success in the initial offensive, emphasis shifted toward the use of tank units in first echelons, especially as forward detachments to achieve and exploit penetrations of defenses fragmented by nuclear strikes. This shift somewhat blurred the traditional distinction between penetration (shock action by first-echelon units) and exploitation (mobile group), but larger tank units (army-size) still remained for the Front-level follow-through to operational depth.

In the 1970s, with the focus returning to conventional warfare but in a "nuclear-scared" posture, emphasis shifted toward a battle formation capable of exerting overwhelming power and rapid, deep penetrations in order to win in the initial phase (i.e., before the enemy has fully prepared its defenses). The Soviets, according to Glantz, concluded this could best be accomplished by (1) deploying Fronts and armies in a single echelon (we presume subject to space, terrain, and other conditions) in order to project maximum force across the broadest front-line and to reduce vulnerability of second-echelon forces to enemy strikes; (2) utilizing tank-heavy, task-organized forward detachments of battalion and regiment size at every command level to penetrate at several axes prior to or simultaneously with the commitment of main force units; and (3) inserting tank-heavy, task-organized operational groups of regiment, division, or army size from the first echelon or parent formation reserve to initiate or continue the exploitation on the heels of the forward detachments. The latter groups are the contemporary OMGs that differ from the previous mobile groups only in terms of time of commitment (earlier), location at the time of commitment (forward), and equipment (the combined-arms formation now includes helicopters that introduce a third dimension and resurrect the mobility differential with main force units that was lost in the 1950s). The previous functions of forward detachments and mobile groups have nearly merged, with the contemporary forward detachment being the leading element of the exploitation force and the OMG, its main body, responsible for completing the process of exploitation.

Penetration and Raiding

The insertion process is the single most critical phase of the deep battle operation and at the same time the most perplexing one to some critics in the West. It requires some additional clarification which we base on authoritative accounts published by American[31] and British[32] defense analysts from Russian reference materials.

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[31]Ltc. John G. Hines and Phillip A. Petersen, *op. cit.* Also by the same authors, "The Soviet Conventional Offensive in Europe," *Military Review*, Apr 1984, pp. 2–29. These authors are with the Office of the Secretary of Defense.

[32]Charles J. Dick, "Soviet Operational Maneuver Groups: A Closer Look," *International Defense Review*, No. 6/1983, pp. 769–776; and "Soviet Operational Concepts, Part II," *Military Review*, Oct 1985, pp. 4–19. This author is with the Soviet Studies Research Center, Royal Military Academy, Sandhurst, UK.

As described above, the advanced penetration and raiding force consists of forward detachments at the tactical level and OMGs at the operational level. Forward detachments are battalion- and regiment-size task forces detached from first echelon regiments and divisions, respectively. The Soviets appear to use three basic types depending on mission: raiding detachments, enveloping detachments, and special detachments (the latter refers to amphibious and vertical envelopments). A forward detachment may operate as a separate detachment or as the lead echelon of an OMG for which it would perform reconnaissance in addition to its other missions. The OMGs are division- and corps-size (possibly army-size) task forces formed from the resources of first-echelon armies and Fronts, respectively (a corps, in Soviet parlance, is a task group of two to three divisions including support elements). Both forward detachments and OMGs have missions of advanced penetration (i.e., ahead of or simultaneously with first echelon units) and raiding. In contrast to Western notions, raiding is an integral and routine part of tactical and operational planning; raids are conducted along previously designated routes against preplanned targets although targets of opportunity are attacked along the way; and raiding elements do not return to the main force, rather main force units are to catch up with the raiding elements. As in the Western concept of raiding, the raiding force is to avoid decisive engagements with large enemy forces.

Three basic tactics are available to get the raiding force elements through and behind NATO's forward defenses while preserving their combat power for the raiding mission. The preferred method is to sneak through or maneuver around enemy forces. In view of the great emphasis in Soviet military journals on night operations, especially for forward detachments and OMGs, the Soviets would probably attempt to penetrate at night, with the raiding force seeking at least two routes of advance. Another method would be to jump over the defense line; to use heliborne air assault units as the lead element of a raiding force. Even though this method has clear limitations (limited lift capability and susceptibility to NATO air defense), the Soviets, in view of their emphasis on vertical envelopment, can be expected to include it in their operational plan, with air assault units linking up with airborne regiments dropped further back in NATO's rear as part of the air operation. The third and least favored, but probably most common, method would be to fight through NATO's forward defenses. This requires the first-echelon units with

integrated fire destruction to create the opening for the raiding elements to pass through.

In the event the assault by first-echelon units is unsuccessful in creating a penetration corridor for the raiding force, the assault would be reinforced by the second-echelon divisions of the first-echelon armies, with the raiding force either held in reserve or the raiding mission reassigned to second-echelon units. On the other hand, if the advanced penetration proceeded more quickly than planned, then second-echelon units might be committed earlier against deeper objectives or perhaps assume the raiding mission for the next higher echelon. The entire process is intended to be much more flexible than frequently depicted in popular descriptions. Raids are to serve three main purposes: destruction of key weapons systems that survive the air operation and represent a major threat to forward echelons, disruption of NATO's defenses, and seizure of objectives that facilitate the rapid advance of the main force. Additionally, the large Front-subordinated OMG would be given operational objectives such as seizing economic or political centers. A sample of representative tasks and the contrast between second echelon and OMG missions are shown in Table 4.

Rationale for OMGs

The emergence of the OMG concept in the early 1980s is viewed by the various authors in slightly different ways. The American authors we have cited view it essentially as a natural evolution of a 50-year-old offensive strategy, facilitated by advancing technology. The British authors view it more as a real change in Soviet operational strategy, with Donnelly attributing the change to perceived strengths of NATO's Active Defense doctrine and Dick describing it as the operational solution to the Soviet need for surprise (to prevent full NATO mobilization) and high-speed advance to reap the advantages of surprise. Whatever the different views, the basic purpose of the OMG, as cited by these authors from a 1981 Polish journal article, is as follows:

> The aim of deploying an army's Operational Maneuver Group is to switch the focus of the fighting into the rear of the enemy formation; to destroy important objectives which cannot be destroyed by other means; to achieve chaos and disorganization; and to limit the freedom of maneuver and the effectiveness of enemy action. . . .

TABLE 4

COMPARISION OF SECOND-ECHELON AND OMG MISSIONS

	Second Echelon	OMG
Primary mission	Breakthrough and exploitation	Raiding and exploitation
Operation order	Specific, preplanned tasks	Broad, mission-type order
Representative tasks	• Increase pressure on main strike axis and break through enemy's defensive zones • Repel counterattacks • Protect flanks • Create external front of an encirclement • Widen the breakthrough • Replace exhausted first-echelon units	• Exploit deep into enemy rear and deploy raiding groups to destroy enemy's nuclear weapons, C^3 systems, and logistics facilities • Destroy enemy reserves in meeting engagements • Block enemy withdrawals by completing an encirclement or by attacks from the rear • Conduct parallel pursuit and destroy withdrawing forces • Seize enemy defense lines in the rear (before they can be occupied) • Seize key economic/political objectives

Source: Charles J. Dick, *op. cit.*

The literature cited by Donnelly suggests that in 1981, Active Defense was perceived by the Warsaw Pact as an effective tactical doctrine against a conventional, echeloned attack. Thus, he argues, a change in operational strategy was required to exploit the weaknesses and overcome the strengths of Active Defense and this explained the renewed emphasis on highly mobile formations. The following weaknesses of Active Defense were singled out by Polish officers:

- It provides for weak defensive positions
- It necessitates decentralization of forces, making for a diffusion of effort with no clear definition of the main defense area

- It commits reserves piecemeal, giving no opportunity to eliminate a break-in to the defensive zone
- It limits "Activeness" to maintaining a dense grouping in the tactical defensive zone, after which the defense becomes passive until the commander orders a counterattack
- It results in complete reliance upon early identification of the main strike axes and the need to weaken one sector to strengthen another
- It provides, by committing tactical reserves for counterpenetration in certain sectors, an opportunity for breakthroughs in the other, weakened sectors by mobile formations.

