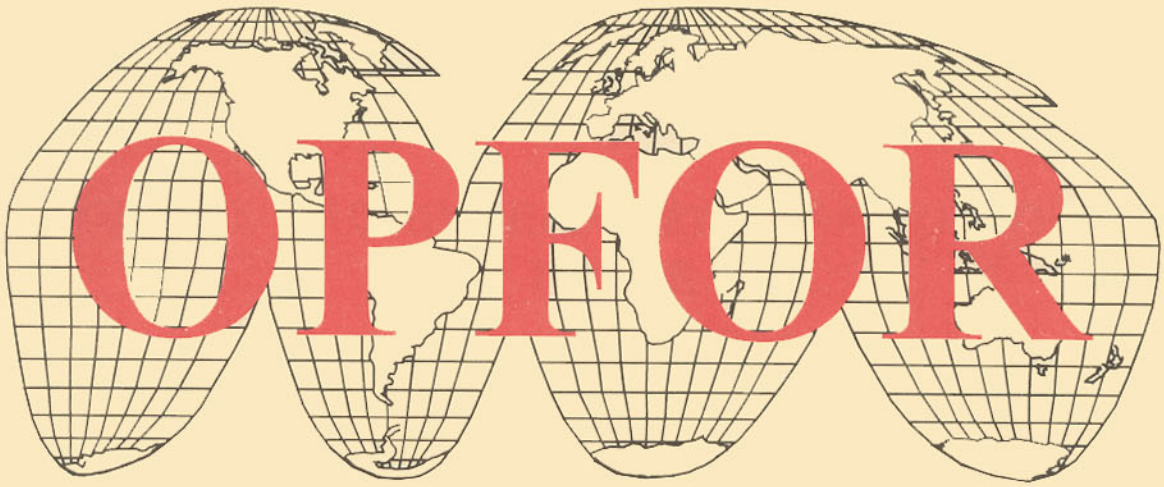
FM 100-61



ARMOR- AND MECHANIZED-BASED OPPOSING FORCE

OPERATIONAL ART

HEADQUARTERS, DEPARTMENT OF THE ARMY

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No. 100-61

FM 100-61

Headquarters
Department of the Army
Washington, DC, 26 January 1998

ARMOR- AND MECHANIZED-BASED OPPOSING FORCE OPERATIONAL ART

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Preface

This manual is one of a series that describes a capabilities-based Opposing Force (OPFOR) for training U.S. Army commanders, staffs, and units. See Reference section for a list of the manuals in this series. Together, these manuals outline an OPFOR that can cover the entire spectrum of military capabilities against which the Army must train to ensure success in any future conflict.

Applications for this series of manuals include field training, training simulations, and classroom instruction throughout the Army. All Army training venues should use an OPFOR based on these manuals, except when mission rehearsal or contingency training requires maximum fidelity to a specific country-based threat. Even in the latter case, trainers should use appropriate parts of this capabilities-based OPFOR to fill information gaps in a manner consistent with what they do know about a specific threat.

The proponent for this publication is HQ TRADOC. Send comments and recommendations on DA Form 2028 directly to the Threat Support Directorate of the TRADOC Office of Deputy Chief of Staff for Intelligence at the following address: Director, Threat Support Directorate, ATTN: ATIN-L-T (Bldg 53), 700 Scott Avenue, Fort Leavenworth, KS 66027-1323.

Readers can also view this manual via the World Wide Web (WWW) at http://leav-www.army.mil/threats/. Periodic updates, subject to the normal approval process, will occur through this electronic medium. Updated printed copies of this manual will only occur as a result of the normal production cycle in accordance with TRADOC regulation 25-31, paragraph 5-2. The date on the "cover" of the electronic version will reflect the latest update.

Nomenclatures of weapons and equipment in this publication are in compliance with international standardization agreements (STANAGs) 2097 and 3236.

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

Introduction

This field manual (FM) is part of the FM 100-60 series that documents the ***capabilities-based Opposing Force (OPFOR)***. This series provides a flexible OPFOR package that users can tailor to represent a wide range of potential threat capabilities and organizations. The overall package features an armor- and mechanized-based OPFOR module and an infantry-based OPFOR module. Each module contains field manuals that describe organizations, operations, and tactics. A third module describes the organizations, operations, and tactics of other OPFORs not covered in the first two modules. A separate field manual provides characteristics of worldwide military equipment available to the capabilities-based OPFOR organizations in the three modules.

This introduction provides definitions of some basic terms used throughout the manual. For definitions of other key terms, the reader should refer to the index, where page numbers in bold type indicate the main entry for a particular topic. The referenced page often includes a definition of the indexed term.

OPFOR VERSUS THREAT

The OPFOR is a training tool for preparing the Army to respond to a variety of threats. The following paragraphs explain the difference between an OPFOR and a threat and the relationships between the two.

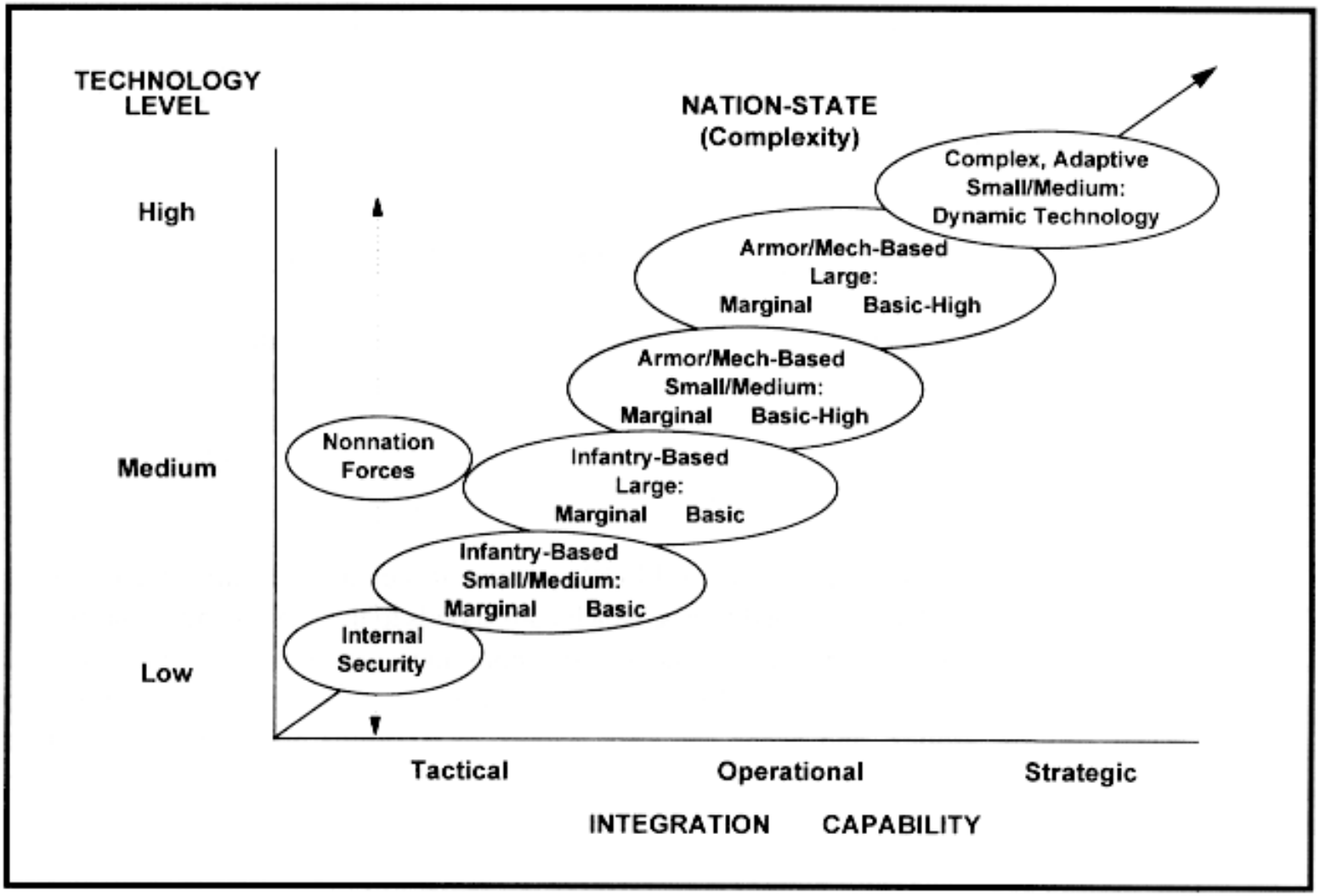
Threat and Country-Based OPFOR

In simplest terms, a ***threat*** is a potential adversary. It can be any specific foreign nation or organization with intentions and military capabilities that suggest it could become an adversary or challenge the national security interests of the United States or its allies. As the Army moves into the twenty-first century, it is no longer possible to identify one or two nations or forces as the potential adversaries against which it needs to train on a regular basis.

When conflict is imminent, or when U.S. forces need to train for a particular contingency, training may focus on a specified threat force. This rehearsal for an actual mission or operation can involve a ***country-based OPFOR***. Such an OPFOR should portray the specified, real-world threat force with the greatest possible fidelity based on the best available classified and unclassified information. Cases may exist in which constraints on the use of classified information preclude the use of actual threat data. Sometimes certain threat information may not be available at any level of classification. In such cases, trainers could fill in gaps by using those parts of the capabilities-based OPFOR that are most consistent with what they do know about a specific threat.

Capabilities-Based OPFOR

In more typical cases, however, the U.S. Army simply needs to train against an OPFOR that represents a particular level of capability rather than a particular country.[1] The ***capabilities-based OPFOR*** is a realistic and flexible armed force representing a composite of varying capabilities of actual worldwide forces. It constitutes a baseline for training or developing U.S. forces in lieu of a specific threat force. This baseline includes doctrine, tactics, organization, and equipment. It provides a challenging, uncooperative sparring partner representative, but not predictive, of actual threats.



Spectrum of worldwide military capabilities.

The capabilities-based OPFOR represents a break from past practices in two principal respects. First, the armor- and mechanized-based and infantry-based OPFOR modules are not simply unclassified handbooks on the armed forces of a particular nation. Rather, each module has its basis in the doctrine and organization of various foreign armies. These OPFOR modules are ***composites*** deliberately constructed to provide a wide range of capabilities. Secondly, the modules do not provide a fixed order of battle. Rather, they provide the ***building blocks*** from which users can derive an infinite number of potential orders of battle, depending on their training requirements.

The primary purpose of the field manuals in the 100-60 series is to provide the basis for a realistic and versatile OPFOR to meet U.S. military training requirements. They can support training in the field, in classrooms, or in automated simulations. However, users other than trainers also may apply the information in these manuals when they need an unclassified threat force that is not country-specific.

ARMOR- AND MECHANIZED-BASED OPFOR MODULE

Field Manual 100-60 depicts the forces of a ***developed country*** that devotes extensive resources to maintaining a military capability that rivals that of the United States. The name of that country is the ***State***. It can have a strategic capability, with strategic air and air defense forces and strategic missile forces. It probably has a nuclear capability. Unless the State is landlocked, it can have a blue-water navy and naval infantry (marines).

In the armor- and mechanized-based OPFOR, ground forces are the largest component. The formal name of this

branch of the armed forces, which corresponds to the U.S. Army, is the ***Ground Forces***. These Ground Forces comprise several standing divisions and separate brigades, most of which are subordinate to standing armies or corps. Most of these forces are, in turn, subordinate to army groups. Army groups, armies, and corps can vary widely in strengths and capabilities. Even multiple army groups may come under a series of theater headquarters that orchestrate complex, large-scale operations.

The armor- and mechanized-based OPFOR can conduct a strategic operation involving the combined forces in a theater. These forces may comprise--

- Several army groups.
- Strategic nuclear forces (strategic missile forces and strategic aviation).
- Strategic air armies.
- National air defense forces.
- A naval fleet.
- Naval infantry forces.
- Airborne forces.
- Special-purpose forces.
- National space forces.

Trainers may use any or all of these elements in an OPFOR order of battle as required.

Armor- and mechanized-based forces are the norm throughout the industrialized world. Such armies normally mount at least 40 percent of their ground forces in armored vehicles. They tend to modernize selected systems to match the best systems deployed by their neighbors. In terms of equipment and size, they range from small forces fielding outmoded equipment to large, capable forces fielding state-of-the-art weapons. For the most part, they base their tactics and doctrine on either their own experience or that of their arms/doctrine suppliers. Many of these nations produce and export weapons and technology up through state-of-the-art systems. If not, they have the financial resources to purchase such systems. Significant technologies that mark this class are in fire support and target acquisition.

Size and Capability

The armor- and mechanized-based OPFOR module includes a range of potential forces that can vary in size and capability. ***Small-to-medium armor- and mechanized-based forces*** cover a wide range of technology and capability, from developing states through small, professional armies. ***Large armor- and mechanized-based forces*** often have more sophisticated weaponry. Both types can field self-propelled artillery and multiple rocket launchers; artillery-delivered precision munitions; medium-to-heavy tanks; and limited thermal capability. These forces may or may not have nuclear weapons but at least have the capability to produce or acquire them. The more advanced states have the logistics and command structures necessary to conduct continuous operations, and joint operations are the norm. Large armor- and mechanized-based forces can conduct large-scale, combined arms operations. Some such forces are capable of sustained power-projection operations.

The high-technology end of the armor- and mechanized-based OPFOR approaches the level termed ***complex, adaptive forces***. From developed nations, these most technically and tactically advanced forces can choose quality over quantity. As they modernize, they can reduce in size and still maintain a high level of military capability. These forces normally have a complex structure, with more specialized units operating highly sophisticated equipment. They are also capable of adapting to dynamic situations and seizing opportunities on the battlefield. However, such a force is exceedingly expensive to equip, train, and maintain.

Thus, the differences between the infantry-based and armor- and mechanized-based OPFOR modules are largely ***scenario-dependent***. A particular training scenario may not require a large array of standing forces or justify the extensive use of mechanized infantry or tank forces. If not, the infantry-based forces of FM 100-63 may better fit

training needs. Sometimes trainers may find it necessary to draw ***some elements from both organization guides*** in order to constitute the appropriate OPFOR order of battle.

Compared to Infantry-Based OPFOR

Infantry-based forces are common throughout the developing world. None of these forces is capable of meeting the most advanced armies on an even footing in conventional battle. An infantry-based force differs from an armor- and mechanized-based force primarily in terms of technological level and the ability to integrate arms into combined arms combat.

The infantry-based OPFOR generally represents the armed forces of a ***developing country with limited resources***. The name of that country would also be the *State*. In this case, the State's military structure still consists primarily of the Ground Forces. However, these Ground Forces are primarily infantry (dismounted or motorized), with relatively few mechanized infantry and tank units and perhaps some airborne infantry units. Compared to the armor- and mechanized-based OPFOR, these forces typically have fewer standing divisions and brigades. However, infantry-based forces, too, can vary in size and capability.

The focus of FM 100-63 is on ***small-to-medium infantry-based forces*** in which divisions and separate brigades are subordinate to military regions and districts. They have some armor but rely on dismounted or motorized infantry for the bulk of their combat power. They normally conduct set-piece operations, integrating arms at the tactical level. A small infantry-based force typically has marginal integration capability (ability to conduct tactical-level combat actions with limited fire support) or basic integration capability (ability to conduct battalion-level tactical combined arms actions). Even with a small infantry-based force, however, the State might mobilize and deploy one army- or corps-size force capable of conducting large-scale operations against a neighboring country whose armed forces are also infantry-based. A medium-size infantry-based force may have one or more standing armies or corps and the capability to integrate forces at the lower end of the operational level. In terms of technology, both groups import most of their systems.

Medium and large infantry-based forces may also possess significant armor- and mechanized-based formations. They typically use these heavier units as exploitation forces or mobile reserves. ***Large infantry-based forces*** can have multiple armies or corps and conduct extensive set-piece operations over broad frontages. However, they are normally capable of projecting military power only within their region. The key technologies that can allow this are self-propelled artillery and offensive chemical and biological warfare. The State may or may not have chemical and biological weapons, but has the capability to produce or acquire them. A country with large infantry forces can have extensive, basic weapons industries, or it may still import most systems.

When opposed by an adversary of similar capabilities, an infantry-based OPFOR can conduct conventional, force-oriented combat. However, when faced with a large, technologically advanced army, it may choose to redefine the terms of conflict and pursue its aims through terrorism, insurgency, or partisan warfare. In the case of intervention by an external power or coalition, this strategy aims to undermine the enemy's will to continue the conflict without the necessity of defeating his main forces on the battlefield.[2]

Aside from the Ground Forces, the State's armed forces may include any or all of the following components:

- The Air Force, including the Air Defense Command.
- The Special Operations Command, with commando and special-purpose forces.
- The Navy, consisting of a small, brown-water force.

This OPFOR can also include less-capable forces, such as internal security forces, the militia, and reserves. This menu of possible forces allows U.S. military trainers to tailor the OPFOR order of battle to meet virtually any training requirement involving an infantry-based force.

Field Manual 100-63 depicts infantry-based forces of a country that is divided geographically into an unspecified number of military regions, each with a number of subordinate military districts. This OPFOR stations most combat

forces within military districts that can vary widely in their strengths and capabilities. The organization guide allows for standing divisions, but districts with separate brigades would be much more common and in keeping with the spirit of the infantry-based OPFOR concept. If the trainer requires a large infantry-based force, the ***combined use of FMs 100-60 and 100-63*** may better suit his purpose.

Compared to Other OPFORs

Field Manual 100-66 provides a menu of other OPFORs to meet U.S. training objectives in stability and support operations. Compared to either OPFOR module described above, these other OPFORs are less well defined. By their very nature, they are unpredictable. They differ from an armor- and mechanized-based or infantry-based OPFOR primarily in size, technological level, and the ability to integrate arms into operations.

In this case, most military forces have lower capability than an infantry-based OPFOR. These may be the forces of a ***preindustrial nation*** or a ***nonnation group***. With limited assets, most such groups cannot, or will not, invest in the weapons and technology necessary to keep pace with the best militaries in their regions. Rather than standing organizations with predictable structures, most of their military organizations are *ad hoc*. Depending on the situation, these irregular forces may bear the labels of insurgents, guerrillas, or light infantry. There may also be more organized forces such as internal security forces or regular military units. The common thread is that they have little or no organic heavy equipment.

Like the lower end of the infantry-based OPFOR, these forces are likely to attempt to deal with a larger, more technologically advanced army through terrorism or insurgency. They do not try to meet such an enemy head-on in conventional combat. They prefer hit-and-run raids, ambushes, terror tactics, or harassment.[3] They try to be unpredictable and invisible, employing methods not anticipated by their enemies. They do not fight by the rules of conventional warfare.

These OPFORs may also include forces that are better equipped and better trained. They may be part of or sponsored by a large-scale drug or criminal organization, or they may have the backing of a wealthy outside power. They may still be small and lightly armed but could have sophisticated, state-of-the-art light weapons. They are light not out of austerity but for practical reasons, because the lightness of the equipment enhances mobility. They may also have high-technology communications and reconnaissance means.

There may be occasions where OPFORs encountered in stability and support operations include a sophisticated military organization with heavier weapons. If the U.S. force is participating in a peacekeeping operation, for example, the OPFOR may be the recognized military of a belligerent nation. As such, it could include armor- and mechanized-based or infantry-based forces of the types found in FMs 100-60 and 100-63, respectively. Likewise, some types of OPFOR described in FM 100-66 can also appear during war.

Like other manuals in this series, FM 100-66 addresses the situation from the OPFOR's perspective. The U.S. force training against the OPFOR may consider itself as performing stability and support operations in an environment of peace or conflict. However, the OPFOR may consider itself at war. Still, the OPFOR concept of victory does not necessarily equate to defeating U.S. forces in a force-on-force battle.

ARMOR- AND MECHANIZED-BASED OPERATIONAL ART

FM 100-61 provides the trainer with a military doctrine and operational art for the armor- and mechanized-based OPFOR. The operational art describes how army groups, armies, and corps conduct operations. The manual also addresses strategic and theater operations, to provide a larger context for the actions of the organizations listed above. Armor- and mechanized-based OPFOR tactics for divisions and below are described in FM 100-62.

How to Use This Manual

To use FM 100-61, trainers must first develop a scenario. This scenario includes a specific order of battle derived

from FM 100-60 or a combination of FM 100-60 and FM 100-63. The scenario should also include, among other things: a defined area of operations; significant military, political, and economic information; and a "road to war" events list. The events list drives the conduct and tempo of the scenario. The scenario is subject to approval by the trainers' OPFOR-validating authority. After approval, the OPFOR organization or player uses the operational art described in this manual to "fight" the OPFOR.

FM 100-61 describes a flexible, thinking OPFOR that ***does not adhere to rigid templates***. At the same time, the manual provides parameters for OPFOR actions. Training (BLUFOR) units can. therefore, use this manual to analyze and understand the OPFOR before the battle. In so doing, BLUFOR commanders and staffs must understand that this manual is more than a "rulebook" to limit the OPFOR. FM 100-61 is a training tool that trainers and OPFOR organizations must use with flexibility to meet their training requirements.

OPFOR Symbology

The OPFOR uses a modified form of the military symbology outlined in FM 101-5-1. In this case, the OPFOR units are the friendly forces. The OPFOR depicts its enemy by using double-lined versions of the same symbols it uses for its own (friendly) forces.

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[1] Another definition of ***threat*** is in terms of a capability rather than a country. This could be any advanced technology or system possessed by a militarily significant country, including western or developing countries. The proliferation of such foreign systems or technologies could pose a threat to the U.S. Army or its systems.

[2] Throughout the FM 100-60 series, the term ***enemy*** refers not to the OPFOR but rather to the enemy of the OPFOR.

[3] Although various OPFORs depicted in FM 100-66 may use terror tactics, one specific type of OPFOR is a terrorist group.

Chapter 1
Military Thought

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Opposing Force (OPFOR) planners have developed a scientific approach to the study of war, that includes comprehensive analysis of all aspects of human activity applied to war. This approach plays an important unifying role within the OPFOR's military structure and provides a framework for systematizing and categorizing everything. The ultimate goal is to understand and exploit the dynamics of war.

The OPFOR defines military terms such as war, armed conflict, military doctrine, military science, military art, strategy, operational art, and tactics. To understand OPFOR military thinking, we must know the vocabulary and the conceptual framework of OPFOR military theory and practice. (See Figure 1-1.) This chapter includes definitions of basic OPFOR military terminology; outlines the basic theories and doctrine espoused by the OPFOR; and discusses key concepts that strongly influence the application of OPFOR military thought.

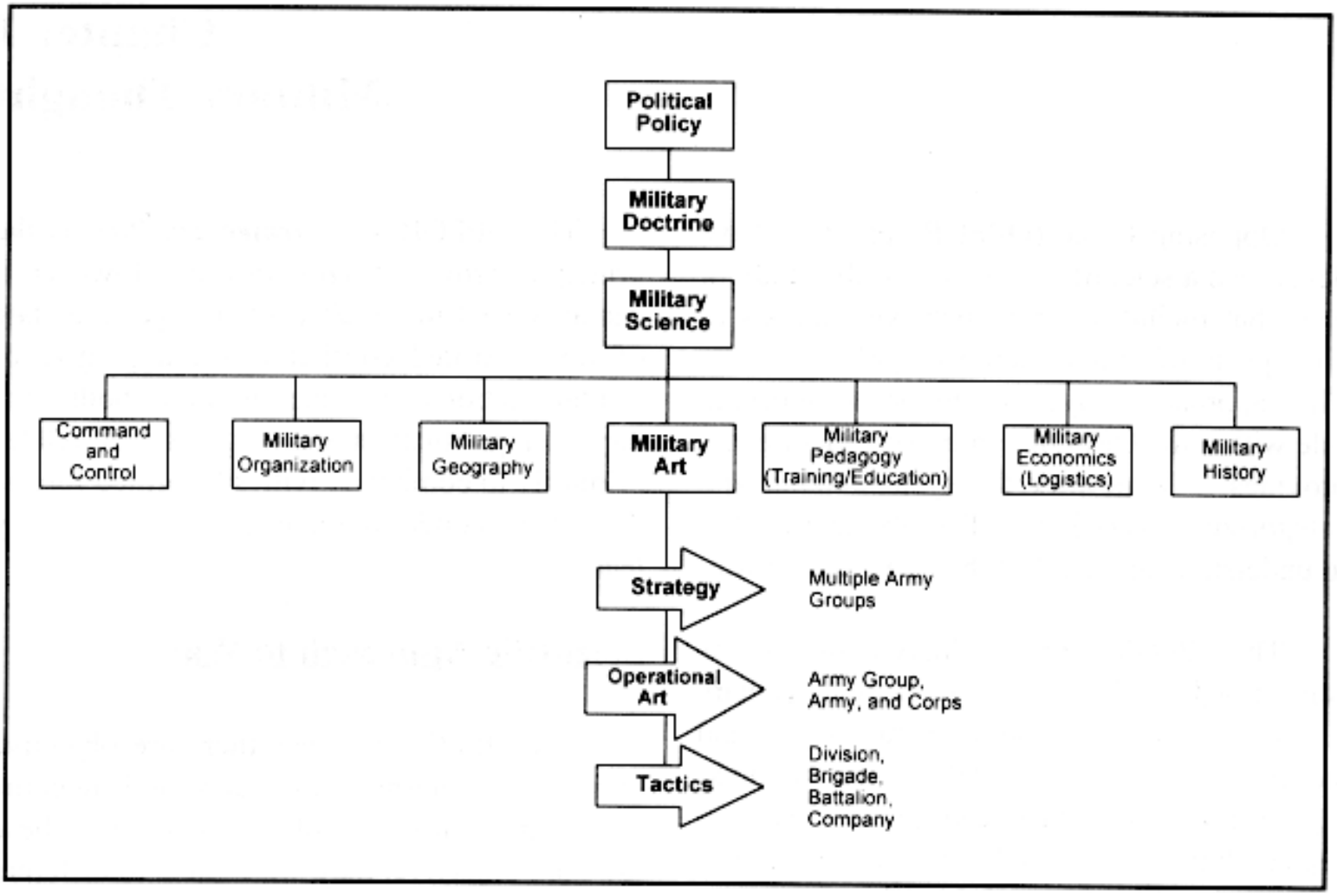

Figure 1-1. Hierarchy of OPFOR military thought.

WAR AND ARMED CONFLICT

OPFOR theorists differentiate between war and armed conflict; ***war*** is the more comprehensive of the two. The OPFOR concept of war is much broader than our own. It involves the entire country and affects all aspects of life and society. War includes economic, diplomatic, ideological, scientific, and technological variables, in addition to armed conflict. The OPFOR might draw from all of these variables to achieve political and military victory in war. Management of the war effort resides with political leadership.

The OPFOR sees ***armed conflict*** as the principle form of struggle in war. However, it can also exist in the absence of a general state of war. Armed conflict is the aggregate of military actions conducted to attain both military and political strategic goals. It relates primarily to combat activities by armed forces; thus, it falls under the management of military leaders.

Scientific Approach to War

The OPFOR believes there are objective "laws" that determine the cause and outcome of a war or armed conflict. Although these laws are objective, they are subject to different interpretations. The subjective interpretations of these laws comprise the principles of military art.

The OPFOR's scientific approach to war and armed conflict depends heavily on its calculations of the ***correlation of forces (COF)***. The COF is an objective calculation of the quantitative and qualitative capabilities of the opposing sides; its purpose is to determine the degree of superiority of one side over the other. At the strategic level, political

and military theorists may use a concept called the "international correlation of forces" to compare the relative strengths of potential enemies. This strategic net assessment would involve the military, economic, scientific-technical, political, moral, and psychological status and potential of each side.

At the operational level, the focus narrows to a calculation of the quantitative and qualitative comparison of weapons, morale, materiel, and the combat situation. At both

levels, the COF is a practical tool for determining the likelihood of victory or defeat in war and armed conflict. With it, planners attempt to quantify the existing or future situation in terms of the laws of war and conflict. Thus, it is a key decision aid for the OPFOR.

Modern Battlefield

Smaller but more lethal armies fight on the modern battlefield. Precision weapons, high-speed maneuver platforms, information warfare, and battlefield automation impact how the OPFOR fights. Flexibility is increasingly important on the fast-paced, fragmented battlefield of today. Thus, the OPFOR attaches more importance to joint operations and to a continuous, multidimensional combined arms approach to the conduct of warfare.

MILITARY DOCTRINE

Military doctrine is the State's officially accepted system of views on the nature of war and the use of the armed forces. Formulating military doctrine is a continuous and evolutionary process. The OPFOR bases doctrine on the following:

- Political ideology.
- National security interests.
- Threat perceptions.
- Foreign policy.
- Economic and military strengths.
- Resources and geography.
- History.
- Science, and technology.

Military doctrine has two closely linked aspects: the political and the military.

The political aspect of military doctrine reflects political aims of the State, in addition to security interests and threat perceptions. The State's political leadership determines the political objectives reflected in military doctrine. Once handed down by the political leadership, doctrine is not open to debate; it has the weight of law.

The military aspect of doctrine conforms to the State’s political aims. It encompasses the following elements that directly pertain to the OPFOR:

- Organizational development.
- Training.
- Combat readiness.
- Equipment types and numbers.
- Development of military art.
- Improvements in command and control (C^2).
- Research and development priorities.

Evolutionary change in the OPFOR's military doctrine is a continuous process. The impetus for such change is often emerging technologies, changing national security interests, or foreign policy goals.

MILITARY SCIENCE

The OPFOR defines military science as a system of knowledge concerning the nature, essence, and content of armed conflict. It studies and analyzes the manpower, facilities, and methods for conducting operations by means of armed forces. Its purpose is to develop practical recommendations for victory in war.

Military doctrine and military science are fundamentally interrelated and interdependent. OPFOR military doctrine governs the nature of war, and the means for prosecuting such a war. Military science examines all military affairs--past, present, and future--and it categorizes military knowledge along functional lines into various components. These components are military art, organization, geography, history, training and education, economics, and command and control. Although all theories are important, the OPFOR regards the theory and practice of military art as the preeminent component of military science.

Military Art

Military art is the theory and practice of preparing for and conducting military actions on land, sea, in the air, and increasingly, in space. During wartime, military art implements doctrine. The components of military art normally relate to a specific level of combat activity:

- Military strategy (national- and theater-level).
- Operational art (army group-, army-, and corps-level).
- Tactics (division-level and below).

The OPFOR considers these components interconnected, interdependent, and mutually conditioned. They supplement each other. Among the three, strategy plays the predominant role.

The ***principles of military art*** are the basic guidelines for organizing and conducting battles, operations, and war as a whole. Lists of principles can vary from broad guides for action to achieve victory in war or operations to more specific recommendations for victory in battle. Among these principles are--

- High combat readiness.
- Surprise.
- Aggressiveness and decisiveness.
- Persistence and initiative.
- Combined arms coordination and joint operations.
- Decisive concentration of forces.
- Deep battle or deep operations.
- Information warfare.
- Exploitation of moral-political factors.
- Firm and continuous command and control.
- Comprehensive combat support.
- Timely restoration of reserves and combat potential.

These principles are idealistic. They show what the OPFOR would like to do, but not, in all cases, what it might be capable of doing. Thus, they apply in varying degrees of importance to strategy, operational art, and tactics. There are also particular principles that apply to each level alone.

Military Strategy

Military strategy is the highest component of military art. It concerns both the theory and practice of preparing the nation and armed forces for war, as well as the planning and conduct of strategic operations and of war as a whole.

The theoretical side of strategy studies the laws and character of war and methods for conducting it. In the applied sense, military strategy determines the strategic missions of the armed forces and the necessary forces to achieve these missions. Within the OPFOR C^2 structure, the Ministry of Defense and General Staff are responsible for developing military strategy. All State ministries and military organizations work under a unified military strategy.

Operational Art

Operational art concerns the theory and practice of preparing for and conducting combined and independent operations by OPFOR army groups, armies, or corps. It is the connecting link between strategy and tactics. On the basis of strategic requirements, operational art determines effective methods of using available military resources to achieve strategic goals. Consequently, plans developed from operational art determine tactical actions.

Tactics

Tactics is the theory and practice of employing available means to win battles at division level and lower. To determine how best to employ forces, tacticians study the laws of combined arms combat. Because tactics relates directly to combat, specific tactical principles relate to each type of unit, weapon, and situation.

Although tactics may change rapidly to conform with changes in weaponry, it is inseparably linked with other components of military art--strategy and operational art. It is subordinate to operational art and strategy and must achieve the goals set by operational art in the interests of strategy.(For more information on OPFOR tactics, see FM 100-62.)

Interrelationships

Separating OPFOR tactics from operational art is often difficult; maneuver divisions are the tactical maneuver elements that achieve the operational missions of army groups, armies, and corps. The overriding goal of the combined arms offensive is to turn tactical success into operational success using a well-orchestrated combination of massive fire, maneuver, and deep, violent strikes. Similarly, tactical and operational successes contribute to the accomplishment of strategic tasks.

Divisions fight battles; armies and corps conduct operations. First-echelon divisions usually pursue tactical missions in the enemy's tactical depth; armies and corps, normally using their second-echelon divisions (or separate brigades), must achieve operational missions in the enemy's operational depth. (See Figure 1-2.)

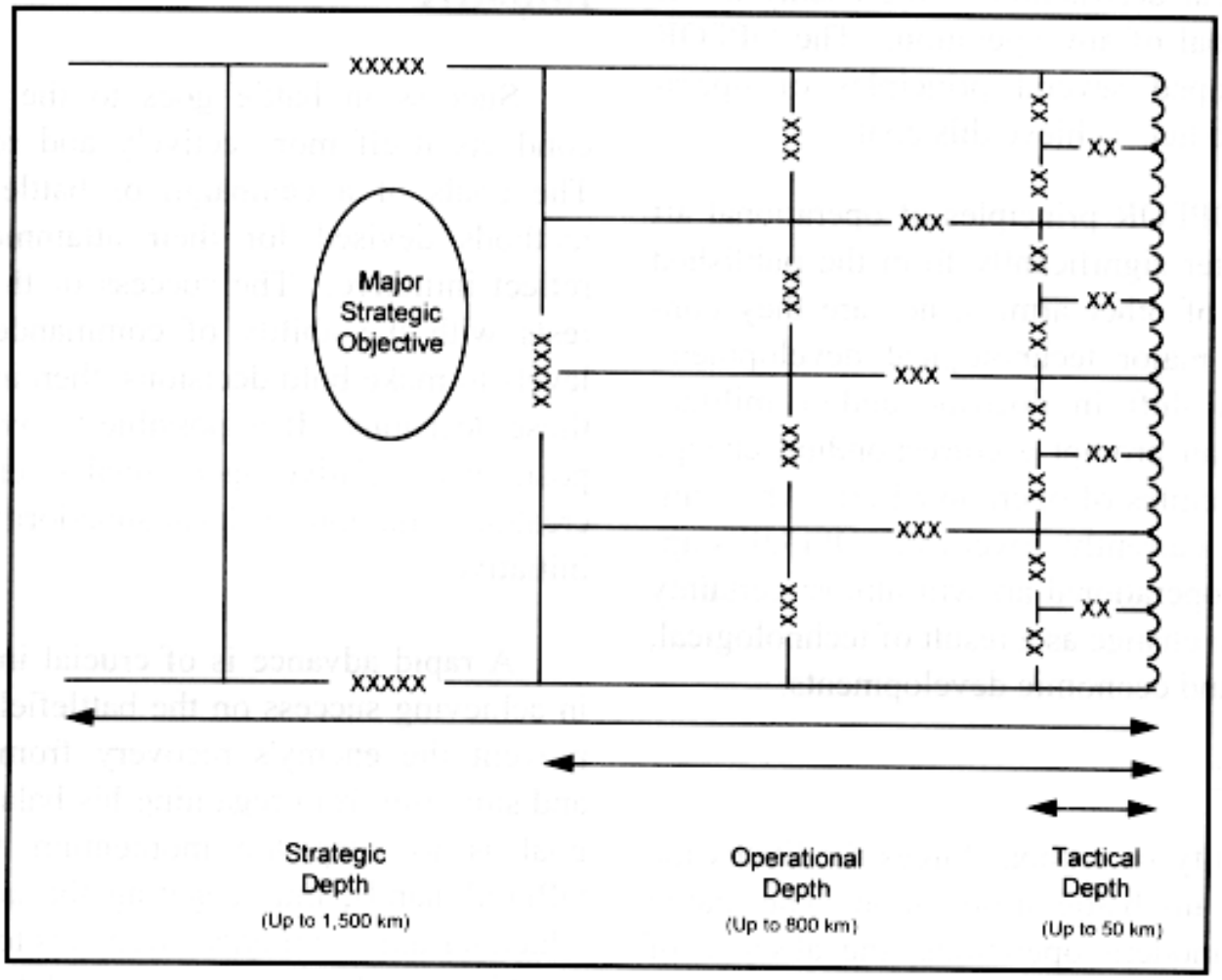

Figure 1-2. Tactical, operational, and strategic battlefield depths.

PRINCIPLES OF OPERATIONAL ART

Operational art is not simply a matter of moving forces to seek out the enemy and engage him in combat; it is using maneuver to defeat the enemy. Operational art deals with--

- Disrupting the enemy’s cohesion on a large scale.
- Depriving him of the ability to react effectively to changes in the situation.
- Breaking up his organization and control of large formations (corps and above).

The physical destruction of the enemy is the ultimate goal of any operation. The OPFOR has developed several principles of operational art to help achieve this goal.

The OPFOR principles of operational art do not differ significantly from the published principles of other armies, nor are they constant. A major technological development, such as a shift in doctrine and/or military strategy, can prompt a corresponding change in the principles of operational art. The principles that currently govern the OPFOR's approach to operational art will almost certainly continue to change as a result of technological, political, and economic developments.

Mobility

Mobility of combat forces facilitates the success of any battle or operation. The spatial scope of modern operations, the absence of solid and contiguous fronts, and the depth of the modern battlefield demand mobility. A high degree

of mobility enables forces to use combat power with maximum effect at the decisive time and place on the battlefield.

Speed

Speed of advance is an important principle, with high rates of advance regarded as an indicator of success. Modern warfare requires great emphasis on the speed and timing of operations. The more rapid the advance, the more difficult it becomes for the enemy to halt the movement. Controlling or altering the rate of advance is critical to maintaining the initiative.

Fast-moving, maneuver-dominated operations complicate the principle of speed and the logistics support that it demands. Rear areas have no clearly defined safe boundaries Thus, the OPFOR has developed a logistics system designed to address this problem.

Initiative

Success in battle goes to the side that conducts itself more actively and resolutely. The goals of a campaign or battle and the methods devised for their attainment must reflect initiative. The success of these plans rests with the ability of commanders at all levels to make bold decisions, then implement those decisions. It is possible to overcome a position of relative operational inferiority by creating conditions of local superiority through initiative.

A rapid advance is of crucial importance in achieving success on the battlefield. It can prevent the enemy's recovery from surprise and stop him from regaining his balance. The goal is to keep the momentum firmly in OPFOR hands, thus negating the advantages which terrain and modern weapons technology would normally give to a stable defense. The OPFOR can--

- Split the enemy defense into isolated, demoralized fragments.
- Disrupt enemy C^2.
- Paralyze the will of enemy commanders.
- Make organized resistance impossible.

Flexibility

Even the best developed plans can and do go wrong in war. Commanders must remain flexible, prepared to alter missions and groupings to meet the inevitable unexpected and achieve the overall operational goal. Thus, great emphasis is on commanders and their staffs reacting quickly and remaining flexible in their reaction to developments. To facilitate flexibility, commands are being structured and deployed to react quickly and appropriately to changing situations.

Concentration of Main Effort

A formation that dissipates its forces equally across the entire frontage can not achieve victory; this is equally true of the offense and the defense. Concentration of the main effort at the decisive time and place on the battlefield is critical to success. In the offense, attacking commanders must overcome the effects of modern technology and the modern battlefield by manipulating their concentration of forces, as well as the enemy's. Commanders should designate the main attack, allocate or focus the forces to support it, and conceal this attack until it is too late for the enemy to react. In the defense, commanders must counter the enemy's main attack by focusing combat support assets without massing maneuver assets.

Just as conventional force concentrations were unacceptable in the face of an enemy prepared to destroy them with nuclear weapons, so they will be even more unacceptable in the face of precision weapons. This, too, puts a premium on surprise and preemption. Concentration now exists more in the massing of strikes by dispersed reconnaissance-strike and -fire complexes, rather than the physical massing of forces.

Surprise

Surprise may be strategic, operational, or tactical. The classification depends on the scale, the quantity of forces and equipment involved, and the results achieved. Distinguishing between the types of surprise is difficult. They are linked and interdependent. Experience shows that surprise is harder to achieve as the scale of combat increases. Concealing one's intentions from the enemy becomes more difficult with increased personnel and equipment.

Still, an OPFOR commander's use of unexpected timing, direction, or forces can catch the enemy unprepared. Denying the enemy the ability to conduct good intelligence operations is critical to this effort. OPFOR commanders believe it is realistic at the operational level to conceal not only the scope of the operation, but the location of the main attack and time it will begin. Surprise delivers victory as a result of timing, boldness, and concentration of forces masked by feints, ruses, demonstrations, and false communications.

Information Warfare

Information and communications technologies have grown exponentially in recent years. Cellular and satellite communications, personal computers, and the Internet are a few examples of the capabilities widely available to nations, as well as independent organizations and individuals. The ability to communicate, access, and transfer information freely is forcing political and military leaders to rethink information handling and control methods. The OPFOR is addressing this issue through the development of the doctrine of Information Warfare (IW).

The OPFOR defines IW as ***specifically planned and integrated actions taken to achieve an information advantage at critical points and times***. IW includes an offensive element, as well as defensive, protective measures. The goal is to influence an enemy’s information processes and systems while retaining the ability to employ OPFOR information processes and systems. The OPFOR knows that it cannot maintain gain information superiority at all times and in all places. It will select only those assets for disruption that are most critical to the success of the OPFOR effort.

The creation of a single, integrated doctrine for the control of information is not a new concept to the OPFOR. The doctrine of electronic combat has long consisted of an integrated approach to attacking the enemy’s command and control structure. However, recent changes in two major areas have made a great impact on electronic combat operations. First is the explosion in the use of computers and information handling systems for military applications. Second, non-military competition between nations has increased awareness of the vulnerabilities of industrial and business infrastructures and information systems.

OPFOR information warfare doctrine consists of six elements:

1. Protection and security measures.
2. Deception.
3. Electromagnetic spectrum operations.
4. Perception management.
5. Destruction.
6. Computer Warfare.

There may be significant overlap among the six elements, depending upon the mission or goal.

Preservation of Combat Effectiveness

Preservation of combat effectiveness has always been an important principle. However, it is becoming more difficult to realize as war becomes more complex and destructive. In the course of operations, the force's combat effectiveness must stay at a level that enables accomplishment of the mission. Measures for preserving combat effectiveness fall into three groups:

- Protection against weapons of high destructive potential.
- Maintenance of combat readiness.

- Restoration of combat effectiveness.

The OPFOR believes that the best way to maintain combat effectiveness is to adhere strictly to the principle of surprise. A surprise, in-depth offensive pursued at a high tempo without let-up should prevent the enemy from establishing a well-organized defense.

Effective Coordination

Success can occur only through the coordinated efforts of all the forces participating in an operation. This coordinated effort depends on effective and reliable C^2. Commanders must closely coordinate the combat roles of many diverse elements to ensure the mutual support of all elements involved in the operation.

Detailed plans and rehearsals ensure that each element fully understands its mission relative to the overall operation. To this end, the OPFOR has created a doctrine integrating all forces into a cohesive, coordinated war effort.

Chapter 2
Strategic Operations

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The highest component of OPFOR military art is ***military strategy***. In its broadest sense, it concerns war as a whole. However, it also includes planning and conducting strategic operations. War can consist of a complex system of such operations, including strategic operations in a theater, to achieve strategic goals and missions.

MILITARY GEOGRAPHY

Military geography is a branch of military science within the conceptual framework of OPFOR military thought. As such, it deals with political, economic, natural, and military conditions in various countries and theaters. It studies their effect on the preparation for, and conduct of, military actions in those geographic areas. Thus, military geography closely parallels military art, particularly at the strategic and operational levels. (See Figure 2-1.)

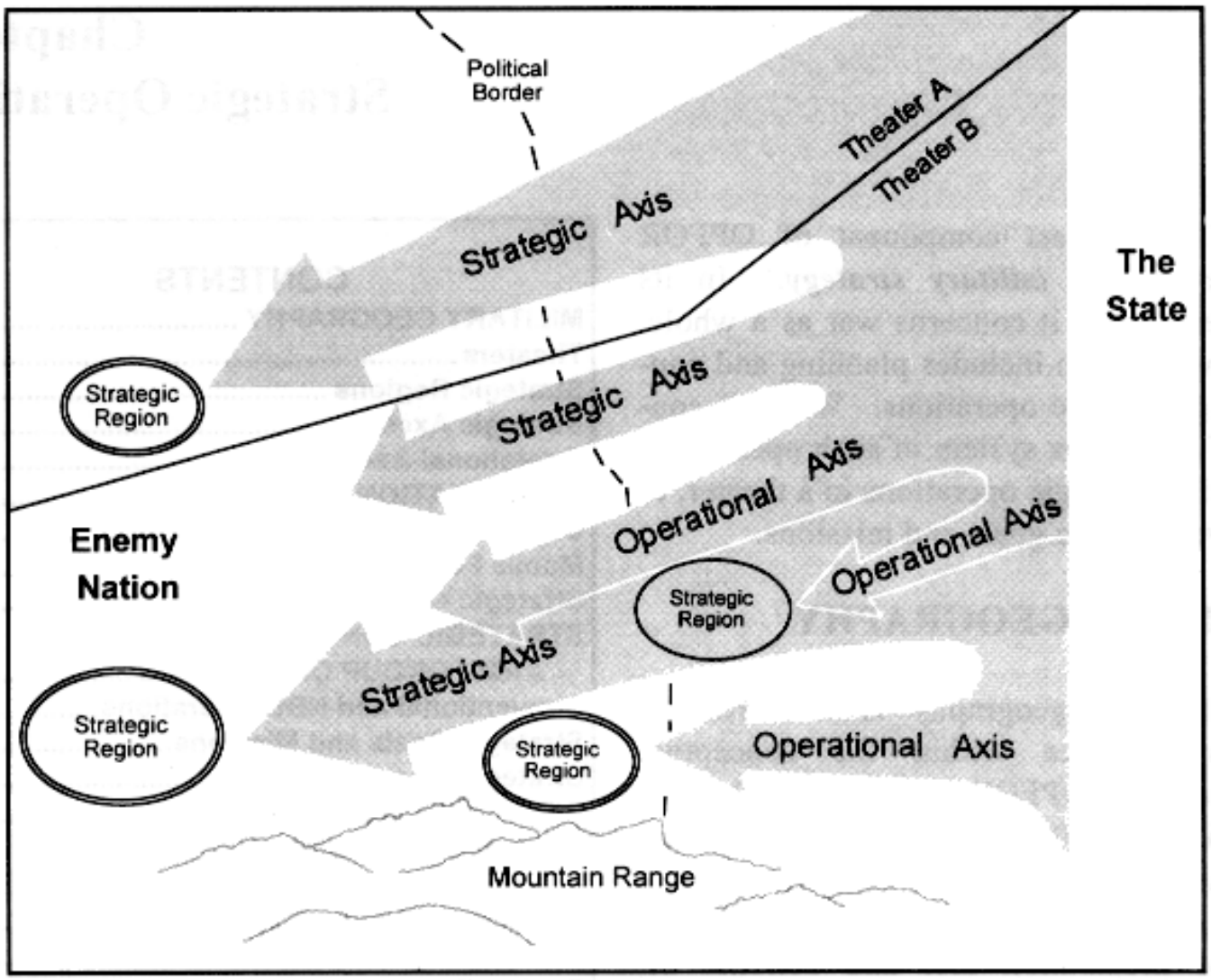

Figure 2-1. Military-geographical concepts.

Theaters

The broadest concept of military geography is that of the theater (sometimes called a theater of military operations). A theater is a geopolitical reference and strategic military territorial designation, but not necessarily a command echelon. Theaters are geographically distinguished as continental, oceanic, or intercontinental.[1] They are further classified by their significance as primary or secondary.

The OPFOR defines a theater simply as that particular territory within whose limits a known part of the armed forces of the State or coalition operates in wartime. Continental theaters include not only land masses but also airspace, inland waterways, and segments of surrounding oceans and seas. As military territorial designations, theaters have clearly

defined boundaries. However, theater boundaries do not always coincide with political boundaries; the theater may include enemy territory as well as State territory. A theater has political and economic significance that shapes military goals in the region and the strategy the state employs to achieve them.

A theater may include a military headquarters. If not, the General Staff or its designated agents (operations groups) would directly control operations in the theater. The theater concept allows OPFOR military planners to work out the strategy, operational art, and tactics to achieve political goals in a given geographic region. Planners should take into consideration the capabilities of the missiles, aircraft, ships, and ground forces at their disposal in that region. The forces in a theater receive specific strategic missions in wartime that contribute to the general strategic effort of the State's armed forces. Those missions determine the necessary force developments and deployments within the theater in peacetime. The forces in various theaters report through the General Staff to the Supreme High Command and the Supreme CINC. (See Chapter 7.)

The OPFOR sometimes establishes a theater headquarters to effectively centralize and integrate General Staff control over theater offensive (or defensive) operations. Headed by a theater CINC, such a headquarters serves as an intermediate command between the General Staff and the principal operational forces within the theater.

Strategic Regions

Strategic regions are isolated parts of a theater containing objectives of fundamental strategic significance. They might include the following:

- Missile, air, and naval bases.
- Major groupings of field forces.
- Major headquarters.
- Nuclear depots.
- Areas designated for the formation of strategic reserves.
- Logistic bases.
- Industrial, energy-producing, and administrative-political centers.

The occupation of hostile strategic regions, and the destruction of targets within them, can radically change the strategic situation within the theater. It can also alter the economic and political, as well as military, correlation of forces (COF).

Strategic Axes

Within a theater, the OPFOR might designate one or more strategic axes. A strategic axis is part of a theater. It is neither an equivalent expression of the same terrain nor an independent entity of forces. The strategic axis does not move, since it is not a force grouping. As a geographical control measure, it lies within the theater of which it is a component part.

A strategic axis incorporates a wide strip of land (or sea), contiguous coastal waters, and the airspace above it. This vast area contains major enemy groupings and vital strategic objectives. The destruction of such groupings and the occupation of such objectives is the goal of strategic military action. Like the theater, the strategic axis is a military-geographical term for terrain where operations may occur. It differs from the theater in that it designates not only the location of potential operations but also the general area of the objective.

A theater might contain one or several strategic axes leading to or including strategic regions. The strategic axis essentially leads the State's armed forces to the enemy's most important administrative-political and industrial-economic centers. A strategic axis involves the coordinated actions of large formations of the State's various armed forces: army groups, fleets, and strategic air armies. Planners must deploy sufficient forces along this axis to achieve the necessary COF for attaining the strategic goals.

Operational Axes

Military planners often divide strategic axes into operational axes. These are areas that lead to objectives of operational significance, such as major enemy groupings and/or political and economic centers that underpin the combat actions of operational forces.

Within a strategic axis, military planners designate one or more operational axes as the main axis, or axes, of advance. However, they may also establish operational axes (main attacks) in sectors of the theater outside the area designated as the strategic axis.

An operational axis is a zone of terrain, including contiguous coastal waters, and its airspace, within which an operational, or operational-strategic, force conducts its operations. Within the context of the theater in which they lie, operational axes may be internal or coastal.

ORGANIZATION

At the strategic level, the OPFOR maintains a three-tiered force structure consisting of covering forces, mobile forces, and strategic reserves. This structure allows the General Staff to respond flexibly to contingencies in any theater or strategic axis.

Covering Forces

Included in the first strategic echelon are the OPFOR's covering forces. These are high-readiness forces permanently located in various theaters near the State's borders. Some of these forces may consist of corps and separate brigades. These have less combat power than armies and divisions but, by virtue of their smaller size, are easier to maintain at high levels of readiness. These smaller formations may be adequate to deal with local, low-level conflicts in their immediate areas of responsibility. To deal with medium- or large-scale conflicts, however, they would require reinforcement from mobile forces and/or strategic reserves. Given sufficient warning time, it is also possible that the OPFOR could expand some of these brigades to full divisions and the corps to armies.

Mobile Forces

In each theater, the OPFOR also maintains mobile forces of two basic types: immediate-reaction and rapid-deployment forces. These forces come under the operational control of the General Staff as a powerful asset to deal with various contingencies.

Immediate reaction forces consist of a high-readiness strike force prepared to move at short notice to meet threats from any direction. For the sake of mobility, airborne forces form the nucleus of this strike force. Along with these, there may be some ground-force brigades (perhaps with helicopters for rapid transport), as well as naval infantry and special-purpose forces (SPF). These forces are the mobile forces only permanent assets.

Rapid-deployment forces consist of heavier ground-force formations held at secondary levels of readiness. These forces normally are not subordinate to mobile forces but, rather, to operational-force groupings of the ground forces in the various theaters. However, they can come under the mobile forces’ operational control for less immediate redeployment to other contingencies. Most of these forces maintain the structure of armies and divisions. However, those potential mobile forces assets in forward areas tend to be at lower readiness levels than covering forces.

Forces in the second strategic echelon are more likely to be at only cadre strength. During a period of crisis or the initial phase of war, the OPFOR may strengthen these units and deploy them to reinforce covering forces. Together with the latter, they should be capable of dealing with medium-scale, regional conflicts. In larger-scale conflicts, they should be able to at least buy time to allow the mobilization and deployment of strategic reserve forces.

Along with ready forces possibly redeployed from other theaters, rapid deployment forces constitute the OPFOR's second strategic echelon. Some rapid-deployment forces could also be part of the second operational echelon of the first-strategic echelon.

Strategic Reserves

Located in the OPFOR's strategic rear are the strategic reserves. These can form additional maneuver divisions by combining conscripts or reservists with equipment in storage depots. This mobilization process can take months. Therefore, it is important that it begin during the threat-of- hostilities period. Nevertheless, it is possible that a war could begin before mobilization and forward deployment of strategic reserves are complete.

STRATEGIC CONTEXT OF ARMY GROUP OPERATIONS

Army group-level commanders now have weapons whose ranges exceed the scope of army group operations. Conventional weapons with improved accuracy and lethality are approaching the destructive power of nuclear weapons. Thus, operational, and even tactical, weapons can reach and destroy strategic targets. The ability to collect timely intelligence on such targets is also increasing. Sharply improved troop mobility has decreased the time required to concentrate forces. It has also increased rates of advance. Modern communications allow the coordination of simultaneous operations by large numbers of complex forces. These trends are forcing a change in the level at which forces conduct operations. Army groups and other forces in a theater now conduct strategic operations to achieve strategic goals and missions.

Conventional and NBC Operations

Even though the OPFOR is a nuclear power, it would prefer for any war to remain conventional. The introduction of precision conventional weapons affords most of the advantages of nuclear weapons, but without such problems as contamination. If the OPFOR has numerical superiority in conventional forces in a particular theater, it would view nuclear escalation as unnecessary. It is unlikely that a nuclear exchange with the enemy could serve any political or military goals. For additional detail on OPFOR doctrine and capabilities for nuclear, biological, and chemical (NBC) warfare, see Chapter 14.

The OPFOR’s preference for a conventional war does not mean that it would forego the use of nuclear weapons in every case. There are two circumstances in which the OPFOR might choose to use nuclear weapons: to preempt an enemy nuclear attack or to defend the State if its political or territorial integrity are threatened.

Strategic Goals and Missions

Goal, in OPFOR terminology, refers to an overall aim, end, or purpose, which may be political rather than purely military. ***Mission***, on the other hand, refers to a specific task or objective set for the military. A task-type mission may call for the OPFOR to destroy, neutralize, disrupt, seize, or defend a particular entity. That entity may be political, economic, or military in nature. If political or economic, the mission may be a terrain-oriented objective. If military, the mission may be a line corresponding to the rear boundary of a particular enemy unit. The latter type of mission involves not only the seizure of the line, but also the destruction of the enemy in that zone.

Strategic Goals

A strategic goal is the specified end result of military operations on a strategic scale. The State's highest political and military leaders determine the strategic goal. Its achievement should substantially, sometimes radically, change the military-political and strategic situation and lead to victory in war. There are two types of strategic goals: general and particular.

General strategic goals. The general goal defines the desired end result of the war as a whole. Ideally, that amounts to a complete defeat of the enemy or enemy coalition. This involves the following conditions for victory:

- Survival of the State's political system.
- Defeat of an enemy's military forces.
- Limited damage to the State.
- Occupation of enemy territory.

Under other circumstances, such a victory may be military unrealistic or politically undesirable. Therefore, the declared strategic goal can simply be quick termination of the war and restoration of the status quo. That can still

constitute success, in terms of the State's national security interests. In either case, the Supreme High Command translates the State leadership's policy decision into a general goal. This overall strategic goal serves as the basis for orchestrating the particular strategic goals within a theater (or strategic axis).

Particular strategic goals. The particular strategic goal is the desired end result of a campaign or strategic operation. Within a theater (or strategic axis), the strategic goal determines the following:

- Force structure and size.
- Forms and modes of military operations.
- Strategic missions.

These goals, too, are under a single plan, which the General Staff controls on behalf of the Supreme High Command.

Strategic Missions

A strategic force consisting of army groups, armies, corps, and divisions of various branches of service conducts a strategic mission in the course of a war or strategic operation. The mission must conform with the strategic goal. Its accomplishment leads to a sharp change in the situation in a theater (or strategic axis).

Strategic Operation

The strategic operation in a theater has become the principal form of operation. It may include one or more of the following types of military action:

- Strategic offensive.
- Strategic defensive.
- Strategic counteroffensive.
- Strategic redeployment.

However, the counteroffensive occurs in connection with strategic defensive operations. (This chapter, therefore, discusses it under that heading.) Since the OPFOR may have only limited forces in a particular theater, it may need to mobilize and redeploy forces to a threatened area in order to build up a strong strategic grouping. It may also need to redeploy forces from other theaters to one where it plans a strategic offensive. Therefore, the General Staff has elevated strategic redeployment to the status of yet another form of strategic operation.

Participants

A strategic operation is the aggregate of interconnected operations by the combined arms forces in a theater. These forces may comprise--

- Several army groups.
- Strategic nuclear forces.
- Strategic air armies.
- National air defense forces.
- A naval fleet.
- Airborne forces.
- National space assets.

All of these act under a single unified plan and concept of operations, coordinated in aims, time, and area to achieve strategic goals and missions.

Goals

A strategic operation may be offensive, with the goals of liberating or seizing politically and economically important areas or destroying the main enemy forces, or it may be defensive, with the goal of repulsing the offensives of enemy force groupings and inflicting heavy casualties on them. The defense protects strategic regions, gains time, and creates

preconditions for mounting counteroffensives. It is possible for theater forces to simultaneously conduct strategic offensive and defensive operations. Whether offensive, defensive, or mixed, the focal point for operational-strategic planning is the theater, with army groups and other large formations executing operations within the context of the theater plan.

INFORMATION WARFARE

Information warfare (IW) is a fundamental component of OPFOR military operations in both the offense and defense. An integral part of every combat operation at all levels, IW is a significant combat multiplier.

IW occurs through the integration of its components. However, it is not necessary to employ all of them together, at all times. Likewise, using one element or sub-element, such as camouflage, does not, by itself, constitute IW. The size and sophistication of the OPFOR force determines the extent to which it employs the various components of IW. The armor- and mechanized-based OPFOR will use all of the components at one time or another. A less technologically-advanced force may not conduct operations relying on high technology, such as electromagnetic spectrum operations. However, it may effectively conduct deception, and protection and security measures to protect and influence the use of information.[2] What follows is a discussion of each of the six elements of IW.

Electromagnetic Spectrum Operations

Electromagnetic spectrum operations (ESO) deny the enemy's use of the electromagnetic spectrum, while retaining friendly use. The goal of ESO is to control the use of the spectrum at critical locations and times on the battlefield. To do this, the OPFOR employs both nonlethal and lethal measures. The OPFOR targets frequencies ranging from:

- Low-frequency radio waves used for communications and television transmissions.
- Microwave frequencies used by radar and high-capacity communication systems.
- Infrared and ultraviolet wavelengths used by rangefinders, designators, and thermal sights.

The OPFOR is developing means to extend capabilities into the x-ray and gamma ray frequencies, although there are no fielded systems now operating at these wavelengths.

ESO are a clear example of the integrated nature of IW operations. ESO overlaps significantly with protection and security, deception, and destruction. Electronic combat, reconnaissance, aviation, air defense, artillery, and engineer support may contribute to ESO.

Protection and Security Measures

Protection and security measures conducted as part of IW include:

- Cover, concealment, and camouflage.
- Reconnaissance and counterreconnaissance.
- Force protection.
- Information security.
- Secure use of information-collection and -processing systems.

Protection and security measures encompass a broader range of activities than the US concepts of operations security and force protection. Protection and security integrate elements of deception and ESO. Engineer fortifications that provide only protective cover from enemy fire are not considered part of IW.

Reconnaissance provides information critical to the planning process. Similarly, successful counterreconnaissance takes the initiative away from the enemy, while forcing him to react to the OPFOR's actions. The OPFOR uses signature-reducing and -altering devices, along with diligent application of operational security measures, to improve survivability. The OPFOR considers the protection of sensitive information a national priority. The types of information considered sensitive by the State include military, scientific, economic, and political data.

Deception

The State considers deception a legitimate part of competition and integrates it into many aspects of society. There is no cultural aversion to its use. Deception measures are a part of every military operation, and are also used to achieve political and economic goals. The OPFOR applies all forms of deception in support of operations. These range from physical and electronic devices to operational activities. Because of the number and sophistication of sensors available to the enemy, a multispectral effort is required to deceive him. This includes providing false or misleading thermal, visual, and electronic signatures.

Destruction

The OPFOR may integrate all forms of destructive fires, especially artillery and aviation, with other IW activities. The increased accuracy provided by precision weapons allows the OPFOR to strike at specific IW-related targets rapidly and accurately.

Computer Warfare

Computer warfare includes a variety of activities, ranging from unauthorized access ("hacking") of information systems, to the insertion of destructive viruses and deceptive information into enemy computer systems. The OPFOR can do this through human agents with direct access to enemy information systems. It can also access systems at great distances via communications links such as the Internet.

The OPFOR uses its own information systems to pass misleading or false information in support of deception operations. Such information may cause the enemy to analyze incorrectly OPFOR capabilities and intentions. The inherent risk in this type of activity is the potential for such misinformation to be used by other OPFOR elements, without knowledge of its inaccuracy.

Computer warfare operations conducted in peacetime or prior to the outbreak of hostilities can affect later military operations. For example, by accessing information about the enemy’s projected troop movements, the OPFOR can disrupt or even halt enemy deployment. Altering this same information supporting an enemy’s deployment could produce substantial confusion.

The enemy relies heavily on computers and supporting communications links down to the tactical level. The development and fielding of unmanned aerial vehicles and robotic ground vehicles, along with the computerization of weapons and miniaturization of components, are evidence of this. The growing enemy use of computers at the tactical level is causing the OPFOR to develop increasingly sophisticated means to attack these systems.

Perception Management

The OPFOR integrates several widely differing activities with the goal of creating a perception that furthers OPFOR objectives. The OPFOR uses a combination of true, false, and misleading information. Enemy or foreign audiences, as well as its own public, may be targets.

Psychological warfare, and propaganda are major parts of perception management during military operations. They are conducted to influence the attitudes, emotions, and will of the enemy. The goal is to induce or reinforce attitudes and behavior favorable to the OPFOR.

Diplomacy and public affairs can be used for perception management in both peace and war. Diplomacy is the art and practice of conducting negotiations with other nations. The State employs public affairs and censorship to control its own people’s access to information. While not targeted against an external enemy, successful preparation of the State’s population can enhance public support for military operations. In addition to conducting IW operations, the State prepares its own soldiers and population for enemy military and information operations.

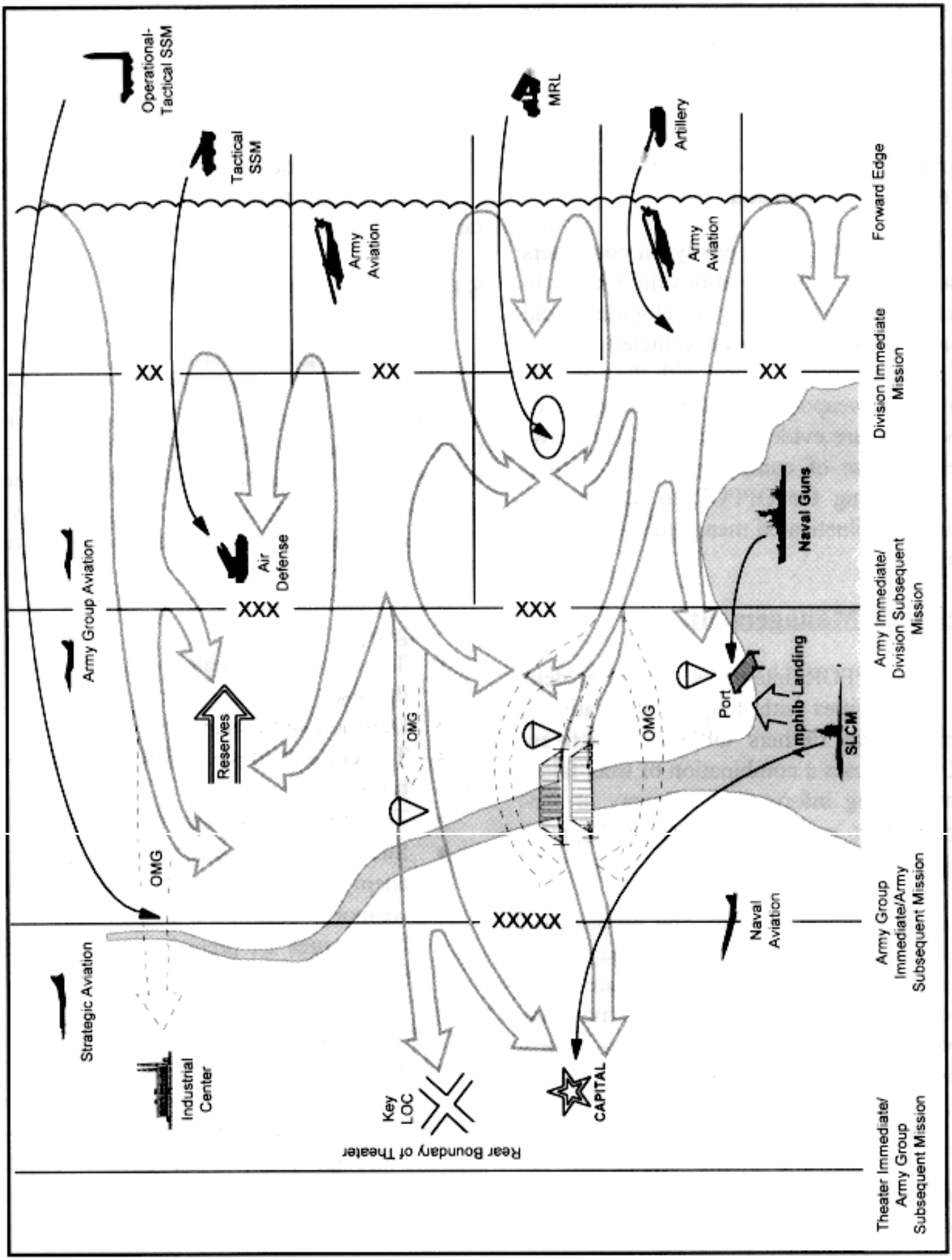

Figure 2-2. Strategic offensive (distances and targets are scenario-dependent).

STRATEGIC OFFENSIVE

The strategic offensive is a military activity conducted to achieve strategic goals. A successful strategic offensive should result in the total defeat of enemy armed forces, the neutralization of enemy military-economic potential, and the seizure of enemy territory. Plans and preparations for such an offensive should ensure--

- A continuous and rapid advance to a great depth.
- The successful breakthrough of enemy defenses.
- Dependable fire support.
- The conduct of successful deep operations.
- The rapid exploitation of success.
- Successful countermeasures against enemy reconnaissance and strike weapons. (Particular targets for countermeasures are precision conventional weapons.)

An OPFOR strategic offensive in a continental theater consists of several joint and combined arms operations. (See Figure 2-2.) The goal is to conduct simultaneous deep operations throughout the theater sector. These operations conform with a single concept and the Supreme High Command's plan.

In a continental theater, major component operations of a strategic offensive may include the following: long-range fire strike, air defense, army group, airborne, naval, and amphibious. The strategic offensive also might include missile- and air-delivered nuclear or chemical strikes. The OPFOR might execute all or selective combinations of these operations. The developing military and political situation determines the particular selection. It may also cause the subsequent repetition of the various operations.

Long-Range Fire Strike

What was previously essentially an "air operation" has become a component of a long-range fire strike phase, including the actions of all deep-strike systems (air-, sea-, and ground-based).[3] The long-range fire strike comprises the aggregate combat activities of all branches of aviation in coordination with other services of the armed forces. This operation is a massive, joint activity on an operational-strategic scale that would include the following:

- Air strikes by strategic, army group, and army aviation and, possibly, naval aviation.
- Fire strikes by artillery, surface-to-surface missiles, and air- and sea-launched cruise missiles.
- Troop strikes (raids) by airborne, heliborne, and SPF and by ground forces raiding detachments.
- Electronic fire strike by electronic combat assets and reconnaissance-strike complexes.

The goals of the long-range fire strike are--

- Disruption of enemy mobilization and deployment.
- Destruction of the enemy's precision weapons capability.
- Establishing air superiority within the theater by destroying or neutralizing enemy air defense and air forces.
- Disruption or destruction of the enemy's military C^2.

The long-range fire strike phase may dominate the initial period of war. Its emphasis is on the enemy's precision stand-off systems. The OPFOR envisions the fire strike as lasting several days or even several weeks; the length depends on enemy force capabilities and actions. It could involve two or three massed strikes on the first day and one or two on subsequent days. Alternatively, the OPFOR may conduct sustained strikes spaced over weeks. The long-range fire strike has increased in scope, from an operation to destroy high-priority targets to assist the commitment of ground forces, to an operation that can ***decisively defeat the enemy***. Although this theoretically can occur simultaneously with ground forces operations, the latter may not begin until a subsequent period of war, if needed at all.

Fire Strikes

The long-range fire strike operation might begin with strikes by artillery and operational-tactical SSMs from army group ground forces. These fire strikes would suppress time-critical enemy air and air defense activities and strike high-priority targets. Such strikes employ precision, conventional, and possibly, chemical munitions. This would be a preemptive massed attack. Although in some cases, the availability of precision weapons might reduce the requirement for massed forces. A single precision weapon, properly employed, might do the work of large amounts of conventional ordnance.

The OPFOR would then conduct a sustained assault on enemy air defenses and the infrastructure supporting its air forces. The assault would systematically destroy enemy airfields, including runways, facilities, and aircraft on the ground, with forces making every effort to bring enemy fighters to battle in disadvantageous circumstances. The fire strikes would also target C^2, reconnaissance and target-acquisition systems, and precision weapons. These targets equate to the enemy's reconnaissance-strike complexes.

Air Strikes

The air portion of the operation employs penetration corridors in the hope of reducing aircraft losses. Electronic combat assets attempt to "blind" enemy air defense radars and associated communications; then, missiles and aircraft can destroy the air defense systems.

The first mission of army group and army aviation assets is to open corridors through enemy ground-based air defense already under attack by artillery and missiles. Subsequently, these aviation assets can prevent enemy aircraft from moving into such corridors, or enemy air defense from firing into them.

Fighters and fighter-bombers attack selected airfields and key C^2 points throughout the depth of army group aviation. The Supreme High Command can allocate strategic aviation assets to the operation to constitute the "shock" force; this force includes bombers, fighter-bombers, and fighters. Along coastal axes, naval aviation can take part in the operation as far as possible; it can also target enemy aircraft carriers in the theater.

Troop Strikes

As part of the long-range fire strike, the OPFOR employs battalion-size airborne and heliborne raiding detachments against enemy air, precision weapons, and air defense assets, along with associated C^2 assets, at the operational depth. However, small SPF teams also conduct raids against the same categories of targets, throughout the entire depth of the theater. In addition, army group ground forces can conduct spoiling attacks and raids into the enemy's deep rear areas. All this, combined with air and fire strikes, can create favorable conditions under which army groups can quickly accomplish their missions.

Electronic Fire Strikes

The electronic fire strike combines EC with RSCs to destroy or neutralize, electronically and by fire, priority targets throughout the entire depth of the enemy's force. The electronic fire strike is an integral component of the long-range fire strike. It consists of surprise, massed, continuous strikes by missile, aerospace, electronic, and naval assets. It typically begins with a surprise air attack and continues simultaneously with fire strikes by long-range, precision, stand-off weapons. However, the EC portion can also be preemptive, with the aim of disorganizing civilian and military C^2. Thus, the electronic fire strike permits not only seizure of the strategic initiative, but also disruption of the enemy's strategic deployment.

Expected Results

A successful long-range fire-strike operation results in overall strike superiority in a theater. Its preemptive strikes disrupt or destroy the enemy's ability to conduct air strikes, precision weapons attacks, or other conventional fire strikes. It is possible, although unlikely, that this phase could result in the enemy’s decisive defeat, without the initiation of major ground force operations.

If ground operations are necessary, their success depends on a favorable air situation. At the least, the OPFOR needs air superiority at the time and in the area of its choosing. Without this, airborne and all but the shortest-range heliborne operations become exceedingly hazardous or impossible. Forces operating in the enemy rear can be quite vulnerable to air attack and thus have limited effectiveness. Without air superiority, the OPFOR cannot inhibit the ability of enemy reserves to maneuver and create new, in-depth defense zones. Likewise, it cannot effectively engage enemy deep-strike precision systems and higher headquarters. At the same time, failure to severely limit the enemy's strike capacity can leave the OPFOR's follow-on echelons vulnerable to interdiction.

Air Defense Operations

Air defense operations focus on defending friendly forces and contributing to air superiority. (See Chapter 11 for more detail.) The emphasis depends on whether or not the OPFOR has already been able to seize the initiative in the air and decimate enemy air power. The primary method of achieving this is through the long-range fire strike. If that operation succeeds, the air defense operation can focus on defensive actions to protect friendly forces and installations from the enemy's remaining air capability. However, the failure of the long-range fire strike operation to achieve the knock-out blow means that the OPFOR may not yet hold the initiative in the air. Then its immediate priority in the possibly prolonged air defense operation may be to provide friendly forces freedom of movement; simultaneously, it may try to cause maximum attrition of enemy air and air defense assets. The protection of friendly forces from air attack is obviously crucial to the success of both army group and air offensive operations.

Participants

In the air defense operation, the OPFOR attempts to gain the initiative through combined offensive and defensive actions of the following forces:

- Army group aviation.
- Ground-based air defense assets of ground forces.
- National air defense forces.
- Air defense elements of other branches of the armed forces.
- Naval forces.

This coordinated operation of offensive and defensive forces should include attacks both against aircraft in the air and against their bases.

Missions

The air defense operation combines all ground- and air-based air defense assets in any theater under a single concept and plan within the context of the strategic operation. The range and flexibility of enemy air power requires this unification of theater assets. It provides protection for--

- Aircraft and missile systems conducting the long-range fire strike.
- Ground maneuver forces striving to rapidly penetrate into enemy territory.
- OPFOR tactical nuclear weapons.

It would also protect lines of communications and friendly air bases throughout the theater.

Echelonment

Initially, an air defense operation consists of two echelons: the air and air defense units of the first-echelon army groups and air defense forces protecting the rear area. As first-echelon army groups advance, they can create gaps the enemy can exploit to attack follow-on forces. Therefore, the OPFOR may have to organize an additional air defense echelon to prevent the development of gaps in the rear. This can involve theater resources with a mix of aviation and ground-based air defense systems. National air defense forces ensure continuity of air defense behind the first-echelon army groups.

Army Group Offensive Operations

Single or multiple army groups conduct the ground maneuver portion of the strategic offensive operation in a theater. (There is a separate section later in this chapter devoted to multi-army group operations.) (See Chapter 4 for a more detailed discussion of offensive operations from the perspective of individual army groups.)

In a continental theater, army group operations are the most important element of a strategic operation. Only ground forces can hold, or seize, and then retain ground. In the offensive, army groups advance rapidly. Their goal is to destroy major enemy groupings and seize critical economic and political objectives within the first few days of the war.

Other Components

The OPFOR intends to make extensive use of airborne and seaborne landings within a strategic offensive in a continental theater. It considers the vertical envelopment to be an indispensable maneuver in modern offensive operations. Naval and amphibious operations may be of lesser, but not insignificant, importance. On coastal axes, the OPFOR would use amphibious landings in conjunction with airborne raids.[4] It targets these raids against deep theater-strategic objectives and against shallower operational objectives directly supporting the advance of army groups and armies.

Raids on strategic targets normally take the form of joint operations. They involve the forces of several arms and services under a single commander. In a coastal region, strategic operations probably involve amphibious and airborne forces supported by naval surface combatants and by aircraft of the navy and air forces. Elements of ground maneuver forces airlanded or sealanded in the objective area can also quickly reinforce such operations. Missions for such strategic airborne or amphibious operations include the following:

- Seizing important enemy administrative-political centers and industrial-economic regions.
- Disrupting enemy governmental and military C^2 systems and centers.
- Seizing important maritime straits, forcing the enemy to fight in two directions.
- Forcing selected governments of the enemy alliance to withdraw from the war.
- Allowing the use of these coastal regions as bridgeheads for further operations in the continental heartland.

Airborne Operations

The use of airborne assets in support of army group operations is likely, at least initially. Their purpose is to help generate operational maneuver and maintain momentum and to help destroy key enemy groupings. However, it is possible that the OPFOR may use some airborne operations at the outset to accomplish theater objectives. (See Chapter 16 for more detail on airborne operations.)

Naval Operations

A naval operation using surface ships, submarines, aircraft, and naval infantry can be an integral part of the strategic offensive in a continental theater. Missions of this operation can include the following:

- Destruction of enemy naval offensive forces at sea.
- Neutralization of enemy naval forces in their bases.
- Bastion defense of strategic naval forces.
- Defense of sea lines of communication.
- Protection of the theater’s coastal flank from attack by enemy naval and amphibious forces.

The naval component can also support missions ashore by participating in amphibious operations and providing naval gunfire, air defense, and logistic support to land operations. Submarines can also launch cruise missiles. All of these actions probably fall under the immediate control of the General Staff (or a theater headquarters, if established).

Amphibious Operations

An important principle of OPFOR military art is the insertion of forces into the enemy rear areas to disrupt the stability and cohesion of the defense. Amphibious landings are one means of achieving this object during operations on a coastal axis.

Categories of amphibious landings. The OPFOR categorizes amphibious landings according to their scale. These categories are strategic, operational, and tactical. However, landings in operational or tactical categories may have repercussions at higher levels. Special category landings include reconnaissance and sabotage landings. A landing may also have secondary missions, such as coastal defense.

Strategic amphibious landings can support theater forces in opening up a new area of military operations. The aim is to exert a decisive influence on the course of the war as a whole. They call for the employment of a multidivision force, with appropriate naval and air support. Because of modern surveillance means, only shorter-range landings conducted during hours of darkness have a chance of achieving the surprise that is critical to success. Just the logistic support required for a landing by a corps or larger force is reason for the OPFOR to continue to favor smaller-scale, shallower landings. Lacking experience but strongly aware of the complexity and difficulty of a strategic amphibious operation, the OPFOR is unlikely to try it in war. Therefore, it is only likely to mount limited operational and tactical amphibious landings.

Even ***operational amphibious landings*** are risky; the OPFOR certainly would not attempt them outside the range of land-based air cover and support. Landings of this scale may entail the landing of a naval infantry brigade as the first echelon.

The second echelon, consisting primarily of mechanized infantry troops, follows as the main force. The aim is to help ground or naval forces in a coastal region surround and destroy enemy ground or naval units in that area. Another aim may be to execute a major encirclement against an enemy flank resting on a seacoast. Other possible missions include seizing major islands or a group of islands, maritime straits, naval bases, and other important coastal objectives. Thus, it is possible for an operational amphibious landing to have major strategic consequences.

Tactical amphibious landings probably are the most frequent form of OPFOR amphibious operation. Their purpose is to strike at the rear area or flank of any enemy force along a coastline or to seize islands, naval bases, coastal airfields, ports, and other objectives on an enemy-held coastline. This diverts enemy attention and resources away from the decisive area of the battlefield. The naval infantry force can be a battalion or larger, operating independently or with ground force units. Tactical landings normally reach up to 50 km or so into the enemy rear.

In the offensive, tactical amphibious landing forces can seize bridges or road junctions near the coast and hold them until the arrival of the main land forces. Such landings can stop or delay enemy reinforcements or cut off his line of retreat. They may also help to maintain the tempo of the OPFOR ground forces' advance, or they can be for deceptive purposes. Thus, landings that are tactical in scale may nevertheless have important operational repercussions.

Reconnaissance and sabotage amphibious landings are in a special category. Seaborne raids may perform the multiple functions of--

- Conducting reconnaissance.
- Damaging or destroying high-value installations located near a coast.
- Disrupting the enemy's C^2 and/or logistics.
- Tying down substantial numbers of enemy troops in the defense of long, vulnerable coastlines.

The naval infantry force employed normally consists of a battalion, company, or platoon. Sea-delivered SPF teams may also perform deep reconnaissance tasks of operational or strategic importance.

Conduct of amphibious landings. The preference for smaller-scale landings reflects the limited and subordinate role amphibious landings play in OPFOR thinking. Also, the OPFOR does not use its naval infantry in exactly the same way as others use their marines. For the latter, the seizure of a beachhead is often merely a prelude to extended action ashore. The OPFOR, by contrast, generally intends to use its specialist troops only to secure a beachhead (and perhaps to raid inland). Any buildup of effort is by ordinary mechanized infantry units, with supporting artillery and staying

power. The OPFOR withdraws naval infantry from combat as soon as possible to keep it available to ensure the success of subsequent landings. This, along with coastal defense, is the primary role of OPFOR naval infantry.

An amphibious landing takes on a combined arms character. No amphibious landing can be successful unless there is at least temporary air and naval superiority. A heavy fire preparation is also necessary to suppress all but the weakest of enemy defenses. Naturally, much fire is air-delivered, including using helicopter fires in an accompaniment role. Also, the main forces' long-range artillery may be able to provide support for shallow landings.

For successful amphibious and supporting air landings, the OPFOR must have an accurate picture of what enemy land, air, and naval forces are in range to intervene. Intensive intelligence-gathering always precedes the landing.

An airborne or heliborne landing precedes or accompanies any important amphibious landing. If the amphibious landing is to be small in scale and shallow, a heliborne force may suffice. However, a major deep landing probably requires the aid of an airborne drop. These air-delivered forces may either seize a beachhead or port, interdict the approach of enemy reserves, or attack important strongpoints from the rear.

Naval infantry units constitute the first echelon of any operational-level amphibious operation. They have responsibility for breaching antilanding obstacles in the water and on the shore, for seizing a beachhead, and for securing the approach of the main force to the landing area. Once ashore, naval infantry units employ standard OPFOR tactics as they fight their way forward to link up with supporting air-landed troops. These troops often land 1.5 to 2 km from the beach, about 15 minutes before the amphibious assault. Their immediate mission is the establishment of a line to provide protection for the landing and deployment of second-echelon forces. The first echelon also receives an axis of further advance (as well as the overall objective of the landing).

When the naval infantry secures a beachhead, mechanized infantry units land in the second echelon. At that point, they take over the battle. They normally replace, rather than reinforce, the assault force, even if the latter has taken only light casualties. Thus, the naval infantry remains available to spearhead additional landings.

As pointed out, the OPFOR expects to commit mechanized infantry units through a secure beachhead to perform combat missions inland. However, these units may share in the assault landing role as well. If so, the OPFOR recognizes the need for at least a degree of special training. Mechanized infantry units may have attached naval infantry personnel to help overcome the special problems of an assault landing.

MULTI-ARMY GROUP OFFENSIVE OPERATIONS

Normally, the combined actions of several army groups are necessary to achieve the main strategic missions in a theater. One or more other army groups may also act on secondary sectors in support of the main strike or in deception (dummy) attacks. Some army groups, or even entire theaters, may adopt a defensive posture in economy-of-force missions to allow a buildup of forces in another, main theater. The OPFOR can only build a single strong grouping within one theater capable of conducting a strategic offensive.

The OPFOR's current goal is to plan and conduct strategic operations consisting of simultaneous army group operations. Ideally, each army group should be able to conduct two or more successive operations with brief pauses or even without pauses. This more effective method allows army groups to achieve deeper missions. However, the depth of operations still depends on the nature of enemy defenses.

Control

Where present, theater headquarters not only improve control, they also permit greater flexibility in responding to situational changes within key theaters. They can also improve the OPFOR's capability to conduct theaterwide operations consisting of simultaneous army group operations of more extensive depths and integrated complexity.

Commander's Concept of Operations

The concept of operations reflects the content of the Supreme High Command's strategic decision. To achieve strategic aims, it is necessary to accomplish a large number of tasks, either simultaneously or successively. The commander's

concept defines the tasks and the methods for their execution.

Strategic Missions

The general political goals of the war determine the particular goals and concept of strategic operations within a theater. Military considerations are always subordinate to political goals. Military considerations include the COF as well as the military geography in the theater. Political influences are paramount in selecting areas of military action and the methods and sequence of inflicting losses on military groupings and attacking targets in the enemy's depth.

In conducting a conventional strategic offensive operation, a theater may receive limited, but strategically significant, missions. The overall goal is to fundamentally tip the balance against the enemy. The seizure of territory is often of great importance to alter the COF between opposing sides. The following paragraphs highlight the most common missions.

Seizure of key political and economic centers. Planners should identify the economic and administrative centers that contribute to the enemy's military and political ability to wage war. These geographical objectives determine what territory the OPFOR must seize and by when. Seizing key centers can disrupt the enemy's political control and the materiel support of his armed forces. It can also cause a collapse of political will in an enemy coalition, driving at least some smaller, more-vulnerable members out of the war. Thus, it can alter the COF and worsen the enemy's strategic situation.

Destruction of enemy military groupings. Planners must identify enemy major groupings and decide which to destroy, in what sequence, and by what forms of operations. Political calculations and the varying degrees of readiness and combat power of enemy forces often determine these decisions. The OPFOR singles out for destruction the enemy’s reconnaissance-strike capability and one or more of his key operational-strategic groupings. Their elimination could make the position of other forces untenable and bare key geographical objectives to attack.

Disruption of enemy mobilization and deployment. The OPFOR must prevent, or at least delay, the full mobilization and deployment of enemy forces. Foiling mobilizations, both military and economic, is vital against a coalition with superior potential for waging war. The importance of this task is such that it can have a great influence on the timing, form, and objectives of operations.

Choice of Axes and Echelonment

The attacker must exploit the initial surprise with a strike conducted without pauses in a critical area or areas. The strike must be of sufficient weight and the advance of such high speed, that the enemy cannot recover his balance and establish an effective defense before the OPFOR has attained the strategic objective. Thus, the most important part of a commander's concept of a strategic offensive operation is the selection of those axes of advance and forms of operation likely to yield a quick decision. He must choose those which should destroy the enemy's willingness and/or ability to continue the war. The second most important decision is on the organization for combat, that is, the strength of the attack and depth of echelonment in the selected strike sectors.

The need for concentration to achieve the COF required in main strike sectors limits the number of axes the attacker can use simultaneously. The result might leave long secondary sectors, in which supporting attacks only reach into the enemy's tactical depth, for the purposes of fixing and deception. Other sectors may have to be purely defensive.

Forms of Strategic Offensive

There are two basic types of strategic offensive action. The first is the encirclement and consequent destruction of the main enemy grouping. This is in conjunction with simultaneous thrusts into the enemy's depth to attain geographical objectives. However, an attack across a broad frontage on multiple axes can split the defense into isolated fragments. The choice of form depends on specific conditions at a particular time. Therefore, commanders must have plans to transition from one form of action to another.

Encirclement

Historically, encirclement has been an important method of destroying major enemy groupings. It offers decisive operational and, often, strategic results. Encirclement currently remains a possible form of operation in conventional conditions, although new weapons capabilities have forced some modifications. The vulnerability of the encircling forces and second echelons to enemy precision weapons may decrease the viability of encirclement. The OPFOR identifies six forms of encirclement. (See Figure 2-3.)

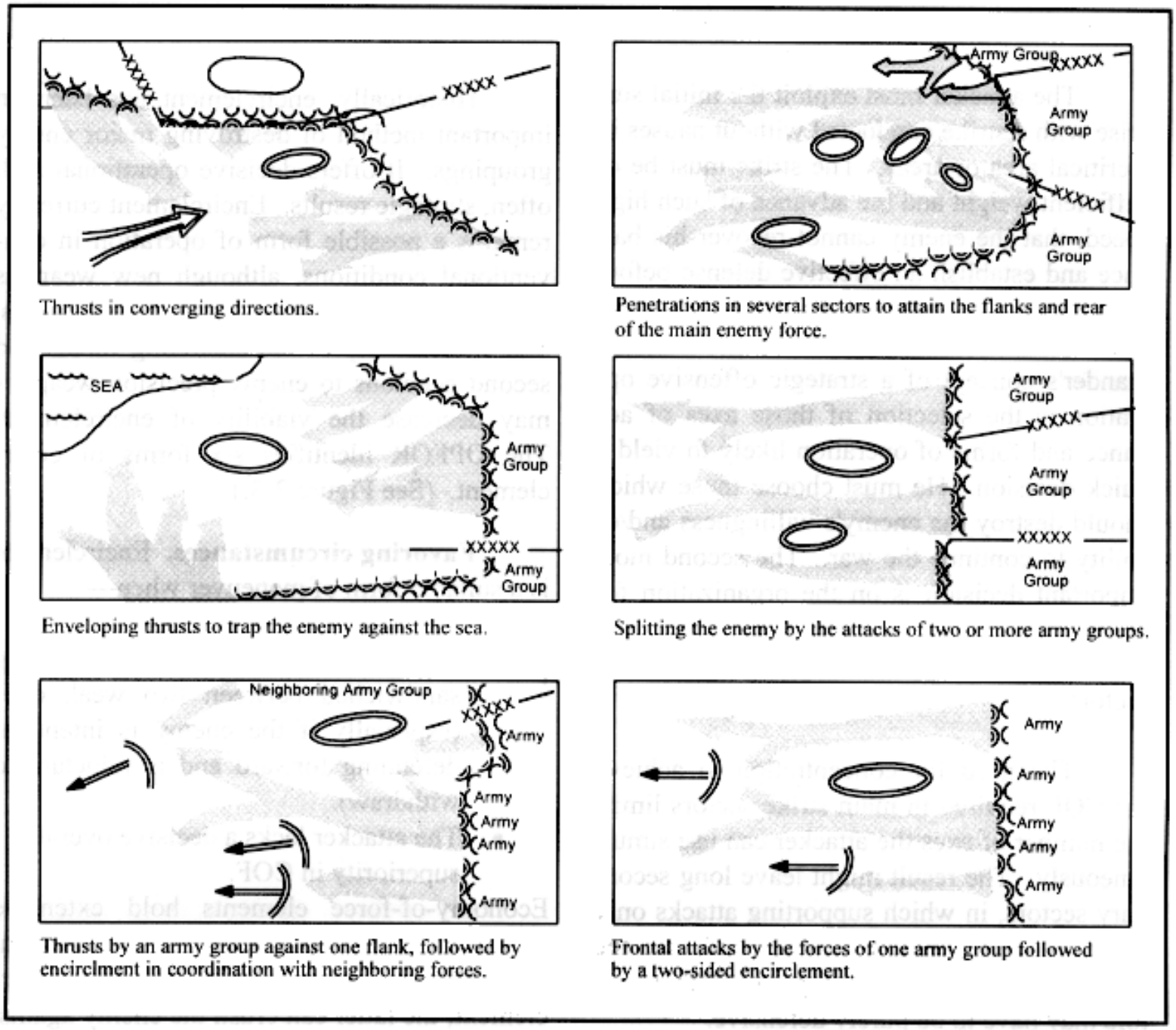

Figure 2-3. Forms of encirclement.

Favoring circumstances. Encirclement is a suitable form of maneuver when--

- The enemy is in a salient.
- The enemy has a strong force grouping sandwiched between two weak ones (especially if the enemy is intent on defending forward and is reluctant to withdraw).
- The attacker lacks a decisive overall superiority in COF.

Economy-of-force elements hold extensive secondary or defensive sectors while powerful concentrations are in the pincer arms of encirclement; the latter can crush the enemy against a major obstacle that precludes his withdrawal. Encirclement is an attractive form of maneuver because its success ensures the annihilation of the enemy grouping. The trapped forces do not have the opportunity to withdraw and live to fight another day.

Requirements for success. Essential to success is the correct ***choice of axes***. First, it is important to identify the enemy's main grouping. The destruction of this grouping can destabilize the entire strategic axis. Then, the aim is to penetrate on vulnerable sectors (on boundaries between units, through weak groupings, or at the base of a salient) and advance rapidly.

The OPFOR recognizes that the fastest route can be over difficult terrain that is accordingly ill-defended. Advancing forces must resist the temptation to seize desirable geographical objectives at the expense of tempo and concentration. They must bypass isolated groupings they cannot overrun. With the enemy main force destroyed, they can take geographical objectives quickly and mop up any bypassed forces.

A large overall operational superiority is not necessary. However, deeply echeloned strike groupings in the pincers must attain a ***decisive COF superiority*** over the defense in order to--

- Deliver a powerful initial blow to rapidly penetrate the enemy’s tactical zone of defense.
- Thereafter maintain momentum into the operational depth to complete the encirclement.
- Deliver strong attacks into the encircled grouping from flanks and rear while maintaining a favorable force ratio on the principal axes throughout the operation.

Speed is all-important. It is essential to keep the enemy off balance throughout the operation and allow him no time to stabilize the situation.

Surprise is usually crucial to encirclement. Deception, including feint attacks, can conceal intentions and the strength of the concentration on the strike sector. This is especially important if the enemy has a shorter distance to withdraw to escape encirclement than the pincer arms have to travel. A rapid advance, of course, has a surprising and paralyzing effect.

It is necessary, in advance, to create inner and outer ***arms of encirclement***. Both pincer-like arms should be active and fast-moving.

The inner arm completes the encirclement, preventing any breakout. It may receive assistance from air-delivered forces, working in combination with forward detachments and operational maneuver groups (OMGs), to cut withdrawal routes. It must start to destroy the target grouping even before the encirclement is complete. It can launch splitting attacks to divide the enemy grouping into fragments for destruction in detail. Any pause gives the enemy time to prepare an all-around defense that might greatly slow the completion of his destruction.

The outer arm of encirclement presses on into the enemy’s depth, widening the gap between encircled and relieving forces. Ideally, it destroys enemy operational reserves in meeting engagements, retaining the initiative. If, however, the enemy is too strong, it may have to transition to defense on a favorable line. The outer arm, too, may receive help from air-delivered forces. The latter can block the movement of enemy reserves and seize key defiles or obstacle crossings on which the enemy could, with time, establish a new defensive line. Past experience suggests that approximately half the force should usually be in each arm of encirclement.

Flank security for strike groupings is vital. Security can be provided by the concurrent advance of flanking forces (especially when the defending enemy, being outflanked, must withdraw from prepared positions). In other instances, it may require the formation of flank security detachments working with mobile obstacle detachments.

Encirclement operations require careful organization of ***command and control***, especially if two or three army groups are participating. Decisions on this lie with the General Staff (or theater headquarters), which corrects army group plans as necessary and issues coordinating instructions. Changes often occur during the course of an operation. For instance two army groups might participate in attacks on both inner and outer arms of encirclement, thus impeding cooperation between the two army groups. Sectors have to come under unified command, often changing the

subordination of forces. The General Staff (or theater headquarters) also has to be ready to alter plans if the operation does not develop as foreseen by shifting axes or emphasis, for example.

Air superiority is essential. Air cover and support are vital to the rapid progress of both army groups of encirclement. Air power can--

- Establish an air blockade of the encircled grouping.
- Engage enemy reserves in the interests of the outer arm of encirclement.
- Help with the destruction of the encircled forces.

Ground forces raids or airborne and heliborne seizure of airfields can materially aid a vigorous long-range fire-strike operation.

Attack Across a Broad Frontage on Multiple Axes

In this form of offensive, strong frontal thrusts deliver separate strikes on two or more axes right through to the depth of the enemy's deployment. Powerful initial strikes on several axes create considerable breaches and split the enemy's defenses into isolated, noncohesive parts for subsequent destruction in detail. The OPFOR can concentrate these splitting attacks and use their timing and sequence to deceive the enemy as to the main effort.

Enemy forces outflanked by the penetrating force may stay put, defending forward. If so, the OPFOR can envelop or encircle them. If they attempt to withdraw, a mixture of frontal and parallel pursuit can destroy them. Once enemy forces start to withdraw, the width of the OPFOR advance grows; forces previously on defensive sectors transition to the offense against enemy forces leaving prepared positions and pulling back. These transitioning OPFOR forces conduct the frontal pursuit, slowing the enemy. Meanwhile, forces on main attack axes execute parallel pursuit to destroy retreating enemy forces in flank attacks.

Favoring circumstances. An offensive on multiple parallel axes is suitable when--

- The OPFOR’s use of precision or NBC weapons obviates the need for concentration for one large penetration to destroy the defense in the tactical zone and to open the way for deep exploitation thrusts by ground forces.
- The enemy possesses significant numbers of long-range, precision weapons that threaten the encircling groupings.
- The OPFOR enjoys such an advantageous COF that it can achieve decisive superiority on several axes simultaneously.
- The OPFOR enjoys operational surprise.
- When neither enemy deployment nor the terrain favors encirclement, that is--
    - Where there is no salient to exploit.
    - Where the OPFOR has to launch attacks from bridgeheads.
    - Where the enemy's strength is evenly distributed along his frontage with no especially weak points.
- The OPFOR has a linear objective to reach on a wide frontage (for example, seizing multiple bridgeheads over a major river).
- The enemy commander appears to be indecisive.

Advantages. An offensive on a broad frontage is in many ways the most dynamic form of operation. It confers several major advantages:

- ***Maximum pressure*** across a broad frontage can prevent the enemy from stripping secondary sectors to reinforce the defense on the principal axes or to create new reserves.
- ***Multiple threats*** make the enemy's decision as to where and when to deploy operational reserves vastly more difficult. This may cause his decision to be too early, with commitment on the wrong sector, or too late, when the offensive has already achieved momentum and width. The enemy is also unable to maneuver his reserves freely in lateral directions.

- ***Flexibility*** is on the side of the attacker. The OPFOR has more options for switching emphasis from one axis to another.
- ***Breaching subsequent defense lines*** on a wide frontage can complicate the defender's efforts to stabilize the situation. It is less a matter of plugging gaps than stemming a flood.
- ***Surprise*** (or at least partial surprise) is often easier to achieve when attacking on a broad army group front.

Requirements for success. The choice of axes is vital. It is essential to correctly identify the enemy's main grouping. The disruption, destabilization, and consequent destruction of this main grouping can compromise the entire strategic axis. It is also important to identify the axes that lead to such paralyzing dislocation.

As in encirclement, ***speed*** is all-important. A quick penetration can shatter the stability of the defense. A rapid advance can keep the defender off balance and prevent him from establishing deep defense lines. All this requires strong strike groupings on the principal axes, generally with two echelons at army group level. This should ensure the maintenance of a favorable force ratio in the enemy's depth, despite casualties and the need to deal with bypassed or encircled groupings. The OPFOR also intends to penetrate deep defense lines from the march before the enemy can properly defend them; this is a task well-suited to air-delivered forces, forward detachments, and OMGs.

Surprise is crucial. Surprise as to the weight of the strike, the scope of the operation, and the axes employed is quite sufficient. Even when attacking out of bridgeheads, the OPFOR can achieve surprise as to which is the main axis.

The ***logistics system*** must have the capacity and flexibility to supply and maintain forces operating to great depth. In past experience, 600 km proved to be the limit to which the logistics system could support an uninterrupted advance.

Air superiority remains a critical element. While the OPFOR prefers continuous air superiority, this may not always be possible. As a minimum, the OPFOR will seek to achieve local air superiority at decisive points and times during the operation.

Mixed Forms of Operations

The methods of conducting operations described above are not, of course, mutually exclusive. Elements of both encirclement and attacks on multiple axes can characterize operations. Figure 2-4 shows how two army groups can combine efforts to encircle a strong, well-prepared enemy grouping. Figure 2-5 provides an example of how two army groups could employ a combination of attacks on multiple axes with encirclements of bypassed groupings.

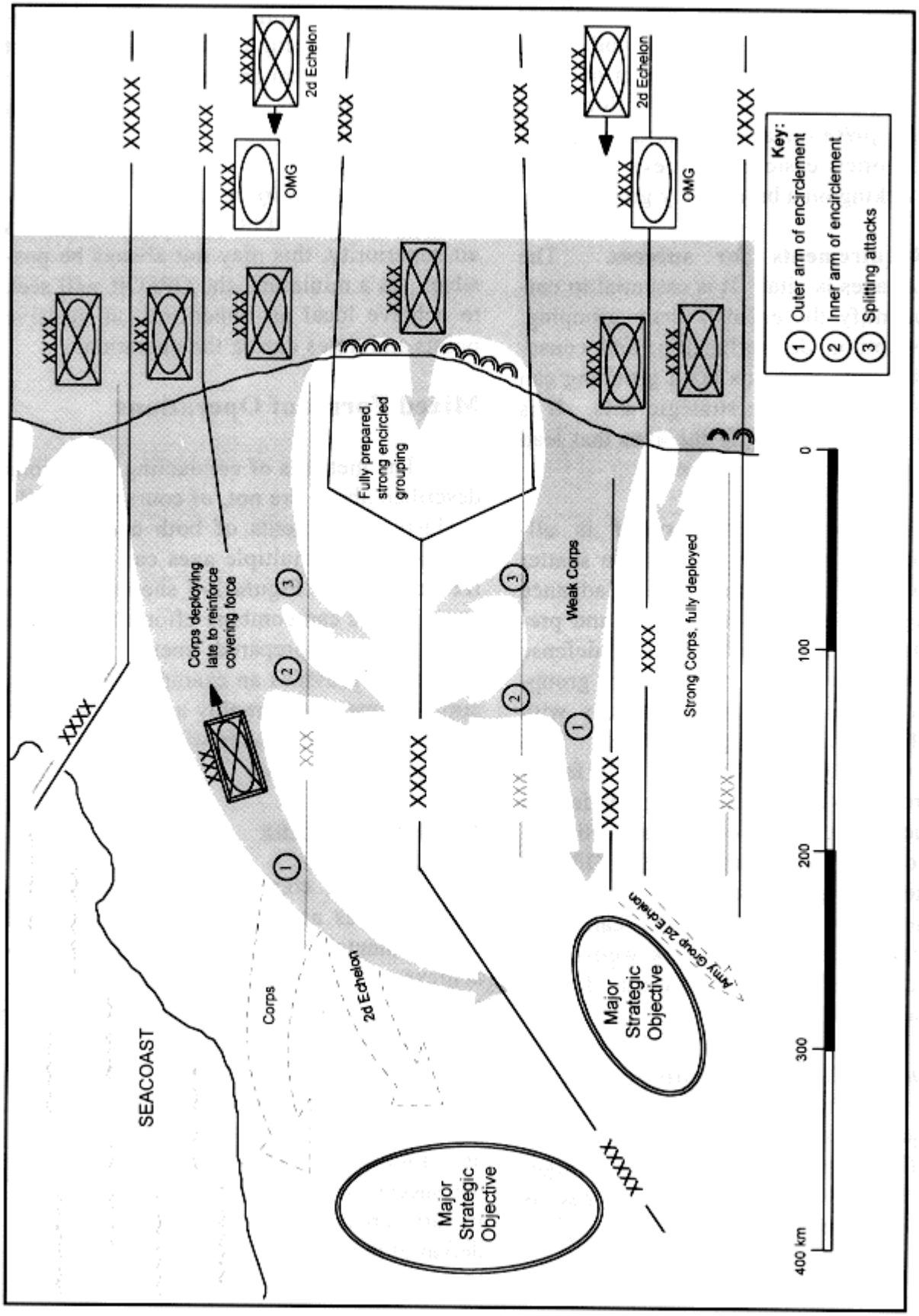

Figure 2-4. Attack by two army groups to encircle a strong grouping.

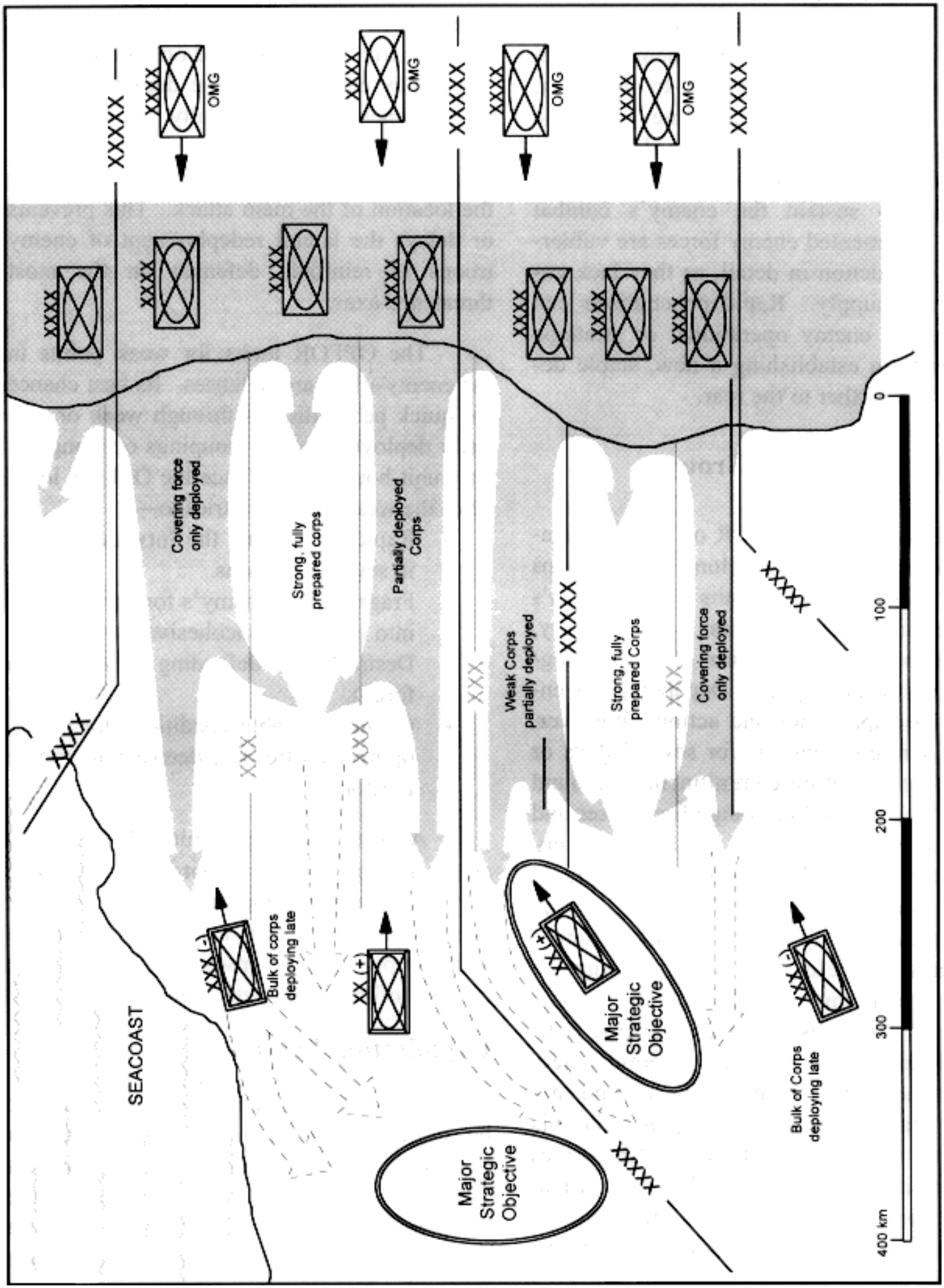

Figure 2-5. Attack by two army groups on multiple axes (with encirclements of bypassed groupings).

Deep Operations

Using a combination of attacks on multiple axes across a broad frontage and encirclements, the OPFOR attempts to achieve operational and strategic missions through deep operations. The goal is to destroy the enemy's defenses using several deep, finger-like penetrations (controlled by a single headquarters) rather than with the driving fist of a frontal assault. Multiple and simultaneous deep thrusts develop tactical success into operational success. This, in turn, creates conditions for the strategic defeat of the enemy.

From the beginning of the offensive, the OPFOR attempts to shift the frame of combat into the enemy's depth. The OPFOR's goal is to force the enemy to fight in several directions at once--to the front, flanks, and rear. At the same time, the OPFOR can destroy the enemy's ability to do so, by disrupting the C^2 and logistic backup necessary to sustain the enemy's combat forces. Fragmented enemy forces are vulnerable to destruction in detail, as they lack cohesion and supply. Rapid penetrations can also prevent enemy operational or strategic reserves from establishing a new, stable defensive line farther to the rear.

First-Echelon Army Groups

In the typical OPFOR offensive operation, forces of first-echelon army groups strike rapidly into the depths of the enemy's defenses in selected sectors. Theoretically, this can occur within hours after the long-range fire strike begins. Depending on enemy force capabilities and actions, however, the latter might continue for several days or several weeks before commitment of ground forces. Successful long-range fire strikes and air defense operations can minimize the enemy's air and precision weapons threats to ground maneuver forces. However, ground forces must quickly exploit the opportunity. They must act before the enemy has time to recover, reorganize, and meet the attack. Therefore, they hope to seize or destroy critical military, political, and economic objectives in the first few days of the ground maneuver phase of the war. They plan to do this through a combination of massed fire strikes and exploitation maneuvers. The ground maneuver force executes these operations in close coordination with airborne and heliborne landings.

First-echelon army groups exert pressure across the entire frontage of the theater. Mechanized and tank armies advance in dispersed march formations and on multiple axes. Thus, they can fully engage deployed or deploying enemy forces. Ideally, the first echelon has sufficient weight and force in several locations so the defenders cannot determine the location of the main attack. This prevents or delays the lateral redeployment of enemy troops to reinforce defenses on the most threatened axes.

The OPFOR looks for weak points in the enemy's forward defenses. Its best chance for quick penetration is through weak or partially deployed enemy groupings or along enemy unit boundaries. Once the OPFOR identifies the weak sectors, it tries to--

- Rapidly penetrate the forward defense in several locations.
- Fragment the enemy's forward defense into isolated, noncohesive parts.
- Destroy the defending first-echelon forces.
- Create favorable conditions for developing the offensive deeper into enemy territory.

At the first opportunity, first-echelon army groups and their subordinate armies or corps send exploitation forces deep into the enemy rear. There they destroy critical targets and disrupt enemy defenses. They also aid the advance of main army group forces.

Exploitation Forces

These exploitation forces are likely to be multiple ***operational maneuver groups*** (OMGs). These are tank-heavy formations formed at army group and army levels. (See Chapters 4 and 5 for more detail.) They are specially

task-organized for deep, large-scale raid and exploitation missions.

Commitment of an army-level OMG normally coincides with first-echelon divisions' penetration of the enemy tactical defense zone. Commitment of the army group OMG normally occurs before the first operational echelon has achieved the army group's immediate mission and long before commitment of the second echelon.

To get into the operational depth, an OMG may have to help the first operational echelon to complete a penetration of well-prepared enemy tactical defenses. To facilitate this, first-echelon formations would continue pressure on adjacent sectors and provide the necessary fire support (artillery, air and air defense) to suppress enemy defenses in the sector. However, this is not the preferred option; the OMG must not expend too much of its combat power in making the penetration. In any case, the goal is to get the OMG into the depths of the enemy's defenses as soon as possible.

In some cases, the OMG might not have to depend on first-echelon forces to create a breach in the enemy's tactical defense zone in order to maneuver into the operational depth. Rather than exploiting an initial success in ground maneuver, it might exploit existing weaknesses in the enemy defense or opportunities created by the success of other components of the strategic operation. For example, it might be able to move rapidly through less-prepared sectors of forward defenses, where the defenders have not yet fully deployed.

The OMG also might exploit gaps that artillery, missiles, or air strikes create, especially if the OPFOR employs precision weapons. In such cases, OMG commitment can begin soon after the long-range fire strike operation begins and possibly even before the main army group's offensive operations begin.

Once in the enemy rear, OMGs have three main goals. First, they can destroy major enemy weapons systems that survived the long-range fire strike. Their highest priority targets are those systems that are most threatening to the OMG and to the OPFOR army group's (or army's or corps') main first- and second-echelon forces. Destruction of enemy precision weapon systems is especially critical. Second, OMGs can thoroughly disrupt the enemy's defense system. Thus, they can reduce the enemy's effectiveness in engaging attacking OPFOR main forces at the forward edge. Disruption activities might include--

- Destruction of enemy C^2 and logistics assets.
- Surprise attacks on the flanks and rear of enemy units and advancing reserves.
- Interdiction of the defenders' lines of communications laterally and to the rear.
- General disruption of the enemy rear area. This diverts command attention and substantial combat resources away from the main battle against the OPFOR at the forward edge.

Third, OMGs can seize specific objectives and terrain features to aid the rapid advance of the main forces of the army group or army. They focus on the capture of--

- Bridges.
- Fording sites.
- Road junctions.
- Airfields.
- Suitable landing sites for helicopters and fixed-wing aircraft.

The deep operations of OMGs are not a substitute for the rapid, steady advance of the main forces of army groups, armies, or corps. Rather, OMGs (along with airborne and heliborne landings) expedite this advance by imposing a deep battle on the enemy. They force the enemy to simultaneously fight rear and close battles. Also, OMGs create conditions favorable for initiating the next deep operation farther into the enemy rear. They continue until the offensive achieves the theater's immediate and subsequent missions.

Successful deep operations depend on the main force taking advantage of the penetration and linking up with the OMG. At that point, the original raiding elements may have lost their effectiveness. Then, an army's or corps' main force could generate a replacement OMG. This is less likely at army group level, since the successful OMG either paves the way for main forces to achieve the strategic mission, or the OMG seizes major strategic objectives by itself.

The larger, army group-subordinated OMGs could have an additional task of seizing or surrounding key political or economic centers deep in the enemy's rear area early in the offensive. Their goal would be to convince the enemy and his allies that continued resistance would be futile.

Mission Depths

The depth of offensive operations depends on the nature of enemy defenses. The OPFOR does not need to have the army groups of its first strategic echelon fully mobilized, concentrated, and deployed prior to hostilities. It is only necessary that the attacking force complete the process before the end of the long-range fire strike. If the attacker wins the race, he can prevent the creation of prepared defenses. He can probably find gaps or weak spots in the defender's combat formation. Thus, he could use preemptive attack to generate momentum and engage in operational maneuver. Therefore, the OPFOR's preferred method, where possible, is to--

- Catch the enemy during mobilization and deployment.
- Achieve surprise.
- Seize and maintain the initiative from the beginning.

Nature of Enemy Defenses

At the tactical level, the OPFOR may measure the preparedness of enemy defenses in terms of the preparation time the defenders have had since occupying their defensive positions. At the operational and strategic levels, however, preparedness of the defense is more likely a function of whether or not the enemy has completed deployment of the force designated to defend in a particular sector of frontage or a defensive line in the operational or strategic depth. Thus, a ***fully prepared*** defense in a theater might have all of the following forces in place: covering force, first-echelon divisions, corps reserves, army group reserves, and theater reserves. An ***unprepared*** defense might have only a covering force deployed and the rest of its forces still in the process of deploying. Either of these extremes might exist at the tactical level but is rather unlikely on operational or strategic levels. There, the OPFOR expects more often to encounter a ***partially prepared*** defense (which encompasses virtually everything in between). Behind the covering force, some of the first-echelon divisions may be fully deployed; others might not. The latter may have one brigade deployed and the remainder of the division still deploying, perhaps up to 100 km from the forward edge. Thus, it may be difficult for the OPFOR to distinguish between deploying first-echelon divisions and divisions intended to be corps reserves. In some cases, entire corps may be deploying late to reinforce a covering force. Yet, there may be some strong corps that are fully deployed.

Figure 2-6 illustrates a probable hierarchy of missions within a theater, in terms of enemy force groupings. These mission depths are likely in an offensive against a partially prepared defense. If the defenses tend toward being fully prepared or unprepared, the missions could be a step lower or higher on this ladder. However, this table, and the following paragraphs, describe typical mission depths against a partially prepared defense.

	Immediate Mission	**Subsequent Mission**	
OPFOR Force Grouping	Destroy Integrity/ Cohesion of Enemy	Complete Destruction of Enemy	Destroy Integrity/ Cohesion of Enemy
Theater	COMMZ (Including Theater Reserve)	Key Points in COMMZ	N/A
Army Group	Army Group	Army Group	COMMZ
Army or Corps	Corps	Corps	Army Group
Division (Day 2-4)	Rear of Division	Rear of Division	Corps
Division (Day 1)	Reserve Bde of Division	Reserve Bde of Division	Rear of Division

Figure 2-6. Probable mission depths in offensive against partially prepared defense.

First-Echelon Armies or Corps

The ground maneuver portion of a strategic offensive must begin with divisions of first-echelon armies or corps penetrating the enemy's tactical zone of defense. The task of the first day of the operation may be to penetrate through the covering force and to the rear boundary of the defending first-echelon division (a distance of up to 50 km).

Successive divisional attacks over the next 2 to 4 days exploit these breaches to complete the destruction of encircled or bypassed enemy first-echelon divisions and, possibly, to engage a counterattacking corps reserve. During this time, they can also seize important areas that facilitate operations deeper into the enemy corps' rear area. By doing so, they can effectively destroy the integrity and cohesion of the enemy corps. The latter is the immediate mission of the first-echelon army and might involve a total depth of 100 to 150 km and a total of 3 to 4 days.

The army's subsequent mission is to complete the destruction of the enemy corps and, possibly, engage the enemy army group reserve. This might involve an additional 150 to 200 km in another 3 to 4 days. Thus, the total mission depth might be about 250 to 350 km over 6 to 8 days. By accomplishing this mission, the army would destroy the integrity and operational stability of the enemy army group. This equates to the immediate mission of the first-echelon army group.

First-Echelon Army Groups

The second-echelon armies of an army group then execute the subsequent mission of the first-echelon army group. (Under favorable conditions, a first-echelon army can conduct a second operation to the depth of the subsequent mission.) This mission is to complete the destruction of the enemy army group and to engage theater reserves if possible. This can involve an additional 350 to 550 km in depth and 6 to 7 additional days. Thus, the total mission depth can be about 600 to 800 km or more over 12 to 15 days. By accomplishing this mission, first-echelon army groups clear the way for further operations into the enemy communications zone (COMMZ) and to the rear boundary of the theater.

The offensive actions of first-echelon army groups are normally decisive. The enemy army group's depth (600 to 800 km or more) normally constitutes army group subsequent missions and the theater's immediate mission. Depending on the overall depth of a particular theater, first-echelon army groups may also be able to seize important political and industrial centers and lines of communications in the rear of the theater. Thus, they can achieve the theater's strategic missions.

Second-Echelon Army Groups

In view of their vulnerability to interdiction, especially by precision weapons, it is not advisable to rely on the timely arrival of second-echelon army groups to complete the theater's immediate missions.[5] The first strategic echelon should be strong enough to reach the nearest strategic objectives (immediate mission) on its own. If necessary, second-strategic-echelon army groups can deliver the final blows to complete the destruction of enemy forces that the first echelon army groups have penetrated and encircled.

If necessary, second-echelon army groups can also expand the scope of the strategic offensive operation either in depth or in breadth. For example, the depth of a theater's subsequent missions can be up to 1,500 km. This can require subsequent army group operations over a total period of 20 to 30 days.

STRATEGIC DEFENSIVE

The OPFOR has traditionally stressed the primacy of the offensive. However, it recognizes the strategic defensive as another possible type of military action for achieving strategic goals. Given its requirement for variant planning, the OPFOR always keeps a defensive variant on the shelf. The choice of variant is a function of the COF and the circumstances. However, the OPFOR believes that defensive operations alone are not sufficient. At best, the defensive can only maintain or restore the status quo. Only offensive actions can seize the initiative, completely defeat the

enemy, and achieve a favorable conclusion to a war.

The strategic defensive can take place at the beginning of a war or in the course of a war. It can contribute to strategic goals in the context of an OPFOR offensive and also if the enemy has mounts an offensive. In the latter case, successful defense can lead to an OPFOR counteroffensive.[6]

The strategic defensive has the same types of subset operations as the strategic offensive: long-range fire strike, air defense, army group, airborne, naval, and amphibious. However, operations do not necessarily occur in the same order or with the same priorities. For example, the air defense operation initially focuses on defending friendly forces, if the OPFOR does not hold air superiority. Finally, the strategic defensive might also feature an antilanding operation; this is not part of the offensive. Army group defensive operations take on a different form.

Multi-Army Group Defensive Operations

Neither offense nor defense exists in a pure form. This is especially true at strategic and operational levels. Precision weapons also have erased some of the traditional distinctions between offense and defense. The defender can now use many of the same means and methods as the attacker. He can achieve surprise and seize the initiative. He can strike the attacker as the latter prepares to attack, or even earlier. Under favorable circumstances, he can also launch a decisive counteroffensive.

Mobilization and Deployment

The choice between offensive and defensive variants depends on the amount of warning time and the relative abilities of the OPFOR and the enemy to mobilize and deploy forces into the intended area of operations. Preceding any large-scale conflict, there is likely to be a period of increasing tension as a crisis escalates toward war. The OPFOR should be able to discern the enemy's war preparations to avoid strategic surprise. During this threat-of-hostilities period, the OPFOR should begin to mobilize its strategic reserves and strengthen and deploy its mobile forces to reinforce its ready covering forces.

Within an OPFOR Strategic Offensive

If the OPFOR can complete all or even most of its mobilization and deployment before the enemy can, the preferred course of action would be to launch a preemptive attack. This can--

- Catch the enemy during mobilization and deployment.
- Achieve surprise.
- Seize and maintain the initiative from the beginning.

Even an overall offensive strategy can incorporate defensive operations**.** It is unlikely the OPFOR can build up the COF advantage needed to immediately initiate offensive operations in all sectors of the theater. Such a buildup would require extensive mobilization and troop movements; detection by the enemy would sacrifice the element of surprise. At the beginning of the war, therefore, forces in some parts of the theater might have to conduct defensive operations before transitioning to the offensive. There may be some sectors where the OPFOR plans no offensive action. These sectors might remain on the defensive throughout the war.

Another possibility is that the OPFOR’s strategic offensive might lose momentum before achieving its decisive strategic goal. The OPFOR might go over to the defense for one or more of the following reasons:

- To consolidate gains.
- To await additional resources when temporarily halted by the enemy.
- To protect the flanks of a unit.
- To repulse an enemy counterattack.
- To regroup after severe losses.
- To free resources for other units that are on the offensive.
- To await logistic support.

Thus, it is likely that some OPFOR formations might be on the defensive while others are on the offense. A typical OPFOR response against an enemy counterattack is to place a division on the defense; that division halts the counterattack while other divisions continue the offensive.

Tactical and operational defense can be an integral part of a larger, strategic offensive. Even a whole secondary theater (or strategic axis) might not be on the offense; some of its forces may have gone to establish superiority in a nearby primary theater (or strategic axis).

Response to an Enemy Offensive

It might be the enemy who seizes the strategic initiative and launches an offensive. If so, the strategic defensive can be the predominant type of OPFOR military action at the outset of war. There are three long-standing goals for the strategic defensive:

1. To halt and repulse a strategic offensive by enemy forces and inflict heavy losses on them.
2. To hold or regain key terrain on the territory of the State or its allies.
3. To create conditions for launching a strategic offensive.

The first two goals apply to any war. Whether or not the third comes into play depends on the relative COF of the opponents and the military-political circumstances at the time.

If hostilities begin before the OPFOR has completed the mobilization of its strategic reserves, that process continues under the protection of the covering forces and reinforcing mobile forces defending in the first strategic echelon. The latter two components combined should be capable of repelling medium-scale aggression.

The second strategic echelon would consist largely of forces redeploying from other theaters. Once that redeployment and the mobilization and deployment of the strategic reserves are complete, the OPFOR should be capable of large-scale operations. Such operations might include launching a decisive counteroffensive or just going over to a strategic offensive. Figure 2-7 outlines the missions of the various echelons and reserves in a strategic defensive.

Echelon:	Missions:
First Strategic Echelon (First-Echelon Army Groups of Theater)	
First Operational Echelon (First-Echelon Armies of First-Echelon Army Group)	
First Tactical Echelon (First-Echelon Divisions of First-Echelon Army)	Hold forward edge of army and army group defenses. - Halt and repulse enemy offensive. - Hold key terrain. - Inflict maximum losses on enemy. May join in counterattack.
Second Tactical Echelon/Reserve (Second-Echelon Divisions and/or Combined Arms Reserve of First-Echelon Army)	Initially occupy defensive positions. Launch counterattack (major mission). - Destroy enemy forces penetrating forward defense. - Restore initial defensive line.
Second Operational Echelon/ Reserve (Second-Echelon Armies and/or Combined Arms Reserve of First-Echelon Army Group)	Launch counterstrike. - Defeat penetrating enemy force in detail. - Regain lost ground and restore border. - Create conditions for transition to offensive or (counteroffensive).
Second Strategic Echelon (Second-Echelon Army Groups of Theater, Possibly Redeployed from Other Theaters) **and Strategic Reserves** (Mobilized from Supreme High Command Assets)	Launch counteroffensive. - Defeat advancing enemy force groupings in detail. - Disrupt enemy's advance. - Capture important areas or lines. - Seize strategic initiative. May continue in offensive.

Figure 2-7. Echelonment and missions in strategic defensive.

First strategic echelon. The theater's first-echelon army groups comprise the first strategic echelon. Within these army groups, the first line of defense would be the first operational echelon; this comprises the first-echelon armies or corps of the first-echelon army groups. Those armies or corps would conduct the stubborn, active defense. Within those units, the first-echelon divisions attempt to hold the forward edge of the army and corps defenses. Division-level defensive tactics are active and mobile, not static, forms of combat. Skillful maneuver can help to destroy the enemy in specifically chosen locales that favor the defense. An exception might be the defense of key areas, although this too remains as active as possible.

The second-echelon divisions of those armies or corps may initially occupy defensive positions. However, their major mission is to counterattack, possibly along with the army or corps combined arms reserves. In certain conditions, they may do this jointly with forces of the first-echelon divisions. Counterattacking forces generally attack the enemy from his flank. They normally wait until the enemy's advance has stopped or at least slowed. Then the parent army or corps hits the stalled enemy force with artillery, missiles, and air strikes. The mission is to destroy enemy forces penetrating the forward defenses. The goal of the counterattack is full or partial restoration of the initial defensive line.

All these actions by the first-echelon armies or corps should halt and repulse the enemy offensive, hold key terrain, and inflict maximum losses. At this point, the enemy will have lost his forward momentum and will not yet have had time to dig in or to use his reserves.

This is when the OPFOR can use the army group's highly mobile second-echelon armies or corps or the army group's combined arms reserves to launch a counterstrike. The counterstrike will have three goals:

1. To defeat in detail the enemy force that has penetrated the defense.

2. To regain lost ground and restore the border.
3. To create conditions for transition to the offensive (counteroffensive).

These aggressive actions involve firepower, maneuver, mines, and barriers. As a rule, it drives into the flanks of the penetrating enemy.

The forces of first-echelon army groups can carry out a counterstrike in one or several sectors. Apart from second-echelon armies or reserves, this may involve parts of first-echelon armies and forces moved from other sectors. It may also involve landing airborne or heliborne forces or using raiding detachments on the axis of the counterstrike.

Second strategic echelon and strategic reserves. Counterstrikes can pave the way for a counteroffensive conducted by the OPFOR's second strategic echelon and strategic reserves.

The counteroffensive is a special type of offensive that defending forces execute. As a rule, it occurs after the enemy has received heavy losses and has expended his principal operational reserves. At this point, he will not yet have time to establish a defensive force grouping and shift to the defense. The counteroffensive can result from exploitation of successful counterstrikes. It can also start while defenders are still in the course of repulsing the enemy offensive.

According to OPFOR doctrine, the goals of a counteroffensive are to--

- Defeat in detail attacking enemy force groupings.
- Thwart the enemy's advance.
- Capture important areas (or lines).
- Seize the strategic initiative.

This statement of goals conspicuously fails to specify the territorial limitations of the counter-offensive. Depending on the situation, the goal can be to recapture the State territory or to shift the war into enemy territory. However, for the OPFOR to seize the strategic initiative implies its ability to transition to a strategic offensive.

Long-Range Fire Strike

In the worst case for the OPFOR, hostilities can begin before covering forces are fully deployed. These alone may be ready to defend in the first operational echelon of the first-echelon army groups, with divisions or separate brigades of the mobile forces only partially deployed as the second operational echelon. If the OPFOR detects the enemy's intention to attack at that vulnerable point, its best option is probably a preemptive long-range fire strike. This would--

- Disrupt the enemy's mobilization and strategic deployment.
- Allow time for the OPFOR to--
    - Strengthen and deploy the rapid deployment forces of its mobile forces within the theater.
    - Redeploy forces from other theaters to reinforce the threatened theater.
    - Mobilize and begin to deploy its strategic reserves.
- Reduce the precision weapons threat to deploying OPFOR formations.

The degree of success of the initial long-range fire strike phase determines whether the OPFOR remains on the defensive or can use its newly deployed forces to launch an offensive. At the least, it would avoid the undesirable prospect of having to trade space for time at the beginning of the strategic defensive. OPFOR doctrine advocates a forward defense of the State.

Antilanding Operation

The antilanding operation consists of coordinated combat actions by large ground forces formations (army groups, armies, or corps). These actions are in coordination with naval, air, and air defense forces. The antilanding operation has three goals:

1. To prevent the landing of enemy forces by water or air.

2. To repulse landings of amphibious, airborne, air assault, or airmobile forces.
3. To hold defended seacoast, islands, or straits.

The General Staff (or theater headquarters) determines responsibilities for organizing and conducting such an operation. It bases them on its overall concept for the strategic operation, the specific features of the theater, and other conditions. Army groups, armies, corps, or divisions may designate a combined arms antilanding reserve. This would be a quick-reaction force separate from a combined arms reserve or second echelon. However, all OPFOR operational and tactical organizations plan for this contingency, whether or not they form a specially designated reserve.

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[1] In future wars, an aerospace theater is alsp possible.

[2] FM 100-66, *Opposing Forces in Stability and Support Operations*, discusses the employment of IW apart from combat operations in greater detail.

[3] See Chapter 10 for more detail on the air component of the long-range fire strike.

[4] This assumes that the OPFOR has a navy and that theater has a seacoast.

[5] The long-range precision-weapon threat might cause the OPFOR to reduce the size of second echelons at all levels in favor of the first wchelon. However, it would not eliminate them.

[6] In OPFOR terminology, a ***counterattack*** is tactical and is carried pit by divisions. A ***counterstrike*** is operational and is delivered by forces of an army group, army, or corps. A ***counteroffensive*** is usually on a strategic scale; rarely is it operational.

Chapter 3
Strategic and Operational March

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The objective of the strategic and operational march is to insure that the military forces designated for specific operations arrive on time, intact and combat-ready, at the appropriate location. The three doctrinal imperatives for successful strategic and operational march are speed, security, and surprise. To achieve these ends, the General Staff (and theater CINCs, where applicable) focus on measures to ensure timeliness and the use of all available means of movement.

PREPARATION

Before war begins, most or all of the OPFOR's strategic and operational first echelons occupy positions within the State, perhaps hundreds of km from the border. In order to build a strong strategic grouping to mount an offensive in one theater or to ensure defense of a threatened theater, the General Staff must mobilize and redeploy forces from one or more other theaters. A timely decision to begin mobilization and strategic redeployment is critical. Once a decision is made, rapid mobilization and movement of units assumes primary importance. Whether the OPFOR plans offensive or defensive operations, unit

march capabilities affect the OPFOR's ability to accomplish goals.

Mobilization, Concentration, and Deployment

The outcome of initial operations, which can shape the rest of a war, usually depends on which side wins the race to mobilize its forces, concentrate them in the area of conflict, and deploy them for battle. If both sides adopt an offensive strategy, the winner seizes the initiative, with his opponent being caught off balance. If one side opts for the strategic defensive and wins the race, it can face the enemy with a dense defense in prepared positions, backed by strong operational reserves. This is a formidable prospect for the attacker, especially if the defender has nuclear and/or precision weapons.[1] On the other hand, should the attacker win the race, he can prevent the creation of prepared defenses. The attacker may find gaps or weak spots in the defender's combat formation, and use preemptive attack to avoid the need to expend precious time and resources for a penetrating operation.

Planning

Planners at the General Staff (and theater headquarters, where created) prepare in advance for strategic movement. Preparations include the following:

- The decision to move by land, sea, or air.
- The allocation of march zones and axes.
- The preparation of alternative march plans.
- The establishment of dumps of POL and other materiel reserves.
- The preparation of the road and rail net, bridges, and bypasses around major junctions and administrative centers.
- The selection of crossing sites, including reserve sites, on important rivers.
- The deception activities supporting movement.

Planners should take full advantage of the march capabilities of units, as well as the transportation infrastructure in the area of the march. When planning combined rail and road marches, planners must closely coordinate the movement of heavy equipment by rail with road columns.

Priority in Movement

In preparation for a strategic operation, top priority goes to the deployment of ground elements of aviation units, long-range missile units, air defense units, and key combat service support elements. The OPFOR needs to hold these at constant readiness to execute important tasks, starting with the long-range fire strike. Next in priority is ground maneuver forces, artillery forces, key engineer units, and communications assets. The engineer units are needed to prepare for movement. Following these in priority are medical support units, other engineer assets, and theater reserves of all types.

Information Warfare Support to the March

The primary goal of information warfare (IW) activities during the march is to minimize the enemy’s ability to collect information and analyze the OPFOR’s force structure, movement, and objectives. Another goal is to reduce or negate the enemy’s ability to disrupt or delay the movement.

Beginning prior to the initiation of hostilities, the OPFOR continuously conducts offensive and defensive

IW activities throughout the duration of a march. Specific emphasis shifts as OPFOR units prepare for their initial movement, and as they transition between movement and halts. Prior to hostilities, the emphasis is on providing a false or misleading picture to the enemy. Once hostilities begin, the emphasis is on minimizing the available picture.

Perception management efforts are most critical prior to hostilities. The OPFOR recognizes that it will not be able to hide the large-scale mobilization and movement of its forces. The enemy may detect movement in the operational and strategic depth of the OPFOR, given the quality and variety of sensors available to him. Therefore, the OPFOR attempts to conceal the true purpose of the movement. The OPFOR describes initial movement as routine internal redeployment or exercise activity, supported by public pronouncements and diplomatic communications.

Protection and security measures are critical during the march. Accurate and complete reconnaissance is imperative. The reconnaissance effort must provide the OPFOR with the required knowledge of march routes, enemy forces, and obstacles to forward movement. At the same time, counterreconnaissance activities attempt to disrupt, destroy, or at the least deceive the enemy's reconnaissance plan. Units continuously dedicate time for the effective use of cover, concealment, and camouflage during movement and at halts. In addition, the OPFOR undertakes a number of operational security measures to reduce the amount of information the enemy may gather, such as--

- Avoiding population centers when possible.
- Limiting movement to nighttime.
- Restricting the information regarding march routes, assembly, and rest areas. (This includes OPFOR division commanders, who receive no more information than the next day's movement.)

The OPFOR conducts ***deception*** activities to conceal the exact composition and routes of the force. Radar corner reflectors and deception jammers target enemy airborne and ground-based radars. These deception systems provide the false signatures of additional vehicles or columns, thereby concealing the true size and location of OPFOR units, as well as the actual march routes. They also provide the additional benefit of targeting airborne radar-aided bombing and navigation systems, supporting force protection efforts. In order to successfully mislead enemy intelligence analysts and planners, false targets must be consistent with associated norms, such as false movement rates, column intervals, and the locations of rest areas. Enemy analysts look for such "norms", and are more easily deceived by a false pattern that meets those expectations. Deception efforts must target multiple sensor types. Deceptive communications traffic emanating from the areas of the false units and routes, along with simulated thermal signatures, can contribute greatly to the impression the false OPFOR units are real.

While the OPFOR continues the attempt to mislead the enemy as to its intentions, as commitment approaches the emphasis shifts towards force protection and increased use of cover, concealment, and camouflage to deceive him. The OPFOR recognizes the inherent uncertainty of deception operations. However, sufficient time may allow the OPFOR to analyze enemy activities to determine whether or not the deception efforts have succeeded. Shortened timelines resulting from closure with the enemy do not allow for this in most cases.

Electromagnetic spectrum operations (ESO) conducted by the marching unit are primarily passive during movement. The OPFOR conducts signals reconnaissance as part of the electronic combat[2] plan (which is the primary component of ESO). The focus is on identifying the composition and intentions of enemy units along or near the route of advance. The OPFOR conducts little or no active jamming (other

than the deception jammers), in order to minimize indicators of OPFOR locations and intentions. Activities supporting deception, such as radar corner reflectors, deception jammers, and dummy radio nets also contribute to the ESO counterreconnaissance effort. Rigid adherence to signals security procedures and the proper use of communications security (COMSEC) equipment and techniques will minimize information the enemy may collect through signals intelligence. Active measures increase as the commitment of the OPFOR approaches.

Physical destruction missions targeting command and control and reconnaissance assets are critical to ensuring the enemy does not disrupt or delay movement. However, the OPFOR strikes these targets only at appropriate times and places on the battlefield. The enemy must not have sufficient time to reconstitute them with minimal interruption of his defense (or offense).

ROAD MARCHES

Road marches (with or without combination with rail marches) result in a more rapid concentration than pure rail moves, especially for distances under 100 km. However, the combined use of road and rail marches can offer the optimum solution as described later.

Rate of March

OPFOR divisions have the ability to cover 1,000 to 1,500 km over difficult march routes, with a daily march rate of from 300 to 350 km. It is the rule to conduct these marches at night for concealment. Figures 3-1 and 3-2 show the norms for the average speed of OPFOR columns and their expected daily performance. Travel in mountains, deserts, arctic, and marshy areas might reduce performance sharply.

	Paved Roads		**Dry, Dirt Roads**		**Muddy, Hilly, Urban Roads**	
Column Type	Day	Night	Day	Night	Day	Night
Wheeled	30-40	25-30	20-25	18-20	10-15	8-12
Tracked/Mixed	20-30	15-20	15-20	12-15	10-12	8-10
Note: During fog, reduce day speed 25 to 30 percent.						

Figure 3-1. Average speeds of march columns (km/hr).

Column Type	**Paved Roads**	**Dry, Dirt Roads**	**Muddy, Hilly, Urban Roads**
Wheeled	250-480	180-300	80-180
Tracked/Mixed	150-350	120-240	80-140

Figure 3-2. Daily march performance (km).

Daily march performance calculations assume that units march from 10 to 12 hours of each day. The remaining 12 to 14 hours are spent as follows:

- Maintenance: 3 to 4 hours.
- Deployment and camouflage: 1 to 1 1/2 hours.
- Movement to start line: 1 to 1 1/2 hours.
- Rest: 4 to 8 hours.
- Hot meal: 1 to 1 1/2 hours.

During a march of over 1,000 km, there is likely to be at least one rest day, for essential repair and maintenance work.

Ensuring Combat Capability After March

Long road marches impose considerable wear and tear on tracked and heavy equipment. The problem is most acute in the case of tanks and, to a lesser extent, self-propelled artillery and infantry combat vehicles. The OPFOR expects a fall-out rate of only from 1 to 2 percent of vehicles per day. One way to solve this problem is to transport tanks and other tracked and heavy equipment on heavy equipment transporters (HETs), at least to the final assembly area. If, for example, the OPFOR had about 500 HETs available, it could move approximately 10 tank or BMP battalions or a combination thereof simultaneously. Of course, the use of HETs limits the number of usable routes. Adverse weather may make unpaved roads unsuitable. Also, HETs need bridges with a load capacity of 80 to 100 metric tons to cross rivers.

March Routes

The OPFOR concept of a usable route for a march, even with tanks, is not the same as that in the U.S. During a march from the depth to the final assembly area, an army allocates from two to four routes to each division and one to the remaining army troops. Thus, with only five routes available, an army can move with only two divisions in its first echelon. With seven, it can deploy three divisions in the first echelon. The latter is preferable, since it is desirable to have a strong first echelon in going over to the attack. For the same reason, it is desirable to have three routes per first-echelon division in the march from the final assembly area to the line of commitment to the tactical area.

Organization of March

The OPFOR uses two types of march columns--administrative march columns and tactical march columns. Figure 3-3 illustrates the march routes and stages of an army in an administrative march. The OPFOR uses administrative march columns when the chance of contact with the enemy is nil, or at least confined to airborne or heliborne forces. Tactical march columns are used when moving into or through a battle area.

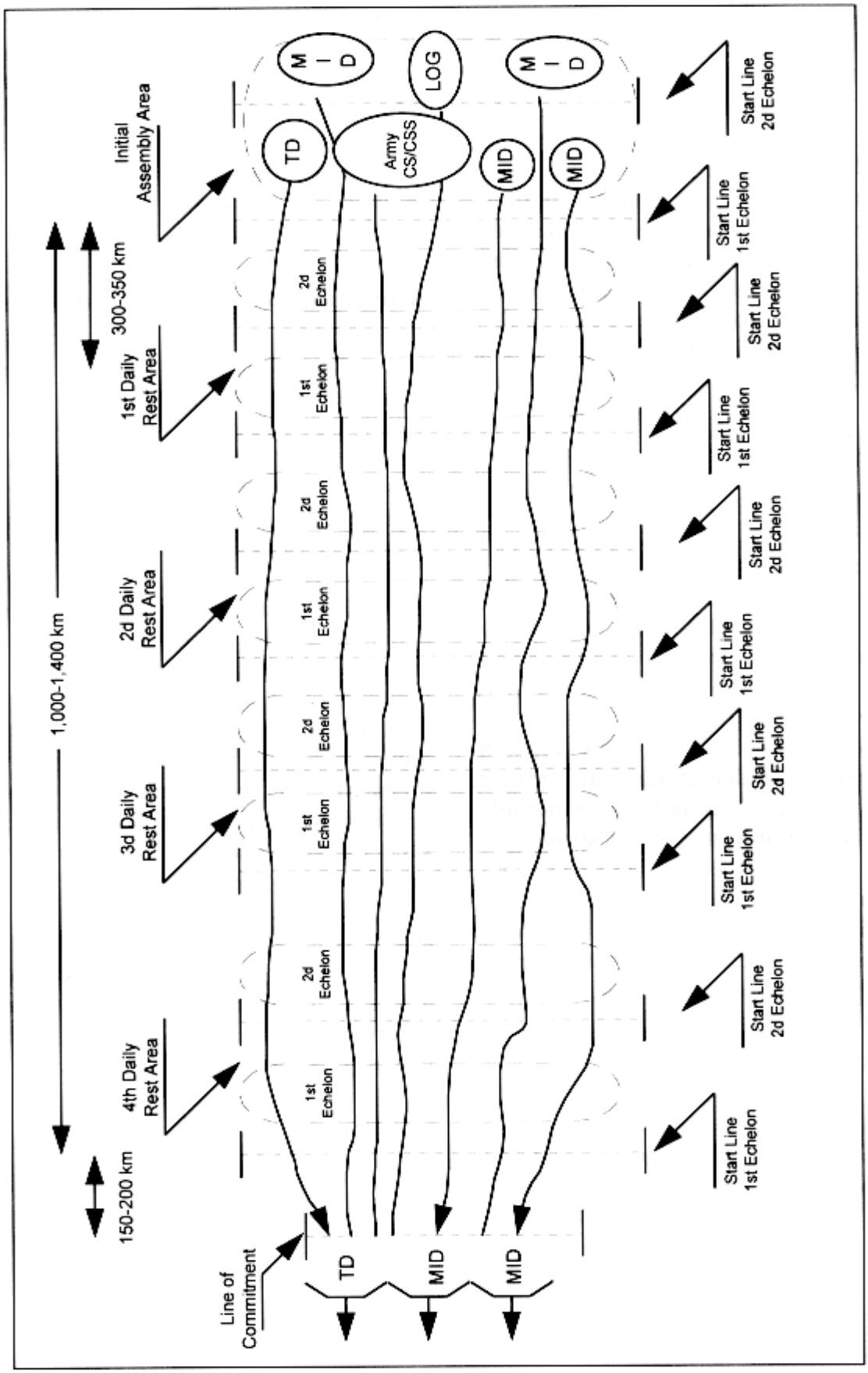

Figure 3-3. Army administrative march (example).

Administrative March Columns

The OPFOR typically deploys march security elements, even in the depth of friendly territory, since diversionary, airborne, and heliborne threats are always present. However, the acceptable size of such security elements is generally smaller than in the forward area.

The main purpose for moving in columns at this point is administrative convenience. Thus, vehicles of similar type, speed, and cross-country capability may move together in packets rather than mixed with other vehicles as they are when prepared for combined arms combat. Tracked vehicles, and heavy equipment such as SSM launchers, usually move on one route (preferably paved), while wheeled vehicles move on another route (possibly an unimproved dirt road). Figure 3-4 illustrates the typical march columns of a first- and second-echelon division and other army elements. There can, of course be many variations on this theme.

Tactical March Columns

The OPFOR is keenly aware of the importance of tempo and the likelihood of meeting engagements (battles) on the modern battlefield. Therefore, it emphasizes that, when contact becomes possible, ***march organization must reflect the desired organization for combat***. There is no time to stop in assembly areas to marry up battle groups.[3] Units must flow smoothly and quickly from the march into battle in preformed groupings tailored for combat against the expected enemy in the terrain where battle might or will take place. This can help to beat the enemy to the punch in a meeting engagement and to surprise a defending enemy through the speed with which the OPFOR can mount an attack.

Once in the combat zone, the OPFOR deploys stronger march security, especially on any open or threatened flank. It may form forward detachments in readiness to conduct deep battle. Movement support detachments (MSDs, see Chapter 12), tailored to the terrain and the degree of enemy route-denial effort, follow immediately behind the forward security element or possibly behind advance guard

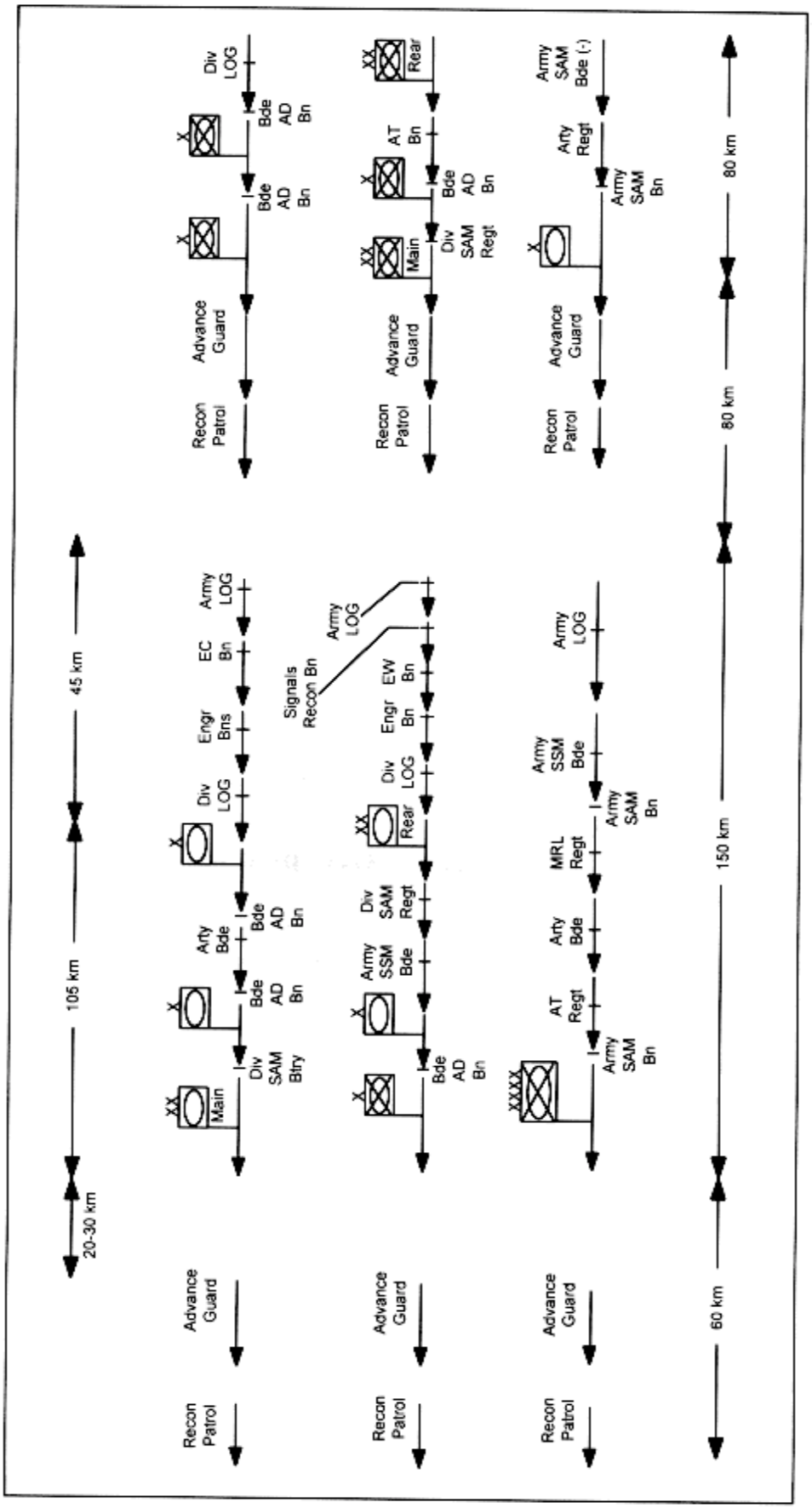

Figure 3-4. Army administrative march from the strategic rear (example).

battalions. If the OPFOR anticipates a meeting engagement (battle), an attack against an ill-prepared or overextended enemy, or a pursuit, the first echelon is normally tank-heavy at both tactical and operational levels, and forward detachments can probe ahead. The army artillery group (AAG) usually moves in the first echelon so its deployment is unhampered and timely; in the same way, the division artillery group (DAG) often moves at the front of a division's main body. However, artillery groups might not always move as a single march unit. They may be dispersed in smaller groupings throughout a march column. This dispersion reduces vulnerability to enemy attack and also increases the area covered by responsive fire support. At both operational and tactical levels, antitank reserves and mobile obstacle detachments (MODs, see Chapter 12) move on a threatened flank or forward within the main body and to be ready to deploy to either flank. Second echelons and CPs normally move on the main axis at either level. Figure 3-5 illustrates a tank division and other army elements moving in a variant of tactical march formation.

Space Occupied by March Columns

The column lengths and intervals depicted in Figures 3-4 and 3-5 are examples for "typical" situations. In actual practice, these distances can vary depending on the makeup of the marching forces, the routes available, and other circumstances.

Administrative Marches

As seen in Figure 3-4, a division on two routes is about 100 km deep (exclusive of march security elements). Thus, the length of the army's first-echelon columns, including forward-deployed combat and logistic support elements, is about 150 km. An interval of from 80 to 100 km separates first- and second-echelon divisions; however, reconnaissance patrols and advance guards from a second-echelon division may move within that interval. A second-echelon division on three routes is about 80 km deep. Thus, the total length of an army's columns marching in seven routes may be about 300 km. If only five routes are available, the depth of the army may extend from 500 to 600 km. The army's width may be from 150 to 200 km.

Tactical Marches

Moving from the final assembly area to the line of commitment, first-echelon divisions can spread out

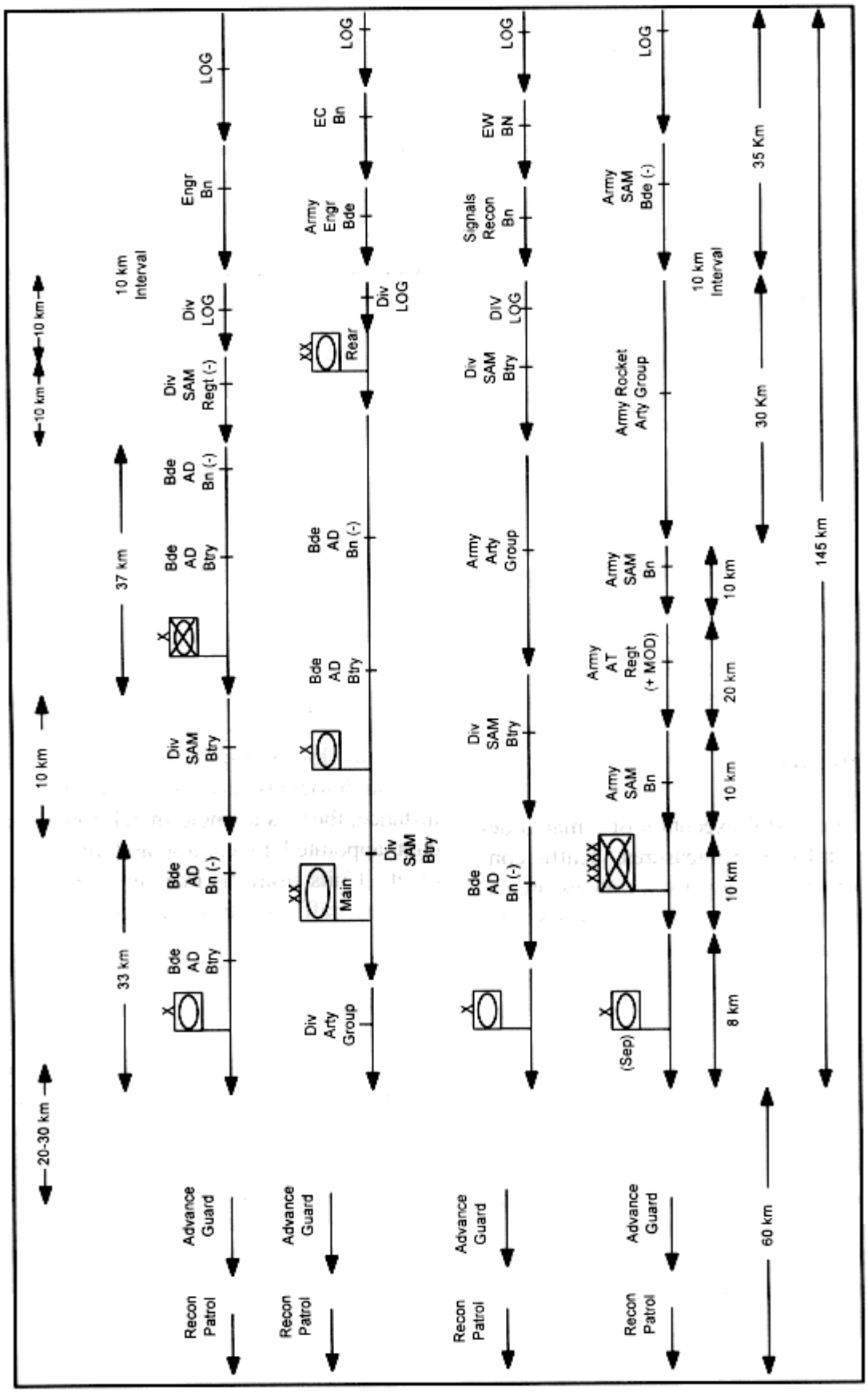

Figure 3-5. Army tactical march (example).

more to observe proper tactical intervals (see Figure 3-5). Intervals between brigades grow from 5 to 10 km, with about 5 km between battalions. However, the divisions may now move on three routes each, if possible; thus their depth remains about the same. The 80- to 100-km interval between first- and second-echelon divisions also remains constant. Such a spacing would allow for any necessary maneuver or dispersion, yet ensures timely commitment.

March Support

The successful execution of a march depends on several support measures. Traffic control and constant cover against air attack are essential, especially at obstacle crossings and chokepoints and in assembly areas. The constant supply of materiel reserves, especially POL, is also vital. Troop control must be flexible and continuous.

Commandant's Service

An important part of the C^2 system is the commandant's service, defined as the system of measures organized and executed to--

- Ensure organized and undetected movement, concentration, and deployment of troops.
- Maintain general order in troop dispositions and areas of activity.
- Monitor the observance of operational security and regulation of movement.

The troops that perform these services have the primary, but not exclusive mission to regulate and control movement. The commandant's service is an instrumental organ for the commander's maintenance of C^2. It organizes traffic control along march routes, in assembly areas, in troop disposition and combat areas, and at chokepoints. Elements of the commandant's service also help to establish and move command posts (CPs).

The OPFOR establishes ***traffic control posts*** at start lines, obstacle crossings, road junction, crossroads, bypasses around population centers, and areas surrounding employed CPs. Within the wide area of responsibility (termed the commandant's area), the OPFOR creates specific sectors extending 100 km along a march route, with several traffic control posts deployed at the aforementioned critical locations. OPFOR standards do not require traffic control posts if the march route is less than 100 km long. In this instance, there is a single march route commandant appointed to control and regulate movement. Units from the marching forces can also perform traffic control functions, when necessary.

Air Defense

Army and divisional air defenders move and deploy in accordance with an overall air defense plan. The plan stresses universal, overlapping and redundant coverage. In general, army group, army, and corps assets provide early warning to subordinate air defense units. Highest priority for protection goes to the first echelon, the SSM brigade and its missile technical battalion, and army, corps, and division CPs.

Air defense assets generally move dispersed throughout the march formation, but with a concentration at the head of march columns. Some elements may leapfrog ahead to defend obstacle crossings and choke points. The advancing unit must coordinate carefully with air defense and air forces through which it is passing in a march from the strategic or operational depth. Such forces may have primary responsibility for combating the air threat to the advancing unit and for the defense of critical points, including assembly and rest areas.

Support

Measures such as reconnaissance; NBC defense; camouflage, concealment, and deception; engineer and topographical support; and logistics are generally the responsibility of the military districts, allied states, and army groups through which the march passes. This avoids depletion of resources the advancing units will need on commitment to combat. To solve the particularly difficult problems of fuel supply, it is necessary to establish depots beforehand to supply each daily march stage. For maintenance support, vehicles requiring medium repairs must go to damaged vehicle collection points for transfer to military district or army group repair centers.

Deployment of Command Posts

Continuity of C^2 is fundamental. This means that a unit on the march must always have at least one CP deployed and in control. There are two methods for ensuring this. The least preferred option is to have an army forward CP move at the head of the first echelon throughout, with the main CP moving in the second echelon, a day's march behind. The preferred method is for the main CP to move with first-echelon combat forces. Whenever possible, the main CP moves on a route separate from the forward CP, while the forward CP exercises control from its position in the next daily rest area. When the army moves into that rest area, the forward CP moves on to the next one; this move may be wholly or in part by helicopter. (See Chapter 7 for more information.)

Communications

COMSEC is a priority, with radio transmissions kept to a minimum. Whenever possible, the OPFOR employs couriers. When radio communications are necessary, preferred systems are those providing line-of-sight and capable of transmitting at relatively low power. Army-level nets are used minimally, primarily for air and NBC warning. During extended halts, the OPFOR lays landline, and uses existing telephone networks and cellular systems whenever possible.

RAIL MARCHES

The OPFOR maintains that, especially for distances under 100 km, rail marches cannot concentrate forces as rapidly as road or combined road and rail marches. Moreover, whatever the relative time advantages of road or rail, the rail movement becomes unacceptably dangerous once hostilities have begun. Thus, deployment in peacetime may be by rail, but during combat the movement of units by rail would be rare, except in strategic depth, and used only in exceptional circumstances.

Advantages

Rail marches confer three benefits:

- Combat vehicles conserve fuel and prolong engine and track life.
- Personnel do not become exhausted by prolonged exertion and discomfort.
- A high rate of movement is possible regardless of weather conditions.

On modern lines, a rail march can achieve from 600 to 1,000 km per day (including loading and unloading times, which may amount to over 50 percent of the total).

Disadvantages

There are two major drawbacks to rail movement. A scarcity of lines means that an army relying totally on rail requires a long time to deploy; the presence of nondeployment traffic on the lines can cause further delays. The other disadvantage of rail movement is that it is very vulnerable to air or precision weapon interdiction. Both the level of destruction and the delay and disruption that such attacks would cause are undesirable.

COMBINED ROAD AND RAIL MARCHES

Combined road and rail movement, with tracked and heavy equipment transported by rail and the rest traveling by road, is an optimum solution for distances under 100 km. A combined movement is economical in the use of transport resources and preserves both equipment and personnel. The price, of course, is the destruction of unit integrity and problems in C[2]. A severe disruption of either form of march might render a whole division or more ineffective. Thus, this sort of march, too, is better for prewar deployments.

AIR AND SEA MOVEMENT

While the deployment of whole mechanized infantry or tank divisions by air is not practical, the OPFOR may use air transport to deploy high-value items urgently needed forward: SSMs, SAMs, EC equipment, and headquarters elements. Air transport can also rapidly move large numbers of personnel. Preserved from the rigors of a long road march, these personnel could man prestocked sets of unit equipment or provide replacements of purely infantry units. Sea movement may be too slow and too vulnerable to interdiction to be practical during war.

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[1] Of course, dense OPFOR defenses (or concentrations for offensive actions) are also vulnerable to strikes from enemy nuclear or precision weapons.

[2] Additional details are found in Chapter 13, Electronic Combat.

[3] After completion of a long range (administrative) march, first-echelon forces might go from the start line (leaving the last rest area) to assembly areas. In these areas, they could reconfigure themselves from march formation into combat formation for the attack, while still beyond the range of enemy artillery. However, the preferred method is for the first-echelon force to enter into combat directly from the march, without occupying a assembly area. Once the operation has begun, even second-echelon and reserve forces generally remain on the move, rather than occupying prepared assembly areas.

Chapter 4
Army Group Offensive Operations

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Operational art is the component of military art that falls between military strategy and tactics. Combined arms operational art prescribes the interaction between ground forces and other forces, especially aviation. Within ground forces, operational art refers to the operations of army groups, armies, and corps.

ORGANIZATION

Army groups conduct the major ground maneuver component of strategic operations in a theater. (See Chapter 2) However, an army group also incorporates the air forces and other assets required for operations in a given area. The army group is both an administrative and an operational entity. Although army groups do not exist in peacetime, the OPFOR activates and organizes them for a specific strategic operation within a theater. The basic combat elements of a wartime army group are the armies, corps, or divisions assigned to it. These exist in peacetime within the structure of the military districts. In wartime, the General Staff (or possibly a theater headquarters) coordinates the operations of several army groups.

An army group is a large formation comprising several armies (or corps) or separate maneuver divisions (or brigades). Its size and composition vary with the mission it receives within the overall strategic operation. A typical army group may have--

- One to four mechanized armies (MAs) or tank armies (TAs).
- Perhaps one or two mechanized corps (MCs) or tank corps (TCs).
- Perhaps one or two mechanized infantry divisions (MIDs) or tank divisions (TDs) not subordinate to an army or corps.
- Perhaps one separate mechanized infantry or tank brigade not subordinate to an army or corps.

(See FM 100-60 for more detail on possible army group organizations.)

There is no fixed army group organization. The number of armies/corps and separate divisions/brigades that might constitute the combat elements of an army group vary widely. The army group's composition depends on its mission within the context of the overall strategic operation. Most of the combat divisions assigned to an army group are subordinate to the armies (or corps). However, some divisions (or brigades) may remain independent of a large formation; in this status, they could function as an army group combined arms reserve, depending on the nature of the operation and on the combat situation as it develops.

The rudimentary framework of the combat service support units for the wartime army groups is present in the peacetime structure of the military districts. The OPFOR organizes the combat service support structure of an army group to meet logistics support requirements. Army group logistics must support all aspects of the army group operation, including augmentation of its armies.

If required, the army group may include airborne forces (a separate airborne infantry brigade or perhaps an IFV-equipped airborne brigade from an airborne division) and amphibious forces (naval infantry). Other forces from the Reserves of the Supreme High Command may also provide support to the army group. These assets include strategic missile forces, strategic air armies, and naval forces.

OFFENSE IN CONVENTIONAL CONDITIONS

Army group offensive operations are always the most important element of a strategic operation in a continental theater. Only ground forces can seize or hold ground. In the offensive, army groups advance rapidly (quite possibly before their mobilization, concentration, and deployment are complete) with the aim of destroying major enemy groupings and seizing critical economic and political objectives. From the start, army groups attempt to shift the frame of combat into the enemy's rear. Doing so forces the enemy to fight in several directions at once, and at the same time disrupts the enemy's ability to do so by destroying command and control (C^2) and logistical support elements.

Lacking cohesion and supply, fragmented enemy forces are vulnerable to destruction in detail. Rapid penetrations would also prevent enemy operational or strategic reserves from establishing a new, stable defense line farther to the rear.

Aims

The aims of an army group offensive are to destroy enemy military forces and to achieve operational missions in support of strategic political and economic goals. An army group offensive involves much more than attacks against enemy forward defensive positions. It involves coordinated, repetitive, and intensive strikes throughout the entire depth of enemy field forces. These strikes might include--

- An initial, large-scale, nonnuclear, air offensive.
- Surface-to-surface missile strikes.

- Heliborne and airborne landings.
- Deep attacks by operational maneuver groups (OMGs).
- Special-purpose forces operations.
- Naval and amphibious forces.
- Information warfare (IW).
- Chemical and nuclear warfare, if necessary.

The OPFOR expects high rates of advance by attacking ground forces. It also plans to conduct strikes throughout the rear. These actions should cripple the enemy's ability to respond effectively to the offensive and to initiate nuclear warfare.

The aims of army group offensive operations naturally depend on the army group's role, composition, and scope of its operation in terms of depth, width, duration, and speed of advance. Aims also depend on the relationship of the army group's actions to those of other army groups in the theater. Whatever the conditions, however, aims usually include the following:

- Destruction of enemy precision weapons and all their support systems.
- Destruction of enemy ground and air forces.
- Prevention or at least delay of enemy mobilization and deployment.
- Seizure of the enemy's political or economic center of gravity.
- Elimination of certain enemy nations from the war.

These aims translate into the army group's immediate and subsequent missions. The following paragraphs briefly detail army group missions. (See "Missions and Norms" for additional details.)

Immediate missions include the elimination of enemy nuclear and precision weapon complexes, the destruction of major enemy ground and tactical air groupings, and the seizure of vital areas. Together, these actions should destroy the stability of the enemy defense and the bases of his tactical aviation. The successful execution of these first steps creates favorable conditions for developing the army group offensive to the depth of the theater.

Subsequent missions include the elimination of newly detected nuclear and precision weapons, the destruction of enemy deep reserves, and the occupation of areas that contribute toward or achieve the strategic aim.

An army group executing a coastal operation has the tasks of destroying coastal groupings, seizing peninsulas or straits, occupying naval bases or ports, and establishing a coastal defense against amphibious landings to protect the flanks of inland thrusts. (For more information on coastal operations, see "Attack Along a Coastline.")

An army group attacking in a mountainous area must pay particular attention to the destruction of enemy forces in areas of (or leading to) road junctions, mountain passes, built-up areas, and other vital regions that lead to wide valleys and plains. The plan is generally to bypass enemy defensive positions, isolate them, and attack them from the flanks and rear. Thus, terrain features normally determine the aim of army group offensive operations.

An army group operating in the desert has the same basic aims as in normal terrain. However, missions are likely to be to greater depths, and frontages are wider, with gaps in them. The offensive typically takes the form of high-speed attacks from the march against the enemy's flanks or rear.

An army group in the offense is likely to have cities in its zone of responsibility. Its aim is to encircle and destroy enemy forces before they can occupy cities. If that is not possible, the army group's first echelon is to bypass pockets of resistance, encircle the city, and continue the advance. Follow-on forces could later neutralize the bypassed enemy-held areas.

Prerequisites for Success

The OPFOR believes that victory depends on achieving surprise, gaining air superiority, and establishing a sufficient superiority in the correlation of forces (COF) on key axes. Combat aggressiveness and decisiveness also play a part, and all of these imperatives translate into the characteristics of army group offensive operations--surprise, rapid advance, concentration of forces, maneuver, and deep strikes.

Surprise

The OPFOR regards operational surprise as an important principle of operational art. It is one of the most important

conditions for the successful achievement of operational missions. Operational-level forces can achieve decisive surprise by conducting unexpected actions, thus forcing the enemy to conduct combat operations at a disadvantage.

Surprise in offensive operations results from a skillful application of the elements of IW, used in conjunction with more traditional means. The OPFOR believes that there are numerous ways to achieve surprise, for example--

- Keeping the concept of operations absolutely secret.
- Selecting the right axis and timing for the main strike.
- Concealing preparations for the operation.
- Using new methods of conducting combat operations.
- Opening massive fire unexpectedly from all assets.
- Employing new technological means of warfare.
- Achieving a swift penetration and carrying the offensive to the enemy's operational depths.
- Maneuvering personnel and equipment extensively.
- Exploiting terrain, weather, season, and time of day for combat operations.
- Deceiving the enemy about one's intentions by extensive and skillful use of operational concealment, disinformation, and other information warfare activities.

Under modern conditions, reconnaissance and intelligence-collection capabilities have increased greatly. So have the scale and complexity of warfare. Totally concealing preparations for large operations is difficult. The OPFOR does not believe, however, that the importance or necessity for surprise has lessened. At the operational level, concealment of the scope and scale of the operation, the plan for and axis of the main strike, and the exact time at which combat operations will begin is crucial.

Commanders and staffs maintain great secrecy regarding the concept of the operation and the composition of the main strike groupings. They pay much attention to issues such as--

- Communications discipline.
- Concealment of C^2 assets.
- Deceptive actions on secondary or false axes.
- Active disinformation to mislead the enemy.
- Electromagnetic spectrum operations at critical points and times.
- Skillful use of new tactics and technology to accomplish the operational mission.

The importance of surprise has also increased because of the enormous destructive power of modern weapons. Achieving operational surprise can ensure mission success. In many cases, it is the decisive factor.

Rapid Advance

A high rate of advance characterizes the offensive. The OPFOR anticipates that, over a period of several weeks or more, an average rate of advance of from approximately 40 to 60 km per day will occur. However, it does not expect this rate to be uniform.

When confronting an enemy in a defensive position, the OPFOR targets weak points in the defense. It drives to the enemy's rear whenever possible by bypassing major force concentrations. It attempts to cripple the enemy quickly by destroying or disrupting nuclear and precision weapons capability, C^2 facilities, and logistics systems before the enemy can effectively react.

Even if the OPFOR must deal with an enemy emplaced in defensive positions across its entire frontage, it tries to avoid a costly, time-consuming battle of attrition. Using an overwhelming COF in its planned strike sectors, the OPFOR attempts to develop penetrations leading to the enemy's rear to topple his defensive structure. It anticipates that elements of an army group's second echelon most likely will not have to fight enemy forces in defensive positions. It expects to have overrun prepared positions within the first 2 to 4 days of the war. At that point, it expects combat to be characterized by rapid movement into the enemy rear interrupted by violent, relatively brief meeting engagements.

Concentration of Forces

An army group normally conducts a main attack over one or more axes. The proximity of one axis to another depends on whether the army group is to fragment or encircle the enemy in its drive to achieve its missions. The choice of axis for a main attack is critical in defeating the enemy and seizing territory. One or more supporting attacks accompany the main attack. A supporting attack ties down enemy forces to prevent them from reinforcing the sector threatened by the main attack.

An operational-level commander may designate certain sectors of enemy defenses as strike sectors. These are areas, normally across a main attack axis, that he deems necessary, desirable, or likely for major penetration. The commander may attack the sector with precision weapons, massed air and artillery fires, and with numerous attacks on multiple axes by maneuver units.

The greater range and increased mobility of precision weapons and modern artillery weapons enables the OPFOR to mass fires against a target without concentrating the weapons themselves. This practice reduces vulnerability to an enemy precision weapon strike. It also hinders the enemy from predicting long in advance where a main attack might occur. Along with precision weapons and artillery fires, the integrated fire plan can include the fires of SSMs, fire support helicopters, fixed-wing aircraft, and even naval guns. Again, this enhances its ability to concentrate fires without exposing masses of troops to possible enemy precision weapons strikes.

An additional advantage of the OPFOR's using precision weapons and modern acquisition means on the battlefield is that the enemy must avoid concentrating forces. The defender must leave gaps or lightly manned sectors between his units. When possible, the commander directs his attack against these undefended or lightly defended areas. He thus achieves a favorable COF without massing his own forces.

The OPFOR has a wide range of options for echelonment. (See "Operational Formation.") It might have a clear numerical advantage over the enemy across its entire frontage, or the enemy might have positioned the bulk of his defending forces forward. If so, the OPFOR is more likely to use a single, strong echelon to effect multiple, narrow penetrations. In other cases, enemy defenses might be well prepared or echeloned in depth. Then, the OPFOR uses an attack force echeloned in depth to maintain the momentum of the attack after the initial penetration.

Maneuver

Offensive operations emphasize the role of maneuver. An offensive operation has three basic goals:

1. The achievement of a penetration through the enemy's tactical zone of defense.
2. The development of the offensive into the operational depths.
3. The resulting isolation, encirclement, and destruction of the enemy force.

The OPFOR tries to attack the enemy's weakest points and gaps, preferring to make multiple penetrations. It shifts combat forces (air, ground, naval) and combat support assets (such as fire and materiel) to win a decided COF advantage over the enemy and to make maneuver possible.

Exploiting the effects of maneuver by fire has assumed an increasingly important role in warfare. Fire is a generic term that includes artillery, aviation, tank, and other kinds of fire. The OPFOR believes that modern precision weapons are approaching the destructiveness of tactical nuclear weapons. The OPFOR masses ground forces and fires while also attempting to minimize detection by the enemy or to deceive him. It concentrates forces rapidly at the decisive points and times and then disperses them. Air superiority remains a key factor.

Deep Strikes

An army group offensive begins with a large-scale air offensive. This air offensive might begin shortly before, or concurrent with, the initiation of ground force operations. The OPFOR employs the air offensive continuously for as long as several days, using massed assets from army group, strategic, and naval aviation. The main goal of the air offensive is to gain air superiority for the remainder of the operation.

Typical targets of the air offensive are--

- Delivery systems for nuclear and precision weapons.
- Airfields and aircraft.
- Air defense systems.
- C^2 facilities.

Ground attacks by army group ground forces follow a massive fire preparation conducted by first-echelon armies. While it is

not likely to use tactical nuclear weapons, the OPFOR always includes nuclear strikes in its fire planning.

An army group could launch an airborne operation either at the start of an offensive or at a later time, possibly after completing the air offensive. In any case, the airborne insertion would rely on penetration corridors the air offensive creates in enemy air defenses. The airborne operation could involve elements of an airborne division (against a key strategic objective in the army group's sector), but would more likely involve one of its subordinate brigades (or battalions) or, possibly, a separate airborne infantry brigade.

The airborne force normally plans to link up with advancing ground forces, probably an operational maneuver group. Objectives are precision weapons systems and support facilities, C^2 centers, enemy airfields, major bridges, and logistics facilities. The OPFOR equips its airborne forces (except the separate airborne brigades) with airborne infantry combat vehicles. On the ground, especially in the enemy rear, these forces fight as mechanized infantry.

Many aspects of an army group operation contribute to achieving simultaneous deep attacks throughout the enemy's defense. These include the air offensive and airborne operations mentioned above, as well as air defense, SPF, naval, and amphibious operations.

Information Warfare

The OPFOR commander relies on IW to be a major contributor to offensive operations. Continuous IW activities during the attack assist in preventing the enemy from a creating or maintaining a stable defense. This can force enemy planning into a reactive mode, responding to OPFOR initiative.

Specific, timed activities support each phase of an offensive operation. In addition to contributing to the penetration, the aim of IW activities can be to prevent the enemy from committing strategic or operational reserves and establishing a new defensive line to the rear. Eventually they could lead to the fragmenting and destruction of defending enemy forces.

Information warfare objectives in support of the offense include the following:

- Disruption or destruction of enemy C^2 links coordinating the defense.
- Protective measures to maintain C^2 for the OPFOR.
- Deception efforts to conceal the main effort and critical assets.
- Disruption or destruction of precision weapon-related C^2 links and sensors.

The contributions of the IW elements to offensive operations are discussed below.

Electromagnetic spectrum operations (ESO). ESO in the offense focus on identifying critical enemy C^2 nodes and links supporting the defense, as well as disrupting the communications and sensors required for the defense. Due to the increased vulnerabilities of an attacking force, particular emphasis is on identifying and disrupting communications and data links associated with precision weapons. Specific C^2 links can a high priority for disruption or destruction depending upon the phase of the operation.

Coordinated jamming and fire support strikes are extremely effective when timed for the most critical phases of the attack, especially during a penetration or commitment of an OMG. The OMG in particular often depends on the electronic combat (EC) assets accompanying it during its penetration of the enemy defense, as it will be further removed from supporting reconnaissance assets of its parent organization.

The OPFOR uses airborne jamming and reconnaissance systems extensively. Large-scale air offensives in particular require extensive support from airborne EC systems. These systems provide protection for air formations through jamming of air defense radars and associated communications systems.

Destruction. Enemy assets that can most effectively disrupt or halt the OPFOR offensive are the focus of OPFOR destruction measures. All available assets, both ground-based and airborne, contribute to this effort. High-priority targets include C^2 and reconnaissance systems associated with precision weapons, tactical C^2 nodes, command posts (CPs), and communications facilities.

The OPFOR focuses on the destruction of precision weapon-related communications and sensor systems. OPFOR maneuver forces massing in the strike sector in preparation for the attack are extremely vulnerable to the enemy's precision weapons. Specific unit types selected as targets and the times for engaging them depend on their location on the battlefield and the

phase of the operation.

Protection and security. Reconnaissance activities focus on identifying the maneuver forces and fire support assets of the main enemy defense, especially those in the area of the OPFOR main effort. Successful counterreconnaissance efforts are critical to winning a meeting engagement, allowing the OPFOR to react and deploy prior to the enemy, at a time and place of its choosing.

Protective measures such as camouflage, cover, and concealment, are much more difficult to employ during the attack. The OPFOR must therefore emphasize those signature-reduction measures it can conduct while on the move, both while moving up from the rear and during the attack. These include strict adherence to information security procedures, maximum use of encryption systems, and the minimum use of communications and sensor transmissions. These measures are doubly important in the case of the employment of an OMG. The OPFOR conducts extensive force protection and reconnaissance screens and patrols to limit enemy detection or observation of OPFOR units as they prepare for the offensive.

Deception. Each level of command prepares a deception plan to the extent that time allows. Most deception activities in the offense focus on preventing the enemy from identifying the OPFOR's operational formation and intentions. While the best case for the OPFOR is to force the enemy into an unprepared or ill-prepared defense with limited covering forces. This situation also affords the OPFOR the least time for preparing a deception plan. However, the necessity to deceive the enemy is reduced when he is unable to present a strong, coordinated defense.

Because of the nature of the offense, and the conduct of a meeting engagement in particular, deception operations are often a protective measure as much as an attempt to influence the enemy's decision-making process. Deception measures and activities can include--

- Creating the false picture of a main offensive effort.
- Maximizing protective measures to conceal movement.
- Creating false high-value assets such as dummy SSM launchers, CPs, or armor concentrations.

The fact that there is no fixed army group or army organization lends itself to deception operations aimed at misleading the enemy as to the OPFOR's composition and strength. Enemy force calculations based upon incorrect analysis of the OPFOR's strength, especially in the main strike sector, may create a more favorable COF for the OPFOR. When successful, deception can force the enemy to focus on limited or nonexistent forces and axes, thus tying down valuable enemy assets outside the actual main strike sector.

Perception management. Perception management activities are tailored to meet the cultural, social, and education levels and traditions of the enemy. The OPFOR conducts psychological warfare and propaganda against enemy military forces, as well as against the civilian populace in the areas controlled by the enemy and the OPFOR. The OPFOR may include elements of the truth, as well as false and misleading information, in developing the perception management strategy.

The OPFOR employs all forms of information media. Television, radio, and newspapers all contribute to the effort. The OPFOR might also distribute a variety of leaflets, pamphlets, and posters throughout occupied territory.

The OPFOR carefully integrates psychological warfare or propaganda activities with the goals and objectives of the overall IW plan. Perception management efforts may also serve as a significant contributor to a deception operation. The spread of leaflets, along with radio transmissions, into a part of the enemy's defense not intended as the main effort could serve to draw attention from the OPFOR's main effort.

COMMANDER'S DECISION

A sound decision depends first and foremost on a clear understanding of the concept of the higher commander (theater commander in chief (CINC) or General Staff). The commander must understand the role and place of his army group in the theater plan as well as the mission of adjacent army groups and of other services and the nature of his interaction with them. Having clarified his mission, the commander makes his assessment and issues his decision. (See also Chapter 7.)

Assessment of the Situation

An accurate assessment of the situation is of vital importance to the outcome of the operation. It must take into account all the situational influences that can hinder or facilitate mission accomplishment. Thus, the commander and his staff usually

consider the following factors.

Enemy Forces

The commander must assess the composition and operational formation of the enemy and his capabilities and limitations. Included in his assessment is the enemy's likely intentions and the character of his actions. The commander can then identify--

- The main enemy grouping and the consequent form its destruction should take.
- The most favorable axes for his main and secondary attack, these being determined largely by the enemy's strong and weak points.
- The requirements for establishing a sufficient COF superiority over the enemy on each axis.
- The enemy commander's personal style, strengths, and weaknesses.
- Targets for the air offensive.
- Targets for airborne, heliborne, or amphibious operations.

The commander always considers enemy deception efforts when assessing the enemy.

Friendly Forces

The commander must also assess the strength and capabilities of his own army group (including logistics support) and the proposed actions of neighboring formations. These factors help determine such issues as the width of strike sectors and the army group's operational formation.

Terrain

The geography of the area of operations exerts a considerable influence on the commander's decision. He also takes into account the weather and such considerations as the hours of light and darkness appropriate to the season.

Economic and Social Factors

The assessment also includes the economic situation and the sociopolitical composition of the population in the area of operations. This allows the commander to determine whether he should expect help, hindrance, or neutrality and from whom. This assessment also allows the OPFOR commander to determine how best to exploit economic, political, and social factors using information warfare.

Issuing the Decision

When he issues his decision, the commander specifies--

- His concept of the operation, to guide his subordinates in making their own decisions.
- The missions of the various armies, the missile troops and artillery, the air defense forces, the air army, airborne and amphibious units, and various types of reserves.
- Objectives for his reconnaissance assets.
- Objectives and means for IW.
- Measures for the organization of C^2, coordination, and logistics support.

The army group commander normally presents his decision graphically on a 1:500,000 or 1:250,000 map. Figure 4-1 provides an example of such a map. Based on the commander's decision and instructions, the army group staff does the detailed planning, as follows.

Initial Operations

The most detailed work goes into planning the first few, most predictable days of the operation. The staff cannot discount the possibility of the enemy's preempting the offensive, since surprise spoiling attacks are a highly effective method of disrupting

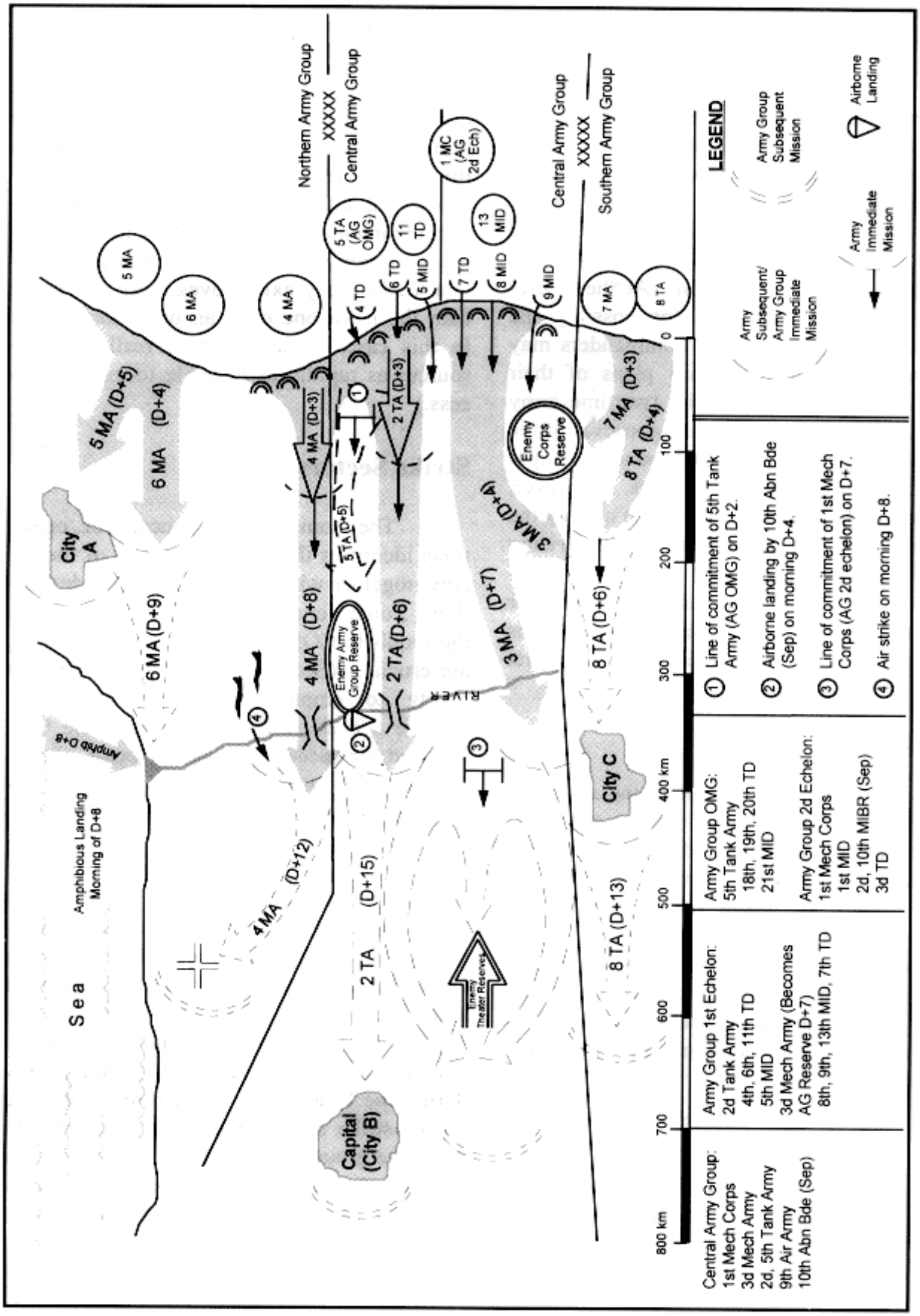

Figure 4-1. Map of the army group commander's decision.

an offensive at the start. The staff identifies possible enemy axes and assigns covering forces to protect the army group's deployment. The staff works out the lines and areas occupied and held by covering forces, together with plans for combat and air support and for coordination with border troops and forces of the first echelon. The staff then plans the actions of the first-echelon armies in terms of time, lines or areas, and how forces are to accomplish immediate and subsequent missions. The staff works out in great detail the required COF, and it plans the form and duration of artillery and air support and the requirements for air defense in great detail for all axes and sectors. It also determines the methods and missions of formations in destroying covering forces, penetrating the defense, conducting meeting engagements, and annihilating the main enemy grouping.