Dick argues that the Soviets cannot afford a series of breakthrough operations against successive NATO defensive positions since those Soviet force concentrations would provide tempting nuclear targets. Therefore, only one breakthrough battle can be undertaken and that battle must be followed immediately by a deep penetration to operational depth before NATO is able to establish an effective defense. The OMG is the answer to this problem provided that the offensive has achieved at least some surprise; with adequate intelligence on weak areas in NATO's defenses and deception plans to draw attention away from planned main axes, OMGs could be inserted on the first or second day of the offensive through the first-echelon divisions engaged in the main battle, penetrate what defenses are left, and proceed with their raiding missions that would help to crumble NATO's defense from within and cause political collapse. In such a scenario, Dick believes there would not be any second echelon armies; furthermore, in contrast to the other authors cited, he doubts the practical feasibility of a Front-subordinated OMG in any plausible European scenario.

Notwithstanding their different views, these authors agree the increased emphasis on advanced penetration and raiding implies a change in force distribution of Warsaw Pact battle formations with most of the combat power concentrated in the first-echelon armies of each Front. Forward detachments and army-subordinated OMGs comprise up to 30 percent of the force; first-echelon main force units comprise from one-half to two-thirds of the force; and second-echelon main force units comprise the remainder, which may be as small as an operational reserve amounting to 10 percent of the force.

Key Characteristics

With the above background, we can now summarize the key characteristics of OMGs that have been extensively debated in the West, ever since Donnelly's article. Although it is apparent that the Soviets are still in the process of experimentation and force development to fully implement the concept, we believe the following represents the current consensus in the West.

What and Where Is the OMG? An OMG is a combined-arms force that is task-organized for a specific mission from the resources of its parent army or Front. It is the contemporary version of the World War II era mobile group but it differs in that it is located further forward and committed earlier and consists of more combat power, including a significant aviation (helicopters) element. It is a self-sustaining task force designed for independent operations in advance of friendly main forces without dependence on a ground line of communication for a given duration. Hence, it comprises considerable combat service support elements, including combat engineers and bridging companies, as well as maintenance and supply companies. The army-subordinated OMG is a division-size task force located in the first echelon before commitment; it is held back out of enemy artillery range 40 km behind forward line of own troops (FLOT) in a large holding area (200 km^2 – 400 km^2) with maximum cover against enemy surveillance. The Front-subordinated OMG is a corps-size task force of two divisions plus support elements and is located with the Front's second-echelon army or armies within 150 km of the FLOT.

When and How Is It Committed? The army-subordinated OMG must be committed on the first or second day of the offensive (i.e., before D + 2) to be successful. The Front-subordinated OMG would be committed between D + 3 and D + 5. The time and place of each OMG's committal and the routes from holding area to start line are preplanned. The method of insertion would depend on the extent of surprise achieved. They can go around, over, or through NATO's forward defenses but are not to engage in major combat in order to preserve combat power for their mission. On the ground, OMG elements would normally follow on the heel of forward detachments (battalion- or regiment-sized units performing raiding missions for the first-echelon divisions). They may seek to sneak through at night in columns on narrow fronts along several routes of advance or, if NATO's defenses are prepared, they could complete the penetration initiated by first-echelon main force units immediately after execution of the integrated fire destruction plan. Part of the OMG

would be airlifted with organic heliborne air assault units. In coastal areas, all or part of the OMG would be inserted through amphibious landings.

What Is Its Mission? The OMG is more than a large cousin of the forward detachments and its mission is more than a large-scale tactical raid. Its tasks include seizure of specific objectives that may influence the course of the war beyond just inflicting losses (see Table 4). Its mission is therefore viewed as strategic-operational with the aim to crumble NATO's defenses from within and to cause NATO's political resolve to collapse.

How Deep is Deep? OMGs are said to penetrate deep into NATO's rear. The term deep refers to the distance between the OMG's objectives and the FLOT at the time of the OMG's committal. Army-subordinated OMGs have objectives up to 150 km beyond Warsaw Pact FLOT; Front-subordinated OMGs up to 250 km. The former are expected to achieve their immediate objectives in 3 days and their subsequent objectives in 5 days (i.e., they are self-sustaining for 5 days). The larger corps-sized OMGs are believed to be self-sustaining for 10 days. When main force units link up with OMGs, they are reconstituted and the process repeats itself until the enemy's theater lines of communication have been cut off or destroyed and its forces have been annihilated or have surrendered.

Summary

The picture that emerges from the above operational concepts (air operation, integrated fire destruction, echelonment/maneuver, and deep battle) is a rapid all-arms offensive that is designed to achieve decisive results in the initial phase of war. The Soviets would not start such a war unless they were convinced of their capability to win on the battlefield using only the first-echelon Fronts and TVD-level assets opposite NATO's Central Region. Although they would form a second strategic echelon in the rear to protect rear assets and lines of communication as a contingency against a deep counteroffensive by NATO, the main battle would not depend on its commitment. Surprise is key to the success of the entire operation. Without surprise, the advance of main force units would be stalled and become a series of breakthrough battles that the Soviets can ill afford; similarly the OMG concept becomes unworkable with any serious delays in the execution of multiple penetrations of NATO's forward defenses. Consequently, the Soviets can be expected

to rely on a maximum of deception and a minimum of mobilization efforts to reinforce the Warsaw Pact's force structure that is forward deployed in peacetime.

ASSESSMENT OF CAPABILITIES

This section parallels the previous one and describes the degree to which the Soviets have put their operational concepts into practice through force modernization, conventional arms build-up, and training. The assessment shows both strengths and weaknesses in Soviet capabilities to execute each operational concept in a large-scale war. In particular, it shows that the ability of their C^3 capabilities to integrate the concepts into a finely tuned war machine is in some doubt at the present time. The only fair conclusion is that the Soviet Union today cannot launch a short-warning attack on NATO with absolute certainty of success. Only in that sense can one talk about a "rough conventional parity" between the two sides as asserted by some observers, especially Soviet officials. Yet, Western security demands more than accepting such a risky situation.

Air Operation

Most defense analysts in the West agree on three points: (1) Soviet air supremacy over the main battle area and NATO's rear would have disastrous consequences for NATO, which would lose the land war in short order; (2) the ability of Soviet air operations to achieve its intended results is doubtful at the present time; and (3) NATO must offset continuous improvements in Soviet capabilities by improving both its defensive and its offensive counterair capabilities to ensure that the Soviet air operation is defeated.

Among the assessments available in the open literature, we have selected two that provide quantitative estimates based on thorough analysis. Both assessments, however, are flawed, in our judgment, in treating the air operation as an air force operation, not a combined-arms operation. As a consequence, we believe both assessments are too optimistic by underestimating the threat. We first summarize these two assessments and then explain our reservations.

The U.S. tactical air community, specifically U.S. Air Forces in Europe (USAFE), has estimated that allied airbases in the Central Region may suffer 40 percent damage to runways and facilities, an estimate that is supported by

several RAND Corporation studies.[33] That assessment explains U.S. pressure on NATO to accelerate the hardened airshelter program: only 50 percent of U.S. forward-based tactical aircraft in theater and virtually no aircraft of our European allies are currently housed in hardened shelters. Even though additional funds have recently been made available in the NATO Infrastructure program for hardened air shelters, progress has been slow. It also explains U.S. interest in aircraft dispersion: NATO's Central Region has approximately 70 operating airbases (half of which qualify as main airbases), but USAFE assets are concentrated on 7 main operating bases; dispersion among "collocated operating bases" and "forward operating locations" is limited by the lack of sheltered servicing and rearming facilities. The RAND studies also explain U.S. concerns about wartime rapid runway repair capabilities. Most of those repairs for U.S. airbases are assigned to wartime host nation support (WHNS), but field commanders believe it is too risky to rely totally on WHNS without organic runway repair capabilities. A recent U.S. Army, Europe (USAREUR) report identified the risks as follows:[34]

- WHNS civilian personnel will not be available until the FRG passes enabling legislation, including a "Declaration of Defense Emergency."
- WHNS personnel will be noncombatants, thus their continued presence cannot be counted on; they may simply decide to leave, with no recourse to a military chain of command.
- Other high-priority tasks may divert planned WHNS elsewhere.
- German military will rely on the same civilian labor pool for support and will take them unless the United States fully identifies in advance exactly what it will need – something that it has not been done so far.
- The labor pool for WHNS is declining and may be less than planned.