Plans for the destruction of enemy precision weapons receive high priority. These are targets for SPF, air, missile and artillery troops, and raiding detachments (both ground and airborne forces).

Subsequent Operations

At this point, planning for the later stages of the operation appears in general outline only. The staff assigns axes of advance, designates areas or lines to seize, and gives a broad indication of how to destroy approaching enemy reserves and surviving groupings.

Security

An army group operations plan as well as directives specifying missions of subordinate troops in the initial army group operations normally exist in peacetime. However, the commander briefs only a limited number of his staff (including the chief of staff and the chiefs of branches), and then only as to matters relating to their function. At the discretion of the General Staff (or possibly the theater headquarters), army commanders may personally receive operations plans of their armies in the military district (wartime army group) headquarters. With the approval of the same authorities, army commanders might participate in creating these plans. However, they normally are not authorized to convey the assigned missions to commanders at division level or below in peacetime. Army commanders keep the sealed plans and orders in their personal safes until they receive instructions for their release from the military district (army group) commander.

Deception

Alongside the real plan, the staff creates another, worked out in just as much detail, for deception. Thus, the OPFOR attempts to conceal the movement and deployment of actual forces, or where that is impossible, makes efforts to disguise their true scale. Deception can serve to confirm enemy expectations as to the likely actions of the army group. It can mislead the enemy into mistaken deployments and to draw attention from real preparations.

Axes

The number of axes on which the OPFOR attacks depends largely on the requirement for establishing a decisive COF superiority on specified axes. Often, an army group mounts attacks on two, or even three, axes during its initial offensive operation. One of these is the main attack, and the operations plan specifies its axis to the depth of the immediate mission, sometimes even to the entire depth of the operation. The axes of other, supporting attacks depend on the need to support the main axis and to destroy the principal enemy grouping. (Of course, it may happen that a secondary axis proves more successful than the main one once an operation begins. In this case, the commander reallocates resources as rapidly as possible to exploit success.)

Strike Sectors

The commander's concept of operations identifies the main groupings of the enemy, together with the forms of their destruction. Force density and the establishment of the requisite COF superiority over the enemy are crucial. (See Chapter 7.) The OPFOR's ability to employ precision weapons to achieve decisive effects can reduce the COF required for success in a given sector. Precision weapons can also lessen the need for massing tanks, infantry, and artillery on narrow axes.

To reduce vulnerability while establishing superiority on limited sectors, it is necessary to disperse strike groupings laterally and in depth, conduct engineer preparations of assembly areas, thoroughly camouflaging forces, and conduct rapid attack from the march. Thus, dense groupings appear only during the penetration, when forces converge on the strike sector (penetration sector). As the strike groupings penetrate the enemy tactical zone of defense, they disperse to the flanks and advance at high speed into the enemy's rear.

OPERATIONAL FORMATION

Mission requirements and the concept of operations determine the operational alignment of the forces within the army group. The OPFOR term for this basic organization for combat is *operational formation*. The operational formation of an army group (or army) is the grouping created for conducting a particular operation. It must be in accordance with the higher commander's concept and must develop the necessary COF for achieving the mission. The army group must establish strike groupings of the required strength to penetrate the defense and thereafter constantly expand its efforts on the main axis.

The OPFOR is quite flexible in its organization for combat. Against a fully prepared or partially prepared defense, the army group normally deploys in two echelons. Against a very weak, ill-prepared, or overextended enemy, however, it may attack in a single echelon with a combined arms reserve. ***An echelon is a grouping with a predetermined mission before the start of the operation***. As a general rule, mechanized armies normally make up the first echelon of the army group. Tank armies normally appear in its second echelon or as the army group operational maneuver group (OMG).[1] An army group may place tank armies in its first echelon to attain greater speed when terrain and other conditions permit this employment. This variant is likely if a large precision weapons strike precedes the ground offensive or if enemy defenses are unprepared.

To ensure success, the operational formation must--

- Secure decisive COF superiority on designated strike sectors (and prevent the enemy from achieving the same in defensive sectors).
- Make possible the rapid reinforcement and maneuver of forces in the course of the operation.
- Enable a rapid transition from one form of combat action to another.
- Ensure uninterrupted C^2 and conduct of operations.
- Provide protection from enemy use of precision (and nuclear) weapons.

Elements

In an offensive, operational formations include most or all of the following elements:

- A first echelon (containing most of the army group's forces).
- An OMG.
- A second echelon or a combined arms reserve.
- Antitank reserve (with mobile obstacle detachments).
- Engineer and other special reserves.
- Groups of missiles, artillery, and air defense.
- SPF.
- Airborne or amphibious landing forces assigned from higher command.
- Air army assets.

An army group's first echelon normally contains most of its forces. The remainder, or follow-on forces of the army group could include--

- A second echelon or a combined arms reserve.
- An OMG.
- Special reserves.

However, the "follow-on" label applies to the operational maneuver group only in the initial stage of an operation. At the first opportunity, it moves through a gap to lead the way for the main forces, which include the first echelon, the second echelon or combined arms reserve, and the special reserves.

OPFOR planners use the concept of echelonment of their forces to ensure the continuous buildup of combat force in the decisive sectors at the critical time. They do not consider reserves to be echelons. (A discussion of reserves appears later in this section.)

First Echelon

First-echelon forces have the important task of penetrating through the enemy's tactical zone of defense and defeating enemy immediate operational reserves. After that, they continue the offensive into the enemy's rear. Therefore, the OPFOR deploys the bulk of its forces in the first echelon. Its task is to destroy the enemy's corresponding first echelon (immediate mission) and develop the offensive into his depth (subsequent mission).

Given the power and mobility of its divisions, the OPFOR expects its first-echelon divisions to penetrate to the entire tactical depth of at least a partially prepared defense (that is, to the rear boundaries of forward enemy divisions). The should be able to accomplish this before the parent army has to commit additional forces to maintain momentum.

The mission of the army group's first-echelon armies is to overcome enemy defenses and to attack through the immediate operational depth (to enemy corps rear areas). Army group first-echelon forces may receive support from the artillery, other combat support, and logistics elements of the army group's second-echelon forces.

Second Echelon

When formed, a second echelon augments and reinforces the efforts of the first. The second echelon is formed and receives its mission at the same time as the first echelon.

Its commitment to battle can thus be preplanned and accordingly rapid, needing only last-minute refinements. It may--

- Develop the success of the first echelon wherever that success occurs, conduct pursuit, and/or penetrate deeper defense zones.
- Defeat counterattacking enemy groupings and destroy them in flank and rear attacks.
- Destroy bypassed groupings that threaten the development of the operation or unduly restrict deployment and limit operational flexibility.

An army group second echelon (norm-ally at least one army) has the primary mission of exploiting success achieved by first-echelon forces. This usually occurs by continuing the main thrust of the offensive to the army group's subsequent mission. Thus, it is usually desirable to commit the second echelon only after completing of the army group's immediate mission. Circumstances, however, may compel the second echelon's earlier involvement to reinforce the first echelon's efforts in completing the immediate mission. Therefore, commitment of the second echelon normally follows rather than precedes that of the OMG.

Once the OPFOR has penetrated the enemy's tactical zone of defense, the frontage of advance widens. Usually the second echelon should be able to pass through a gap in the first echelon's combat formation or commit to a flank. Once the second echelon is committed, the former first-echelon forces then, normally, become a combined arms reserve. In this context, it is worth noting the impossibility of committing a second-echelon army through the wreck of a first-echelon army in battle formation. Always, the basic principle is to use second echelons to exploit success--not to redeem failure.

Second-echelon formations are components of a higher formation's main forces. Their missions are preplanned and well-defined, and can include--

- Building up further pressure in the attack on the main axis, completing the work begun by the first echelon, and penetrating the enemy's subsequent defense zones or, at least, widening any breach in forward zones.
- Completing an encirclement and destroying the surrounded enemy grouping through flank and rear attacks.
- Repelling counterattacks or possibly acting as an outer arm of encirclement.
- Providing flank protection for an advance into the enemy rear.
- As a last resort, redeeming failure, either by switching to a new axis of main effort or by replacing exhausted first-echelon elements.

Operational Maneuver Group

Perhaps the most significant characteristic of operational formation of army groups and armies is the OMG concept. The OMG is distinct from the second echelon or reserves. It represents a unique element in the operational formation of army groups and armies.

The term OMG does not signify any particular organization. The "group" in its name connotes a force that is task-organized for a particular mission. An operational commander may form an OMG either before or during the course of an operation. At army level, an OMG probably consists of at least one division. At army group, the OMG would be larger--from two or more

divisions to an entire army. It is unlikely that a corps would form an OMG, because a corps would not generally have the assets to create a large, independent formation.

The OPFOR might not always form OMGs. Forming OMGs depends on a number of factors:

- The mission.
- The planned axis of the main attack.
- The tactics, strength, and readiness of enemy forces.
- The nature of the terrain over which an attacking force must maneuver.

The OPFOR is most likely to use an OMG when the enemy defense is at a low state of readiness, or when enemy defenses are relatively shallow and not supported by large reserves. Formation of an OMG directly affects the COF that an army or front commander can achieve. The commander must sacrifice forces in either the first or second echelon to form an OMG. However, the OMG is also a force multiplier. It meets the OPFOR goal of placing a substantial force in the enemy rear area quickly to conduct simultaneous attacks throughout the depth of the enemy's defense.

The OMG is, in effect, a formation tasked to achieve at the crucial operational level what the forward detachment accomplishes at the tactical and operational-tactical level. It is little more than the logical development of the latter. As an exploitation force, its role is quite distinct from that of the second echelon and requires a different level of flexibility, mobility, and combat power.

The concept of facilitating the advance of the main forces through the use of an OMG is more flexible, more dynamic, and perhaps more potentially damaging and difficult for the enemy to counter than the concept of using a second echelon. A comparison of the possible roles of each element makes the point quite clear. (See Figure 4-2.)

Tasks of OMG	Tasks of Second Echelon
1. Drive deeply, rapidly into enemy rear, destroying/disrupting enemy nuclear and precision weapon capabilities, C^2, and logistics support in raids. 2. Parallel pursuit and destruction of withdrawing enemy groupings. 3. Create the inner arm of encirclement or act as the outer arm, destroying enemy reserves moving forward in meeting engagements. 4. Seize defense lines in the enemy rear before he can occupy them. 5. Seize objectives that facilitate the advance of the main forces. 6. Seize key political, economic, or military objectives.	1. Build up pressure on the main axis and penetrate deeper defense zones. 2. Widen the strike sector or bridgehead. 3. Repel counterattacks and provide flank protection for further advance. 4. Strengthen the inner arm of encirclement and destroy the encircled grouping with flank and rear attacks. 5. Replace exhausted first-echelon formations where necessary. (This is not by design, but as a last resort.)

Figure 4-2. Comparison of roles of OMGs and second echelons.

The role of an OMG is the conversion of tactical into operational success (army OMG) or operational into strategic success (army group OMG). By operating in the enemy's rear, usually ahead of and separate from the main forces, OMGs crumble the defense from within. OMGs can help precipitate the collapse of the defense and accelerate the advance of the main force in two ways. First, they could attack the enemy first echelon's C^2 and logistics support. Second, they could engage his operational or tactical reserves and seize deeper defensive lines before the enemy can man them. Thus, the actions of OMGs, if inserted early, could make the deployment of second echelons superfluous.

Reserves

Reserves are an integral part of the operational formation of army groups. They are contingency forces held by the commander to meet any unforeseen circumstances. Reserves do not receive definite missions when the operation is planned. Their role is to increase effort, to replace or reinforce formations of the first echelon, and to complete unforeseen missions that suddenly arise in the course of the operation. Thus, unlike second echelons, they cannot receive their missions in advance.

In the offense, the army group commander specifies the composition, possible missions, concentration areas, and methods of relocation of three basic types of reserves--combined arms, antitank, and special reserves.[2]

In some cases, as in an offensive against a relatively weak and shallow enemy defense, the army group might employ only a single echelon. If an army group does not have a second echelon, it generally retains at least one division as a ***combined arms reserve***. If the operation is likely to develop in a highly fluid, unpredictable fashion, an army group may form a combined arms reserve instead of a second echelon, since its mission could not be readily foreseen and pretasking is therefore impossible. In that case, or against a partially prepared defense, the army group retains a larger combined arms reserve of two, three, or more divisions. Such a reserve might be similar in size to a second echelon or even larger. The difference is that it might not have all the support elements present in an army and, of course, it would have no definite mission at the outset.

Depending on the developing combat situation, the combined arms reserve might--

- Reinforce or exploit the success of first-echelon forces.
- Repel counterattacks.
- Provide flank and rear area security.
- Respond to other contingencies that might arise.

Normally, an army group has an organic antitank brigade. The army group's antitank assets may reinforce first-echelon armies or the combined arms reserve.[3] Alternatively, they may form an army group ***antitank reserve***, often reinforced with engineer assets. (See Chapter 9 for more information on the employment of antitank reserves.)

All commanders from brigade up to army group automatically form antitank reserves. Their main role is to repel counterattacks and/or provide flank security. They usually have antitank units as their basis, but may be reinforced by tank and/or mechanized infantry troops as appropriate. Antitank reserves play an important role in the fluid maneuver battles and engagements anticipated by the OPFOR. They provide an economy of force, a grouping that can deal with developing armored threats without having to weaken an attack echelon and thereby compromise its viability.

The OPFOR considers antitank fire to have the decisive role in repelling attacks or counterattacks by enemy armor. Therefore, antitank reserves are an important element of the operational formation in offensive as well as defensive operations. Their basic missions are to--

- Screen the advance and deployment of OPFOR formations for attack.
- Reinforce army antitank defense.
- Repel enemy tank counterattacks.
- Screen the advance, deployment, and commitment of second echelons or combined arms reserves.
- Screen the flanks of attacking formations and consolidate occupied positions.
- Screen areas weakened by an enemy precision weapon strike.

With additional antitank brigade(s) possibly allocated from the Reserves of the Supreme High Command, an army group might have one or two antitank reserves. As a rule, they operate jointly with army group mobile obstacle detachments.[4] These assets normally are ready to deploy on tank-threatened axes or at the line of commitment for the army group's second echelon.

The OPFOR often forms special engineer, chemical defense, medical, or other rear services reserves. The role of these ***special reserves*** is to reinforce efforts on the main axis and/or cope with unforeseen problems (particularly those created by the enemy use of precision weapons). In conventional conditions, their primary roles are in defense against enemy counterattacks, security, and tasks requiring specialty skills.

Combat Support

In highly mobile, fluid operations, the OPFOR decentralizes most combat support elements to divisions and below. However, an army group (or army) would retain some long-range systems as part of reconnaissance-strike complexes to conduct deep fire missions. An army group forms army artillery groups (AAGs) and army rocket artillery groups (ARAGs). These groups ensure the concentration of fire on the main axis and the maneuver of massed fire in support of the penetration. They also support the commitment of OMGs and second echelons (or combined arms reserves). Similarly, an army group forms strong air defense groups to protect the concentration of forces necessary for a penetration. In subsequent, mobile operations such artillery and air defense groupings are likely to be reduced or broken up altogether, their elements reinforcing formations on

key axes.

Airborne and Amphibious Forces

Airborne and amphibious landing forces are also part of the operational formation of army groups. The army group commander lays down the following for each landing element:

- Its composition.
- Its staging areas and times of occupation and for preparation.
- The means, time, and area of delivery.
- Combat mission in the enemy rear.

The commander also issues orders for coordination with army group main forces and air and naval forces.

Separate airborne brigades and possibly divisional airborne brigades are available to army groups to conduct deep battle and deep operations. They often work in conjunction with tactical and operational maneuver elements (forward detachments and OMGs) to help convert tactical into operational or operational into strategic success. They conduct raids on high-value targets (especially nuclear and precision systems and C^2 and communications facilities). They can seize key crossroads, defiles, and obstacle crossings in advance of maneuver elements to help maintain momentum or to prevent (or at least delay) enemy attempts to withdraw from or reinforce the battle against either main forces or OMGs.

Determining Factors for Operational Formation

Along with selection of the main and secondary axes, the commander's decision on the operational formation of his army group (or army) is the most important element of his decision. The determining factors are--

- The aim of and plan for the operation.
- The strength, depth, and degree of preparedness of enemy defenses and of his operational reserves.
- The availability of resources.
- The nature of the terrain in the zone of the advance.

The OPFOR is not rigid in its organization for combat, nor does it adhere to a inflexible formula in all circumstances. Given the imperative of a high rate of advance, the operational formation must prevent or delay the enemy use of reserves, or at least render them ineffectual. The OPFOR can accomplish this either by advancing on such a broad frontage that these reserves have only limited, local significance. Another method for the OPFOR to defeat enemy reserves is to maintain a high tempo in the attack, engaging and defeating enemy reserves before they are able to react effectively.

Influence of Nature of Enemy Defense

The operational formation must ensure a rapid penetration of the tactical defense zone and transfer of combat action into the enemy's operational depth without delay. Its precise organization depends primarily on the nature of the defense.

Prepared enemy defenses are likely to have a high density of major antitank weapons. Moreover, the depth of the tactical defense zone can be up to 50 km, and the terrain is generally favorable to the defender, offering both obstacles and protection to the defense as well as inhibiting the deployment and maneuver of large OPFOR formations.

A fully deployed enemy would have strong operational reserves capable of broad maneuver and massive counterstrikes. Against such defenses, the OPFOR would have to attack in two echelons. (Figure 4-3 shows a typical army group operational formation against a prepared defense.)

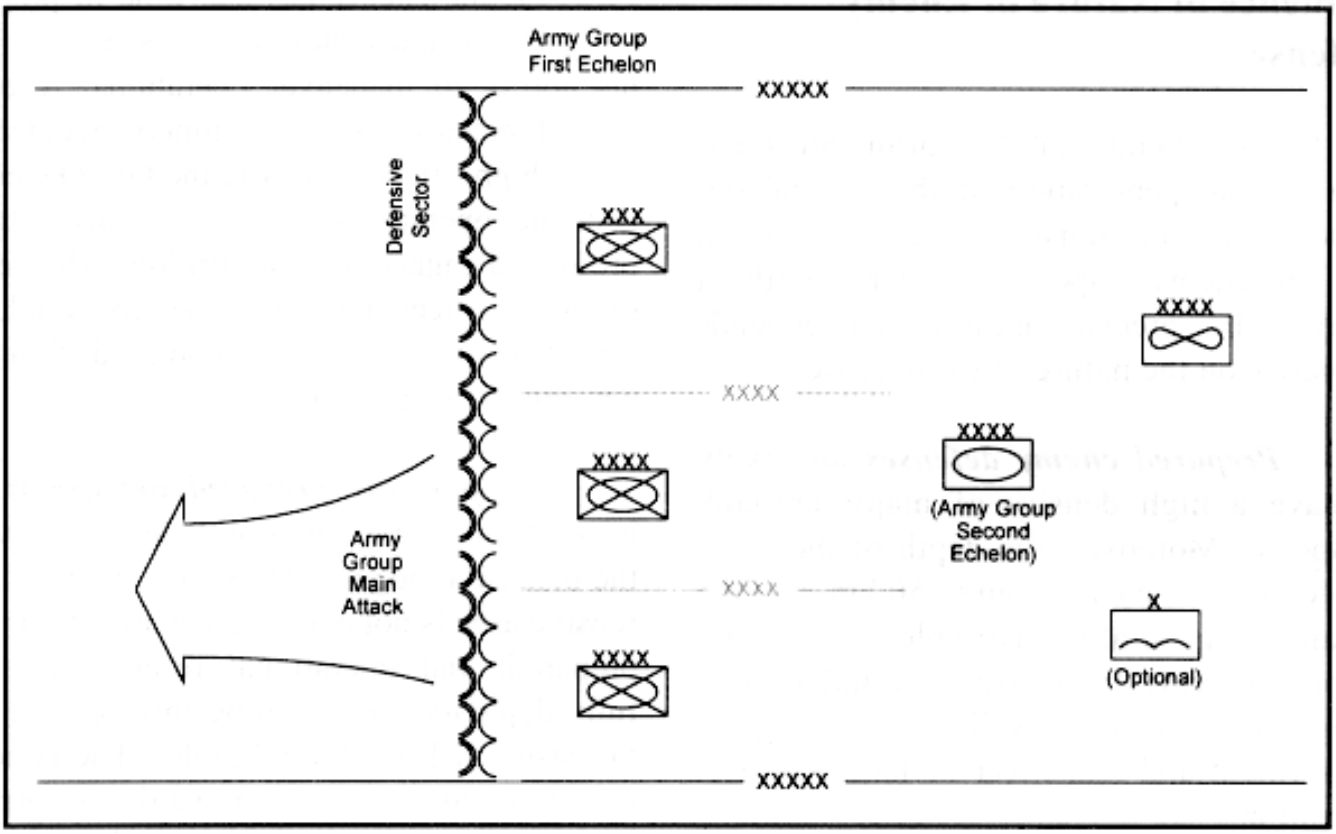

Figure 4-3. Example army group operational formation against a prepared defense.

An army employs a similar operational formation if on a main axis, and would have a strong AAG and an ARAG concentrated on the main strike sector.[5] In such an operation, an army--and perhaps even an army group as well--might try to penetrate on only one, probably narrow axis.

If the enemy has had time to prepare, the stability and cohesion of his defense and his ability to maneuver operational reserves onto threatened axes in a timely manner remains high. In such a case, the OPFOR could generate operational maneuver only after a prolonged engagement of attrition. The defeat of enemy forces then has to be sequential, not simultaneous. Surprise becomes difficult, if not impossible to achieve.

A ***partially prepared defense*** might have strong covering forces deployed when the offensive begins. However, the main defensive area is not even fully manned, far less prepared, and operational reserves are not fully deployed. Penetrating this defense is a far easier task for the OPFOR. The concern here is to maximize the rewards of surprise by delivering the strongest possible strike before the enemy's defense becomes fully prepared.

The closer the enemy comes to having a prepared defense, the more likely it is that the OPFOR army group would have (or need) a second echelon. Figure 4-4 shows a typical operational formation of an army group facing a partially prepared defense that is close to being prepared.

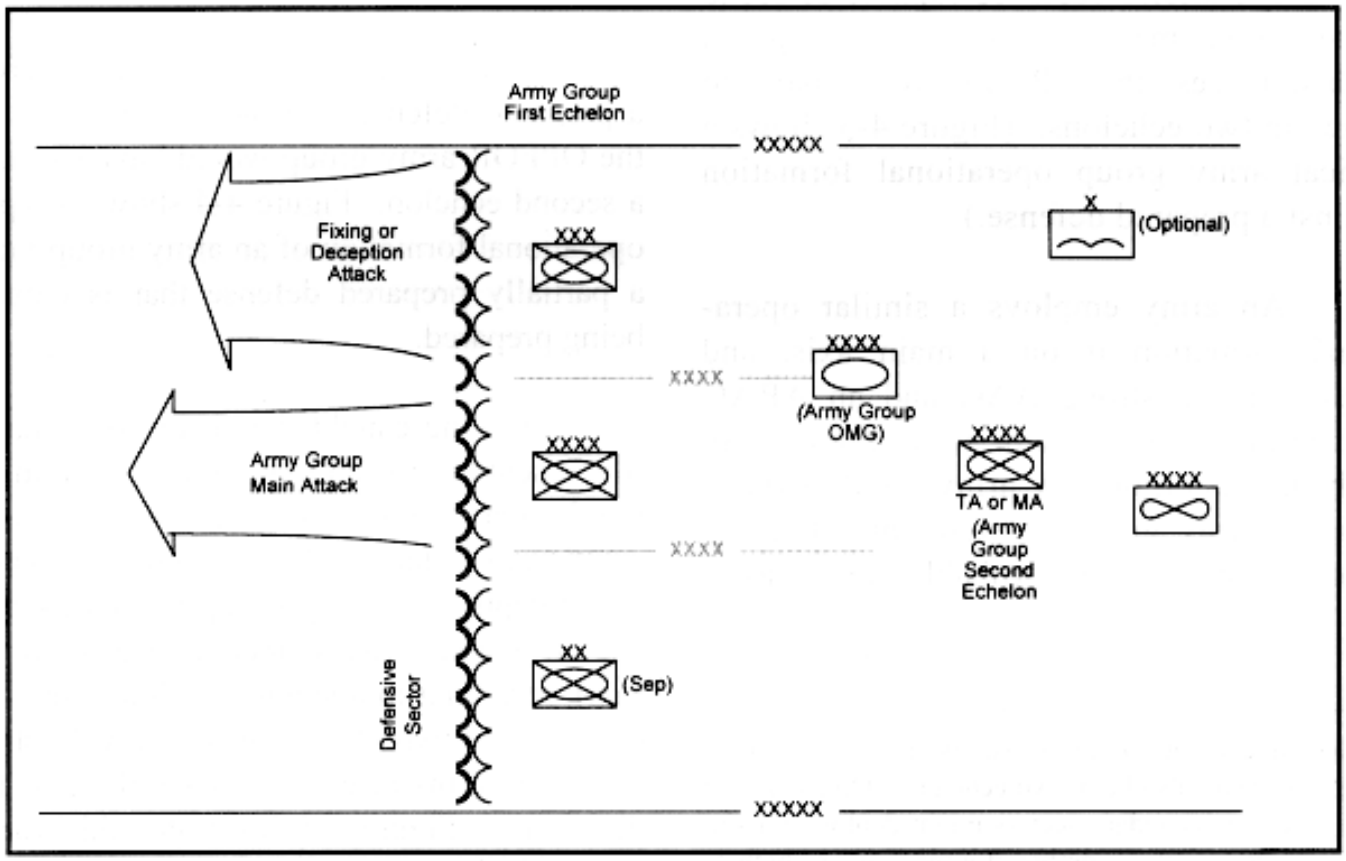

Figure 4-4. Example army group operational formation against a partially prepared defense (variant 1).

Having caught the enemy off balance, it is essential to keep him so, to keep him in a purely reactive posture, and to prevent the creation of a stable defense, even in the operational depth. An army group is then likely to use all available axes (including difficult terrain), attacking in a single echelon with either one or even two OMGs or a relatively strong combined arms reserve (perhaps three to four divisions). Figure 4-5 illustrates this variant of a typical army group operational formation, against a defense at the lower end of the partially prepared category.

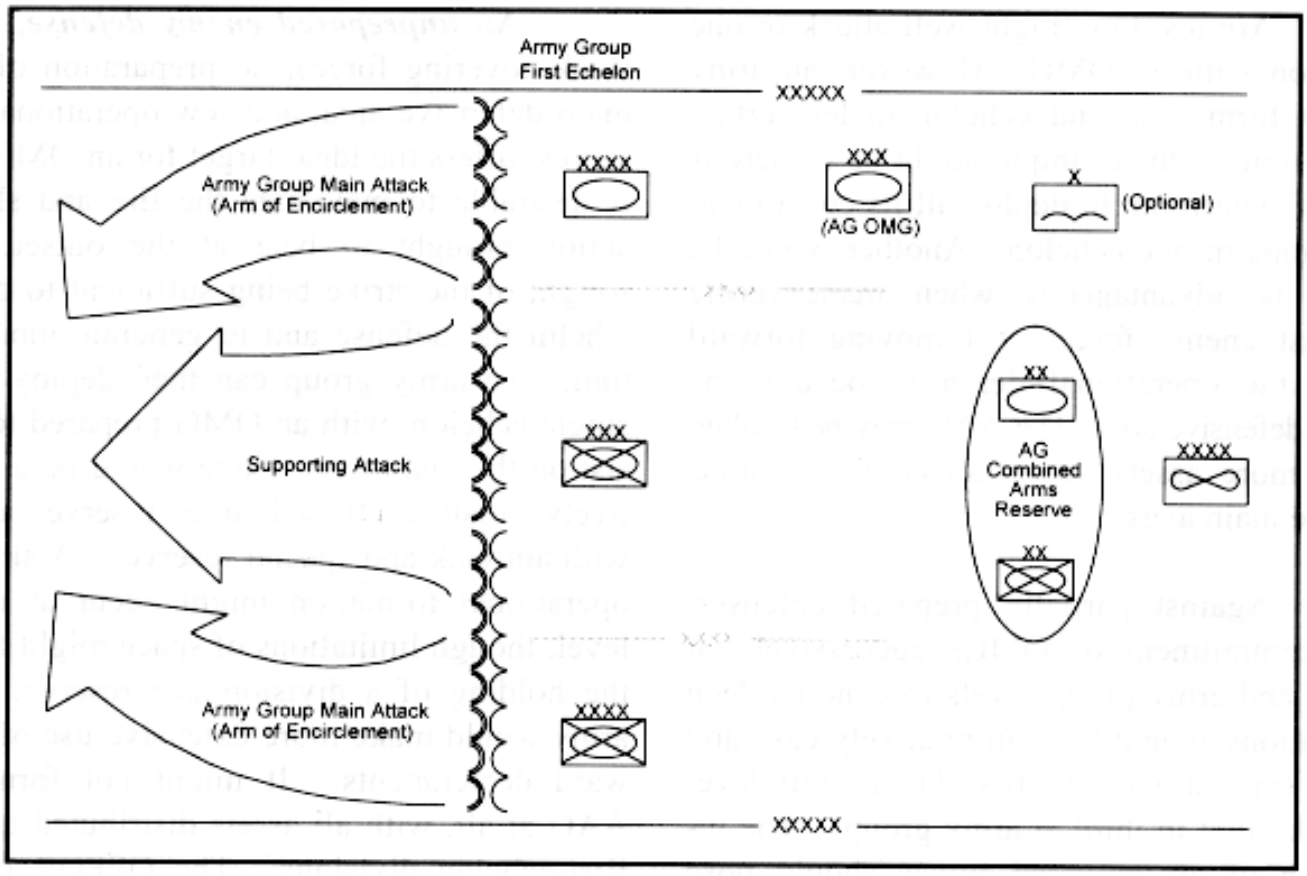

Figure 4-5. Example army group operational formation against a partially prepared defense (variant 2).

Armies, too, might well attack in one echelon with an OMG. However, an army might form a second echelon under certain conditions. One example might be if there is insufficient room to deploy all its constituent divisions in one echelon. Another would be if it is advantageous when maneuvering against enemy forces still moving forward from the operational depth to occupy the main defensive area. The AAG may be smaller, with more assets decentralized to divisions on the main axes.[6]

Against partially prepared defenses, the commitment of OMGs successively at army and army group levels to conduct deep operations should be both relatively easy and rapid (probably on the first day at army level and the first to third at army group). The insertion of air-delivered forces should pose fewer problems, and the delay before linkup with operational maneuver elements should be short, solving the problem of survivability. With a combination of air interdiction, airborne and heliborne landings, and the deployment of OMGs at all levels, the OPFOR can effectively follow the principle of simultaneous defeat of the enemy throughout the depth of his deployment.

Such a scheme of maneuver is not easily countered with weapons of mass destruction, thanks to the speed of advance (expected to average 40 to 60 km per day) and the intermingling of the enemy and friendly forces. For that matter, it also sharply reduces the relevance of the deep interdiction capabilities of enemy precision weapons.

An ***unprepared enemy defense***, with weak covering forces, no preparation of the main defensive area, and few operational reserves, offers the ideal target for an OMG. It is desirable to maximize the fire and shock action brought to bear at the outset, the weight of the strike being sufficient to overwhelm the defense and to generate momentum. An army group can then deploy in a single echelon, with an OMG prepared to assist on the main axis. There would be a relatively small combined arms reserve, along with antitank and special reserves. A similar operational formation might occur at army level, though limitations of space might force the holding of a division-size reserve. An army would make more extensive use of forward detachments. It might not form an AAG at all, with all assets distributed to the first-echelon divisions. The OPFOR could make even bolder use of air-delivered forces. Figure 4-6 illustrates a typical army group operational formation against an unprepared defense.

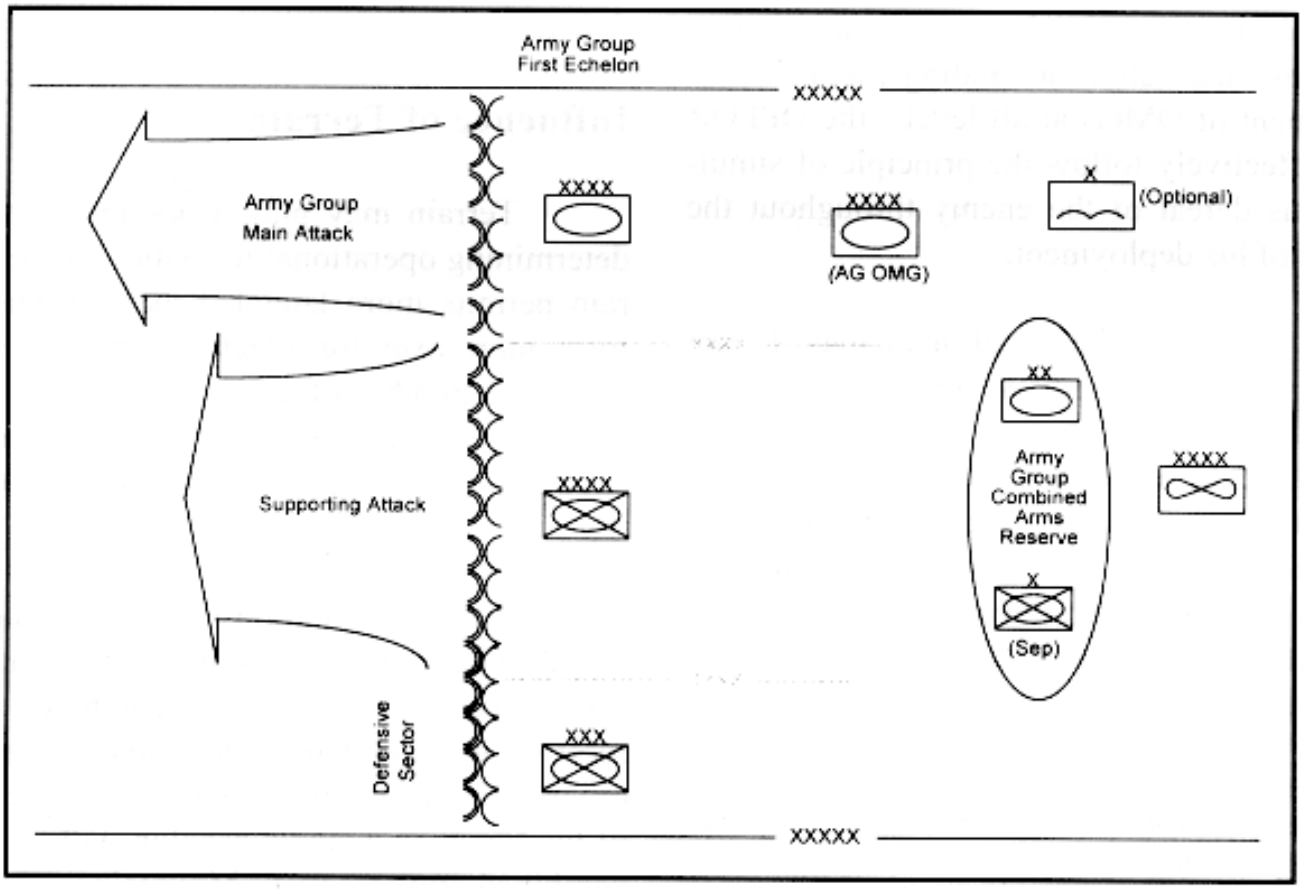

Figure 4-6. Example army group operational formation against an unprepared defense.

Influence of Terrain

Terrain may play a dominant role in determining operational formation. Open terrain permits more lateral dispersion and affords more axes for attack; restricted terrain limits the number of axes. Thus, limitations of space or maneuverability may prevent the adoption of the optimal operational formation.

Terrain limitations might dictate an initial operational formation in two echelons (or one echelon with a large combined arms reserve) in cases where the commander otherwise would have preferred to array the bulk of his forces in a single echelon with a small combined arms reserve. Mountainous terrain may even dictate a three-echelon formation.

On the other hand, an army group mounting an offensive in forested mountainous terrain would often adopt a single-echelon formation. Circumstances could dictate that, even if the commander had a second echelon, he could not commit it to battle in a timely manner. The reason would be the difficulty in maneuvering laterally and in passing one echelon through another (passage to a flank of the first echelon being precluded by the terrain). The viability of this single-echelon option depends, of course, on a disposition of targeted enemy forces and of adjacent formations that would allow a wider zone of attack for the army group in question.

OPERATIONAL MANEUVER GROUP

The OPFOR identified a need for a concept that would enable it to fully exploit its growing technical capability while preventing the enemy from using his. By attacking the enemy simultaneously throughout the depth of his deployment, the OPFOR intends to ensure rapid collapse before the enemy can resort to the use of precision or nuclear weapons. Air-delivered forces play an important role in disrupting the cohesion of the defense, but only significant armored groupings can provide the decisive element in the struggle in the enemy's rear. Their early commitment into the enemy's rear can overstretch the defender's resources by forcing him to fight in two directions, to front and rear, while denying him the means to do so by disrupting his C^2 and logistics systems. At the operational level, this is the role of OMGs.[7] It is important to understand that the OMG is a concept and not a specified formation. It is possible for virtually any division, corps, or army to receive the mission of acting in the OMG role, as circumstances dictate.

Concept

The basic concept of the OMG is to fracture the stability of the enemy defense at the earliest possible moment by conducting deep operational maneuver into the enemy's rear area. Once in the enemy rear, the OMG's main purpose is to help smooth and accelerate the progress of the main force by eroding the defense from within.

The OPFOR sees the OMG as part of a total package of operations in the enemy rear involving air offensive and airborne/heliborne operations and the offensive by more traditional echelons.

It is a concept which can only apply in favorable circumstances. Nevertheless, the OPFOR makes every effort to bring about these circumstances, principally by achieving surprise. The OPFOR sees the concept as a way of fully exploiting the characteristics of modern weapons systems while denying the same to the enemy.

In contrast to a second echelon (or combined arms reserve), the OMG's role is not to overwhelm the defense from in front but to disrupt it from the rear. This is why the OPFOR wants to commit OMGs early, usually long before the second echelon. The OMG is designed to preempt and negate possible enemy countermeasures--

- By destroying and disrupting the soft infrastructure that supports and directs the hard defensive shell.
- By forcing the defense to face the possibility of attack, from behind as well as in front.
- Through its impact on enemy military and civilian morale.

Moreover, the OMG is designed not merely to overstretch the enemy's conventional defenses but also to preclude his precision weapon or nuclear option.

The OMG harasses and destroys the defender's precision and nuclear weapons and C^2 system and denies him a lucrative interdiction target during concentration for a penetration. The concept is most easily translated into practice if the OPFOR achieves at least partial surprise.

Composition

The composition of an OMG is task-oriented and normally determined in advance of operations. At the army group level, an OMG may consist of anything from two divisions to an entire army. At the army level, an OMG generally consists of one division. Because it lacks the assets to form a large, independent formation, a corps does not normally form its own OMG.

Predesignated OMG

If selected for a predesignated role, the army group OMG is likely to be a tank army or possibly a corps. In a strategic offensive operation of limited depth, it is quite possible that the OPFOR would not form large army group OMGs; instead, the multiple effects of several army-level OMGs could provide a suitable force.

Improvised OMGs

Should the OPFOR achieve an unexpected success, it would automatically adjust the missions and momentum of the operation to fully exploit its advantage. It might, as part of this process, nominate any formation in a favorable position to become an OMG. Such an improvised grouping, lacking both preparation time and probably the resources normally allocated, would probably receive a less demanding mission than a OMG.

Reinforcement

Operating separately from their parent formations in the enemy's rear, OMGs need substantial reinforcements such as air defense, engineers, fire support, logistics assets, and C^2 elements.

The OMG needs to take its own ***air defense*** coverage with it, and it also needs extra assets. It may well have dedicated fighter aviation. For example, because the OMG would be operating within a corridor cleared through enemy air defenses, it should be possible to provide fighter cover at acceptable cost.

Substantial and varied ***engineer support*** is necessary. Support functions might include elements for route clearing, bridging, ferrying, minelaying, exploiting captured POL resources, and even creating improvised runways.

Being some distance from the main forces and with the likelihood of meeting strong enemy reserves, the OMG needs additional ***fire support***. This could include long-range guns and MRL systems. There would also be a need for strong air

support from both fixed-wing and rotary-wing aircraft. Helicopters, and quite probably the ground-attack aircraft as well, would be under operational control.

An OMG might also have a considerable electronic combat component. This greatly enhances effectiveness of communications intercept and jamming by operating from within the enemy rear areas.

With no secure land line of communications, an OMG has to carry most of its ***logistics*** needs with it and would, therefore, need extra cargo transport. However, this should not be a serious problem since the OMG should not have to fight the sort of grueling battle or engagement that characterizes the action of the main forces. Raids, and short but intense meeting battles/engagements, should be the norm. At least limited air resupply may well be possible, either by parachute or by airlanding.

To improve ***command and control***, OMGs would almost certainly make use of airborne CPs (in medium and heavy-lift helicopters) and liaison aircraft. They would also have secure, long-range, and reliable communications means (for example, troposcatter and satellite communications).

Objectives and Missions

An army group-subordinated OMG, if formed, would have much deeper and larger targets than the smaller army-level group. The objectives/missions assigned by the General Staff (or theater CINC) would be of strategic significance; for example, seizure of an enemy capital or conducting a major encirclement (in conjunction with the OMG of another army group). (Figure 4-7 illustrates a variant of such missions in the enemy rear.)

Figure 4-7. Army group OMGs advance on strategic objective while main forces execute an encirclement.

They may, however, also have the requirement to execute intermediate missions en route. The army group (or army) commander outlines these missions in a broad directive rather than detailed orders. The OMG commander thus has much greater latitude than his second-echelon counterpart. The higher commander expects him, as well as his subordinate commanders, to show much more independence and initiative, once the OMG has launched into the enemy rear.

Missions

An OMG receives its orders at the same time as the first echelon. Possible missions can include the following:

- Creating the inner arm of an encirclement to help main forces destroy enemy forward formations by attacking from the rear, establishing blocking positions on withdrawal routes, or conducting parallel pursuit and destruction of withdrawing enemy formations.
- Acting as the outer arm of an encirclement to destroy in meeting engagements enemy operational-tactical (corps) or operational (army group) reserves moving forward to counter the main forces of the army group or army.
- Seizing key objectives or favorable lines from which the OPFOR can mount further operations.
- Seizing possible defense lines in the enemy's rear before he can prepare and occupy them (army group operations often end with occupation of a bridgehead over a major obstacle).
- Seizing key political and/or economic objectives assigned to the army group (such as an enemy capital).

Through rapid penetration into the enemy's rear, and working in conjunction with airborne forces and forward detachments, OMGs accomplish such tasks of operational or even strategic importance.

Planners normally establish alternative lines of commitment and routes to them for the OMG. These are established along with orders for the march and projected support for commitment to combat.

Raids

Whatever the primary missions, OMGs would also conduct raiding actions deep into the enemy rear as early in the offensive as possible. Possible objectives for raids include--

- Destroying, or at least disrupting, enemy precision weapons, air defenses, communications, C^2, and logistics.
- Seizing airfields or disrupting lines of communication.
- Assisting advancing main forces by seizing bridgeheads, road junctions, and similar objectives.

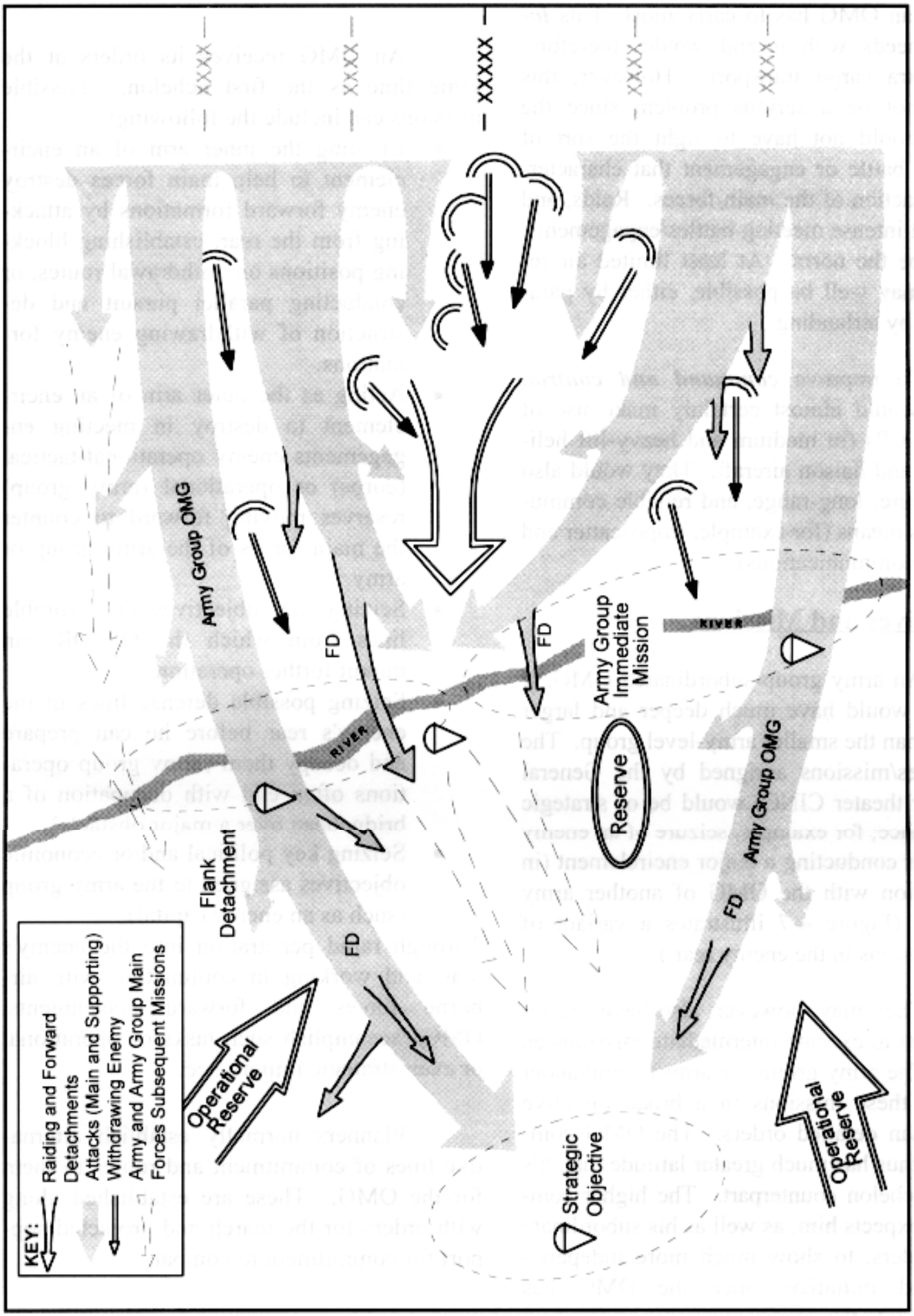

Figure 4-7. Army group OMGs advance on strategic objective while main forces execute an encirclement.

The purpose of these raids is to help the main forces by reducing the effectiveness of the enemy opposing them. Thus, the raids are an essential part of the OMG's operational task and not merely an option. Nor do the raids distract the OMG from its ultimate geographical objective, since their targets are generally on or near the axis of the OMG's main thrust.

Prerequisites for Success

The commitment of the OMG is the most difficult, most dangerous, and most crucial part of the whole concept. The time and area of commitment must remain unknown to the enemy until it is too late for him to take effective countermeasures. Aside from that, there are certain things that the OPFOR must accomplish if the commitment of the OMG is to be successful.

Assembly Area

The OMG's assembly area must be close to the line of contact to ensure the OPFOR does not lose the opportune moment and the element of surprise by having to conduct a long approach march. Thus, the OMG is likely to remain just out of artillery and surveillance-radar range (from perhaps 30 to 50 km from the line of contact). The enemy could easily mistake the OMG for a second echelon if detected by aerial reconnaissance.

The OPFOR should take every a precaution to conceal the presence of the formation using normal camouflage means and strict electronic silence. The OPFOR often attempts to confuse the defense by--

- Locating the assembly area to the flank of the intended line of commitment.
- Deploying dummy concentrations behind secondary sectors.
- Using false radio sets and misleading radars to reinforce the deception.

While concealment of a large grouping so far forward is certainly difficult, it does not have to last long if insertion is to be on the first day (or more likely, night) of the operation.

Movement Forward

As the OMG moves forward for commitment, there must be careful coordination with the first-echelon formation through which or around which it is being committed. Considerable engineer effort is necessary to improve routes, and routes must be clear of first-echelon traffic. The CPs of the two formations normally colocate, with the forward CP ideally providing observation of the battlefield. Until the last minute, communications would be restricted to wire and couriers in vehicles and helicopters to avoid sacrificing surprise.

The Commandant's Service must deploy a massive traffic control effort. Key traffic control posts often are under the command of senior officers, for instance the OMG's deputy commander or chief of engineers, to make sure traffic jams do not occur.

The OMG normally moves forward, and indeed through the defense, on two or three routes to ease control problems and to shorten the time taken to insert the formation. It would largely ignore normal march intervals in the interests of control and speed, and an entire reinforced division may be only about 25 km deep on a frontage of as little as 4 to 6 km. The passage of the line of commitment, however, is likely to take place at speeds of only 8 to 10 km per hour, given the presence of battle damage (both to the terrain and to first-echelon elements) and of enemy minefields and antitank ditches. Thus, a division-size OMG could take 2 to 3 hours to complete its commitment, and a tank army in two echelons, using four routes, might require up to 10 to 12 hours.

Reconnaissance

The OPFOR needs an accurate intelligence picture of the battlefield. Of crucial importance is the identification of a weak spot in the defense through which the OMG can penetrate. (It could be a weak spot or gap created by first-echelon forces or by firepower, or it could be a naturally occurring gap in a less than fully prepared defense.) It is also vital to determine the location of any enemy reserves that can react within even the short warning the OPFOR intends to allow, and of all enemy artillery, especially MRLs, that can strike the penetration sector. While elements of the first-echelon army are fighting through the tactical zone of defense, reconnaissance elements from the OMG follow. They must exploit any opportunity to move through gaps created and get into the enemy's operational depth. Also, mobile observation posts of the OMG move in the front line, reporting on progress and likely weak sectors for commitment.

Air Superiority

Commanders recognize that winning air superiority is no easy task against a first-class enemy in a modern war. Yet, they must achieve at least local and temporary air superiority, or enemy air power could severely cripple the OMG. Therefore, they must concentrate overwhelming fighter and attack helicopter strength to provide top cover and also intensify offensive counterair action in the sector. The OMG's air defense weapons and those of the formation through which it moves give priority to its protection. Since the OMG normally operates on the main axis, it may enjoy the protection of an air corridor established in the initial long-range fire strike or army group offensive air operation. Commitment at night further confuses enemy reconnaissance and countermoves, both by air and ground forces.

Concentration of Maximum Support

Every available weapon from first-echelon brigades and divisions, as well as army and army group resources, must concentrate on supporting the OMG as it approaches and then passes through the defense. The aim is to put down so much mortar, howitzer, gun, MRL, helicopter, and ground-attack fire that there would be no combat-effective enemy units in the sector through which the OMG is to move, or to its immediate flanks. Fire support begins up to an hour before the OMG arrives on the line of contact, with the last 20 to 30 minutes being an intense preparation for commitment. Ideally, the OMG does not use its own artillery to support its commitment because it would have to deploy out of the OMG's march formation to do so. However, the need for firepower often forces its employment. Both preceding and during the OMG's commitment, the first echelon delivers supporting attacks on the flanks. (See Figure 4-8.)

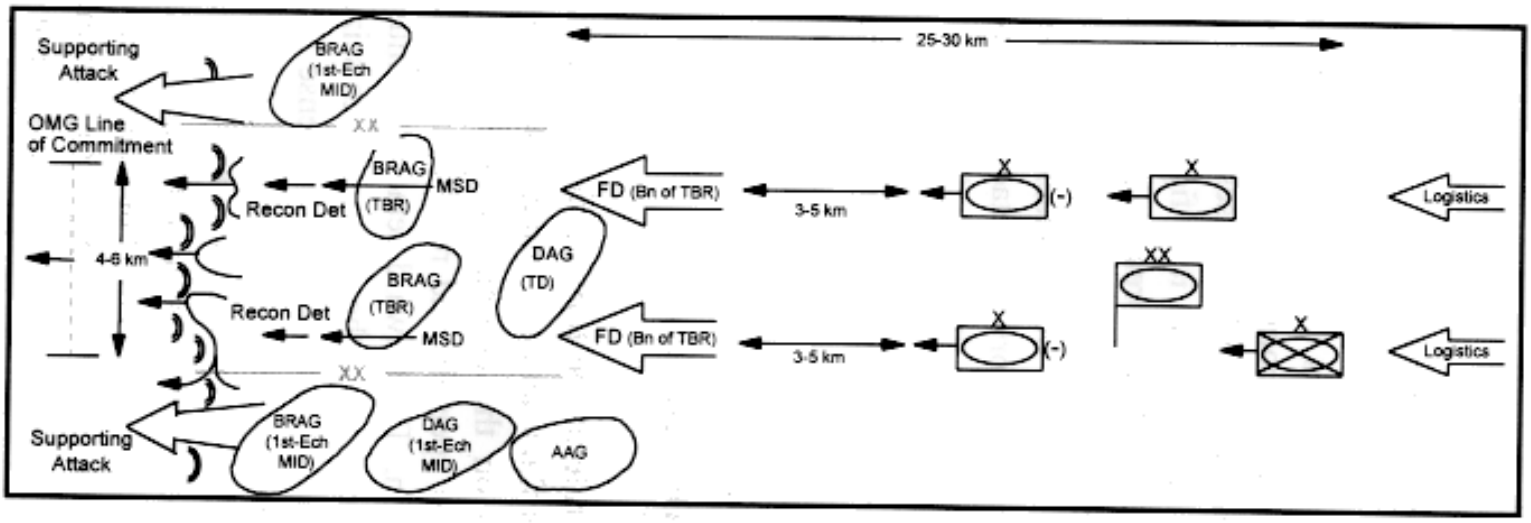

Figure 4-8. Tank division as army OMG, or part of army group OMG, completing a penetration begun by mechanized infantry division.

Commitment

It is essential to commit the OMG as early as possible. Ideally, this should occur when the enemy's defense is essentially unprepared; then army, and even army group, OMGs might lead the advance of their parent formations from the outset. Such an early commitment assumes the offensive has achieved a substantial degree of surprise. Of course, the reduction of the OMG's combat effectiveness because it must complete the penetration is unwelcome--but less so than a loss of tempo. Figures 4-8 illustrates how an army OMG (or part of an army group OMG) could complete a penetration with some help from first-echelon formations. Figure 4-9 shows the more ideal situation where a first-echelon army has created the penetration through which the army group OMG can pass.

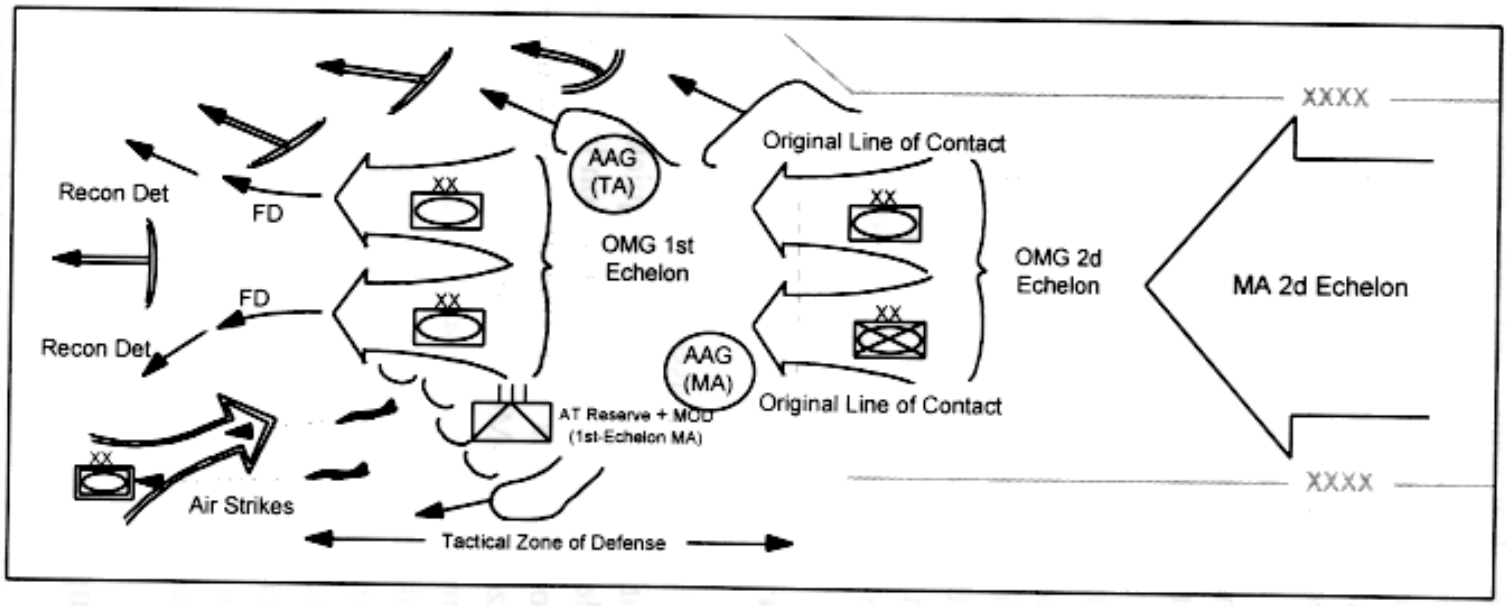

Figure 4-9. Tank army as army group OMG exploiting the penetration of the tactical zone of defense by a first-echelon mechanized army.

Sector

The OMG masses only at the point of penetration. It then disperses quickly along multiple routes to avoid interdiction by enemy precision weapons and aircraft. For a division-size army OMG, the frontage at the line of commitment may be as little as 4 to 6 km, especially if it has to complete the penetration of a prepared defense. An army group is likely to commit its OMG on a broader frontage (perhaps 12 to 20 km), and after the first echelon has largely completed the penetration of the tactical depth of the defense.

Timing

The time of commitment also depends on the preparedness of enemy defenses. Against an unprepared defense, the OPFOR probably would hope to commit an army group OMG on the first, or at the latest, the second day of battle in the enemy's main defense zone. Against partially prepared defenses, commitment could possibly be on the third or even fourth day. In the worst case, it could come after the commitment of the second echelon against prepared defenses of some strength.

Completing Penetration

Although it is quite likely that an OMG might have to complete the penetration of well-prepared forward defenses itself, the OPFOR would not expect it to fight a major battle. If not yet cleanly breached, the enemy defense must at least be on the point of breaking. The OMG would attack on a narrow frontage using forward detachments on each axis to complete the penetration in conjunction with elements of the first echelon. It should receive the maximum support possible from all army assets and maximum aviation effort.

Forward Detachments

The role of the forward detachment is crucial.[8] Its flank and rear attacks on enemy strongpoints on the chosen sector for commitment must speedily and reliably complete the penetration. The forward detachment must then rapidly move into the enemy rear to seize a foothold in the enemy's second defense line before that line becomes strong enough to stop the OMG. To ensure decisive action by such forward detachments, they are often under the command of senior officers. For example, the deputy commander of an army acting as the army group OMG might command the reinforced brigade acting as its forward detachment.

Movement Support Detachments

Almost as important an element as the forward detachment is the movement support detachment (MSD).[9] An MSD closely follows the forward detachment and improves the routes being used to commit the OMG across battle-damaged terrain.

Window of Opportunity

The aim is not to open a breach and to keep it open; it is merely to push the OMG through the last vestiges of the defense into the rear area. Quite possibly, enemy reserves or troops moved from less threatened sectors to form a defensive counter-concentration could temporarily re-establish the integrity of the defense. This is quite acceptable as long as the OMG has got through; the OMG can then help the main forces to create a more permanent, indeed irreparable rupture. All the OPFOR has to do is to create a window of opportunity and exploit it in a timely manner.

Actions in the Enemy Rear

An army group OMG is less likely to have to expend combat power in raiding activities, especially if preceding army OMGs have already disrupted the enemy's operational-tactical rear. The major point of such raids is the undermining of resistance to the first echelon. If the first echelon has already been successful, the need for raids becomes less compelling. If, as is more likely, an army OMG has not preceded the army group's, then raiding actions would still be the norm, though conducted to greater depth.

Even with diminished raiding functions, there remains a subtle but important difference between an army group OMG and a second echelon. The OMG would drive deep rapidly and seize geographical objectives, whereas the primary task of a second echelon is to destroy enemy forces.

MISSIONS AND NORMS

Well-defined norms govern offensive operations and depend principally on an assessment of friendly and enemy capabilities. In particular, norms depend on the preparedness of enemy defenses. They may also reflect other factors such as terrain and weather. Thus, planners have established norms in distances, rates of advance, and time factors. These factors guide planning for an operation.

Indicators of Success

An army group receives immediate and subsequent missions.[10] The OPFOR uses three indicators to assess the success of an operation:

- The degree of destruction inflicted on the enemy.
- The depth of the penetration achieved.
- The remaining combat capability of the army group, at least on the main axis.

The OPFOR regards the mission as accomplished if the operation achieves all three indicators, partially accomplished if it achieves only the second, and not at all accomplished if it does not achieve the second. Thus, the depth of penetration is of prime importance.

Degree of Destruction

As a rule, the degree of destruction imposed on the enemy must be at least 50 percent of his initial combat potential and partial disruption of his C^2 system. This lessens the enemy's ability to offer effective, organized resistance.

Depth of Penetration

The importance attached to the depth of penetration is not at the expense of the destruction of enemy groupings. Only a rapid and deep penetration can ensure the elimination of enemy forces and his ability to exercise effective C^2. Deep operations also fragment the defense and allow easy destruction of bypassed enemy forces. They can also contribute to the political collapse of parts of an enemy coalition.

Remaining Combat Capability

This indicator of success is relative. The ability of the attacking force to maintain the offensive is a function of the loss ratios of the two sides. If the defender has lost not less than 50 percent and the attacker not more than 40 percent, the attacker can maintain momentum. The attacker can accept losses even greater than 40 percent if he still has a slight superiority in COF and the enemy's morale is low.

Army Group Missions

First-echelon army groups receive immediate and subsequent missions. A typical immediate mission for a first-echelon army group includes--

- Neutralizing or destroying, in zone, the enemy's precision weapon capabilities.
- Destroying the main forces of an enemy army group or equivalent.
- Creating favorable conditions for developing the offensive deeper into enemy territory.

A typical subsequent mission for a first-echelon army group includes--

- Destroying any newly detected precision weapons capabilities.
- Destroying any remaining army group forces, theater reserves, and national forces.
- Seizing important industrial and political centers deep in the enemy's territory.

The first-echelon army group's subsequent mission normally coincides with the theater's immediate strategic mission. The theater's second-echelon army groups also receive immediate and subsequent missions that correspond to the overall mission of the strategic operation within the theater.

Dimensions

Army groups may vary widely in size and composition and as widely again in their missions. The following paragraphs are broad guidelines that give a general impression of the scope of operations.

Depth and Duration

An army group generally executes two successive operations to a depth of 600 to 800 km. Its immediate and subsequent missions largely depend on the nature of the defending enemy forces the army group must destroy.

The immediate mission is to penetrate to the rear of the defending army group (or equivalent). By penetrating to this depth, the army group's first-echelon armies complete the destruction of enemy first-echelon corps and destroy the enemy army group's cohesion and integrity. At this depth, they also engage the enemy army group reserve. Depending on the preparedness of enemy defenses, the depth of this immediate mission is 250 to 350 km, achieved over a period of from 6 to 8 days.

The army group's subsequent mission is to complete the destruction of the enemy army group and possibly engage enemy theater reserves. Depending on the preparedness of defenses, this might involve an additional 350 to 550 km in depth and from 6 to 7 additional days. Thus, the total depth of this subsequent mission might be about 600 to 800 km over a total of from 12 to 15 days.

Under favorable conditions, the army group's first-echelon armies (which, like the army group itself, may conduct one or more successive operations) may accomplish the army group's subsequent mission. Against more prepared defenses, however, the army group would normally have a second echelon to complete this task.

Depending on the overall depth of the theater, the army group's subsequent mission may also include seizure of key points in the communications zone (COMMZ). However, it is also quite possible that the army group's second operation could be on a different strategic axis from the first. Ideally, the army group can execute such operations without a pause between them. Against stiff opposition, such deep advances without a pause may be logistically impracticable, even if the army group retains sufficient combat power to go so far.

Expected Average Rate of Advance

Against a partially prepared or overextended defense that lacks strong operational reserves, the expected average rate of advance would be 40 to 60 km per day. However, this rate would not be uniform. It might be no more than 25 to 30 km per day when fighting through defended areas. Once the attacking force has achieved a penetration, the rate of advance would increase considerably, up to 60 to 70 km per day in developing the offensive into the enemy rear. These rates are for normal terrain; in mountains, marshes, jungles, and arctic areas the average rate of advance would decrease to about 30 to 50 km per day; in deserts and steppes, it increases substantially.

Width of Zone of Action

In an offensive, the sector of responsibility of an army group (sometimes called a zone of action, zone of advance, attack zone, or overall attack frontage) may be up to 300 to 400 km wide. The army group conducts offensive operations within this

assigned sector. The width of the zone depends on a number of factors, including the mission, COF, terrain, weather, enemy disposition, and precision weapon threat.

In an attack against a defending enemy, an army group commander would not distribute his forces evenly across the entire zone. Instead, he would designate main and secondary operational axes, with the desired COF to achieve the missions in the designated time.

In any operation, there are long secondary or defensive sectors, at least at the start, and particularly in attacks on well-prepared defenses. Strike sectors in an army group against prepared defenses are likely to total about 25 to 30 km.

Once the attacking force has penetrated the enemy's tactical zone of defense and the enemy starts to withdraw his outflanked forces, the breadth of offensive actions increases, as forces on previously secondary-attack or defensive sectors transition to the pursuit.

A zone width of up to 200 to 300 km could be appropriate for an army group with two or three armies or corps in the first echelon operating in normal terrain. In other theaters, particularly in the desert or the mountains, the zone of action might be wider. The zone of action depends on the number of axes of advance in the army group's first echelon. In assigning division frontages, the OPFOR considers assessments of friendly and enemy forces as well as the nature of the terrain. The average division zone of action for offensive operations in a main attack is 15 to 25 km. Thus, the width of a first-echelon army making the main attack with 4 divisions in its first echelon might vary from 60 to 100 km; with only 3 divisions in the first echelon, it would be 45 to 75 km; with 2 divisions in the first echelon, it could be as little as 30 to 50 km. For armies not making the main attack, in secondary sectors, on axes where the enemy has no sufficient forces and means, or in areas with much impassable terrain, the width of the zone of action could be up to 100 km or greater.

Thus, an army group with 2 or 3 armies or corps in its first echelon could have a zone anywhere 120 to 300 km wide. However, frontages of 150 to 250 km are probably more typical. If one or more armies had conditions that allowed a frontage of 100 km or more, the width of the army group could approach or even exceed 300 km. (The depth of the army group forces might be 300 to 400 km measured from the forward edge of friendly troops.)

FORMS OF OPERATIONAL MANEUVER

Planning at army group level must support the conduct of operations deep in the enemy's rear area. The OPFOR recognizes two basic forms of operational maneuver: the attack across a broad frontage on multiple axes and the encirclement operation. It is also likely that an army group could use a combination of the two forms.

The OPFOR must achieve decisive operational COF superiority's, exploit weak points and gaps in the enemy's deployment, and use bold maneuvers into the enemy flanks and rear to destroy the enemy's cohesion and split his groupings so that it can destroy them in detail. The availability of long-range, precision weapons can allow the OPFOR to destroy enemy forces deep in the enemy's rear area. Such precision weapons can reduce the COF required by ground maneuver forces and can facilitate the conduct of bold maneuver into the enemy flanks and rear. This concept of offensive operations may take one of the following forms.

Encirclement

The encirclement is a deep flanking maneuver (related to the tactical-level envelopment, but on a larger scale). Army groups and armies conduct encirclement operations extensively. The OPFOR believes that encirclement operations are the most decisive means of destroying the enemy force. It uses two basic methods of achieving encirclement. The first is a double penetration on converging axes and involved two major penetrations by a single army group or by neighboring army groups to encircle an enemy force. (See Figure 4-10.) The second method is a single penetration followed by flanking attacks. This was most useful when a natural obstacle (the sea or a major river) serves to block enemy withdrawal. (See Figure 4-11.)

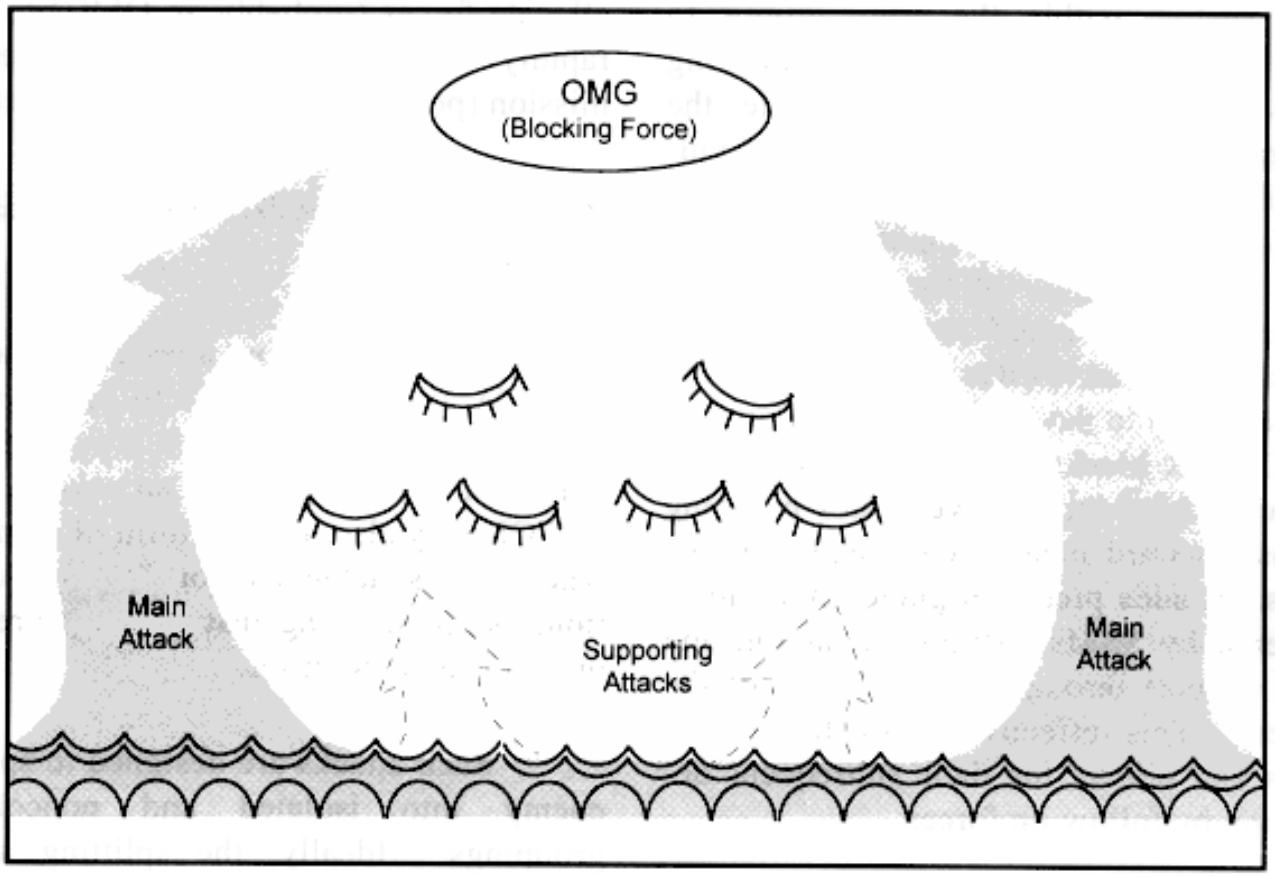

Figure 4-10. Encirclement with a double penetration.

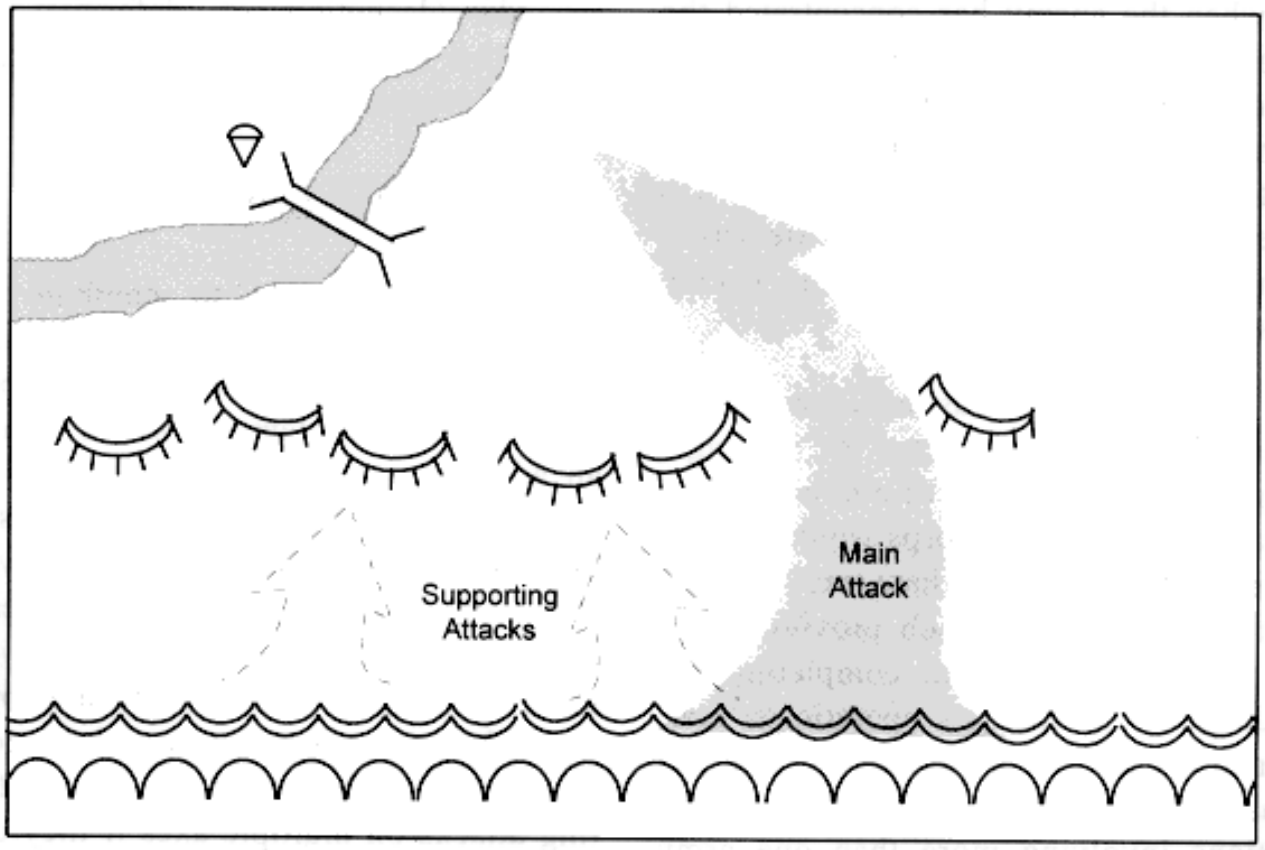

Figure 4-11. Encirclement with a single penetration (against a natural obstacle).

The OPFOR attacks on selected strike sectors within the army groups to create the initial penetrations. The attacking forces have to form rapidly, create the penetrations, and then disperse to avoid vulnerability to precision conventional strikes. The goal is to maintain a rapid tempo of advance into the depths of the enemy. Commanders insert forward detachments at the tactical level and OMGs at the operational level early on to develop the deep offensive. The OPFOR blocks major withdrawal, supply, and advancing reserve routes by using OMGs, forward detachments, and airborne forces. It adds precision-guided munitions, delivered by SSMs, artillery, aviation, and naval support throughout the depths of the theater. This effectively isolates enemy forces and allows for their subsequent destruction by follow-on forces.

The most advantageous form of operation is usually the encirclement. It is ideal when the enemy has concentrated the bulk of his forces in the tactical and immediate operational depth, without any major reserve far to the rear. Other favorable conditions are where a strong grouping is in a salient, and/or where its flanks are weak, or when the OPFOR can trap the enemy against an obstacle.

Figure 4-12 illustrates an encirclement on converging axes by a single army group. Encirclement of a larger grouping than a single enemy corps would require the forces of two or even three army groups, with two army groups each providing one wing of encirclement and completing the ring deep in the enemy's operational rear. (Refer to Figure 4-7 or Figures 2-4 and 2-5 in Chapter 2 for examples of encirclement operations involving more than one army group.) Simultaneously with the execution of the encirclement, the army group must allocate forces (probably an OMG) to drive rapidly for the army group's subsequent mission (possibly a key strategic objective).

Attack Across a Broad Frontage on Multiple Axes

The attack across a broad frontage on multiple axes lends itself to situations in which the OPFOR enjoys a considerable numerical advantage over an enemy. The OPFOR may also use this form of maneuver when it has achieved considerable operational surprise or against partially prepared or unprepared defenses.

Such attacks are designed to split the enemy into isolated and noncohesive groupings. Ideally, the splitting attacks would focus on weak or overextended enemy forces in a main attack sector with a secondary/deception or defensive sector facing the strongest enemy groupings. Figure 4-13 illustrates such a maneuver.

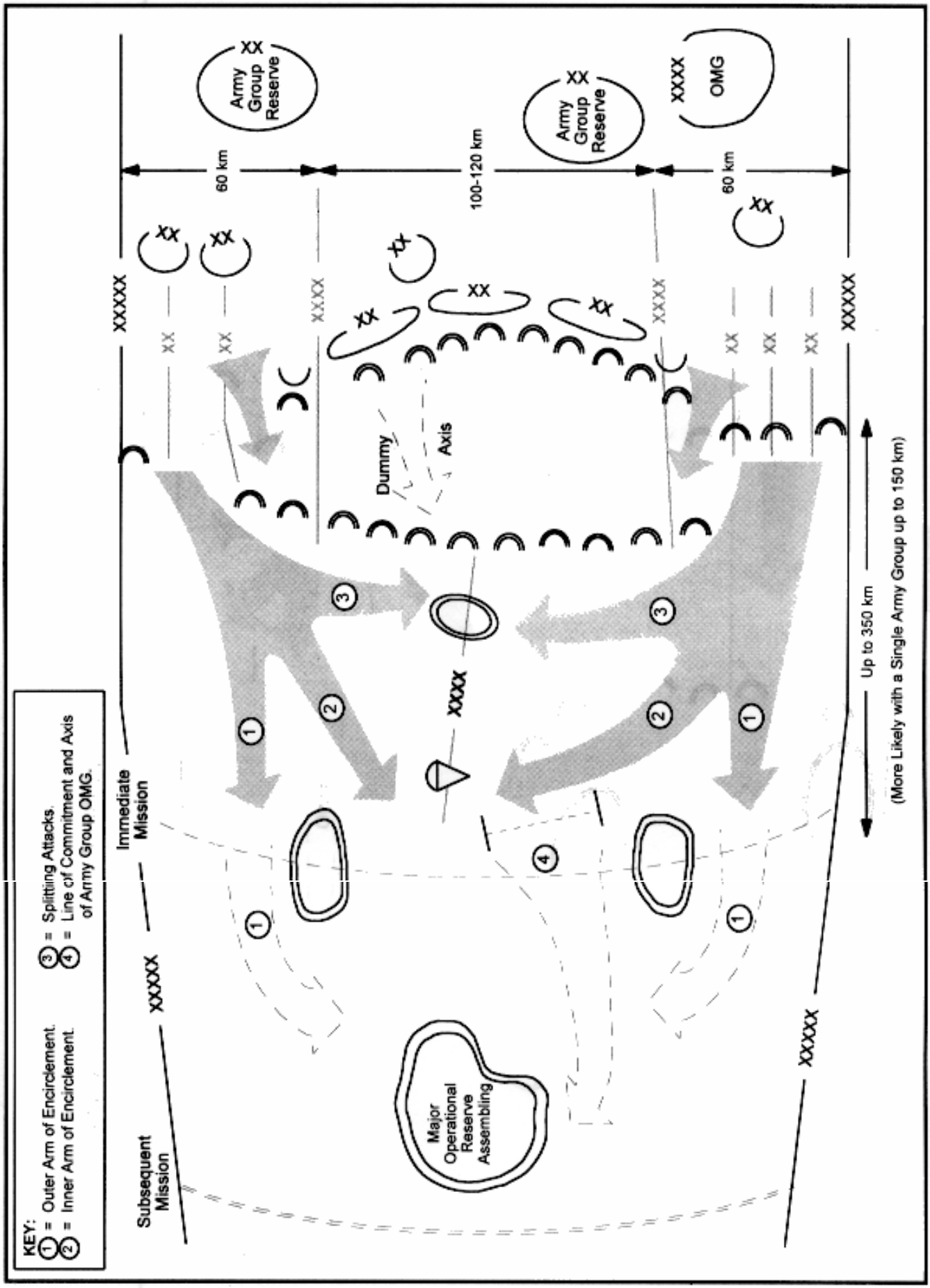

Figure 4-12. Encirclement by a single army group (example).

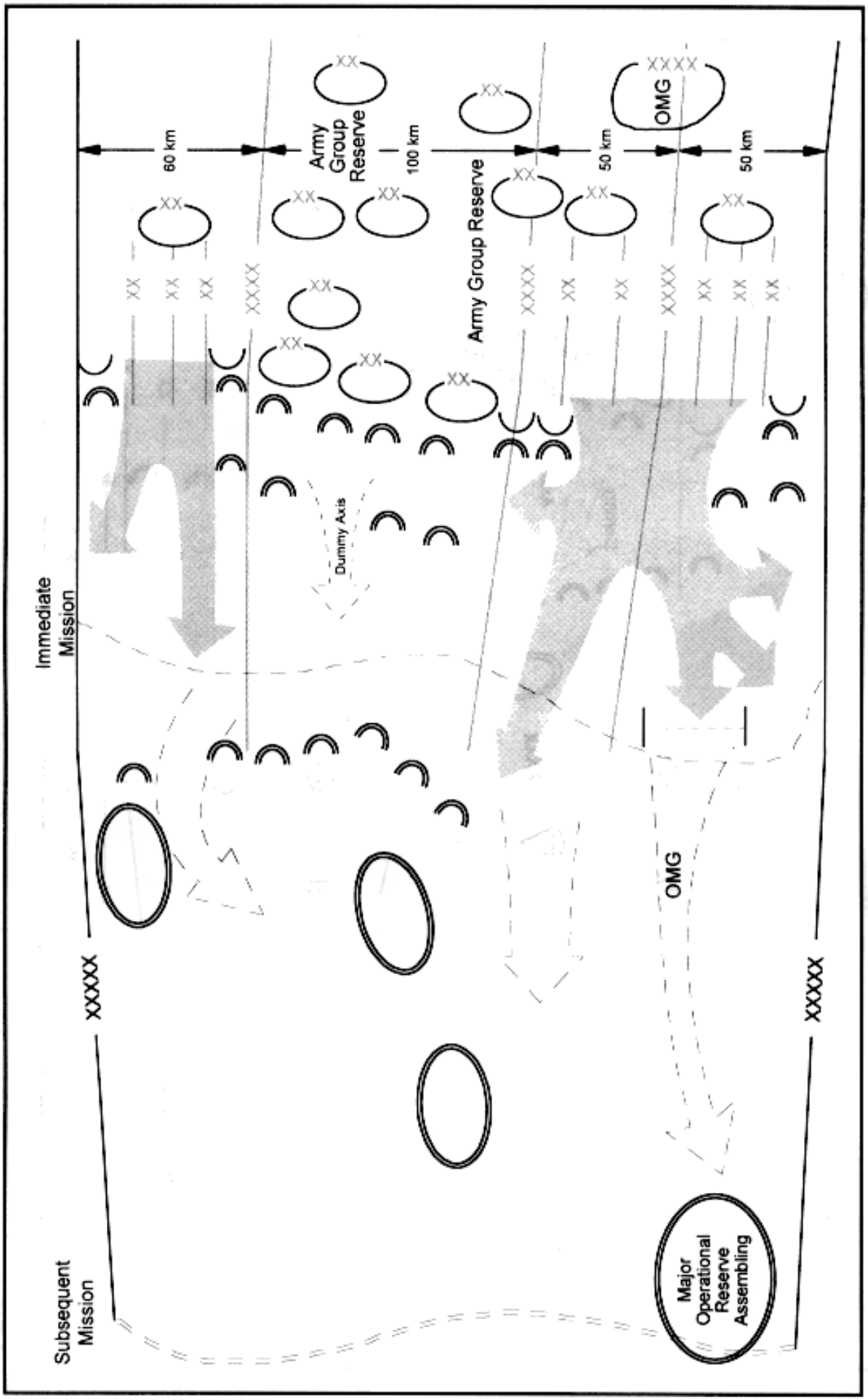

Figure 4-13. Single army group attacking across a broad frontage on multiple axes (example).

Combined Methods

It is possible to combine encirclement and attacks on multiple axes. The elimination of the main enemy grouping in one or more encirclements would then allow an advance across a broad frontage to the planned depth of the operation. This combination can be effective if the enemy lacks the strong reserves which would necessitate a more concentrated strike. Equally, it is more than likely that encirclement by second echelons or reserves would destroy enemy groupings bypassed as a result of splitting attacks on multiple axes if they choose to remain in place rather than risk breaking out of the encirclement.

Attack Along a Coastline

The OPFOR may find it necessary to physically occupy ports to preclude enemy reinforcement by sea. There may also be a requirement to establish defense on a coast to protect the flank of strike groupings from an amphibious landing. Thus, a coastal operation may be necessary. One possible form of this operation would be to launch a single-penetration encirclement to the flank and rear of enemy groupings to pin them against natural obstacle (the seacoast) and then destroy them. However, a normal double-penetration encirclement is still an option. Another mission might be to support the landing and subsequent operations of an amphibious force.

TYPES OF OFFENSIVE ACTION

The OPFOR defines offensive (and defensive) actions more in regard to the enemy situation (for example, an attack against a defending enemy) than to time (whether hasty or deliberate). This is because the enemy situation dictates the employed tactics and operations as well as the time available. The OPFOR defines three basic types of offensive actions. If both sides are attacking, advancing, or maneuvering, it is a meeting engagement. If the OPFOR is attacking and the other side is defending, it is an attack against a defending enemy. If the enemy is retreating and the OPFOR is attacking, it is a pursuit.

Meeting Engagement

A meeting engagement is a clash between opposing sides when they are both simultaneously striving to fulfill their assigned missions by means of offensive action. The goal of such combat is to rapidly rout the enemy, seize the initiative, and create advantageous conditions for subsequent operations. As a form of combat action, the OPFOR prefers to conduct a meeting engagement rather than defending or attacking an enemy prepared for defense. However, if the OPFOR can achieve its operational aims without combat (by maneuver), then, of course, it avoids a meeting engagement as well.

Occurrence

An operational-level meeting engagement can arise under various circumstances, for example--

- At the beginning of the war, when formations are moving forward to meet an attacking enemy or when an attacking force meets an enemy moving forward (belatedly, as a result of surprise) to occupy initial defensive positions.
- During the course of an offensive, when a formation is exploiting a penetration or in pursuit and encounters an enemy's counterattack or advancing reserves.
- In defensive situations, when the OPFOR is conducting counterstrikes or when dealing with enemy airborne or amphibious landing forces.

Characteristics

In many ways, the meeting engagement is the most difficult, demanding, and unpredictable form of combat. The following paragraphs describe its characteristics.

Shortage of time. There is only limited time to organize for combat. To take an extreme instance, for example, if both sides are advancing at 20 km per hour, the closing speed would be 40 km per hour. Therefore, even an initial separation of 80 km would leave only 2 hours for the commander to make a decision and to transmit its content to his subordinates. This problem is exacerbated for both sides by the fact that neither enjoys the advantage of choosing the time or place of the engagement. Formations and units often have to be committed from the march, though it is also possible that tactical units could already be in prebattle or battle formation.

Obscurity of the situation. With limited time for reconnaissance, forces usually enter combat on the basis of limited

information. Once battle begins, there are frequent, abrupt changes in the situation, since both sides are acting aggressively in conditions where there is no continuous frontage.

Struggle for the initiative. The essence of the meeting engagement is an intense struggle to win time and seize the initiative. The winning side is the one that imposes its will on the enemy, forcing him into a reactive posture. The struggle for the initiative begins well before main forces actually clash. The engagement often starts with air attacks, long-range artillery fire, and the use of heliborne forces and forward detachments. Information warfare efforts to achieve information dominance can deny the enemy the ability to coordinate operations and react to the engagement, thus helping the OPFOR to seize the initiative.

Fluid battlefield. The engagement develops on a wide frontage and in considerable depth. Inevitably, there are exposed flanks and gaps in combat formations, and these create opportunities for maneuver.

Decisiveness. The losing side finds itself outflanked and/or penetrated frontally, with its C^2 disrupted, and lacking prepared positions to fall back on. Under these conditions, it may find transition to the defense impossible. It would probably be combat-ineffective because of heavy losses and fragmentation.

Conditions for Success

Success in the meeting engagement normally goes to the side that not only achieves some degree of surprise but also seizes and holds the initiative. The OPFOR believes that a smaller force that seizes the initiative might defeat a larger force. It might do so even though it lacks detailed knowledge of the enemy and elaborate plans of its own.

The operational commander extensively employs maneuver. Lead elements (forward detachments and tactical-level advance guards) try to overcome the enemy force; they may fight a holding action as a last resort. The main forces then try to maneuver and strike the enemy force in its flanks or rear. There are several principles for conducting meeting engagements that, when properly observed, can enable an equal, or even somewhat weaker, force to triumph.

Reconnaissance. Constant, aggressive reconnaissance is necessary to detect and monitor the size, composition, order of march, speed of movement, and deployment of the enemy grouping. Especially important targets for reconnaissance are, of course, enemy precision weapons and reconnaissance-strike complexes. Good and timely intelligence is the basis of a correct decision by the commander and, thus, the key to seizing the initiative.

Preemption. The seizure of the initiative, being the first to deliver air strikes, achieve fire superiority, and deploy the main forces is of fundamental importance. Preemption puts a premium on careful organization of both operational and march formation. There is no time to regroup prior to a meeting engagement. Thus, the order of march is the order of deployment and commitment.