Additionally, USAFE is concerned about its susceptibility to chemical attack which would drastically reduce, if not inhibit, sortie generation. The U.S. Air Force has recently begun to address this concern through a collective chemical shelter program for maintenance and aircrew rest facilities, but none of the NATO allies has done so.

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[33]Deborah M. Kyle, "An Exclusive Interview with General Billy M. Minter," *Armed Forces Journal International*, Jan 1984.

[34]HQ USAREUR, Deputy Chief of Staff/Engineer, *U.S. Army Tactical Command Readiness Program: Providing Engineer Support in Transition from Peace to War*, Jun 1985.

In summary, USAFE views the Soviet air operation as potentially highly destructive but not devastating; various programs are underway to correct current shortcomings because the U.S. Air Force has realized that, citing General Minter's words,"Airbase survivability is the highest priority variable in the complex equation of war winning strategy." In contrast, the NATO allies have not placed as great an emphasis on airbase survivability. This deficiency must be corrected if their air forces are to provide the planned wartime contribution to NATO's counterair mission.

Another assessment was produced by Joshua Epstein who used a computer-based model to assess various scenarios and arrived at the following conclusion: Using its entire aircraft fleet, the Soviet air operation would be capable of creating secure corridors through NATO's SAM belt, destroying all significant C^3 centers, suppressing theater nuclear weapons launch and storage facilities, and damaging 4 to 10 major NATO airbases, but because of massive attrition the Soviets would lose in 3 days all tactical aircraft and those aircraft would be needed in support of the ground offensive.[35] Thus, realistically, the Soviets would have to allocate a much smaller number of aircraft to the air operation. As a result, the air operation might disrupt NATO's defense but would not devastate it.

Unfortunately, Epstein's analysis, like the USAFE and RAND assessments, overestimates Soviet aircraft attrition and ignores the contribution of the other branches to this combined-arms operation. The air commander (deputy commander for aviation, Western TVD High Command) would not use ground attack aircraft to attack NATO's SAM batteries and accept the resulting attrition. That mission lies with SSMs, standoff air-launched missiles, electronic warfare aircraft, airborne and air assault forces, and special forces; those branches would also contribute to the other missions of the air operation. The following briefly describes Soviet capabilities in these five areas and then provides our summary assessment of the air operation.

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[35]Joshua M. Epstein, *Measuring Military Power: The Soviet Air Threat to Europe* (Princeton, N.J.: Princeton University Press, 1984).

Surface-to-Surface Missiles

The missiles and munitions available to the Soviet Union after implementation of the INF (intermediate nuclear forces) treaty include the following:

- *FROG 7 and SS-21 Scarab.* The FROG (NATO designation which stands for free rocket over ground) is a family of short-range, solid-fuel, unguided rockets. FROG 1 was deployed in the 1950s and the current version, FROG 7, in 1965. The latest version has a range of 70 km, has low accuracy, and is not a serious threat against military targets if it carries a conventional warhead. It is being replaced with the SS-21, first deployed in 1976 in the USSR, which has greater range (120 km); improved accuracy (100 meters CEP);[36] better maneuverability (the launcher is mounted on a 6-wheeled, armored, amphibious vehicle); and quicker reaction time (15 to 30 minutes after arrival at presurveyed launch site to emplace the launcher and prepare to fire). These tactical missiles are deployed in battalions of four launchers, one battalion per maneuver division, with a resupply vehicle carrying three reloads for each launcher. The number of deployed launchers (FROG 7 and SS-21) totals approximately 800, with 564 in the Western TVD. As a divisional-level tactical missile, the SS-21 would not be the first choice for the air operation, but it could be used to supplement the army- and Front-level missiles.

- *SCC-1c Scud B.* The Scud is a family of single-stage, liquid-fuel, inertially guided missiles. Scud A was deployed in the 1950s; the current version, Scud B, was introduced in 1961 and deployed in 1965. It has a range of 300 km, is quite inaccurate (900 meters CEP), and, like the FROG, not a serious threat against military targets if it carries a conventional warhead. Its successor, SS-23, because of increased range is being destroyed pursuant to the INF treaty. No information is available in the open literature on the Soviets' progress toward replacing the obsolete Scud. It could conceivably be a single-stage version of the SS-23 or a new solid-fuel, command-guided missile. These "operational-tactical" missiles are deployed in brigades of 18 launchers, 1 brigade per army. The Scud B replacement or product improvement (assuming propulsion modifications for range extension and

[36]Missile accuracy is measured by circular error probable (CEP), i.e., the radius of the circle in which 50 percent of the warheads aimed at the same target fall. It is not a precise measure because it does not account for drift or bias; i.e., the center of that circle and aim point or target may not coincide. The International Institute for Strategic Studies, in its *Military Balance*, lists the accuracy of SS-21 as 300 meters CEP. The 100-meter CEP estimate is from Kerry L. Hines, "Soviet Short-Range Ballistic Missiles: Now a Conventional Deep-Strike Mission," *International Defense Review*, No. 12/1985, pp. 1909–1913. Other experts believe the Soviets are capable of improving the accuracy of this missile to 40 meters CEP within a few years through improvements to guidance and control components.

guidance improvements) would be the weapon of choice for launching an attack on NATO's SAM batteries, airbases, and C^3 centers.

- *Cruise Missiles.* One missile system that for unexplained reasons is not included in the INF protocol is the SSC-1b Sepal coastal defense cruise missile, even though its range lies within the definition of "shorter range" INF missiles (500 km to 1,000 km). It is a jet-propelled, subsonic cruise missile that is the land-launched derivative of the SS-N-3 Shaddock naval cruise missile, fitted with either conventional or nuclear warheads. It is deployed with the missile battalions of the Soviet Navy's coastal defense force; its predecessor, SSC-1a Shaddock, was an Army cruise missile that until its deactivation in 1975 was counted by DoD as part of the Soviet theater nuclear force. The omission of Sepal from the INF treaty sets a precedent by permitting the Soviets to modernize and adapt this "sea-based" cruise missile for a surface-to-surface land attack role, with treaty-sanctioned testing from a land-based test site. If the Soviets so choose, they could redeploy that missile from the Baltic Coast to Fronts opposite NATO in wartime; or worse, they could deploy the truck-mounted launchers in peacetime under the guise of being reconnaissance drone launchers.

- *Improved Conventional Munitions.* The Soviets are believed to have developed improved conventional munitions, lagging the United States by only a few years, to increase the effectiveness of their tactical ballistic missiles (as well as long-range artillery and aerial bombs) in a conventional role. The destructive effect of such munitions is comparable to a low-yield (0.2 kt) nuclear explosion, thus reducing the number of missiles required to destroy or suppress a target. For example, using the Soviet artillery norm of 100 rounds of 152 mm (or 150 rounds of 122 mm) required to suppress a SAM battery, the same effect can be accomplished by 1 to 4 missiles with improved conventional warheads containing 100 to 40 submunitions respectively. Moreover, the effectiveness of improved conventional munitions is much less dependent on accuracy of target acquisition and warhead delivery.

Air-to-Surface Missiles

Standoff air-launched missiles that could be used for attacking NATO's SAM radars include the following:

- *AS-9 Kyle*: subsonic antiradar missile, 55-mile range
- *AS-10 Karen*: laser-guided missile, 6-mile range
- *AS-11 Kitter*: guided missile, carried by Su-24 Fencer, 350-mile range

- *AS-12 Kegler*: laser-guided missile, 15-mile range
- *AS-14 Kedge*: laser-homing missile, 25-mile range.

This listing excludes missiles primarily designed for antiship missions, such as the AS-4 Kitchen, AS-5 Kelt, and AS-6 Kingfish. It also excludes a variety of missiles designed for strategic missions, including Soviet counterparts to U.S. short-range attack missiles and long-range air-launched cruise missiles. Little information is available in the open literature on the performance and stock levels of the above missiles. The AS-12 is currently in service on several tactical aircraft types; the AS-9 and AS-11 are currently carried only on the Su-24 Fencer-C and -D aircraft.

Electronic Warfare

Radio-electronic combat, the Soviet term for electronic warfare, was originally a Soviet invention applied as long ago as 1904 in the Russian-Japanese war and is viewed as an important "force multiplier." Soviet doctrine in this area is well developed, and although some of the equipment may lag U.S. technology, the Soviets possess a massive electronic warfare capability. In the air operation, electronic warfare would play a key role, especially in signals intelligence, active countermeasures, and direct suppression.[37] For example, Soviet aircraft dedicated to active electronic countermeasures (ECM) that would be used in the air operation include the Tu-16 Badger-H (standoff or escort ECM aircraft with 20,000-pound chaff-dispensing capacity), Yak-28 Brewer-E, and the ECM version of the Su-24 Fencer that is reportedly under development. The 1968 invasion of Czechoslovakia demonstrated Soviet capabilities to maintain chaff corridors across considerable distances (200 nautical miles) for a considerable time (over 6 hours).

The capability of NATO's SAM systems to counter such ECM is somewhat in doubt. The Improved Hawk (IHAWK) medium air-defense missile system has several ECM shortcomings that have been recognized since 1981; furthermore IHAWK can easily be saturated. In 1985, NATO initiated conceptual development of a successor to IHAWK, the Medium Surface-to-Air Missile system. Even though the NATO Staff Target document was completed in 1987, development, production, and fielding of that system will require at least 10 years. Thus, IHAWK combined

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[37]For a review of the electronic warfare mission area and capabilities, see Stephen L. Johnston, "Soviet Electronic Warfare: A Review of Published Materials," *Electronic Warfare Supplement, International Defense Review*, No. 12/1985, pp. 9–14.

with Patriot, will remain the key system in NATO's SAM belt through the late 1990s. Although Patriot is a very capable SAM system for the high air-defense mission (it cannot be saturated by multiple targets like IHAWK nor defeated by current Soviet ECM capabilities), it is very expensive. Because of cost, Belgium, for example, has decided not to procure Patriot and yet to phase out Nike-Hercules (an obsolete system that Patriot was designed to replace), thus leaving a 50-mile wide hole in NATO's SAM belt.

Vertical Envelopment

Recent Soviet writings indicate they are convinced that "vertical envelopment" has become a fundamental form of maneuver without which offensive operations on the modern battlefield are not possible. The insertion of airborne and air assault units is thus an integral part of the air operation. The Supreme High Command has seven airborne divisions under its direct control, at least two of which would be transferred to the Western TVD for the air operation. Each division is composed of 3 regiments (1,455 men each) and various combat support units; the equipment is tailored to airborne requirements and includes the BMD fighting vehicle[38] and self-propelled guns; the division total is 6,500 men and 330 BMDs. The 6 regiments would be airdropped up to 300 km deep into NATO's rear (possibly 2 regiments along the main operational direction of each Front) to attack vital military targets. Two weaknesses of the entire operation are well recognized by the Soviets: vulnerability of transport aircraft and sustainability of the unit after airdrop.

Military Transportation Aviation aircraft used for the mission would be a mix of Il-76 Candid (comparable to C-141 with capacity of 140 troops or 125 paratroops), An-22 Cock (175 paratroops), and An-12 Cub (comparable to C-130 with capacity of 90 troops or 60 paratroops). (The new An-124 Condor, which is comparable to the C-5, would probably not be exposed to the risk.) The Soviets appear to believe that with surprise, heavy ECM, and fighter escorts, they would be able to execute this mission. With respect to sustainability, these units are expected to support

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[38]The BMD (*Bronevaya Mashina Desantnaya* or airborne combat vehicle) is a lightened, smaller version of the BMP (*Bronevaya Mashina Pickhota* or infantry combat vehicle) with the same main armament, suspension, and hull. The most authoritative information on the development of Soviet airborne forces is in Ltc. David M. Glantz, *The Soviet Airborne Experience* (Ft. Leavenworth, Kans.: Combat Studies Institute, Nov 1984. Also see Graham H. Turbivile, Jr., "Soviet Airborne Troops," chapter in the publication *Soviet Armed Forces Review Annual*.

themselves for up to 3 days by which time the plan calls for ground units to have penetrated NATO's defenses and to join up with them.

Separate from these airborne units, the Army force structure includes eight air assault brigades, with one assigned to each wartime Front. Each of these brigades consists of two assault battalions (BMD-equipped), two parachute battalions, and one artillery battalion.[39] Each Front commander would insert an air assault brigade up to 100 km deep behind NATO's front-line in accordance with the TVD-orchestrated air operation plan; the mission of those brigades would be to destroy whatever is left of NATO's forward SAM batteries, to attack other military targets, and to link up with ground maneuver units penetrating NATO's forward defense. (Note that airmobile units, formed at Army-level and transported in organic helicopters, would not be used in the air operation but in the ground offensive.)

Special Forces

Potentially the most dangerous threat that the cited assessments ignore is the use of Soviet special diversion (*Spetsnaz*) forces that would be inserted in advance of the air operation and would operate in close coordination with the airborne units. Their main tasks would be to destroy critical military targets (nuclear sites, C3 nodes, radar facilities, and airfields); conduct general sabotage (especially against electric power plants, oil/gas storage facilities, and transportation choke points); and perform "politico-military missions" (Soviet vernacular for assassination of political and military leaders). The objective of these missions is to create paralysis.

Spetsnaz forces are controlled by the GRU (Chief Intelligence Directorate) of the General Staff. In peacetime, they are organized in brigades of approximately 1,000 men each, 1 brigade per Military District, Group of Forces Abroad, and Fleet. In wartime, the Western TVD would deploy about 11,000 *Spetsnaz* troops (not counting intelligence units), about 7,000 of which would be available in the first-echelon Fronts: 1 regiment of 800 men under direct command of CINC Western

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[39]See Major Roger E. Bort, "Air Assault Brigades: New Element in the Soviet Desant Force Structure," *Military Review*, Oct 1983.

TVD; 1 brigade of 1,000 men per Front; and 1 company of 115 men per army.[40] Those 7,000 troops, crossing the border before hostilities begin, would form 700 to 900 independently operating teams. They would receive assistance from, or be supplemented with, Soviet "sleeper agents" located in the FRG and possibly other NATO countries. (Various sources have estimated as many as 20,000 agents may be living in the FRG alone.) The success of those *Spetsnaz* teams would very much depend on the level of alert of NATO, both military units and civilian security personnel, and its ability to provide effective rear area security, which is a long-standing problem for NATO.

Summary

The conventional assessment by defense analysts in the West regarding the air operation matches NATO air defense capabilities in the Central Region with the air offensive capabilities of the Western TVD. NATO air defense capabilities consist of the NATO Airborne Early Warning Force, the SAM belts running from north to south in the FRG, the fighter-interceptor forces under the Allied Air Forces Central Europe and UK Air Region commands, and the supporting infrastructure of airbases and C^3 facilities protected by area and point defense antiaircraft missile and gun systems. Warsaw Pact air offensive capabilities consist of the bombers, fighter-interceptors, and ground-attack aircraft of the Air Forces (Frontal Aviation and Air Armies) assigned to the Western TVD and the supporting infrastructure. Although these conventional assessments differ in detail (specifically in the estimates of tactical aircraft on either side), the conclusion invariably is that the air operation would fail to achieve its objectives, resulting only in some, but not decisive, damage to NATO's infrastructure.