Timely decisions. The commander must make timely decisions if he is to preempt the enemy and the seize the initiative. Firm, uninterrupted troop control and constant coordination, forward command, and the exercise of initiative by subordinate commanders are all of critical importance.

Maneuver. Swift maneuver is essential to beat the enemy to advantageous ground and to concentrate a decisive COF superiority on the main axis. It allows the OPFOR to exploit weak sectors in the enemy's deployment and deliver surprise attacks into the flanks and rear of the enemy grouping.

Security. Flank security detachments, antitank reserves, and mobile obstacle detachments assume an important role in meeting engagements. They provide security against enemy attacks without diverting main body elements and thus weakening the force of the main body's strike.

Conduct of Engagement

The engagement opens with air and missile strikes on the approaching enemy grouping. Meanwhile, airborne landings and forward detachments act far in advance of main forces to seize key terrain such as defiles, obstacle crossings, and dominating features. Since their success can ensure favorable conditions for the commitment of the main forces, the commander pays considerable attention to their efforts and provides them with prompt support.

The concept for the engagement is usually one of rapid and bold maneuver to strike the enemy on one or both flanks and/or his rear. Accompanying these strikes is a fixing frontal attack. It is also possible, when the enemy's frontage is overextended, to deliver frontal attacks into the gaps between enemy columns and to split the enemy grouping into isolated fragments. While

the destruction of the enemy first echelon is underway, air and long-range artillery strikes (and perhaps heliborne landings) can delay and disrupt the approach and commitment of his second echelon. (See Chapter 5 for a discussion of an army-level meeting engagement.)

A meeting engagement usually concludes with one of the following actions:

- A transition to the pursuit, if the enemy withdraws.
- A transition to the defense, if the OPFOR is unable to overcome the enemy force.
- A transition to an attack against a defending enemy, if the enemy succeeds in establishing a deeper line of defense.
- A continuation of the march.

Attack Against a Defending Enemy

attack against a defending enemy is the second basic form of offensive action. The OPFOR further defines it in relation to the method used to bring forces into the offensive. Thus, they identify an attack as either from a position ***out of direct contact*** with the enemy (from the march), or from a position ***in direct contact*** with the enemy.

The enemy situation dictates the operational formation employed and the time available for planning and preparation. Army group (and army) attacks against a defending enemy attempt to exploit gaps, unit boundaries, and other enemy weak points on the most favorable axis.

Modern enemy forces can deploy rapidly and quickly occupy defended lines with a high density of direct and indirect fire weapons. The defeat of a thoroughly prepared defense requires--

- Artillery annihilation of the enemy forces in the strike sector and to the immediate flanks, using a combination of precision weapons and traditional massed fires.
- The neutralization of enemy immediate reserves, artillery, and C^2 by long-range precision weapons strikes.
- The establishment of the required COF superiority on specified axes, followed by decisive actions by leading tank and mechanized infantry units.
- Continuous fire support for attacking troops so that they can increase their efforts on important axes as they advance.

Covering Force Battle

Where the enemy has deployed a weak covering force, its destruction is primarily the responsibility of the forward detachments of first-echelon divisions, with strong artillery and air support. The main bodies of these divisions follow in tactical march column, ready to support the forward detachments or to exploit their success by a rapid advance to gain a foothold in the main defended area. The deployment of elements of leading divisions into prebattle or battle formation depends on the degree of enemy resistance.

Against strong covering forces, the OPFOR might have to deploy the main bodies of first-echelon divisions from the outset. However, it would try to use forward detachments to defeat the covering force, and air landings to cut off enemy withdrawals and seize entries into the tactical zone of defense.

Penetration

The requirement to concentrate sufficient COF superiority to ensure a penetration determines the density of the attacking forces and the width of the strike sector. Generally, the total width of an army group penetration, whether on one or two sectors, is from about 25 to 30 km; in any event, it should not fall below 20 to 25 km to ensure the simultaneous commitment of 2 to 3 divisions for the exploitation of the penetration.

The key to a successful penetration is fire support. The speed of penetration depends on fire support's neutralization of the enemy to the entire depth of his tactical zone of defense before and during the attack. This involves the use of all available fire support assets of the ground forces, as well as naval guns, where applicable.

Principal targets for artillery and SSMs are enemy precision weapons, artillery, strongpoints, C^2 systems, and electronic combat assets. In addition to this indirect fire, many tanks, ATGMs, and artillery weapons can destroy targets by direct fire. Air power also plays a vital role in neutralizing the defense. Principal targets for OPFOR air strikes are precision weapons, artillery, CPs, reserves, and other targets out of artillery range.

In the battle for the tactical zone of defense, the emphasis is on destroying the enemy piecemeal. The OPFOR does this as far as possible by flank and rear attacks, after the initial penetration has disrupted the stability of the defense. To achieve this destruction, the OPFOR must isolate defending units by air and artillery strikes and rapid action. It must not allow the enemy to concentrate and reinforce defensive efforts, especially on key axes. It must interdict the movement of reserves and bypass centers of resistance. Long-range artillery, MRLs, and air strikes, as well as airborne landings and the rapid action of forward detachments and advance guards attacking from the march, must foil enemy attempts to organize defense in depth.

Pursuit

The pursuit is the third basic type of offensive action. Its goal is to exploit OPFOR success and to complete the destruction of enemy forces. The OPFOR uses three pursuit techniques--frontal, parallel, and a combination of frontal and parallel.

The preferred technique is the combination method. Using this technique, a small force pursues the enemy along the enemy's direct withdrawal route, attempting to prevent an orderly withdrawal or enemy occupation of favorable defensive positions. At the same time, forward detachments (or OMGs) moving along parallel routes try to block the path of the withdrawing enemy.

The OPFOR may also insert heliborne or airborne forces to block the enemy's withdrawal. Once these forces halt the enemy, the OPFOR's main forces attempt to conduct a flanking movement to complete the destruction of the enemy force. OPFOR commanders plan for a pursuit when they plan their attack. They outline possible enemy withdrawal routes, friendly pursuit routes, and allocation of precision weapons and other fire support means.

Units at brigade or above initiate pursuit immediately on discovering the enemy's withdrawal. Only the orders of a higher commander can terminate a pursuit. The pursuit ends when--

- When enemy forces are destroyed.
- Pursuing elements outdistance their support and are in danger of being cut off.
- The enemy successfully establishes a strong defensive position.

The OPFOR then regroups and redeploys for the next operation.

EXPLOITATION OF THE ATTACK

The successful exploitation of the attack, converting tactical successes of penetration battles into operational success, depends on an early expansion or reinforcement of effort along the main axis. Only a rapid penetration can throw the enemy off balance, and only a rapid exploitation can keep him off balance.

The OPFOR can preempt enemy efforts to reestablish a defensive front on successive lines or to initiate counterattacks. The advance must reach the enemy's airfields and the deployment areas of precision weapons as fast as possible. Given the mobility and firepower of modern forces, the enemy can quickly maneuver reserves and other forces for counterattacks.

Water Obstacles

The OPFOR expects the enemy to make maximum use of river and canal lines for the creation of subsequent defense lines in depth. The OPFOR plans to preempt this by using airborne landings to establish bridgeheads early and seize dams that the enemy could use to create flooding. The OPFOR plans to rapidly reinforce airborne forces with forward detachments moving up to 50 km ahead of the main forces, or more in the case of army-level detachments. Ideally, such actions should prevent an orderly withdrawal over the obstacle so the OPFOR can trap the enemy against it and destroy him on the near bank.

Where assault crossings are necessary, the OPFOR selects sectors in advance across a wider frontage. The OPFOR crosses obstacles without pause, whenever possible; and having crossed, units do not stop to consolidate bridgeheads but press on into the enemy's rear.

Defensive Actions

Ideally, the OPFOR can defeat enemy counterattacks in meeting engagements. If the COF is unfavorable, however, it may have to go over to the defense to repulse them with maximum casualties in order to create the necessary preconditions for a resumption of the offensive.

While such defensive actions are taking place, the OPFOR can shift the attack onto other, more favorable axes to develop

actions into the enemy rear. The best aid for a hard-pressed force is resolute offensive action by its neighbors. Where possible, the OPFOR avoids a battle of attrition. **Regrouping**

Once the OPFOR completes any of the above types of offensive action, it may have to regroup and redeploy forces for the next operation. However, regrouping of army groups (or armies) is not likely to occur more than once in a strategic operation, should it be necessary at all.

It is plainly undesirable to carry out extensive operational regrouping during the course of a strategic offensive operation. Such maneuvers can too easily lead to loss of momentum and confusion. Commanders recognize, however, that some regrouping must occur, either because unexpectedly effective resistance forces a change of axis or because the grouping appropriate to the first of a consecutive series of operations is not suited to the next.

The OPFOR believes that its centralization of operational command at the highest possible level makes possible major deployments and redeployments with minimal dislocation and waste of time. Any regrouping of army groups occurs only if ordered or approved by the General Staff or theater CINC. Similarly, only the army group commander can authorize regrouping of subordinate armies or corps.

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[1] The army group OMG could be a corps.

[2] In the defense, OPFOR commanders may also form a fourth type, an antilanding reserve, whose purpode would be to prevent the landing of enemy amphibious, airborne, or heliborne forces.

[3] This is especially likely when the army group receives an additional antitank brigade (or brigades) from the Reserves of the Supreme High Command as reinforcement.

[4] A mobile obstacle detachment is an enfineer grouping with rapid minelaying and usually also antitank ditching and obstacle-creating capabilities. It usually supports the antitank reserve, though it may also help prepare defensive positions for a transition to the defense. Artillery or air delivery of scatterable mines may supplement, or even on occasion replace, these efforts.

[5] Tactical combat formation (division down even to battalion) can also be in two echelons. Divisions and brigades on secondary sectors might deploy in a single echelon, with a combined arms reserve, both to economize in forces to enable concentration on the main sector and because the objectives on secondary sectors are shallow (combat action being of an essentially supporting or deception and fixing nature).

[6] For ease of control, to maintain momentum, and because there may be limited room to deploy, tactical combat formation (division and below) is likely still to be in two echelons but with extensive use of forward detachments.

[7] Forward detachments and raiding detachments perform this role at the tactical level.

[8] For more information on forward detachments, see Chapter 5.

[9] For more information on movement support detachments, see Chapter 12.

[10] An OPFOR commander usually assigns to a subordinate a ***mission*** graphically represented by a ***line*** on the map of the operations plan. The line most often corresponds to the rear boundary of an enemy unit. The mission is usually to destroy the enemy within a zone to the depth of the assigned line. A mission can also include an assigned ***task*** not involving a line; the task might be to destroy, neutralize, disrupt, seize, of defend a particular enity. The subordinate must achieve all of this by a specified time.

Chapter 5
Army Offensive Operations

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OFFENSE IN NUCLEAR CONDITIONS

An army offensive operation is normally part of an army group offensive operation. However, an army operating on a separate operational axis is capable of independent operations. The army is the smallest OPFOR organization fully organized and equipped to conduct operational maneuver. It can strike throughout the entire tactical-operational depths of the enemy using a combination of operational maneuver and fires.

The forms of maneuver and types of offensive action at the army level are similar to those at the army group,

only on a smaller scale. Since much of the content of Chapter 4 applies to the army level as well, this chapter does not repeat the elements common to both army groups and armies; it concentrates on nuances peculiar to the army.

ORGANIZATION

In wartime, the composition and size of an army reflect its mission, the situation, and the area of operations. An army has a permanent staff structure and a flexible complement of divisional and nondivisional combat, combat support, and combat service support elements. Its structure provides adequate control and ground-based support for the divisions assigned to it during the army's participation in an army group operation. When the army's divisions actively engage in army group combat operations, army group assets supplement the army's combat support elements.

Armies

The OPFOR employs two basic types of army: the mechanized army (MA) and the tank army (TA). While both types have a combined arms structure, a TA has a predominance of tank divisions (TDs). The MA normally has a predominance of mechanized infantry divisions (MIDs) or perhaps a balanced structure of MIDs and TDs.

Corps

The OPFOR also employs two types of corps, which may operate in lieu of armies in most situations. Both corps have a combined arms structure. The primary difference between armies and corps is the smaller amount of supporting assets and units allocated to a corps.

The OPFOR might choose to employ corps in its more austere theaters; for missions requiring a more compact force, such as an operational maneuver group (OMG); or simply when armies are not available. A tank corps has a predominance of tank divisions or separate brigades. A mechanized corps has a predominance of mechanized infantry units or, perhaps, a balanced structure of MIDs and TDs or mechanized infantry brigades (MIBRs) and tank brigades (TBRs).

Divisions

The MA has no permanent organization. A typical mechanized army has two to five divisions, with four being the most common. There are generally at least two MIDs and one TD. Similarly, a typical TA has two to five divisions, with four again being the most common. There are normally at least two TDs and no more than one MID. A corps may have one or two divisions and one or more separate brigades.[1]

Nondivisional Elements

In addition to this flexible number of divisions, the numbers and types of nondivisional elements in an army can also vary greatly. Typically, either type of army may have--

- One or two separate MIBRs or TBRs.
- One or two separate combat helicopter regiments.
- An artillery brigade.
- A multiple rocket launcher (MRL) regiment.
- Two surface-to-surface missile (SSM) brigades.
- A surface-to-air missile (SAM) brigade.
- An antitank regiment (MA only).
- Possibly a special-purpose forces (SPF) battalion.

(See FM 100-60 for more detail on army and corps organizations.)

OFFENSE IN CONVENTIONAL CONDITIONS

Just as army group offensive operations provide the vital ground maneuver element in strategic operations within a theater, it is actually the armies that conduct the operational maneuver for the army group. Within the context of the army group's offensive operation, an army executes its mission in close cooperation with adjacent armies and other elements of the army group.

Aims

The aim of an army offensive is to destroy enemy military forces and to achieve operational missions in support of army group operations. Thus, army operations may involve some or all of the tasks in the following paragraphs.

Destruction of Enemy Forces

This is the primary aim of most army offensive operations. An army might complete the destruction of enemy forces begun by an initial precision weapons strike or other means. An army might also be tasked to destroy enemy forces unaided by nonorganic means.

Seizure of Vital Areas

An army may have to capture terrain features and/or political or economic centers to create favorable conditions for subsequent operations. If the depth of a particular army group operation is not great and the enemy has no strong reserves in that sector, an army operation may achieve the goals of the army group offensive, or even strategic political goals.

Consolidation on Achieved Objectives

Only when specifically ordered to by the army group does an army stop and consolidate on an objective. Generally, missions are more in term of lines to reach (and forces to destroy in doing so) than of sectors of terrain to hold. Common exceptions to this rule are--

- Transition to the defense on an army group's final objective, or subsequent mission line.
- Consolidation of a bridgehead or other favorable line when the army lacks the strength to continue the advance.
- Transition to the defense when faced by a superior enemy force.
- Going onto the defensive when the army group switches the focus of its efforts.

Army Roles in Army Group Offensive

Armies conduct offensive (or defensive) operations in support of army group missions. Therefore, an army's missions depend on its role in the army group commander's concept of operations. Its missions also depend on its place in the army group's operational formation; that is, whether it is acting in the first or second echelon or as an OMG. These same two factors also determine the army's composition; that is, the number of divisions and the degree of support allocated to it from army group. Usually, MAs conduct penetration operations, act on secondary sectors or in difficult terrain, or serve as second echelons. A TA usually operates on the main axis, acting in the first echelon against weak or partially prepared defenses or as an OMG or second echelon against stronger defenses.

In some cases, the OPFOR has used TAs to drive rapidly toward deep objectives, destroy enemy strategic reserves, or maneuver rapidly to the flanks to encircle large enemy groupings that the slower-moving infantry

would subsequently destroy.[2] However, MIDs also include a significant number of tanks. Tank divisions have evolved into more balanced combined arms organizations with the expansion of artillery and mechanized infantry units. Thus, the traditional difference in the roles of MAs and TAs has largely disappeared. The design of OPFOR armies, regardless of divisional makeup, allows them to accomplish the tasks envisioned on a highly mobile battlefield.

Army Group First Echelon

First-echelon armies constitute the bulk of army group forces. Their success is essential to achieving the army group aim. If they do not accomplish a penetration, OMGs may be unable to conduct deep operations, and there might then be insufficient combat power in the second echelon to carry the offensive through to the depth of the army group subsequent mission. Moreover, the OPFOR is unsure whether the second echelon can arrive in time and in combat-effective condition to ensure success. The first echelon therefore has the requirement to reach at least the immediate mission of the army group without reinforcement.

If the depth of an army group operation is shallow and the enemy lacks strong reserves, a single army operation could be enough to achieve army group goals. Usually, however, the OPFOR expects a first-echelon army to conduct two successive operations with little or no pause between them.

Army immediate mission. In the first offensive operation against a partially prepared defense, the army's immediate mission would be to--

- Destroy enemy precision and nuclear weapons.
- Penetrate enemy covering forces.
- Destroy the main forces of enemy first-echelon corps and immediate operational (corps) reserves.
- Seize lines or areas that upset the stability of the defense and create favorable conditions for the continuance of offensive operations.

Army subsequent mission. The goal of the subsequent mission is to--

- Destroy newly located precision or nuclear weapons.
- Complete the destruction of enemy corps and approaching (army group) reserves.
- Seize those areas that are the aim of the army group operation.

Army Group OMG

When acting as an army group OMG, an army may conduct one, more probably two successive operations with little or no pause between them. Against a weak or unprepared enemy, the OMG may actually lead the advance from near the start. Even if that is not the case, the army group holds the OMG well forward, probably 30 to 50 km from the line of contact, to ensure the earliest possible commitment to exploit a gap or penetration. Ideally committed on the first day against an unprepared defense, certainly by the third or fourth against a partially prepared defense, the OMG then operates considerably in advance of the main forces.

Army Group Second Echelon

A second-echelon army usually executes only one offensive operation--to carry the army group operation forward from its immediate to its subsequent mission. It may, however, be committed earlier than the achievement of the army group's immediate mission to reinforce the efforts of a first echelon that is losing momentum or faced by a superior enemy force. Another reason to commit a second-echelon army earlier would be for a specific purpose, such as reducing encircled or bypassed forces, conducting a pursuit, or even widening the penetration (strike) sector.

A second-echelon army would often be still moving up from the strategic rear when the offensive begins. If not

committed immediately on arrival into the tactical zone, it may then be held anywhere between 50 and 120 km from the line of contact. Its march into battle (and often even its commitment) occurs at night, when possible, to achieve surprise and to minimize the threat of interdiction.

Special Conditions

In mountainous areas, or marshy areas intersected by rivers, efforts concentrate on dividing enemy groupings for destruction and seizing communications centers, main road junctions, and defiles through impassable terrain. In deserts and steppes, the depth of army operations might increase.

Changes in Missions

Army group missions are normally fixed, but those of armies may change, especially when the main effort shifts from one axis to another. Factors that might lead to a change in mission include--

- Success along an axis other than the main effort, resulting in the reinforcement of this success.
- Commitment of enemy reserves against a penetrating first-echelon army, requiring protection along the flank of the penetrating army.
- Successful enemy resistance in the army's sector, or enemy counterattacks/counterstrikes, which lead to a change in the army group concept.
- The loss of combat effectiveness from heavy casualties.
- The capacity of the army group to support the army.

Prerequisites for Success

Penetrating a well-defended position can be a difficult task requiring detailed preparation and concentration. Success depends on the factors discussed in the following paragraphs.

Selection of Strike Sectors

The OPFOR carefully selects areas for penetration (strike sectors) that lead to both the achievement of geographical objectives and the destruction of the main enemy grouping. Ideally, it penetrates weak enemy groupings to get to the strong groupings from the flank or rear. Other vulnerabilities it can exploit are boundaries between enemy units and difficult terrain the enemy has defended only lightly because of its unsuitability for offensive action.

Reconnaissance

Detailed reconnaissance of both the terrain and the enemy is essential if the OPFOR is to make accurate calculations about required force levels and densities and to achieve reliable neutralization of the defense. OPFOR reconnaissance has the requirement to reveal 75 to 80 percent of the targets (100 percent in the case of particularly vital systems).

Correlation of Forces

The estimate of forces required to penetrate must be correct. Staff work must be meticulous to concentrate dispersed groupings rapidly in order to attack from the march.

Neutralization of Enemy Forces on Strike Sector

It is critical for artillery to neutralize the enemy on the strike sector and to its immediate flanks. The OPFOR defines neutralization as the destruction of up to 30 percent of all enemy personnel and weaponry in the target area. This is the norm usually required for a successful penetration. It would, for instance, reduce the density of major enemy antitank weapons from 15 per km to about 10 per km, which would reduce casualties to around 25

percent.

The problems of movement, coordination, and logistics support are by no means insurmountable in defeating the first echelon of a prepared defense. However, the difficulty increases if the OPFOR has to make another penetration at the rear of the enemy tactical zone of defense 40 to 60 km from the original line of contact.

Moving both tank and mechanized infantry elements and their supporting artillery, as well as the required logistics, through narrow strike sectors requires a fully-functioning C^2 system or strong initiative by field commanders.[3]

Neutralization of Enemy Tactical Reserves and Command Posts

Artillery, air attacks, and forward, raiding, and heliborne detachments must neutralize enemy tactical reserves and command posts if the OPFOR is to destroy the stability of the defense and gain early momentum.

Rapid Penetration

Rapid penetration by the first echelon is essential to destroy the cohesion of the defense and to generate operational maneuver from an early stage. Otherwise, the battle degenerates into one of attrition, wasting precious time. This penetration, in turn, depends on the continuity of fire support and the timely reinforcement of efforts by second echelons (reserves) at all levels.

Information Warfare

Information Warfare (IW) conducted at the army level follows the same form and principles as that of the army group (see Chapter 4). Detailed information on tactical-level IW operations is provided in FM 100-62.

COMMANDER'S DECISION

The army commander considers the same factors as his superior, the army group commander, but naturally at one level lower. The army commander presents his decision graphically on a 1:250,000- or 1:100,000-scale map. (See Figure 5-1 for a simplified example.) Usually he needs the 1:100,000 scale because of the increased detail of his plan compared to the army group plan. On the map, he indicates--

- Groupings of enemy forces and their possible courses of action.
- The army's operational formation.
- The army's immediate and subsequent missions and their contents, depths, and time for accomplishment.
- The location of strike sectors and axes of main and supporting attacks.
- The combat formation of first-echelon divisions and brigades and the method of their movement into specified areas.
- The missions of first-echelon divisions.
- The method of commitment of second-echelon divisions (or combined arms reserve).
- Firing position areas for army and division artillery groups (AAGs and DAGs) and the army rocket artillery group (ARAG).[4]
- The composition, missions, landing areas, and time of insertion of airborne and/or amphibious landing forces.
- Deception and decoy units or groupings.

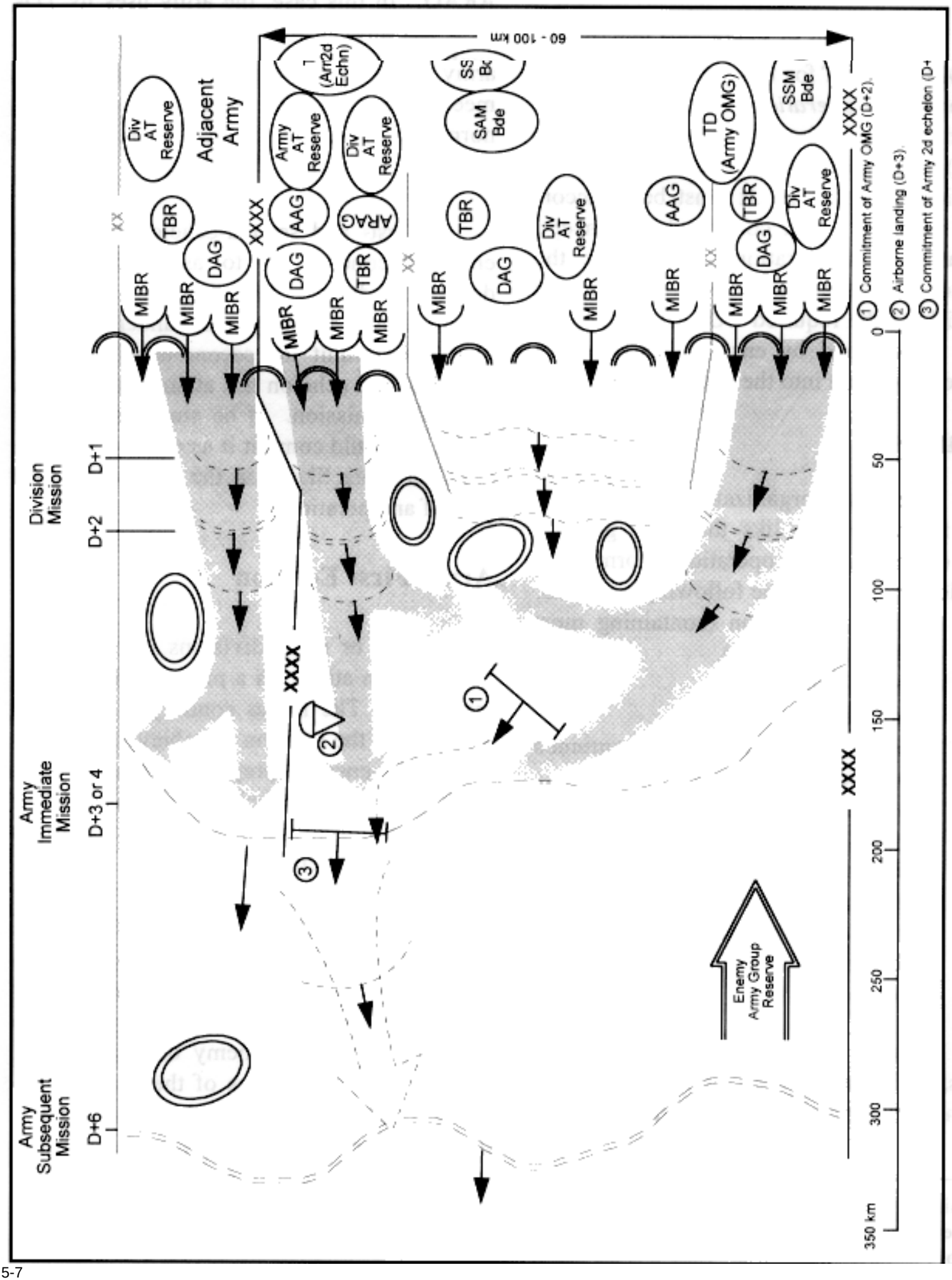
Division Mission
D+1
D+2
Army Immediate Mission
D+3 or 4
Army Subsequent Mission
D+6
Adjacent Army
Div AT Reserve
Army AT Reserve
Div AT Reserve
SAM Bde
TD (Army OMG)
SSM Bde
Div AT Reserve
Div AT Reserve
TBR
DAG
AAG
MIBR
XX
XXXX
60 - 100 km
Enemy Army Group Reserve
0
50
100
150
200
250
300
350 km
① Commitment of Army OMG (D+2).
② Airborne landing (D+3).
③ Commitment of Army 2d echelon (D+

Figure 5-1. Map of the army commander's decision.

(For more detail, see Chapter 7; see also Commander's Decision section in Chapter 4.)

OPERATIONAL FORMATION

The concept of operations determines the operational alignment of the army forces. The OPFOR term for this basic organization for combat is *operational formation*[5]. The operational formation of an army (or army group) is the grouping created for conducting a particular operation. It must be in accordance with the higher commander's concept. The army's configuration must ensure the destruction of the main enemy grouping by establishing the required COF superiority on strike sectors and by ensuring early and a rapid exploitation into the enemy's rear.

Elements

The army's organization for combat is quite flexible, much like the army group's. In an offensive, army operational formations include most or all of the following elements:

- Army first echelon (containing most of the army's forces).
- Forward detachment.
- Army OMG.
- Army second echelon or a combined arms reserve.
- Army antitank reserve (with mobile obstacle detachments).
- Artillery groups.
- Engineer and other special reserves.
- Combat helicopter regiment(s).
- Airborne and heliborne landing forces.
- Other elements.

Against at least partially prepared defenses, MIDs usually accomplish the penetrations, supported by strong artillery groups at all levels up to and including the AAG and ARAG. In this case, the army uses its TDs (if it has any) in the second echelon, for an exploitation role. On the other hand, the army might anticipate light resistance or a meeting engagement. In such instances, it is normal to place TDs in the first echelon and decentralize much of the artillery.

First- and second-echelon forces operate in concert, up to assigned mission depths, to destroy defending enemy forces before them. An army commander normally plans to commit his second-echelon forces after his first echelon has attained the army's immediate mission. If he employs an army OMG, he could commit it as early as the first day, but more likely on the second or third day, of an operation.

Army First Echelon

One or more divisions in the army's first echelon attack on a predetermined army main axis. The forces conducting the main attack have the mission to achieve a penetration of the enemy's prepared defensive positions. Other first-echelon divisions conduct supporting attacks, fixing attacks, or perhaps even defensive actions.

First-echelon brigades of the army's first-echelon divisions attack from the march at top speed to achieve deeper penetration of the enemy's main defenses. They plan to exploit surprise and enemy disorganization. Second-echelon brigades of the army's first-echelon divisions exploit the best penetrations into the deep tactical rear of the enemy (to the rear boundary of the enemy division).

The scope of a division's actions varies widely according to its role in the army operation and the strength of the enemy. Although it is unlikely that an army would face an enemy force with fully deployed, well-prepared defenses across its entire zone of action, that could be the case for a division within the army's operational formation. Other divisions, however, could face defenses ranging from unprepared to partially prepared. In any event, the army's second echelon is prepared to exploit success wherever it may occur.

Against strong, deeply-echeloned, and well-prepared defenses, an army conducts penetration battles on strike sectors normally totaling from 4 to 6 km in width to ensure requisite COF superiority. Under these conditions, it is even possible that the zone of advance of a division attacking on the army's main axis could coincide with its strike sector. Such narrow frontages reflect an attack echeloned in great depth. Up to half of the division would be acting in the second echelon. First-echelon brigades and their leading battalions would also be in two echelons. Such a penetration requires the support of strong artillery groups, including the brigade artillery groups (BRAGs) of first-echelon brigades, the DAG (or perhaps two DAGs) of the division, and probably an AAG and/or ARAG.

In a penetration of a well-prepared defense, the OPFOR expects a leading first-echelon brigade, as its immediate mission, to destroy a first-echelon defending battalion (a depth of 8 to 10 km). Its subsequent mission is to destroy the reserves of a forward brigade and penetrate to the depth of the division's immediate mission.

The immediate mission of a first-echelon division is to--

- Destroy a forward brigade.
- Destroy the brigade reserve and seize its position.
- Penetrate to the positions of supporting artillery.

The depth of this mission ranges from 16 to 20 km. The destruction of the enemy's first-echelon brigades and attacks on gun lines would disrupt the enemy's fire system and mutually supporting defenses. This would create favorable conditions for the destruction of the remainder of the enemy division.

The division's subsequent mission is to--

- Destroy the enemy's divisional reserve.
- Complete the penetration of the tactical zone of defense.
- Capture favorable terrain for launching exploitation to the flanks and rear.

This mission would normally be from 25 to 30 km deep. The division also receives a mission of the day. This mission, in cooperation with adjacent divisions, is likely to be the destruction of enemy corps reserves.

Another mission the army might assign to the division commander would be to dispatch a forward detachment (FD) after the first echelon has disrupted the stability of the defense. If the mission is to form an army-level FD, the division commander assigns this task to one of his brigades. The division may also choose to dispatch an FD of its own. This usually consists of a reinforced battalion from one of its brigades. Either type of FD attempts to infiltrate into the enemy rear, off the main axis, and seek to seize dominating terrain or obstacle crossings or forestall the actions of enemy tactical reserves. (For more detail, see Forward Detachments below.)

Finally, the division may have the requirement to ensure the trouble-free deployment and commitment of the army OMG or second echelon. To accomplish this task, divisional engineers and air defense assets prepare and protect routes, a reinforced brigade launches a supporting attack, and the DAG fires missions against forces opposing the OMG/second echelon.

In attacks on partially prepared or unprepared defenses, penetration is less of a problem. Therefore, a division's immediate mission might be the destruction of an enemy first-echelon brigade and (with other forces) a reserve brigade. The subsequent mission is to penetrate to the full depth of a defending division; the mission of the day might be up to 60 km deep.

In attacks on a weaker, partially prepared enemy, the zone of advance of a division on the army's main attack axis is normally 15 to 25 km. The strike sector is approximately 2 to 4 km per division. (After the penetration, the zone of advance widens again.) For a division on a supporting attack axis, the zone of advance might extend from 30 to 50 km. Thus, the overall zone of attack for the army could be 60 to 100 km. A total of 8 to 12 km is in the strike sectors.

Forward Detachments

Armies, divisions, and brigades employ FDs as tactical maneuver forces. Against an unprepared defense, the army's brigade-size FD could actually have an operational-tactical mission; that means that it might perform missions as deep as the immediate operational depth of the defense; that is, to the enemy corps rear area. Army and division FDs function during all types of offensive action--an attack against a defending enemy, a meeting engagement, or a pursuit. The same concept applies to brigade FDs, except that employment in an attack against a defending enemy is normally only against an unprepared defense. Whatever the level, FDs are tailored forces, reinforced to allow independent action. Depending on the enemy and the terrain, the nucleus of an FD can be either tank or mechanized infantry forces; however, tank battalions and tank brigades are the most likely.

Forward detachments serving operational maneuver forces help maintain the forward momentum of the entire force. They fragment enemy forces, penetrate covering forces, preempt or overcome intermediate defensive positions, and destroy the equilibrium of deploying enemy reserves. Forward detachments provide the essential linkage between OMGs and main forces and lend cohesiveness to the entire offensive.

Against unprepared defense. The characteristics of the offensive are surprise, speed, and attempts to preempt or dislocate the enemy. Forward detachments from first-echelon divisions may attempt to strike deep into the enemy tactical zone of defense (main defense area) before enemy defenses are fully organized and solidified. Reinforced battalions (or sometimes entire brigades) given such missions receive full support from artillery and direct-support aviation. It is also possible that an army could employ a brigade-size "operational-tactical" FD to achieve similar, but deeper, results to the rear of the tactical zone of defense.

Against an unprepared defense, where the enemy has deployed only his covering force, FDs at all levels might initiate the attack. If the enemy has advanced during the night before the offensive, they then attack on multiple axes across the army's offensive zone to penetrate rapidly enemy covering forces.

They then drive at top speed in prebattle or march formation to seize and hold key terrain within the enemy division's main defense area, thus preempting enemy occupation of positions there. There may also be battalion-size heliborne landings, designed for linkup with the forward detachments. Such tactics in support of an operation help to disrupt or preempt enemy defensive structure while opening multiple avenues for swift attacks by larger first-echelon forces. Figure 5-2 shows typical depths of FD missions against an unprepared defense.

FD Subordination	Mission	Depth (km)
Army	immediate operational depth	50-80
Division	rear of tactical zone of defense	30-50
Brigade	front of tactical zone of defense	20-30

Figure 5-2. Forward detachment missions against unprepared defense.

Against partially prepared defense. More often, the OPFOR finds the enemy defense partially prepared, with the covering force in place and the tactical zone of defense partially occupied. A brigade FD does not attack under these conditions, but an army or division FD could if it receives heavy fire support. The FD's mission is to

overcome the covering force and penetrate into the tactical zone of defense to prevent the enemy from establishing a firm, fully integrated defense.

An FD could also facilitate the commitment of the main force (first- or second-echelon divisions) and OMGs. Figure 5-3 shows typical mission depths under such conditions, which is one step shallower than for an unprepared defense.

FD Subordination	Mission	Depth (km)
Army	rear of tactical zone of defense	30-50
Division	front of tactical zone of defense	20-30

Figure 5-3. Forward detachment missions against partially prepared defense.

During the attack, FDs use reconnaissance to detect gaps in enemy defenses occurring naturally or created by artillery fire. If a gap exists, or if fire support has neutralized sectors of the defense, the FD moves quickly through the gap to secure objectives in the enemy brigade or division rear.

Against a prepared defense. If the OPFOR encounters a prepared, fully occupied defense, FDs do not participate in operations until first-echelon divisions have completed the penetration of enemy first-echelon brigades (the front of the tactical zone of defense). (In rare instances, a division FD may assist the main forces in penetrating the covering force or in initiating subsequent attacks into the tactical zone of defense. However, it is unlikely that it would emerge still capable of further operations.)

Once the penetration operation is complete, forward detachments at all levels of command lead the operational exploitation or pursuit, helping to encircle and destroy enemy forces. In this role, they advance from 30 to 60 km ahead of the main force.

Throughout the operation, strong FDs continue to press the advance into the enemy rear on several axes. Numerous deep penetrations by FDs and/or OMGs early in the operation may result in an intermingling of enemy and friendly forces. This situation complicates or forestalls enemy use of precision or nuclear weapons. The OPFOR would accept heavy losses in such deep-penetration forces if it could cause an early collapse of the enemy's defensive structure before he could resort to use of nuclear weapons.

Army Operational Maneuver Group

An army might form an OMG either from resources that are normally part of it or from army group assets that are supporting it. An army commander might establish an OMG before an operation as part of the initial plan, or he might instead form one during an operation to exploit an unforeseen opportunity. At army level, the OMG might be as large as a reinforced division and, usually, based on a TD because of its speed and shock effect. The army commander selects a division for this mission. It has the latest equipment, a high state of combat readiness, and first-rate division and brigade commanders. An army that uses one of its divisions as an OMG may have to resort to a smaller second echelon or combined arms reserve. An army OMG could operate 100 km or more beyond other army forces.

Objectives and raids. Once committed, the OMG's ultimate task depends on the army group commander's concept of the operation. It may preempt the defense, seizing strategic objectives, destroying enemy reserves, and/or seizing key terrain to facilitate the advance of the army's main force. Unlike the second echelon, the army OMG acts as a large operational raiding force. Typically, it has one or more objectives, perhaps located on the army's main axis. On the way to its geographical objective(s), the OMG attempts to avoid a decisive engagement with large enemy forces. However, it may conduct raids en route. In this case, it launches battalion- or even brigade-size raiding detachments to attack targets crucial to the viability of the enemy defense. The relative

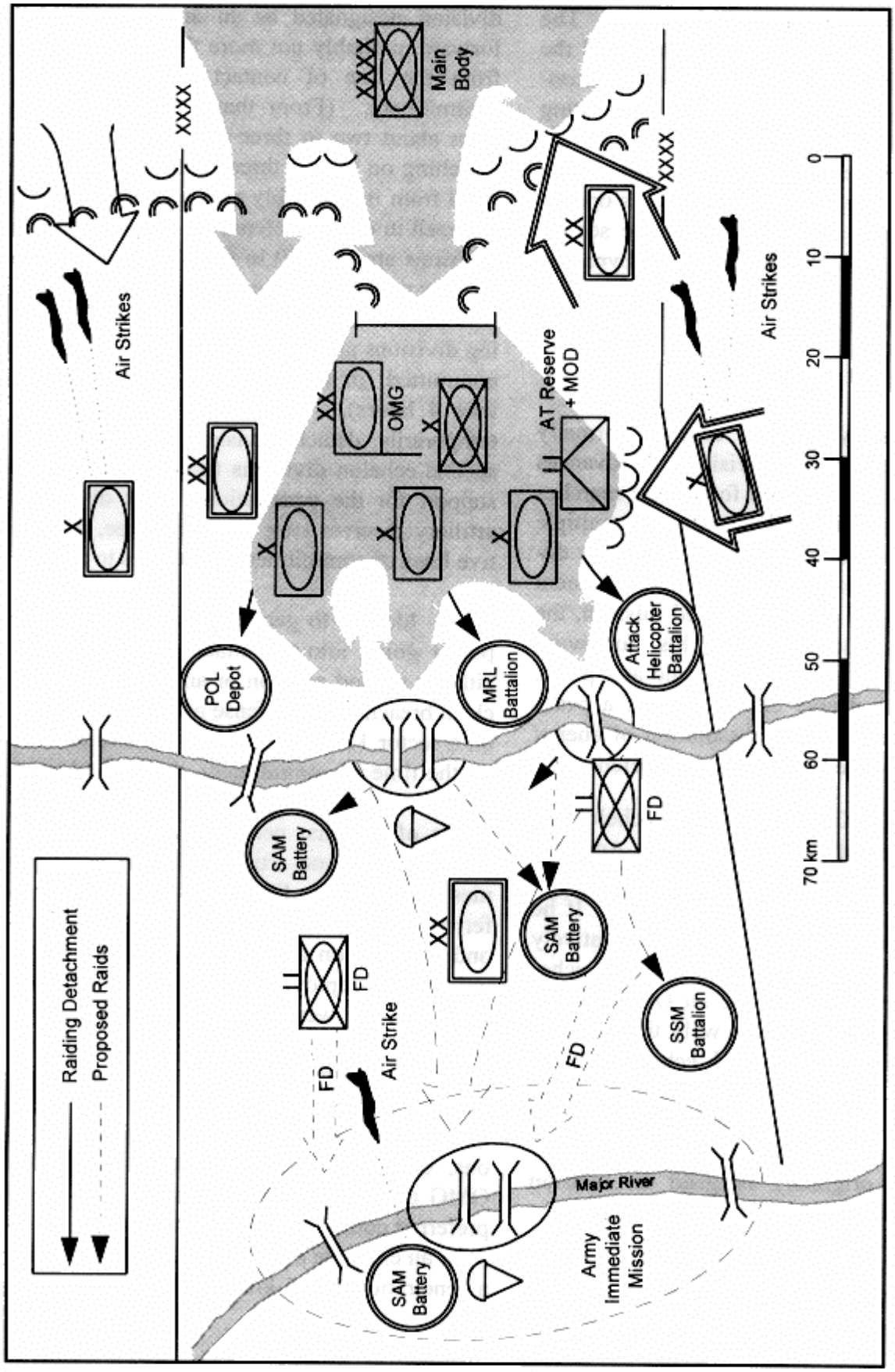

Figure 5-4. Actions of an army OMG in the enemy rear.

importance of raiding versus achieving a mission depends solely on the mission(s) of the OMG. Figure 5-4 illustrates the activities of an army OMG.

Cooperation with other forces. Although operating ahead of the main forces, the OMG does not fight in isolation. Air reconnaissance, long-range reconnaissance patrols, and SPF patrols provide intelligence and targeting data. Some heliborne and airborne landings directly help the OMG, smoothing its advance by preempting defensive or counterattack preparations; others help indirectly by confusing the enemy and inhibiting his reaction. Air interdiction also attempts to prevent counterattacks or counterpenetration. The OMG receives the highest priority for both air defense and ground-attack aircraft. Indeed, as the OMG advances beyond supporting range of helicopters operating along the line of contact, it will have its own air component--helicopters moving with the OMG. It may also be possible to make at least temporary use of captured airfields or improvised strips to base fighters or to fly in resupply. OMGs, airborne/heliborne, and air operations are all crucially interdependent, the successes of each contributing materially to that of the others.

Command and control and logistics. Command and control of an army OMG is accomplished by a combination of radios, an airborne command post, and air and ground couriers. Sustaining the OMG requires highly mobile transport and supply. The OPFOR attempts to maintain a ground line of communication, but it plans for resupply by air.

Relationship to second echelon. The relationship between the army OMG and the second echelon varies depending on the concept of the operation. If the OMG is operating away from the main axis of advance, its activities and those of the second echelon may not be directly related. If the OMG is operating on the main axis of advance, the second echelon may have to destroy forces bypassed by the OMG or to secure the OMG's lines of communications.

Army Second Echelon

The army's second echelon normally consists of one or more divisions. It advances behind army first-echelon forces and marches with its units dispersed laterally on multiple routes to minimize vulnerability to enemy detection and attacks. Based on the development of the battle and on his assigned mission, the army commander commits his follow-on forces at the most opportune time and place. This achieves deeper exploitation of a penetration and leads to the dissolution of enemy tactical and immediate operational defenses.

The OMG and the second echelon are different types of follow-on forces. An army commander, given a limited number of divisions, might not be able to form both. If he expects initial enemy defenses to be relatively weak, he is less likely to form a second echelon, but more likely to use an OMG. If he uses an OMG and all goes well, there should be less need for a second echelon, and a smaller combined arms reserve could suffice. Should the strength and stability of the defense preclude the planned use of an OMG, the division originally assigned the mission could simply become part of the reserve.

An army may form either a second echelon or an OMG or even both in some circumstances. The commander may hold a division designated as an army OMG well forward, probably not more than 30 to 50 km from the line

of contact, ready for early commitment. (From that distance, it takes from about two to three hours for a division marching on two or three routes to move forward from its assembly area and pass through a breach in enemy defenses.) Second-echelon divisions are held 40 to 60 or even 80 km to the rear while the first echelon is achieving the penetration. Thereafter, they follow the leading divisions at a distance of 50 to 60 km until committed (in this case, the process should take 4 hours). The army commander may temporarily detach divisional artillery from second-echelon divisions to augment artillery support for the penetration. This divisional artillery receives two, possibly three, alternative lines of commitment and routes to them.

Ideally, to generate maximum combat power going into the attack, commitment of either a second echelon or an OMG follows a clean breach in the defense and occurs at night on a sector 12 to 20 km wide on three routes. At the time of commitment, the second echelon or OMG receives augmentation by elements of the first echelon and/or the AAG. Maximum air and artillery support accompanies commitment. Figure 5-5 illustrates a preferred mode of commitment of an army's second echelon, on a 15-km frontage through a gap in the deployment of the first echelon. Sometimes, however, such forces may have to attack on a narrower frontage (strike sector), as little as 5 km wide, to complete the penetration. Given the enemy's capabilities to acquire targets and to employ precision weapons, commitment of the second echelon or OMG on such a narrow frontage is the least preferred course of action. (Refer to Figure 4-8 for an example of an army OMG completing a penetration on a 5-km sector.)

Since it is impossible to predict the progress of the operation in the enemy's depth with certainty, second echelons receive only an immediate mission and a subsequent axis of advance. Once the army commander commits his second echelon, he establishes a new one, or a reserve, either by withdrawing other forces from combat or through reinforcement from the army group.

Army Reserves

If an army does not have a second echelon, it normally retains one or more brigades as a combined arms reserve in an offensive. This also could be a mission for a separate MIBR or TBR. Other reserve brigades may come from army first-echelon divisions in supporting attack sectors.

Antitank reserves and other special reserves are important in augmenting the first echelon so that the army does not have to commit its second echelon prematurely. They can also provide strong defense against counterattacks so it is not necessary to divert elements of the main forces from their mission. (For more detail on various types of reserves, see Chapter 4.)

A mechanized army's organic antitank (AT) regiment normally constitutes its AT reserve. However, an army may also receive an AT brigade from the army group or from the Reserves of the Supreme High Command. In that case, the reinforcing brigade becomes the army AT reserve; the AT reserves of divisions operating on the army's main axis are reinforced using the assets of the army's organic AT regiment.

Artillery Groups

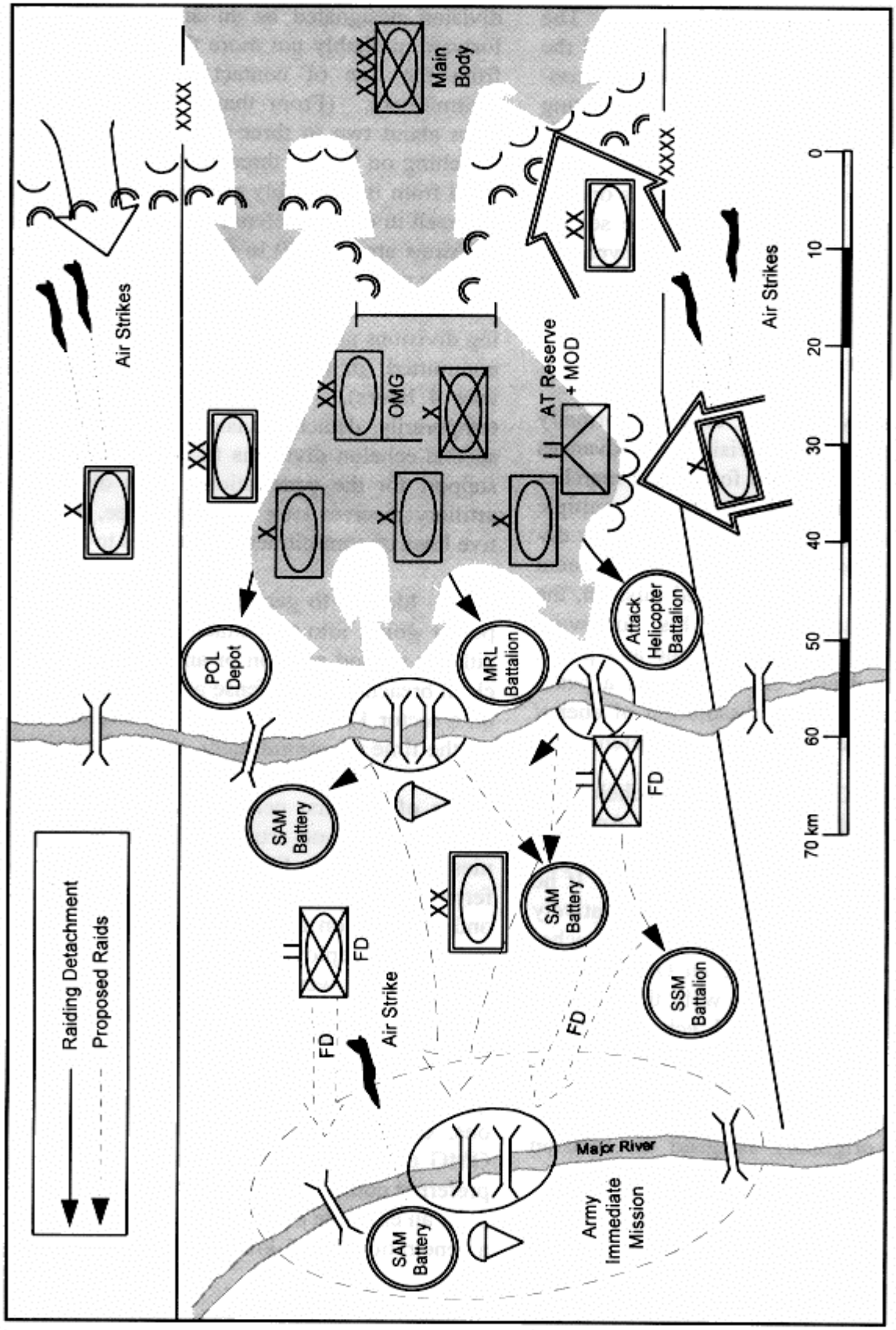

Figure 5-5. Commitment of an army's second echelon.

An army of an army group's first echelon receives artillery units from the army group artillery division(s). The army commander then allocates army and army group artillery to his divisions to form DAGs. He may retain some artillery at army level to form one or more AAGs and an ARAG.

The majority of this artillery is long-range guns and MRLs, though the AAG may have some howitzers assigned from a second-echelon division. Within the army, artillery from second-echelon divisions may go to reinforce first-echelon divisions until the commitment of the second echelon to battle. The artillery would then rejoin its parent division.

Together with fixed-wing aviation, these artillery groups have the most important task--neutralizing enemy precision weapon systems and artillery. They can also maneuver concentrated fire to support the attacks of both first and second echelons or OMGs and to engage enemy reserves.

With organic and army group-allocated assets not passed down to its divisions, an army conducting an army group main or supporting attack forms a strong AAG. The purpose of an AAG is to--

- Engage enemy SSMs and artillery, especially those capable of delivering precision munitions, along with associated C^2 facilities.
- Reinforce the fires of DAGs on the army's main attack axis.

An army could have from four to eight battalions of tube artillery for this purpose.[6] If the number is closer to four battalions, the army forms one AAG; if it is closer to eight it is probable that an army would form subgroups or two AAGs. The latter may be necessary to support more than one division or to perform more than one mission (for example, divisional support, counterbattery, or demolition of fortifications).

An army does not normally allocate the MRLs of its organic MRL regiment to its subordinate divisions. With these and additional MRL battalions allocated to the army from the army group-level MRL brigade, the army commander may form an ARAG. Thus, the ARAG has at least three MRL battalions and perhaps as many as seven. With the larger number, an army might form two ARAGs. The army commander normally reserves the ARAG for centralized employment in the army's main attack axis. However, it could also conduct rapid maneuver to any axis, as required, to inflict losses on main enemy groupings.

Combat Helicopter Regiments

The OPFOR considers aviation to be a means of fire support. When operating in an air corridor, army aviation can use its attack helicopters for missions across the line of contact. They can attack enemy gun lines and reserves, especially those trying to deploy. This, of course, occurs only when preceded by suppression of enemy air defenses. Attack helicopters also provide direct air support to units fighting through enemy defenses. Their support is important in the transition from the artillery preparation to support phases and in the accompaniment phase. They are, however, most useful in engaging targets beyond effective artillery range. They closely coordinate their activities with those of the artillery, air defense, and fixed-wing aviation.

The army's combat helicopter regiment(s) also have transport helicopters. With additional heavy-lift reinforcement from army group, and with strong artillery and air support to suppress enemy air defenders, the army can insert a mechanized infantry battalion into the enemy rear.

Airborne and Heliborne Landing Forces

Any brigade-size landing of airborne troops is more likely to be air-dropped than helicopter-delivered, particularly if it is more than about 50 km beyond the line of contact. (See Chapter 16 for more detail on airborne operations.)

The OPFOR can launch battalion-size heliborne landings up to 50 km or so into the enemy rear. This restriction

is due to the payload/range limitations and helicopter vulnerability. Even then, the airborne troops expect early linkup with forward detachments or OMGs. Usually, an airborne battalion can hold out no more than 18 to 24 hours without resupply.

Mechanized infantry battalions may serve in the heliborne landing role (particularly for shallow missions). They usually operate not more than 20 km from the line of contact, within range of supporting artillery. Heliborne insertion of a mechanized infantry company normally is to a depth of not more than 10 km.

The less prepared the enemy defense, and the less dense and more poorly organized its air defense, the greater the scope a heliborne landing might have. Using such landings, an army can conduct company- to battalion-size raids against vulnerable, high-priority targets such as precision weapons, headquarters, and key logistics assets. Such raids commonly seize defiles, river crossings, and prepared but as yet unoccupied counterpenetration positions in the enemy's rear. In this way, they can help convert tactical into operational success and help generate operational momentum by--

- Blocking the moves of enemy reserves.
- Blocking the withdrawal or redeployment of enemy forces.
- Seizing positions on which the enemy could fight delaying actions.

The mechanized infantry battalions involved normally come from a second-echelon brigade or, perhaps, even from a second-echelon division. Such a heliborne landing is usually in support of a division on the army's main axis. A division or army may order it, but the army provides both lift and approval.

Other Elements

A first-echelon army on the main attack axis is likely to receive, from army group, additional--

- Engineers and river-crossing equipment.
- Air defense weapons.
- Chemical defense units.
- Transportation assets.

The army commander allocates these assets primarily to support the main effort. Subordinates also receive these assets according to their specific needs.

Influence of Nature of Enemy Defense

As at other levels, the factors that determine an army's operational formation include the--

- Aim of and plan for the operation.
- Strength, depth, and degree of preparedness of enemy defenses and operational reserves.
- Availability of resources.
- Nature of the terrain in the zone of advance.[7]

However, the strongest influence is usually the nature of the enemy defense.

The nature of the enemy's defenses also largely determines the echelonment of OPFOR offensive formations. The enemy may not have well-prepared defenses in depth backed by operational-level reserves. If not, the army would attack in a single strong echelon followed by a combined arms reserve.

If the enemy is well prepared in depth or does have operational reserves, the army would attack in two echelons. In other words, if the enemy defense has an operational second echelon or reserve, the OPFOR employs an operational second echelon to sustain the momentum of the offensive.

Figures 5-6 through 5-9 show several possible variants of operational formation an army might use against defenses with varying degrees of preparedness. Figure 5-6 depicts an example formation against a prepared defense, figure 5-7 and 5-8 against a partially prepared defense, and figure 5-9 against an unprepared defense.

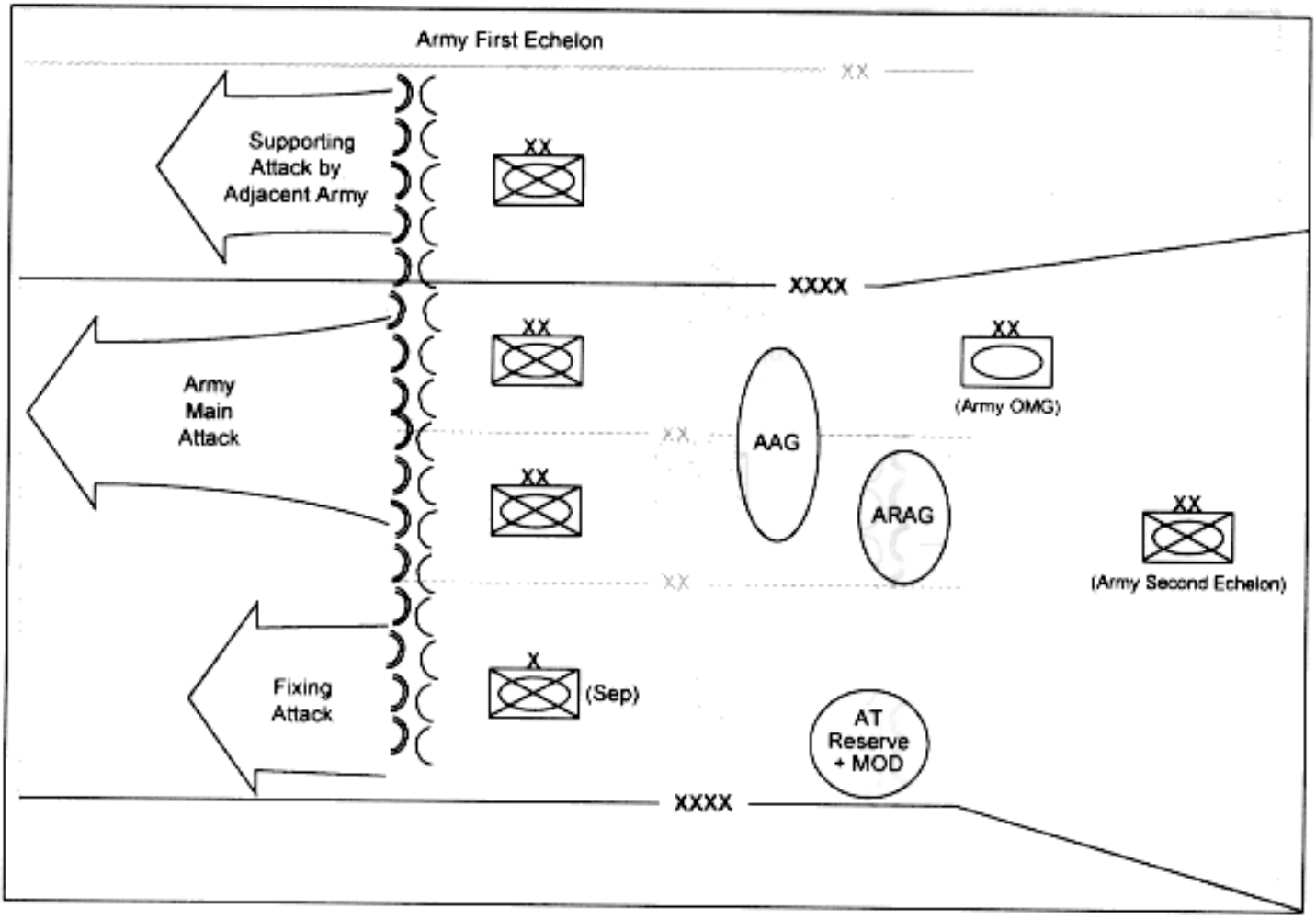

Figure 5-6. Example army operational formation against prepared defense.

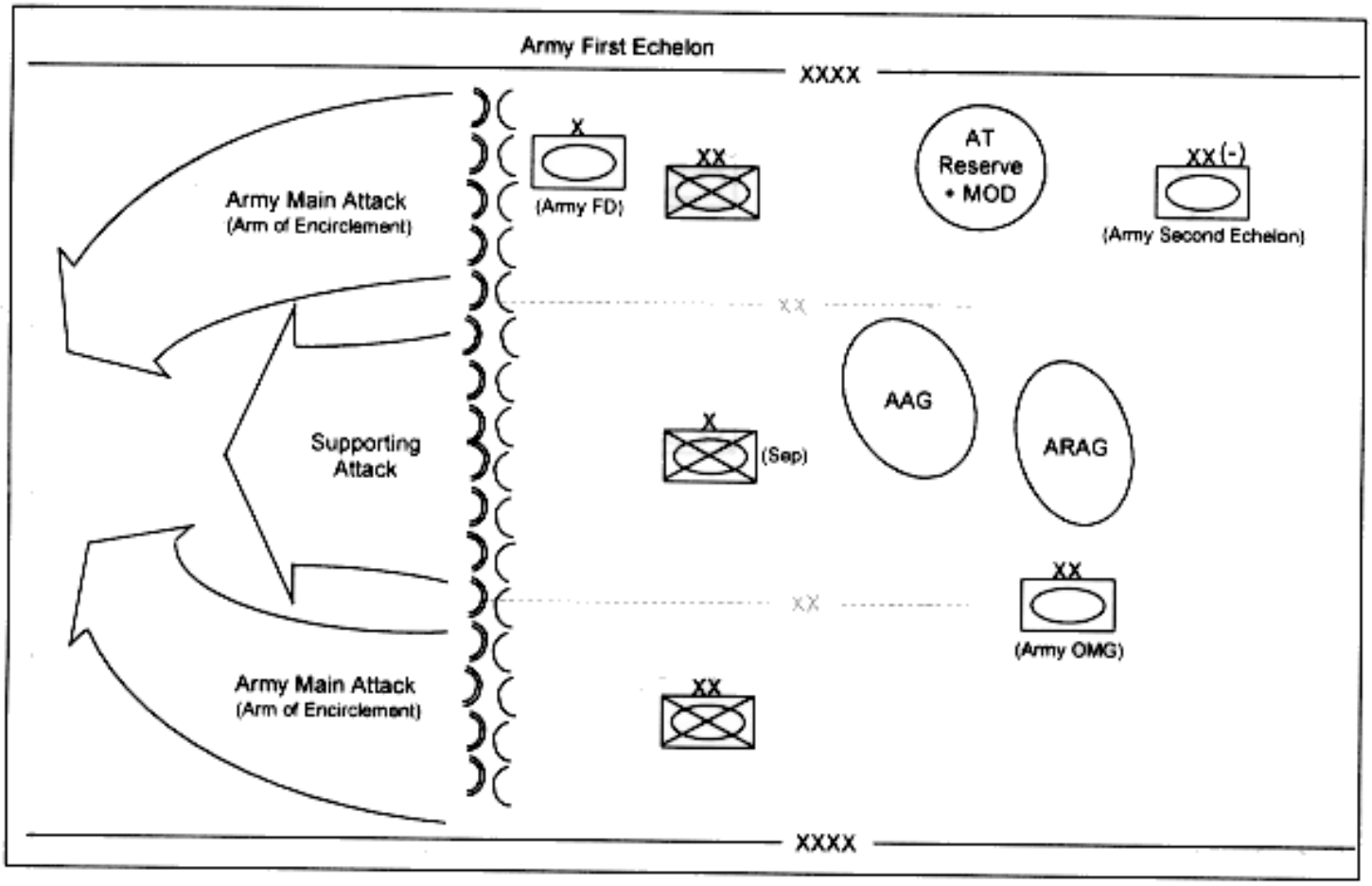

Figure 5-7. Example army operational formation against partially prepared defense (variant 1).

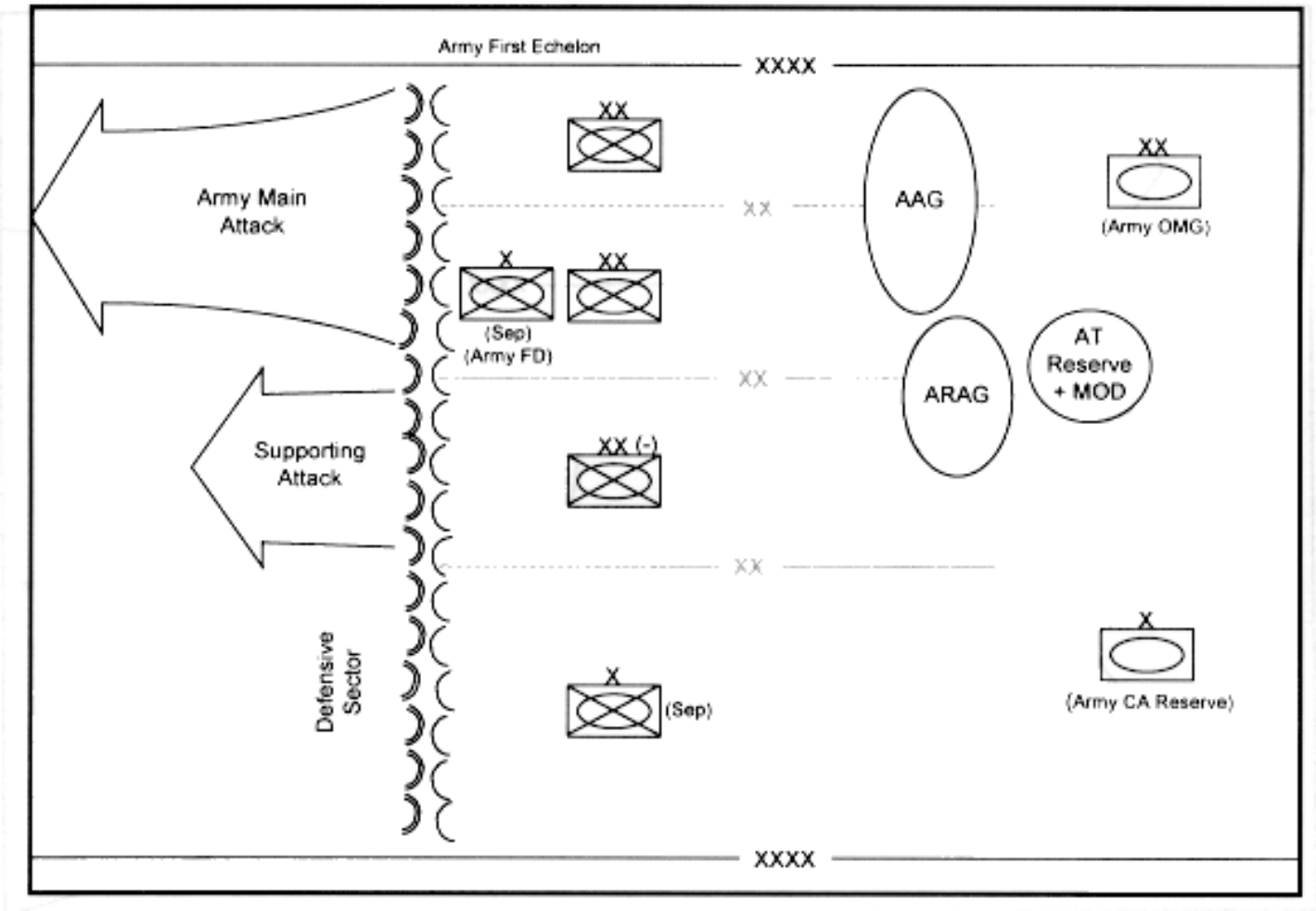

Figure 5-8. Example army operational formation against partially prepared defense (variant 2).

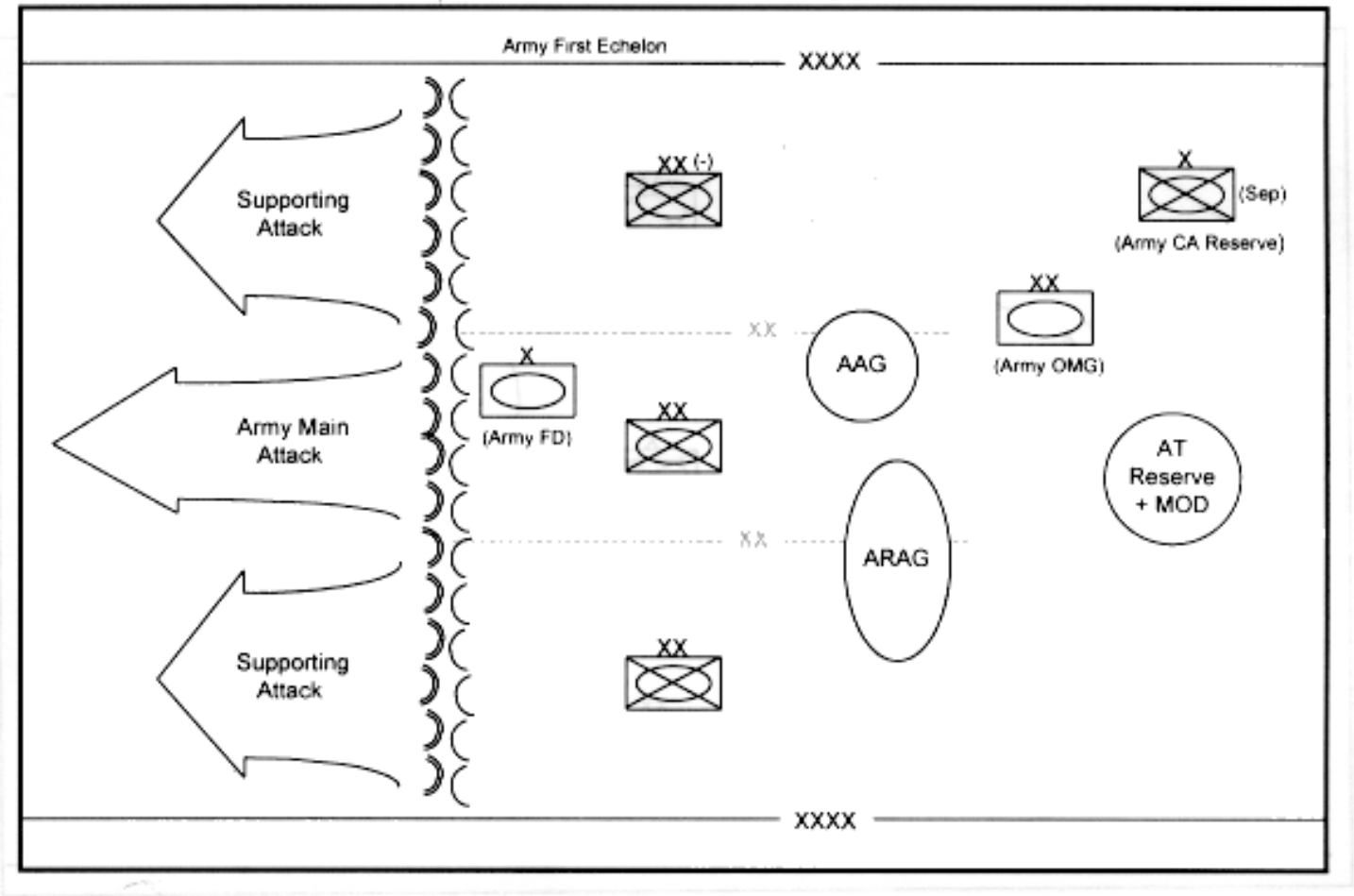

Figure 5-9. Example army operational formation against unprepared defense.

MISSIONS AND NORMS

Planners have established norms in distances, rates of advance, and time factors for army offensive operations. These norms principally depend on an assessment of friendly and enemy capabilities. In particular, they depend on the preparedness of enemy defenses. They may also reflect other factors such as terrain and weather. These factors guide planning for an operation. Not all norms for a given theater apply to other theaters. Even within a specific theater, OPFOR planners may vary considerably from these norms, depending on the particular conditions.

Army Missions

An army in the first echelon of an army-group offensive normally has a mission to attack through enemy defenses to the immediate operational depth--the enemy's army rear area. The achievement of an army's mission is the culmination of successive attacks conducted by its divisions.

A typical army immediate mission is to destroy the integrity of an enemy corps. This includes seizing important areas that facilitate offensive operations deeper into the enemy rear area. The task of the first day of the operation may be to penetrate the forward defending enemy division and, subsequently, to advance to the counterattacking corps reserves.

The army subsequent mission depends primarily on the nature of the enemy defenses. It could include any or all of the following actions:

- The complete defeat, in zone, of the enemy corps.

- The destruction of army group reserves.
- The destruction of the integrity and operational stability of the opposing army group.

Dimensions

As with army groups, armies vary in size and combat missions. These, and the following factors, determine the dimensions of an army offensive operation:

- The nature of the terrain.
- The strength and nature of the defense.
- The need to concentrate to create the required COF superiority over the enemy.
- The need for maneuver space.

Thus, there can be considerable variations in such factors as the width of the zone of advance and depth of missions. The generalizations given below are guidelines only.

Depth and Duration

A first-echelon army may execute two successive operations to a depth of 250 to 350 km. Its immediate and subsequent missions largely depend on the nature of the defending enemy forces the army must destroy.

The depth of a first echelon army's immediate mission normally is to the rear boundary of a defending corps. By penetrating to this depth, the army would complete the destruction of enemy first-echelon divisions, thus destroying the cohesion and integrity of the enemy corps. Under normal conditions (against a partially prepared defense) the depth of this immediate mission would be 100 to 150 km accomplished over a period of 3 to 4 days.

The subsequent mission of such an army would usually be to complete the destruction of the enemy corps and engage the enemy army group reserve if possible. This mission involves an additional 150 to 200 km and another 3 to 4 days against light opposition (no more than a partially prepared defense). Thus, the total depth of the subsequent mission could be 250 to 350 km over a total of 6 to 8 days.

Under favorable conditions, the army's first-echelon divisions (which, like the army itself, may conduct one or more successive attacks) may accomplish the army's subsequent mission. Against more prepared defenses, however, the army normally forms a second echelon to complete this task.

Expected Rate of Advance

Against a partially prepared or overextended defense that lacks strong operational reserves, the expected average rate of advance is 40 to 60 km per day. However, this rate may not be uniform. It might be no more than 25 to 30 km per day when fighting through defended areas. Once the attacking force has achieved a penetration, the rate of advance increases considerably (up to 60 to 70 km per day in pursuit or exploiting the offensive into the enemy rear). All these rates are for mixed terrain.

In close terrain, such as mountains, marshes, jungles, and arctic areas, the average rate of advance decreases to about 30 to 50 km per day. In open terrain, such as deserts or steppes, it increases substantially.

Width of Zone of Action

The zone of action of a main axis army, with 4 divisions in the first echelon, is likely to be from 60 to 100 km in mixed terrain.[8] In other types of terrain, particularly in mountains, the zone of action may be wider. The zone of action depends on the number of axes of advance in the army's first echelon. In assigning division frontages, the OPFOR considers assessments of friendly and enemy forces as well as the nature of the terrain.

The average division zone of action for offensive operations in a main attack is 15 to 25 km wide. Thus, the width

of a first-echelon army making the main attack with four divisions in its first echelon might vary from 60 to 100 km. With only three divisions in the first echelon, it would be 45 to 75 km; with 2 divisions in the first echelon, it may be as little as 30 to 50 km. The width of the zone of action could be up to 100 km or larger for--

- Armies not making the main attack.
- In passive sectors.
- On axes where the enemy has no significant forces.
- In areas with much impassable terrain.

In any conventional operation, there are long defensive and secondary sectors, at least at the start, and particularly in attacks on well-prepared defenses. Strike sectors for an army penetration against prepared defenses are likely to total about 8 to 12 km, on one or two sectors. Once the attacking force has penetrated the enemy's tactical zone of defense, and the enemy starts to withdraw his outflanked forces, the breadth of offensive actions increases. OPFOR units in previously "passive sectors" then transition to the pursuit of withdrawing enemy forces.

FORMS OF OPERATIONAL MANEUVER

The form an army operation takes depends on the location and strength of enemy groupings and their likely reactions, the nature of the terrain and location of obstacles, and the army-group commander's concept of operations. Having established the areas in which the decisive battles are likely, the army commander works out the method of attack in terms of frontage, depth, and main and supporting axes. Operations at army group level, as portrayed in Chapter 4, are similar in concept at army level but, of course, on a smaller scale. An army uses the same two basic forms described for the army group (or combinations thereof) plus one form (the "single penetration") peculiar to the army.

Single Penetration

An army may deliver a single, heavy strike on one axis to the entire depth of the defending enemy corps, simultaneously widening the gap to the flanks and destroying fragmented enemy groupings. This form of operation, portrayed in Figure 5-10, is used when having to penetrate strong, deeply echeloned, prepared defenses at the start of an operation.

Encirclement

Figure 5-11 illustrates the delivery of two heavy strikes on converging axes to encircle the main enemy grouping (including the reserve brigade of the enemy division) while simultaneously exploiting into the enemy's rear. This form of operation is suitable--

- When the trace of the line of contact forms a salient.
- When the army has sufficient strength for two thrusts.
- Against an unbalanced enemy, with a strong grouping (its center of gravity) well forward, flanked by two weaker ones (as will often be the case during a counterattack.

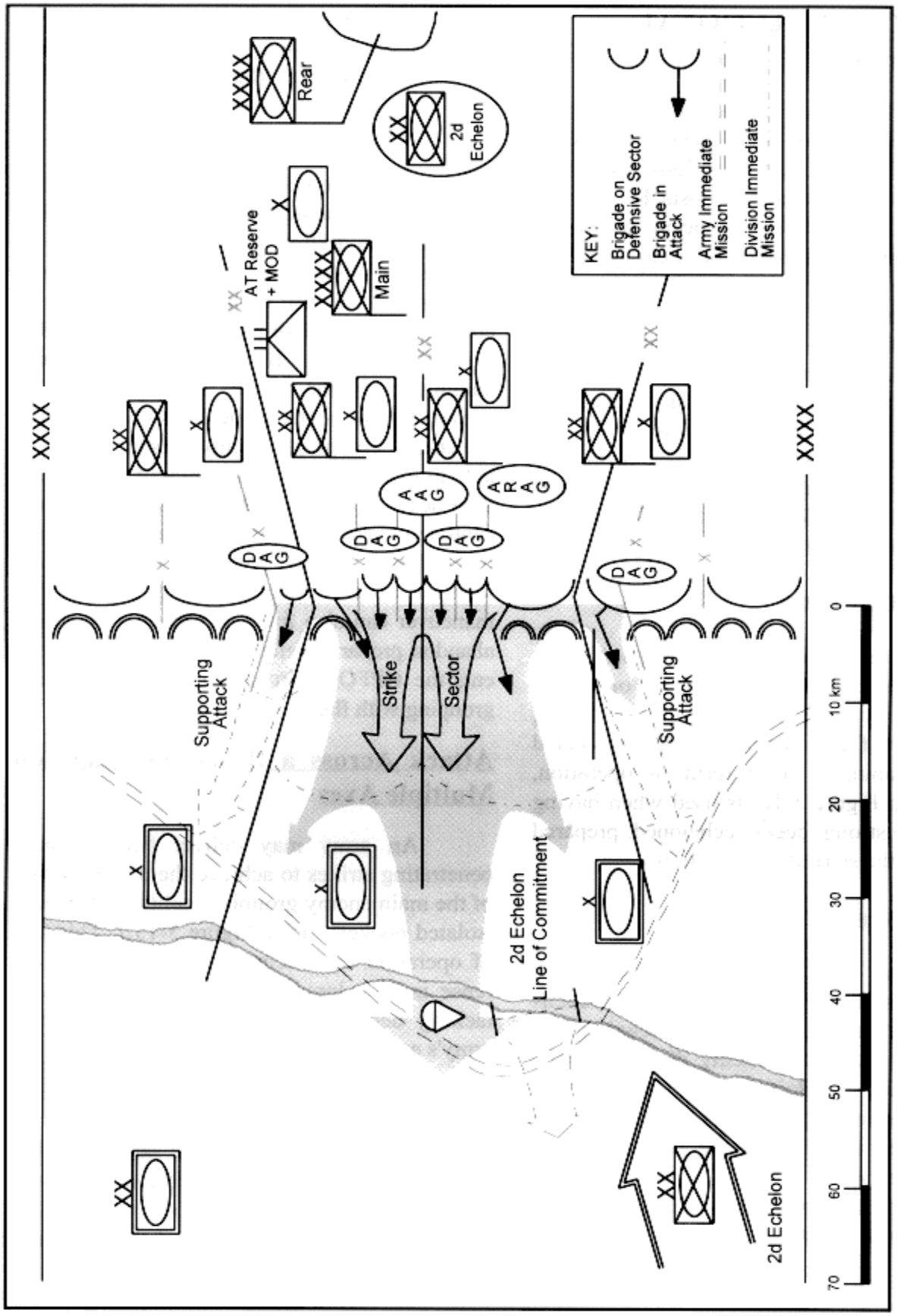

Figure 5-10. An army penetration operation against a prepared defense.

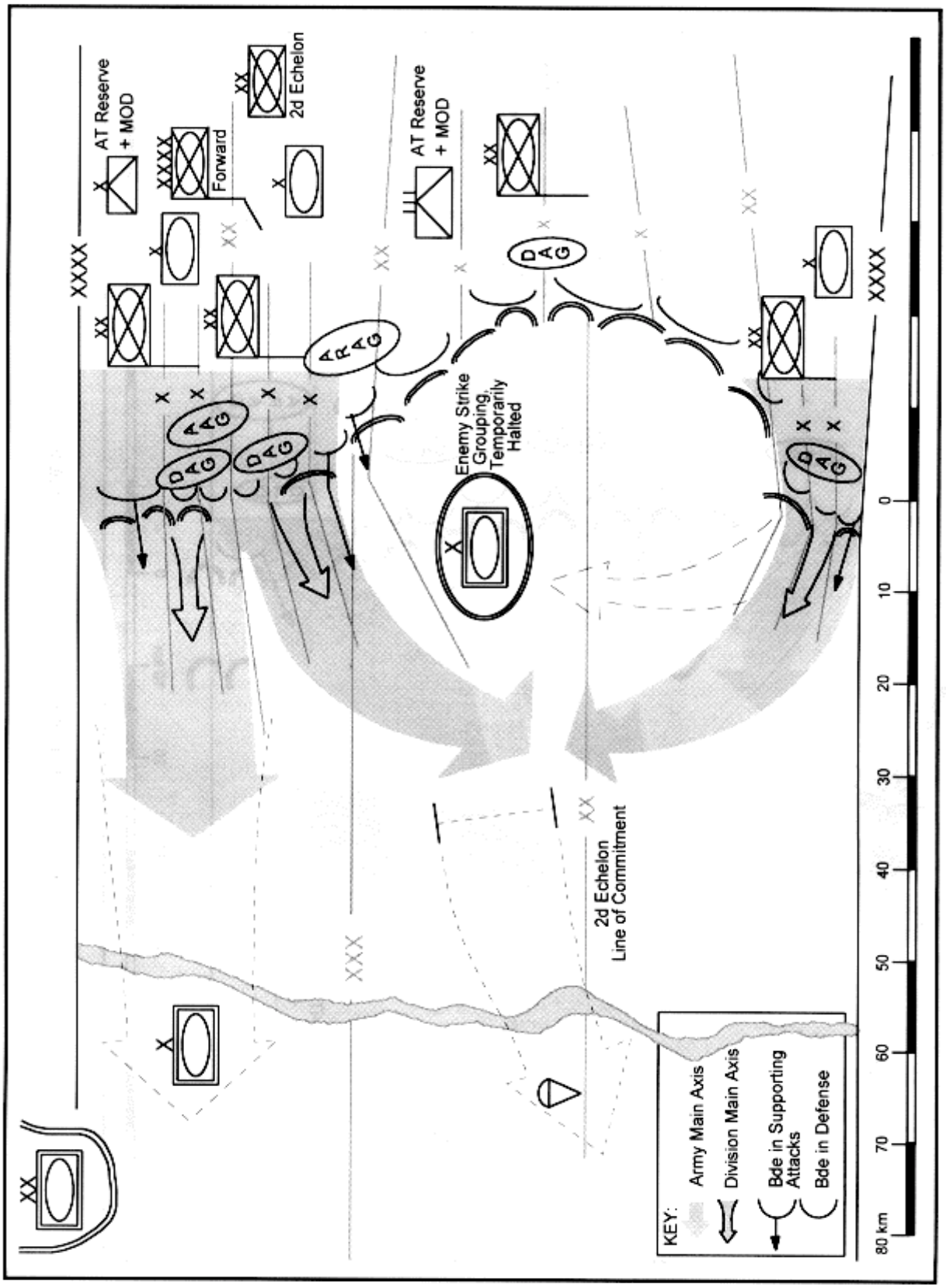

Figure 5-11. An army encirclement operation.

A variation on encirclement, depicted in Figure 5-12, is the trapping of the enemy against an obstacle to destroy him there. In coastal operations, the obstacle is, of course, the sea. Such an operation can also occur inland, trapping the enemy against a major river or canal or possibly a mountain range. If interdiction or airborne landings deny the enemy bridges, ferries, or passes over the obstacle, the OPFOR can destroy the enemy grouping. Enemy personnel may be able to exfiltrate, but at the price of abandoning their heavy equipment. Another use for the concentrated strike from one flank is to encircle a much larger enemy grouping in cooperation with the forces of another army. This type of maneuver can also force a defending enemy to abandon prepared defensive positions and reorient; the OPFOR can then destroy the enemy grouping with flank and rear attacks.

Attack Across a Broad Frontage on Multiple Axes

An army may deliver two or more penetrating strikes to achieve the disintegration of the main enemy grouping, splitting it up into isolated pockets. (See Figure 5-13.) This sort of operation can occur when the enemy's defense is of a less than fully prepared nature, lacking depth and a strong reserve on that army's axis.

TYPES OF OFFENSIVE ACTION

An army carries out the same three basic forms of combat action as the army group. Again, the OPFOR defines these in terms of the postures of the attacker and defender, not the time available.

Meeting Engagement

As an operational-level force, an army conducts a meeting engagement. (See "Meeting Engagement" in Chapter 4.) Its subordinate divisions and brigades conduct meeting battles at the tactical level. Figure 5-14 shows a simplified example of an army commander's decision for a meeting engagement.

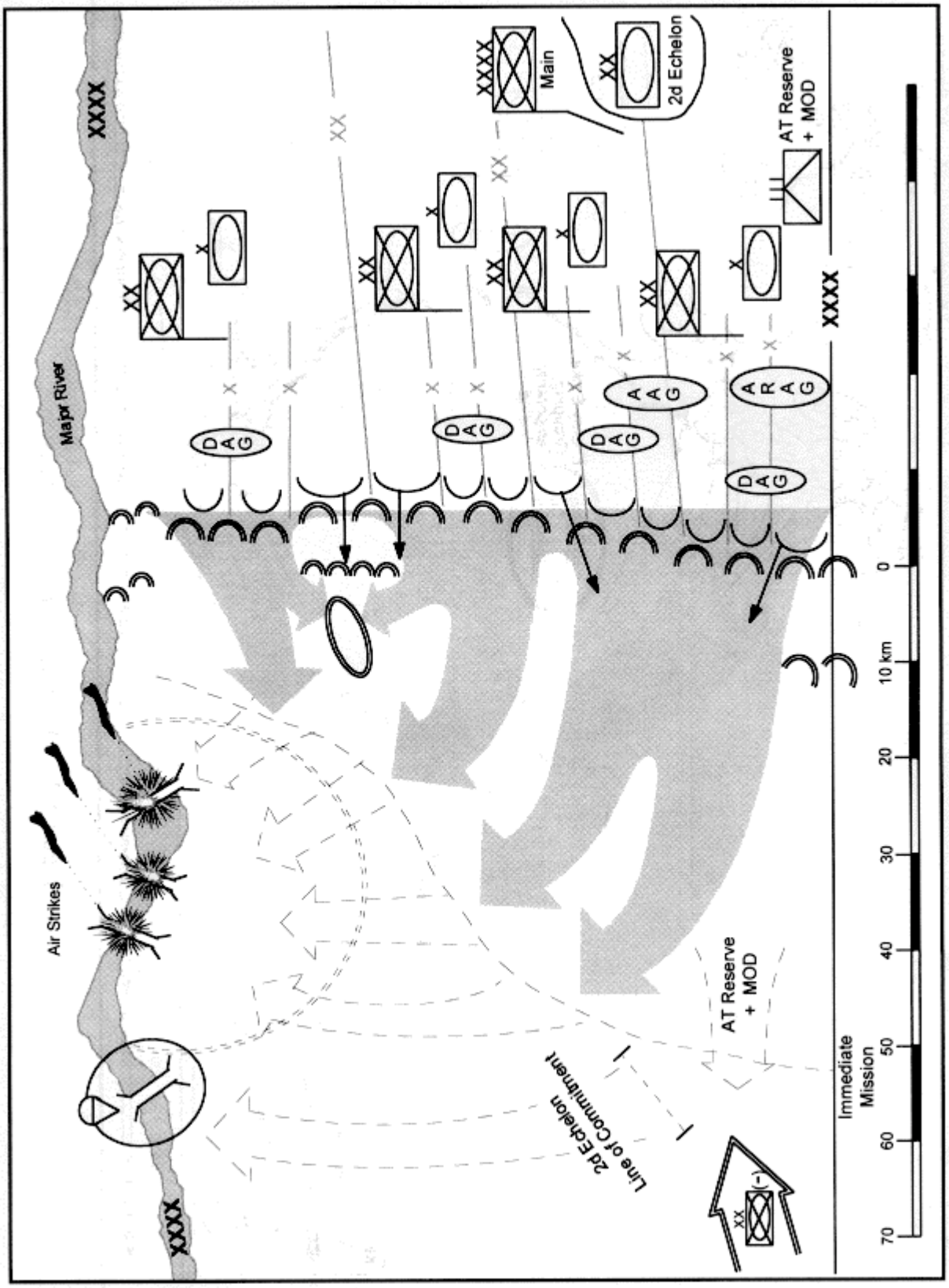

Figure 5-12. An army encirclement against a natural obstacle.

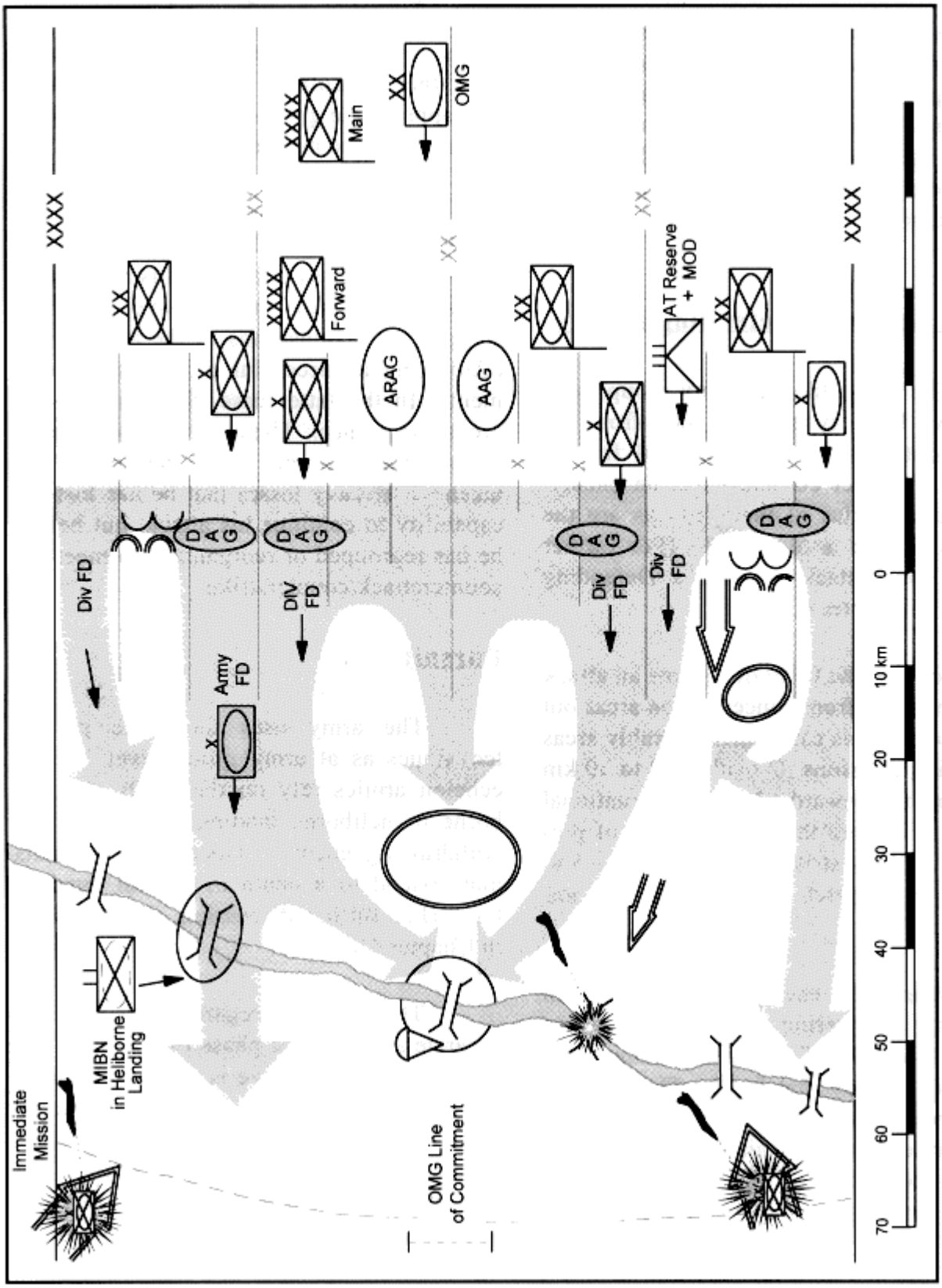

Figure 5-13. An army attack on multiple axes.