In contrast, assessments by NATO commanders are less benign because they are aware of a variety of operational weaknesses within NATO that are not taken into account by the defense analysts. For example, the lack of adequate identification friend-or-foe equipment inhibits identification of hostile aircraft beyond

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[40]The most authoritative source on this subject in the open literature is Viktor Suvorov, "Spetsnaz: The Soviet Union's Special Forces," *International Defense Review*, No. 9/1983 (reprinted in *Military Review*, Mar 1984). Suvorov's new book on *Spetsnaz* was recently published in the UK but has not yet been published in the United States. For a "quick read," including numerous source references, see the series of excellent articles by James Hansen (senior analyst with the U.S. Defense Intelligence Agency), "Soviet Vanguard Forces" in *National Defense*: "Spetsnaz," Mar 1986; "Airborne," Apr 1986; and "Naval Infantry," May–Jun 1986.

visual range, at night, or during inclement weather with a high degree of confidence; the unavoidable consequence will be a significant attrition rate for friendly aircraft (fratricide) and a reduced attrition rate of enemy aircraft. Similarly, the lack of an adequate theater-wide air command and control system inhibits optimal employment of friendly aircraft; the unavoidable consequence will be that more enemy aircraft get through to their targets than generally assumed. Even though NATO has several programs underway that address both of these shortcomings, they will not yield measurable improvements for several years. For example, the planned NATO Identification System will not be fielded until the late 1990s, whereas the planned Air Command and Control System will not be fielded until after the year 2000. As a result, NATO commanders have realized, since at least the late 1970s, that the only effective way to cope with the air operation is to bring the battle to the enemy – attacking and destroying the runways and support facilities of the Soviet operating bases, which would enable NATO to counter the air operation. Current capabilities to execute such an offensive counterair mission, however, are extremely limited: NATO air forces lack the necessary reconnaissance assets, standoff weapons, and night operations capabilities. Thus, a variety of acquisition programs are underway to meet those requirements, with the expectation that NATO will have an effective counter to the Warsaw Pact air operation by the mid- to late-1990s.

Our judgment is that both types of assessments are fatally flawed because they do not recognize the scope of the air operation. The Soviet intent is to silence NATO's SAM batteries in the path of six to nine planned air corridors through SSM strikes and establishing chaff corridors before the first wave of aircraft passes overhead. Simultaneously, the Soviets will cause major destruction and chaos at NATO's 35 main operating bases and 60 key C^3 facilities through the combined efforts of *Spetsnaz* teams, airborne regiments, and air assault battalions. If only 30 percent of these latter missions are successful, NATO communications would be virtually disabled[41] and its capability for sortie generation would be decimated.

[41] About 60 of NATO's 380 C3I (C^3 intelligence) facilities (command centers, satellite ground stations, high-frequency communications stations, and signal intelligence collection stations) are critical nodes in the network. Redundancy permits some attrition, but not 30 percent of the critical nodes, as concluded by Desmond Ball of the Strategic and Defense Studies Center, Australian National University, Canberra, as presented to the International Seminar on Technology and Arms Control, Castigloncello, Italy, Sep 1987.

Consequently, we believe the Warsaw Pact air operation may be successful in achieving at least some of its objectives, unless NATO does more than just correct the recognized deficiencies – the gap in the Belgian sector of the SAM belt; the lack of hardened shelters and chemical collective protection; the susceptibility of IHAWK to ECM; the lack of electronic warfare capabilities on 40 percent of NATO's tactical aircraft; the inability to identify hostile aircraft beyond visual range, at night, or in bad weather; the inadequate arrangements for rapid runway repair in wartime; the inadequate air command and control; and the lack of reconnaissance assets, standoff weapons, and night operations capabilities. NATO needs to recognize and prepare for the unconventional rear-area threat. It needs to proceed with the development and fielding of an antitactical ballistic missile system that has been talked about but has not yet received the multinational support needed to move forward. It also needs to increase the density of ground-based air defense missile systems, both in the SAM belt and in the rear to protect vital assets. It needs to ensure that Soviet attempts to circumvent the SAM belt, especially north of the Central Region, to attack British airbases (which account for one-third of the sortie-generation capability in support of Allied Forces Central Europe) are interdicted by supplementing UK Air Region command capabilities with forward deployed carrier-based interceptors and missiles (in accordance with U.S. maritime strategy). Finally, NATO needs to realistically assess its offensive counterair operation. Its plans to attack enemy airbases would have limited effect because Soviet fighter aircraft will not operate from those bases in wartime but will be dispersed in groups of 4 to 12 aircraft to operate from highway sections prepared with parking apron, fuel bladders, ammunition storage, and mobile ground support equipment. Soviet tactical aircraft (like those of Sweden, incidentally) are specifically designed for such a wartime organizational and operational concept.

Integrated Fire Destruction

Successful execution of the integrated fire destruction concept is predicated upon two conditions: the availability of sufficient firepower to achieve the density of fire required (without a need for protracted bombardments that would impede the speed and momentum of the offensive) and the viability of C^3 systems to coordinate and integrate the fire in time and place. With respect to the first condition, the Soviets have greatly increased the amount of artillery in their force structure over the past 10 years. Divisional artillery has increased by 87 percent in tank divisions

and by 57 percent in motor rifle divisions; the number of nondivisional artillery units (brigades and regiments) has been increased by 20 percent, with many units converting from 54-gun regiments to 96-gun brigades; and 2 additional separate artillery divisions have been formed, resulting in a total of 15 artillery divisions (counting ready divisions only) in the Soviet force structure (of which 6 divisions are earmarked for the Western TVD, each comprising 16 battalions of 18 guns).[42] With respect to the viability of C^3, less information is available in the open literature. Many observers doubt the Soviet's ability to achieve the degree of coordination and integration of firepower required for successful execution of the concept and accomplishment of the doctrinal destruction norm, but large-scale field exercises in Eastern Europe in recent years indicate they are working hard on eliminating the C^3 problems. Perhaps the most critical problem is the coordination of the TVD-level air operation and Front offensive operations. Most of the Frontal Aviation must initially be allocated to the air operation (and the associated antiair operation if NATO is able to launch its aircraft in time), but the same aircraft are indispensable for the integrated fire destruction plan in support of the ground offensive.

Given the tremendous growth in firepower available to ground maneuver units and their air defense protection, it would be prudent to assume that each wartime Front in the Western TVD has the capability to achieve the stated destruction norm (60 percent) along its main axis of attack on NATO's forward defense positions. For example, experts have calculated that a first-echelon division advancing on the Front's main axis could count on at least 16 battalions of tube artillery (300 tubes), 1 battalion of multiple rocket launchers (18 launchers, 720 tubes), 1 battalion SSMs, 1 helicopter regiment (120 attack helicopters), and 2 regiments ground-attack fighters (80 aircraft), which would be sufficient firepower, if concentrated in a sector of 6 km or less to achieve the 60 percent destruction norm.[43]

The only effective response for NATO forces is counterfire, but according to knowledgeable observers such as retired Brigadier General Paul Pearson, NATO has neither enough artillery guns nor enough munition stockpiled to effectively

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[42]Data derived from Department of Defense, *Soviet Military Power*, 6th ed. (Washington, D.C.: U.S Government Printing Office, Mar 1987); and International Institute for Strategic Studies, *The Military Balance 1984/85* (London, 1984).

[43]See Ltc. Kerry L. Hines and Maj John G. Hines, *Front Fire Support*, Defense Intelligence Report DDB-1130-8-82, Washington, D.C : Defense Intelligence Agency, 1982.

counter the Soviet threat.[44] The Warsaw Pact's superiority in artillery has been a permanent feature in force comparisons, but NATO has traditionally treated artillery as a "poor cousin" to other armaments such as armor-antiarmor that enjoy higher visibility and funding priority. The counterfire battle, however, will be as critical as the armor-antiarmor battle. Official estimates of the Warsaw Pact-to-NATO artillery ratio (including multiple launch rocket systems but excluding mortars) appear to underestimate the actual ratio in the Central Region at the start of a conflict. The official estimates (for all of the Warsaw Pact and NATO) range from 1.8:1 (citing the U.S. Department of Defense 1988 edition of *Soviet Military Power*) to 3.5:1 (citing the British 1987 *Statement on the Defence Estimates*) in the Warsaw Pact's favor, whereas the unofficial estimates for just the Central Region range from 4:1 (citing Phillip Karber[45]) to 6:1 (citing Pearson) in peacetime, and as high as 10:1 in wartime (again citing Pearson).

Similarly, the limited ammunition stockpile of NATO allies has been a much-debated issue since the adoption of a 30-day supply goal as part of the Long Term Defense Program, formally approved by NATO nations in 1978. Although the United States has met that objective in most classes of munitions, the European allies apparently have made only marginal progress toward that objective. In 1984, General Rogers, as Supreme Allied Commander, Europe (SACEUR), warned that munition stocks would be sufficient for only 7 to 10 days; more recently, General John Galvin, who replaced Rogers, has publicly stated that NATO forces could fight only for 2 weeks with existing ammunition stocks. The amount of ammunition to cover 30 days of supply has grown with the increased intensity of fire support required on the modern battlefield. For example, U.S. Army studies in 1980 concluded that a 24-gun, 155 mm howitzer battalion in a direct-support role (i.e., close support to maneuver forces) would need to fire 300 to 500 rounds per tube per day to achieve the lethality required; this equates (at the lower end) to nearly twice the firing rate of an entire artillery division in World War II.[46]

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[44]For example, see: Brig. Gen. Paul Pearson, U.S. Army Ret., "Can Army Fire Support in Europe Do the Job?" *Armed Forces Journal International*, Dec 1987, pp. 62 – 68.

[45]The 4:1 estimate of the Warsaw Pact/NATO artillery ratio is by Phillip Karber, cited in Anthony H. Cordesmann, "Fatal Flaws in Presenting the NATO/Warsaw Pact Balance," *Armed Forces Journal International*, Jul 1988, pp. 60 – 68.

[46]See: Steve Doerfel, "Meeting the Strategic Challenge," *International Defense Review*, No. 3/1984, pp. 251 – 255.

Although NATO has made some improvements in the 1980s, notably the fielding of the multiple launch rocket system, improving existing howitzers, fielding counterbattery radars and fire direction centers, procuring (U.S. Army) Copperhead laser-guided projectiles, and funding research and development on other precision-guided munitions, much more is still required, otherwise the Soviets' integrated fire destruction plan is sure to succeed. More artillery, better target acquisition, better fire control and coordination, more effective munitions, and continued survivability improvements are all needed. One quick and efficient way to increase firepower, as Pearson suggested, is for the European allies to follow the U.S. Army example by increasing the number of guns per battery. In addition, corps artillery needs to be enhanced in each corps to supplement divisional artillery in threatened areas.

Echelonment, Maneuver, and Deep Battle

Any student of Soviet exploits in the "Great Patriotic War," especially after their counteroffensive got underway at Stalingrad (November 1942—January 1943), cannot help but be impressed by their skills in maneuvering huge troop formations in campaigns on a scale unknown in the West. For example, the largest allied operation in World War II was "Overlord," which by the fall of 1944, after the successful advance through France, involved three army groups, comprising 91 divisions, on a front of about 400 km. At the same time, the Soviet counter-offensive in Eastern Europe involved 10 Fronts controlling 57 armies, comprising 560 divisions and corps, which stretched 3,200 km from the Baltic Sea to the Black Sea.[47] Even though the German Army was tactically superior over the Red Army and was frequently successful in tactical battles, it lost one campaign after another at the operational level, which caused great bewilderment among German officers. In its various campaigns during the summer of 1944, the Red Army advanced 800 km and defeated 314 Axis divisions and 47 brigades, including the total annihilation of 96 divisions and 34 brigades.[48] The famous Vistula-Oder operation of January 1945 is viewed by some observers as the model for a Soviet offensive against NATO's Central Region (see Figure 8).

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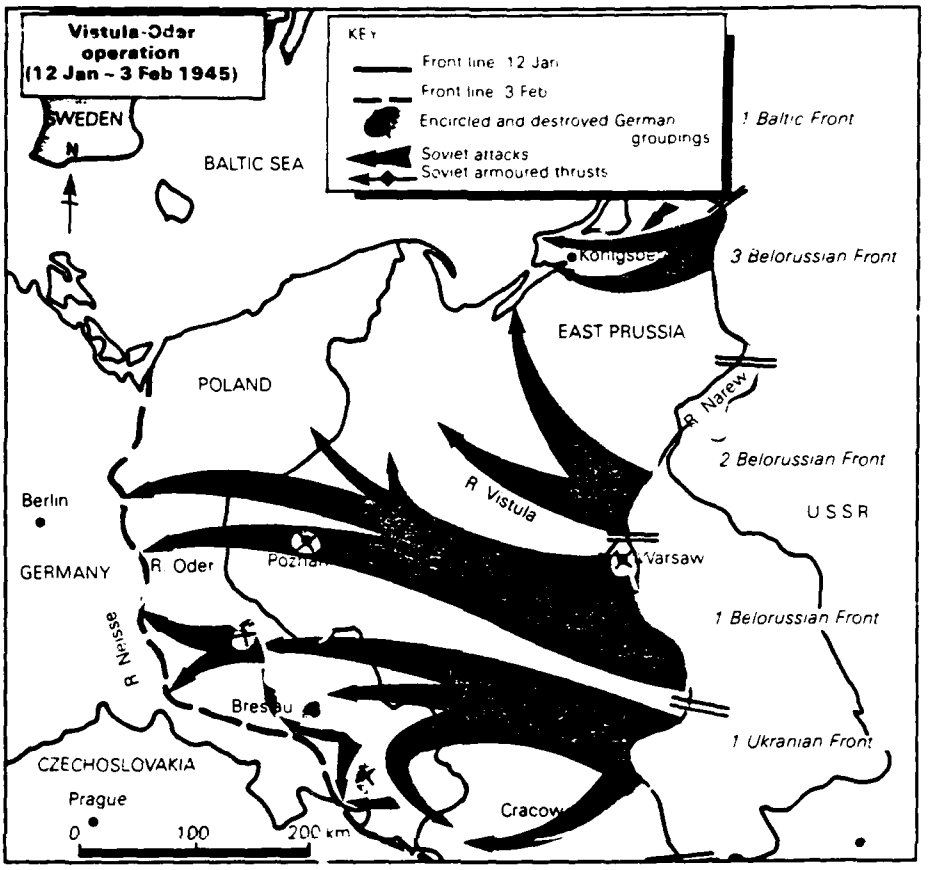
[47]Charles J. Dick, "Soviet Operational Art – Part 1: The Fruits of Experience," *International Defense Review*, No. 7/1988, pp. 755–761.

[48]Dick, *ibid.*



Source: Charles J. Dick, "Soviet Operational Art - Part 1: The Fruits of Experience," ***International Defense Review***, No. 7/1988, pp. 755 - 761.

FIG. 8. VISTULA-ODER OPERATION

According to conventional wisdom, the Red Army has maintained and honed its operational-level skills acquired in World War II, while Western Armies have forgotten those skills and the lessons of World War II. In contrast, however, we believe there is room for some skepticism about the capability of the Soviet military today to repeat its World War II feats in a short-warning attack against NATO's Central Region. Our skepticism is based upon the following examination of Soviet strengths and weaknesses in maneuvering and deep operations to achieve their strategic objectives on this next battlefield in Europe.