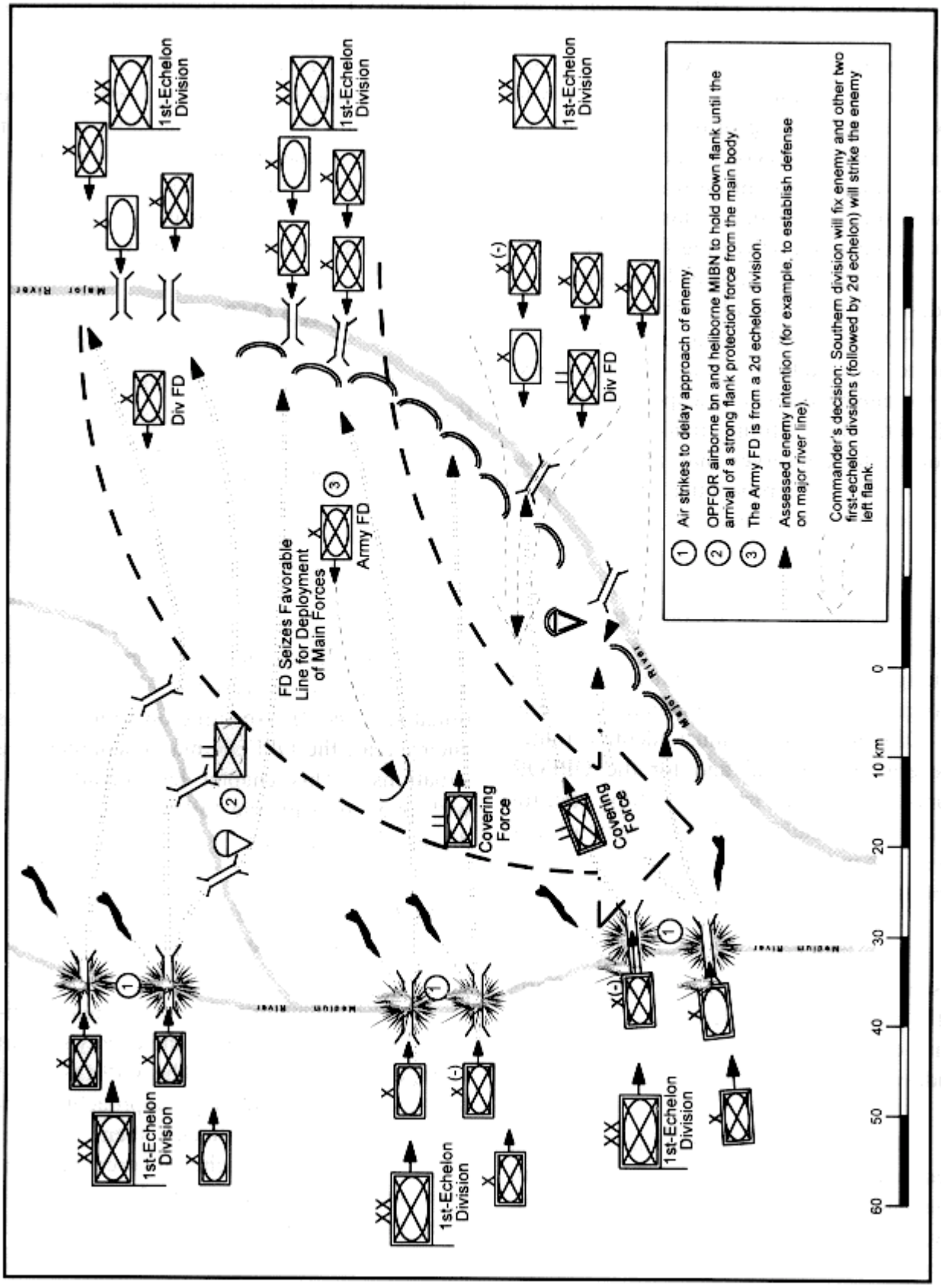

Figure 5-14. An army commander's decision for a meeting engagement.

Attack Against a Defending Enemy

The army, like the army group, conducts two basic types of attack--from the march (out of direct contact) and from a position in direct contact with the enemy. The characteristics of these attacks are the same as for the army group. (For further details, see "Attack Against a Defending Enemy" in Chapter 4.)

Ideally, the OPFOR mounts an attack from the march from concentration areas out of contact. In this case, final assembly areas for leading divisions are within 20 to 40 km of the enemy forward edge (or international border). They are thus out of range of preemptive artillery strikes, but still only 1.5 to 3 hours night march from the line of commitment.

Where the enemy has succeeded in deploying a covering force, battalion- to brigade-size FDs of the first-echelon divisions will destroy that force. The division main forces follow the FDs in tactical march or prebattle formation, aiming to attack the enemy's forward edge close behind the retreating covering force to gain a lodgment.

If, however, enemy resistance in the covering force is strong, it may be necessary for the OPFOR to commit first-echelon brigades, even divisions. The commander must then consolidate and reorganize units into appropriate groupings before they make contact with the main defense.

There are circumstances in which the OPFOR may have to launch an attack from a position in direct contact. This means that an army resumes an offensive that had stopped, or it transitions to the attack after conducting a successful defensive engagement. In the latter case, the timing is of great importance. The army should go over to the offensive only when the enemy has taken such heavy losses that he has lost his capability to continue his attack, but before he has regrouped or reorganized to meet the counterattack/counterstrike.

Pursuit

The army uses the same pursuit techniques as at army group level. First-echelon armies rely on their FDs and airborne or heliborne landings to cut off the withdrawing enemy. Operational pursuits may extend to a depth of several hundred km. (For further discussion, see "Pursuit" in Chapter 4.)

The OPFOR regards pursuit as a separate and decisive phase of combat. The purpose of an offensive is not just to drive the enemy back, but also to destroy him so he cannot reinforce and reorganize his force to continue the struggle. Encirclement and pursuit are the two basic methods of completing the destruction of an enemy grouping.

There are three basic elements of the pursuit (Figure 5-15). First, a portion of the army vigorously conducts a frontal (direct) pursuit to prevent the enemy from disengaging and to slow him down by forcing him to deploy not just rear guards but elements of his main body. Second, the army's main body conducts a pursuit on routes parallel to the withdrawing enemy columns, trying to overtake them and delivering flank attacks to split the enemy force into isolated groupings for destruction in detail. Third, the army sends FDs and heliborne or airborne forces ahead to seize defiles and/or obstacle crossings the enemy needs to escape or to receive reinforcements. Strong flank detachments and/or antitank reserves may also be necessary to prevent approaching enemy forces from disrupting the pursuit.

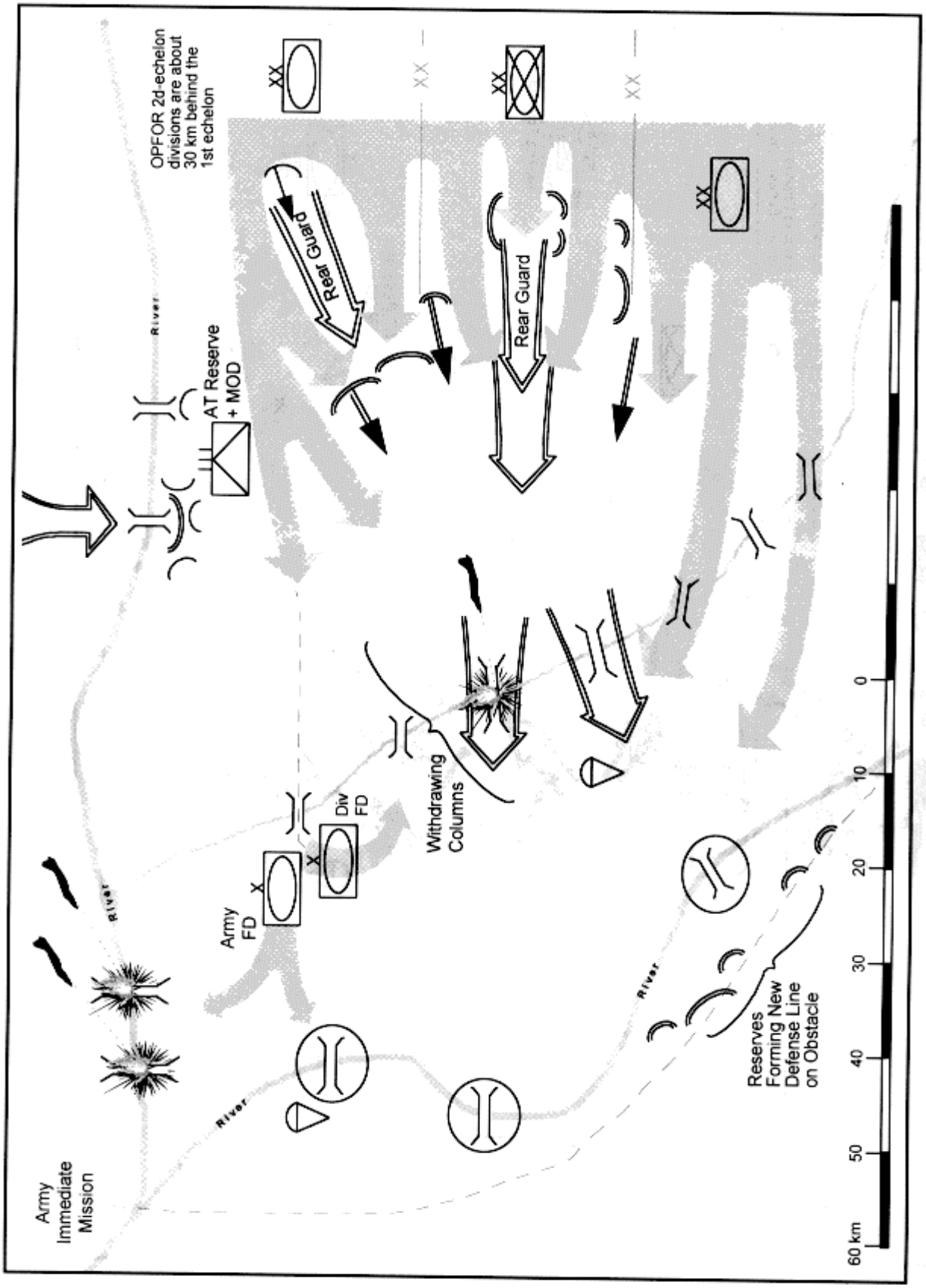

Figure 5-15. A tank army conducting a pursuit.

The OPFOR organizes pursuit in a centralized manner, but it conducts a decentralized pursuit. Staffs conduct advanced planning to avoid losing precious time, which could give the enemy the advantage. Therefore, OPFOR planners must identify routes for enemy withdrawal and for the OPFOR advance. They must issue an outline plan for operational formation and the scheme of maneuver. They must form preplanned FDs and heliborne detachments.

The OPFOR must intensify reconnaissance (and counterreconnaissance) efforts for the pursuit to be successful. To prevent enemy escape, early detection of an enemy withdrawal is also important.

Therefore, the OPFOR demands that its commanders at all levels initiate pursuit immediately on detecting an attempt to withdraw, informing higher headquarters as they do so. (This is an occasion when the exercise of initiative, without waiting for orders, is mandatory.) The pursuit continues until one of the following conditions exists:

- The OPFOR has destroyed the enemy.
- The higher commander terminates the pursuit because the pursuing forces or their logistics support becomes overstretched or because the COF has changed for the worse.
- Enemy reserves have arrived.

Developing the Offensive

For the timely achievement of operational and strategic goals, it is necessary to develop the offensive into deep battle from the earliest opportunity. To do this, OPFOR divisions use forward, raiding, and heliborne detachments. Then, as a result of these tactical maneuvers, armies conduct deep operations with OMGs operating along with aviation and airborne landing forces. Figure 5-16 portrays the desired actions of an army in the enemy's rear to convert tactical into operational success. In executing operations in the enemy rear, the OPFOR may encounter five situations. This chapter has already dealt with one--pursuit; the following paragraphs discuss the other four.

Destroying Enemy Reserves and Repelling Counterattacks

The counterattack poses great difficulty, because it represents the enemy's effort to regain the initiative. The OPFOR must delay, disrupt, and damage approaching enemy reserves by air attacks, then by long-range artillery. First-echelon forces, or perhaps an OMG, should then destroy enemy reserves in meeting engagements, if the COF allows.

Strong antitank reserves and flank detachments should block the counterattack. If, however, the enemy enjoys too great a COF superiority and/or is the victor in the meeting engagement, it may be necessary to change the axis of main effort. The OPFOR should allow nothing to prevent deep penetration. The OPFOR may commit the second echelon, or elements of it, to destroy the enemy counterattack and resume the offensive.

River Crossings

It is important, when possible, to preempt the establishment of defense along a river line.[9] The OPFOR can do this through the use of heliborne or forward detachments at the tactical level and airborne units and OMGs at the

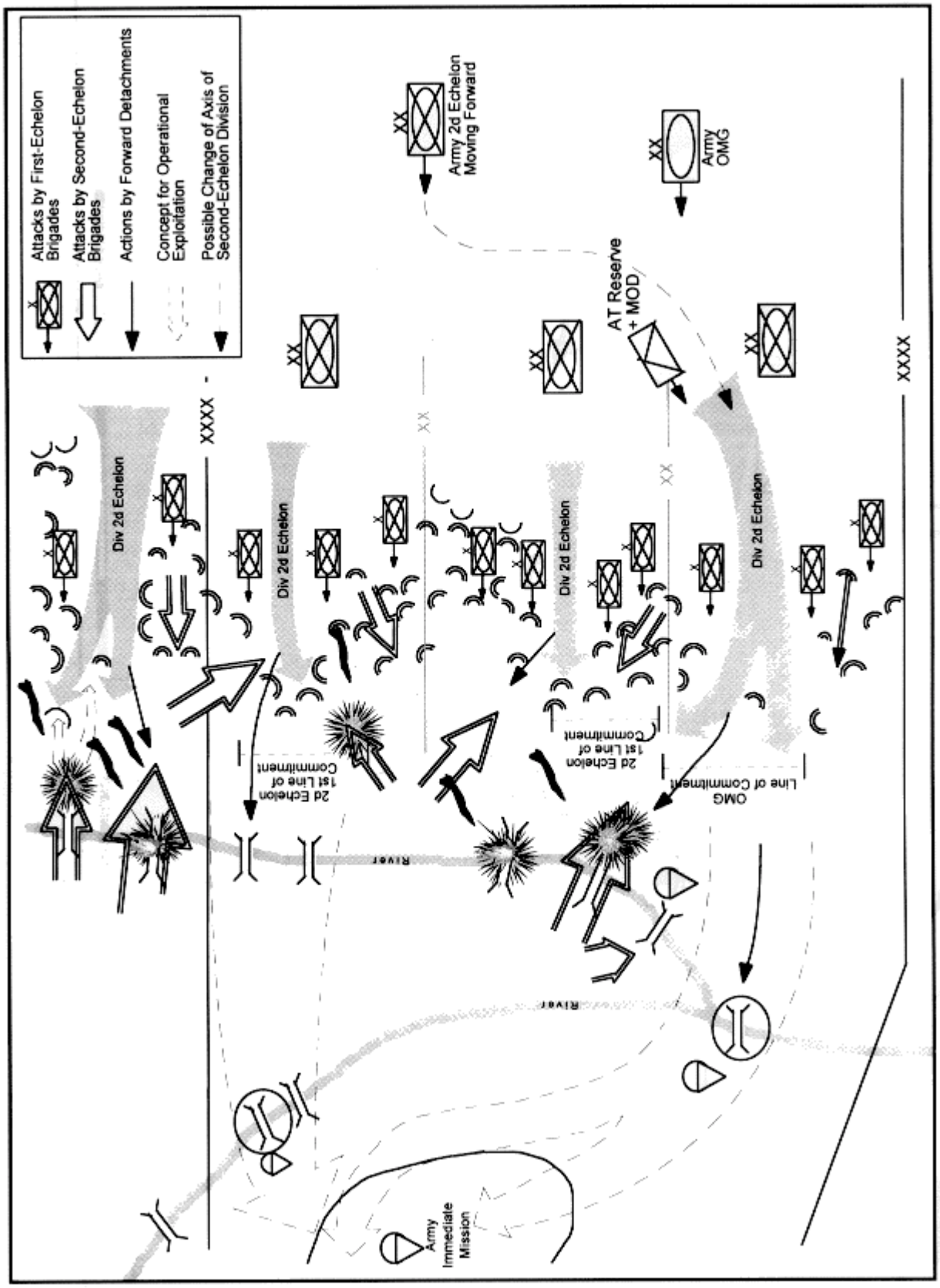

Figure 5-16. Actions in the enemy rear.

operational level. Following close behind a retreating enemy, the main forces would try to encircle the enemy against the obstacle and destroy him on the near bank, thus crossing the river unopposed. Should a forced crossing become inevitable, the commander must make the decision for it well in advance. He should issue combat missions from at least 1 to 2 days in advance of leading divisions' reaching the obstacle, to allow time for organization of combat groupings, engineer and air support, airborne landings, and deception measures. Preparation is essential if the OPFOR is to achieve the necessary speed and surprise to conduct crossings from the march.

Generally, the OPFOR forces a river line on a broad frontage, since this reduces the danger of vulnerable concentrations and traffic jams. Thus, it also complicates the intelligence picture for the defender in the crucial early stages, so that he is unable to deploy his firepower and reserves to best advantage. All leading divisions attempt to force with at least two brigades, and each of those, in turn, attempt a crossing at two points. When these units have seized tactical footholds, the OPFOR attempts to link them up and deepen them into an operational-size bridgehead. Ideally, units do not pause to consolidate bridgeheads; rapid forward progress is always of paramount importance. The enemy, however, can put up a determined fight for river lines, and heavy counterattacks can force the OPFOR onto the defensive to hold the favorable line gained for exploitation by subsequent echelons.

Operations at Night

The OPFOR has to continue operations around the clock to deny the enemy any breathing space and prevent his consolidation on new lines or the restoration of the defense. However, night-fighting equipment may not be state-of-the-art. When required to attack at night, the OPFOR may choose to convert it into something approaching daylight conditions with the extensive use of illumination.

The amount of illumination used varies according to the amount of thermal imaging capability possessed by OPFOR units. Moreover, OPFOR soldiers need rest, too; units must carry out equipment maintenance and resupply. Accordingly, the OPFOR may avoid conducting complex maneuvers at night. Divisions and brigades may alternate attacking and resting.

Most offensive action occurs only to--

- Exploit gaps and weak spots where the enemy is in disarray.
- Seize limited objectives that provide a favorable line for resuming full-scale offensive operations at dawn.
- Conduct raids, airborne landings, and the actions of FDs.

However, the OPFOR makes full use of the hours of darkness for major operational moves and for regrouping. It prefers to commit second echelons and OMGs at night, presumably on the calculation that surprise and the enemy's lack of balance offset the dangers involved.

Reinforcement of Success

Success in developing the offensive depends on--

- The timely commitment of OMGs, second echelons, and/or reserves.
- Shifting the army's axis of main effort to a different axis when resistance is too strong.
- Consequently regrouping forces from less favorable axes.
- The skill and initiative of subordinate commanders.

The underlying principle is the continual reinforcement of success and never of failure**.** Such a principle can actually help those formations that have run into trouble. The continuation of the advance can expose the flanks, rear, and lines of communication of a successfully defending or counterattacking enemy to attack. An army can shift its main effort to a new axis only on the instruction, or with the permission, of the army group commander.

The resultant regrouping should be both rapid and secret, quite possibly with attacks being continued on the former axis as deception. Figure 5-17 depicts an army's shift of axis.

Regrouping

Extensive operational regrouping during the course of a strategic offensive operation is undesirable because it could lead to loss of momentum and confusion. Commanders should recognize, however, that some regrouping will probably have to take place. In any case, regrouping of armies within an army group or divisions within an army is not likely to occur more than once in a strategic operation, and then only if ordered or approved by the next higher commander.

Tactical regroupings within divisions and brigades, however, occur frequently, since the tactical situation can change often and radically. Another frequent occurrence is reorganization following the commitment of second echelons as the old first echelon becomes a new reserve.

OFFENSE IN NUCLEAR CONDITIONS

In offensive operations following an initial nuclear strike, the basic forms of army operational maneuver in nuclear conditions would be attacks on multiple axes, encirclement, or the trapping of the enemy against a natural barrier.

In the event that nuclear use begins with only short warning and only one-third of systems permanently held ready to fire are available, initial strikes are usually concentrated on nuclear systems and command posts. As other weapons come on line, they target enemy troop groupings and logistics sites.

In a nuclear environment, penetration is not much of a problem and occurs speedily. However, enemy nuclear strikes affect the rate of advance. The time required to restore combat effectiveness to formations damaged in the initial exchange can be from 1 to 2 days or more.

In the advance, the problems of overcoming or bypassing areas of destruction, flooding, and/or contamination can slow movement. Consequently, it is likely that the average rate of advance may be much the same for both nuclear and conventional operations.

For planning purposes, the OPFOR should consider them to be identical, moving at an average of 40 to 60 km per day in mixed terrain and 30 to 50 km per day in mountains or marshy areas intersected by rivers. Thus, an army could still accomplish an operation extending to a depth of 250 to 350 km in 6 to 8 days.

Where the enemy has sustained decisive losses, the army can advance in prebattle or even march formation; mopping up requires only part of the army. Where both sides have taken massive casualties on more than one axis, or even across the entire zone of operations, there will almost certainly have to be a radical revision of the army's plan. It is imperative that the OPFOR move more quickly than the enemy in mounting attacks with elements that are still combat-capable and in delivering repeat strikes on enemy surviving forces and reserves.

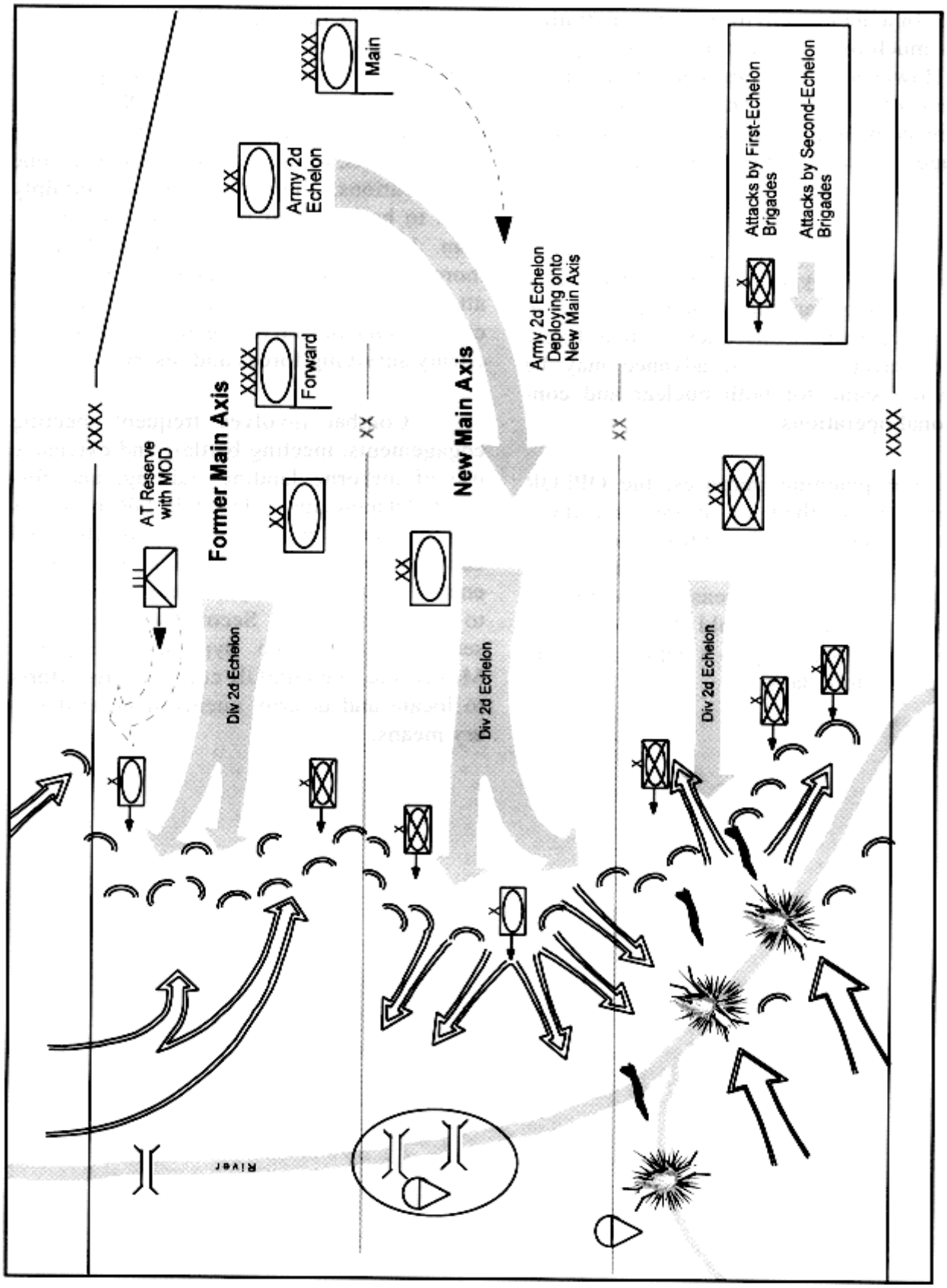

Figure 5-17. A tank army shifting its axis of main effort during a deep operation.

Combat involves frequent meeting engagements, meeting battles, and extensive use of airborne landing, raiding, and forward detachments. The OPFOR bypasses strong enemy pockets where possible and concentrates its efforts on thrusting into the enemy's rear to destroy nuclear systems and to capture airfields. Second echelons or reserves destroy such bypassed groupings. Meanwhile, the OPFOR continues its efforts to locate and destroy enemy nuclear delivery means.

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[1] A corps could be composed of multiple separate brigades with no assisgned divisions.

[2] This could still be the case, if the OPFOR employs infantry armies. See FM 100-63.

[3] The use of precision weapons can greatly reduce ammunition expenditures required to support a penetration. If such munitions are available only in limited numbers, however, the OPFOR would normally concentrate them on the main attack axis.

[4] On maps and diagrams, artillery groups often appear as "goose eggs" for the sake of convenience. However, this does not mean that all battalions assigned to a group locate physically in such a small area.

[5] In this context, the term *operational formation* describes how an army (or army group) organizes and deploys its forces for combat. Thus it is the operational-level equivalent of the tactical term *combat formation*.

[6] A corps forms a ***corps artillery group (CAG)*** to serve the same function, but on a smaller scale. It might comprise from 4 to 6 battalions and include the corps' organic MRL battalion. If the corps has two or more MRL battalions, it might form a ***corps rocket artillery group (CRAG)***.

[7] See "Determining Factors" in Chapter 4 for details on the influence of terrain.

[8] The zone of action is also sometimes called a zone of advance, attack zone, overall attack frontage, or sector or responsibility.

[9] In mixed terrain, the OPFOR would expect to encounter--

- A Stream 6 to 20 m wide every 20 km.
- A stream 100 to 300 m wide every 100 to 150 km (the normal distance to an army's immediate mission).
- A major water obstacle over 300 m wide every 250 tp 300 km (roughly the distance to an army's subsequent mission.)

Chapter 6

Army and Army Group Defensive Operations

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WITHDRAWAL

The OPFOR defines an army group or army defensive operation as the aggregate of operations and battles of subordinate units unified by a single concept and plan.[1] Subordinate operations may involve--

- First- and second-echelon maneuver forces.
- Reserves.
- Surface-to-surface missile (SSM) and artillery units.
- Army group aviation.
- Army aviation.
- Airborne and heliborne units.
- Electronic combat (EC) and reconnaissance units.
- Air defense forces.

- Naval and amphibious forces (on a coastal axis).

The combined arms concept is an integral part of the OPFOR approach to defensive operations.

Even when a given army group as a whole is conducting an offensive operation, it is likely that one or more subordinate armies may be executing defensive missions. The same is true of divisions within an army. This may be out of necessity, as when encountering a superior enemy force during the course of an offensive. However, it may also be in an economy-of-force role, to permit the OPFOR to establish a correlation of forces (COF) advantage on its main attack axes sufficient to ensure a higher probability of success there. The primary focus of OPFOR operational-level defensive planning is at the army level.

NATURE OF OPERATIONAL-LEVEL DEFENSE

The OPFOR regards a defensive operation as a temporary measure conducted when successful offensive operations are not possible in a particular area. The purpose of the defense can be to--

- Perform economy-of-force missions, allowing for concentration of superior forces along the main axis.
- Hold key terrain.
- Protect significant areas or installations.
- Buy time.
- Halt and repulse an enemy offensive.
- Inflict maximum losses on the enemy.
- Create the conditions for transitioning to offensive operations.

The ultimate goal of the defense is to wrest the initiative from the attacking enemy forces.

Concept

Army or army group defensive operations involve the use of operational maneuver and positional defense. The exact nature of the defense depends on whether the OPFOR establishes it in direct contact or out of contact with the enemy.

The army and army group deploy in a series of defensive lines and zones with alternate positions. However, the OPFOR does not intend these lines and zones for use in successive, positional, defensive battles. Prepared positions in depth provide protection and lines or areas for counterpenetration, but the basis of the defense is maneuver and counterstrike against enemy forces trying to reduce prepared defenses.

The OPFOR designs its defenses to be penetrated, but at a significant cost to the enemy in casualties, time, momentum, and disruption. This creates the optimum conditions for a counterstrike.[2] The OPFOR then destroys the enemy.

For the OPFOR, the basic defense is a ***positional defense***. A defense out of contact with the enemy allows for more extensive engineer preparation consisting of barriers, obstacles, and minefields throughout the depth of the position. However, the defensive concept is not completely static; it involves ***aggressive maneuver*** in concert with fixed defensive positions. Positional defenses weaken the attacker, allowing maneuver forces to deliver decisive blows into the enemy's flanks.

The OPFOR might use a ***maneuver defense*** when--

- It can afford to surrender territory.
- Forces are insufficient to conduct a positional defense.
- Conditions are suitable for luring an enemy into an operational fire sack where the OPFOR can deliver decisive fire strikes and counterstrikes.

Reasons for Assuming the Defense

Defensive operations are essentially a temporary form of combat action. An army or army group assumes the defense

when offensive actions are not possible (because of inadequate resources) or when they are undesirable (considering operational and strategic concepts). The following paragraphs describe the circumstances when an army or army group might act on the defensive.

A defensive operation may be merely a ***prelude to a decisive counteroffensive***. At the beginning of a war, the OPFOR initially may have to meet superior enemy forces with a defensive action to prevent the enemy's seizure of important economic, administrative, and political centers. The defenders may also need to gain time for the mobilization, concentration, and deployment of strategic groupings.

Either at the beginning of a war or during the course of operations, an army or army group may transition to the defense ***after defeat***. This might occur in a meeting engagement or in an offensive, or as a result of devastating nuclear or precision-weapon strikes.

In the course of offensive operations, an army or army group may transition to the defensive to ***repel an enemy counterattack*** that is too strong for a meeting engagement. If the enemy mounts a small-scale counterattack, the OPFOR response would be to place one or more divisions on the defense, while the rest of the army or army group continues the offensive.

After completing an offensive mission, an army or army group may assume the defensive because it has taken the designated strategic objective. The defense might also allow the army or army group to regroup and resupply before resuming offensive operations on its axis. A defense might cover the exposed flank of another strategic grouping of forces conducting an offensive in the theater.

Operational Formation

In the defense as well as the offense, the term ***operational formation*** refers to the basic organization for combat by an army or army group. The OPFOR is quite flexible in its organization for combat, which corresponds to the mission and the forces available. Figure 6-1 outlines the possible elements of operational-level defensive deployment within a series of defensive lines and zones.

Line	Zone	Defended By
	(Security Zone)	Brigades or Reinforced Battalions from Army's 1st- or 2d-Echelon Division(s)
	Tactical Zone of Defense	
Army 1st Defensive Line	Army Main Defensive Zone	Army's 1st-Echelon Divisions
Army 2d Defensive Line	Army 2d Defensive Zone	Army's 2d-Echelon Division(s) or Combined Arms Reserve
	Operational Zone of Defense	
(Army 3d Defensive Line)	(Army 3d Defensive Zone)	Army's 2-Echelon Division(s) or Combined Arms Reserve
Army Group 1st Defensive Line	Army Group 1st Defensive Zone	Army Group's Combined Arms Reserve and/or 2d Echelon
(Army Group 2d Defensive Line)	(Army Group 2d Defensive Zone)	Army Group's 2d Echelon or Combined Arms Reserve
Lines and zones in parentheses may or may not be present.		

Figure 6-1. Operational formation for defense.

Echelonment

In the defense, as well as in the offense, armies and army groups have a first echelon and a second echelon and/or a combined arms reserve. The OPFOR achieves depth in its operational formation for defense by establishing a ***security zone*** (when possible) and a series of army and army group ***defensive lines***. Behind each defensive line is a ***defensive zone***, the depth of which largely depends on the number of division defensive positions employed within the zone. The main maneuver forces of the army or army group are within these zones. However, there are also spaces between defensive zones which often contain special reserves, command posts (CPs), missile units, and possibly detached defensive lines and positions. A typical distance of about 15 km between zones allows the possibility of establishing a security zone in front of the defensive line that forms the forward edge of each defensive zone.

An army may deploy in two or three defensive lines. The first army defensive line coincides with the ***forward edge of the defense***; the last army defensive line (second or third) is *the* army defensive line. Behind its first-echelon armies, the army group deploys its second echelon and/or combined arms reserve in one or two army group defensive lines; the rearmost line (first or second) established by the army group is *the* army group defensive line.

The first army defensive zone is normally the ***main defensive zone***; together with the army second defensive zone, it comprises the ***tactical zone of defense***. Everything from the rear edge of the tactical zone of defense back to the rear edge of the army group's rearmost (first or second) defensive zone is part of the ***operational zone of defense***; this includes the army's third defensive zone, if there is one.

The system of defensive lines and zones does not mean that OPFOR commanders conduct a static positional defense with all of their forces. Within the various zones, and sometimes between them, reserves and second-echelon forces have planned commitment lines. Should a penetration develop, they would assume blocking (counterpenetration) positions or initiate counterstrikes on these lines. The system of defensive lines and zones, and echelonment within zones, allows room and the necessary forces for maneuver. By dispersing forces laterally and in depth, it also reduces the vulnerability of its defending forces to precision weapon or NBC strikes.

Defending Forward

OPFOR defensive concepts emphasize the need to delay, defeat, or weaken the enemy offensive as far forward of the main defensive zone as possible. Reconnaissance troops attempt to locate enemy forces and determine enemy intentions. When possible, an army or army group establishes a security zone. An army's security zone may extend forward as far as 15 to 50 km. The depth of such a security zone depends primarily upon the forces, resources, terrain, and time available. The security zone delays, weakens, and deceives the enemy.

Using artillery, SSMs, helicopters, and aircraft, OPFOR commanders try to attack the enemy in concentration areas before an attack. The OPFOR conducts counterpreparatory fires to break up and disorganize enemy formations in advance of the main defense zone. Missile and artillery forces locate far forward in initial fire positions to strike the enemy as deeply as possible. They then fall back to planned primary and alternate firing positions in the main defensive zone.

Threats to the Defense

The OPFOR believes an enemy offensive (or counteroffensive) poses four threats to the viability of the defense: precision weapons, air power, armor, and airborne or heliborne landings.

Precision Weapons

Long-range, precision weapons can possess the destructiveness of small-yield nuclear weapons and use all-weather, deep-looking surveillance means for targeting. Their use can wear down the defender as he prepares defensive positions. By the time the enemy force reaches the forward edge of the defense, his precision weapons could have reduced the OPFOR to the point where it lacks the necessary COF to defeat the enemy attack. The enemy might also

use precision weapons to interdict the second-echelon forces the OPFOR needs to conduct a counterstrike.

Air Power

Even without using nuclear weapons, potential enemies can deliver formidable firepower from the air. The development of air-delivered, long-range, precision weaponry is increasing this threat. To reduce the effectiveness of enemy air power, the OPFOR relies on thorough preparation of the defense, dispersion, air defense, and information warfare.

Armor

Modern armies base their offensive capabilities on masses of armored fighting vehicles. These possess high mobility, flexibility, firepower, and shock power. Thus, they can quickly exploit any weakness in the defense to generate operational maneuver into the defender’s rear. Therefore, the maneuver of ground forces and the concentration of combat power at the decisive point within the defense is critical to defeating this capability.

Airborne or Heliborne Landings

Airborne or heliborne (or in coastal areas, amphibious) landings usually complement and aid armored thrusts. These landings threaten to undermine the OPFOR defense by disrupting its command and control (C^2) and logistics systems and by seizing vital ground. Thus, the OPFOR’s antilanding plan is an essential part of the overall defensive scheme.

Principles of OPFOR Defense

The basic principles for OPFOR defense are a response to the threats described above. These principles focus on making optimum use of the defender's capabilities and seizing the initiative from the attacking enemy forces.

Preparation

The OPFOR makes the most thorough preparation that time allows. Preparation includes engineer work and the stockpiling of ammunition and other essential materiel. All OPFOR elements must be ready to withstand precision weapon, air, and artillery attacks. Second echelons and reserves must be protected against deep attacks.

Extensive obstacles can disrupt and canalized enemy armored attacks. Preparation of the first defensive line (zone) continues until the enemy attack begins. Preparation of subsequent lines (zones) continues as the OPFOR fights the enemy in forward zones.

Aggressiveness

The OPFOR defender cannot afford to rely on passive, positional defense; he must not surrender the initiative to the attacker. The more aggressive the defense, the more stable it is. Within the context of theater and army group defensive operations, respectively, army groups and armies can deliver attacks of limited goals and spatial scope but with important roles on decisive axes.

Preemption, an expression of continuous aggressiveness, is highly desirable, especially against enemy precision weapons and NBC-delivery systems. Altering an unfavorable COF at the last minute and disrupting the enemy’s timetables by means of counterpreparatory fires also a key to success in conventional defense. Preemptive offensive operations by divisions, armies, or larger forces are also a possibility, even on a strategic scale.

Maneuver

A critical part of the defense is the maneuver of combat troops, both from secondary sectors and from the rear, to form concentrations either for counterpenetration or for counterstrikes. This avoids lengthy occupation of the counterstrike sector, which could result in heavy losses during the enemy's preparation. It also fulfills the need for anti-precision-weapon maneuver (that is, the frequent relocation of units to get out from under enemy strikes). Successful, timely maneuver increases the defender’s power and makes it possible to defeat a superior enemy force.

Counterattacks and counterstrikes. Tactical-level counterattacks or operational-level counterstrikes are offensive

actions designed to retake ground or destroy enemy penetrations. They are the basis of a successful defense. Ideally, the OPFOR launches the counterattack or counterstrike when--

- The enemy has not yet disrupted the defense's stability.
- The enemy has already committed his immediate reserves.
- Interdiction has delayed or disrupted the entry of further enemy reserves into the battle.

The OPFOR prefers to launch counterattacks against a disrupted enemy penetrating force or when the enemy is transitioning to a hasty defense. This allows the OPFOR to seize the initiative from the enemy, forcing the enemy to respond to OPFOR actions. Commanders must, however, be sure of producing significant operational (or operational-tactical) results before initiating the counterattack. If the first echelon cannot achieve the counterpenetration, the commander must use second-echelon units or reserves for that role.

Counterpenetration. If the attacker has already succeeded in upsetting the stability of the defense and still has additional reserves within striking distance, the defending commander may choose not to counterattack. Rather, he may use his own second-echelon or reserve forces to replace elements of the first echelon and block any further enemy advance. This would allow the senior commander to make more decisive counterstrikes with his reserves. The OPFOR's aim is not merely stop the enemy, but to destroy him and create conditions favorable for the OPFOR's own attack. In addition to the second echelon and reserves, the commander may use airborne elements or heliborne mechanized infantry troops for counterpenetration tasks.

Reconnaissance. Success in the defense requires continuous and aggressive reconnaissance into the enemy's depth. Determining the enemy's main axes, the locations of his force groupings, and his timetable are essential to preemptive actions. Accurate information gained by thorough reconnaissance gives the commander the ability to disrupt approaching enemy forces with long-range fire, timely maneuver, and damaging spoiling attacks.

Deep battle and deep operations. Even in defense, there is a place for deep attacks to disrupt, damage, and delay the attacker. The OPFOR does not limit these deep attacks to air and precision-weapon strikes. In friendly territory, the OPFOR attempts to organize partisan movements. Partisans carefully coordinate with main forces and may receive reinforcement from regular troops.

Firepower

The OPFOR uses all means of fire at its disposal to begin engaging the enemy as early as possible, continuing throughout the depth of the defense. The goal is to mass the effects of weapon systems, although the weapon systems themselves may remain widely dispersed. OPFOR planners must seek to mass fires not only at the decisive point but at the decisive time while economizing forces and fires in other areas. Flexibility to shift fires as conditions change is an important aspect of this principle. To the extent that they are available, precision weapons offer the OPFOR the ability to achieve decisive effects without massing forces or fires in the traditional sense.

Tenacity

Not all defensive actions have a maneuver character. The OPFOR must hold some key areas and lines to ensure the stability of the defense, disrupt the enemy, and gain time to maneuver units from unthreatened sectors or the rear. Defending units do not have the right to withdraw without orders from the senior commander. They must hold tenaciously. This applies even if they are encircled or have lost communications with higher or adjacent units. Generally, attempts to break out of encirclement equate to the effective loss of the unit as a fighting entity. It also has an adverse effect on efforts to stabilize the defense in depth or to counterattack.

The mix of positional and maneuver defense varies from sector to sector. In some areas, the commander combines the retention of occupied lines and zones with local counterattacks. In other areas he may decide to use a maneuver defense. He may also decide to use a combination of the two. Methods can vary according to the mission, the terrain, forces available, and other criteria. As a result, operations often develop in a nonlinear fashion.

Information Warfare

The OPFOR commander counts on information warfare (IW) to provide an information advantage during defensive operations. Planners develop a detailed IW plan with two primary goals: denying information or misleading the enemy concerning the organization, location and intentions of the defense. IW objectives include the following:

- Disrupt or destroy enemy C^2.
- Allow the OPFOR to seize, retain, and exploit the initiative.
- Place OPFOR strengths against enemy weaknesses.
- Conceal friendly forces.
- Cause friendly forces to appear stronger or weaker at critical points.
- Portray a false disposition of forces.
- Portray false levels of preparation, readiness, and morale.

The following elements of IW are significant contributors to the defense.

Electromagnetic Spectrum Operations

Electromagnetic spectrum operations (ESO) in the defense focus on disrupting enemy C^2, degrading enemy electronic systems, and protecting OPFOR electronic assets. As in the offense, the OPFOR assigns various friendly and enemy C^2, communications, computer, and intelligence links a priority based on the expected impact of their disruption, as well as the phase of the operation.

The OPFOR is likely to use airborne jammers in the defense to ensure the survivability of friendly air platforms and to help maintain at least local air superiority. Air defense jammers and related systems have increased emphasis when the enemy makes heavy use of air power in support of offensive operations.

Electronic protection measures ensuring the OPFOR’s use of electronic systems are critical to effective coordination and conduct of the defense. In addition to those measures conducted as part of the protection and security effort, the OPFOR may use a jamming screen during critical phases of the defense to protect vital communications from enemy intercept and jamming.

The OPFOR gives considerable attention to the selection of specific targets and the time and location for attacking them. For example, the jamming of fire support nets supporting the enemy's fire preparation, prior to the actual assault on the OPFOR defensive positions, can reduce the effectiveness of fire. However, as the assault on the OPFOR defense begins, the priority is jamming of enemy maneuver unit C^2 nets to prevent a well-coordinated attack.

In the event of an enemy penetration, ESO support of the OPFOR response is especially critical. Objectives include disrupting the communications between the penetrating force and the main body, as well as preventing or limiting support (such as fire support and aviation) from the main body.

Destruction

During the defense, IW-related destruction measures focus on destroying enemy assets critical to the control of the offensive. As in the offense, indirect fire, ground, and air attack all contribute to the effort. Specific targets can vary based on location and time, but typical high-priority targets include--

- Precision weapon systems.
- C^2 nodes and facilities.
- Artillery, tactical aviation, and air defense systems.
- Reconnaissance, surveillance, and target acquisition systems.

Special emphasis is on destruction of enemy reconnaissance, surveillance, and target acquisition capabilities prior to the attack on OPFOR defensive positions. Once the attack begins, enemy C^2 nodes responsible for the planning and conduct of the attack, along with supporting communications, become priority targets. If the OPFOR destroys enemy C^2 nodes prior to the attack, the enemy may have time to reconstitute his control. However, targeting the same nodes

once the enemy has committed his forces to the attack can cause a far greater disruptive effect.

Protection and Security

Reconnaissance activities focus on identifying enemy main forces and their objectives, primarily the location of the planned attack and penetration. Winning the counterreconnaissance battle is very important, as it limits the information the enemy is able to collect and use in planning his attack.

The OPFOR dedicates extensive effort to employing cover, concealment, and camouflage to protect its defensive positions and high-value assets. All units are responsible for providing protective measures for themselves, with support from engineer units. The OPFOR employs a variety of signature-reducing or -altering materials and systems, including infrared- and radar- absorbing camouflage nets and paints.

In the defense, the OPFOR emphasizes radio silence and alternate communications methods such as landline and couriers. Rigid adherence to information security procedures and limiting radio transmissions to the minimum required can complicate the enemy’s attempts to identify defensive positions and force structure.

Deception

Each level of command prepares a deception plan prior to every defensive operation. The extent and complexity of this plan depend on the amount of time available for preparation. Obviously, a defense out of contact allows the most effective and complete planning for a deception operation. In any case, the OPFOR realizes that uncoordinated efforts without a centralized plan can lead to reduced or even negative results. Therefore, it undertakes deception activities in a deliberate manner. Particularly, coordination among staff elements, between levels of command, and with adjacent units must be constant and detailed, in order to avoid misleading friendly forces or bringing attention to an actual planned operation.

Deception planners create a "story" or picture of the battlefield the OPFOR wants the enemy to see as reality. The goal is to cause the enemy to commit his forces in a manner that favors the OPFOR’s defensive plan. Specifically, the intent is to have the enemy attack and penetrate the defense at a location of the OPFOR's choosing, where it has created a lethal antitank defense and counterstrike to destroy the enemy main force.

The OPFOR deception planners understand that, in order to deceive the enemy, they must provide the signatures his intelligence collectors and planners are looking for as indicators of OPFOR activity or assets. The more types of signatures presented, the greater the potential effect of the deception. Examples of deception measures and activities include--

- Concealing troop movements and secretly occupying defensive positions.
- Creating indicators of false units and movement.
- Establishing dummy artillery positions, SSM deployments, or CPs.
- Creating false defensive positions and engineer obstacles.
- Establishing false airfields and early warning sites.
- Establishing a security zone and forward positions to conceal actual forward edge of the defense.

When planning a specific deception effort, the OPFOR attempts to replicate all associated signatures. As an example, the OPFOR might plan to portray the movement of a second-echelon mechanized or tank force that does not exist, while masking the actual unit’s movement. This requires a number of activities.

To provide a picture for ground or airborne radar reconnaissance, the OPFOR can deploy deception jammers and corner reflectors along the false route of advance. Smoke pots and generators along with heat sources provide the thermal signatures expected. A special signal element provides false radio traffic replicating the communications associated with a mechanized or tank unit in movement. If enemy ground reconnaissance forces are near, it is even possible to use loudspeakers to provide the sounds of tracked and wheeled vehicles.

ARMY DEFENSE

The goals of an army defensive operation include some or all of the following:

- Repel an attack or counterattack by superior forces.
- Inflict maximum losses on the enemy.
- Support the development of an attack on an important direction.
- Hold vital operational lines or areas.
- Cover the flank of the army group main defense.
- Restore the combat capabilities of the army when it has taken such heavy casualties that it cannot continue to attack.
- Create favorable conditions for the initiation of an attack, either by the army or by other forces.

To achieve these goals, the army's missions are to--

- Destroy enemy precision weapons.
- Inflict heavy loses on the enemy's main grouping as it approaches and deploys to attack.
- Repel the enemy attack and hold vital ground.
- Destroy any enemy groupings penetrating through the depth of the defense.
- On sea coasts, repel any amphibious landings.
- Create conditions for a transition to the offensive.

Reasons for Assuming the Defense

Army-level defensive operations are generally a forced, temporary form of combat employed in support of and in the interests of offensive actions. The purpose often is to inflict losses on the enemy's strongest groupings, thereby supporting the conduct of the offense on a critical axis of the army group or theater. Army defensive operations are likely to be more frequent than those of a whole army group. An army may act on the defense in the circumstances described in the following paragraphs.

Army Group Defensive Operation

An army might assume the defensive within the context of an army group defense (whether at the beginning of a war or during the course of operations). In this context, it might defend in the first echelon, either on a main or secondary axis, or it may act in the second echelon, where its primary role would be to launch counterstrikes.

Army Group Offensive Operation

There are several circumstances in which an army might act on the defensive while most or all of the rest of the army group continues to advance. They are--

- When encountering a superior enemy force on the army's axis.
- When repelling an enemy counterattack.
- When defending a bridgehead.
- When repelling enemy attempts to break out of an encirclement.
- When defending an extended frontage as an economy-of-force measure to free forces to concentrate on an offensive axis.

Forced Defensive Action

The following conditions might force an army onto the defense:

- Sustaining heavy losses from precision weapons or massive air attacks.
- Having the enemy deploy his forces before the army does.

- Suffering defeat in a meeting engagement.
- Encountering an enemy with superior forces.

Transition to Defense

Making the transition to the defensive during the course of an offensive often occurs during adverse ground and/or air situations. This transition might even occur under enemy attack. The army's main forces might have already engaged the enemy in combat, with divisions fighting at varying depths and on different axes. All elements of the army might not simultaneously transition to defense. Some might continue to attack to seize favorable lines from which to defend; others might have to deal with enemy air landings in the rear. Often, an army has to conduct its defensive battle with little or no help from the army group. The army group might have concentrated its efforts on continuing the offensive on another axis or on supporting the defense on a more dangerous axis. For OPFOR, transition to the defense occurs either in direct contact with the enemy or out of direct contact with the enemy.

In Direct Contact

After the initiation of hostilities, the OPFOR considers that a defense in direct contact with the enemy is the more likely form of defense. This also occurs during an offensive when an army must assume a defensive mission. An entire army would probably not shift to the defense in direct contact with the enemy. If its forward tactical units transition to the defense, their initial priority is to establish good defensive positions. This might require offensive actions to seize suitable terrain.

Depending on the enemy situation, the commander has limited time to plan. Follow-on forces are more likely to have sufficient time for planning; they can then establish typical defensive positions. Units in direct contact with the enemy while transitioning to the defense are unlikely to withdraw to establish a security zone. Forces would continue to upgrade their positions as long as they are defending. As a result, with the exception of the security zone, the defense in direct contact with the enemy eventually differs little from the defense executed out of direct contact with the enemy.

Out of Direct Contact

A defense established out of direct contact with the enemy can occur before a war begins or along a secondary axis. It can also occur during an offensive, when follow-on army group and army forces must block an enemy's counterattack. If under no direct enemy pressure, the army normally establishes a security zone. The time available for preparing the defense depends on the enemy situation. Of course, an army assuming the defensive before the enemy's attack and on ground of its own choosing is in a much better position to create a stable, enduring defense.

Operational Formation and Tasks

The operational formation of the army in the defense might be in one or two echelons with a combined arms reserve. However, the organization for combat and positioning of forces are not fixed. They differ in each instance according to--

- The operation and the army's missions.
- The forces available to the army commander.
- The composition of enemy groupings and the character of their actions.
- The terrain.

OPFOR commanders are expected to maximize use of the terrain and to avoid establishing patterns that could aid enemy planning and targeting. Normally, the operational formation is deep to allow unhampered maneuver (especially of second echelons and reserves), to reinforce the resistance against the main threat, and to achieve dispersion against precision-weapon attack.

Figures 6-2 and 6-3 are examples of how an army might deploy in the defense, representing two extremes. The first example is for a small army defending on a narrow frontage with relatively shallow depth. The second example is for a very large army defending a wider frontage and deployed in maximum depth. Actual deployment of a given army could be anywhere between these two extremes, and other variants are possible, depending on the situation. The following

paragraphs present the options for operational formation and defensive layout of an army in the defense.

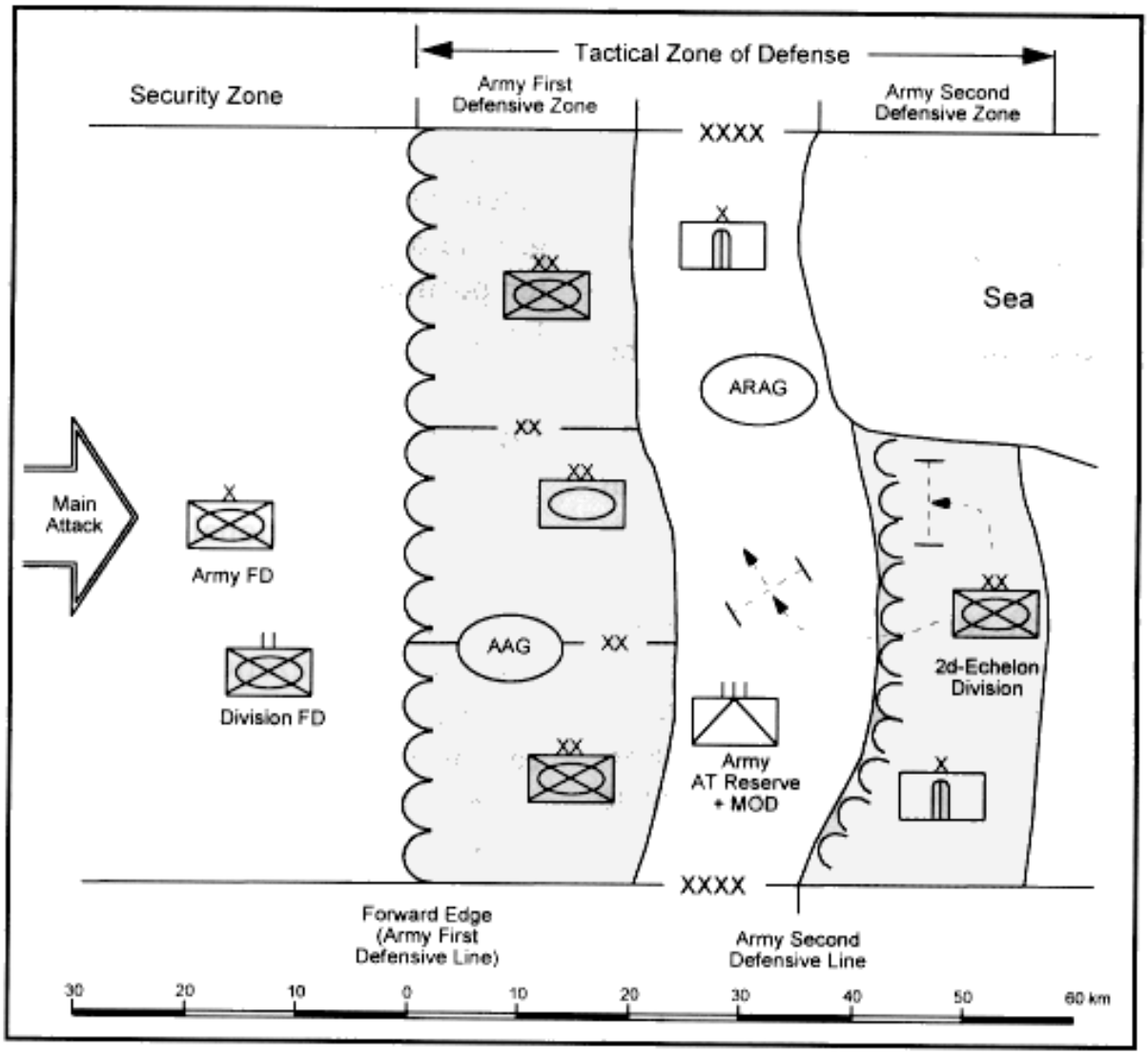

Figure 6-2. Example army operational formation in the defense (variant 1).

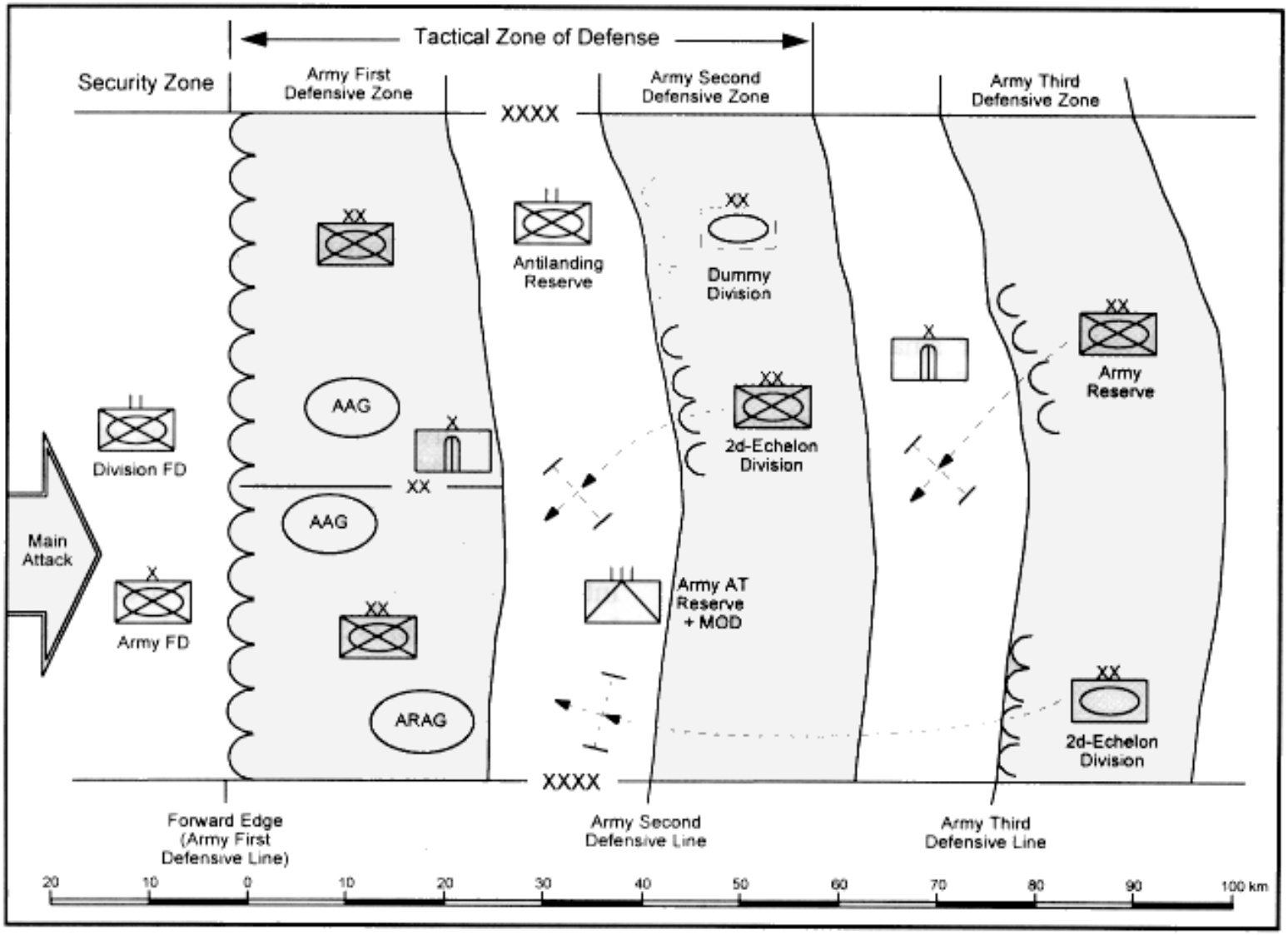

Figure 6-3. Example army operational formation in the defense (variant 2).

Scope

An army with two divisions in its first echelon might defend a sector as narrow as 40 to 60 km wide. One with three divisions in its first echelon could defend a sector up to 100 km wide; by taking advantage of terrain and economy-of-force measures in some areas, the frontage could reach up to 100 to 150 km. Much depends on the relative strengths of the sides and on the terrain in the sector. An example is that in mountainous, desert, or arctic regions an army might hold a wider sector. An army on a greatly threatened key axis in normal terrain might defend a narrower sector. An army defense deployed in two defensive lines (zones) could have a depth of 50 to 60 km, and one with three defensive lines (zones) could have a depth of 80 to 100 km or more on an important axis.

Forward Edge of Defense

The selection of the forward edge of the defense often depends on the conditions in which the army goes onto the defensive. First-echelon forces doing so in the course of an attack usually establish the forward edge of the defense on the lines they have reached. Sometimes the selection occurs only after seizure of more favorable terrain further on. Sometimes, it is desirable to establish the first defensive zone on a favorable line within the depth of friendly territory with forward units providing cover for its preparation.

The army commander designates the forward edge; division and brigade commanders confirm it on the ground. Individual division commanders specify the number of defensive positions created and their precise location within the

defensive zone of each division.

Security Zone

When organizing a defense out of contact with the enemy, the army commander can establish a security zone in front of the main defensive zone.[3] This security zone can be up to 15 to 50 km deep. Forces in the security zone may be an army-level, brigade-size forward detachment taken from a second-echelon division and/or smaller forward detachments consisting of reinforced battalions drawn from the second-echelon brigades of first-echelon divisions. A brigade defending in the security zone usually deploys in one echelon of three reinforced battalions. These forces conduct a maneuver defense, withdrawing from one prepared position to another when pressure grows too strong.

A security zone serves several purposes, such as to--

- Detect the enemy's main groupings and intentions.
- Delay the enemy, allowing the preparation of defense and counterstrikes.
- Deceive the enemy as to the location and configuration of the main defensive zone.[4]
- Force the enemy into premature deployment.
- Canalize the enemy onto unfavorable axes.

Strong combat support elements, especially artillery, provide support to the security zone battle. On the most important avenues, 3 to 5 km forward of the forward edge, battalions detached from first-echelon brigades might establish forward positions.

First (Main) Defensive Zone

First-echelon divisions establish the first defensive zone, which is usually the main defensive zone. Within the main defensive zone, each division can hold three or more positions, with each brigade holding two defensive positions and each battalion, one. The basis of each position is company strongpoints integrated into battalion defensive areas. Each battalion position is 3 to 5 km wide and about 2 km deep, with gaps of up to 5 km between battalions. Generally, a brigade has a frontage and depth of up to 10 km. A division has a sector up to 30 km wide (as little as 20 km on a key axis) and 20 to 25 km deep.

The tasks of the first-echelon divisions are to repel enemy attacks, inflict maximum casualties on attacking enemy force groupings, and prevent penetration. Should that be impossible, the tasks become holding vital ground and supporting second-echelon (reserve) counterstrikes.

Second and Third Defensive Zones

Behind the main defensive zone, an army establishes at least one more defensive zone, and possibly two. A distance of about 15 km typically separates the rear edge of one zone from the forward edge of the next. The location of these zones depends on the terrain, the likely character of enemy actions, and the army's concept of operations. The army's second echelon and/or combined arms reserve occupy these zones. Sometimes, the army has engineers prepare a third defensive zone but does not occupy it initially.

The army's first and second defensive zones constitute the tactical zone of defense. A third army zone, if present, is part of the operational zone of defense. The army's second and third zones each can consist of one or two defensive positions. Thus either of these zones is typically 15 to 20 km in depth.

An army may have either a second echelon or a combined arms reserve, or both. The army's decision on forming these groupings and the strength of either force depends on the--

- Army's strength.
- Width of the army's sector.
- Army's mission.
- Importance of the axis.

- Conditions under which the defense occurred.
- Strength of the enemy.

In the defense, the roles of the second echelon and combined arms reserve are not as clearly distinguished from one another as in the offense. Either of these forces may perform essentially the same roles; it is just a matter of which roles are the primary or most likely tasks for each type of force. Basically, the role of any force other than the first echelon seems to depend on what the enemy does (the strength of the enemy force and how far it can penetrate into the OPFOR defense).

The army generally forms a ***combined arms reserve*** in the second defensive zone when there is no second echelon. The primary roles (contingencies) for such a reserve are to reinforce or relieve first-echelon forces or to hold defensive lines on vital axes, or to remain ready to deal with unexpected situations and conduct new missions that arise in the course of the defensive operation. However, it may also perform antilanding missions (especially if there is no dedicated antilanding reserve). Especially when there is no second echelon, the combined arms reserve is responsible for counterattack or counterstrike missions. Even when there is a second echelon, the combined arms reserve might have to support the second echelon in the counterstrike if the penetrating enemy force is strong enough. If the enemy attack is too strong to be defeated at army level, the army combined arms reserve (possibly along with the army second echelon) may support an army group counterstrike.

The initial deployment area of the ***army's second echelon*** is likely to be in the second defensive zone. Its primary mission is to launch a counterstrike and to restore the stability of the tactical zone of defense. However, the situation may require it to perform roles normally associated with the combined arms reserve. For example, the army may have its second echelon reinforce the efforts of the first echelon on the main axis, possibly relieving first-echelon troops that have lost combat effectiveness. The second echelon might have to hold firmly in the second defensive zone to halt enemy penetration. If the army has no combined arms reserve or dedicated antilanding reserve, it may also call on the second echelon to destroy enemy air landings.

If a collapse of the first echelon has allowed complete penetration of the tactical zone of defense, the role of the second echelon may be to establish a last line of counterpenetration defense on the enemy's main attack axis. In some cases, elements of the second echelon may have deployed initially in a third defensive zone, with this mission as an option to a counterstrike. Otherwise, elements may have to redeploy to prepared lines in the operational zone of defense for the mission of holding those lines until the army group can mount a decisive counterstrike. Sometimes the second echelon canalizes the enemy forces into an area that allows the army group counterstrike to destroy them.

Reserves

Besides the combined arms reserve, the army commander often creates a dedicated ***antilanding reserve***. ***Special reserves*** in the operational formation can include engineer, chemical defense, reconnaissance, communications, and medical reserves. There is always an ***antitank (AT) reserve*** based on the army’s AT regiment but often reinforced with other artillery and tank and/or mechanized infantry assets. This almost invariably works in tandem with a mobile obstacle detachment (MOD).

The AT reserve and MOD deploy on or near the most important or most threatened axis ready to move quickly to prereconnoitered counterpenetration positions. These various types of reserves, when established at army level, typically locate in the second defensive zone or in the space between the first and second zones.

Fire Support

An army typically has two ***SSM brigades***. Although both brigades have short-range ballistic missiles, one brigade typically has longer-range missiles than the other. Each SSM brigade has one main and one or two alternate deployment areas.

Brigade positions for the longer-range SSMs are usually 60 to 80 km from the forward edge of the defense and to the flank of the likely direction of attack.[5] For shorter-range SSM brigades, positions typically are 15 to 30 km from the forward edge (in the space between the army's first and second defensive zones). However, it is possible that some

army-level SSMs could deploy initially to temporary positions much closer to the forward edge or even within the security zone. Final positioning is based on mission, target, and survivability. The brigade's principal tasks are to--

- Destroy precision weapons.
- Destroy key target acquisition assets.
- Conduct NBC strikes on main forces and airfields.
- Disrupt C^2.
- Destroy air defenses.
- Disrupt logistics support.

The commander may not form an ***army artillery group (AAG)*** if the army must defend in a wide sector or if there is no axis more obviously important or threatened than any other. If formed, the AAG deploys on the most important axis, probably about 10 to 12 km from the forward edge of the defense. The AAG's principal tasks are to--

- Conduct counterbattery fire.
- Reinforce the artillery of first-echelon divisions.
- Disrupt the approach and deployment of strike groupings (including, if possible, counterpreparatory fires).
- Support the launching of counterstrikes.
- Separate enemy tanks and infantry in the assault.
- Destroy enemy CPs and logistics elements.
- Destroy enemy airborne or amphibious landings.

An army normally does not allocate the multiple rocket launchers (MRLs) of its organic MRL brigade to its subordinate divisions. With these and additional MRL battalions possibly allocated to the army from the army group-level MRL brigade, the army commander would form an ***army rocket artillery group (ARAG)***. An army may have from three to seven MRL battalions for this purpose. With closer to seven battalions, the army might form two ARAGs.

An ARAG is normally reserved for centralized employment on the army's most important axis, probably about 10 to 12 km from the forward edge of the defensive area. The ARAG does not include SSM units.

System of Fire

The OPFOR pays particular attention to its AT defense throughout the defended area, especially on the best tank approaches. A maneuver division's AT defense should be capable of repulsing the attack of two enemy divisions. The army commander might reinforce defending divisions with troops from a less-threatened axis or from army AT reserves or MOD. Antitank weapons deploy within the defended positions of battalion defensive areas (within company strongpoints) on tank-threatened axes. Firing lines for AT reserves are predesignated and, if possible, prepared.

Commanders integrate the system of fire with the system of natural and artificial obstacles. The army's system of fire also includes the following types of artillery fires:

- **Long-range fires.** Artillery fires on obstacles, crossings, defiles, road junctions, and likely routes approaching the forward edge.
- **Fire to the immediate front.** Artillery delivers massive fire concentrations and barrages, both moving and standing, on several lines in front of the forward edge (approaching no closer than 400 m from friendly positions). Assembly areas and approaches are primary targets.
- **Fire in the depth of the defense.** In depth, the artillery delivers fire concentrations and barrages to likely areas of penetration, the axis of planned counterstrikes, and the flanks.

The principal organizers of the fire system are division commanders, using their chiefs of artillery. However, the army commander is responsible for--

- Coordinating between divisions.
- Conducting the maneuver of fire to threatened areas and to cover boundaries and flanks.

- Organizing counterpreparatory fires.
- Organizing preparatory and supporting fires for counterstrikes.
- Calling on fire from second-echelon or flanking divisions.

Engineer Support

Engineer works are vital to the stability of the defense. Of course, such work is not just an engineer responsibility, it is a combined arms task.

Divisions occupying defensive zones concentrate on--

- Digging weapons pits and trenches.
- Constructing observation posts, CPs, and medical centers.
- Creating obstacles in the security zone, in gaps in the combat formation, and to the flanks.
- Preparing fields of fire for AT weapons.
- Preparing lines for counterpenetration and counterattack/counterstrike and routes to such lines.
- Preparing bridges and other vital targets for demolition.
- Establishing water supply points.

In conjunction with other tasks, engineers support the deception plan through activities such as constructing false defensive positions and preparing false routes.

After engineers complete initial tasks, their second priority is to--

- Integrate weapons pits into squad/section and platoon trenches and prepare alternate positions for tanks and other weapons.
- Improve lines of commitment for counterattacks/counterstrikes and routes to them.
- Increase the density of obstacles in front of the forward edge, in depth, to the flanks, and in gaps.

At army level, engineer units specializing in rapid obstacle construction and minelaying form MODs. These MODs normally deploy in conjunction with AT reserves to block enemy penetrations or to protect the flanks of counterstrike forces. Other engineer units may form an engineer reserve at the disposal of the army commander for situations that require additional engineer support.

Reconnaissance

With the initiative in the hands of the attacker, timely intelligence is vital to forestalling the enemy with counterpreparatory fires and to prepare timely counterstrikes. The organization of reconnaissance includes--

- Planning and issuing missions to troops executing reconnaissance tasks.
- Establishing a reconnaissance reserve.
- Coordinating reconnaissance efforts with combat and combat support.
- Organizing communications, including groups operating in the enemy rear.

Collecting, assessing, and analyzing information and disseminating intelligence to higher, lower, and flanking headquarters.

Types of Defensive Action

There are several types of defensive action an army can employ depending on the combat circumstances. The following paragraphs detail these actions, which parallel those conducted at the army group level.

Counterpreparatory Fires

The goal of counterpreparatory fires is to inflict heavy losses and delay enemy forces preparing to attack the forward edge. This is usually an action planned at army group level and executed at the army level. Under some circumstances,

an army may conduct counterpreparatory fires within its own area in accordance with instructions from the army group commander. Fire support assets involved can include army-level artillery and SSMs, army aviation helicopters, and some support from army group aviation. When it involves artillery from more than one army, army group SSMs, and the main forces of army group aviation, the army group commander organizes it. To conduct counterpreparatory fires, a division needs 3 to 5 hours planning time. Planning at army level might require 6 to 8 hours.

A successful counterpreparation needs much artillery--30 to 40 guns, MRLs, and mortars per km of frontage. To produce the right density, the army can involve not only the artillery of the threatened divisions and the AAG but also the weapons of adjacent divisions and sometimes of second-echelon divisions as well. Precision weapons, if available, can reduce the requirements for massed artillery in counterpreparatory fires.

To be successful, counterpreparatory fires must also take the enemy by surprise (preferably as the enemy is completing his attack preparations) and be based on accurate reconnaissance data. The counterpreparatory fires usually last 25 to 40 minutes. Fires reach 10 to 30 km over the forward edge (25 to 30 km if supported by army group aviation as well). The OPFOR fire strikes combine fires with EC directed against enemy artillery and air support nets, target acquisition assets, and C^2 elements.

Spoiling Attacks

Spoiling attacks may follow the counterpreparatory fires to inflict further casualties, disruption, and delay on enemy forces as they prepare to attack. Usually, the army uses brigade- or battalion-size elements of its second echelon or combined arms reserve in this role to avoid compromising the stability of the defense. A spoiling attack can strike targets of opportunity created by counterpreparatory fires, such as destroying a weakened and isolated enemy unit before it can be reinforced. When the army group does not organize counterpreparatory fires in a particular army's sector, that army may use spoiling attacks to disrupt or delay the enemy attack.

Security Zone Battle

The forces allocated to the security zone conduct a maneuver defense from a series of positions on main approaches. They receive support from allocated artillery units engaging the enemy from temporary firing positions. Division and brigade artillery groups from the main defensive zone may supplement the fires of artillery in the security zone. The artillery groups fire with guns and MRLs generally start to engage targets 15 to 25 km from the forward edge of the main defensive zone. Howitzers typically begin to fire when the enemy is within 10 to 15 km. Also possibly located in the security zone are deep fire systems such as army-level SSMs and MRLs to hit the enemy on distant, as well as, near approaches. During the fight in the security zone, the OPFOR determines the axis of the enemy's main attack. First-echelon divisions improve their defenses by reconfiguring their plans and regrouping as necessary onto critical axes.

Repelling Enemy Attack

During the actual start of the enemy attack, all available weapons open intensive fire to disrupt attacking groupings, to separate tanks from infantry, and to neutralize fire support. They create favorable conditions for the destruction of mechanized forces by AT systems. This occurs regardless of whether or not the army had time to establish a security zone. Once the OPFOR identifies the enemy’s axes of attack, it reinforces its defenses on those axes. Reinforcing the axes increases the density of AT weapons and obstacles, and adds depth to the defense. The army commander then adjusts and confirms the missions of aviation, artillery, mobile AT reserves, and other troops.

Where the enemy achieves penetration into the main defensive zone, the OPFOR must firmly hold advantageous positions and take measures to prevent enemy advances into the depth or against the flanks of stable defensive groupings. Brigades and divisions mount counterattacks to destroy minor penetrations and to restore the main positions. If faced with a major penetration, however, the second echelons of divisions receive orders to hold deep defensive positions and delay the enemy.

Counterstrike and Counterpenetration

The battle for the tactical zone of defense normally requires not only brigade and division counterattacks but also a

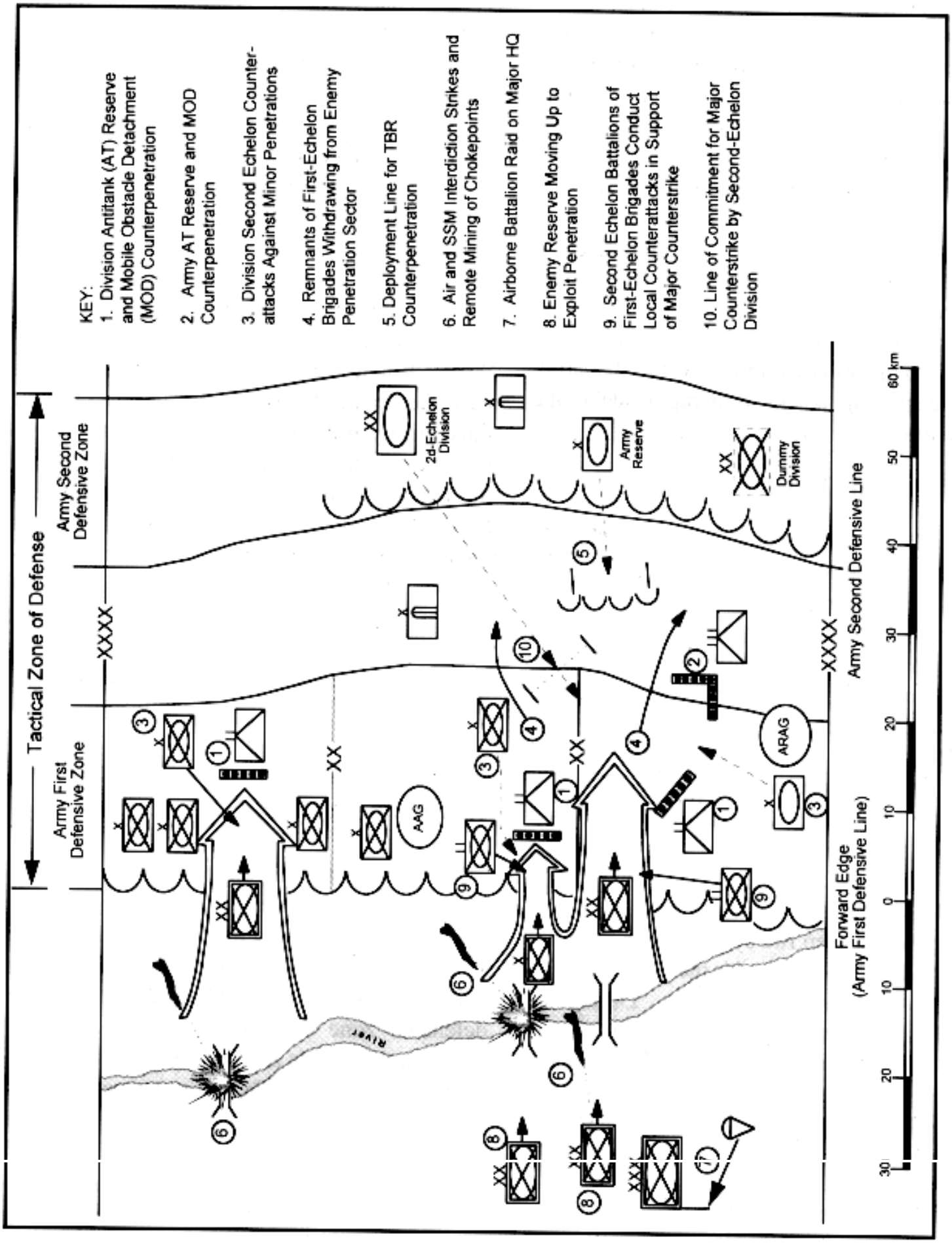

Figure 6-4. Army-level counterpenetration and counterstrike (example).

counterstrike by the army's second echelon or combined arms reserve. Where the enemy penetrates the main defensive zone on several axes in superior strength, the army's response may be limited to counterpenetration. This is to restore the stability of the defense and to create favorable conditions for launching army group-level counterstrikes. Figure 6-4 illustrates an example of army-level counterpenetration and counterstrike, as well as tactical-level counterattacks.

The army counterstrike against forces penetrating into the depth of the defense is usually the decisive move of the defense, thus regaining the initiative from the attacker. Ideally, the destruction of the penetration creates favorable conditions for going over to the offensive. However, the army might mount the counterstrike when conditions are less favorable. If so, the army might have more limited aims, such as the destruction of the most threatening grouping penetrating the defense or the restoration of the defense on a favorable line.

Another means of regaining the initiative is for the OPFOR to concentrate overwhelming force against an enemy supporting effort, while maintaining the defense against the enemy's main effort. Because enemy commanders sometimes reinforce failure, a counterstrike against an enemy supporting effort may cause the enemy to abandon a successful main effort in favor of saving the supporting effort. This type of counterstrike accepts a greater degree of risk to the defense than a counterstrike against the enemy's major penetration. Nevertheless, a counterstrike against a supporting effort does have the potential to achieve decisive results with smaller forces.

Other uses of counterstrikes are to eliminate the threat of encirclement, to divert enemy forces from his main axis, and to force the enemy to regroup. The timing and axis of the counterstrike are crucial, although of the two, timing is perhaps the most important.

Timing. The army commander should launch his counterstrike before the enemy compromises the firmness and sustainability of the first echelon's defense. He may also launch his counterstrike when the enemy has taken heavy losses and slowed down or even stopped but before he has consolidated his gains. Especially favorable times for counterstrikes occur--

- When the enemy is relocating his artillery.
- When the enemy has exhausted his immediate reserves.
- While deeper reserves are still too far away or delayed by air attack.

Critical to the army commander is the timing of his counterstrike. He must consider the army's mission, movement routes and lines of commitment for the counterstrike force, obstacles, and the possibility of enemy interdiction. He must also take into account the time the second echelon or reserve requires to move from positions in the army's second or third defensive zone and to deploy at the designated line of commitment for the counterstrike. This includes the time to issue and react to orders.

Axis. The aim, terrain, and the time it takes to achieve a concentration on one axis rather than another determines the direction of the counterstrike. Normally, the OPFOR mounts the strike against one or both flanks of the enemy penetration. This is the most efficient way to cut off spearheads from enemy reinforcements, attack enemy precision weapons and CPs, and split up and destroy enemy forces piecemeal. However, the OPFOR does not exclude direct attacks to split the enemy. The use of the direct attack can be dictated by--

- The terrain.
- The lack of time to move forces to a flank.
- The opportunity to achieve surprise.
- The need to re-establish the defense on a specific favorable line.

Whatever axis the commander chooses, he must determine and prepare in advance the routes to the line of departure and to the line of commitment. He must ensure that defensive lines of forces covering the flanks of the movement route remain firmly held. He can plan in advance for possible counterstrikes in two or three sectors. In each sector, he designates a line of commitment, or possibly two lines about 10 km apart.

The OPFOR must have the necessary COF superiority over the enemy. To this end, the forces of the first echelon on

the axis of the counterstrike can reinforce the army second echelon (reserve). After regrouping, other first-echelon elements drawn from sectors not under heavy pressure can reinforce the second echelon in the counterstrike. Powerful fire strikes must precede the counterstrike. Therefore, the bulk of the army-level artillery combines with that of the second echelon and as much of the first echelon's as can be brought to bear. This is also the time for the maximum commitment of air support, with the especially important task of isolating the penetrating enemy force and delaying the forward movement of reserves.

ARMY GROUP DEFENSE

The General Staff (or CINC of the theater) specifies the goals of an army group defensive operation, depending on--

- The strategic mission (and/or theater commander's concept of operations).
- The significance of the axis to be defended.
- The missions of adjacent army groups.
- The likelihood of enemy air and ground attacks and their likely strengths.

In most cases, the goal is to repel enemy attacks, inflict maximum casualties, and retain important lines or zones. The goal might also be to establish favorable conditions for subsequent offensive operations. At the start of a war, this includes covering the deployment of strategic groupings and their organized commitment into combat.

Therefore, missions might include--

- Inflicting heavy casualties on the enemy's approach to the defended area.
- Repelling ground and air attacks.
- Destroying penetrations of defended areas.
- Eliminating enemy airborne, heliborne, or amphibious landings.

For each of these missions, part of the responsibility actually falls within the armies (or corps) subordinate to the army group. However, each mission also has a part left to the army group level, and the army group commander has overall responsibility.

Transition to Defense

The circumstances under which the OPFOR transitions to a defensive operation determine the structure and strength of the defense. The primary determining factor is whether or not the army group is in contact with the enemy at the time.

In Direct Contact

After the outbreak of war, the OPFOR is more likely to adopt a defense in contact with the enemy. If a force is under strong counterattack or has been defeated in a meeting engagement, the commander has limited time to prepare his defense.

Preparation must occur simultaneously with efforts to repulse enemy ground and air attacks and to stabilize the first echelon's position on favorable ground. The weight of the defense is likely to be forward, quite possibly on the wrong axes. Even as the defense is being established, the OPFOR may have to conduct limited offensive action in order to seize favorable ground.

Out of Direct Contact

There are several conditions that can cause an army group to establish a defense out of contact with the enemy. One is when the army group is preparing to defend before the outbreak of war. Another is when it is preparing deep defenses during the course of hostilities.

The defense out of contact with the enemy generally has a relatively long preparation period. The OPFOR prepares alternative plans for enemy attacks on different axes and begins extensive engineering work. Complete preparation of an army group′s defensive zones may to require 8 to 10 days. Deception efforts prepared during a defense out of contact

also benefit from additional planning time. Combat units do not deploy until the last minute to maintain secrecy and to give maximum time to study the enemy deployment. In a defense out of contact, the bulk of the army group's combat power may be in the rear to allow freedom and time to maneuver.

Operational Formation and Tasks

The operational formation of an army group in the defense might be in one or two echelons with a combined arms reserve. Even more so than at army level, the organization for combat and positioning of forces are not fixed. They differ in each instance according to--

- The operation and the army group's missions.
- The forces available to the army group commander.
- The composition of enemy groupings and the character of their actions.
- The terrain.

OPFOR commanders must maximize use of the terrain and avoid stereotyped patterns. A deep operational formation allows unhampered maneuver of second echelons and reserves to meet the main threat. It also provides dispersion against precision weapon attack.

Figures 6-5 and 6-6 are examples of how an army group might deploy in the defense, representing two extremes. The first example is for a small army group defending with relatively shallow depth. The army group in this first variant has a clear idea of where the enemy's main attack is about to occur and has organized an operational fire sack to defeat a penetration in that sector.

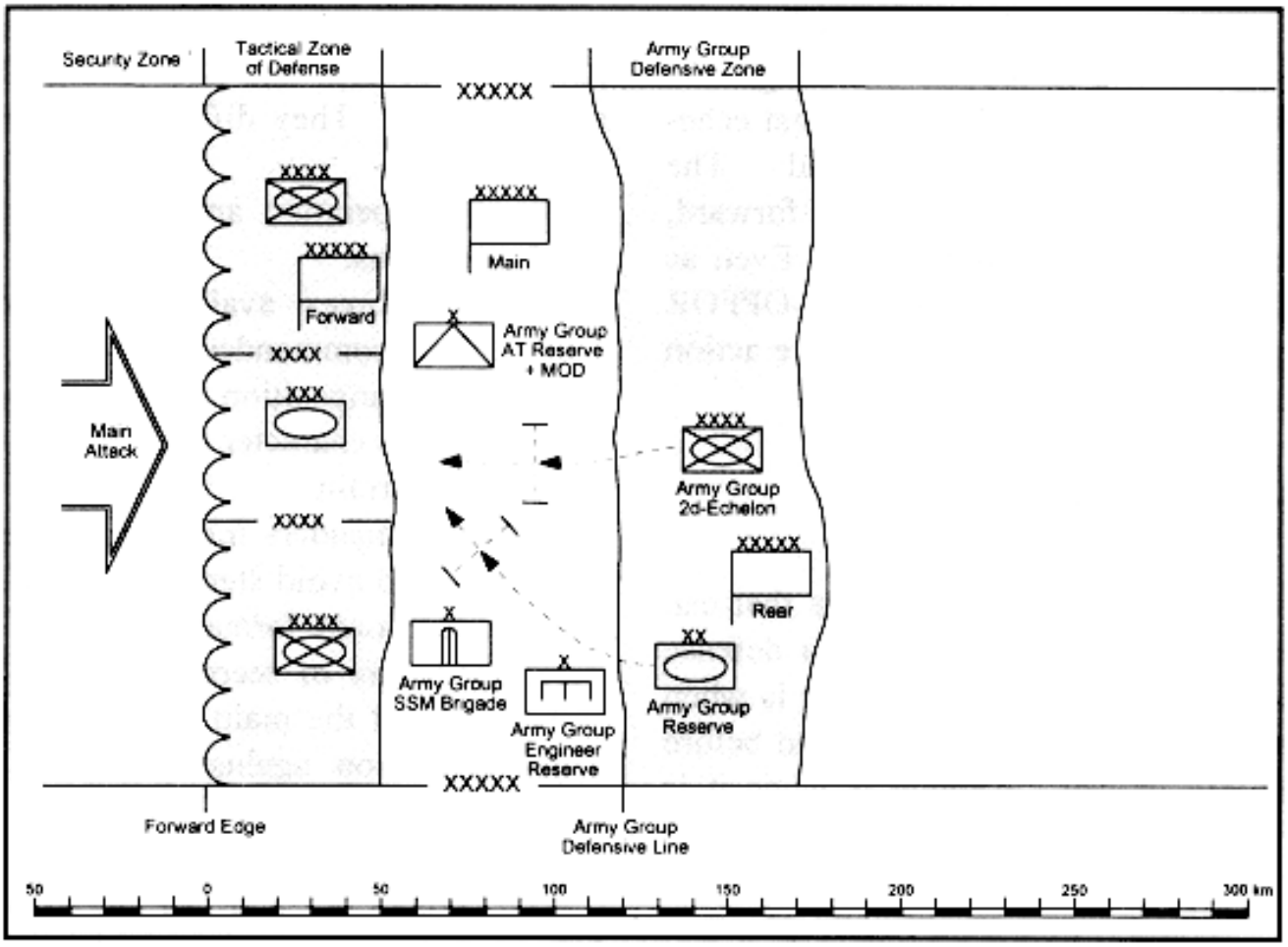

Figure 6-5. Example army group operational formation in the defense (variant 1).

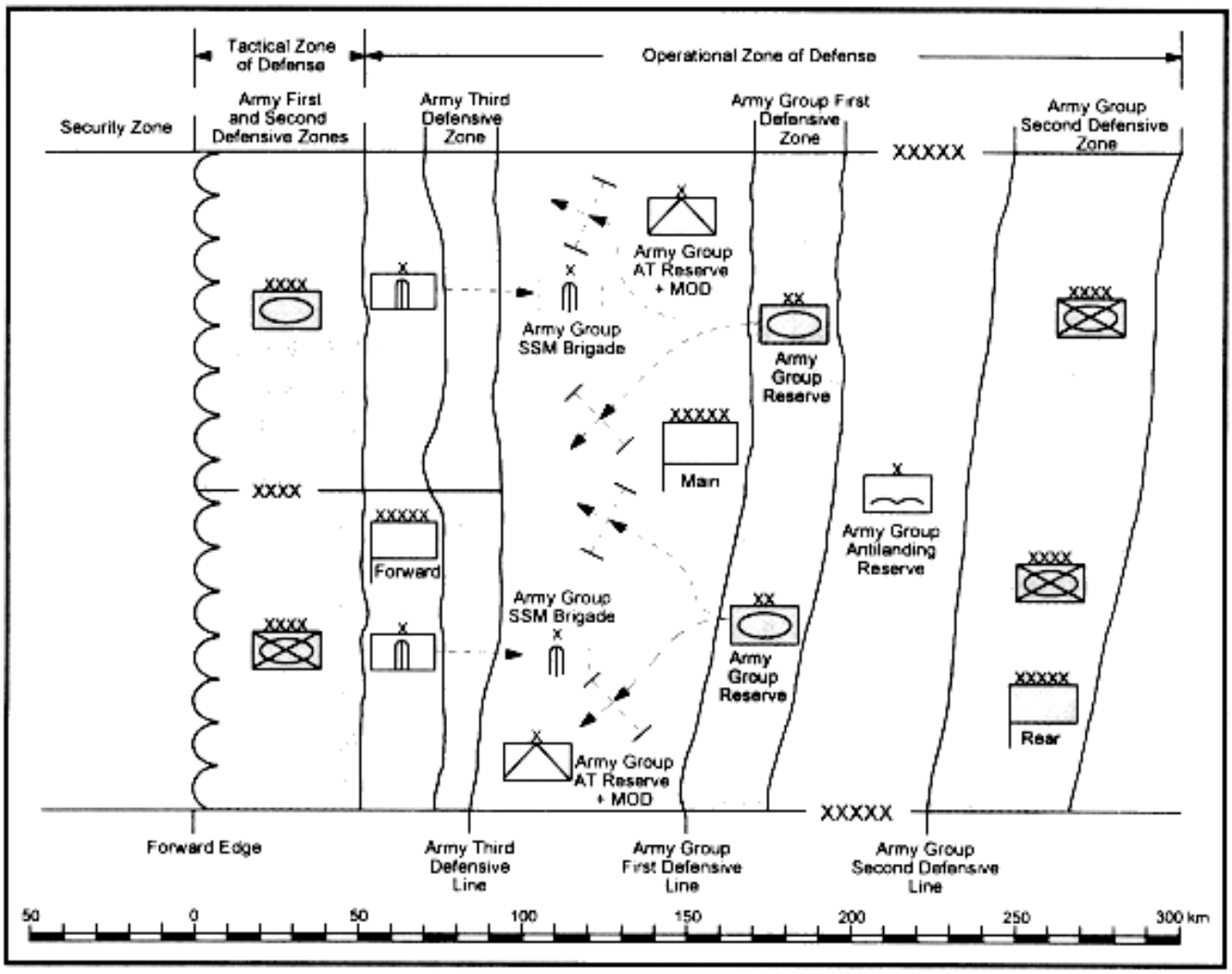

Figure 6-6. Example army group operational formation in the defense (variant 2).

The second example is for a very large army group deployed in maximum depth. This variant shows a situation where the OPFOR has had time to prepare a defense in great depth but does not yet know where the enemy's main attack will be.

Actual deployment of a given army group could be anywhere between these two extremes, and other variants are possible, depending on the situation. The following paragraphs present the options for operational formation and defensive layout of an army group in the defense.

Scope

The scope of the defense depends on the army group’s composition as specified by the General Staff (or theater CINC). An army group has no fixed organization. Structure depends on the composition and strength of the expected enemy attack and on the terrain and nature of the theater.

The ground maneuver forces of an army group may comprise one to four armies and possibly one or two separate divisions and/or a separate brigade. An army group may have one or two corps (in lieu of armies). In addition to these ground maneuver forces, an army group normally has an air army. It can also have a special-purpose forces (SPF) brigade, a naval infantry brigade, and possibly an airborne infantry brigade allocated to it. Most of the army group's combat support elements are not organic assets; the General Staff allocates them to the army group from a national pool of assets known as the Reserve of the Supreme High Command.

An army group might defend on a frontage of as much as 350 to 400 km, to a depth of 250 to 300 km. In some cases, the area of responsibility may be larger. In other cases, it could be considerably smaller, in frontage or in depth. A

determining factor is the need to achieve adequate force density to repel the enemy. Ideally, the force density should provide a first-echelon division per 20 km of frontage on a main axis and per 30 or more km on a secondary axis. However, such a density may not always be possible (or necessary). The OPFOR may have to accept lesser densities in sectors where no attack is expected. The army group and its subordinate armies or corps would also have to maintain second echelons and reserves appropriate for the weight of the expected attack.

Tactical Zone of Defense

The army group's ***first echelon*** repels attacks, holds important areas, and creates favorable conditions for counterstrikes. Usually, but not invariably, the bulk of the army group is in the first echelon. First-echelon armies deploy in the first two or three defensive zones. The first two army zones comprise the tactical zone of defense. When organizing a defensive operation out of contact with the enemy, the army group commander or one of his army commanders can establish a security zone in front of the army's first (main) defensive zone. (See the "Army Defense" section of this chapter for more detail.)

Operational Zone of Defense

A first-echelon army can hold its combined arms reserve and/or part of its second echelon in an ***army third defensive zone***, to the rear of the tactical zone of defense. From this third zone, the army can mount counterstrikes against penetrations of the tactical zone of defense. Alternatively, the army may employ counterpenetrations against very strong and successful penetrations. With this third zone, the total depth of a first-echelon army could be 85 to 100 km.

Behind the army's last (second or third) defensive zone, the remainder of army group deploys in one or two additional defensive zones. Together with the army's possible third defensive zone, the army group zone(s) constitute the operational zone of defense. The army group's combined arms reserve and/or second echelon deploy there. If time permits, the OPFOR prepares defenses in the operational zone to serve as alternate positions for occupation by forces withdrawing from the tactical zone.

The army group's ***combined arms reserve*** consists of one or several maneuver divisions. It normally deploys in the army group's first defensive zone. Its primary role is the reinforcement of forces operating on decisive axes, the relief of battered divisions, the destruction of airborne landing forces, or the execution of other, unexpected missions that may arise in the course of defensive operations.

In the absence of a second echelon, the army group establishes a strong reserve that also has the responsibility for conducting a counterstrike. Even when there is a second echelon, the combined arms reserve can join in the counterstrike.

The army group normally plans for counterstrikes on two or three axes. A distance of 80 to 100 km typically separates the forward edge of the zone occupied by the counterstrike force from the forward edge of the defensive zone in front of it. This distance allows dispersed concealment and deployment of the second echelon or combined arms reserve and gives it the capability to conduct quick maneuver on a choice of axes to launch counterstrikes or accomplish other missions.

If the army group establishes two defensive zones, a ***second-echelon army*** (or corps) usually deploys in the second zone, behind the combined arms reserve. If there is only one army group zone, the second echelon deploys there, possibly along with a smaller combined arms reserve. In either case, its primary role is to act as a counterstrike force to destroy major penetrations and, usually, to restore stability to the tactical zone of defense. In the event of a collapse of the first echelon, however, all or part of the second echelon might establish a defense on vital lines in the operational depth on the enemy's main axis.

The total depth of this defense, with three army zones and two army group zones, may reach up to 250 to 300 km from the forward edge.

Reserves

The army group commander establishes his ***AT reserve(s)*** from organic or allocated AT brigades. They almost always

work closely with the engineer MODs, of which the army group usually establishes two. Together, these AT forces--

- Reinforce the AT defense of the first echelon.
- Act as counterpenetration groupings.
- Deploy to support the commitment of army group counterstrikes.

The army group can establish the same types of ***special reserves*** as found at army level. It is also likely to have a specialized ***antilanding reserve***. Likely sources for the latter role are separate mechanized infantry or tank brigades or possibly an airborne infantry brigade; the antilanding reserve could be an entire brigade or one or more reinforced battalions.

Command Posts

An army group may deploy up to six types of CPs (excluding dummies) as follows:

- The main CP normally deploys close behind the rearmost army defensive line, to the flank of the most likely axis of the main attack.
- The alternate CP deploys to the flank or rear of the main CP and is constantly manned by an operations group from army group headquarters; it also has redundant communications.
- The forward CP usually deploys in the tactical zone of defense; it can control army group-level counterstrikes.
- The rear CP deploys with the army group forward base in the rearmost army group defensive zone, and is able to take over from the main CP if required to do so.
- The army group commander uses an airborne CP when he visits an area of operations.

The commander might establish an auxiliary CP to ease C^2 problems of formations operating on an independent axis.

Fire Support

The army group allocates its tube artillery and MRL assets to subordinate armies or corps. However, it normally retains control of its organic SSM brigades and army group aviation.

The army group commander assigns his ***SSM brigade(s)*** a primary area generally 60 to 80 km from the forward edge, with one or two alternate areas 15 to 30 km apart for each brigade. This places the army group-level SSMs at roughly the same depth as the army's longest-range SSMs. However, each army group brigade can also have an alternate position farther to the rear, behind the tactical zone of defense. These distances may be modified based on the brigade’s mission.

For ***army group aviation***, airfields for fighter-bomber and reconnaissance aircraft are generally 100 to 150 km from the forward edge, with bomber bases 200 to 300 km distant. Each aviation division has an airfield complex that includes four to six operational airfields and two or three reserve fields.

System of Fire

The basis of the defense is a coordinated and integrated system of fire that is primarily antitank (AT) in nature. Antitank weapons are deployed to achieve interlocking fires along the forward edge and in depth. The AT reserves, up to army group level, provide a quick-reaction AT force to block penetrations, generally along with MODs. Commanders carefully integrate obstacle and barrier plans with fire plans to create fire sacks.

The system of fire includes--

- The organization of fire strikes.
- The establishment of multilayered, massive fires of all types of weapons.
- Preparation for the maneuver of fire onto all axes.

Generally, aircraft engage targets beyond artillery range as well as moving and point targets.

The OPFOR’s system of fire and air strikes can--

- Destroy enemy precision weapons.
- Inflict losses on enemy maneuver forces in their assembly areas, during their forward movement, while they are deploying, and in attack positions.
- Repel or destroy massed tank/infantry attacks, if they penetrate the defense.
- Neutralize artillery, air defenses, CPs, and radars at appropriate stages of the operation.
- Provide strong fire support to friendly troops operating in the security zone.
- Forestall the enemy attack with surprise counterpreparatory fires where intelligence makes it possible.
- Bring to bear the full weight of available fire support to support counterstrikes.
- Cover flanks, intervals in operational formations (otherwise covered only by obstacles), and gaps created by enemy nuclear or precision weapon strikes.

Types of Defensive Action

An army group can employ several types of defensive action depending on the combat circumstances. The following paragraphs detail these actions, which parallel those conducted at the army level.

Defense Before Enemy Penetration of Forward Edge

Much depends on whether the OPFOR assumes the defense in or out of contact with the enemy. If out of contact, the army group initiates the engagement by hitting the enemy on distant approaches, with air and missile strikes and, especially, precision weapons. Principal targets are enemy precision weapons, main force groupings, airfields, air defense forces, CPs, and key logistics elements.

Before the enemy launches the attack, the OPFOR executes surprise ***counterpreparatory fires*** by air, missile, and artillery strikes. Even if the enemy attack is focused on one army, artillery in adjacent areas can participate as long as it is within range of the attacking force. When counterpreparatory fire involves the artillery of more than one army, army group SSMs, and the main forces of army group aviation, the army group commander organizes it. An army group fires its counterpreparation over a period of 25 to 30 minutes, normally on a sector 20 to 25 km wide at the junction of two armies, and to a depth of 25 to 30 km. The required artillery density can be approximately 40 to 50 weapons per km of frontage. The use of precision weapons, if available, would reduce the duration and density of the counterpreparation.

If the army group transitions to the defense in contact, the defense is much more difficult to establish because operations might begin before completing preparations and reorganization. If so, elements of the army group might have to continue the attack in order to seize an advantageous line.

Defense After Enemy Penetration of Main Defensive Zone

As the penetration of the tactical zone of defense develops, army mobile AT reserves move to the threatened axes. Other forces redeploy from secondary sectors. Any bypassed or encircled forces hold their positions firmly and absorb as much of the enemy's forces and attention as possible. These units should receive as much air and artillery support as possible (including aerial resupply). Encircled forces receive permission to break out and withdraw only when their actions in the encircled position cease to tie down substantial forces. While the battle for the tactical zone of defense continues, army and army group engineers prepare new defense lines and develop the obstacle system to add further depth to the defense on the threatened axes.

Operational-Level Counterstrikes

The counterstrike is the key to a successful defense. No matter how well prepared, forces engaged in a passive defense are more likely to be defeated.

At any level, the ***immediate mission*** of the counterstrike is the destruction of the enemy, usually achieved by hitting the flanks or rear of the main enemy grouping. In the most favorable circumstances, the immediate mission might be to encircle and destroy the main enemy force grouping. The most favorable circumstances are when the enemy has committed all his reserves, has taken heavy losses, and has had his C^2 disrupted, while the OPFOR has gained or held

air superiority.

Subsequent missions include the complete elimination of the penetration, the restoration of the integrity of the defense, and the defeat of enemy reserves advancing to the area. The subsequent mission often involves the seizure of favorable lines from which the OPFOR can launch an army group offensive or strategic counteroffensive. Compared to a counteroffensive, the counterstrike is a more limited blow designed to destroy enemy elements but not necessarily to recover lost ground. It exploits a temporary enemy vulnerability by inflicting a decisive blow against an important enemy grouping.

The OPFOR prefers to conduct counterstrikes against disrupted or halted enemy penetration attempts. It may, however, launch them against an advancing enemy grouping, resulting in a meeting engagement. A short but intense artillery and air preparation usually precedes counterstrikes. Ideally, the OPFOR executes the counterstrike into the flanks or rear of the penetration, exploiting gaps and ruptures in the enemy's operational formation. Mobile AT reserves and MODs protect the flanks of counterstrike groupings. Air interdiction and remote mining prevent counteraction by enemy reserves. After restoring the defense, OPFOR troops regroup. This enables reconstitution of a deep operational formation and reserves. Alternatively, if the enemy exhausts his own reserves, the OPFOR commander might develop the counterstrike into a counteroffensive.

The OPFOR launches ***army-level counterstrikes*** either on the instructions of the army group commander or on the basis of the army commander's decision. A maximum effort made by army group assets (especially air) supports them. The army group commander may commit his combined arms or special reserves. If the enemy attack is strong, the army’s second echelon might hold prepared lines in depth. If the enemy breaks into the army's second defensive zone with significant forces, the most important tasks become--

- Stopping the advance.
- Inflicting maximum losses.
- Isolating the penetrating force from follow-on groupings.
- Preventing the movement of enemy reserves.
- Creating favorable conditions for mounting an army group counterstrike.

The OPFOR launches ***army group-level counterstrikes*** to destroy or at least contain the penetrating enemy force on the most decisive axis. The containment of the enemy offensive may also trigger a counteroffensive by one or more army groups. (A weak enemy sector is an ideal target.) The following conditions favor an army group counterstrike:

- When first-echelon armies maintain their combat capability and firmly hold positions on the flank of the penetration.
- When the enemy spearhead halts or slows appreciably.
- When the enemy has taken heavy losses and committed his immediate reserve.

Ideally, the army group counterstrikes against both flanks of the penetration. This gives the best chance of getting into the enemy's rear area and encircling the penetration. However, terrain, or the time involved in moving elements to one flank, might prevent a double encirclement. Time is a critical element, particularly if the possibility of surprise exists.

To launch the army group counterstrike, the commander brings as many forces to bear as possible. These forces might include--

- The army group second echelon and combined arms and special reserves.
- All the available resources of army group aviation.
- Elements of the army group first echelon near the counterstrike. These elements might possibly combine with air landings to block any retreat or the forward movement of enemy reserves.

The counterstrike must use sufficient forces to gather a decisive superiority over the enemy in designated strike sectors.

Defense Against Enemy Airborne and Heliborne Landings

The enemy might try to unbalance the defense and increase his own momentum by using tactical and operational landings. Initially, OPFOR air defense troops and aircraft engage enemy forces conducting these landings. If the enemy forces succeed in landing, the OPFOR must destroy them before they can reorganize to seize and consolidate their objectives. This task belongs to army group aviation and the antilanding reserve.

When an OPFOR commander anticipates an enemy airborne or heliborne landing, he may specifically designate a battalion- or brigade-size force to act as an antilanding reserve. These unit(s) can deploy to likely drop or landing zones, with a mobile force available to maneuver within the area for counterattacks. If a shortage of troops prevents the formation of an antilanding reserve, the commander may use elements of his second echelon or combined arms reserve in this role.

REACTION TO ENCIRCLEMENT

The most decisive engagements, usually inflicting the heaviest casualties, are generally encirclements. Encirclements become more likely in modern warfare, because of the increased mobility of forces and the availability of airborne and heliborne troops to seal the trap.

Several circumstances in which forces may become encircled include the following:

- As the result of a surprise attack at the outset of a war.
- When the support for the flanks of offensive or counteroffensive groupings is inadequate.
- When forces defend areas they cannot abandon.
- When forces deploy in the enemy rear to defend a city.
- When trapped against an obstacle.

The OPFOR analyzes the factors the following paragraphs describe, both to reap benefits and minimize consequences.

Costs and Benefits

The enemy sees encirclement as a prelude to the destruction of the trapped grouping. Success in accomplishing its elimination usually creates a significant gap in the defender's order of battle. However, an encircled force can contribute materially to the stability of the defense. Aggressive action by the encircled forces, perhaps reinforced or working with airborne forces, can create a battle front in the enemy rear, severely disrupting his C^2 and logistics.

Successful Action and Survival of Encircled Groupings

There are three conditions for surrounded forces to have an impact on the enemy's operations and still survive to break out or be relieved. These preconditions are--

- There must be firm C^2 and adequate logistics support within the encircled force.
- The main force must be close enough to provide fire, air, EC, and/or intelligence support.
- The gap between the encircled force and the main forces must not preclude operational coordination.

Problems of Organization Within Encirclement

Perhaps the biggest problem facing a grouping in the process of being enveloped is lack of time to organize to cope with the event. The situation is likely to change rapidly, radically, and unpredictably. Speedy reactions are necessary to maintain combat effectiveness. These include--

- Immediate measures to centralize the C^2 of all elements within the trapped grouping.
- An immediate assessment of the combat and logistics capabilities of the grouping, quite possibly with measures to strengthen them before the enemy can organize a tight blockade.
- Redeployment in order to establish a reliable perimeter force and a strong mobile reserve to prevent the enemy from splitting the grouping into fragments, which he could then destroy in detail.
- Maintenance of stable communications.

- Creation of a strong air defense umbrella.

In addition, the main force must prevent the enemy from tightly sealing off the encirclement. The main force then increases the interval between the enemy and the encircled force. Air power must be able to make up for deficiencies in the combat support of the encircled force and to ensure its logistics support.

Breakout

It is unlikely that an encircled force can break out without the aid of the main force. Indeed, the main force usually plays the major role in the operation and thus dictates the plan. Usually, the axes of the encircled and relieving forces must be convergent, on the shortest route separating them. However, the surprise resulting from the choice of other axes may outweigh the obvious advantages of this.

The immediate mission of the breakout grouping is to penetrate the inner arm of the enemy's encirclement. With favorable conditions, the subsequent mission might be to continue the advance against the rear of those enemy forces fighting the main force. Otherwise, the subsequent mission could be to seize and consolidate on an important line (perhaps with the aid of air-delivered troops) until linkup. Screening forces cover both flanks and the rear. Strong combined arms reserves, AT reserves, and MODs may supplement screening forces. Forward detachments are ideal to lead the breakout (and, for deception, on false axes as well). They also serve as raiding detachments to destroy enemy precision weapons and to disrupt C[2].

WITHDRAWAL

A withdrawal may be necessary in some circumstances, such as when--

- Establishing a more stable defense on more favorable ground.
- Shortening the defensive frontage, thus releasing troops for increasing the density of the defense or for offensive missions elsewhere.
- Avoiding encirclement.
- Conforming with the retreat of flanking forces.

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[1] As in the offense, a ***corps*** can conduct defensive operations similar to those of an army, but normally on a smaller scale.

[2] In OPFOR terminology, a ***counterattack*** is a tactical action conducted by divisions. A ***counterstrike*** is operational and is delivered by forces of an army group or army. A ***counteroffensive*** is usually on a strategic scale; rarely is it operational.

[3] The establishment of a security zone is an operational-level decision. A division commander could employ a battalion- or even brigade-size forward detachment in the security zone in front of his own defensive, independent of the operational plan, but must still clear this with the army commander before implementing it. The army (or army group) commander may also decide to employ security zones in front of subsequent defensive zones.

[4] Forces in the security zone also can disrupt or destroy enemy reconnaissance assets, thereby limiting information available to the enemy of the OPFOR defense.

[5] In cases where the total depth of the army operational formation is as little as 50 to 60 km, the longer-range SSM brigade could be as close as 50 km to the forward edge. This is around the minimum range for such SSMs.

Chapter 7
Command and Control

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This chapter examines the OPFOR system of command and control (C^2). It explains how the OPFOR expects to direct the forces and actions described in other chapters of this field manual. It provides insights on the OPFOR theory and practice of controlling combined arms forces in war. Most important, it shows how OPFOR commanders and staffs think and work.

Although dealing briefly with strategic control of forces, this chapter focuses on operational command and control. OPFOR army groups, armies, and corps share a common decision-making and planning process. They also share a parallel staff organization and command post structure, tailored to match the differences in scope and span of control.

CONCEPT

OPFOR command and control includes all the measures necessary to effectively manage forces in combat. These measures represent a systematic and scientific approach to staff planning and decision-making processes. They stress efficient staff organization, in-depth planning, and extensive use of automation to assist decision making.

The objective of command and control is to attain maximum combat effectiveness from all resources. This enables the OPFOR to fully exploit the combat situation.

The OPFOR specifically defines C^2 at tactical and operational levels as the actions of commanders, staffs, services, and headquarters to maintain continual combat readiness and combat efficiency of forces, to prepare for combat operations (battles), and to provide leadership during the accomplishment of assigned missions. The three key elements are--

1. Commanders and staffs.
2. Command posts.
3. Communications and automated support systems.

The C^2 process includes the following:

- Continuous receipt, collection, study, reporting, and analysis of information on the situation. (Effective C^2 depends on the proper management and use of information.)
- Decision making for operations (battles).
- Issuing of missions to subordinate forces.
- Planning of operations (battles).
- Organization and maintenance of continuous coordination of forces.
- Preparation of forces for combat operations (battle) and provision for their direct leadership.
- Creation of C^2 systems.
- Monitoring of and assistance to subordinate commanders, staffs, and forces.
- Defensive measures to protect C^2-related facilities, systems, personnel, and information from disruption, destruction, or deception.

In modern war, victory is likely to go to the side that reacts most quickly. The overriding need for speed drastically reduces the time available for decision making and for issuing and implementing orders. The successful execution of an information warfare (IW) plan is critical to victory. The need for wide and deep-ranging maneuver, coupled with dispersion to avoid the threat of precision weapons, dictates the replacement of concentration in terms of space by concentration in terms of time. Moreover, the operational and tactical situation is subject to sudden and radical changes, and the results of combat are likely to be more decisive than in the past.

COMMAND AND STAFF PROCEDURES

The professional training of commanders and staffs emphasizes consistency in staff planning procedures at all levels of command. Emphasis on in-depth normative planning (assisted by automation) in the C^2 process has produced a cadre of professional, highly trained staff officers. Thoroughly educated in all aspects of operational art and tactics, these

officers are capable of functioning from the General Staff down to brigade level.

This obviously offers some possibilities for saving time and increasing efficiency. For instance, parallel planning, in which all levels (and operations and logistics staffs) work concurrently, has for the most part replaced the sequential planning method, whereby each headquarters would only begin work on receipt of a complete set of orders from its superior.

Normative Planning

Command and control is more than the commander and staff working together to accomplish a single objective. It is a carefully thought out, comprehensive approach to maximizing the combat potential and active use of military forces. OPFOR command and control has as its basis a scientific military philosophy that emphasizes standardization of components and procedures within the system. It also stresses rigorous adherence to the norms for organizing and conducting control activities. This philosophy creates uniformity at each level of command, but the system is not unduly rigid.

In the OPFOR view, it is not the intuitive genius of commanders but the scientifically developed methods of evaluation, decision making, and planning that lead to the "right" decisions in combat. An understanding and consistent application of approved methods, norms, and calculations are essential to the proper exercise of command. These tools do not dictate decisions to the commander, but provide him with the parameters for a solution to his combat requirements with a high probability of success.

Scientifically substantiated C^2 provides operational and tactical commanders with the means to seize and maintain the initiative on the battlefield. To this end, command and control relies heavily, but not solely, on correlation of forces (COF) calculations, quantitative norms, and combat modeling. The ability to foresee conditions on the battlefield and anticipate enemy actions ensures that the OPFOR commander is able to pick where, when, and how to fight or to alter decisions once fighting begins.

Correlation of Forces

The COF is the most important calculation that decision making and planning requires. The OPFOR defines the COF an objective index of the combat power of opposing sides, which allows a determination of the degree of superiority of one over the other. (See also the final section of this chapter.)

Norms

The use of norms is pervasive in the military, as the numerous examples scattered throughout this manual testify. There are norms for everything, from the time required to change the fan belt on a truck to the number of 152-mm artillery rounds required to destroy a tactical missile launcher at a range of 15 km. Norms serve as a basis for staff calculations and as measures against which to test and assess troops and units. The OPFOR sees these norms as averages rather than absolutes, and as guides in planning rather than figures to which one must adhere rigidly in all circumstances.

Norms represent scientifically derived guidelines for the use of resources. Two types of norms have direct application to the decision-making and planning process. The OPFOR applies both types extensively, viewing them as practical expressions of the relationships dictated by the laws and principles of war.

Operational-tactical norms. The first type, operational-tactical norms, deals with average space and time factors concerning the missions of forces and their areas of combat activity. For example, such norms establish parameters for the depth of combat missions (objectives), width of an operational (tactical) sector, rate of advance in an offensive, length of time to accomplish combat tasks, and the average rate of column movement under specified conditions. (See Chapters 2 through 6 for examples.) The basis for these norms is a close study of military history, field training exercises, and mathematical simulations. These sources provide a solid historical, theoretical, and experimental-scientific basis for the applicability of the norms to modern warfare. The resulting norms are tailored to the makeup of OPFOR formations, their capabilities, enemy capabilities, and conditions on the modern battlefield. Regulations and directives reflect the basic operational-tactical norms. Decisions and plans that correspond to these carefully developed indices are likely to be successful; those that deviate from the norms experience higher rates of

failure.

Performance and expenditure norms. The second type of norms includes those that express the normative times, resources, or extent of accomplishment required for individuals and small units to perform a specific task or procedure. They deal with timeliness and with quantitative and qualitative factors. Examples include normative expenditures of ammunition to destroy a given target (see Chapter 9), rates of POL consumption under specific conditions, and the number of halts in a road march of a given duration (see Chapter 3). Such norms ensure a uniform and objective approach to expected performance in combat and a standard for evaluating the training level of personnel and units.

Combat Modeling

The OPFOR believes that only actual combat can demonstrate true military capability. Only when hostile forces are pitted against one another is it truly possible to measure the accuracy of forecasts, the completeness of plans, the efficiency of the decision process, and the effectiveness of control. Staffs can use combat modeling in estimating the situation. They can model variants of a plan before the commander makes a final decision. They can also keep the more promising nonselected variants as contingency plans.

Centralized Control and Decentralized Battle Management

The Supreme High Command and commanders down through the operational level recognize that the principle of centralized control and decentralized battle management is essential to the successful conduct of a fluid, deep operation. Centralization of control at the operational level keeps the focus on the overall goal and ensures the direction of resources toward the main effort. Should the control mechanism break down, the issue of the commander's decision and the insistence that commanders use their initiative within the framework of their superior's overall concept should ensure that the constructive direction of the battle continues.

It is necessary to maintain control at high levels, and subordinate control organs must firmly and persistently execute the adopted decisions and plans of higher authority. Once the commander has established missions and objectives, subordinate organizations must accomplish them in order to facilitate the success of the overall mission. However, this does not imply an indifference to changes in the situation or rote implementation of plans already negated by enemy action.

One-Man Command

One man (the commander) has complete authority and responsibility for the actions of subordinate forces, including the authority to impose unity of action on them. The commander is personally responsible for the decisions made, for the use of subordinate forces, and the results.

A single commander must control the full scope of combined arms activity. The clearest example of this requirement for unity in control structures is the complex nature of C^2 in a theater. A single theater or army group commander (or the General Staff) must direct ground, long-range fire strike, air defense, airborne, amphibious, and naval operations. Developing a theory of C^2 and appropriate staffs, methods, and hardware are critical tasks for OPFOR military planners.

Centralization of Control

Centralization of control gives the OPFOR flexibility in the employment of resources to meet the overall goal of an operation. It ensures a unity of views on the management of forces. Above all, it is essential to the control of NBC and precision weapons. It is important in the management of long-range fire strikes and air defense operations. As warfare has become more complex and deadly, the need for well-integrated combined arms groupings (including air power) has grown.

Decentralized Battle Management

At the operational level, centralized control continues to be essential to the efficient management of the resources necessary for achieving the goal. On the other hand, it is necessary to leave the detailed implementation of the

operations plan more to the executors. Timely reaction to rapidly developing and changing situations requires considerable freedom of action, within the framework of the overall plan, on the part of army, corps, division, and even brigade commanders. This is especially true on the battlefield on which electronic combat and deep strikes can threaten communications and even the very survivability of higher headquarters. Thus, the OPFOR employs task-oriented control where possible. The superior commander states the mission in broad terms, accompanied by his concept of operations, which contains the essential elements of his plan. Thus, in the event circumstances change, a subordinate who is familiar with his superior's concept can adapt his efforts to ensure his unit contributes to the overall goal.

Where time is critical, an operational-level headquarters cannot accomplish the detailed planning or control of tactical actions. The independent action of a division functioning as an OMG is an example of much looser, directive control. The OMG commander, as well as his subordinate commanders, must have great independence and exercise initiative while remaining within the overall operational goal and plan.

Initiative

Maintaining independence and exercising initiative within the overall operational goal and plan places demands on subordinate commanders. Initiative and a creative approach have become the main criteria for describing the tactical maturity in a commander. To an OPFOR commander, initiative consists of intelligent anticipation, or at least correct interpretation, of the higher intent and the effective implementation of it without detailed guidance. Initiative is also the ability and the farsighted, flexible organization of the combined arms grouping to react speedily, without waiting for direction, to meet unexpected changes in the operational and/or tactical situation.

Flexibility

One essential characteristic of the OPFOR C^2 system is flexibility. It is a mistake to view OPFOR C^2 as a rigid, top-down system. One might see a disadvantage in the fact that the OPFOR accomplishes planning by the use of computers and correlation of forces calculations. This would seem to limit the commander's options, leading to predictability.

However, the OPFOR views it as an advantage that its commanders receive their missions in relation to the senior commander's plan and the missions of adjacent forces. In its view, automated support to the commander employs simple, approximate models; and quantitative assessments support well-founded, scientifically substantiated decisions. It sees the system as providing consistent, flexible methods of decision making and planning even in the absence of positive control.

To the OPFOR, the basic objective of C^2 is maximum effectiveness in the accomplishment of assigned missions. The commander's role is key to successful command and control, especially in maintaining the combat readiness of forces, planning operations (battles), and efficiently controlling those forces in combat. The commander does not do this alone, but rather with the support of a whole C^2 infrastructure. The key elements in this structure are headquarters and command posts. These require support from communications systems.

STRATEGIC-LEVEL ORGANIZATION

The Supreme High Command is responsible for the preparation and conduct of military campaigns and strategic operations. It also resolves issues regarding the overall wartime situation of the State and the allocation of strategic resources. The Supreme High Command allocates forces to theaters and establishes general plans for the conduct of strategic operations in the theaters.

In addition to the Supreme Commander in Chief (CINC), the primary strategic headquarters includes the Minister of Defense, the Chief of the General Staff, and the CINCs of the five services of the armed forces. (See Figure 7-1.) The head of state is the Supreme CINC of the armed forces. He represents the unity of political and military leadership, and he alone has the authority to make final decisions about the use of the armed forces. The Supreme CINC relies heavily on his deputies to command the armed forces. The Minister of Defense is responsible for the day-to-day administration of the armed forces. He is also responsible for the readiness and overall development of the five services. The Chief of

the General Staff has direct control over the five services of the armed forces, and through him, directives are issued to implement strategic plans. The CINC of each service has his own staff and is responsible for the administration, management, and training of his respective forces.

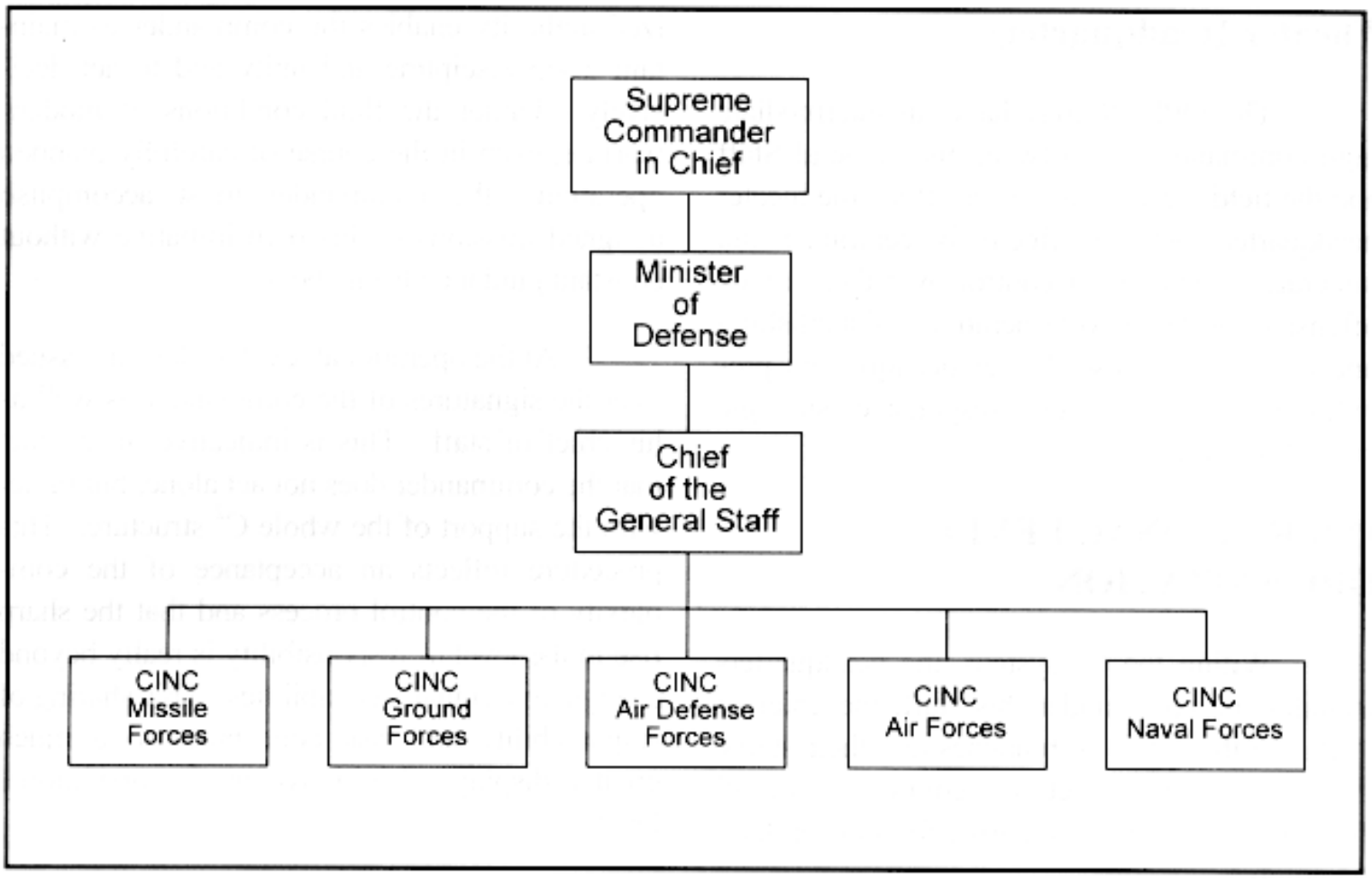

Figure 7-1. The Supreme High Command.

General Staff

The General Staff is a major link in the centralization of the OPFOR national command authority. It provides staff support and acts as the executive agency for the Supreme High Command. The forces in various theaters report through it to the Supreme High Command and the Supreme CINC.

The General Staff consists of four staff directorates. These are the main directorates for operations; intelligence; communications; and organization and mobilization. (See Figure 7-2.) Working with the staffs of each of the services, the Main Operations Directorate drafts detailed plans for strategic operations for the Supreme High Command. Once the Headquarters of the Supreme High Command approves the plans, the General Staff issues them to operational commanders as Supreme High Command directives. Because of the uncertainties of combat, the General Staff continually reevaluates and refines these directives. Its Main Organization and Mobilization Directorate determines the assets the force needs to perform strategic operations.

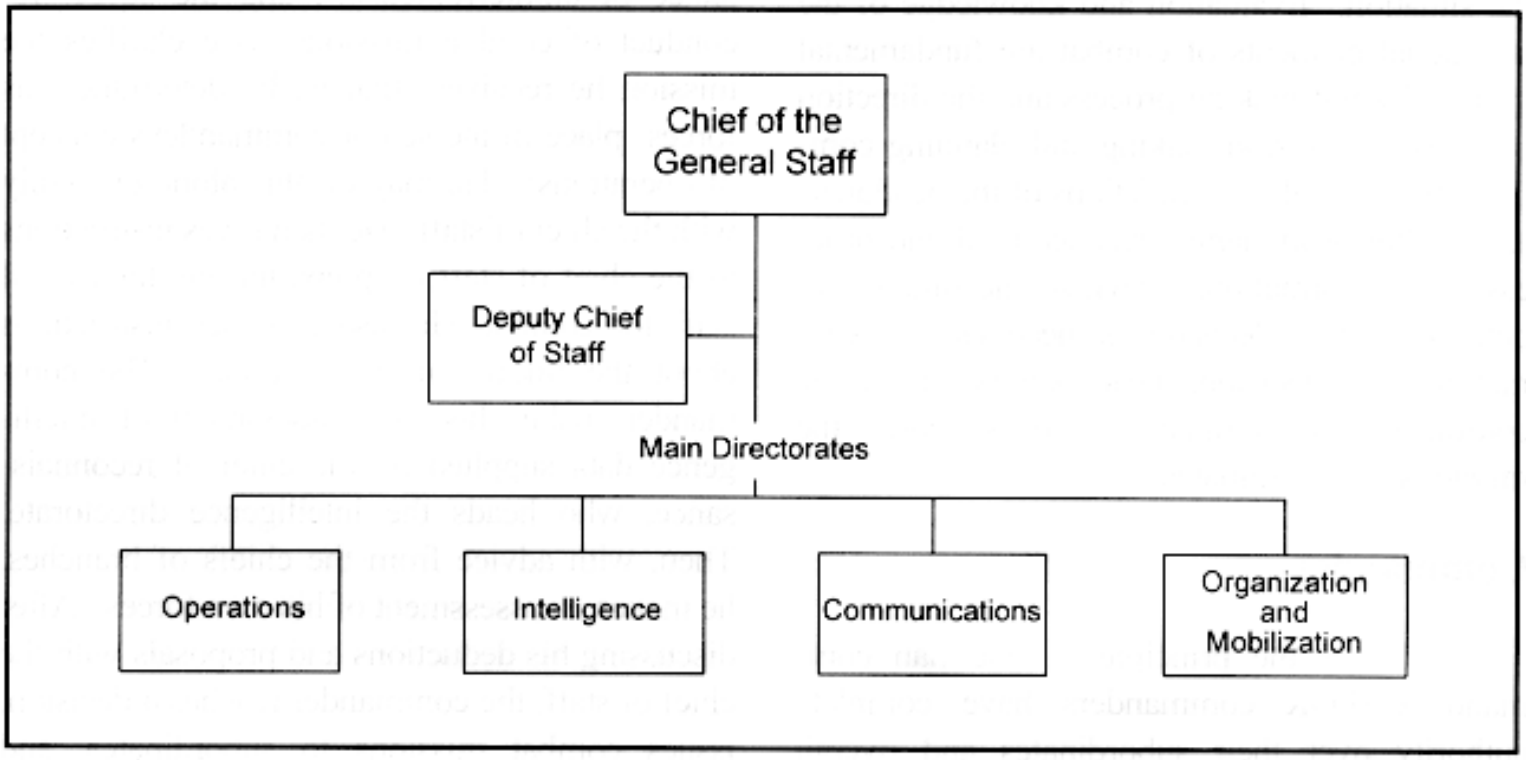

Figure 7-2. The General Staff.

Theater Headquarters

The OPFOR may have an intermediate high command level between the General Staff and the field forces in a theater. If so, the theater headquarters acts to effectively centralize and integrate General Staff control over theaterwide offensive (or defensive) operations. Establishing one or more of these theater headquarters provides more-flexible and responsive strategic control of forces.

OPERATIONAL-LEVEL ORGANIZATION

Within the C^2 system, the headquarters includes the commander, his staff, the chief of staff, and the chiefs of branches and their staffs. They perform the functions required to control the activities of forces preparing for and conducting combat.

The primary function of these headquarters are acquiring and processing information on the situation. Evaluation and knowledge of the situational elements of combat are fundamental to the decision-making process and the direction of troops. Decision making and planning combat actions are also C^2 functions of the headquarters. After headquarters has acquired and processed the information, it reviews the situation to determine if a decision is necessary. After making the decision, headquarters organizes, coordinates, disseminates, and supports the missions of subordinates.

Commander

Under the principle of one-man command, OPFOR commanders have complete authority over their subordinates and overall responsibility for their actions. Because the commander's decision is the basis for planning and executing combat tasks, his role activates and guides all other headquarters. This centralized authority enables the commander to maintain troop discipline and unity and to act decisively. Under the fluid conditions of modern warfare, even in the course of carefully planned operations, the commander must accomplish assigned missions on his own initiative without constant guidance from above.

At the operational level, orders are issued over the signatures of the commander as well as his chief of staff. This is indicative of the fact that the commander does not act alone, but rather with the support of the whole C^2 structure. This

procedure reflects an acceptance of the complexity of the control process and that the sharp rise in the level of responsibility is really beyond a single individual's capabilities. This sharing of responsibility and risk contributes to a much greater display of initiative at the operational level.

The commander is responsible for the combat capability of subordinate units, the organization of combat operations, the maintenance of uninterrupted C^2, and the successful conduct of combat missions. He clarifies the mission he receives (that is, he determines his forces' place in the senior commander's concept of operations). He may do this alone or jointly with the chief of staff. He then gives instructions to the chief of staff on preparing his forces and staff for combat. He also provides instructions about the timing of preparations. The commander makes his own assessment of intelligence data supplied by the chief of reconnaissance, who heads the intelligence directorate. Then, with advice from the chiefs of branches, he makes an assessment of his own forces. After discussing his deductions and proposals with the chief of staff, the commander reaches a decision, issues combat missions to subordinates, and gives instructions about planning the operation. He then organizes coordination within his organization and with adjacent forces and other elements operating in his area of responsibility.

During the course of operations, the commander must constantly evaluate the changing situation, predict likely developments, and issue new combat missions in accordance with his forecast. He also keeps his superiors informed as to the situation and character of friendly and enemy actions and his current decisions.

Compared to their tactical counterparts, operational commanders are less likely to be visible to the fighting troops. They cannot exercise continuous C^2 of large formations from the front line. It is the task of army group, army, and corps commanders to turn tactical success into operational success and not to supervise the achievement of tactical success. Only on rare occasions would operational commanders leave their own forward CPs and go down to the CPs of nearby main-axis subordinate units to issue instructions.

Staff

The commander controls and supervises subordinates through the staff. However well-trained and broadly experienced an OPFOR commander may be, only full use of his staff can allow him to effectively prepare his forces for combat. A well-trained staff provides rapid, in-depth planning for combat activity and then coordinates and monitors the execution of the resulting plans. Proper use of this staff allows the commander to focus on the most critical issues in a timely manner and to preserve his energies.

In the decision-making and planning process, the staff--

- Prepares the data and estimates the commander uses to make a decision.
- Plans and implements the basic measures for comprehensive support of a combat action.
- Organizes communications with subordinate, coordinating, and adjacent headquarters and the next higher staff.
- Monitors the activities of subordinate staffs.
- Coordinates ongoing activity with higher-level and adjacent staffs during an operation (battle).

All major headquarters have the same basic organization, although each differs in size and complexity. The higher the level, the larger and more complex the staff. Therefore, the organization of command and staff elements is similar at army group, army, or corps levels. The main difference is that army- and corps-level staffs are smaller. In all cases, the staff organization is leaner than typical U.S. counterparts.

The staff consists of two elements: the principal staff and the primary staff. Figure 7-3 depicts the principal staff officers of an army group headquarters.

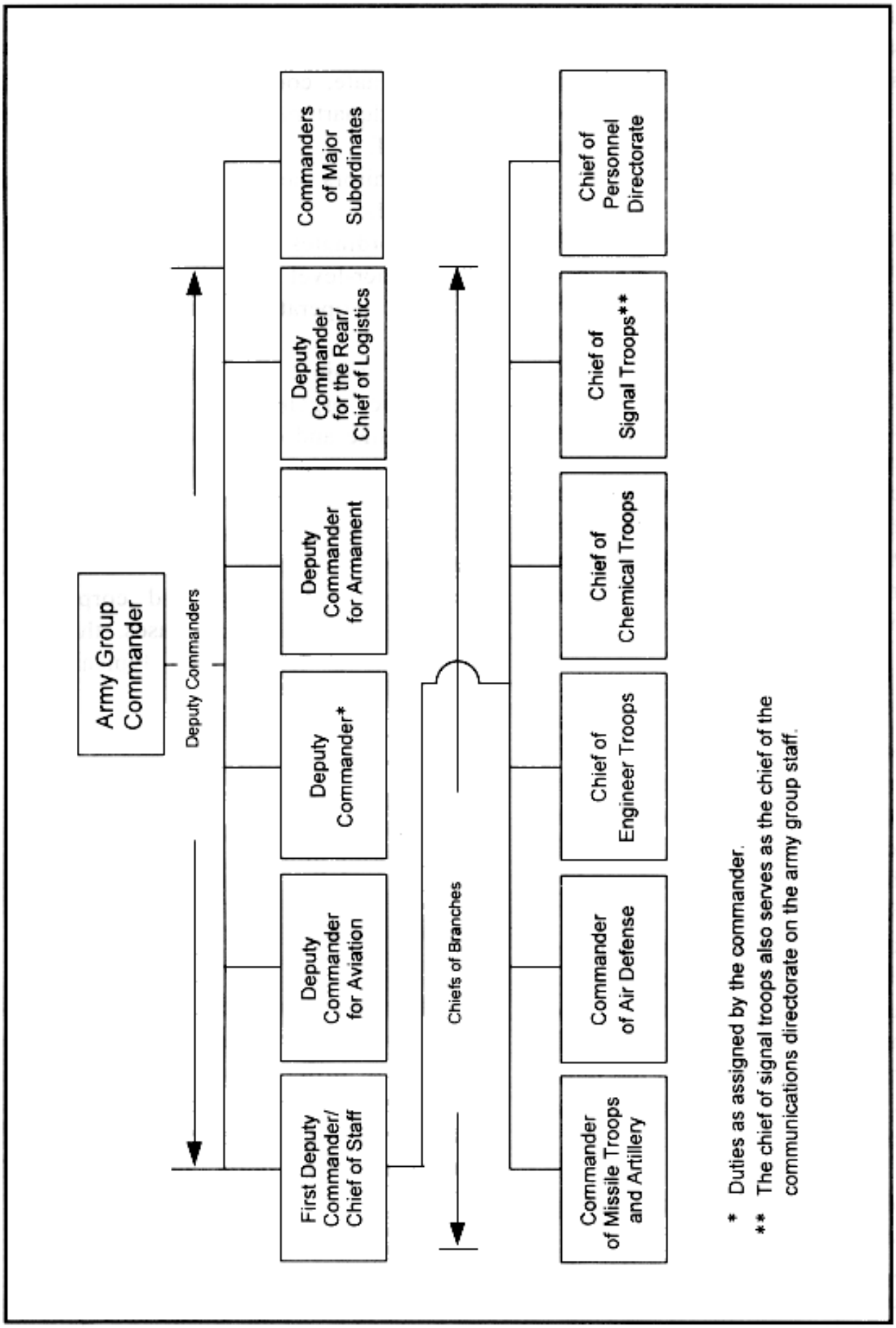

Figure 7-3. Principal staff organization (army group).

Principal Staff

Principal staff officers are directly subordinate to the commander. (See Figure 7-3.) These officers include deputy commanders (such as those for the rear, armament, or aviation) and their staffs, chiefs of branches and their staffs, and the chief of staff.

Chief of Staff. Preeminent among OPFOR staff officers is the chief of staff position (found at every level from the General Staff down to battalion). The chief of staff is the commander's closest assistant. Only he has the power to speak in the name of the commander, and he normally countersigns all written orders and combat documents originating from the commander's authority. He alone has the authority to sign orders for the commander and to issue instructions in the commander’s name to subordinate formations and the chiefs of branches. In emergency situations, he can make changes in the operational plans of subordinate commanders. Thus, it is vital that he understands not merely the commander's specific instructions but also his general concept and train of thought. He runs the main CP and controls the battle during the commander's absences.

Chiefs of Branches. The army group, army, or corps commander also has chiefs of branches subordinate to him. They normally report to him through the chief of staff. The commander of missile troops and artillery (CMTA) at the operational level is a commander (rather than chief). There is also a commander of air defense. There are chiefs of engineer, chemical, and signal troops and a chief of the personnel directorate. Each of these individuals has his own staff.

At every level from brigade upward, chiefs of branches augment the primary staff, conforming to the needs of the level of command. These officers bring specialized knowledge and skills to the control of various elements of the combined arms. Although the chiefs perform as an element of the commander’s staff in advising him on the use of forces in their branch of troops or services, in many cases they are also commanders. They are responsible for artillery, engineer, or air defense units readiness and performance. Like the primary staff, the chiefs continuously interact with the corresponding chiefs of branches at both higher and lower levels of command.

Although directly subordinate to the commander of their own force, chiefs of branches also receive and issue directives and instructions through a chain of special subordination within their branch. For example, because of the complex coordination required to integrate army group and army fire support planning in an offensive, the army CMTA can be specially subordinate to the army group CMTA. This special subordination serves as a high-speed channel for guidance, control, and coordination concerning the allocation and use of missile and artillery assets, while preserving the authority and responsibility of the army group and army commanders.

Thus, each chief has a dual chain of command. He is primarily responsible to the commander (or the chief of staff) in whose headquarters he serves, but he also receives additional instructions and guidance from his own counterpart at the next higher level. This dual chain of reporting reduces the administrative and technical burden on the commander, so he can concentrate on the operations (tactics) of his maneuver elements. The commander at the highest level has centralized control over all the assets available to him. However, the drawback is the increased need for coordination, which can sometimes create problems of responsiveness.

Primary Staff

Primary staff officers are all staff officers who are subordinate to the chief of staff and are members of the "staff" in their primary duties. For example, the chief of the operations directorate and chief of reconnaissance are primary staff officers. The army group chief of staff has four directorates subordinate to him: operations, intelligence (reconnaissance), communications, and organization and mobilization. So are several services. (See Figure 7-4.)

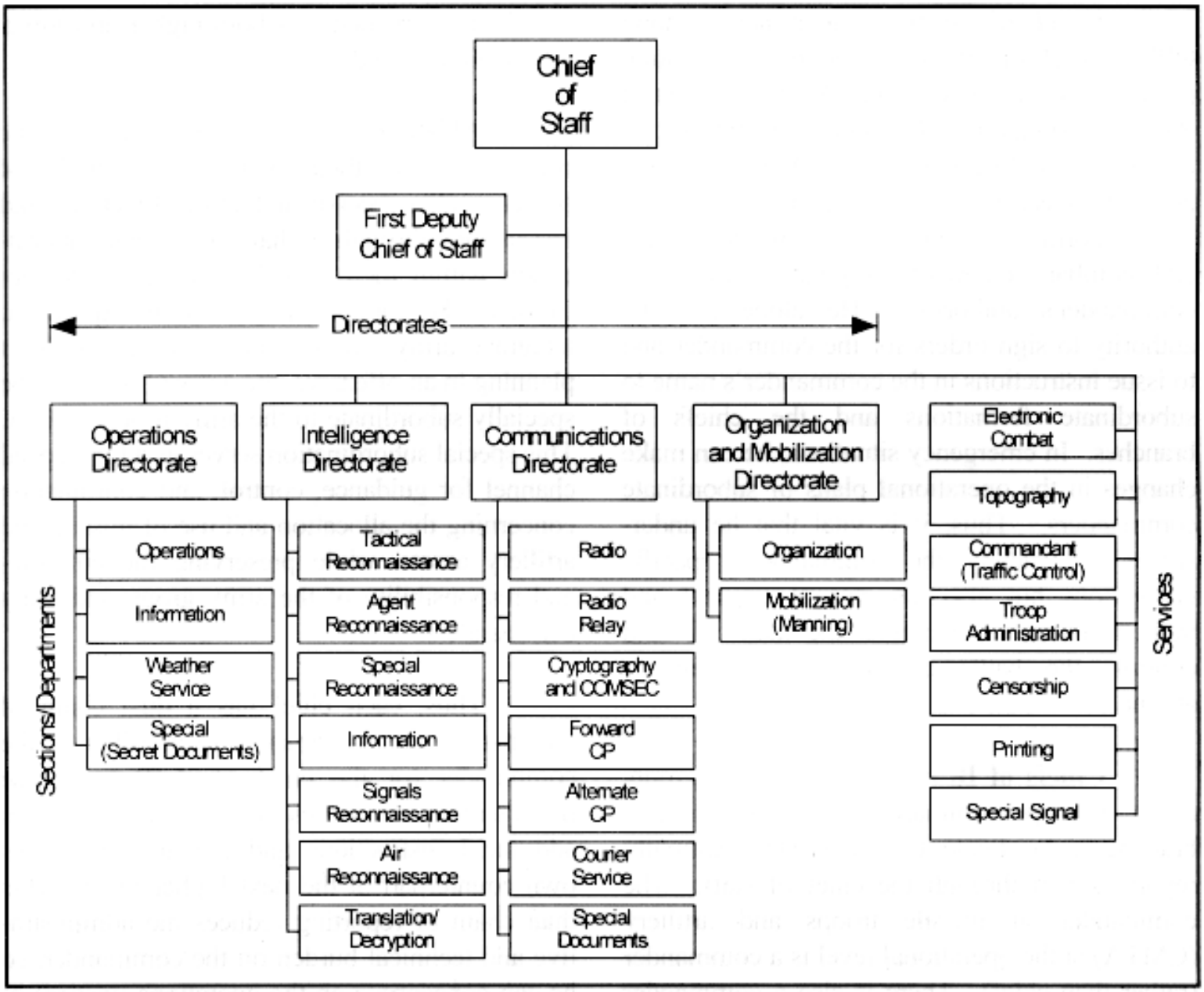

Figure 7-4. Primary staff organization (army group).

The ***chief of operations*** (chief of the operations directorate) prepares preliminary instructions (warning orders), calendar plans, and operational directives. His directorate prepares the COF calculations the commander requires for making his decision. The chief of operations plays a key role in planning the operation.

The ***chief of reconnaissance*** heads the intelligence directorate. He is responsible for preparing the reconnaissance plan, allocating forces and coordinating reconnaissance assets, and analyzing and disseminating intelligence information. He ensures that the reconnaissance and intelligence-gathering effort is continuous, beginning as soon as his unit receives preliminary instructions from higher headquarters.

The ***chief of communications*** heads the communications directorate. The staff of this directorate is responsible for communications planning; coordinating signal operations with overall operational planning; deciding on the location, composition, and employment of communications centers and equipment; and issuing signal operating instructions. In his dual role as chief of signal forces (on the principal staff), he exercises operational control over organic and attached signal units.

The ***chief of organization and mobilization*** determines the assets needed for army group operations and coordinates

for their employment. He also prepares some of the calculations the commander requires for making decisions.

INFORMATION WARFARE

Information warfare activities, particularly defensive measures, play a significant role in ensuring the viability of the OPFOR C^2 process. IW operations are planned at the strategic, operational, and tactical levels. IW measures, combined with the mobility and redundancy of the C^2 system, can provide a high degree of survivability even if the enemy is successful in disrupting or destroying individual elements of the system.

The OPFOR plans and integrates actions to achieve an information advantage at critical times and locations on the battlefield. As stated in Chapter 2, there is both an offensive and defensive aspect to IW. To protect the C^2 process, the OPFOR focuses on defending three distinct but related areas: information, information-based processes, and information systems.

Information

The OPFOR considers information to be a national resource that requires substantial protection. This includes information on friendly forces, capabilities, and intentions, as well as information the OPFOR possesses or may obtain concerning potential or actual enemies. Protective measures used by the military include the use of cryptographic systems for encryption of communications, the use of alternate communications methods, and the minimizing of communications and noncommunications emissions. While the potential activities related to computer warfare decrease once conflict begins, the OPFOR continues to practice defensive measures. These include limiting unauthorized access to information systems and supporting data bases and efforts to screen or remove computer viruses. This is especially critical for those systems that may be accessed through digital data transmissions or are tied into a commercial communications network.

Information-Based Processes

The OPFOR protects any process that uses information. These include the decision-making process, the strategic planning process, and the intelligence cycle. One of the most critical elements of any information-based process is the accuracy of the information the processes use to perform analysis or arrive at a decision. The OPFOR uses a wide variety of reconnaissance, surveillance, and target acquisition systems across the entire electromagnetic spectrum. Recognition of enemy deception efforts is vital to ensuring the OPFOR decision-making process is not contaminated by false or misleading information. Successfully defending information and information systems directly results in more effective information processes.

Information Systems

Information systems include the entire infrastructure, organization, personnel, and components that collect, process, store, transmit, display, disseminate, and act on information. Protective measures focus on preventing disruption or destruction from both physical and electromagnetic means. Protection and security measures include extensive use of camouflage, cover, and concealment of CPs and supporting communications facilities. Redundant communications links between and within echelons utilizing different communications types (e.g., high frequency, satellite communications (SATCOM), radio relay) minimize disruption due to the loss of a link. Multiple and redundant CPs ensure continuous C^2 of forces during movement or in the event a CP is detected and destroyed. Doctrinal tenets such as skip-echelon communications compensate for the loss of an intervening level of control. Electromagnetic spectrum operations (ESO) focus on preventing enemy electronic reconnaissance and neutralization activities.

Staff Responsibilities

The ***information warfare officer*** is responsible for developing the IW plan. A member of the operations staff, the IW officer develops the IW plan based upon the commander’s guidance. After reviewing and concurring with the plan, the chief of operations forwards the plan to the chief of staff for his approval.

The IW officer is responsible for coordinating with principal and primary staff officers and their staffs to ensure the

objectives identified in the plan are met. The plan provides guidance for targeting high-priority enemy assets and activities at the appropriate time and place, as well as measures necessary to protect the OPFOR's own command and control.

The following principal and primary staff officers have specified responsibilities in carrying out IW plan taskings. In many instances, successful accomplishment of the plan requires close coordination between the staff elements, not just with the IW officer.

The ***chief of reconnaissance*** is perhaps the most critical staff officer supporting IW. He is responsible for the collection of information required for the conduct of electromagnetic spectrum operations, identifying and locating targets for destruction, and the counterreconnaissance battle aimed at degrading or denying the enemy's ability to identify OPFOR capabilities and intentions. The veracity and timeliness of information collected is critical to the OPFOR planning process and must identify enemy efforts at deception. The chief of reconnaissance is also responsible for psychological warfare directed against the enemy. He coordinates with the chief of operations to ensure psychological warfare activities do not conflict with planned activities of the OPFOR and are consistent with the overall mission.

The ***commander of missile troops and artillery*** ensures the targeting of enemy assets identified for destruction in the IW plan. He allocates appropriate assets to engage those targets.

The ***commander of air defense*** ensures the correct placement of air defense systems and jammers protecting high-value assets. He is responsible for disrupting airborne radar emitters. The air defense staff must coordinate to receive the most up-to-date information from the intelligence directorate on the emitters' signal parameters and characteristics. It also coordinates with the operations staff when deploying radar deception jammers in support of a deception operation.

The ***deputy commander for aviation*** ensures the availability of dedicated reconnaissance and jamming aircraft, as well as their protection. He also provides strike aircraft for the destruction of targets beyond the reach of artillery and missile strikes.

The ***chief of engineer troops*** directs engineer operations in support of deception. Activities include the preparation of false positions and routes, and the provision of false thermal, radar, and visual signatures.

The ***chief of signal troops*** is responsible for the efficient use and survivability of the C^2 process. He ensures all information security measures are followed, to include the protection of computers and information-handling systems from enemy intrusion efforts. He provides dedicated signal assets as required in support of deception operations. The chief of signal troops is also responsible for deconflicting frequencies between signal requirements, ESO, and deception.

The ***chief of chemical troops*** provides protective smoke for concealment of OPFOR activities and assets from enemy reconnaissance, as well as degrading or denying target acquisition efforts. Smoke is used as a supporting component of deception.

The ***chief of the electronic combat service*** is responsible for the conduct of jamming operations targeting high-priority enemy communications nets. He provides technical expertise to the chief of air defense and the deputy commander for aviation as required.

The ***chief of operations*** has overall responsibility for the development of the IW plan. As the "first among equals," he provides the final recommendation for those instances where there is conflicting requirements amongst the staffs. He also provides critical oversight of the deception plan to ensure deception activities do not conflict with actual or planned OPFOR operations.

COMMAND POSTS

The OPFOR plans to exercise strategic, operational, and tactical control over its wartime forces from an integrated system of command posts. It has designed this system to ensure uninterrupted control of forces. Because the OPFOR expects the C^2 system to come under heavy attack in wartime, its military planners have created a CP structure that emphasizes survivability through dispersal, stringent security measures, redundancy, and mobility. They have constructed a CP system that can sustain damage with minimum disruption to the actual C^2 process. In the event of disruption, they can quickly reestablish control. This extensive system of command posts extends from the hardened command facilities of the national command authority to the specially designed command vehicles from which OPFOR tactical commanders control their units. The number, size, and types of CPs depend on the level of command.

OPFOR ground forces use six basic types of command posts. (See Figure 7-5.) Not all levels of command use all six types. Generally, the larger force groupings use more CPs of various types due to their greater span of control. The redundancy provided by multiple CPs helps to ensure that the C^2 process remains survivable.

Unit	Main CP	Alt CP	Fwd CP	Aux CP	Rear CP	Abn CP
Brigade	X		X		X	
Division	X	(X)[1]	X		X	X
Corps	X	X	X		X	X
Army	X	X	X	X	X	X
Army Group	X	X	X	X	X	X
Theater[2]	X	X	X	X	X	X

[1] Does not normally exist in offensive operations.

[2] Not all theaters have their own CINC and headquarters/CPs.

Figure 7-5. OPFOR command post system.

Theater-Level

A theater headquarters, if established, uses the same number and types of CPs as the army group: main, alternate, forward, auxiliary, rear, and airborne. The main CP at this level may initially be in permanent, hardened bunkers; the other CP types are at less-protected sites. Airborne CPs are most likely aboard fixed-wing aircraft.

Operational-Level

The operational-level C^2 system is not a rigid structure. Its organization and deployment can vary with the mission, situation, and combat disposition of the particular army group or army. Army groups and armies use the same types of CPs (main, alternate, auxiliary, forward, rear, and airborne). Army-group-level airborne CPs may be aboard fixed-wing aircraft. However, helicopters are more likely to serve this purpose at army level. Various functional groupings of staff personnel occupy different CPs, depending on their roles and the tasks associated with the post. Figure 7-6 shows the typical deployment of CPs in the advance.

CP	Dimensions of CP (km^2)[1]	Separation of Control and Support Groups	

	Control Group	Support Group	$(km)^2$	Remarks
Army Group Forward	2.25-4	0.75-2	1	Moves with first-echelon armies
Army Group Main/Alternate	16-25	8-15	2-3	Moves behind first-echelon armies
Army Group Rear	16-25	8-15	2-3	Usually collocated with rear service elements, probably near a railhead
Army Forward	1-2.25	0.5-0.75	0.5-1	Moves with first-echelon divisions
Army Main/Alternate	4-9	3-4.5	1.5-2	Moves behind first-echelon divisions
Army Rear	4-9	3-4.5	1.5-2	Usually collocated with rear service elements

[1] The control group comprises the commander and staff, and the support group, the transport and signal elements.
[2] Communications centers are remoted 3-4 km from the support group, and HF transmitters may be remoted as much as 15-20 km.

Figure 7-6. Typical deployment of command posts in the advance. (part 1)

Main Command Post

At all levels, the main CP is the focus of control. It consists of the commander and his staff. Its organizations include a communications center, a control group, a support group, and if necessary, an airborne control element. At army group, army, and corps levels, the main CP is also generally the focus of command, since commanders at these levels tend to remain at their main CP to keep a firm grip on developments across their wide frontages.

The chief of staff runs the main CP, directing the staff in translating the commander's decision into plans and orders. The main CP coordinates the movement and deployment of forces and monitors their combat effectiveness.

Alternate Command Post

The purpose of the alternate CP is to be a substitute for the main CP. Its primary function is to monitor the situation and assume C^2 responsibilities in the event the main CP becomes ineffective. It consists of officers designated specifically by the commander, with personnel and equipment taken from the staff and other headquarters, as well as from communications and service elements. Thus, its equipment normally duplicates, but is less extensive than, that of the main CP. It also has reduced manning levels.

While it is usual to create an alternate CP in defense, it is less common during the offense. If a unit does not establish an alternative CP, it may designate a subordinate headquarters to perform its function. In addition, an alternate CP can assume control when the main CP is moving to another location, if there is no forward CP to do so. The location of the alternate CP is not forward of but is lateral to the main CP. The deputy commander is usually in the alternate CP if he is not in the forward CP.

Forward Command Post

An army group or army may deploy a forward CP. Its purpose is to further the commander’s control on the main strike axis. It usually consists of the deputy commander and officers of the staff, branches, special troops, and services.

Particularly at division level, commanders like to move with the first echelon on the main axis in the offensive. This allows the commander to obtain personal observation of key sectors and contract with his subordinate commanders. The commander may bring with him a small group of principal advisers, for example, the chiefs of the operations; intelligence; and communications staff sections; the CMTA and, perhaps, the chief of engineer troops; and an air force representative. When formed, and when the commander is present, the forward CP is the main focus of command, though the chief of staff (remaining in the main CP) has the authority to issue orders in the commander's absence. The forward CP is generally established only in the offense. In the defense, the only reason for forming a forward CP would be to control the counterattack/counterstrike.

Auxiliary Command Post

At army group, army, and corps levels, the operational commander creates an auxiliary CP to provide C^2 over subordinate units operating on isolated or remote axes. He may also use it in the event of disrupted control or when he cannot adequately maintain control from the main CP. An officer appointed at the discretion of the higher commander mans it, with support from a communications unit.

When a single army operates on an isolated axis with an isolated mission, it may have an auxiliary CP from its parent army group. It may be no more than the headquarters of that particular army, in both numbers and organization. (The exception is augmentation of communications personnel.) However, in many cases the army group may deploy a small "operations group" to assist the army commander and staff who are controlling forces on the separate axis.

Rear Command Post

The chief of logistics (deputy commander for the rear) establishes and manages this post. He normally does this in cooperation with the deputy commander for armament. Therefore, the rear CP consists of these two deputy commanders and their staffs. It has the mission of planning and controlling the entire scope of logistics and maintenance functions. It controls all rear supply and special-technical units, and establishments. Like the main CP, the rear CP functions continuously. In cases of extreme emergency, the rear CP can assume control of the force (formation) for limited periods.

Other Types

Though all command posts are ideally mobile, several have the specific designation of "mobile command posts." These posts are useful when the commander desires a closer look at the battlefield situation, or they can function as forward, auxiliary, and other types of CPs. The OPFOR may place an airborne control post on helicopters and transport aircraft. They are necessary when operations become fluid and spread over a wide area and to maintain continuity of control when other CPs are displacing. Army group commanders normally establish airborne CPs in fixed-wing aircraft, although they may also use CP variants of heavy-lift or medium helicopters. Army commanders normally establish airborne CPs using medium helicopters.

Operations Groups

Armies or army groups might form temporary operations groups to assume control over part of the force. This occurs when control from the main CP becomes problematical, either because of geographical separation or due to the fact that the grouping in question is operating on a different axis from the main body. Commanders can also set up operations groups with a subordinate commander and a team of specialists to plan and control special operations, such as an amphibious landing.

<u>Survivability</u>

The OPFOR C^2 system stresses the need to maintain continuous, reliable control of forces. It takes numerous measures to prevent disruption and to enhance survivability. The IW activities discussed earlier in this chapter contribute to the survivability of the C^2 system. Command posts are usually mobile (that is, in vehicles) but may also be fixed. By

emphasizing the use of mobile CPs, planners hope to minimize the disruption of C^2 that would occur with the enemy's destruction of this element of the C^2 system. Security of CPs is important, and the OPFOR takes a number of measures to ensure it.

Mobility

The OPFOR has configured its C^2 system to provide a high degree of survivability through mobility, reliability, and flexibility. Highly mobile signal units support mobile CPs. This mobility, coupled with the redundancy and multiplicity of CPs and communications systems, gives OPFOR commanders great flexibility in organizing and deploying the C^2 system. Thus, they are able to provide effective control in varied situations.

Location

The commander decides where to locate the CPs and where they will move. He locates CPs in areas affording good concealment and with a good road net access, either on or just off the main axis. Higher headquarters dictates the locations of its immediate subordinates' main and rear CPs. Figure 7-7 shows the approximate locations of various CPs in relation to the line of contact and how frequently they normally move. However, these distances typically increase as the momentum of operations quickens. Similarly, the frequency of movement can vary, as dictated by the speed of advance, the stability of defense, or the rate of withdrawal.

	Distance from Line of Contact (km)			
CP	**March Formation**	**Prebattle Formation**	**Battle Formation**	**Frequency of Displacement**[1]
Army Group Forward	80-150	80-150	25-40	1-3 per day
Army Group Main/Alternate	150-250	150-250	100-150	1 per 2-3 days
Army Group Rear	250-350	250-350	150-250	1 per 2-3 days
Army/Corps Forward	20-40	20-40	10-20	Constantly moving
Army/Corps Main/Alternate	75-150	75-150	25-40	1 per day[2]
Army/Corps Rear	150-200	150-200	60-100	1 per day
Division Forward	10-20	2-5	2-5	Constantly moving
Div Main/Alternate	50-75	10-20	10-20	1-3 per day
Division Rear	75-100	40-80	30-40	1-3 per day

[1] The frequency of displacement obviously depends partly on the tempo of the operation. Figures here assume a rate of advance of 40-60 km per day. Even given a slower rate of advance, however, it is likely that moves would occur the same frequency to avoid detection and destruction.
[2] The army/corps main CP may move only once every 2 days. In the course of an army/corps operation, planners envision 2 or 3 moves.

Figure 7-7. Typical deployment of command posts in the advance (part 2).

The OPFOR locates CPs so no single weapon can eliminate more than one. Remoting communications facilities lessens the chance of the enemy's locating the actual command element by radio direction finding.

Colocation

During some particularly difficult phases of an operation/battle, where close cooperation between formations/units is essential, the forward CP of one element may be collocated with the forward or main CP of another. Examples are the commitment of an OMG or the passing of a second echelon through the first.

Movement

Commanders generally deploy army group and army CPs in depth to facilitate control of their entire zones of action. (See Figure 7-8.) During lengthy moves, CPs may bound forward along parallel routes, preceded by reconnaissance parties that select the new locations. Normally, the main and forward CPs do not move at the same time, with one moving while the other is set up and controlling operations. During an administrative march, when there is little or no likelihood of contact with the enemy, a CP may move into a site previously occupied by another CP. However, during a tactical march or when contact is likely, the OPFOR will not occupy a site twice, because to do so would increase the chances of an enemy locating a CP. While on the move, CPs maintain continuous contact with subordinates, higher headquarters, and flanking organizations. During movement halts, the practice is to disperse the post in a concealed area, camouflaging it if necessary and locating radio stations and special vehicles some distance from the actual command center. Because of dispersion in a mobile environment, CPs are often responsible for their own local ground defenses.

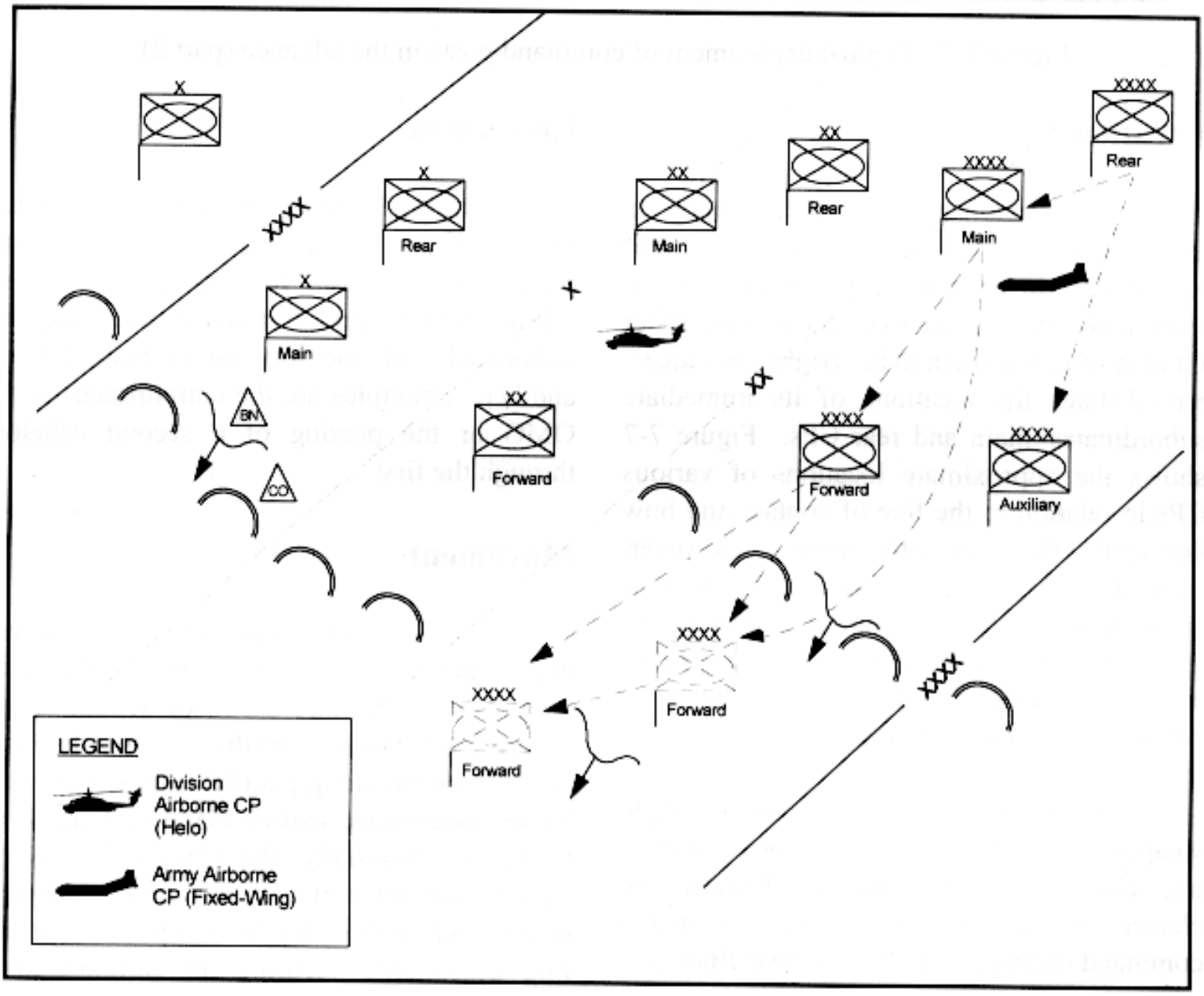

Figure 7-8. Movement of CPs in the offensive.

During the movement of a main CP, the OPFOR maintains continuity of control by handing over control to either the forward or airborne CP or, more rarely. to the alternate CP. Often key staffs move to the new location by helicopter to reduce the time spent away from their posts. Before any move, headquarters' troops carefully reconnoiter and mark the new location. Engineer preparation provides protection and concealment. (See Chapter 3 for additional detail on the deployment of CPs during the march.)

Defense of Command Post

Command posts are a high priority for air defense protection. Ideally main CPs also locate near second-echelon/reserve elements to gain protection from ground attack. Nevertheless, circumstances often dictate that they provide for their own local defense. Engineers normally dig in and camouflage key elements.

Good camouflage, the remoting of communications facilities, and the deployment of alternate CPs makes most of the C^2 system fairly survivable. Nevertheless, one of the most important elements, the forward CP, often remains vulnerable. It forms a distinctive, if small, grouping, well within artillery range, even at army level. Its destruction could seriously affect the conduct of the battle.

Despite protective measures, the simultaneous destruction of main and alternate CPs would cause a significant disruption. Though the OPFOR emphasizes initiative and creativity in combat, it is not the type of initiative that would allow an operational force to rebound in a timely or efficient fashion after the destruction of its control system. The OPFOR practice of skip-echelon communications would, however, enable the commander and staff of the next-higher command level to exert a measure of control over the organizations two levels below it, thus reducing the effects of the disruption.

Communications

The chief characteristics of communications supporting the C^2 system are security, survivability, and flexibility. In the OPFOR view, centralization is a prerequisite to achieving the flexibility required to ensure timely concentration of forces. Redundancy in equipment, as well as communications links and CPs, is the primary means of ensuring the control structure's security and survivability.

Assets

Signal units at all levels, from army group to battalion, support communications within the headquarters and provide communications with higher, subordinate, and adjacent organizations. Signal units use three different means to ensure continuity:

1. Landline as far forward as possible.
2. Multichannel radio-relay.
3. Troposcatter and satellite links down to army level (and below, for instance, in the case of OMGs).

Encrypted communications are common from brigade upward, but may extend to the lowest levels in the most modern OPFOR units.

At the operational level, an army group, army, or corps headquarters normally task-organizes its signal assets to support its formation of forward, main, alternate, and rear CPs. The numbers and types of signal units can vary greatly depending on the size and makeup of the operational force grouping under a particular headquarters.

Each army group has at least one signal brigade. In addition to that, it may have a second signal brigade and/or a smaller signal regiment. A signal regiment at army group level differs from those at army or corps level by having an organic troposcatter battalion and a SATCOM company, as does a signal brigade. In lieu of or in addition to a signal brigade or regiment, an army group may receive communications support from separate battalions. These may include one or two signal battalions, a radio relay battalion, and/or a troposcatter battalion.

An army normally has a signal regiment. In lieu of such a regiment, however, it may get its communications support from separate battalions. These may include a signal battalion and/or a radio relay battalion. A corps would have at least a signal battalion and perhaps an entire signal regiment. At army or corps level, troposcatter or SATCOM units or stations from them are present only if allocated from the parent army group.

Responsibilities

The commander at each level is responsible for the organization of communications to meet immediate requirements. He tasks his chief of communications with establishing and maintaining continuous communications. The chief of communications is responsible for the actual organization of communications, in accordance with the orders of his commander and chief of staff, as well as the communications instructions of higher headquarters.

Nets

OPFOR signal troops deploy and operate the communications system which supports operational command and control. This includes communications lines from the CPs to subordinate organizations and direct lines of communication between corresponding commanders. A general-purpose support communications net provides service to all troops located in its area of deployment. At army group, army, and corps level, the OPFOR deploys three types of communications centers--CP, support, and auxiliary. Near the main CP communications center, it deploys a support communications center at the intersection of axial and lateral communications links or at communications channel distribution (switching) points. This center switches, routes, and transmits to the CP and auxiliary communications centers. An auxiliary communications center provides communications with forces operating at a considerable distance from higher headquarters' CP and support communications centers. It can also serve forces that lack the personnel and facilities to maintain direct communications with CPs or tie-in to support communications centers.

In addition, the OPFOR uses various types of more specialized communications nets as follows:

- ***Command***. Commanders use these nets primarily to pass orders. Channels are generally direct from a superior to his immediate subordinates, but they also permit skipping echelons.
- ***Chief of Staff***. When the commander is working from a forward or airborne CP, the chief of staff duplicates the command net so he is in touch with all major subordinate headquarters. This enables the chief of staff to issue detailed orders implementing the commander's decision. There is also a back-up net enabling the alternate CP to assume control without delay if the main CP is disrupted or destroyed.
- ***Staff***. The chief of staff uses staff nets for directing other staff elements at this level and for keeping subordinate and superior staffs informed of the commander's intentions. Principal staff officers have their own dedicated nets to ensure the uninterrupted receipt of information and the issue of orders necessary to fulfill their function in a timely fashion.
- ***Coordination***. The OPFOR uses coordination nets between commanders to ensure mutual understanding and unity of purpose and action with flanking formations. These nets also allow coordination between first and second echelons, reserves, or OMGs at the critical time of the latter's commitment. Another use is for coordination between main and rear CPs.
- ***Special-purpose***. The OPFOR may establish special-purpose nets between main CPs and selected subordinates. The main CP uses these links to communicate with forces executing special missions.

COMMAND AND CONTROL PROCESS

Command and control is a continuous process at all levels of command. The OPFOR recognizes seven elements in this process:

1. Acquiring and processing information.
2. Decision making and planning.
3. Disseminating missions and organizing coordination.
4. Organizing and directing combat support.

5. Preparing troops for combat.
6. Organizing and maintaining control.
7. Monitoring readiness and executing missions.

The remainder of this chapter primarily focuses on the first three elements of the C^2 process. Other chapters address the remaining elements.

Acquisition and Processing of Information

Acquiring and processing information is always the first function in the C^2 process. This function is a continuous, active process of requesting, receiving, collating, analyzing, and disseminating information commanders and staffs need for decision making and planning. However, the physical collection of information is not actually part of the C^2 process.

Strategic-Level Information Requirements

At the General Staff level and above, military and political information requirements are global in scope. The OPFOR has a continuous requirement to evaluate changes in the military or political capabilities and intentions of foreign nations in relation to the State. The accuracy of these assessments can directly influence the selection of military and political goals, the structure of the armed forces, and the strategic concept for using military power.

Operational-Level Information Requirements

Army group, army, and corps staffs are the focal points for detailed situation evaluation and large-scale planning for combat units. Therefore, they have a particularly heavy demand for information to support the decision-making and planning process. To function efficiently, operational-level staffs require high-resolution data on both enemy and friendly forces. Required periodic and special reporting is the primary source of detailed, accurate, and timely information on friendly forces. The availability and timeliness of such friendly force data depends largely on the availability and efficiency of the necessary communications links. On the other hand, acquiring information on the enemy involves collecting and reporting in a hostile environment. Operational staffs must analyze conflicting and incomplete data and assess and correlate intelligence provided by higher headquarters.

Information Requirements

The commander and staff must bring together all available data applicable to their mission and use the data skillfully to achieve their objectives. At a minimum, these data include information on enemy and friendly forces, terrain, weather, and climatic and seasonal conditions.

Enemy. Of these elements, information about the enemy is the most important. An OPFOR commander must have continuous, reliable information about the enemy's effective combat strength and organization to determine the correlation of forces. He must receive information concerning enemy locations, reinforcing units, C^2 systems, and defensive positions. Information pertaining to the disposition and potential use of precision weapons is important. The required degree of detail will vary in different situations and at various levels of command. Constant attention is given to identifying enemy deception efforts. The OPFOR emphasizes multi-spectral collection efforts to reduce the potential effects of the enemy’s deceiving a single reconnaissance, surveillance, and target acquisition asset.

Friendly forces. Information about friendly forces is necessary to help the commander determine how best to use them and to identify requirements for coordination. OPFOR planners consider training status when making qualitative calculations of relative strengths of their own and enemy forces. In addition, they must consider how missions of other friendly forces may affect the accomplishment of their own assigned tasks.

Combat environment. The NBC environment, the terrain, and seasonal conditions also provide OPFOR planners insight as to what they can and cannot do effectively during a combat action. Planners use this information to determine routes, use of NBC weapons, and types of camouflage. This information can also help determine the effects these factors could have on friendly actions and on the enemy's possible courses of action.

Economy and politics. The economic and sociopolitical makeup of a region interests OPFOR military planners. Information about the hostile population enables the OPFOR to exploit local resources and to plan appropriate levels of security and perception management strategies to manipulate the population.

Decision Making and Planning

The commander's decision is the basis for command and control. The OPFOR commander must assess the situation and make a decision. At army group, army, or corps levels, he bases his decision on his assigned mission, his knowledge of the senior commander's concept of operations, his knowledge of the general situation, and his review of a series of options his chief of staff presents. (This differs from the tactical level, where the commander normally bases his decision on personal observation of the battlefield and selects one of a number of standardized solutions to standard tactical problems.) The decision includes the concept, organization for combat, axes of advance, missions for major subordinates, and C^2 organization.

The commander conveys his decision to the chief of staff, who, with his subordinates, fleshes it out with detailed planning tailored to the circumstances of the operation and the terrain. The chief of staff issues detailed, precise orders for the initial phase of an operation only. At this point, there probably is not enough hard data to allow an accurate forecast of how the situation will develop. The plan includes intelligence, the commander's decision, boundaries, the missions of flanking forces, the missions of CS and CSS elements, the air defense plan, coordinating instructions, and the deployment of CPs.

Since the conditions of modern warfare dictate quick decisions, the commander must effectively use his staff to support his decision process. He usually focuses on only the elements of the decision that he alone can develop. He leaves other areas, like the organization of logistics or the communications structure, for his staff to formulate. The staff sorts out these decisions in detail and presents them to the commander for approval. Regardless of the degree of staff involvement in assisting the commander in decision making, the responsibility for the timeliness and quality of the decisions are solely his. These two critical elements--timeliness and quality--underlie both the decision and the entire C^2 process.

Phases in Decision Making

The receipt of a mission from a higher authority sets the OPFOR combat decision-making process in motion. This process consists of four phases:

1. Clarifying the mission.
2. Estimating (evaluating) the situation.
3. Assessing decision variants.
4. Selecting the most appropriate decision.

These phases are not completely independent processes or stages of thought. Each phase overlaps and relies on the others. The result of the decision-making process is a set of missions for subordinates and a framework for detailed planning of the operation the commander has decided to conduct. These four phases inevitably involve the staff in providing the information and calculations essential to making a scientifically substantiated decision.

Before the receipt of the operational directive and during the course of combat, elements of the staff conduct certain analyses. At army group and army, the operations directorate continually updates and reevaluates the analysis of the numerical strength of its own forces and the terrain. The intelligence directorate/department continually updates and reevaluates the estimate of the enemy. Figures 7-9 through 7-11 detail the process by which the commander reaches his decision.

Function	Main Issues Considered	Commander's Deductions and Influence on Decision

1. Clarify the Senior Commander's Mission	From senior commander's concept of operations, identify-- (a) Which enemy he plans to attack and how; what percentage of destruction he requires. (b) His zone of advance and main/secondary attack axes (strike sectors). (c) Major targets for conventional artillery. (d) The operational formation and nature of maneuver. (e) His own mission, including aim, immediate and subsequent missions and timings, reinforcing or supporting assets, boundaries, strike sector, routes, and deployment times. (f) Overall correlation of forces.	*Deductions:* (a) His own formation's role in senior commander's plan. (b) Where to attack and the required rate of advance. (c) Quantity of forces and echelonment. (d) Allocation of time. (e) What percentage of losses he expects to suffer. *Used as guidance in planning:* (a) His own zone of advance and main/supporting attack axes (strike sectors). (b) His operational formation and maneuver plan. (c) Outlining missions for subordinates. (d) Priorities in planning operation. *The commander issues preliminary instructions to subordinate commanders and staffs on completion of this phase.*

Figure 7-9. Clarification of the mission.

Function	Main Issues Considered	Commander's Deductions and Influence on Decision
2. Estimate the Situation		
(a) Assess the enemy	Major elements in assessment include: (a) Composition and combat capability of enemy force. (b) Density of enemy forces to depth of immediate and subsequent missions. (c) Layout of defense, including fire and obstacle plans. (d) Location of boundaries, CPs, comm centers, and logistic sites. (e) Morale of troops and personal qualities of commander. (f) Enemy options during operation, including sector of main effort, counterattack plans.	*Deductions:* (a) Main enemy groupings. (b) Strong and weak points of defense. (c) Probable enemy concept of operations (including use of NBC). *Used as guidance in planning:* (a) Outline plan, including zone of advance, main/supporting attack axes (strike sectors), and operational formation. (b) Subordinates' missions. (c) Combat support plan (including final recon plan).

(b) Assess own forces	Headings include: (a) Effective fighting strength, including morale. (b) Combat capabilities, classified by arm of service. (c) Correlation of forces.	*Deductions:* (a) General condition of own forces. (b) Any requirement for regrouping. *Used as guidance in planning:* (a) Zone of advance, main/ supporting attack axes (strike sector), and operational formation. (b) Immediate and subsequent missions for the force as a whole. (c) Subordinates' missions. (d) Plan for deployment.
(c) Assess flanking units	Commander assesses: (a) Their position, nature of operations, missions, including tempo of attack. (b) Their lines of deployment and axes for second echelon.	*Deductions:* (a) Influence of flanking units on air operations. (b) Priorities of cooperation with flanks. *Used as guidance in planning:* (a) Zone of advance (to link with flanking units). (b) Measures to coordinate with flanking units.
(d) Assess terrain	Commander assesses terrain in sequence: (a) In the assembly area. (b) From the LD to the LC. (c) In the depth of enemy positions, including general nature of terrain and its effects on observation, fire, and deception.	*Deductions:* (a) Effect of terrain on accomplishment of mission. (b) Most favorable axes for operations. *Used as guidance in planning:* (a) Zone of advance and main/ supporting attack axes (strike sectors). (b) Assembly areas, routes, deployment lines, objectives, second-echelon commitment line, river-crossing sites, and command posts.

(e) Assess hydrography, meteorology, times of year and day	(a) Water barrier conditions. (b) Weather, including temperature, winds, clouds, fog, visibility. (c) Hours of light and darkness and timings.	*Deductions:* (a) Effect on operations. (b) Effect on employment of various weapons by either side. *Used as guidance in planning:* (a) Zone of advance, main/ supporting attack axes (strike sectors), and operational formation. (b) Measures to anticipate changes in conditions (such as floods, snow storms).
(f) Assess NBC situation	(a) Existing NBC destruction and contamination. (b) Future effects of NBC contamination.	*Deductions:* (a) Likely effect on fulfillment of mission. (b) Safest sectors of operation for troops. *Used as guidance in planning:* (a) Zone of advance, main/ supporting attack axes (strike sectors), and operational formation. (b) Decontamination measures.
(g) Assess economic, social, and political conditions in the combat zone	(a) Possibilities of using local resources, including repair, medical, and communications facilities. (b) Class composition of local population, its mood, and its attitude toward the war and OPFOR troops.	*Deductions:* Effect on combat operations. *Used as guidance in planning:* Measures to exploit local resources.

Figure 7-10. Estimate of situation.

Function	Main Issues Considered	Commander's Deductions and Influence on Decision
3. Assess Decision Variants	Staff models several different variants based on-- (a) Commander's concept. (b) Estimate of situation. (c) Revised correlation of forces calculations. (d) Modeling of variants. (e) Possible enemy responses.	*Deductions:* (a) Which variants meet decision criteria set by commander, achieving mission on time and at lowest cost. (b) Where to attack, where to defend, and where to plan the main/ supporting attack (strike sectors).

4. Select and Formulate the Most Appropriate Decision	Commander proceeds to select the most appropriate decision, which he outlines under the following headings: *1. Concept of Operations:* (a) Which enemy to destroy and the required percentage of destruction. (b) Main targets to hit. (c) Zone of advance, main/ supporting attack axes (strike sectors), operational formation, and maneuver plan. *2. Missions of Subordinates:* Includes groupings, missions, axes, timings, and the percentage of losses acceptable in OPFOR formations. *3. Cooperation:* How to coordinate operations in terms of missions, place, and time. *4. Support:* Includes CS and C^2.	Once the senior commander approves the decision, the commander passes it to his staff, where it forms the foundation of the plan they produce. The commander may keep the more promising nonselected variants "on the shelf" as contingency plans.

Figure 7-11. Evaluation of variants and formulation of decision.

The commander’s decision consists of the following four components:

1. Concept of combat operations.
2. Missions of major subordinates.
3. Troop coordination procedure.
4. Measures for comprehensive support of combat operation and organization of command and control.

See Figure 7-12 for more detail on the commander’s decision. The commander’s decision is the basis for the operations plan.