Operational Art

Operational-level thinking has been inculcated in the Soviet officer corps down to the regimental commander level. The technical revolution in warfare, in the Soviet view, has increased the importance of the operational level, the decisive role

of maneuver in combat, and the premium on surprise and deep operations. In contrast, among NATO Armies only the the U.S. Army has rediscovered the operational level of war when it adopted AirLand Battle doctrine in 1982. That doctrine was subsequently endorsed by U.S. Air Force in 1984. NATO is currently in the process of drafting an operational-level concept paper to be inserted in a future edition of NATO *Land Force Doctrine*, ATP-35(A), but it will require many years before NATO members adopt this notion and help develop a coalition-oriented, operational doctrine, let alone implement it. Moreover, the approach whereby this subject is being broached in NATO is *prima facie* evidence that NATO has serious problems in dealing with joint-Service issues. By definition, the operational level of war is joint, not Service-peculiar; as a result, NATO's approach, without first developing a joint NATO operational doctrine, is seriously flawed. Among the key problems in NATO cited by SACEUR in June 1988, the lack of integration of air/land/sea forces and operations heads the list. Until this problem is resolved, NATO will not be able to develop an effective operational doctrine.

Command and Control

The single most important constraint on the Soviet ability to execute a fast-moving conventional offensive in accordance to operation plans is their command and control (C^2) systems. Numerous experts have cited a variety of problems with the Soviet's C^2 systems, but the Soviets are also aware of those same problems, as evidence by several recent actions. First, they instituted the TVD High Command in peacetime, which may not necessarily expedite their transition to war but will surely improve their execution of the war through better C^2 over the many disparate elements of the attack force. Second, they are modernizing the associated equipment. Third, they are focusing their training and troop exercises on those problems, witness the following quotation that pertains to Warsaw Pact combined exercises:

> The experience from battles and engagements of previous wars shows that it is possible to have the most advanced weapons and well trained personnel, but if C^2 is lost, then their combat capabilities remain unutilized and the mission fulfillment will be jeopardized. For precisely this reason, the problem of improving force C^2 is of major significance in the entire training system of the [Warsaw Pact] Combined Armed Forces.
>
> C^2 problems are most effectively rehearsed in combined exercises where a complex, dynamic situation is created, one requiring of commanders and staffs the ability to rapidly assess the developing situation.
>
> C^2 is inconceivable without communications, which are its material basis. In the exercises where they rehearse methods for the skillful, rapid, and

> dependable connection of communications equipment and where they check the coordinated operations of the communications centers of formation and unit C^2 posts in the fraternal armies, the appropriate officials gain good practical experience in using various types of communications equipment. These officials improve their skills in commanding forces when individual elements (links) the C^2 system are out of commission and in relocating C^2 posts and in conducting communications traffic in a difficult electronic environment.
>
> The exercises help to bridge the language barrier, the effects of which are particularly noticeable during fluid and dynamic situations.[49]

Thus, to the extent that the Soviets are still experiencing problems and shortcomings in their C^2 capabilities, they can be expected to solve them in due time. Similar problems exist in NATO. SACEUR's list of key problems in NATO had inadequate C^2 as the second most severe problem; citing from a public interview in August 1988, "the whole command and control arrangement in NATO needs help." Unfortunately, unlike the frank discussions of Soviet shortcomings in their military press, NATO's shortcomings are seldom admitted and discussed in either NATO or national military journals. In total, we believe that NATO's C^2 problems are even more serious than the putative C^2 problems of the Warsaw Pact.

Deep Battle

The somewhat sensational accounts in public media in the early 1980s about Soviet notions of landing airborne regiments in NATO's rear to seize objectives and of OMGs slashing through NATO's defenses to reach the Rhine River in 3 days not only damaged the credibility of the authors but caused doubts about the entire concept of deep operations in the minds of many skeptical Europeans. Those doubts were largely resolved at a special, by-invitation-only, conference in Bonn, in June 1984. That conference was sponsored by the U.S. Department of Defense in coordination with the German Strategy Forum and provided U.S. briefers with the opportunity to release previously classified information on OMGs (both the concept and Soviet capabilities and training as demonstrated in maneuver exercises) and the air operation in support of the insertion of OMGs. The conference served to provide evidence that the OMG was not just a theoretical concept but had become a matter of

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[49]Col. V. Voloshin and Col. V. Kilesor, "Combined Exercises – The Highest and Most Effective Form of Training for Warsaw Pact Military Staffs and Forces," *Military Historical Journal*, Dec 1982, translated and cited in Jeffrey Simon, *Warsaw Pact Forces: Problems of Command and Control* (Boulder, Colo.: Western Press, 1985), p. 197.

practice, with troops of the GSFG regularly exercising the OMG mission in spite of Soviet reticence on the entire issue.

Assessment of where the Soviets stand today on deep battle is difficult, but the consensus appears to be that they will need a number of years to further perfect their OMG capabilities through training and exercises, force structure adjustments, and equipment modernization. We summarize some of the key issues below:

- *Surprise and Deception.* Some level of operational surprise, if not strategic surprise, must be achieved, otherwise the OMG insertion process may fail and the attack will lose momentum. An objective review suggests they are masters at deception.[50]

- *Intelligence and Surveillance.* Information on NATO's force deployment is important to the OMG operation. Their technical means lag those in the West but their human intelligence collection efforts are known to be considerable.

- *Timing.* Precise timing is required to reach the line of transition to attack (for second echelons) or the startline of the advance (for OMGs). Both lines and alternatives are marked on the commander's map. If the tactical situation permits implementation of the plan of action, the process is straightforward; problems start when the tactical situation has changed, requiring improvisation down to battalion commander level.

- *Flexibility and Initiative.* Flexibility of plans and commander's initiative are key requirements for OMG operations. Contrary to popular opinion that Soviet operation plans are extremely rigid and executed by unimaginative commanders, flexibility is recognized as the first principle of tactics and that initiative is encouraged down to battalion commander level.

- *Air Superiority.* Warsaw Pact military authors acknowledge that the OMG can only succeed in a benign air environment. If NATO can defeat both the antiair operation (which accompanies the air operation to provide air defense to troop formations throughout their depth of deployment and facilities in the rear) and the air operation, then it would be able to destroy all OMGs and blunt the offensive thrusts.

- *Airlift.* The Soviets do not possess sufficient airlift to drop airborne units of any reasonable size in NATO's rear. One airborne regiment requires 160 Cub or 110 Candid transport aircraft; one airborne division requires two-thirds of the entire lift capacity of Military Transport Aviation. Similarly, a Front has only enough helicopter assets to lift one air assault

[50]Charles J. Dick, "Catching NATO Unawares: Soviet Army Surprise and Deception Techniques," *International Defense Review*, No. 1/1986, pp. 21 – 26.

battalion at a time. It is inconceivable that airborne regiments are a realistic threat to NATO, considering also that NATO most probably would maintain at least local air superiority. Yet, those airborne units are a key feature in deep battle theory to seize key objectives and thereby to facilitate the advance of OMGs and follow-on echelons.

- *Sustainability.* The OMG is supposed to be self-sustaining (without a ground line of communication) for the duration of its mission. This requirement may force fundamental changes in Soviet logistics practices. The idea of aerial resupply is one option that is highly vulnerable; the addition of a big logistics tail to the OMG is another option, but it would reduce the speed of the unit and increase its size. The consequences of both options conflict with the OMG mission; increased size would make the difficult insertion process even more difficult. We do not believe that the Soviets have yet resolved this problem.