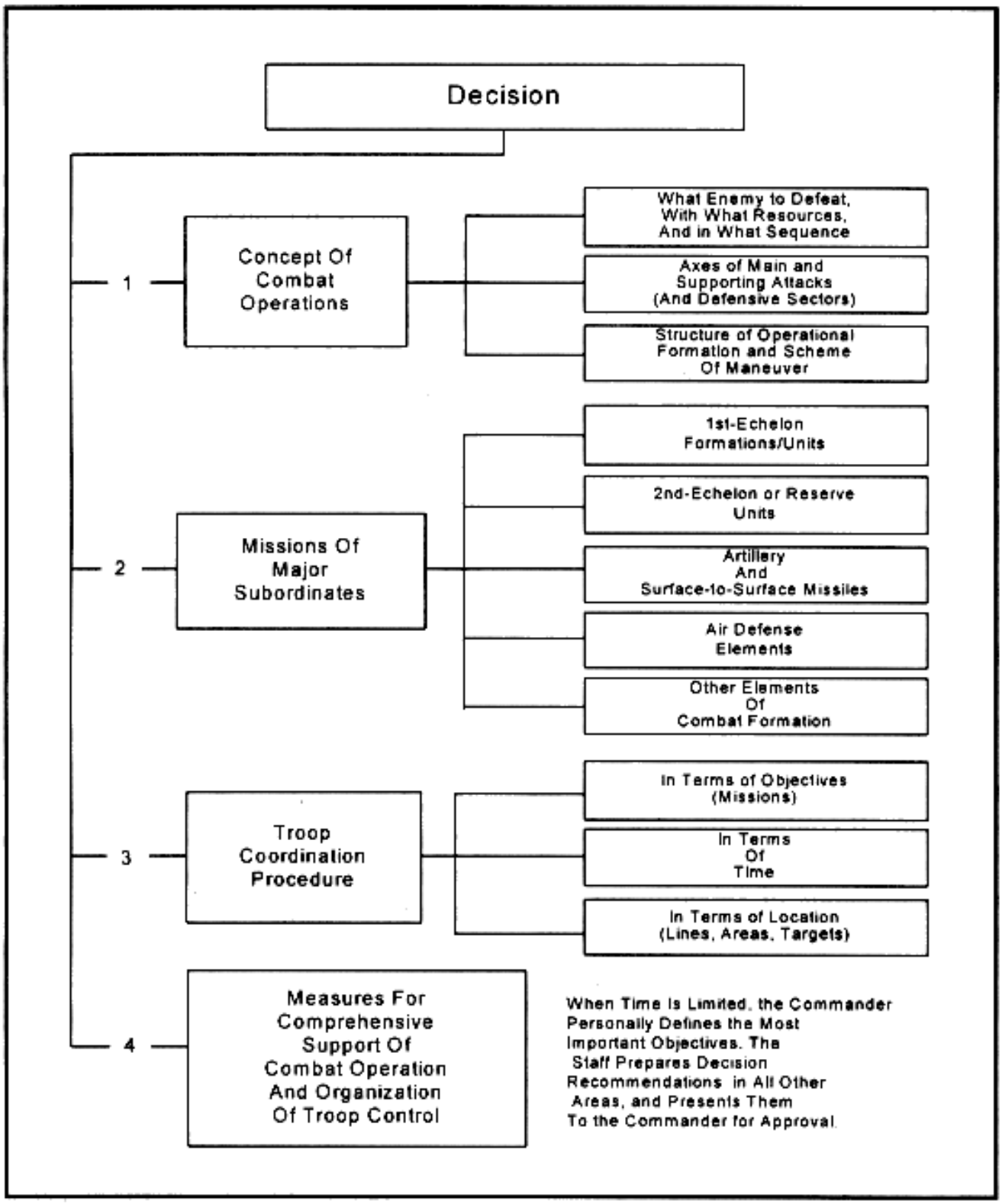

Figure 7-12. Content of the commander's decision.

Time

To OPFOR decision makers and planners, time assumes a role of unparalleled importance on the battlefield. If they cannot achieve time lines at all levels, they think they cannot accomplish their tactical, operational, and strategic military objectives. The effectiveness of their C^2 system is inseparably linked to its ability to make and implement decisions quickly enough to deny the enemy any opportunity to impose his concept of battle against the OPFOR.

Correlation of Forces

Many factors from the COF are important to OPFOR decision makers and planners, but time is the critical determinant. Planners believe that effective C^2 can give one of otherwise equal opponents at least a 2:1 advantage in combat effectiveness. Given forces with equivalent combat potential, the actual COF would favor the side that has the better C^2 system and, consequently, that side would more skillfully realize its potential capabilities. Decreasing the time required to make effective decisions in battle is the focus of improvement efforts in the C^2 process.

Time Segment Analysis

The OPFOR divides the C^2 cycle into four time segments, as follows:

> T_1 = time that elapses from the occurrence of some significant event until relevant information about the event reaches the commander and his staff.
>
> T_2 = time the commander takes to reach a decision. This includes the time he requires to clarify the task, estimate the situation, and adopt a plan.
>
> T_3 = time the commander requires to transmit his decision to subordinate commanders.
>
> T_{action} = time that elapses between receipt of the order by subordinate commanders and mission accomplishment.

To initiate this whole cycle, the OPFOR must first recognize that the significant event that should trigger the cycle has occurred. Therefore, the T_1 phase is particularly vulnerable to enemy deception operations. Also, T_3 is especially vulnerable to enemy electronic combat operations that could prevent or delay transmission of the decision to subordinates.

The first three phases combine to comprise control time:

$$T_{control} = T_1 + T_2 + T_3$$

This control time ($T_{control}$) is the total time the decisionmaking process requires. It must take place quickly enough to allow actual implementation of the decision. The fourth time segment (T_{action}) measures the time required for detailed planning and mission accomplishment. The sum of these four time segments ($T_{control} + T_{action}$) must take place ***inside the enemy's time window*** in order to achieve victory. The enemy's requirement for time to complete his control cycle and implement his decision dictates the critical time ($T_{critical}$). Thus, OPFOR success in battle requires the following inequality:

$$T_{control} + T_{action} \text{ critical}$$

OPFOR control time and action time must not exceed the critical time. While this rule appears to be obvious, it demonstrates the OPFOR's commitment to seizing and maintaining the initiative by using time efficiently.

Planning Methods

OPFOR staff officers also recognize three planning methods that correspond to the available time for fully detailing the assigned missions in supporting plans: parallel, sequential, and executive. The two primary methods of combat planning are the parallel and sequential. Parallel planning is the more flexible and preferred method, but commanders may use either of these methods, depending on the intensity of the situation. A combination of the two is appropriate in some cases.

Implementation of Commander's Decision

Although the decision-making process is complete at the point of the commander's decision, the full OPFOR combat planning process has two more phases. The headquarters must still disseminate the finalized missions to subordinate

elements and plan the operation (battle) in accordance with the commander's concept of operations (battle) and the decision. Use of the parallel planning method can streamline and shorten this process to save time.

Dissemination of Missions

The dissemination of missions to subordinates is a critical C^2 task. The commander usually establishes the general procedures of staffs and other headquarters for disseminating missions to the troops. However, the chief of staff is the main organizer for carrying out this work. He must accomplish this quickly, in order to give subordinate commanders and staffs, and units as well, sufficient time to prepare for their combat missions. In order to decrease the time this task requires, the OPFOR applies technology, such as graphic display panels and other sophisticated signal equipment.

Disseminating mission-type information concerning upcoming or planned combat activity occurs at several points in the decision-making and planning process. At any level, preliminary instructions and preliminary combat instructions from higher-level commanders first present this information in general outline, allowing subordinate commanders and staffs to begin preliminary planning (as part of the decision-making process). Only when they receive the senior commander's final decision in operational directives or combat orders can lower-level commanders decide on their own final concept of the operation. The process at a given level ends when commanders issue combat orders/operational directives to their own subordinates.

Preliminary instructions. The means by which commanders can make the earliest possible dissemination of information concerning an upcoming operation are preliminary instructions. In them, commanders provide basic instructions for preparations that are not mission specific. These instructions, which the chief of operations prepares, contain the missions of the subordinate elements and the higher commander’s general concept of operations. Similar to a warning order in the U.S. Army, they allow subordinate units to prepare for the flurry of activity demanded of headquarters on receipt of a new mission. They enable subordinate headquarters to begin their planning process concurrently with the higher command levels. The commander may issue preliminary instructions to subordinates in either oral or written form. However, it is normal to transmit preliminary instructions by electronic, secure-voice means rather than in written form.

Preliminary combat instructions. At the operational level, the commander issues preliminary combat instructions (sometimes called "combat instructions" or simply "instructions"). These normally serve as a vehicle to provide the outline of the commander's decision, basic information on the situation, and the mission for which the receiving headquarters should begin planning. (This allows parallel planning to begin at army and division levels.) These instructions may revise a previous order or issue a new, time-sensitive mission. Normally, the missions established in the preliminary combat instructions should not change; however, the operational directive or combat order (issued later) may clarify or refine them. Providing more detail than preliminary instructions, they contain both the operational/tactical missions and the technical missions of subordinate elements. They would probably include a brief assessment of the enemy situation, the location and missions of adjacent formations/units, and the combat mission of the formation/unit receiving the instruction.

Combat order. A combat order is an eight-paragraph order that the commander issues. These orders are complete mission statements that contain complete information for accomplishing the operational or tactical tasks of a unit. Commanders issue them in both written and oral form from army to divisions and from divisions to brigades.

Operational Directive

The operational directive is the formal operational-level order to subordinate elements, and it forms the basis of the operations plan. It contains the general goal of the operation, the procedure for its attainment, the missions of subordinates, and the time for accomplishing these missions. The chief of the operations directorate (or sometimes the chief of staff) is responsible for preparing the operational directive. The Supreme CINC and the Chief of the General Staff (or the theater CINC and his chief of staff) sign it for theater-level operations; at army group level, the army group commander and his chief of staff sign it. The General Staff (or theater headquarters) disseminates it to army groups, and an army group disseminates it to armies and corps. The normal eight-paragraph format is similar to that of a combat order. (See Figure 7-13.)

Traditional Format	Modified Format
1. Enemy Situation: A concise statement of enemy forces and their disposition, as that information relates to the mission of the issuing unit.	1. Enemy Situation: A concise statement of enemy forces and their disposition, as that information relates to the mission of the issuing unit.
2. Mission: A statement of the mission assigned to the issuing unit by its superior headquarters.	2. Mission: A statement of the mission assigned to the issuing unit by its superior headquarters.
3. Missions of Higher and Adjacent Units: A description of the missions of higher and adjacent units and their impact on the mission of the issuing unit; includes coordination procedures for nonorganic and attached units.	3. Missions of Higher and Adjacent Units: A description of the missions of higher and adjacent units and their impact on the mission of the issuing unit; includes coordination procedures for nonorganic and attached units.
4. Concept of Combat Action: A discussion of the commander's decision for fulfilling the mission of paragraph 2; includes the concept of maneuver and fire support.	4. Concept of Combat Action: A discussion of the commander's decision for fulfilling the mission of paragraph 2; includes the concept of maneuver and fire support.
5. "I Order...": Establishes combat missions of subordinate elements, normally in order of: first echelon, second echelon, artillery, air defense, and reserves.	5. "I Order...": Establishes combat missions of subordinate elements, normally in order of: first echelon, second echelon, artillery, air defense, and reserves.
6. Preparation Times: Establishes the times by which subordinate units must be prepared for combat.	6. Expenditure Norms: Provides the consumption norms for ammunition and fuel to be used during the combat action.
7. Control Coordination: Provides special instructions for coordination of combat actions by units.	7. Preparation Times: Establishes the times by which individual units must be prepared for combat.
8. Command Continuity: Indicates which of the subordinate officers is designated to assume control if the commander is incapacitated.	8. C^2: Contains all C^2-related information.

Figure 7-13 Format for a combat order.

Detailed Planning

When the commander decides on the final concept of operations, the staff begins detailed planning. Detailed planning is a prerequisite for success. Modern combined arms warfare integrates the actions of many types of forces and combat equipment, as well as diverse support requirements. In terms of detail, OPFOR planning considers forces an echelon below those dealt with in the commander’s decision. Thus, army group operational planning looks at divisional requirements in detail (just as division staffs look in detail at battalion activities in their planning for tactical missions).

Operations Plan

Echelons of command down to corps compile operations plans. An operations plan is a series of documents the staffs prepare based on the commander’s decision on how to conduct a mission. The operations plan must--

- Optimally allocate forces and resources to each mission.
- Provide concrete methods to coordinate the actions of maneuver, fire support, and materiel support.
- Provide for a specific sequence and methods for conducting each subtask required to assure mission success.

From the completed operations plan, the staff creates its operational directive or combat orders to inform subordinates of their missions, roles, and time requirements for executing the plan.

The operations plan details the commander’s thinking and reflects the input of various headquarters according to their functional responsibilities. It normally includes the following specific areas:

- Assessment of the enemy situation and probable intentions.
- Scope, aim, and concept of operations.
- Organization for combat of subordinate elements.
- Correlation of forces.
- Location, direction, and width of strike sectors for main and supporting attacks.
- Unit boundaries.
- Plan for commitment of the second echelon.
- Immediate and subsequent missions of subordinate units.
- Missions of supporting and adjacent units.
- Plan for logistic support.
- Locations of CPs.

Most of the principal staff officers, and some of the primary staff officers, prepare subordinate plans for the operations plan. These include reconnaissance, communications, engineer, chemical, air, missiles and artillery, rear service, and air defense plans.

The operations plan includes a varying number of annexes. There are normally annexes for preparation and occupation of assembly areas, march lines and routes of movement, information warfare, airborne landings, special-purpose forces, and C^2, among others.

Planned Flexibility

Operational-level C^2 is highly flexible. This flexibility comes from mission-type orders from the General Staff (or theater headquarters) to the army groups and from army groups to armies and corps. The staff structure provides operational commanders the capability for rapid situation assessment and decision making. A standardized, streamlined process, using automated support, produces the decision and the accompanying plans to implement it. Scientific substantiation is a key criterion at the operational level. Such substantiation is a tool to decrease uncertainty and increase the probability of operational success.

Since operational planning occurs up to 3 days in advance, it would be difficult for the enemy to disrupt the initial decision making and planning, However, the army group, army, and corps commanders and staffs are continually updating of the operations plan. By limiting a commander's time to plan, an enemy could force the OPFOR staff to forsake the preferable parallel or sequential planning methods for less desirable executive planning. The OPFOR uses IW measures to help ensure that the OPFOR commander has sufficient time to acquire and process information on the combat situation.

The OPFOR's response to this concern is planned flexibility. It helps OPFOR commanders adjust the composition of forces on various axes, as well as adjusting their methods of operations and support. Planning continues the process of forecasting and modeling the commander began in his decision process. It produces a series of variants, or contingency plans, the commander can implement without completely changing his concept of operations (battle). Such planning also accounts for a range of probable enemy responses to OPFOR combat actions. Each variant, however, must allow the achievement of the assigned mission by the designated time; these aspects of the plan are not subject to contingency planning.

CALCULATING THE CORRELATION OF FORCES

The OPFOR calculates the COF on a strategic, operational, and tactical scale throughout an entire zone of action, in the main sector, and in other sectors. It uses various reference manuals, tables, and computers to speed calculations.

Level of Analysis

OPFOR decision makers and planners calculate the COF with varying degrees of refinement depending on the level of analysis. At the strategic political-military level, they may assess only a general overall balance, which includes a more detailed calculation for military forces. At the lower end of the strategic level, the General Staff (or the staff of a theater headquarters) does COF analysis down to army and corps level. At the operational level, the army group staff does it down to division, and the army or corps staff does it down to brigade. The actual COF takes into account both the quantity and quality of weapons systems on both sides.

Lower, tactical-level commanders and staffs would not always have time for these calculations; rather than comparing OPFOR /enemy force ratios, they might use tactical density norms (for example, tanks or artillery pieces per km of frontage for the OPFOR side).

Combat Potential Values

The OPFOR has assigned to all models of all types of weapons a numerical value in comparison to an arbitrarily adopted standard unit of armament. This means that it compares all weapons systems (whether tanks, artillery, or aircraft) to the same standard unit of armament to determine their relative worth or combat potential value (CPV). Thus, the combat potentials of weapons and combat equipment and the aggregate CPVs of the force elements they make up are quantitative and qualitative indicators of their relative effect on the outcome of combat action. These general potential scores reflect an average for offensive and defensive missions performed under average expected conditions.

Aggregate Combat Potential Values

The COF does not simply measure tanks versus tanks, artillery versus artillery, or air defense versus air defense; rather, this OPFOR calculation is based on the aggregate CPV scores of combined arms units. If different weapons happen to have the same CPV, it does not mean they are interchangeable; it only means they perform equal shares of the combat mission. It is impossible to totally replace tanks with aircraft or mechanized infantry troops with missiles. However, in combined arms combat, it is possible to make up partially for a deficiency in certain weapons with others that have an equivalent influence on the course of combat. While tanks might destroy tanks, so do other (fire support) weapons; air defense weapons do not normally destroy air defense weapons.

Overall Correlation of Forces

Calculating the overall COF in a zone of action involves the following steps:

1. Determine the number of each type of weapons system in a unit.
2. Multiply the number of weapons by the established CPV for that specific weapons system.
3. Add the weapon CPV totals for each unit or formation.
4. Add the unit CPV totals for each side (OPFOR and enemy).
5. Divide the OPFOR CPV total by the enemy CPV total.

See Figure 7-14 for an example of how the OPFOR calculated the aggregate (unit) CPV for a mechanized infantry brigade and Figure 7-15 for an example of the overall COF calculation for a hypothetical situation. The values used to make these calculations are examples only.

Unit: 302d MIBR

System	Weapon CPV* ×	Number Of Weapons=	Weapon CPV Total
Tank	10	31	310
IFV	4	143	572
SP Howitzer	2	18	36
Mortar	3	18	54
SP AA Gun	1	6	6
SP SAM	2	6	12
Shoulder-Fired SAM	1	48	48
ATGM Vehicle	2	9	18
ATGM Manpack	1	18	18
AT Grenade Launcher	1	140	140
Unit CPV Total			**1214**
* The purpose of these examples is only to illustrate the calculation process. The actual values would differ according to the specific equipment model and its relationship to whatever standard unit of armament the OPFOR selects as the baseline for comparison.			

Figure 7-14. Calculation of unit CPV (example).

Situation			
OPFOR	**Unit CPV***	**Enemy Forces**	**Unit CPV***
MID	6,441	Mech Div	6,164
MID	6,441	Aviation Bde	2,596
TD	6,265	SP Howitzer Bn	80
SSM Bde	540	SP Howitzer Bn	80
Helicopter Regt	230	SP Howitzer Bn	80
Artillery Bde	336		
SAM Bde	432		
CPV TOTAL	20,685	CPV TOTAL	9,000
Overall COF = OPFOR/Enemy CPV Total = 20,685/9,000 = **2.3:1**			
* For illustrative purposes only.			

Figure 7-15. Calculation of overall COF (example).

Adjustments

The OPFOR may adjust unit CPVs to reflect the conditions of a specific combat action. These include--

- Type of combat action (offense or defense).
- Terrain.
- Losses already incurred.
- Logistics.
- Training and morale.
- Other factors.

Strike Sector Assessment

The calculation of the COF is central to decision making both before and during the course of combat actions. However, what is most important at the operational-tactical level is not the overall COF but the creation of local superiority in selected strike sectors. Each army group, army, corps, and division has a main strike sector where it weights its resources to achieve a penetration of enemy defenses. It may also have one or more secondary strike sectors for shallower fixing or holding attacks. The remaining "nonstrike" sectors are purely defensive sectors. (See Figure 7-16.)

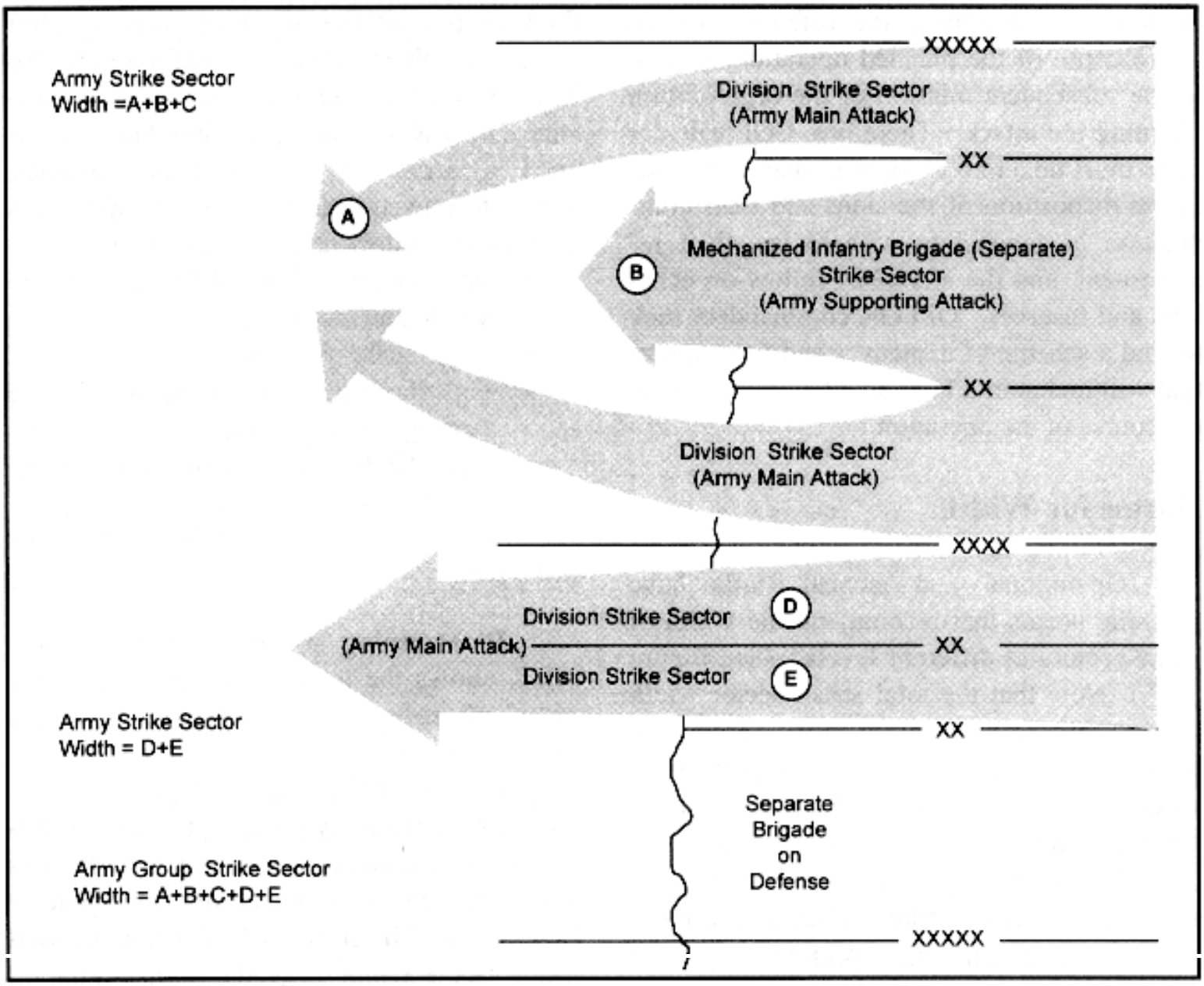

Figure 7-16. Strike sectors.

Norms for Correlation of Forces Advantage

OPFOR commanders believe it is possible to achieve victory with a slightly superior, equal, or even inferior overall COF in relation to the enemy. The critical task is to create such a decisive COF advantage in designated strike sectors that the assigned mission has a high probability of success. On the basis of historical data, the OPFOR has concluded that a strike sector COF of 4:1 gives only a 75 percent probability of achieving the mission, while a 5:1 advantage raises the probability to over 90 percent. Generally, it would like to have a strike sector COF somewhere between 4:1 and 6:1. Although it might seek as much as a 7:1 superiority to reduce casualty rates, the benchmark figure seems to be 5:1 in the strike sectors. It is normally willing to defend in the remaining (nonstrike) sectors with no more than a 1:1 COF, and it believes it is possible to defend successfully even at a 0.5:1 negative correlation.

OPFOR planners do not limit their calculations only to the CPVs of the forces conducting and defending against the initial strike. They include all forces on both sides involved in continuing the offensive to the entire depth of the planned operation, that is, to the subsequent mission of the organization planning the attack. Therefore, COF calculations must take into account probable changes in the disposition of the sides and their composition in connection with losses, their replacement, and the arrival of follow-on echelons and reserves. OPFOR commanders seek to find a scheme of maneuver and fire support that will maintain a favorable COF throughout the course of the operation.

Norms for Width

Operational and tactical staffs have planning norms that recommend the width of strike sectors at different levels. (See Figure 7-17.) Note that the total strike sector width for an army group or army is the cumulative total of division and separate brigade strike sectors in the first-echelon divisions of first-echelon armies. (See Figure 7-16.) The OPFOR uses COF methodology to allocate sufficient forces to strike sectors and to more precisely determine the optimum width of these sectors.

	Overall Width of Attack Zone Frontage (km)	**Strike Sector Width (km)**
Army Group	300-400	25-30
Army	60-100	8-12
Division	15-25	2-4

Figure 7-17. Operational and tactical planning norms for overall frontage and strike sector width.

Formulas

It is critically important to create a decisive superiority in a force grouping that is to penetrate the enemy defense. However, defensive sectors must not be so weak that the enemy can attack through them to attain the flank or rear of the attacking force or shift forces from them to meet the main attack. To help the commander evaluate decision variants, OPFOR military scientists have developed a series of mathematical formulas. These formulas deal with the relationships between the following important factors:

- W_o =Overall width of frontage for the whole zone of action.
- W_{ss} =Strike sector width (total).
- C_o =Overall COF along the entire frontage (attack zone).
- C_{ss} =COF achievable/required in the strike sector.

C_m=Minimum COF allowable outside the strike sector.

Determining width. The formula below allows the staff to determine the total width of strike sectors possible, given a known COF in strike sectors:

$$W_{ss} = W_o (C_o - C_m) / (C_{ss} - C_m)$$

For example, an army group with a total frontage of 300 km and an overall COF of 1.4:1 is willing to defend on nonstrike sectors with a COF of 1:1. The staff needs to know the total strike sector width possible if they plan to have a 5:1 COF advantage in those key sectors. They calculate--

$$W_{ss} = 300 (1.4 - 1) / (5 - 1) = 30 \text{ km}$$

The OPFOR believes it can expect greater than 90 percent probability of achieving its mission if the total width of strike sectors in the first-echelon divisions of first-echelon armies does not exceed 30 km. The remaining 270 km must be nonstrike sectors.

Determining COF. The next formula allows the OPFOR to determine the COF its forces could possibly achieve in a strike sector of given width:

$$C_{ss} = W_o / W_{ss} (C_o - C_m) + C_m$$

For example, the same army group still has an assigned total frontage of 300 km. The staff is considering an operational variant using a total strike sector width of 25 km (within the operational planning norm). The staff has calculated an overall COF of 1.4:1 and is still willing to accept a 1:1 COF in nonstrike sectors. They use the above formula to calculate--

$$C_{ss} = 300 / 25 (1.4 - 1) + 1 = 5.8:1$$

This strike sector COF gives a slightly higher probability of success than the previous variant with a 30-km strike sector width.

Increasing COF. If the resulting C_{ss} had been too low (less than 4:1), planners would have the following options:

- Reduce the strike sector width.
- Reduce the minimum COF in nonstrike sectors (accept more risk).
- Request more forces.
- Weaken the enemy grouping with fire strikes.

(1) Reducing the width of the strike sector does not proportionately increase the strike sector COF. For example, an army with a total frontage of 75 km, an overall COF of 1.5:1, and a minimum COF of 1:1, might have calculated its strike sector COF using a sector width of 12 km, using the following formula:

$$C_{ss} = 75/12 (1.5 - 1) + 1 = 4.13:1$$

Since this does not achieve the benchmark 5:1 advantage, the staff might reduce the strike sector width by one-third, to 8 km. If so, it would apply the following formula:

$$C_{ss} = 75/8 (1.5 - 1) + 1 = 5.69: 1$$

The staff would find that this resulted in a 38-percent increase in the COF.

(2) The same army staff might try to solve their original COF problem by accepting greater risk on the nonstrike sectors. The OPFOR might be willing to defend with a 0.5:1 COF disadvantage there. The result would be--

$$C_{ss} = 75/12 (1.5 - 0.5) + 0.5 = 6.75:1$$

This would greatly improve the chances for success in the strike sector.

(3) Bringing in more forces would chiefly influence the COF along the entire frontage; that is, W_{ss}. Given the original COF problem in the strike sector, the same army staff could determine the new overall COF (C_o) required to achieve a 5:1 superiority in the strike sector using the following formula:

$$C_o = W_{ss}/W_o\ (C_{ss} - C_m) + C_m$$

The original situation was--

$$C_o = 12/75\ (4.13 - 1) + 1 = 1.50{:}1$$

By substituting the desired strike sector COF, the staff could calculate--

$$C_o = 12/75\ (5 - 1) + 1 = 1.64{:}1$$

This might be a manageable solution, since it represents only a modest increase over the original 1.5:1 overall COF.

(4) Weakening the enemy through fire strikes depends on calculating the minimal degree of damage to the enemy that would achieve of the necessary COF, at least on the strike sector. The enemy, however, is likely to retaliate against strikes to alter the COF, and calculations must also take into account one's own losses. The formula to calculate the necessary degree of fire destruction is--

$$M = 100 - (C_i/C_n) \times (100 - F)$$

where

M = The necessary destruction of the enemy, as a percentage.

C_i = The initial COF.

C_n = The necessary COF.

F = The forecast of percentage losses to own forces.

Applying this formula, and allowing for 30-percent friendly losses, the same army staff could calculate--

$M = 100 - (4.13/5.00) \times (100 - 30) = 42$ percent

Other variables. Absolute norms for the necessary COF on the overall frontage of the zone of attack and in strike sectors are difficult to establish. The reason for this is that a multitude of other factors, objective or subjective and varying widely, can influence the correlations. Other factors might include deep missile and air strikes, actions by OMGs and airborne and amphibious landings in the operational depth, electronic combat, and C^2 effectiveness. These and other factors outside the direct confrontation of forces on the line of contact in the main sector complicate the calculation of the true total combat potential of the opposing sides.

Chapter 8
Reconnaissance

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The OPFOR considers reconnaissance the most important element of combat support. All commanders and staffs organize reconnaissance to acquire information about the enemy's NBC and precision weapons; force disposition and intentions; and terrain and weather in the area of operations. This information is crucial to the planning process in OPFOR command and control (C^2) systems. Reconnaissance can decisively influence the outcome of a battle, operation, or campaign.

CONCEPT

Reconnaissance and intelligence collection are critical to OPFOR military operations. Strategists place significant emphasis on the destruction of enemy precision weapons and on conducting high-speed, continuous, combined arms operations throughout the depth of the theater. Reconnaissance and intelligence collection have three distinct levels--strategic, operational, and tactical. These three categories overlap, mutually support, and differ primarily by the level of command and the commander's area of responsibility.

Commanders require continuous, timely, and accurate intelligence on the enemy, terrain, and meteorological situation. Thus, the OPFOR devotes substantial effort to all forms of reconnaissance. Commanders confirm their plan only after thorough reconnaissance.

Principles

The OPFOR uses six principles to guide its reconnaissance activities: focus; continuity; aggressiveness; timeliness; camouflage, concealment, and deception; accuracy and reliability. For the greatest likelihood of a

successful operation, OPFOR reconnaissance units must satisfy all of these principles simultaneously and continuously.

Focus

The actions of reconnaissance units must serve the commander's needs and focus on elements and objectives critical to the execution of combat operations. Each level of command, from theater to brigade, develops a comprehensive reconnaissance plan in accordance with the organization’s mission. Reconnaissance resources are always scarce. The commander must carefully define and limit ground reconnaissance objectives and concentrate reconnaissance assets on the critical sectors of the battlefield.

To use reconnaissance assets effectively, the commander must be flexible. If the situation changes, he must redirect the reconnaissance effort, even altering the plan. The reconnaissance plan must coordinate all available assets into an integrated plan.

Continuity

The modern, fluid battlefield demands continuous reconnaissance to provide an uninterrupted flow of information under all conditions. Reconnaissance provides constant coverage of the enemy situation and helps prevent enemy operational surprise. To ensure continuity, the OPFOR employs a wide variety of assets with deep overlapping coverage ranging from satellites to human agents to unmanned aerial vehicles (UAVs).

Reconnaissance units attempt to maintain contact with the enemy at all times. They conduct reconnaissance in all directions, including the flanks and rear, in order to prevent surprise. Reconnaissance units collect information during all battle phases, 24 hours a day, 7 days a week, in all weather conditions. Not only must reconnaissance units answer specific requests for information; they must continuously collect information on all aspects of the enemy, weather, and terrain to fully meet future requirements. Units conducting reconnaissance and intelligence collection must maintain a high state of combat readiness, and prevent any shortage of reconnaissance personnel, weapons, or equipment. Reconnaissance is a critical responsibility for all commanders at all times.

Aggressiveness

Aggressiveness is the vigorous search for information, including the willingness to fight for it if necessary. Reconnaissance troops must creatively conduct intelligence collection and make maximum use of assets on the battlefield to ensure success. The OPFOR vigorously employs all available collection resources and adheres carefully to the reconnaissance plan. However, it may alter the plan when its own initiatives or enemy actions dictate. Although reconnaissance is the primary mission, all reconnaissance units train to defend themselves. Many remain ready to attack, sabotage the enemy, or conduct reconnaissance in force. The OPFOR stresses initiative, resourcefulness, and daring in the conduct of reconnaissance. Reconnaissance troops attempt to penetrate enemy defenses, ambush and raid enemy forces, and as a last resort, draw fire to determine enemy positions. In short, they do what is necessary to fulfill the commander's intelligence needs.

Commanders use all available means to seek information. The need for intelligence determines the techniques to use, such as clandestine infiltration by special-purpose forces or quick mechanized reconnaissance. Ambushes and raids are fruitful sources of intelligence from POWs, captured documents, and equipment. Such intelligence actions are generally more important than any associated damage, but there are exceptions. Reconnaissance elements must sometimes destroy high-value targets they find.

Elements of enemy reconnaissance-strike complexes, precision weapons, MRLs, and forward operating sites for attack helicopters or ground-attack aviation are some high-priority targets.

Timeliness

Timely information is critical on the modern battlefield. Because of the high mobility of modern armies, there are frequent and sharp changes in the battlefield situation. As a result, information quickly becomes outdated. Timely reporting enables the commander to exploit temporary enemy vulnerabilities. He can adjust plans using increased data automation to fit a dynamic battlefield.

Camouflage, Concealment, and Deception

OPFOR commanders try to conceal the scale, missions, targets, and nature of reconnaissance efforts. They understand it is not possible to hide the fact that reconnaissance is being conducted. However, they do strive to prevent the enemy from discovering where they are preparing to launch their main attack. The OPFOR may also use camouflage, concealment, and deception to "paint a picture" that confirms the enemy’s stereotyped views of how the OPFOR fights. By showing the enemy what he wants to see, the reconnaissance effort can help to establish the conditions for success during ensuing operations.

Accuracy and Reliability

The OPFOR uses every available means to verify the accuracy and reliability of the reported information. A commander must base his decisions on accurate and timely reconnaissance information. Reconnaissance must clarify the true enemy situation in spite of enemy camouflage, deception, and counterreconnaissance activities. Multiple means of acquisition help defeat enemy counterreconnaissance. To maximize results, the commander's plan requires accurate information on the enemy's size, location, equipment, and combat readiness. Accuracy is crucial to destroying precision weapons, C^2, and communications. Reconnaissance-strike complexes and other high-value weaponry are also important.

Characteristics

OPFOR reconnaissance operations are characterized by--

- **Flexibility**. The OPFOR must be able to switch priorities from one target to another without degrading the overall mission.
- **Sustainability**. Reconnaissance elements must be able to sustain themselves wherever they are operating, without relying on others for transport, subsistence, and so on.
- **Security**. A reconnaissance asset should be as secure as possible during operations. This means operating in a manner that conceals activities and areas of interest at all times. Reconnaissance activity should not reveal the parent unit's plan of action.
- **Communications**. Reconnaissance elements must have reliable communications. An intelligence organization may successfully gather all necessary information, but if it cannot transmit this information to the user (such as the commander or an artillery unit), the entire effort is useless.
- **Reserves**. All levels should maintain a reconnaissance reserve to take on unforeseen tasks or redeem failure on key missions.

Priorities

Reconnaissance activities must support the information requirements of the commander. Therefore, priorities vary at different levels of command: strategic, army group, army or corps, and division.

Strategic

The highest priority of strategic reconnaissance is to provide indications and warning of impending hostilities, as well as targeting information for strategic nuclear weapons. However, strategic intelligence can also gather information useful to operational and even tactical commanders. In this case, the information must pass down through intelligence staff channels to the potential user.

Army Group

The army group conducts reconnaissance to locate the most critical enemy targets including the following:

- Precision weapons.
- NBC systems.
- Air defenses.
- Intelligence-collection assets.
- Higher headquarters and communications centers.
- General support artillery groups.
- Operational-strategic groupings and their movements.

Army or Corps

The army or corps repeats these priorities and, in addition, seeks the following:

- Contents of airfields and army aviation forward operating bases.
- Major concentration areas of reserves.
- Unit boundaries.
- Location and extent of defended areas.
- The enemy's combat capabilities and intentions.

Division

Divisions repeat army or corps priorities and address more local threats including the following:

- Location of direct support artillery and mortars and attack helicopters.
- Disposition of tanks and medium- and long-range antitank systems.
- Deployment of air defense weapons.
- Location of brigade and battalion command posts.
- Nature and extent of natural and manmade obstacles.
- Locations of field defenses.

STRATEGIC ASSETS

Strategic reconnaissance acquires and analyzes information about the military-political situation in individual countries and coalitions of probable or actual enemy nations, their armed forces, and their military-economic potential. Strategic reconnaissance provides the information required by the highest military-political leadership. Needed information concerning a potential enemy includes the following:

- Intentions and capabilities.
- Military, industrial, and economic potential.

- Preparation and disposition of forces in various theaters.
- Nuclear, biological, and chemical capability.

Special-Purpose Forces

In addition to agents and reconnaissance forces, the Main Intelligence Directorate of the General Staff has its own special-purpose forces (SPF). These elite troops are a major source of human intelligence (HUMINT). The SPF represent an important element in the total integrated reconnaissance network planners try to achieve. Special-purpose forces provide reconnaissance and combat capabilities for strategic and operational employment, normally beyond 100 km in advance of the forward edge of friendly troops. (See Chapter 16 for more information).

The Main Intelligence Directorate controls all special-purpose forces. The General Staff would normally reserve some SPF brigades under its own control for strategic-level targets. If it creates a theater headquarters, it may place an SPF brigade under the operational control of the chief of reconnaissance at that level. Even SPF units allocated to army group or army control may support strategic missions.

The chiefs of reconnaissance of army groups and armies may use special-purpose forces. The army group normally has an SPF brigade. An army might have a SPF battalion to operate from 100 to 500 km beyond the forward edge. The divisional reconnaissance and electronic combat (EC) battalion has a long-range reconnaissance company of similar troops, who conduct both reconnaissance and long-range sabotage operations in the enemy's rear area. Their priorities include--

- Precision weapons.
- NBC systems.
- Headquarters and other C^2 installations.
- Road, rail, and air movements.
- Airfield and logistics facilities.
- Air defense systems.

Signals Reconnaissance Units

Signals reconnaissance is an integral part of the concept of electronic combat. The overall scope of EC includes the interception, analysis, and exploitation of electromagnetic (radio and radar) emissions, coupled with measures to disrupt or destroy the enemy's radio and radar assets. Signals reconnaissance assets are found in two types of organizations. The majority are organic to signals reconnaissance units at all echelons and provide significant support to the chief of reconnaissance. Additional assets are organic to jamming units, where they provide targeting support. (See Chapter 13 for details.)

Air Assets

Aerial reconnaissance includes visual observation, aerial imagery, UAV reconnaissance, and signals reconnaissance. Since most reconnaissance aircraft must penetrate enemy airspace, many of these missions are possible for manned aircraft only when the OPFOR has established air superiority. However, UAVs do not necessarily require air superiority. They are generally harder to detect because they are smaller and fly at lower altitudes than manned aircraft. Also, they are relatively low-cost and may be considered expendable.

Fixed-Wing

The air force has varying reconnaissance assets to meet specific needs. These units use high-performance aircraft to conduct aerial reconnaissance, including visual, photographic, radar, and signals reconnaissance missions. Aircraft on photographic reconnaissance missions normally fly at high speed and may fly at high or low altitudes. They fly in pairs or singly, out to about 600 km beyond the forward edge of friendly troops. Aircraft with side-looking airborne radar (SLAR) normally work at high altitude and may not need to cross the forward edge to achieve their objectives. Similarly, signals reconnaissance aircraft may not need to cross the forward edge to identify and locate enemy radar emissions.

Rotary-Wing

Helicopters are a primary means to transport and insert reconnaissance elements behind enemy lines. They can emplace observation posts or reconnaissance patrols rather than perform air reconnaissance, especially when the OPFOR does not have air superiority.

Unmanned Aerial Vehicles

There are two types of UAV: drones and remotely-piloted vehicles (RPV). A drone flies a set course programmed into its onboard flight control system prior to launch. An RPV, on the other hand, can be flown by remote control from a ground station, over a flight path of the controller’s choosing.

Flight patterns can vary according to the mission. For surveillance missions, the UAV typically uses a figure-eight or racetrack pattern to maintain it over the assigned surveillance area. For reconnaissance, intelligence collection, target acquisition, and battle damage assessment missions, a loop or zigzag pattern allows thorough coverage over a specific target area. RPV operators can vary these basic flight patterns by taking control of the RPV and changing its altitude, speed, or direction of flight. This allows RPVs to search for high-priority targets or to collect more detailed information on such targets once it locates them. While the radio command link gives an RPV greater flexibility, it also limits the range of the RPV to the line-of-sight transmission range from its control station. However, many RPVs can also operate in a preprogrammed mode at longer ranges.

Satellites

The Main Intelligence Directorate controls satellite reconnaissance to support the OPFOR. These satellites provide unique capabilities of noninvasive reconnaissance (not violating enemy airspace), "free" access, and continuous communications or surveillance from their orbits. The OPFOR uses three basic types of reconnaissance satellites: photographic, early warning, and signals reconnaissance.

Photographic

Satellite reconnaissance is not as flexible as other types of reconnaissance, because a satellite only reconnoiters an area when its orbit takes it into range. As a result, the OPFOR uses several specialized photographic reconnaissance satellites to record designated enemy activity. Satellites may photograph an area 40 to 50 km wide from an altitude of 200 to 250 km.

Early Warning

Early warning satellite orbits cross over foreign countries and the oceans. The satellites might be used to detect infrared signatures from intercontinental ballistic missile (ICBM) launches.

Signals Reconnaissance

The OPFOR uses several classes of signals reconnaissance satellites to gather information on the electronic

order of battle. Signals satellites locate C^2 nodes, battlefield radars, and forward units. Some might also monitor transoceanic shipping and air traffic. Another function could be to detect unknown electronic signatures that might indicate the presence of new equipment.

OPERATIONAL ASSETS

Operational reconnaissance units support army group, army, and corps commanders. They acquire and analyze information, about an actual or probable enemy, to prepare for the successful conduct of combat operations. Operational reconnaissance elements usually collect information throughout the entire depth of the enemy's corps area (300 to 600 km). See Figure 8-1 for a graphic depiction of the effective ranges of various reconnaissance measures available to an army group. Operational reconnaissance collection assets include signals reconnaissance, aerial reconnaissance, and special-purpose forces. Army groups, armies, and corps conduct operational reconnaissance using their own resources, plus those of their subordinate divisions and brigades.

Army Group

The army group intelligence directorate coordinates the army group's reconnaissance effort. The following paragraphs discuss the army group’s reconnaissance organizations and assets.

Special-Purpose Forces

Although the Main Intelligence Directorate of the General Staff controls all SPF, it normally allocates an SPF brigade to support the operations of an army group. Thus, each army group has specially trained SPF troops to insert by parachute, helicopter, light aircraft, or infiltration to conduct special reconnaissance. An SPF brigade can deploy 80 to 100 SPF teams. Of course, commanders do not insert all of the assets at the outset to operate simultaneously; they might retain some in the reconnaissance reserve.

Signals Reconnaissance Assets

The OPFOR fields a large capability for radio and radar intercept and direction finding. Generally, an army group has one signals reconnaissance brigade, but it may have two of them. In lieu of a second brigade, the army group may have a signals reconnaissance regiment or a separate signals reconnaissance battalion.

Air Assets

The army group commander normally controls aerial reconnaissance but may allocate aircraft to army or division headquarters to support a particular operation or battle. The number and composition of units, and

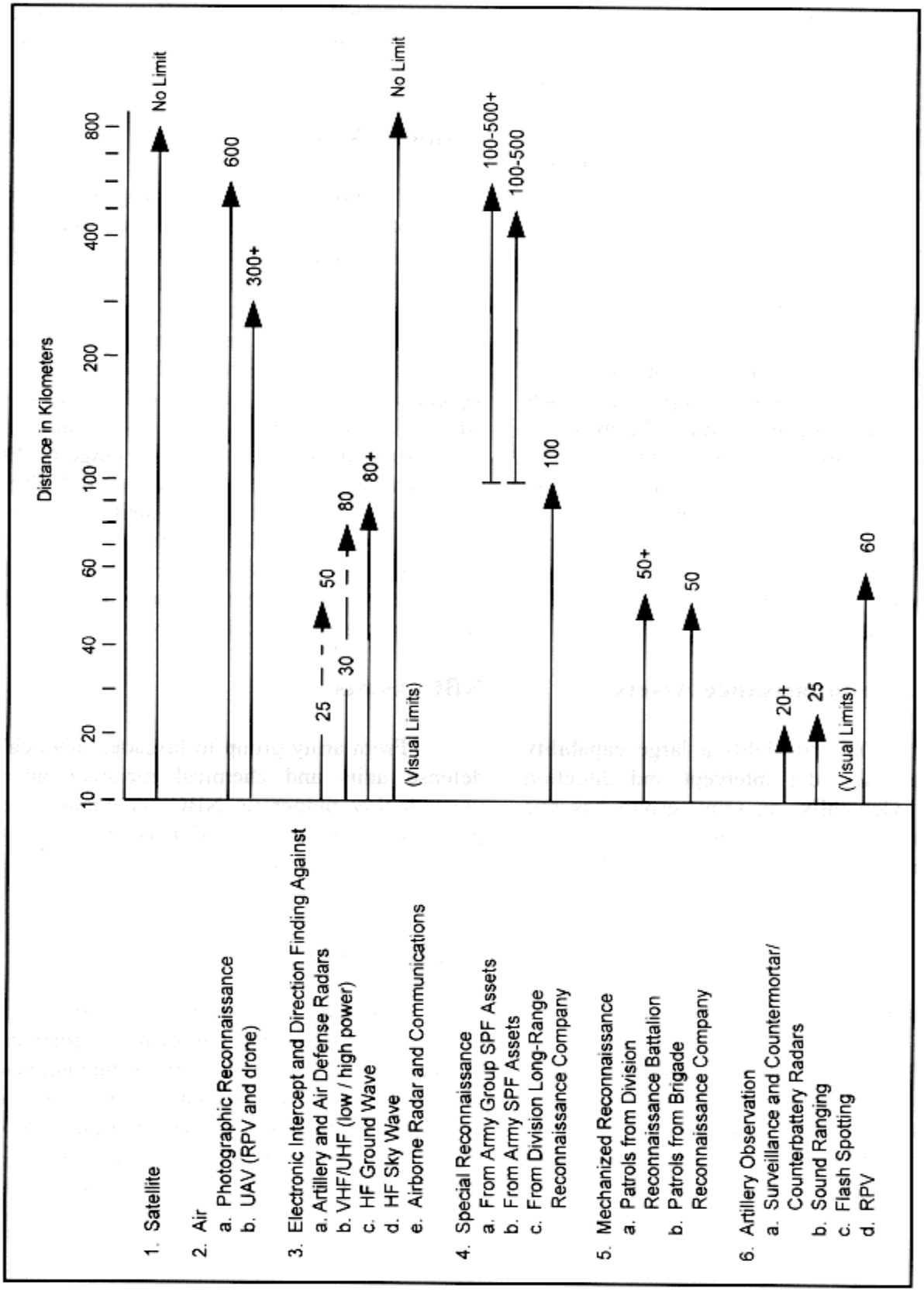

Figure 8-1. Effective ranges of reconnaissance means.

the types of fixed-wing and rotary-wing aircraft can vary greatly. The OPFOR also employs UAVs to conduct aerial reconnaissance. Generally, an army group has a UAV regiment.

Artillery Assets

The army group has an organic target acquisition regiment to obtain and transmit meteorological, topographic, and targeting information. Each brigade of the army group's artillery division also has a target acquisition battalion or battery. Each target acquisition battery in these organizations has a meteorological survey section that is especially significant in NBC conditions. Sound-ranging systems can locate targets up to a range of 20 to 25 km but are not as effective in highly mobile operations. Target acquisition batteries and even individual artillery battalions have organic battlefield surveillance and countermortar/counterbattery radars capable of detecting targets up to 20 km or more.

NBC Assets

From army group to brigade, chemical defense units and chemical reconnaissance units deploy numerous NBC reconnaissance patrols to detect, report, and mark all contaminated areas. Helicopters can also perform this mission.

Engineer Assets

Engineer units, from army group to brigade level, have reconnaissance specialists to accompany maneuver unit reconnaissance elements. There are specialized engineer reconnaissance patrols that assess routes, reporting on obstacles, road conditions, and the general nature of the terrain. These engineer assets help units maintain a rapid rate of advance.

Airborne Forces

Airborne forces are elite troops whose primary purpose is to conduct active combat operations in the enemy's rear area. Airborne forces might conduct reconnaissance operations and relay information directly to the main command post or headquarters as they operate against targets in the enemy's rear area.

Army or Corps

At the army or corps level, the chief of reconnaissance (COR) heads the intelligence directorate. This directorate coordinates operational reconnaissance in the same manner as the army group's reconnaissance directorate described above.

Forward Detachments

Armies, corps, divisions, and even brigades employ forward detachments as the situation dictates. Maneuver forces configured as forward detachments have reconnaissance as one of their missions. These detachments transmit information on the size, type, and disposition of enemy forces, enemy obstacles, route conditions, and river crossing sites.

Special-Purpose Forces

The Main Intelligence Directorate of the General Staff may allocate an SPF battalion to support army operations. Such a battalion can deploy 9 to 15 SPF teams.

Drones

At army or corps level, drones provide aerial reconnaissance support. An army or corps typically has a drone

squadron. Drones normally fly at low altitude and subsonic speeds.

Signals Reconnaissance Assets

An army normally has a signals reconnaissance battalion, or perhaps two of them. Instead of these battalions, some high-priority armies may have a full signals reconnaissance regiment composed of three battalions.

Artillery Assets

At army or corps level, an artillery brigade has an organic target acquisition battalion or battery, and an MRL regiment has a target acquisition battery. In addition to these assets, a corps typically has a target acquisition battalion. An army has a target acquisition regiment comprising three such battalions, plus an RPV squadron. These RPVs provide real-time targeting support to firing units. Surface-to-surface missile units do not have reconnaissance assets, but rely on external intelligence support.

Ground Forces Tactical Reconnaissance

Reconnaissance is a combined arms responsibility. Thus, ordinary mechanized infantry and tank units perform two functions; they perform their own close reconnaissance tasks with organic resources, and they provide reconnaissance detachments of up to reinforced battalion strength. Leading units may also conduct reconnaissance in force, attacking the enemy to determine his strength and disposition.

At brigade level, specialized reconnaissance troops normally conduct reconnaissance 25 to 30 km forward of the OPFOR line of contact (or forward of the main body of the brigade on the march). When necessary, they can operate out to a maximum distance of 50 km. Division-level reconnaissance troops also operate out to approximately 50 km. The division commander can insert the airborne-qualified, long-range reconnaissance company up to 100 km deep without its vehicles. Task-oriented reconnaissance groups, reinforced by engineer and NBC reconnaissance and, often, by mechanized infantry and tank elements, also move forward. Generally, these groups try to avoid combat in fulfilling their tasks, although they may direct artillery fire or air strikes. Typical missions might include--

- Locating, identifying, and reporting enemy precision weapons and nuclear delivery means, headquarters, communications centers, troop concentrations, and movements of enemy units.
- Determining the strength and disposition of the enemy's defenses and locating his boundaries.
- Providing topographical information concerning routes to, or bypasses around, enemy positions as well as concerning lateral routes.
- Identifying the extent and depth of minefields and the types of mines employed (assessing obstacles and possible crossing points).
- Establishing the extent of zones of NBC contamination.
- Identifying potential communications facilities and other sites for use by their own forces.

The reconnaissance staffs, with input from other branches, must prepare a detailed reconnaissance plan on a map with explanatory notes, specifying--

- The organization of reconnaissance activities for a specific time.
- Goals and mission for each reconnaissance activity.
- Completion times.
- Reporting procedures.

Each headquarters has a zone of reconnaissance responsibility. Within its own rear area, the headquarters must be able to monitor enemy activity, particularly precision weapons strikes or airborne forces. The detailed reconnaissance zone extends out to the effective range of weapons systems commanded by the headquarters. Beyond that is a general reconnaissance zone, in which the headquarters must monitor enemy activity sufficiently to ensure that unexpected enemy moves do not disrupt its own plans. Thus, the reconnaissance information of interest to an OPFOR division commander typically involves the enemy and terrain out to a depth of 100 to 150 km. Since division tactical reconnaissance assets are not adequate to cover this entire area of responsibility, operational-level assets must provide longer-range reconnaissance support. In return, operational commanders receive information derived from tactical reconnaissance within their area of interest.

Chapter 9
Artillery Support

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OPFOR operations rest on the three basic principles of speed, maneuver, and massed firepower. Modern advances in armament and technology continue to drive the development and application of combined arms doctrine. The integration of artillery assets into a unified fire support plan is a major task for the combined arms commander. Integration is also fundamental to the success of any operation.

Integrated fire support is a decisive element on the modern battlefield. In the offense, it is the principal means of achieving an advantageous correlation of forces over the enemy. It can blast gaps in defenses; disrupt, immobilize, or destroy enemy groupings in his tactical depth; and repel counterattacks. In the defense, it disrupts enemy preparations for the attack, causes attrition as he approaches the forward edge, and repels forces that reach or penetrate the forward edge. Fire superiority is a precondition for the success of any attack. The attacker must be able to execute his fire missions while suppressing counterbattery fire. Fire superiority is also the cornerstone of any defense, although often achieved only for a limited time, at the crucial point in the battle.

ASSETS

Assets include not only artillery organizations and their weapons, but also their target acquisition means and the types of munitions available to them. Modern conventional fire support means, especially precision weapons, approach the destructive effect of low-yield nuclear weapons.

In the ground forces, the branch of missile troops and artillery is responsible for--

- Surface-to-surface missiles (SSMs) at army group, army, and corps levels.
- Field artillery: multiple rocket launchers (MRLs), field guns, gun-howitzers, howitzers, mortars.
- Antitank artillery (antitank guns and ATGMs).

With the exception of MRLs, field artillery assets at army, corps, and division levels do not necessarily remain at the organizational level to which they are organic. In organization for combat, the common practice is to allocate these assets downward to subordinates. Mechanized infantry units from division to battalion have their own organic field artillery; for example, an artillery regiment to a division, an artillery battalion to a brigade, and a mortar battery to a battalion. The same is true of tank units except that the tank battalion has no organic artillery or mortar unit.

Army Group

Some army groups could have an artillery division or perhaps even two of them. Such a division typically has four tube artillery brigades (152-mm guns, gun-howitzers, and 122-mm howitzers) and one brigade of long-range MRLs (220- or 300-mm). If an army group has no more than one artillery division, it may also have a separate SP gun brigade and/or a separate MRL regiment or brigade. For additional support, higher command may allocate a heavy artillery brigade to an army group. This brigade is not part of an artillery division. It may have four battalions of 203-mm SP guns or two battalions of those guns and two battalions of 240-mm SP mortars. An army group also has at least one or perhaps two SSM brigades.

Army and Corps

A mechanized army (MA) or a tank army (TA) each normally has an artillery brigade with four or five gun battalions (152-mm towed or SP). Both types of army also have an MRL regiment and an SSM brigade. The MA has an AT regiment. A corps has the same types of artillery assets as the army, except it may have only one battalion of MRLs

rather than an entire regiment. Another difference is that both the artillery brigade and the AT regiment are smaller at corps level.

Target Acquisition

Each tube artillery or MRL battery and battalion has its own artillery command and reconnaissance vehicles (ACRVs) and rangefinders. MRL battalions (220-mm and above) and tube artillery battalions also have a mobile reconnaissance post vehicle with a battlefield surveillance radar.

At the tactical level, target acquisition batteries have a variety of battlefield surveillance and countermortar/counterbattery radars, plus sound-ranging sets, rangefinders, and topographic survey equipment. At the operational level, these batteries (and battalions comprised of them) add a meteorological radar. At army and army group level, there is a target acquisition regiment comprised of such battalions, plus a squadron of remotely-piloted vehicles (RPVs). A corps, however, has only a target acquisition battalion.

As with the field artillery systems they support, target acquisition assets do not necessarily stay at the level to which they are organic. In organization for combat, higher headquarters normally allocate target acquisition batteries or battalions downward along with the artillery battalions that form artillery groups.

Precision Weapons

The OPFOR defines a ***precision weapon*** as one capable of delivering guided conventional munitions with a 50- to 60-percent probability of destroying enemy targets with a first-round hit (within range of the weapon delivery system). This capability is possible only by employing ***precision munitions*** that have a guidance or homing element. The presence of the precision munition transforms a weapon into a precision weapon. However, a precision weapon system must also incorporate a target acquisition and tracking subsystem and a missile or projectile guidance subsystem. Some of these subsystems may be combined.

Precision weapons have enabled the OPFOR to mass firepower at critical points on the battlefield and simultaneously reduce ammunition expenditure and mission time. A reconnaissance-strike complex (defined later in this chapter) is the most effective form of precision weapon system. This complex, sometimes called a unified precision weapon system, links the highly accurate weapon to an automated reconnaissance and control system.

Precision munitions delivered by missile troops and artillery can include--

- Homing and guided SSMs (some delivering advanced submunitions).
- Semiactive laser-guided artillery projectiles.
- Sensor-fuzed artillery submunitions.
- Terminally homing cannon and mortar projectiles.
- Terminally homing submunitions for MRLs.

The artillery precision munitions are primarily designed to effectively defeat armored vehicles; SP artillery systems; MRLs; command, control, communications, computer, and intelligence (C^4I) centers; defensive fortifications; and bridges.[1]

The fielding of precision munitions provides distinct advantages for a tube artillery unit. First, tube artillery units are capable of firing at individual targets (to include pinpoint targets such as tanks, infantry fighting vehicles (IFVs), or field fortifications) with a high probability of a first-round kill. For example, a unit firing 152-mm laser-guided projectiles (LGPs) can reduce its ammunition expenditure by 40 to 50 times, compared to using 152-mm conventional munitions, and also destroy the target three to five times faster. This eliminates the traditional requirement for an area fire or artillery barrage. Second, a tube artillery unit can fire at group targets using the same gun settings computed relative to the center of mass of the group target.

Not all OPFOR artillery units have precision munitions, making it necessary to allocated those rounds available

against high-value targets. Even the units that do receive them do not distribute them evenly among all available tubes, but typically designate one particular subelement to fire them. For example, a typical allocation for a 152-mm SP gun battalion that receives LGPs could be four equipment sets. Each set typically includes a laser target designator, a shot synchronization system, and 50 LGPs. Thus, an SP gun battalion could receive a total of 200 LGPs.

The commander of that battalion may designate one of his three batteries as the special-weapons or LGP battery. In turn, that battery commander designates one platoon (possibly on a rotating basis to maintain crew proficiency) as the principal LGP firing unit.[2] The LGP firing platoon retains 140 LGPs, with the 60 remaining projectiles distributed throughout the battalion at a rate of four LGPs per tube.

NBC Weapons

The OPFOR might use nuclear, biological, and chemical (NBC) weapons either to deter aggression or as a response to an enemy attack on the State. The OPFOR has short-, medium-, and intermediate-range SSMs capable of carrying nuclear, chemical, or biological warheads. Additionally, it can employ aircraft systems and cruise missiles to deliver an NBC strike.

OPFOR military doctrine distinguishes between fire support and an NBC attack. However, the two are closely related. Strategic and operational fire support units must plan and deliver the strikes. They must also adjust the fire plan to account for the effects of NBC strikes on the enemy. Such strikes greatly affect the tempo of combat activity. This, in turn, influences the type of fire support required. It also influences the kind of logistics support needed, such as fuel or ammunition.

If needed, the majority of OPFOR artillery (152-mm and above) is capable of firing nuclear or chemical munitions. However, continued improvements in conventional munitions, especially precision munitions, increase the likelihood that the OPFOR can achieve operational- or tactical-level fire superiority at the desired location and time without resorting to NBC weapons.

COMMAND AND CONTROL

OPFOR commanders believe in exercising control of artillery at the highest possible level. Doing so ensures maximum flexibility, maximum effort at the decisive point, and logistics economy. What the highest level is depends on the phase of the operation. During a penetration, control is at the army level. In an attack on a broad frontage against weak opposition, control is at the division level. In pursuit, control may devolve to individual maneuver brigades. In the defense, the army would control a counterpreparation or support for an army counterstrike, while the rest of the operation might see the division as the main focus.

Commander of Missile Troops and Artillery

At maneuver brigade and above, an artillery officer who plans and coordinates artillery fires serves on the staff of the maneuver unit commander. His title is chief of artillery at brigade and division level and commander of missile troops and artillery (CMTA) all levels above division.

At the army group, army, and corps level, the CMTA advises the maneuver commander on fire support. He also commands and issues orders to artillery units through the special chain of artillery subordination. This system preserves the authority of the army group, army, and corps commanders. They can rapidly allocate missile and artillery assets.

Centralization

The OPFOR accomplishes fire planning at the highest possible levels. An army commander and members of his staff are usually at army group headquarters before the army group completes its planning. This prior knowledge lets the army staff begin its own fire plan before receiving the final army group operations order and fire plan. The highest

level of participating units coordinates and approves the plan. The fire plan also includes input from subordinate units. The fire planning process includes--

- Target acquisition.
- Organization for combat.
- Assignment of tactical missions.
- Determination of ammunition requirements.
- Formulation of a detailed fire plan.

The artillery has targets for each phase of the operation based on the following data: target type, dimensions, degree of fortification, mobility, and depth into the enemy's defense.

Coordination

The army group, army, or corps fire plan incorporates the fires of all divisional artillery units. The artillery unit commander at each level coordinates the fires under his control. He determines new requirements and missions and, with the CMTA or chief of artillery (depending on the level), makes suggestions to the combined arms commander concerning adjustments in tactical organization as the situation develops.

AIMS

Effective fires enable OPFOR ground forces to attack successfully and quickly to exploit weaknesses. Commanders try to accomplish their missions by fire then by rapid exploitation with maneuver forces. The OPFOR continues to expand and upgrade fire support systems to achieve overwhelming firepower.

Fire Superiority

Fire superiority is a firepower advantage over the enemy in a given battle or operation. It allows a unit to execute its own fire missions successfully while suppressing enemy counterfire. The OPFOR believes that fire superiority is relatively assured for whoever--

- Opens fire first.
- Achieves surprise.
- Delivers highly accurate and effective fire.
- Masses fires effectively, either through maneuver by fire or maneuver of fire support means.

To gain and keep fire superiority, a unit maintains continuous fire on the enemy's fire support systems, especially on his artillery and attack aviation.

An extensive fire preparation in the offense can win fire superiority. This vital advantage should continue during the entire battle. In the defense, fire planners may achieve fire superiority by quickly massing fires in selected sectors for a given period of time. For example, units may fire in a sector selected for a counterpreparation or in support of a counterstrike force.

The OPFOR stresses that fire support systems should combine air assets, SSMs, and artillery into a coordinated attack throughout the enemy's defenses. The combined arms commander must increase the volume of air and missile strikes and artillery fire to destroy enemy weapon systems during preparatory fires. This can also provide continuous fire support for maneuver units while they move though enemy defenses.

Target Damage Criteria

Target damage is the effect of fires on a given military target. It results in total, partial, or temporary loss of the target's combat effectiveness. The categories of target damage are annihilation, demolition, neutralization, and harassment.

Annihilation

Annihilation fires make unobserved targets combat-ineffective, needing major construction to be usable. For a point target such as an ATGM launcher, the OPFOR must expend enough rounds to ensure a 70 to 90 percent probability of kill. For area targets such as platoon strongpoints or nuclear artillery assets, they must fire enough rounds to destroy from 50 to 60 percent of the targets within the group. These fires result in the group ceasing to exist as a fighting force.

Demolition

The OPFOR uses the term *demolition* in reference to the destruction of buildings and engineer works (bridges, fortifications, roads). Demolition requires enough rounds to make such material objects unfit for further use. It is a subset of annihilation.

Neutralization

Neutralization fire inflicts enough losses on a target to--

- Cause it to temporarily lose its combat effectiveness.
- Restrict or prohibit its maneuver;
- Disrupt its C^2 capability.

To achieve neutralization, the OPFOR must deliver enough rounds to destroy 30 percent of a group of unobserved targets. The term *neutralization* applies only in an artillery context.

Harassment

The OPFOR uses a limited number of artillery pieces and ammunition within a prescribed time to deliver harassment fires. The goal of these fires is to put psychological pressure on enemy personnel in concentrated defensive areas, command posts, and rear installations. Successful harassment fire inhibits maneuver, lowers morale, interrupts rest, and weakens enemy combat readiness.

ORGANIZATION FOR COMBAT

Offensive doctrine calls for intense artillery preparations of short duration. Defensive doctrine calls for prolonged, high volumes of artillery fire in depth to break up and to destroy the enemy's attack. The OPFOR concentrates fires on critical points in the offense or disperses them throughout the sector in the defense. This requires a numerical superiority in artillery pieces that are capable of rapid fire, long range, and mobility. Above all, the OPFOR stresses the importance of thoroughly integrated fire and maneuver plans.

Numerous longer-range tube artillery and MRL battalions from army group, army, corps, and division provide massive reinforcing fires when required. The OPFOR seeks to achieve the densities of fire they believe necessary without sacrificing the mobility that artillery units need to survive and perform their mission.

Allocation Procedures

The OPFOR carefully calculates artillery requirements in terms of weapons and rounds needed to produce a required effect on enemy targets. Planners adhere strictly to these norms. If insufficient artillery or ammunition is available to achieve the necessary result, the OPFOR does not fire less and hope for the best. Rather, if necessary, it engages fewer targets, adjusting the tactical, or even operational, plan. Alternatively, it may prolong preparatory fire to take in more targets.

Combined arms theory calls for artillery support to brigade- and division-size battles that exceed the capabilities of organic artillery resources. To do this, the OPFOR uses organic and allocated artillery to form artillery groups. A higher headquarters allocates artillery to a maneuver force to execute a given operation, for example--

- Army group, army, and corps normally allocate artillery battalions according to the importance of the army, corps, and division missions.
- A division might allocate some of its organic and allocated artillery to leading brigades.
- The army might temporarily allocate second-echelon divisional artillery to first-echelon divisions.

The OPFOR does not normally reinforce second-echelon divisions, brigades, and battalions with additional artillery until the commander commits them.

Artillery Groups

Temporary, mission-oriented artillery groups are a command and organizational structure that ensures flexibility in concentrating artillery fire. The goal of forming artillery groups is to provide ample fire support to the maneuver commander to conduct an operation. Army, corps, division, and brigade artillery groups provide continuous artillery support to maneuver commanders with the required degree of centralized control.

The commander positions the groups' assets to support his concept of maneuver. As higher headquarters allocate artillery battalions to subordinates, they also pass down target acquisition batteries or battalions to support them in the artillery groups being formed.

Artillery groups usually consist of at least two battalions of field guns, howitzers, gun-howitzers, and/or MRLs. These groupings are command and control relationships and do not imply close positioning.[3] While close positioning may be necessary to achieve desired effects, artillery groups disperse as much as possible to avoid becoming a target for enemy precision weapons, air attack, and counterfire.

A designated commander and staff provide the group's command and control. This is usually the commander and staff of the artillery brigade or regiment that forms the core of the group, regardless of whether or not that artillery unit was organic to the maneuver unit. Figure 9-1 illustrates how the OPFOR forms artillery groups.

Army Artillery Group

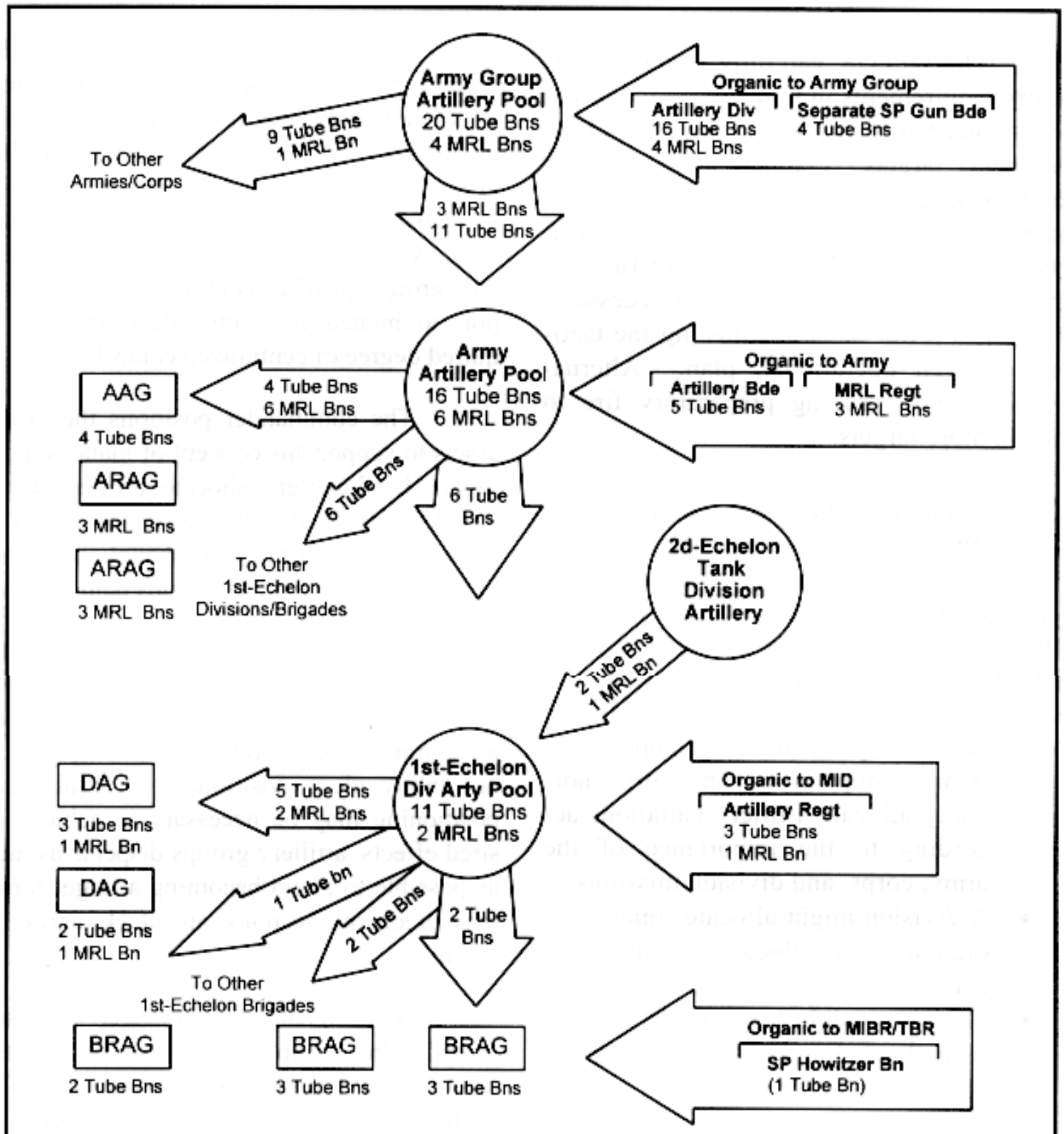
The army commander forms the army artillery group (AAG) from army group assets allocated to that army and the army's own assets, less any assets that have been decentralized to divisions. The army group commander usually distributes army group artillery assets to committed armies in proportion to the importance of assigned tasks.

When an army commander receives army group artillery assets, he decides which artillery he will allocate to his first-echelon divisions. He bases his decision on the concept of the operation. The division executing the major army mission receives the most artillery.

The AAG may use the remaining artillery battalions for the army’s counterbattery mission. The group comprises largely the longer-range systems. Its primary tasks are counterfire and the engagement of deep targets such as NBC or precision weapons, headquarters, air defenses, and reserves. It can also maneuver concentrations of fire to aid the advance of main-axis divisions.

An army could have four to eight battalions of tube artillery with which to form one or two AAGs.[4] If the number is closer to four battalions, the army would form one AAG; with closer to eight, it is probable that an army would form subgroups or two AAGs. The latter may be necessary to support more than one division or to perform more than one mission (for example, divisional support, counterbattery, or demolition of fortifications). The OPFOR might not form an AAG in fluid operations or if the army has a wide frontage.

Army Rocket Artillery Group



The distribution of artillery battalions shown above is only an example. Actual allocation patterns depend on the situation and the mission of the receiving organization. In this example, the army illustrated is in the army group's main attack. The mechanized infantry division is in the army's main attack, and the two brigades on the right are the division's main attack. It is not necessary that all second-echelon divisions give up artillery assets to reinforce first-echelon divisions; this is only an option the army corps commander could use.

Figure 9-1. Formation of artillery groups (example).

An army would not normally allocate the MRLs of its organic MRL regiment to its subordinate divisions. With these and additional MRL battalions possibly allocated to the army from an army group-level MRL brigade or regiment, the army commander would form an army rocket artillery group (ARAG).[5] The three to seven battalions in the ARAG do not include any SSM units. With closer to seven battalions, and army might form two ARAGs. An ARAG normally fires under centralized control in support of the army's main attack axis. However, it could also conduct rapid maneuver to any axis, as required, to inflict losses on main enemy groupings.

Division Artillery Group

Army resources would augment divisions on the main axis, either with army group or army artillery or units taken temporarily from second-echelon or reserve divisions. The division commander allocates this artillery, and the division's own organic regiment, less any units decentralized to brigades, to form a division artillery group (DAG). The division may organize more than one DAG, if necessary, due to the span of control, the number of battalions available, and the assigned missions.

Brigade Artillery Group

Brigade artillery groups (BRAGs) provide fire support to maneuver brigades. The division commander allocates additional divisional and nondivisional tube artillery to form strong BRAGs in first-echelon brigades. He could do the same for a brigade performing an independent mission, such as a pursuit or forward detachment (FD). Likewise, an operational-level commander could allocate additional resources to form a BRAG in a separate brigade or any brigade performing an independent mission for him, such as an OMG or FD.

Regrouping

Where possible, commanders meet changing situations by the maneuver of fire from one axis to another. As the situation becomes more fluid, artillery groupings change in line with the nature of combat and the strengths of supported groupings. The centralization of logistics support at army group, army, and corps levels makes substantial regroupings relatively quick and easy. Artillery groups established for the defense normally remain intact until the offense resumes.

Higher headquarters forms or dissolves DAGs and BRAGs in accordance with plans and the tempo of operations. The OPFOR normally releases BRAGs from firing preparation targets first, then releases the DAGs. When higher headquarters dissolves these groups, army group and army assets may revert to centralized control. Thus they can provide long-range reinforcement for divisional and brigade artillery.

Reconnaissance-Strike Complexes

The same types of artillery assets normally found in artillery groups may also act as part of an operational-level ***reconnaissance-strike complex (RSC)***.[6] The RSC integrates reconnaissance and target acquisition, fire control, and weapon systems into a closed-loop, automated strike system that detects, identifies, and destroys critical targets in minutes. One reason for this requirement for accelerated engagement is that high-value targets may expose themselves for only fleeting periods. As with artillery groups, the assets assigned to an RSC are organizationally and functionally interconnected only for the duration of the RSC mission and do not necessarily have to be colocated.

Normally, the operational-level commander designates specific reconnaissance, C^2, and fire support assets to conduct the RSC. This type of arrangement allows the assets to remain silent or concealed until the desired high-priority targets are detected in the RSC target area. However, it is more likely that OPFOR commanders would establish a window of time (based on a reconnaissance assessment of when the enemy targets should be in the designated target area) for assets tasked to support the RSC. Thus, the designated RSC assets can execute other missions or taskings prior to executing the RSC.

The RSC system enables the OPFOR to deliver long-range air, SSM, and artillery fires (including precision munitions) on enemy targets in real time or near-real time. The OPFOR can use RSCs in offensive and defensive

phases of combat. The size of the target area, the objectives to be achieved, and the forces available will determine the number and types of RSCs formed. Assets designated for RSC use are under control of operational-level commanders, and control remains centralized for planning, analysis and evaluation of reconnaissance data, and execution of the RSC mission.

Reconnaissance and Target Acquisition

The RSC employs a target acquisition system or multiple systems capable of detecting and determining the location of the specific type(s) of target assigned to that RSC. To locate critical enemy systems and complexes, the OPFOR may use--

- Advanced airborne early warning aircraft.
- UAV (drone and RPV) systems.
- Battlefield surveillance radars.
- Weapon-locating radars.
- Sound-ranging systems.
- Ground-based and airborne signals reconnaissance systems.

Fire Control

The RSC is a closed-loop system with direct communications links between reconnaissance assets and fire support systems to support real-time or near real-time targeting. The OPFOR employs a fire control system capable of providing automated and non-automated control of designated fire support systems. Once firing begins, the reconnaissance unit observes the results and controls any additional fires necessary to destroy the target.

Fire Support Assets

Using targeting criteria established during the planning process, fire support systems automatically (or semi-automatically) deliver fires against critical targets upon detection. The OPFOR may use SSMs (with terminally homing warheads or submunitions), MRLs (with precision munitions or mines), conventional artillery and air munitions, tactical aircraft, and attack helicopters during the execution of the RSC. However, attack helicopters do not operate outside of an air defense umbrella. For targets detected on the move, the RSC might use artillery-delivered scatterable mines to fix the target in place and then engage it with precision weapons or advanced conventional munitions.

When reconnaissance and target acquisition assets locate critical targets that take precedence over artillery group missions, predesignated fire assets come under the control of the RSC until they complete their engagement of those critical targets. Only on completion of the RSC mission do these assets revert to control of their parent units or the artillery groups to which they had been allocated.

Targets

An RSC may engage moving or stationary targets. These targets include--

- Precision weapons.
- NBC delivery means.
- Long-range conventional weapons.
- C^4I facilities.
- Air defense assets.
- Weapon guidance systems.

The OPFOR wants to neutralize enemy equivalents of the RSC to maximize its own offensive or defensive capabilities.

Engagement Time

Recent technological advances in target acquisition and fire control systems provide the OPFOR with a capability to rapidly disseminate information on suspected enemy targets within one minute or less. This includes from time of acquisition to computation by a fire direction center and the initial transmission of data to a firing battery.

Under favorable conditions, the first artillery round may be on target within 2 to 4 minutes of acquisition. The desired identify-destroy cycle should not last any longer than 6 to 10 minutes. In essence, the RSC allows the detection and simultaneous attack and destruction of a target in near real time.

METHODS OF FIRE

The OPFOR uses various types of fires against the enemy. The methods of fire may have different purposes in the offense and defense. The following definitions provide the background on OPFOR methods of fire.

Counterbattery Fire

Counterbattery fire accomplishes the neutralization or annihilation of enemy artillery batteries. Combat with enemy artillery is one of the artillery's most important missions. It enables ground forces to achieve fire superiority on the battlefield. Combat with enemy artillery requires more than counterbattery fire. It requires the destruction of C^2 centers as well as artillery. It also requires the cooperation of other ground combat arms and aviation.

Maneuver by Fire

Maneuver by fire occurs when a unit shifts fire from one target, or group of targets, to another without changing firing positions. This is a combined arms concept in which the artillery plays a critical role. Maneuver by fire masses fires on the most important enemy installations or force groupings. Its intention is to destroy them in a short period of time or to redistribute fires to destroy several targets simultaneously. Another purpose may be to shift the OPFOR’s main combat effort from one axis to another.

In the offense, maneuver by fire in the depth of the enemy's defenses can--

- Neutralize enemy strongpoints.
- Repulse counterattacks.
- Cover the attacking unit's tanks with protective fires.

In the defense, it can--

- Destroy the enemy as he deploys to attack.
- Repulse the attack.
- Support a counterstrike force.
- Protect gaps in defenses.
- Seal off enemy penetrations.
- Assist neighboring units that lack sufficient firepower.
- Support a unit defending in all directions.

Wide use of maneuver by fire enables the defending commander to achieve fire superiority at the critical time in decisive sectors.

The fire plan normally includes plans for maneuver. In such planning, artillery units have several supplementary assigned sectors of fire. These sectors cover areas along the supported unit's flanks and the gaps between units.

FIRING NORMS

When establishing firing norms, planners consider several variables. The norms change as any one or more of the variables change. These variables include--

- The type of target; such as equipment or personnel, defensive positions, hard- or soft-skinned vehicles, point or area, and disposition.
- The type, caliber, and number of weapons engaging the target.
- The range to the target.
- Whether the target is under direct observation during the artillery attack.
- The types of ammunition available.
- The time available to prepare for firing.

Ammunition Expenditure

For annihilation or neutralization missions against fires as many (or as few) rounds as necessary for the observer to indicate that the target has sustained the required amount of damage. For unobserved fire, the OPFOR uses a general table of ammunition expenditure norms as the basis for artillery fire planning. Figure 9-2 is an example of such a table for fragmentation high-explosive (frag-HE) rounds required to annihilate or neutralize various targets. This table does not consider time. The norms might apply to any of the methods of fire previously described.

Target	Required Effect	Frag-HE Rounds by Caliber in Millimeters											
		Guns and Howitzers							Mortars			MRLs	
		76	85	100	122	130	152	203	82	120	240	122	220
SSM Launcher	Target annihilation	800	720	540	300	280	200	70			60	360	200
Battery (platoon) of armored self-propelled artillery (mortars)	Target neutralization	1000	900	720	450	360	270	120		450	120	400	240
Battery (platoon) of unarmored self-propelled or dug-in towed artillery mortars	Target neutralization	540	480	360	240	220	180	100	400	240	100	320	180
Battery (platoon) of towed Artillery in the open	Target neutralization	250	220	150	90	80	60	30	180	90	20	120	60
SAM Battery	Target neutralization	250	240	200	150	150	100	60				200	100
Signal and Radar vans or radar control point in the open	Target neutralization	420	360	280	180	180	120	60	350	180	40	240	120

Dug-in troops and weapons in prepared defense strongpoint positions	Neutralization of 1 hectare of target area	480	450	320	200	200	150	60		200	50	240	100
Dug-in troops and weapons, tanks, IFVs, and APCs in hastily prepared defense positions, and assembly areas	Neutralization of 1 hectare of target area	400	350	250	150	150	110	45	300	140	45	180	80
Troops and weapons in assembly area in the open	Neutralization of 1 hectare of target area	50	45	30	20	20	15	5	35	10	4	8	5
Command post in dug-out shelter or other overhead cover	Neutralization of 1 hectare of target area	480	450	320	200	200	150	60		200	50	240	100
Command post in the open (or mounted in vehicle	Neutralization of 1 hectare of target area	120	100	80	80	50	40	15		25	10	20	15
ATGM,antitank gun of other individual target in the open	Target neutralization	250	240	180	140	140	100	90	240	140	35		

Figure 9-2. Ammunition expenditure norms (unobserved targets at ranges up to 10 km).

Planners use norms based on unobserved targets at a range of 10 km or less from the artillery. For tube artillery, this expenditure increases by 10 percent for each additional kilometer at ranges beyond 10 km. The expenditure for MRLs does not increase with this longer range. The ammunition expenditure rate typically decreases by 25 percent when the artillery adjusts from a known point.

The table also assumes that batteries have occupied their firing positions and laid their guns based on survey data. Finally, the meteorological data used should be no more than 3 hours old. Below are some examples of ammunition expenditures derived from this table.

To neutralize a tank or mechanized infantry platoon in a hasty defensive position covering 6 hectares (1 hectare equals an area 100 by 100 m), a 122-mm howitzer battalion would have to fire 900 rounds weighing 19,800 kg. To neutralize an SP artillery battery at a range of 15 km, a 152-mm gun battalion would have to fire 405 rounds weighing 17,820 kg. A unit in defense presents a multiplicity of such targets. For example, a two-battalion defense to be penetrated could consist of 60 to 70 targets requiring between 30,000 and 40,000 rounds for neutralization (2,500 to 3,000 metric tons), depending on caliber and the effectiveness of target acquisition.

The ammunition expenditure in these examples is only to achieve neutralization of the target. To ensure annihilation

of unobserved targets, planners may have to multiply the expenditure norm by a factor of 2 to 3 for targets in the open or by 3 to 4 for dug-in targets. The massive level of expenditure implied in this example illustrates the logistics challenge facing the OPFOR if it has to mount frequent attacks on a defending enemy. Even a series of meeting engagements and battles might stress the logistics system. The OPFOR possesses a large number of ammunition vehicles, but their movement must be carefully coordinated so as not to limit the mobility of their parent units. If the OPFOR anticipates the need for artillery preparation, it must pre-position the required ammunition to conserve unit stocks.

The availability of ***precision weapons*** reduces the amount of ammunition required to achieve specific effects. Given proper acquisition and guidance, it might be possible to annihilate the above-mentioned enemy platoon in a hasty defense with no more than three precision artillery rounds. In most cases, the OPFOR supply of precision weapons is not unlimited and must be allocated carefully against high-value targets.

Unit of Fire

The unit of fire is a fixed number of rounds per weapon, or weapons system, for planning and accounting purposes. It is not an authorized allowance or a daily expenditure rate. A unit of fire is the basic factor to plan ammunition requirements in each action.

The OPFOR establishes units of fire by directive, based on combat experience, the enemy situation, and the availability of ammunition. The weapon unit of fire refers to the number of rounds required for a particular weapon to accomplish a planned mission. A weapon unit of fire may or may not be equal to the number of rounds carried on board a particular system.

Ammunition distribution and stockage use units of fire as a basis of measurement. The use of units for fire simplifies ammunition accounting procedures.

OFFENSE

The fire planning process includes target acquisition, combat organization, assignment of missions, determination of ammunition requirements, and the formulation of a detailed fire plan. The army group commander coordinates and approves the plan.

In an army attack, the army commander lays down timings and specifies engagement priorities. The army CMTA then allocates targets and timings to the AAG(s), ARAG(s), and DAGs. With the fire units, time, and ammunition remaining, division commanders and their chiefs of artillery apportion tasks to DAGs and BRAGs.

Fire Planning

Although the CMTA conducts basic fire planning, senior commanders often give artillery orders and amendments to orders as the operation progresses. Units initially engaging the enemy conduct detailed fire planning. As the operation develops and additional artillery deploys, the artillery staff refines the fire plan. It also enlarges it to provide maximum fire at critical points. The artillery commander positions accompanying artillery to facilitate prompt fires for each maneuver unit as the maneuver commander commits it. Reinforcing artillery displaces forward to be in the best location to support the operation with fire. The single, coordinated fire plan includes precision weapon strikes, conventional fires, fixed-wing aircraft, and attack helicopters. Fire preparations precede major offensive actions.

Target Priorities

Generally, the highest priority targets, in the approximate order of importance, are--

- Precision and NBC weapons.
- Conventional artillery and air defense systems and mortars.
- Defensive strongpoints, especially ATGMs and tanks within them.

- Command posts, observation posts, communications, and radar facilities.
- Reserves and logistic support units and routes units could use when moving up to counterattack.

The priority each target receives can obviously vary according to the stage of the battle. For example, enemy reserves are a high priority at the time of commitment of a second echelon.

Phases of Fire Support

The goal of fire support in the offense is to weaken the enemy through the conduct of an "artillery offensive." This goal is accomplished by the continuous supporting fire of artillery through the depth of the enemy defense. The duration of fires varies with circumstances. There are four phases in the fire support of the offense (see Figure 9-3). The number of phases used and their form depend on the situation of the enemy. For example, Phase I normally applies only to an attack from the march against a defending enemy. Phases II through IV apply to an attack against a defending enemy from the march or from positions in direct contact. The artillery may repeat some of these phases for the commitment of a second echelon, OMG, or reserve. To varying degrees, these latter phases also apply to an attack against an attacking enemy (meeting engagement) or against a withdrawing enemy (pursuit). In the meeting engagement or pursuit, artillery commanders must be ready to enter the battle at any phase.

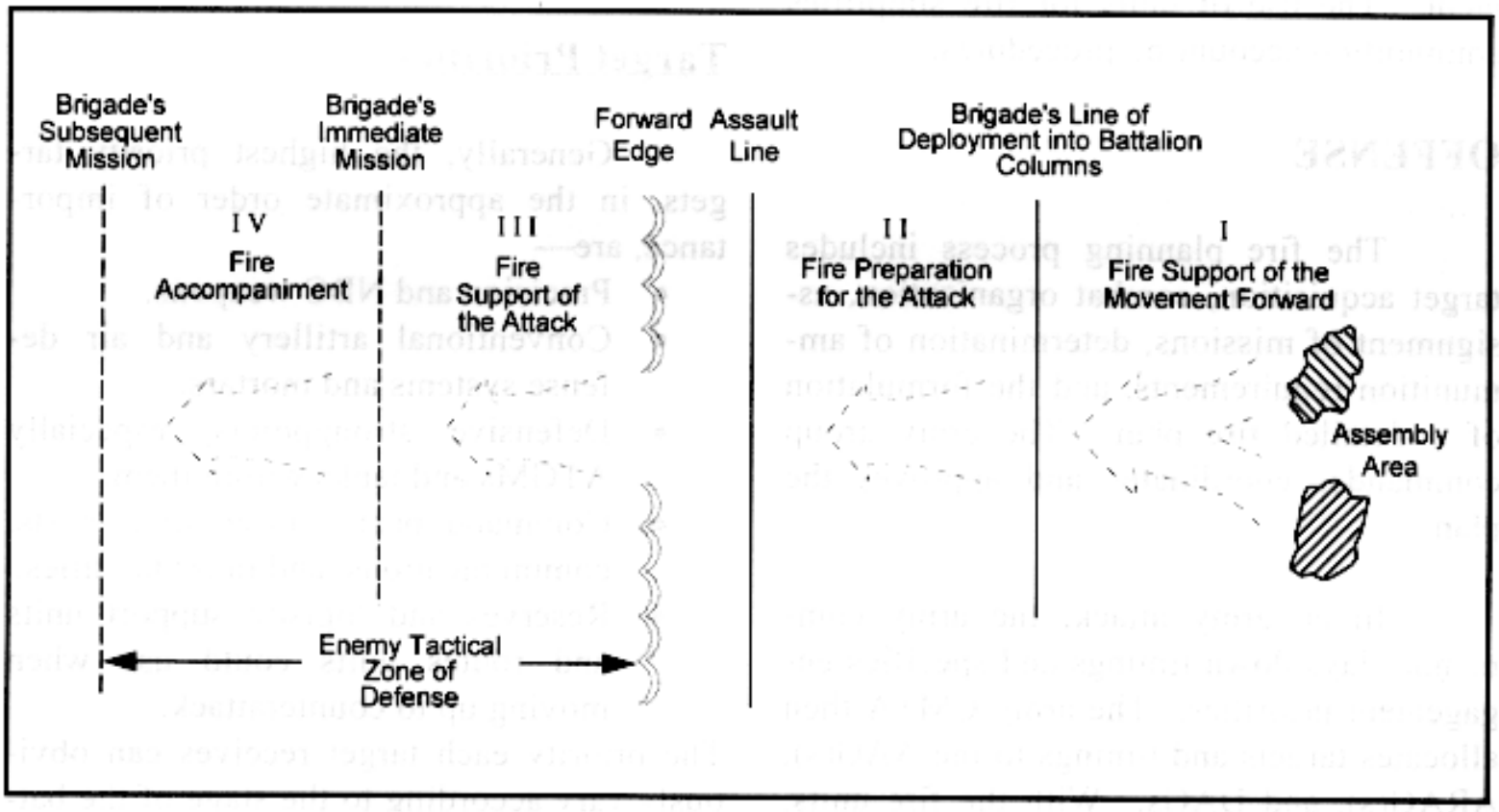


Figure 9-3. Phases of offensive fire support.

Phase I: Fire Support for the Movement Forward

Phase I applies to conventional support of any uncommitted force moving toward commitment in an attack from the march against a defending enemy. It targets the enemy's long-range attack capabilities, acquisition assets, and command and control. It also covers a unit's movement from the assembly area to the line of deployment from march to prebattle formation. It might also cover a follow-on force's movement forward before commitment. The OPFOR commander wants to establish battlefield conditions favorable for Phase II fires.

Phase I specifically targets the most dangerous enemy long-range weapons that might strike the supported unit while it is still a considerable distance from the forward edge of enemy defenses. These targets primarily consist of enemy

nuclear and precision weapons, long-range artillery, and SSMs. Targets also include aircraft on airfields and combat helicopters. The OPFOR uses aviation, tactical and operational-tactical SSMs, long-range guns, and MRLs to destroy or neutralize deep targets. These OPFOR assets often take the form of RSCs or RFCs committed to engage specific high-priority targets.

Phase I may begin more than an hour before the attacking force reaches the enemy's forward edge of defense. The aim is to protect advancing columns by destroying or harassing enemy systems that could interfere. The artillery is likely to conduct fire for this phase largely from temporary fire positions, with the artillery shifting to its main positions for the preparatory phase. Phase I ends when maneuver units are ready to deploy into battalion columns.