- *Maneuver Exercises.* Combined maneuver exercises by Warsaw Pact forces in the 1980s indicated several significant changes have occurred: the exercises were larger in size, occurred with greater frequency, stressed issues of combined command, and served to test new concepts such as TVD and OMG.[51] *Zapad* (tr. West)-81, an 8-day exercise held in September 1981 in the Baltic Sea and the Baltic and Belorussian MDs, was the first major exercise that practiced the new concepts of TVD and OMG. This exercise involved 100,000 Soviet troops, divided *into* "friendly" and "opponent" forces, and was under the personal direction of Defense Minister Ustinov and Marshal N. V. Ogarkov (Chief General Staff). Its stated goal was "to test new concepts and methods of Soviet military science and art, to develop greater initiative and independence of commanders at all levels, and to measure the performance and response time of reserve elements and the combat readiness of participating units." The friendly forces were organized into two Fronts under a TVD Commander who deployed an OMG (one tank division) to engage a large reserve unit located deep in the opponent forces rear; this OMG operation was coordinated with the drop of airborne units tasked to seize and destroy given objectives and to coordinate with the OMG in liquidating the opponent reserve forces. *Druzhba* (tr. Friendship)-82 consisted of two combined exercises, one in Czechoslovakia and the other in Poland. Both practiced coordination between subunits of the various forces and simulated deep operations by combined-arms mobile units and airborne troops, thus introducing the OMG concept for the first time into non-Soviet Warsaw Pact forces. *Shield*-82, the fourth exercise in the "Shield" series which originated in 1972, was a 1-week exercise in Bulgaria and the Black Sea, involving 60,000 troops from six Warsaw Pact armies with a scenario similar to those used in *Zapad* and *Druzhba*. More recent exercises, both command post and field, have continued to stress the

[51] Jeffrey Simon, *op. cit.*

role of OMGs, the coordination with the air and antiair operations, and the coordination between combined ground maneuver forces.

- *Tactics.* Soviet tactics are commonly considered in the West as crude and strictly "by the book"; that perception was probably true in World War II, but it no longer holds today. The lengthy debates in military journals about all types of tactical problems provide evidence that the Soviet officer corps is taking the identification and solution of tactical problems seriously and is continuously engaged in refining tactical doctrine to provide the best instructional framework for training and operations. Some of the persistent issues include coordination of fire support with infantry assaults, maneuver of fire, good troop control, effective troop maneuvers (with particular concern about the quality of battalion commanders and staff), and more realistic training.[52] It is probably fair to say that those issues are not unusual and might apply equally to Western Armies.

The above list of key issues influencing the feasibility and potential success of OMGs shows a few strengths and many question marks. As a result, many observers believe that the Soviets do not have the ability to put their concepts into practice today. We subscribe to that skepticism and believe that in the *near-term* any attempt to apply the OMG concept in a short-warning offensive would only be partially successful. Rather than thrusting 200 km deep into NATO's rear, the OMGs that do penetrate NATO's forward defenses would probably only reinforce the missions of forward detachments in enveloping NATO's forward defense units at a depth of at most 70 km. In the *long-term* (mid- to late-1990s), however, the consensus appears to be that the Soviets would be capable of putting their concepts into practice, given continued training and exercising, force structure adjustments, and equipment modernization. They can be expected to systematically perfect their deep operations capabilities because they offer the best approach for exploiting NATO's weaknesses.

Putting It All Together

The above subsections have assessed Soviet capabilities to execute each of the key concepts in isolation from each other: air operation, integrated fire destruction, echelonment/maneuver, and deep battle. (We have not discussed the antiair operation that would proceed in conjunction with the air operation to protect Warsaw Pact

[52]For a good, but now somewhat out-of-date, overview of those debates, see the following article: C. N. Donnelly, "Tactical Problems Facing the Soviet Army: Recent Debates in the Soviet Military Press," *International Defense Review*, No. 9/1978, pp. 1405 – 1412.

troop formations throughout the depth of their deployment as well as rear areas and facilities.) To put all four concepts together in a fast-moving offensive operation is, however, entirely another matter as the Soviets are probably well aware.

Overall, an objective look at their capabilities presents an image of massive numeric strength designed to compensate for a variety of significant qualitative weaknesses. Among their strengths vis-a-vis NATO, we single out the following:

- The natural advantages that accrue to the aggressor in a blitzkrieg-type operation (notwithstanding Karl von Clausewitz's dictum that defense is a stronger form of fighting than attack)
- Their centralized, TVD-level command-and-control structure
- Soviet experience and inculcated doctrine (in the Western-meaning of the word) in operational art
- Their centralized, logistics support structure that makes army- and Front-level commanders of "rear services" responsible for providing logistics support to subordinate units, permitting responsive support as and where needed
- Their theater stockpiles of ammunition, fuel, and end items, and spare parts are available to the Western TVD for 60 to 90 days of combat, including 23-day supplies stockpiled in the GDR as of 1987.[53]

Among the Soviet's weaknesses vis-a-vis NATO, we include the following:

- Their soldiers (2-year draftees make up more than 75 percent of their force; career noncommissioned officer corps less than 5 percent; as a result, officers perform many tasks that in the West are performed by enlisted personnel)
- Their equipment
- Their training in military skills, both schoolhouse and field.

Soviet self-doubts about their capability to succeed in a contemporary version of operation plan *Donaj* have increased in recent years because of signs that NATO is beginning to pay more attention to conventional defense requirements, specifically U.S. Army's adoption of AirLand Battle doctrine, SACEUR's adoption of Follow-On Forces Attack concepts, and NATO's advantages in precision-guided munitions. Even though Marshal Akhromeyey (Chief General Staff since Ogarkov's transfer in

[53]The latter estimate is from a parallel LMI study on Soviet logistics (unpublished).

1985 to head up the Western TVD High Command) felt obligated in March 1986 to state "Soviet military science had not ignored these trends [and] is taking them into account in the training and command of troops," it is apparent that the Red Army is wrestling with changes in tactics that will be required in response to those trends.[54]

- The bottom line, we believe, is that the notion of a massive Soviet onslaught to occupy the whole of Western Europe is gone forever thanks to steadfastness of NATO. What remains within Soviet capabilities, however, now and in the near future, is a limited incursion focused on the FRG (especially the northern half), Denmark, and the Benelux countries. Although the notion of a limited war may be foreign to Soviet military doctrine, its *de facto* capabilities are exactly that.

EPILOG

This volume describes the command structure, operational concepts, and offensive capabilities of the Warsaw Pact forces as they relate to a NATO conflict. Even if the Soviet Union has no current intention of launching an unprovoked attack against NATO, its growing capability to conduct a rapid, deep thrust into the rear of NATO's Central Region in a limited war scenario represents a significant latent threat to NATO's security. NATO essentially has two options. It can attempt to remove that threat through armaments negotiations. Or, if those are unsuccessful, it has no choice but to counter that threat through theater nuclear force modernization and conventional defense improvements. In Volume 4, we examine the prospects for the first option based on the various negotiations that have taken place to date. In Volume V, we explore the second option and illustrate, on the basis of plausible scenarios, what NATO must do to defeat this Soviet threat.

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[54]See: William Burgess, "Soviets Size Up AirLand Battle," *Army*, Jul 1986, pp. 38 – 48.

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This report examines the logistics implications of AirLand Battle, a new maneuver-oriented operational concept being adopted by the U.S. Army. The examination discusses the application of AirLand Battle in the NATO environment, details the need for NATO to shift toward adopting such a concept, and identifies the specific logistics improvements that are required to assure its success.

Volume 1 sets the stage for examining AirLand Battle doctrine and lays out the focus and scope of the study.

Volume 2 reviews NATO's defense posture, including its operational concepts and capabilities.

Volume 3 describes the military command structure, operational concepts, and capabilities of the Soviet Union.

Volume 4 summarizes the various arms control negotiations that have taken place between East and West to solve peacefully NATO's security problem.

Volume 5 illustrates the need for NATO to adopt a maneuver-oriented defense posture if it is to maintain a credible conventional defense.

Volume 6 details the specific logistics improvements that are required to support maneuver defense in a NATO environment.

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