Phase II: Fire Preparation for the Attack

Phase II can apply to the attack or the counterattack. It may also precede the commitment of second-echelon or reserve forces. The artillery preparation should neutralize and/or annihilate a defending enemy with organized, thoroughly planned, massed fires. These fires deny the enemy the opportunity to organize resistance. The OPFOR may deliver fires for the preparation either simultaneously or sequentially. The fire preparation should annihilate and neutralize enemy weapons systems, C^2 elements, and troops in the tactical and immediate operational depth of the enemy's defenses. In this and subsequent phases, RSCs and RFCs stand ready to engage critical targets immediately upon detection. Otherwise, the artillery portion of the fire preparation comes primarily from the artillery groups supporting particular maneuver forces. The OPFOR strives to achieve fire superiority early to deny any real opposition by the enemy.

The preparation includes fires from artillery, fire support helicopters, and combat aircraft. It may include tanks and other direct fire weapons. The fire planner allocates targets for the preparation phase to these various fire support assets. His allocation depends on the target's type, dimensions, degree of fortification, and mobility. He must also consider depth in the enemy's defenses.

The organization of the preparation reflects--

- The overall attack plan.
- The nature of the enemy's defenses.
- The type and density of fire support means available for the preparation.
- The number and type of fire preparation missions allocated to missile troops and aviation by higher headquarters.
- The role of NBC or precision weapon strikes in the attack plan.

The length of the preparation depends on the time required to achieve the planned level of destruction. In an attack from the march, the preparation lasts until first-echelon maneuver units are ready to deploy into battle formation. The shift to this final battle formation usually occurs within 1,000 m of enemy defenses. The fire preparation might consist of several artillery strikes. The first and last of these normally would be the most powerful. The final strike concentrates on the enemy's artillery and mortar batteries. It overlaps the end of the fire preparation phase and the start of the fire support phase of the attack.

Depending on the combat situation, the preparation may take as little as 10 minutes or it may extend to over an hour. However, it typically begins about 20 to 30 minutes before the supported force reaches the forward edge of enemy defenses. The OPFOR may repeat this fire against well-fortified, deeply echeloned defenses. The preparation includes the following targets:

- Precision weapons.
- C^2 centers.
- Air defense equipment.
- Artillery and mortar batteries.
- Antitank weapons.

- Enemy strongpoints

Because of the mobility of potential targets and the threat of enemy counterbattery fire, the OPFOR strives to increase the intensity of fire. It tries to reduce the length of this phase by adding more artillery (with special emphasis on MRL units) to the force structure.

Phase III: Fire Support of the Attack

Phase III begins when the supported maneuver units cross their assault line and deploy into battle formation; it continues at least until the supported maneuver unit achieves its immediate mission. For OPFOR brigades, attacking partially prepared enemy defenses, that normally equates to the rear of the enemy's first-echelon brigade defensive positions. The army, division, and sometimes the brigade plan and organize the fire support of the attack phase. It is vital that the enemy does not identify the transition from preparation to support phases, alerting him to the need to man fire positions and return defensive fires. In this phase, first priority goes to maintaining fire superiority.

To help the advance, fire is preplanned on sequential lines moving progressively deeper into the enemy's deployment directly in front of and on the flanks of attacking troops. This hastens the forward movement of assaulting tank and mechanized infantry troops. The method of shifting fires is normally by successive fire concentrations or a rolling barrage. Emphasis is on the continuity of support, making sure the fire of the artillery and the advance of the maneuver units do not get out of phase. This phase should prevent the enemy from restoring fire, C^2, and observation systems disrupted during the preparation. Fires continue to neutralize enemy troop activity and weapons systems, maintaining fire superiority.

Artillery support fires must coincide with the advance of the supported maneuver unit. The time required for the supported attacking troops to move from the assault line to a safety line determines the length of time artillery can fire on the initial barrage line or line of targets. The maneuver unit commander orders fires to shift from line to line. The interval between shifting fires and attack by the ground troops should not exceed from 2 to 4 minutes. These shifts must coincide with the advance of the supported attacking troops to the minimum safety distance from the friendly artillery fire.

Phase IV: Fire Accompaniment to Depth of Enemy Defense

Phase IV includes artillery and air strikes against troops and weapon systems opposing the attacker's advance as well as against enemy reserves deep in the rear. Artillery units support maneuver units with on-call fires as they exploit their success in the rear of the enemy's defenses. The attackers must maintain fire superiority during this phase. The OPFOR continuously refines the artillery accompaniment part of the plan during the course of the attack.

The senior artillery battalion commander or the supported maneuver unit commander assigns targets to exploit success and to assist the commitment of second-echelon forces. Fire strikes must destroy the following types of targets:

- Precision weapons.
- NBC delivery means
- Enemy aircraft on the ground.
- Artillery units.
- C^2 centers.
- Antitank weapons systems.
- Enemy troops.

During Phase IV, artillery units displace with the units they support. They fire on newly located targets or targets that have survived the preparation and support phases. Artillery units provide fires to the maneuver units as they--

- Attack enemy defenses from the march.
- Fight meeting engagements.

- Force water obstacles.
- Commit the second echelon or reserve to battle.
- Repulse an airborne or heliborne assault.

Artillery and combat aviation units coordinate mutually supporting fires with each other and with the supported maneuver unit. They support the commitment of the attacker's second-echelon forces to ensure a high rate of speed. Fires must keep the enemy from using his reserves for counterattacks.

If the enemy counterattacks, the artillery would fire on the counterattack force as it advances and deploys for the attack in conjunction with tanks and mechanized infantry troops. During pursuit, accompanying artillery would fire on the withdrawing enemy and destroy or neutralize enemy units left behind to cover the withdrawal.

Artillery units fire various types of missions, depending on the tactical situation. If attackers encounter an enemy strongpoint in the depth of the enemy's defenses, the supporting artillery attacks the target with a fire concentration or with massed fires. To repulse a counterattack, the artillery employs defensive tactics such as standing barrier fire or rolling barrier fire. A unit may have to overcome an enemy occupying defensive positions, force a water obstacle, or commit its second echelon. The artillery might then have to conduct a preparation of 4 to 10 minutes followed by successive fire concentrations.

Density of Fire

The OPFOR is not content merely to deliver the normative number of rounds to the target. It recognizes that, under current conditions, the density of fire is important (for example, the number of rounds per minute landing on each hectare). In several circumstances, a high density of fire (from 24 to 30 rounds per minute per hectare minimum) is desirable; the following paragraphs outline the reasons:

Surprise

The first salvo is the most destructive and should therefore be large. The OPFOR believes artillery fires achieve their greatest effects in the first 3 to 5 minutes of any fire mission. Artillery should fire one-third to one-half the ammunition allocated to the target during those first minutes.

Increased Effectiveness

In a mobile, fast-developing battle, a detailed survey becomes impossible. A high density of fire provides some compensation for the resulting inaccuracy. It also disposes with the requirements for adjustment, which can cause the loss of both time and surprise.

Target Mobility

Tanks, IFVs, APCs or SP guns can move out of a fire concentration in from 4 to 5 minutes. The artillery must deliver the required number of rounds to neutralize or annihilate a target in less than that time.

Enemy Counterbattery Fire

The enemy might locate OPFOR artillery as little as 2 to 3 minutes after it opens fire. It might deliver counterbattery fire in another 4 to 7 minutes. Short engagements can lessen vulnerability by allowing timely changes of fire positions.

Meeting Engagements

In a fast-developing meeting engagement, there may only be a short time available for artillery preparation before maneuver troops close with the enemy. Therefore, it is important to deliver short, high-density fires.

Weapon Density Norms

The OPFOR plans to achieve certain density norms for artillery depending on the tactical situation. For example, even under the threat of precision weapon or NBC strikes, planners know that they need massive artillery fire in order to penetrate well-prepared enemy defenses. Without necessarily massing the artillery weapons in vulnerable proximity to one another, the OPFOR plans to mass the fires of high numbers of tubes per km of frontage.

Some average guidelines for desired densities are as follows:

- Attack of a well-prepared defense, on a main-attack axis: 60 to 100 tubes per km of frontage.
- Attack on a hasty defense on a main-attack axis: 60 to 80 tubes per km of frontage.
- Attack on a supporting axis: 40 tubes per km of frontage.

These densities include all calibers of guns, howitzers, and mortars. When fire planners include MRLs, the number of tubes per km increases, but the number of actual systems per km decreases.

To reduce mission times and increase fire densities, the OPFOR has adopted both technical and organizational solutions. Even more important has been the allocation of more artillery to each mission. The battalion is now the basic fire unit and engages targets previously engaged by batteries. Some missions, especially counterbattery fire, are fired by two or even three battalions.

Types of Fire

During the offense, OPFOR artillery may conduct seven types of fire. These types of fire are described in the following paragraphs.

Fire Assault

Surprise and a high density of fire on the target characterize the offensive fire assault. Several batteries or battalions fire against an individual target. Fire assaults are the major subelements of an artillery preparation for an attack. All, or at least the larger part, of the artillery of a division, corps, or army carry out these assaults simultaneously on a large group of targets. Fire assaults may annihilate or neutralize targets. Six factors determine the number of fire assaults on a target:

1. The area or nature of the target to be destroyed.
2. The number of rounds allocated for its annihilation or neutralization.
3. The range to the target.
4. The number of tubes available.
5. The types of ammunition available.
6. The time required for available artillery to prepare and expend the rounds allocated.

The situation and the maximum rate of fire of the weapons firing the mission determine the duration of the fire assault. A fire assault of a given duration typically begins with rapid fire of from two to four rounds per minute per weapon. It continues with systematic fire at a rate that uses the allocated ammunition in the time allotted for the mission.

To destroy a target in the shortest possible time, the OPFOR does not fix the duration of the assault. Artillery subunits conduct the mission at rapid fire until they expend the allocated ammunition. A fire assault at the rapid rate of fire also has application to annihilate a target rather than neutralize it.

A fire assault can neutralize a moving target or a target deployed in the open. Controlling fire might fire against the target in the time intervals between fire assaults.

Controlling Fire

Artillery directs controlling fire at an enemy target in the intervals between fire assaults on the same target. Controlling fire denies the enemy the freedom to conduct combat activity. It also prevents escape before the next fire

assault. The planner uses this method when the interval between fire assaults exceeds 15 minutes. A single battery usually conducts this fire at a systematic rate of fire, rapid fire, or a combination of the two. This ensures a smooth transition for supporting fires. Controlling fire usually expends one-tenth to one-fifth of the allocated rounds for the engagement.

Fire Concentration

Several batteries or battalions may simultaneously conduct a fire concentration against a common target. Artillery uses fire concentration against the enemy's--

- Troop concentrations.
- Strongpoints.
- Artillery batteries.
- Command and control centers.

The dimensions of the fire concentration target area depend on the fire mission and the firepower of the artillery unit firing the mission.

Batteries and battalions conduct fire concentrations with all weapons firing at once on the center of the target area. All weapons may fire on the same elevation and deflection settings, or some units may use different settings. Settings depend on factors such as target disposition and whether the target is under direct observation.

Massed Fire

Artillery masses fire against an important target with all or most of the available artillery. The goal is to destroy the target in the shortest possible time. This massed fire may be one large fire concentration or several large fire concentrations fired simultaneously.

Before conducting massed fire, the artillery battalion chief of staff designates target areas and assigns each area a code name. If the dimensions of the target area do not exceed 800 by 800 m, all participating artillery groups fire simultaneously on the center of the target area, applying the principles used for fire concentrations. If the target area is larger than 800 by 800 m, the target has subdivisions of numbered targets or target sectors. Fire planners designate targets or target sectors for assigned artillery groups or units to annihilate or neutralize with fire concentrations. Artillery units fire the mission simultaneously to the extent possible.

Successive Fire Concentrations

Artillery fires successive fire concentrations in the attack when the supported maneuver unit has begun the final assault on enemy defensive positions. The artillery fires such concentrations for the successive neutralization or annihilation of specific targets or target groupings such as strongpoints, weapon systems, and C^2 points deployed to the front and on the flanks of attacking troops. Successive fire concentrations primarily support the offense. This fire can also support counterattacks or counterstrikes in the defense. Successive fire concentrations may be single or double. In a single successive fire concentration, the artillery unit initially fires on the single line of targets closest to the attacking troops. The artillery unit shifts the single fire concentration to progressively deeper lines or groups of enemy targets as the supported attacking troops advance. The principal weight of fire concentrates on neutralizing the enemy's forward defensive positions. A double successive fire concentration requires at least two artillery battalions to fire simultaneously.

The first group fires on the line of targets closest to supported attacking troops. The second group fires on the next line of targets. The first group then shifts its fires from the first line of concentration to the second line. The second group shifts its fires from the second line to the third. This action continually shifts. In a double successive fire concentration, every line of targets, except the first, receives fire twice.

The first line of concentration covers the defender's forward positions. Subsequent lines of concentration are about 300 to 1,000 m apart through the depth of the enemy's defenses. On each successive fire concentration, the fire

planner assigns concentration sectors to every battalion or battery firing the mission. Preparatory fires become supporting fires when attacking troops deploy into battle formation at the assault line. The time required for troops to travel from there to the troop safety line is important; it determines the duration of fire on the initial line of targets (concentrations). The maneuver commander signals initiation of this fire when the ground assault begins.

The supported maneuver brigade or battalion commander gives a signal to shift fire to each subsequent line of concentration. The duration of fire on subsequent lines depends on the distance between the lines and the rate of advance of the attacking troops.

Rolling Barrage

Alternatively, artillery support of the attack might use the rolling barrage, which is a continuous curtain of fire. The rolling barrage successively shifts from one phase line to another in front of attacking troops. Like successive fire concentration, it might fire against a single line or against two lines simultaneously. The supported maneuver commander orders the fires to shift to support the advance. The rolling barrage differs from the successive fire concentration in that it assumes a uniform distribution of targets throughout the target area. It then shifts fire between uniformly spaced phase lines. (The successive fire concentration focuses on targets that require concentrated fires. The target location determines the intervals between lines.) The rolling barrage may have a fire concentration superimposed to ensure the destruction of the most important targets.

In the rolling barrage, phase lines have planned concentrations every 400 to 800 m. Spacing depends on the density of targets in the target area. Planned intermediate phase lines lie every 100 to 200 m. Artillery units fire on each phase line for at least 5 minutes at a rate of 4 to 6 rounds per 100 m per minute. They fire on each intermediate line for 1 or 2 minutes at the same rate. A rolling barrage has battalion and battery sectors with standard widths. The division or brigade commander gives the order to shift from a phase line. However, fires shift automatically from intermediate lines in accordance with a timed firing program.

The depth of a rolling barrage depends on the nature of the enemy's defenses, the attack plan, and the availability of artillery and ammunition. Normally, there is a rolling barrage through the depth of the defenses of the enemy's first-echelon battalions. The rolling barrage requires a great deal of ammunition. It is not, therefore, the most likely method of offensive fire. A rolling barrage, however, may support a penetration of well-prepared defensive positions and forced water obstacle crossings.

Direct Fire

Direct fire is economical of ammunition and at the same time gives a better guarantee of the destruction of point targets than indirect fire. The OPFOR does not limit this role to tanks, ATGMs, and other traditional direct fire weapons. Often, it uses substantial numbers of guns in this way, particularly against structures that require large numbers of rounds for their demolition.

DEFENSE

In the defense, fire planners allocate fire strikes by all available means against likely avenues of approach. The CMTA closely coordinates precision weapons, NBC delivery means, conventional artillery, and supporting aircraft. Intelligence efforts concentrate on determining enemy formations and locating his precision weapons and nuclear delivery means.

As in the offense, "maneuver by fire" in the defense means shifting concentrated fires. An essential element is the ability to shift fires on to new targets as the enemy maneuvers. This delivers a high volume of fire against the enemy's most important target groupings and against targets in the enemy's rear areas. It also covers friendly flanks with fire.

Counterpreparatory Fires

Counterpreparatory fires are an intense delivery of SSM, artillery, and air strikes. Their intent is to annihilate,

neutralize, or at least disrupt enemy forces preparing to attack. These fires should surprise the enemy when he is still in assembly areas or moving up to the line where he deploys into battalion columns in preparation for the attack. The aim is to anticipate the enemy's preparatory fires by a few minutes and thus to reduce their effectiveness. Of course, the intelligence necessary to achieve this is not easy to acquire, and the time required to organize it (3 to 5 hours at division level or 6 to 8 hours at army level) may be lacking. However, when accomplished successfully, it can be devastatingly effective.

Counterpreparatory fire is an army group-level measure. Its execution is in accordance with decisions of the army group commander. When it involves the artillery of more than one army, army group SSMs, and the main forces of army group aviation, the army group commander organizes it. Under some conditions, counterpreparatory fire may occur within first-echelon army or corps areas as well. When it involves only those elements of army group aviation assigned to support one army or corps and only army- or corps-level artillery, the army or corps commander organizes it in accordance with instructions from the army group commander. Direct preparation for counterpreparatory fire is always an army or corps responsibility.

The OPFOR uses all appropriate fire support means for counterpreparatory fires. This includes the fires of DAGs of first-echelon divisions, the army's AAG and ARAG, and artillery of second-echelon divisions. It includes SSMs at army group, army, or corps levels. It can also include army aviation helicopters and some or all of the army group's fixed-wing ground-attack aviation. Reconnaissance strike complexes can engage critical targets.

If the area specified by the army group commander for counterpreparatory fires falls in the defensive area of one army, its size can be about 10 to 15 km in width and from 10 to 30 km in depth. Using the artillery assets of one army, weapon density can be 30 to 40 tubes per km of frontage. Counterpreparatory fires typically consist of 2 or 3 fire strikes and last from 10 to 15 minutes. If the army or corps receives aviation support from the army group, the overall depth of counterpreparatory fires is more likely to reach 25 to 30 km, and the duration of fires can be 25 to 30 minutes.

However, if two adjacent armies conduct the counterpreparatory fires, the width can be up to 20 to 25 km. Using the artillery assets of both armies, weapon density can be 40 to 50 tubes per km of frontage. Even if the enemy attack is focused on one army or corps, artillery in adjacent areas can participate in the counterpreparatory fires, as long as it is within range of the targeted attackers. If the enemy is attempting to attack on a boundary between two adjacent armies or corps, both can participate. If only artillery assets conduct the counterpreparatory fires, the depth of strikes is still 10 to 30 km, with 2 or 3 fire strikes in a period of 25 to 30 minutes. If aviation also participates in counterpreparatory fires, it strikes areas beyond the range of artillery. With aviation, the overall depth of counterpreparatory fires is more likely to reach 25 to 30 km. In any case, the duration of fires can be 25 to 30 minutes.

Phases of Fire Support

In the defense, as in the offense, the fire planner uses all available fire support to carry out the commander's plan. Emphasis is on integrating field artillery, SSM, air, antitank, engineer and electronic combat assets into an overall defensive fire plan. The staff produces several variations of the plan based on the various approach and deployment options open to the enemy.

The OPFOR recognizes that, in the attack, the enemy is likely to enjoy a numerical advantage in fire support assets. Maneuvering massed firepower against key groupings at the crucial moment then becomes critical.

The OPFOR plans fire support in the defense in four phases. These phases are detailed in the following paragraphs.

Phase I: Fire Interdiction

Fire interdiction of advancing enemy troops occurs when the enemy deploys into battalion columns and continues until the enemy reach its assault line. Fire interdiction may include preplanned fires on chokepoints, massed fires by artillery groups, precision weapon strikes, and MRLs emplacing minefields.

Fixed-wing aviation, SSMs, and long-range artillery conduct fire on distant approaches using precision weapons, NBC, or conventional munitions. To the extent possible, long-range fires destroy enemy forces as they move forward. However, if target intelligence is inadequate, the OPFOR can cause disruption and delay by using remotely-delivered mines or possibly by creating barriers of radiation or chemical contamination.

To ensure maximum reach into the enemy's depth, long-range systems and SSMs initially deploy as far forward as the security zone. Attached or supporting artillery units may occupy temporary fire positions beyond the forward edge of defense.

If the OPFOR adopts the defensive when already in contact with the enemy, this phase concentrates on the enemy's second echelon. Throughout the period before the enemy's attack, the focus is on denying the enemy good target intelligence for his preparation. Measures include maintaining strict radio silence and destroying enemy reconnaissance vehicles by specially chosen antitank systems firing from temporary fire positions. As much of the artillery as possible remains silent until needed to repel a major attack. Batteries used before the main enemy attack fire from temporary fire positions or as roving batteries to confuse enemy artillery intelligence.

Phase II: Fire to Repel Enemy Attack

Fire to repel the enemy attack is the most important phase of defensive artillery fire. It begins when the enemy crosses the assault line and ends when he enters the first defensive positions. The goal is to create a zone of continuous fires in front of the defense.

Fire to repel the enemy attack coordinates artillery fire with antitank weapons and all weapons of the maneuver units. The OPFOR employs fire on individual targets, fire concentrations, and barrage fires.

Because this phase is largely tactical in nature, forward divisions control most artillery assets. The army or corps commander may still hold the AAG or CAG for counterbattery fire and to have the means to quickly shift support from one axis to another. Army aviation resources also remain under army direction to continue hitting deep targets and to provide a flexible firepower reserve that can quickly maneuver to meet dangerous developments.

Division and brigade artillery groups attempt to break up attacks and split armor from the infantry with preplanned linear and box concentrations in front of forward edge positions and minefields, in gaps between strongpoints, and eventually in depth. Artillery units deliver short but intense fire assaults no more than 15 to 20 minutes in duration. Then they displace to alternate fire positions to avoid counterbattery fire.

Phase III: Fire Support of Defending Troops

Fire support of defending troops occurs when artillery battalions attack enemy forces penetrating the defensive positions of first-echelon maneuver battalions. The purpose of fire support is to canalize the enemy and to prevent him from developing the attack further into friendly positions. Some batteries may enter preselected direct fire positions. The defender fires against individual targets as well as using fire concentrations and barrage fires.

The OPFOR expects the enemy to penetrate the defense but to pay a heavy price in losses and momentum and be canalized. The artillery supports defensive positions in depth and disrupts the enemy by separating his infantry from armor and his fighting troops from their logistics support. If necessary, artillery can use direct fire as a backstop against armored penetrations. Generally, artillery plays a key role in creating suitable conditions for the launching of a counterattack or counterstrike.

Phase IV: Fire Destruction of the Enemy During Counterattack and/or Counterstrike

Phase IV goals are to recover lost positions, to destroy the penetrating enemy forces, and to capture a line to launch offensive operations. There are three subphases for artillery support:

1. Support for the forward movement of troops.
2. Preparation of the counterattack or counterstrike.
3. Support of the counterattack or counterstrike.

A successful counterattack or counterstrike requires a stabilized line of contact. A stabilized line allows enough time for second-echelon forces to advance and deploy for the counterattack or counterstrike. A density of at least 50 to 60 weapons per km of frontage is necessary to ensure success. Preparation should last at least 30 to 40 minutes. Artillery requires 2 hours to prepare, including one of daylight. Planners must consider this factor, and the time required to move second-echelon artillery forward.

Organization for Combat

The artillery organization for combat in the defense resembles that in the offense. The artillery planner locates artillery groups so they can execute their primary mission and still be able to mass fires in support of forward positions, especially against armor. Fire planning supports the defensive mission of the force.

Fire Planning

The fire plan provides for artillery and aviation to accomplish, in a rough order of priority, the following tasks:

- Destroy the enemy’s precision weapons and NBC delivery means.
- Destroy aircraft on airfields and annihilate or at least neutralize the enemy’s artillery. This attack includes the use of smoke to blind enemy observation posts, attacks, and fire units.
- Disrupt C^2.
- Support covering forces in the security zone.
- Neutralize or disrupt enemy march columns, concentrations, and units deploying to attack.
- Conduct defensive fire to protect forward units, cover gaps, or halt enemy units that have achieved a penetration.
- Support counterattacks or counterstrikes.
- Contaminate terrain, or obstacles to hamper clearance.
- Illuminate the battlefield.

Types of Fire

Barrier fires are the primary type of OPFOR defensive fires. Barrier fire is a continuous curtain of defensive fire across the approach of attacking tanks and infantry. Although normally used in the defense, it also has applications in offensive operations against enemy counterattacks. It is useful with fire concentrations, massed fires, and direct fire from tanks and guns. The two types of barrier fire are standing barrier fire and rolling barrier fire.

Standing barrier fire consists of a single line of concentration planned well in advance to disrupt an enemy attack. The OPFOR plans artillery fires for likely tank avenues of approach. A ground observation post observes these fires planned in front and to the flanks of defensive positions. All available artillery, except MRLs, fires standing barrier fire. The fire planner assigns each battalion or battery a sector on the line of fire concentration. Planners compute the width of each unit's sector based on 50 m of coverage per gun (howitzer) or mortar.

The line of concentration for standing barrier fire must be no closer than 300 to 500 m from friendly troops for troop safety. This allows gunners to fire antitank weapons in direct fire at enemy tanks and armored vehicles as they come through barrier fires.

Standing barrier fires begin the moment enemy tanks and infantry approach the planned line of fire concentration. The fires continue at rapid fire until they cut off the infantry from the tanks and halt their attack. If the infantry goes around the fire concentration line, the fires shift to the new approach.

Defensive fire can combine a standing barrier fire with other artillery fire and fire from tanks and infantry. For example, if dismounted infantry should lie down to avoid the standing barrier fire, the OPFOR would conduct a fire concentration to destroy them. Direct fire would destroy the tanks penetrating the barriers.

Rolling barrier fire lands on several lines of concentration. Each line lies successively closer to defending troops. Lines of concentration for rolling barrier fire should impact on terrain that a ground observation post can see. Distances between lines of fire concentration are 400 to 600 m or more. The final line of concentration closest to friendly troops is 300 to 400 m from forward defensive positions.

The fire planner assigns every battalion or battery that participates in the fire mission a sector of fire on each of the lines of fire concentration. He bases the width of each sector on 25 m of coverage for each gun (howitzer) or mortar. The entire area has a general code name. Each individual line of concentration has a number in sequence, beginning with the one farthest from the defensive positions.

The rolling barrier fire begins the moment the lead tanks or other armored vehicles approach the initial line of fire concentration. The fire continues on that line until the bulk of the advancing force has moved out of the zone where rounds impact. Then the fire shifts to the next line of concentration. Fires continue to shift until surviving enemy armored vehicles pass through the last zone of fire concentration.

ANTITANK RESERVES

Antitank (AT) reserves comprise units of AT artillery, often reinforced by other means, such as engineer, tank, or mechanized infantry troops. They are directly subordinate to the combined arms commander, who uses them to reinforce AT defenses on important axes. They are a standard part of both operational and tactical formations down to brigade level. Almost invariably, these reserves work with engineer mobile obstacle detachments to create AT obstacles.

Organization

Because neither army group, army, nor corps has a fixed organizational structure, the AT units available for forming AT reserves at these levels also vary. A mechanized army or corps typically has an organic AT regiment. An army group might have one organic AT brigade. However, the Reserves of the Supreme High Command may allocate an additional AT brigade from its national asset pool to an army group. When this occurs, the army group may form two AT reserves or it may allocate its organic AT assets to its combined arms reserve or to a first-echelon army or corps. At army or corps level, the AT reserve normally consists of the organic AT regiment or of several AT battalions from an AT brigade at higher level. An army or corps receiving additional AT assets from the army group might form two AT reserves at that level. Alternatively, the army or corps could opt to allocate some of its organic assets to reinforce first-echelon divisions or separate brigades. The amount of AT reinforcement at all levels depends on the subordinate unit's mission and the assessment of the threat of armored attack or counterattack.

Assets

OPFOR planners believe that AT fire plays a decisive role in repelling enemy armor attacks. The OPFOR divides AT weapons into two categories: general and special.

General Weapons

General AT weapon systems include missiles, aircraft, tanks, and artillery. The purpose of these systems is to destroy a variety of battlefield targets. However, they may also deploy to fire against tanks and other armored vehicles. According to the OPFOR, any artillery-type weapon (over 20-mm) should have an AT capability. All conventional artillery up to 152-mm has good direct-fire AT capability and carries some armor-defeating ammunition. The 122-mm towed and SP howitzers and the 152-mm SP howitzer, which have a 360-degree traverse, are particularly effective in this role. Antitank forces often include direct-fire field artillery. Antiaircraft guns can also fire against ground targets.

Guns and howitzers have the sights necessary for direct-fire engagements. Some weapons may reinforce the AT firepower of mechanized infantry strongpoints. However, should enemy armor penetrate, the OPFOR may use artillery units. They can delay and disrupt the attackers and, thus, create favorable conditions for a counterattack or

counterstrike into the enemy's flank.

Special Weapons

Special AT weapons systems consist of antitank guided missiles (ATGMs), AT guns, grenade launchers, and recoilless guns. The OPFOR designs these weapons to destroy tanks and their crews by direct fire. It considers ATGMs to be effective AT weapons, although limited by minimum ranges, low rates of fire, and visibility requirements. OPFOR antitank forces therefore have a mix of ATGMs and direct-fire weapons (guns and grenade launchers). Direct-fire weapons provide quick-response fires at medium, short, and point-blank ranges, on broken terrain, and under favorable visibility conditions.

Missions

The importance of the AT reserve continues to grow, partly because many armies today are almost totally mechanized; therefore, defense must first and foremost be antitank in nature. It is also partly a function of the growing trend for the defense to occupy broader frontages in order to achieve protection against nuclear attack through dispersal. Gaps now routinely exist in the deployment of defending units and formations. These trends have increased the importance of the AT reserve in ensuring stability in defense and in maintaining the momentum of an offensive in the face of counterattack.

Missions that commanders may assign to an AT reserve include, in the offensive (or meeting engagement)--

- Repelling counterattacks.
- Protecting the flanks of a unit or a gap in deployment.
- Covering the commitment of a second echelon.
- Consolidating on captured lines.
- Gaining time for the mounting of a counteroffensive.
- Sealing off encircled forces.

Missions in the defensive include--

- Destroying armored groupings that have penetrated the defense.
- Reinforcing the AT defense of the first echelon on an important axis.
- Covering boundaries, flanks, or the deployment line of a counterattack and/or counterstrike forces.
- Gaining time for the mounting of a counterattack or counterstrike through counterpenetration.

Deployment

For planning purposes, AT units can be assigned the following sector widths:

- A division AT battalion, 3.5 to 5 km.
- An army or corps AT regiment, 8 to 10 km.
- An army group AT brigade, 20 to 25 km.

Where the commander holds a reserve, and how far from the line of contact (or head of tactical march column), depends on the operational or tactical situation. As a generalization, the AT reserve deploys between the first and second echelon. Both in the offense and defense, it is usual to designate two, three, or even more alternate lines of commitment on each axis depending on the assessment of likely enemy actions. In the defense, the OPFOR places great stress on the surprise use of AT reserves.

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[1] Air-delivered precision munitions include homing and guided air-to-surface missiles (including radar-seeking antiradiation missiles); guided bombs and cluster bombs containing homing elements; and air-launched cruise missiles.

[2] The special weapons platoon might also be responsible for firing other special types of munitions. Thus, its basic load could include LGP, smoke, and illuminating rounds.

[3] On maps and diagrams, artillery groups often appear as "goose eggs" for the sake of convience. However, this does not mean that all battalions assigned to a group are physically located in such a small area.

[4] A corps would form a ***corps artillery group (CAG)*** to serve the same function,but on a smaller scale. It might comprise from four to six battalions and include the corps' organic MRL battalion.

[5] If a corps has two or more MRL battalions (organic or allocated from army group), it mithe firn a ***corps rocket artillery group (CRAG)***. Otherwise, MRLs would be part of the CAG.

[6] Tactical commanders can use tube artillery and MRLs under their control as a ***reconnaissance-fire complex (RFC)*** fir tactical missions similar to those of an operational-level RSC. A collective term that includes includes both RSCs and RFCs is ***reconnaissance destruction complexes***.

Chapter 10
Air Support

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The OPFOR has a variety of aviation assets, at strategic, army group, and army levels. It has organized these assets so specified levels of command have their own aviation forces to fulfill mission requirements. This eliminates the wait for aviation support from higher headquarters. It also supports the doctrine of a fast-moving offensive. The aviation organization centralizes control over most fixed-wing army group aviation aircraft. However, it decentralizes some control over attack helicopters.

Any or all of these assets may become involved in strategic operations in a theater, as described in Chapters 2 and 11 and in the first parts of this chapter. Sometimes naval aviation or aviation elements of the national air defense forces can also support strategic operations in a theater or army group operations.[1] The last part of this chapter concentrates on the roles of army group and army aviation in direct support of ground forces operations.

STRATEGIC AVIATION[2]

There are strategic air armies subordinate to the Supreme High Command. Elements of a strategic air army, including long-range bombers, electronic combat (EC) platforms, transport aircraft, and tanker support, may well support an army group in strategic operations.

A strategic air army is organized into bomber (strike) aviation divisions. Some long-range bombers can also deliver long-range, air-launched cruise missiles (ALCMs) with high accuracy and a standoff range of 3,000 km or more. Tankers provide a capability for air-to-air refueling of bombers. A strategic air army has the missions of inflicting losses on vital targets in a theater and conducting air reconnaissance. The Strategic High Command can allocate an air army to support a specific theater and yet retain the flexibility to reallocate aircraft as necessary during wartime.

ARMY GROUP AVIATION

Army group aviation plays a key role in all types of combat, from participating in theater-level strategic operations to supporting low-level tactical units of the ground forces. In the former role, it complements strategic aviation, and in the latter, army aviation.

High-performance fighters, fighter-bombers, and some light bombers comprise the air army of the army group. Army group aviation also controls a substantial number of fixed- and rotary-wing EC aircraft as well as medium and heavy-lift helicopters. Army group aviation can use these assets to support high-priority army operations.

The size and composition of an air army can vary greatly according to the needs of the supported army group. However, most air armies have a--

- Fighter aviation division.
- Fighter-bomber aviation division.
- Bomber aviation division.
- Reconnaissance aviation regiment.
- Mixed-aviation regiment (or squadron).
- Heliborne jamming squadron.

In addition, some air armies may have one or more of the following:

- A ground-attack aviation regiment.
- A transport helicopter regiment.
- An airborne jamming aviation regiment.
- A separate helicopter squadron.
- An air ambulance regiment.

See FM 100-60 for details on organization.

The OPFOR organizes its army group aviation assets on a functional, mission-related basis, in homogenous formations. For example, an aviation division is normally homogeneous.[3] The exception is that a fighter or fighter-bomber aviation division might have one regiment equipped with the other type (fighter-bomber or fighter) aircraft. As a rule, aviation regiments are also homogeneous. The exception here would be the mixed aviation regiment (or squadron) comprising both fixed-wing transport aircraft and transport helicopters.

Fighter Aviation Regiments

A typical fighter-bomber aviation regiment might have an authorized strength of about 36 aircraft (including up to 6 two-seat trainers that can also serve as combat aircraft). Such a regiment can be part of a fighter aviation division or a fighter-bomber aviation division. Fighters escort bombers and fighter-bombers to their targets and provide air cover for ground forces.

Fighter-Bomber Aviation Regiments

Although organizations vary, a typical fighter-bomber aviation regiment might have an authorized strength of about 36 aircraft. This includes up to 6 two-seat trainers that can also serve as combat aircraft.

To neutralize an operational SAM site, the OPFOR might task four fighter-bombers; two would suffice to suppress an early-warning radar site. As few as 24 aircraft could close an airbase for 12 hours (excluding aircraft needed for air defense suppression). The sortie rate for fighter-bombers could be three in the first 24 hours, declining thereafter.

Bomber Aviation Regiments

The authorized strength of army group bomber aviation regiments is about 36 aircraft (including up to 6 training aircraft that can also serve as combat aircraft). Assuming 85-percent serviceability for the first strike, an initial strength of about 30 aircraft could be available. In theory, nine bombers could close an airbase for 12 hours (excluding aircraft need for air defense suppression). Bombers could probably mount two sorties in the first 24 hours, declining thereafter.

Reconnaissance

Aerial reconnaissance includes visual observation, imagery, and signals reconnaissance. Imagery reconnaissance encompasses all types of optical cameras utilizing conventional fixed-frame and strip photography, infrared photography, and television systems; it also includes side-looking airborne radar (SLAR) and synthetic-aperture radar (SAR) capabilities. Airborne signals reconnaissance includes communications and noncommunications emitter intercept and direction finding.

The greatest potential weakness of aerial reconnaissance is the need for air superiority in order to accomplish the majority of missions. The farther aircraft must penetrate enemy airspace the greater the threat from enemy fighters and air defense weapons.

Aircraft Capabilities

The priority for organizational strength and equipment modernization depends on the importance of an army group within the overall strategic plan. Modernization, in particular, depends greatly on the economic capability of the State to acquire the latest-generation fixed-wing aircraft and helicopters. As permitted by economic constraints, the OPFOR continues to introduce high-performance aircraft with--

- Improved avionics.
- Improved electronic countermeasures (ECM) and electronic counter-counter-measures (ECCM) equipment.
- Increased payload.
- Longer combat radius.

The deployment of a wide array of mobile and semimobile air defense systems has given ground formations greater freedom of maneuver. This deployment simultaneously frees aircraft from air defense missions for the ground support roles.

The OPFOR is working on the problems of providing more reliable air support by improving the accuracy of munitions delivery. Ongoing efforts to improve nighttime and poor-weather reconnaissance and combat capabilities may allow continuity of air support around the clock. New and improved platforms continue to appear in the inventory, improving payload-range characteristics.

Night and Weather Conditions

Aviation continues to improve nighttime and poor-weather air reconnaissance and ordnance delivery in support of ground maneuver formations. Despite heavy emphasis on night combat, the OPFOR recognizes limitations in its ability to maintain continuity of air support at night and in poor weather. Also, some of the mutual identification and target designation systems for complex weather conditions and for night flying are unsophisticated.

The OPFOR is making efforts to correct these shortcomings. The all-weather/night fighter-bomber is a capable asset to support ground forces. It has the range and payload to attack deep targets. Many modern fixed-wing aircraft and combat helicopters have electronic and infrared instruments, which enable pilots to conduct sorties at night and in poor weather at low altitudes. The pilots can search for, detect, and destroy targets. Despite its modern, sophisticated equipment, the OPFOR believes that, for air support of ground troops, pilots must know how to--

- Navigate by land.
- Search for targets visually.
- Determine distances to targets without visual aids.

To improve target designation and mutual identification between air and ground units at night, the OPFOR might form special helicopter units for night combat.

Electronic Combat

The OPFOR continues to improve its capabilities to conduct EC, including sophisticated jamming equipment. It might deploy equipment on its aircraft to--

- Jam multiple enemy radars using a single transmitter.
- Jam only when the target radar reaches a certain intensity.
- Select the correct jamming signal for the specific target radar.

The OPFOR can jam the enemy air defense network's major surveillance and acquisition radars. It also uses advanced deception jamming techniques. All these capabilities allow OPFOR aviation to provide increased support that combines accuracy in ordnance delivery, greater flexibility in employment, increased survivability, and increased responsiveness to combined arms commanders.

ARMY AVIATION

Attack helicopters, and some transport and airborne command post (CP) helicopters, are directly subordinate to an army, hence the term *army aviation*. An army normally has--

- One or two combat helicopter regiments with a mix of attack helicopter and medium-lift transport helicopter squadrons (and possibly a reconnaissance helicopter squadron).
- A separate helicopter squadron with a mix of light, medium-lift, heavy-lift, and reconnaissance helicopter flights (and possibly flights of heliborne jamming and airborne CP helicopters).[4]

On occasion, these assets may come directly under divisional command during the course of operations. This is especially likely for a division acting as an army's operational maneuver group (OMG). (See FM 100-60 for details on army aviation organization.)

Army aviation, reinforced as necessary with army group assets, also provides lift for heliborne landings and direct air support for ground forces. In the latter role, it is conceivable that the army group's ground-attack aircraft could supplement army aviation. The scale of assets allotted to an army depends on the importance of that army in the army

group scheme of maneuver.[5]

Helicopters now provide most of the direct air support to ground forces. Attack helicopter tactics closely support ground maneuver unit tactics. Newer helicopters have antitank guided missiles (ATGMs) that have greater stand-off range and accuracy. Most of the helicopters with an antitank role are in the attack helicopter squadrons of army-level combat helicopter regiments. However, some medium-lift transport helicopters and general-purpose light helicopters at both army group and army levels can also mount ATGMs.

The OPFOR has also improved the survivability of its attack helicopters on the battlefield. All attack helicopters likely to operate near the forward combat areas have active and passive self-screening jammers, flare dispensers, and sometimes, engine-emission filters to reduce the danger from heat-seeking SAMs. Some helicopters have additional armor to protect the crew or vital helicopter components.

The OPFOR generally uses helicopters for reconnaissance only within the protection of the ground forces' air defense umbrella. Helicopters perform such tasks as route or NBC reconnaissance. However, more aggressive use of helicopters is likely when the situation becomes more fluid, especially in the case of OMGs.

LONG-RANGE FIRE STRIKE

The OPFOR approach to the initial stage of a strategic offensive includes a massive long-range fire strike. (See also Chapter 2.) It employs initial, massive air strikes throughout the theater. This operation differs from a general offensive; strikes do not directly support a concurrent advance by ground maneuver formations.

The goal of the long-range fire strike is to win air superiority in the initial stage of hostilities. It may succeed, wholly or partially, only to find that enemy reinforcement renews the air challenge. Thus the struggle for air superiority continues throughout the strategic operation and across the entire theater and is waged with particular vigor on the main axis. A substantial proportion of theater and army group aviation must devote continuous efforts to suppressing enemy air defenses, airfields, and helicopter forward operating sites.

Without some measure of success in the air, army group, airborne, and amphibious operations in the theater cannot be successful. In the initial period of war, air power is likely to be the main enemy operational reserve of firepower. Given the range of modern enemy aircraft and the ease and speed with which they can redeploy, the long-range fire strike has to be theater-wide and -deep. Due to this scale and the nature of the forces involved, planning must be at the theater headquarters or Supreme High Command level.[6]

In the long-range fire strike, military strategists have a viable, offensive option to gain the strategic and operational initiative. Using this option can create the conditions of victory in the period directly after the outbreak of hostilities.

Assets

The concept of the long-range fire strike includes fixed-wing aircraft from army group aviation and long-range aircraft from strategic aviation and naval aviation. These aircraft could conduct a series of massive strikes against priority theater targets over a period of several days or even weeks. A small proportion of air resources might be available to neutralize enemy air defenses and to create approach corridors. The majority of the aircraft attack enemy NBC and precision weapons, command and control (C^2) centers, airfields, and long-range artillery.

The main weight of firepower delivered in the long-range fire strike is air-delivered. However, fire planning to support strategic operations in a theater also includes surface-to-surface missile (SSM), air defense, army group, airborne, amphibious, and naval assets. This concentrated fire destruction of the enemy during all four offensive fire support phases requires dependable and integrated fire support from all of the armed forces.

The OPFOR tries to achieve centralized fire planning and to execute an integrated fire destruction of the enemy. The following paragraphs discuss the air portion of the OPFOR's strategic offensive.

Priority Theater Targets

Fixed-wing aircraft attack priority theater targets during the initial hours of the long-range fire strike. Such attacks can create favorable conditions for army group operations. This commitment of aircraft precludes their use for direct air support of ground force operations. (Ground force commanders must rely on attack helicopters to fill this initial fire support role.)

Integrated fires of artillery, attack helicopters, and operational and tactical SSMs, along with EC operations, help create corridors through the enemy's forward air defenses. The OPFOR plans missile strikes and attacks by air assault, special-purpose, and partisan forces against airfields, precision weapons, NBC delivery means, and C^2 facilities. It may also target for destruction some industrial complexes that support enemy nuclear and air forces.

Enemy Nuclear Missiles and Precision Weapons

A high priority for the OPFOR is to eliminate the enemy's nuclear missile capability. Thus, the long-range fire strike must destroy enemy operational and operational-tactical SSM forces and their associated C^2, storage facilities, and logistics. The spread of conventional precision weapons that have the destructiveness of small nuclear systems serves to increase the numbers of top-priority targets.

Enemy Air Power

The OPFOR's first priority is to destroy sophisticated enemy aviation systems, including airborne early warning, EC, fighter, and interdiction aircraft. The second priority for the long-range fire strike is enemy direct-air-support forces.

Although air-to-air combat is one method of winning air superiority, the OPFOR sees the principal means of accomplishing this mission as destroying aircraft on the ground, closing air bases, and disrupting enemy C^2, air navigation, and logistics systems. Enemy naval aviation must also be dealt with, whether at sea or in bases.

Duration

The OPFOR expects a long-range fire strike to last several days.[7] The strike might involve two or three massed strikes on the first day and one or two on subsequent days. The first strike would be the most massive, intended to cause decisive losses to the enemy's air force and to lower his strength and ability to conduct effective retaliatory strikes. In the first 24 to 48 hours, the OPFOR's intent would be to destroy the bulk of the enemy's aviation.

This is not to say that offensive counterair actions and actions against surviving nuclear missiles or precision weapons would cease after the completion of the long-range fire strike. They would continue against the remaining enemy air forces, their reinforcements from other theaters, and naval aviation on carriers. Given air superiority in the long-range fire strike, however, the OPFOR can switch substantial forces to the support of other operations.

Requirements for Success

The long-range fire strike strives to establish ***air superiority***. It is a principal component of the overall effort to preserve ground forces and to negate enemy NBC and precision weapon capabilities. The OPFOR believes it can achieve air superiority with the destruction of 50 to 60 percent of the enemy's air power.

However, if the enemy’s air and air defense capabilities are powerful, the OPFOR might view air parity in the air war as a satisfactory outcome. That would mean that neither side could bring its full weight of air power to bear on the ground operation for the critical first week or so. This situation could offer the ground forces an opportunity for victory. For even partial success in the long-range fire strike, the following are key factors.

Continuous Reconnaissance

Continuous reconnaissance of enemy nuclear and precision weapons and air assets does not, of course, start with the outbreak of hostilities. It is continuous in peacetime, intensifying in periods of crisis.

Surprise

The first, massive strike must achieve at least partial operational and tactical surprise. To be successful, the long-range fire strike must be preemptive. The OPFOR must strike airbases before aircraft have had time to fly to dispersal fields.

Measures to achieve surprise may include attack without redeployment, timing, and unexpected weapons and methods.

Attack without redeployment. Aircraft from the operational and strategic rear are unlikely to deploy forward for the first strike. Such a move could trigger the dispersal of enemy air assets, or even an enemy preemptive attack (with many forward-deployed aircraft being vulnerable if hardened aircraft shelters for them are lacking). Aircraft from the rear may move up as the initial strike occurs to join the second strike and to replace casualties. Alternatively, they may use forward bases to stage through and not remain in the forward area.

Timing. To catch enemy air forces unprepared, the OPFOR plans to launch the long-range fire strike before preparations for ground operations are complete. The first air attack might precede the ground offensive by days or even weeks. However, it is possible that airborne operations would begin during the period of the initial strike of the long-range fire strike. In that case, the airborne insertion would have to be through the penetration corridors the long-range fire strike creates through enemy air defenses.

Unexpected weapons and methods. The OPFOR is likely to use unexpected weapons and methods. These might include the following:

- Long-range missiles. The OPFOR might use long-range SSMs, ALCMs, and submarine-launched cruise missiles (SLCMs) to spread chemical contamination and/or mines on enemy airbases to pin aircraft to the ground before the first air strike. If missile strikes achieve sufficient accuracy, they can also deliver precision conventional warheads against key C^2, logistics installations, and missile launchers.
- Fuel-air explosives (FAE). Relying as they do on blast, rather than fragments for their effects, FAE are excellent weapons for killing personnel, wrecking aircraft and maintenance equipment, and rendering unserviceable the doors of hardened aircraft shelters. With overpressures greater than those of small-yield nuclear weapons, such munitions affect wide areas. Delivery means could be SSMs, SLCMs, ALCMs, and air-to-surface missiles (ASMs), perhaps being given terminal guidance by special-purpose forces (SPF) teams with laser designators.
- Unmanned aerial vehicles (UAVs). The OPFOR is developing methods of using UAVs for air defense suppression, including the use of UAVs to simulate raids, coupled with the use of air- and ground-launched antiradiation missiles (ARMs) to destroy radars activated to meet the dummy attacks.
- ECM. The OPFOR might well aim to deploy more, and more sophisticated, ground- and air-based jamming platforms than the enemy would anticipate.
- SPF. Even before the long-range fire strike begins, some SPF teams might conduct sabotage or assassinate selected key officers. They might also have the mission of incapacitating personnel, by contaminating food or water supplies.

Concentration of Effort

The long-range fire strike concentrates on the most important strategic and operational axes. It must mount a massive effort against the enemy's aviation groupings, both in the air and on the ground.

Continuous Action

The OPFOR must maintain continuous action over enemy airfields and against his aircraft, both day and night. Between massive attacks, it must continue smaller raids against CPs, air defenses, and runways.

Combined Arms

All services must contribute to the operation. Virtually all aviation resources participate, including at least elements of a strategic air army and much of army group aviation. Some strategic missiles may attack enemy bases and destroy C^2 centers. Operational and operational-tactical SSMs do the same for targets within range and neutralize air defenses.

Long-range artillery can hit near air defense missiles and radars. SPF conduct reconnaissance and target designation and, perhaps, sabotage. Airborne forces may seize airfields. Naval forces may destroy enemy aircraft carriers, and elements of naval aviation may participate in airfield attacks.

Initial Strike

The initial, massive strike is crucial to the success of the operation as a whole. If it does not achieve a high proportion of its goals, imparting an unstoppable momentum, the air war is likely to settle down to a battle of attrition in which victory will go to the numerically superior side. The first strike actually comprises four phases of attacks: pinning, supporting, main, and follow-on. It ends with post-strike recovery.

Pinning Attack

The long-range fire strike opens with a massive strike on all airbases by ALCMs, low-trajectory SLCMs, and operational and strategic SSMs. The attack pins enemy aircraft to their airfields. The first salvo may be FAE warheads to destroy exposed personnel and equipment. This attack may be followed by scatterable mines, and perhaps persistent chemical bombardment, to close runways and taxiways until aviation strike groupings can arrive.

Supporting Attack

The ***support echelon*** comprises about 25 to 30 percent of army group aviation and 5 percent of long-range aviation devoted to the long-range fire strike. The support echelon's mission is to--

- Open up air penetration corridors.
- Attack the defending C^2 system.
- Execute further mining of airfields.
- Conduct reconnaissance and deception.
- Engage any enemy fighters not pinned to their airfields by the missile strikes.

The support echelon devotes to these tasks about 10 percent of the army group aviation's light bomber forces, 30 percent of its fighter-bombers, 25 to 30 percent of its fighters, and from 55 to 60 percent of its reconnaissance assets.

Main Attack

The ***strike echelon*** includes about 60 percent of army group aviation and 75 percent of long-range aviation. The army group aviation component contains about 85 to 90 percent of the light bombers, 65 to 70 percent of the fighter-bombers, 15 to 20 percent of the fighters, and 10 to 15 percent of reconnaissance aircraft.

The mission of the strike echelon is to--

- Destroy enemy aircraft and personnel on airbases.
- Destroy or neutralize CPs.
- Close airfields so aircraft cannot rebase or get fighters into the air before the second massive strike.
- Destroy enemy precision weapons and NBC delivery systems.
- Destroy or neutralize enemy long-range artillery.

Accompanying reconnaissance a provides near real-time damage assessment.

Follow-On Attack

The OPFOR assigns follow-on forces and reserves on the basis of post-strike reconnaissance after the strike echelon's attack. They service targets not sufficiently damaged by the strike echelon and hit newly located targets (such as aircraft that managed to rebase before being hit). These forces comprise about 10 to 15 percent of army group aviation and 15 to 20 percent of the long-range bombers.

Post-Strike Recovery

Aircraft generally recover to dispersal airfields to avoid retaliatory strikes. It is the OPFOR rule that an air grouping should never, where it is avoidable, return to the base from which it mounted a raid.

<u>Subsequent Actions</u>

From the beginning of the pinning missile strike to the end of the follow-on attack is normally 2 to 2.5 hours. Army group aviation follows up with a further attack in the middle of the day on CPs, air defenses, and runways. Then there is a further massive strike toward the end of the day. The OPFOR repeats this on the second day, and it continues until the OPFOR has won air superiority through the destruction of 50 to 60 percent of the enemy's air power. The long-range fire strike's successful conclusion is not, however, the end of offensive counterair effort. The OPFOR recognizes that the enemy can reinforce from his strategic rear and redeploy forces from other, less active or inactive theaters. Continual action is necessary to keep the initiative in the air, compensating for losses through reinforcement from aviation reserves.

Suppression of Enemy Air Defenses

Whether in the course of the support strike or during subsequent operations, the OPFOR must suppress enemy air defenses before it can execute deep penetration missions at bearable cost. As in ground operations, the penetration of ground-based air defenses must occur on specific, relatively narrow sectors or axes to create penetration corridors through the enemy's air defense system. Corridors are normally 10 to 15 km wide and of whatever length is necessary to get strike aircraft to their target area.

Within a corridor, the OPFOR must suppress key defending systems. It must ensure additional suppression on some medium-range systems (such as Patriot sites up to 100 km from the center line of the corridor). The assessment of which medium-range SAMs need to be dealt with depends on complex payload-range calculations. On selected sections of the route, aircraft may avoid such weapons by flying low, but there is a limit to which they can do this, if they are to strike deep targets.

The OPFOR normally creates one or two corridors in each army group's sector (probably largely coinciding with the intended main axes of the army group). It creates these corridors through the enemy air defenses using a combination of electronic and physical attack of enemy radars and missiles sites.

Electronic Combat

The OPFOR first attacks early-warning and ground-controlled-intercept (GCI) radars. For this, it uses standoff jamming (SOJ) aircraft and the laying of chaff on a broad frontage. Jamming of key nodes and communications links in the enemy air defense structure exacerbate time delays in the defense's reaction. It also means that the information passed by the early-warning network can be ambiguous, especially as to range. These effects result in acquisition radars receiving only tentative information and being able, therefore, to pass only limited information to fire control radars.

If sufficient degradation occurs at the top and middle levels of the air defense system, fire control radars (the hardest to jam and most numerous) may have to operate autonomously using only target azimuth data. Moreover, that data itself comes only from jamming spokes from a mixture of escort jamming (ESJ), SOJ, and self-screening jamming (SSJ) systems on attack aircraft. Without centralized control, the enemy may be forced into uncoordinated target engagements, leading to a rapid depletion of ammunition stocks for relatively poor returns.

Sowing chaff trails protects the entire penetration corridor. Trails may be as large as 36 km wide and 360 km deep and could last for several hours. A chaff trail conceals the size and formation of a raid and provides cover from which aircraft can emerge to fire standoff missiles.

Both ESJ and SSJ occur from within the chaff trail. This protects the sowing aircraft and also gives added general protection against all types of enemy emitters. SOJ aircraft can then follow the raid and operate from within the trail.

OPFOR aircraft can also use chaff for navigational purposes; for example, using bursts to signal turns. Of course, aircraft can lay false chaff trails for deceptive purposes. The OPFOR can achieve additional deception by launching groups of UAVs to simulate raids, causing enemy radars to expose themselves to ARM and cruise missile attacks and firing units to waste ammunition. The enemy might also vector additional fighters against them, wasting time and fuel. (For more information on EC, see Chapter 13.)

Physical Attack

The OPFOR can single out key SAM sites for physical destruction as well as (temporary) electronic neutralization. For example, fighter-bombers with conventional ordnance could attack a Patriot site. Operational-tactical SSMs could destroy SAMs sufficiently near the deployment areas of the SSMs.

Longer-range SSMs with improved accuracy could attack more deeply deployed SAMs, while long-range artillery and multiple rocket launchers (MRLs) could engage those close to the line of contact. Sabotage of SAMs, their associated radars, and C^2 by SPF teams is also possible.

Actions of Fighter Aviation

Fighter escorts protect bombers and fighter-bombers en route to their targets. The high-performance, long-endurance fighters are likely to sweep ahead of strike groups, ideally to catch enemy fighters on their runways or just taking off. If they fail in this and have to engage in air-to-air combat, they force the enemy to expend fuel and ordnance needed to attack the bombers. Shorter-range and less sophisticated fighters are likely to protect fighter-bomber groups. They do not fly close escort, but provide airspace security on the axes used by the ground attack forces. Figure 10-1 illustrates a typical fighter-bomber raid formation, with supporting fighters and ECM aircraft.

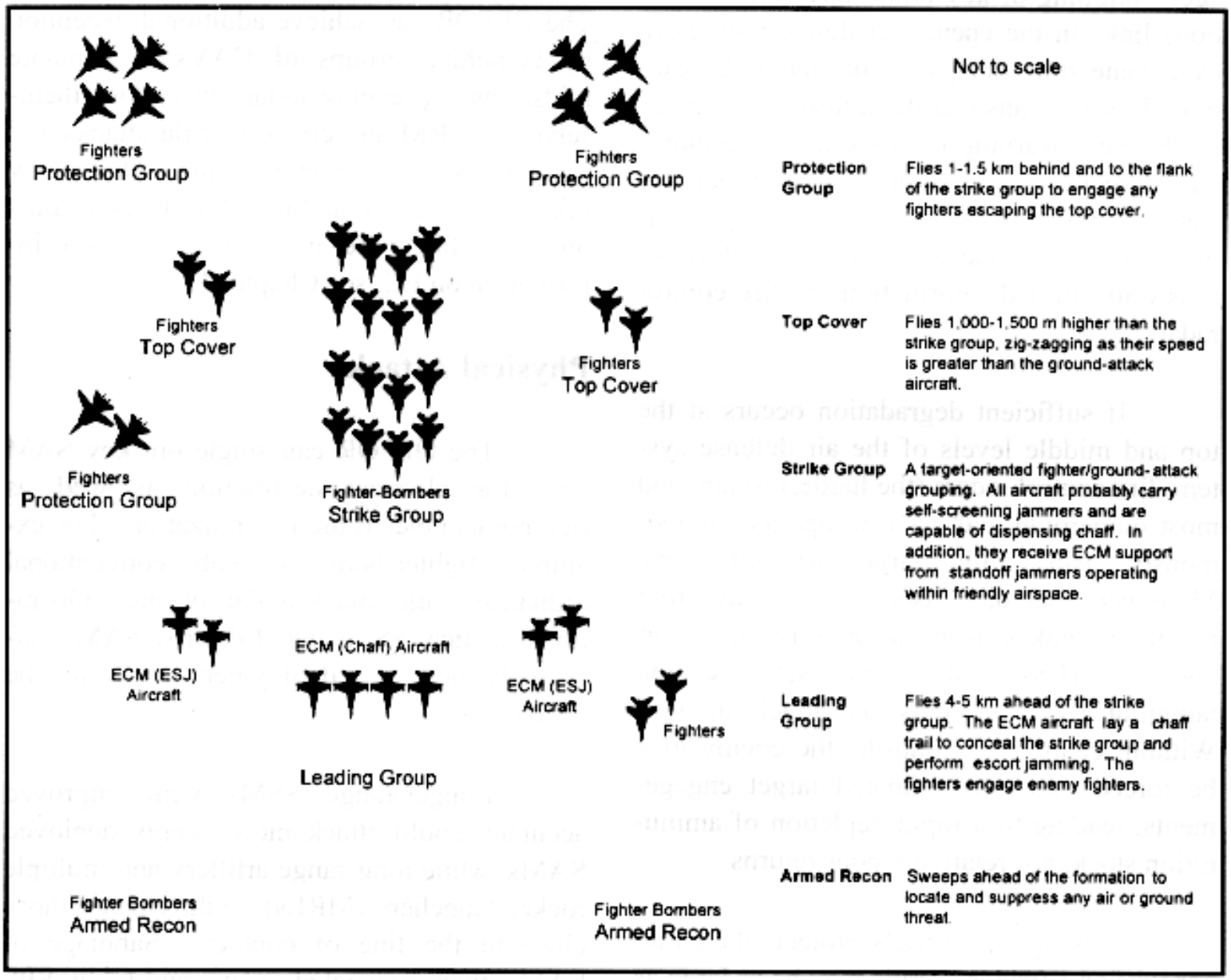

Figure 10-1. A fighter-bomber raid by army group aviation (example).

AIR DEFENSE OPERATION

The air defense (counterair) operation is a component of a strategic operation in a theater. It combines all the ground- and air-based air defense assets in any theater under a single concept and plan within the context of the strategic operation.

The air defense (counterair) operation can also provide protection for aircraft and missile systems conducting the long-range fire strike and ground maneuver forces striving to penetrate rapidly into enemy territory. It focuses on defending the OPFOR and allied forces and contributing to air superiority. The emphasis depends on whether or not the OPFOR has already seized the initiative in the air.

The best way to reduce the enemy's ability to influence the battle from the air is to execute a successful long-range fire strike. When mounted after the long-range fire strike, the purpose of the air defense operation is to defeat the enemy's residual air capability. The aim is thus more modest than that of the long-range fire strike. It would focus on defensive actions to protect friendly forces and installations from the enemy's remaining air capability.

Alternatively, the air defense operation can take place when the OPFOR does not hold the initiative in the air, either because the enemy has preempted or because the long-range fire strike has been less than totally successful. In this case, the immediate priority in the air defense operation is defending friendly forces, allowing them freedom for maneuver. Simultaneously, the OPFOR would try to cause maximum attrition of enemy air and air defense assets, thus contributing to the achievement of air superiority.

While primarily defensive in nature, it does not exclude offensive action. On the contrary, the OPFOR must still execute offensive counterair missions. The goal is still the achievement of air superiority, but over a greater period of time, or perhaps only for limited periods. Until the OPFOR achieves air superiority, its fighter aircraft, along with the air defenses of the ground forces, must protect troops on the ground.

Assets

The OPFOR would attempt to gain the initiative through the actions of the following forces:

- Army group aviation.
- Ground forces missile troops and artillery.
- National air defense forces.
- Air defense elements of other branches of the armed forces.

This coordinated operation of offensive and defensive forces should include attacks both against aircraft in the air and against their bases.

Organization for Combat

Initially, the air defense operation could consist of two echelons: the air and air defense organizations of the first-echelon army groups and the national air defense forces protecting State territory to the rear. As first-echelon army groups advance, the OPFOR would organize an additional air defense echelon to prevent the development of gaps. (The enemy could exploit these gaps to attack follow-on forces.) This would ensure continuity of the air defense effort from the rear of first-echelon army groups.

Missions

The target set for offensive missions is much the same as in the long-range fire strike. Defensive tasks, in order of priority, include--

- Protecting administrative-political, military-industrial, and communications centers.
- Providing cover for air bases, missile troops, and major headquarters.
- Providing cover for defiles or chokepoints (such as bridges over major rivers) vital to operational maneuver.
- Defending concentrations and deployments of major ground forces groupings, especially on main axes, and then

of second echelons or reserves.

- Protecting airborne and amphibious landing forces in assembly areas, while loading, and en route to their objectives.

Airfields

As ground forces advance in an offensive operation, a gap may open between the forward elements of army groups and the bases of their fighter aviation. Therefore, fighters would redeploy forward onto captured or improvised airfields. Fighter-bomber units would then occupy the former fighter bases. More fighters would then move forward from the State to the former fighter-bomber bases to establish a seamless web of defensive aviation deployed in depth. Given the larger number of bases becoming available, it is even possible the OPFOR could create new air armies for the support of second-strategic-echelon forces.

Air Defense Tactics

The main focus of fighter aviation efforts is on protecting the main strike group, airfields, SSM deployment areas, key CPs, and logistics installations. The OPFOR expects enemy air power to attack across a broad frontage with a large number of aircraft operating in small groups echeloned both in height and depth. To repel such attacks, the operational formation of fighter aviation is in several echelons, including two to three at low altitude and two at high altitude.

The purpose of the first echelon is to engage the enemy on distant approaches. For this mission, it uses the best pilots to conduct independent "free hunt" sweeps in enemy airspace, beyond the reach of friendly SAMs. The OPFOR commits the second echelon in the area of the line of contact or somewhat over it. Fighters on standby at airfields reinforce and develop the operations of forward fighter elements.

To intercept small groups or individual aircraft, each fighter division has a sector of responsibility. Within that sector, it destroys targets according to the decision of the fighter division commander, by the simultaneous commitment of not more than one-third of the available aircraft.

Coordination with Ground-Based Air Defenses

Where fighters are operating in the same area as ground-based air defenses, it is necessary to ensure a strict segregation of aircraft and air defense fires (by height and/or by area) to prevent fratricide. Figure 11-1 in Chapter 11 illustrates the four possible ways of separating the activities of fighter aviation and of SAMs.

Changing Aircraft Roles

The demands placed on air forces are great and growing. In the past, it was unlikely that substantial numbers of aircraft would be able to switch roles, from the counterair battle to offensive air support. This should be more likely in the future, at least from a technological viewpoint. New aircraft types and improved munitions are increasing both capabilities and flexibility. Nevertheless, given the time and casualties required to establish air superiority, it remains uncertain whether changing roles from a defensive to an offensive posture could be achieved within a time frame acceptable to the ground forces. Still, this possibility is important when assessing any defensive strategy.

AIR SUPPORT OF GROUND FORCES

One of the primary missions for army group and army aviation is to provide continuous fire support to ground maneuver forces. Thanks to their range, speed, variable ordnance load, and accuracy of delivery (especially against moving targets), modern fixed- and rotary-wing aircraft are reliable fire support weapons for high-tempo, deep-penetration operations in the offensive. These same air assets can provide a large and flexible reserve of firepower in the defensive. Air fire support is responsive to sudden, sharp changes in the battlefield situation and can keep pace with highly mobile ground forces. It is a key component of integrated fire support, serving as a complement to artillery.

Integrated Fire Support

The concept of integrated fire support embraces all combat support provided to ground-gaining arms by missile troops

and artillery and by aviation forces. Fixed-wing combat aircraft and attack helicopters provide aerial fire support to ground maneuver forces. Air support assets are an integral element of combined arms operations at army group and army levels.

Air support is extremely important for maintaining a high rate of advance because maneuver units can outrun their artillery support, and artillery units can outrun their logistics support. Maneuver units thus need air support to cover and support their advance.

Furthermore, aviation assets generally can strike targets that are out of artillery range. The army group can take advantage of the effects of the air strikes against targets 1,500 km in the enemy rear area. Fighter aviation aids the movement of troops to the tactical and operational depth of the enemy. Heliborne forces and fire support helicopters increase this capability to strike rapidly and deeply.

Fixed-wing aircraft support army groups and armies in theaters. These assets accomplish the missions of air defense cover, air reconnaissance, EC, and ground support. The aircraft can also conduct battlefield and rear area interdiction.

Helicopters have become increasingly important in execution of both the close- and long-range fire support battles. The increased use of helicopters frees fixed-wing aircraft to attack deeper targets. General-purpose and attack helicopter units can move with rapidly advancing armies and divisions conducting combined arms operations. The OPFOR routinely employs attack helicopters to provide direct fire support to tank and mechanized infantry units during both the offense and the defense. Helicopters also perform a variety of logistics, reconnaissance, jamming, liaison, C^2, and communications functions. They also support heliborne operations.

The flexibility and maneuverability of operational-level aviation assets give them a key role in modern combat. According to the OPFOR, aviation has particular advantages over other combat forces because it can--

- Conduct independent operations.
- Execute rapid, wide maneuvers.
- Combat enemy air, ground, and naval forces.
- Execute missions under diverse tactical and environmental conditions.
- Concentrate forces quickly for the execution of unexpected missions.
- Redirect assets after launch to a different target.

Command and Control

The commander of army group aviation is subordinate to the army group commander, but has the title ***deputy army group commander for aviation***.[8] His CP is normally within 10 to 15 km of the army group's main CP to ensure a close relationship. This relationship ensures that there is no danger of army group aviation conducting separate, divergent operations in its own interests instead of subordinating the air effort to the needs of the ground operation. Of course, the army group commander takes advice from his air commander, and he must act within the constraints of the operational directive from the General Staff (or theater CINC). Indeed, the army group has an obligation to contribute substantial assets to the initial long-range fire strike. This is of direct benefit to ground forces, since air superiority is important for their success.

Planning and Preparation

Army group aviation and ground forces have an integrated C^2 structure. This ensures close and continuous coordination in a combined arms operation. At army group level, the deputy commander for aviation serves as chief of aviation on the army group staff. The deputy commander and his staff evaluate the situation based on the army group commander's concept of operation. They then plan the air portion of an operation and recommend the proper employment of air assets to the army group commander.

The army group commander has overall responsibility to integrate air support with ground combat missions. To achieve a coordinated combat plan, army group aviation sends personnel and communications equipment to the armies. If time is short, army staffs may concurrently develop plans for their own levels, based on preliminary instructions from the

army group.

The army commander and his aviation staff reconcile allocated air assets with air support requirements of ground force divisions. A maneuver division commander consults his aviation representative and develops detailed plans for targets in the first two days of the operation. He also makes estimates for subsequent days. If they plan to use attack helicopters, the planners divide air support between fixed- and rotary-wing aircraft. The plan depends on the targets, flight distances, and disposition of enemy air defenses. Once approved, these division and army plans become part of the integrated army group fire support plan.

Then, the deputy army group commander for aviation issues specific orders to his aviation divisions and regiments. These orders cover targets, numbers of sorties, air approach corridors, communications codes, and mission timing. Air representatives at army, division, and brigade level then confirm, for their respective commanders, the allocation of air resources. Normally, the deputy army group commander for aviation holds a percentage of his forces in reserve to meet the unforeseen demands of division commanders. Maneuver division commanders can also withhold a percentage of their allocated air assets as reserves.

A higher headquarters may assign specific air support to a maneuver brigade. Then, the brigade commander explains his objectives to the commander of the supporting air unit and to the forward air controller (FAC) assigned to his brigade. He also seeks their recommendations.

Both army group and army commanders pay particular attention to the coordination of artillery and missile fire with preplanned and on-call air strikes. This fire can neutralize or suppress enemy air defenses before attack aircraft arrive.

Centralization Versus Decentralization

The OPFOR normally maintains strict ***centralized control of at least fixed-wing aviation***. The combined arms commander does not always have operational control of the supporting aviation. Instead, centralized planning may apportion air support resources into regiment-flights or aircraft sorties with the required quantity of munitions. The combined arms commander may not know which aviation unit will accomplish the missions he requested.

Centralization takes advantage of the mobility and maneuverability of aircraft to concentrate them at the decisive point and time from dispersed bases. Centralized control simplifies the integration of aircraft being used in different, but complimentary roles (for example, reconnaissance, strike, air superiority), and their coordination with ground forces and air defenses. It also allows a rapid reallocation of air support resources to accomplish the most important missions that suddenly arise during operations. Aviation units not originally assigned for ground support may sometimes take part in delivering air strikes against ground targets.

Once air superiority is achieved, the OPFOR sometimes places fixed-wing aviation under the operational control of an army. For example, an army operating as an OMG in the enemy depth could receive a division or more of fighter and ground-attack aviation, and sometimes fighter-bombers as well, in direct support. This might be necessary, if the OMG is operating far enough ahead of the armies of the army group's first echelon that it is out of range for artillery support from the main force. An army-size OMG also has its own attack helicopter force.

On the other hand, the OPFOR has given largely ***decentralized control of helicopters*** to armies, and even divisions on occasion. This is partly because the OPFOR regards attack helicopters as flying artillery and partly because of the limited range of helicopters. It is also partly due to the fact that the army group may attempt to advance on multiple, separate axes, all of which would require some air support.

Operations on separate and disconnected axes may use decentralized employment of aviation, especially combat helicopters. In that case, aviation assigned for air support transfers to the operational control of the combined arms commander. He can employ it according to his needs, rather than waiting for aviation support from higher headquarters. This arrangement supports the doctrine for a fast-moving offensive.

A maneuver division acting as an army OMG could operate 100 km or more beyond other army forces. Such an OMG receives high priority for support by both fighter-interceptors and ground-attack aircraft. Because the OMG advances beyond the normal range for helicopter support from the army's main body, it often has army helicopters assigned to

move with it.

Aviation Control Element

The staff of the army and division usually has an aviation control element (ACE). This element advises on the use of air assets. It transmits air support requests to aviation organizations, maintaining communications and control with aircraft in the battle area. It also advises the commander of air reconnaissance information.

At army, this ACE generally consists of the following personnel: an air controller, an intelligence officer, a liaison officer, and communications personnel. It normally has two sections. One section chief colocates with the commander; the other with the chief of staff. The ACEs at division level are similar to those at army level, but smaller.

Principles of Employment

Air superiority is a necessary condition for the effective support of ground forces and, indeed, for the operation as a whole. The OPFOR believes its aviation assets can exert a tremendous influence on the battlefield. It emphasizes that aviation can provide responsive and continuous fire support using the following principles.

Concentration

The OPFOR does not spread resources evenly across its frontage but allocates them to key sectors and axes. From the outset, strategic and army group aviation concentrate on punching a few corridors through enemy air defenses and attacking air bases. The OPFOR makes every effort to maintain air superiority over these corridors, even if it cannot do so over the entire theater of operations. The thrusts of principal air and ground forces probably go through these corridors.

Coordination

The coordination of aviation with artillery fire support, air defenses (both ground-based and airborne), and maneuver units is one of the most difficult problems of modern combat, particularly in the absence of air superiority. At army group and army levels, the CPs of supporting or organic aviation commanders are near the CPs of the ground forces.

The combined arms commander establishes air support priorities. The aviation commander and staff develop the details of the plan, working closely with their artillery and air defense counterparts. Divisions receiving direct air support have an air representative; maneuver brigades have an experienced pilot to act as a FAC.

When the division commander approves a request for direct air support, the air staff at army allocates forces to the mission and passes control to a vectoring and target designation post. The latter, which has its own mobile acquisition and height-finding radars, vectors the attack into the target area and provides information about enemy and friendly forces. It then passes control to the FAC who visually directs the attack.

The coordinated use of the airspace over the battlefield and aerial delivery of ordnance close to friendly troops are among the most complex problems of modern combat. The OPFOR stresses early attainment of air superiority to simplify the airspace-management problem. To reduce air-ground coordination problems as much as possible, OPFOR planners do not normally simultaneously use attack helicopters, fixed-wing ground attack aircraft, and artillery in the same fire zone. The OPFOR might time air strikes sequentially to achieve mass in the target area and reduce air-ground coordination difficulties.

Continuity

The achievement and maintenance of air superiority require a continuing effort. Many phases of ground operations require continuous air actions to ensure success. This is especially true of penetrations of enemy defenses and the forcing of water obstacles.

Economy

If the OPFOR hopes to achieve concentration and continuity, it cannot use air assets to perform missions that can be adequately executed by other means. Thus the OPFOR may use missile strikes to suppress enemy defenses rather than

using manned aircraft. Following this principle, the OPFOR might employ its ground-attack aircraft outside artillery range; for example, 30 to 40 km, sometimes up to 70 km from the line of contact.

Surprise

To reduce loss rates to acceptable levels, surprise is an essential part of air action. Means of achieving it include--

- Choosing unexpected or covered axes.
- Attacking at unlikely times.
- Attacking in unanticipated strength (for example, after covert reinforcement).
- Using new weapons or tactics.
- Limiting or preventing radio and radar emissions.
- Degrading the enemy's early-warning radar net.
- Making decoy raids.
- Using camouflage, concealment, and deception on airfields.

Reserve

Air power provides the most flexible and fastest-reacting source of firepower to cope with unexpected difficulties or expected developments (such as the commitment of an enemy corps reserve). For this reason, both army and army group maintain a reserve of number of sorties.

Reconnaissance and Targeting

Air reconnaissance is the principal method of gathering target intelligence. The chief of reconnaissance on the army or army group staff prepares an overall reconnaissance plan, which details tasks for operational-level aviation assets. Army and army group assets also provide intelligence to support division combat actions. Army group aviation's reconnaissance regiment and the armies' reconnaissance drone squadrons gather tactical and operational intelligence information to a 300-km depth. They may also collect strategic intelligence to support theater and national missions.

Aircraft crews on any mission should immediately report observed enemy activity. Dedicated reconnaissance aviation regiments have the primary responsibility for air reconnaissance. These regiments have specially equipped reconnaissance aircraft. Aviation assets also have airborne signals reconnaissance collectors.

The aircraft transmit perishable target intelligence by radio to ground CPs. The processing of data from an air reconnaissance mission can take 2 to 8 hours. To shorten this time, OPFOR planners are modernizing their techniques.

Armed reconnaissance can disrupt the enemy's resupply operations and troop movements through the immediate exploitation of reconnaissance data. The OPFOR does this with a flight of a reconnaissance aircraft and two to four attack aircraft. Targets for interdiction missions include nuclear storage areas, enemy airfields, troop reserves, and C^2 centers. These targets may be up to 500 km behind the frontlines. However, it can be difficult to conduct armed reconnaissance flights before establishing air superiority.

Targets

Air reconnaissance determines the enemy's intentions and collects intelligence to plan air and ground operations. It has four major categories of targets:

1. Precision weapons.
2. Active and potential enemy airfields.
3. Defensive positions and systems (air defense C^2 and early warning centers).
4. Enemy reserves, supply depots, and approach routes (particularly key intersections and bridges).

Target Classification

The basis for planning air strikes is the classification and location of targets. The OPFOR classifies targets as single,

multiple, line, or area. The target's classification affects the method of engagement. (See Figure 10-2.)

Classification	Example	Attack Technique
Single (or Point)	Rocket launcher, tank or armored vehicle, parked aircraft, or helicopter. Radar firing point, observation point, or bunker.	Single aircraft using lower-level or dive delivery of ordnance. ARM employed against radars. Single helicopter using ATGMs or rockets.
Multiple	Group of 10-20 single targets, occupying an area of 1-1.5 m.	Attack by a small group of (2-8) aircraft or helicopters with appropriate ordnance.
Line	Tactical march column (usually 1 km or longer), train, runway.	Attack by a single aircraft or a small group along the long axis of the target. Helicopters attack column from the flank.
Area	Dispersal or assembly areas of battalion or larger unit, supply depot, larger C^2 center, forward airfield.	Massive and concentrated air strikes, delivered from various altitudes and directions.

Figure 10-2. Classification of air-strike targets.

Reconnaissance-Strike Complexes

OPFOR technological advances in reconnaissance, target acquisition, weapon-delivery systems, and automation have led to a concept integrating fire control and fire support capabilities. The OPFOR term for this concept at the operational level is *reconnaissance-strike complex* (RSC).[9] Under this concept, an operational-level commander centrally controls long-range MRLs, SSMs, and fixed- and rotary-wing aircraft, linked through an automated system for processing and disseminating reconnaissance data. The goal is to attack enemy targets in real time or near-real time. Long-range strike assets target their enemy counterparts, including precision weapons. (See Chapter 9 for more detail on the RSC.) An RSC may combine with EC assets to conduct an electronic-fire strike.

Mission Types

Maneuver commanders identify requirements for air strikes. The aviation commander and air staff then prepare orders for aviation units designating preplanned, on-call, and immediate air support missions to support these requirements.

Preplanned Missions

Most air strikes in direct support of ground maneuver formations are preplanned. The combined arms commander identifies the target, times, and desired effects. The aviation commander determines the force, ordnance, and attack technique to accomplish the mission. The air staff plans predesignated attacks in great detail and integrates them with other forms of fire support, in coordination with the staffs of artillery and air defense. Preplanned missions differ from on-call missions in that the predesignated attacks are part of a timed program rather than on-call at the discretion of maneuver commanders.

The plan for preplanned strikes normally covers the first one to two hours of combat operations. It may cover a period of up to 24 hours in a static situation. The plan specifies the following details: targets, strike force, time, location, attack

technique and ordnance, communications codes, and approach and departure routes. Under favorable conditions, some aviation assets may also "free hunt" targets.

Air crews of aviation regiments and squadrons closely study preplanned target assignments to determine the best attack techniques, using large-scale maps for reference. In some cases, they study scale models of the terrain and targets in their sector. Models help the crews determine ingress and egress routes and plan tactical maneuvers. Pilots practice and develop variations to acquire a ready response to changes in the situation.

Once airborne, the aircraft fly to a designated checkpoint behind friendly lines. There, they confirm their target assignment with ground control. The OPFOR emphasizes strict adherence to predetermined timing and flight paths. This indicates they probably use "safe" corridors through friendly air defenses. The air crews also use prearranged signals for mutual identification. The ACEs and FACs maintain communications with attack aircraft either directly or through radio-relay aircraft.

As the aircraft approach the target area, FACs establish communications, making sure pilots correctly identify the targets. Once the pilots see the target, and the FAC confirms the target, the flight leader assigns individual targets and orders the attack. Aircraft follow the original flight plan through friendly air defenses unless changed by ground control.

On-Call Missions

Planners may predesignate a target for on-call attack by aviation assets. However, the ground forces commander can choose the time for the strike at his discretion. If the target no longer presents a problem to the ground attack, he does not call for it at all. This gives the ground forces the flexibility to take advantage of opportunities for success without stopping for an unnecessary air attack. Thus, the commander may save his air assets to use when needed.

The commander may also keep a portion of available air assets in readiness to execute on-call attacks against unexpected targets. Aircraft and helicopters designated for on-call missions can be airborne in holding areas or be on the ground at forward airfields. The size of these assets depends on the phase of the operation.

The on-call mission is basically the same as a preplanned mission, except for the attack's timing. During a "window of availability," usually no longer than 4 to 5 hours, air mission launches may occur at any time. On-call missions usually have secondary targets planned in the event the window of availability expires before the primary target becomes available for attack.

Immediate Missions

The ground commander submits a request for immediate air support to the next higher headquarters. The request moves up through the chain of command. If a request for air support does not exceed the division commander's allocated assets, he can order the air strike through his ACE. Otherwise, the army or army group must approve this request, depending on the size of support the maneuver division requested. As with preplanned support, the ACE at each command level participates directly to evaluate each air support request and to coordinate the strike mission.

Aircraft designated for immediate missions can be airborne in holding areas or on the ground at airfields. Occasionally an aircraft on armed reconnaissance patrol can respond to an air support request within its area of operations. The OPFOR recognizes three levels of combat readiness for army group aviation aircraft and crews. Aircraft in categories one and two respond to ground force requests for immediate air support.

Before takeoff, pilots receive a briefing on a checkpoint toward which to proceed and, possibly, on the target location. On reaching the checkpoint, the pilots contact the air representative of the ground force units being supported. This representative gives the pilots target designation or confirmation. Approach, attack, and recovery air control procedures remain the same as in preplanned air support missions.

Choice of Aircraft

The OPFOR prefers to use helicopters for immediate, time-sensitive strikes close to friendly forces. Attack helicopters have reduced logistics requirements compared to those of fixed-wing aircraft. This often allows deployment close to the main battle area and enhances their ability to respond to on-call or immediate missions. Helicopters have other

advantages over high-performance aircraft as well. They have the ability to concentrate and probably maneuver undetected for an attack. They can also conduct ambushes. Compared to fixed-wing pilots, helicopter pilots are better able to evaluate battlefield conditions rapidly and exactly and to react without needing to make a second pass over the area.

On the other hand, helicopters are somewhat vulnerable to enemy fighters and ground fire. The OPFOR thus prefers not to use them in ground support outside the protection of the air defense envelope, at least if fighter top cover is not available.

The OPFOR employs fixed-wing aircraft more frequently in strikes on previously reconnoitered, fixed or semifixed targets, in the enemy's immediate rear, or at greater depths. In very fluid situations, fighter-bombers may also participate in "free hunt" sorties (armed reconnaissance missions), in which they attack targets of opportunity. High-performance aircraft are vulnerable to ground-based air defenses when executing ground attacks. This necessitates a low-altitude, high-speed target approach and minimum time in the target area.

Sortie Allocation

The procedure for distributing army group aviation sorties to the armies and, in turn, to the divisions, is a top-down method. It starts from the total numbers of air sorties available (rather than a bottom-up method starting from the number of sorties required from some assessment of the number of targets).

The aviation commander does not allow air assets to remain idle, but aims for the maximum use of aviation resources each day (sorties cannot be "saved" on one day for use on the next). He maintains a daily reserve of about 10 to 20 percent of sorties to meet daily contingencies.

As a rule of thumb, each ground army operating on the main axis gets an average of two to three regimental sorties per day, with armies on secondary axes receiving up to one. The OPFOR maintains the strength of army group aviation in the face of attrition by reinforcement from the rear (depending on the availability of open airfields). On occasion, reinforcing assets may stage through reserve or dummy airfields to mount surge operations at crucial times.

Critical Periods

The most important role air power can play in the offensive is to provide air cover, keep enemy air away from friendly ground forces. This requirement is vital and ongoing. There are, however, certain periods when failure to achieve or maintain air superiority would assuredly result in failure, and the addition of offensive air support may be crucial to success.

Penetration

While artillery provides most of the fire support for the ground penetration, air action is important in--

- Speedy elimination of unexpected centers of resistance that cannot be bypassed.
- Neutralizing enemy artillery and helicopter assets.
- Disrupting and delaying the intervention of enemy reserves.

During the support of the penetration, and when trying continuously to disrupt and delay the movement of enemy reserves, ground-attack aircraft might attack in waves of from 4 to 12 aircraft each. On the other hand, the army group employs regimental sorties on an on-call basis when supporting the forcing of a river obstacle or defended line in the enemy rear or when trying to inflict decisive damage and dislocation on enemy reserves or counterattack forces.

Commitment of OMG or Second Echelon

The period of commitment of a follow-on force is usually one of great vulnerability to enemy air, indirect fire, or counterattack. This is especially the case if the OMG or second echelon has to complete the penetration of the tactical zone of defense. It presents a massed target array to the enemy over a period of several hours, even in the case of a division-size force. Air defense must be impregnable, and if the artillery has not kept up in adequate strength, direct air support may be necessary to complete the penetration, destroy or neutralize enemy artillery, interdict reserves, repel

counterattacks, and even to lay smoke. During this period, the army group commits the bulk of its aviation in support (traditionally 70 to 80 percent).

Repelling Counterattacks or Counterstrikes

If the enemy succeeds in getting his timing right, he can mount a counterattack or counterstrike when the attacker is off balance and unable to effectively respond. Air power may be the main or only means of breaking up the attack, or at least of disrupting and slowing it.

Deep Operations in the Enemy's Rear

When conducting operational maneuver deep in the enemy's rear, OMGs, whether they be of division or army size, might find that artillery has difficulty in keeping up with the maneuver units, as does logistics support. The ground maneuver force thus looks to ground-attack aviation to compensate for deficiencies, particularly when forcing water obstacles or when breaching lines in the enemy's rear. Of course, air action also plays a key role in destroying withdrawing forces, interdicting enemy reserves, and disrupting enemy C^2 and logistics support.

Encirclement

At least initially, air power often provides the primary source of fire to disrupt or prevent breakout efforts or relief attacks. If an encircled grouping establishes a viable defense, air action can also play a major role in preventing enemy aerial resupply.

Readiness Categories

The OPFOR recognizes three levels of combat readiness for army group aviation fighter-bomber aircraft and crews. Figure 10-3 defines the categories in terms of aircraft and crew status, how long they maintain that status, and the time it would take them to be airborne. These categories probably also apply to other types of ground-attack aviation assets. Aircraft in categories one and two respond to on-call missions.

Category	Crew and Aircraft	Duration Of Readiness	Time Before Takeoff
One	Aircraft are fully serviced and armed. Combat crews are briefed on their mission and are in the aircraft ready to start engines. Ground personnel are assisting the combat crews.	1-2 hours	3-5 minutes
Two	Aircraft are fully serviced and armed. Combat crews are briefed and are on standby in the vicinity of the aircraft ready to take off within a specified short period of time after receiving a mission order.	2-4 hours	15 minutes
Three	Aircraft are refueled and serviced. Cannons are loaded. External systems (bombs, rockets, missiles, fuel tanks, etc.) are not loaded. Combat crews are designated, but not on standby; they have not been briefed on the air and ground situation, but will be before takeoff.	2-4 days	1-2 hours

Figure 10-3. Levels of air combat readiness.

Transit time can vary according to the proximity of the airfields to the target. It can be quite short for attack helicopters, since these stand by at forward operating sites located within the second echelons of forward divisions or armies, about 30 to 50 km from the line of contact.

Protective Measures

The OPFOR emphasizes the importance of camouflage, concealment, and deception and surprise in paralyzing hostile air defenses. To this end, it employs the following attack techniques and EC measures.

Attack Techniques

As far as possible, aircraft approach the target area along corridors created through enemy ground-based defenses. They usually make the approach at the lowest permissible altitude given weather and terrain restrictions, ideally at 50 to 100 m. Aircraft reduce radio transmissions to a minimum or operate silently.

The OPFOR exploits detected gaps in enemy radar coverage and uses decoy flights in advance of attacking aircraft to distract enemy air defense systems. If more than one pass is necessary to destroy the target, attacking flights approach from different directions or from bright sunlight. This minimizes visual detection, and recognition, and antiaircraft effectiveness.

Electronic Combat

Because the enemy air defense relies on electronic equipment, the OPFOR must neutralize it to reduce aircraft losses. Special SOJ and ESJ aircraft protect the raid, and raiding aircraft use SSJ systems. Moreover, the ground forces attempt to neutralize or destroy all identified air defense weapons and radars within range using indirect fire. All these efforts help to reduce OPFOR aircraft losses.

Offense

The OPFOR has steadily increased the offensive air capabilities of fixed- and rotary-wing assets to support fast-moving ground forces. They continue to improve the quality and quantity of all aircraft to achieve their tactical, operational, and strategic goals.

Air power provides the best means for suddenly concentrating potentially decisive fire anywhere on the battlefield and for projecting firepower into the enemy's depth. The OPFOR attaches particular importance to interdiction as a vital part of deep operations.

Ground-attack assets execute shallow missions against tactical and operational-tactical reserves, and bomber aviation conducts an operation against operational and operational-strategic reserves to prevent their timely and organized deployment. Long-range strategic aviation plays an important part in destroying or disrupting the arrival of strategic reserves in the theater.

Air Cover

Air cover prevents attack by enemy offensive air weapons on OPFOR troops and installations and prevents hostile air reconnaissance. This is the principal mission of fighter aviation. Air cover also protects other aviation assets involved in various phases of air support. Thus, air cover equates to combat air patrol or escort.

Phases of Air Support

Besides the long-range fire strike at the onset of theater-level hostilities, doctrine calls for air support of ground forces in offensive operations. The OPFOR recognizes four phases of air support, which correspond to the four phases of offensive fire support. The major difference between the phases is their time of deployment, although there are some differences in targeting, command, and delivery.

The four phases of air support within an offensive operation are--

- Phase I: air support for movement forward.
- Phase II: air preparation.
- Phase III: preplanned and immediate air support of the attack.
- Phase IV: air accompaniment.

These four phases are not mutually exclusive. Air accompaniment may occur simultaneously with support of the attack

for units on the main axis, while air preparation is taking place for other units about to make a secondary attack. At the same time, fighter aviation provide air cover for all of these ground force units.

The OPFOR plans to coordinate the fire support of SSMs, artillery, and air assets into the integrated fire destruction of the enemy throughout the entire depth of the enemy's defenses. Integrated fire support in an offensive begins when the supported OPFOR unit leaves the assembly area and continues until the supported unit completes the offensive mission.

Phase I: Air support for movement forward. The OPFOR introduced this phase to support the movement of an OMG. However, Phase I also applies to support of any uncommitted force moving toward commitment against the enemy. It consists of long-range fires to protect a force moving from an assembly area to the line of deployment into battalion columns.

Phase I specifically targets the most dangerous enemy long-range weapons that might strike the supported unit while it is still a considerable distance from the forward edge of enemy defenses. These targets primarily consist of enemy nuclear and precision weapons, long-range artillery and SSMs; they also include aircraft on airfields and combat helicopters. The OPFOR uses fixed-wing aviation, SSMs, long-range guns, and MRLs to destroy or neutralize these deep targets. The deepest targets are the responsibility of aviation. Air support for the movement forward may extend over several hours.

Phase II: Air preparation. Phase II, like Phase I, occurs before the onset of a ground offensive and across a specified frontage. Air preparation can precede a variety of offensive operations such as penetrations, forcing water obstacles, amphibious and airborne or heliborne landings, and counterstrikes. It may also precede the commitment of second-echelon or reserve forces or OMGs.

Generally, air preparation extends no farther than the enemy's immediate operational depth (that is, to the rear areas of defending corps, which is about 250 to 350 km). Air attacks destroy targets that conventional artillery and SSMs cannot because of distance, mobility, or their hardened nature. Targets thus include--

- Enemy nuclear delivery means and precision weapons.
- Airfields and forward operating sites for helicopters.
- Artillery.
- Electronic warfare sites.
- C^2 centers.
- Deep defensive positions.
- Reserves and their approach routes (such as key road junctions and defiles).
- Logistics sites.

Depending on the combat situation, air preparation might take as little as 10 minutes or may extend to over an hour. However, it typically begins about 20 to 30 minutes before the supported force reaches the forward edge of enemy defenses. The length and organization of the air preparation reflects the--

- Nature of the enemy's defenses.
- Type and density of fire support means used for the preparation.
- Role of precision weapon strikes in the attack plan.
- Nature of the ground attack.

Air preparation usually occurs simultaneously with missile and artillery preparation. It requires close, detailed coordination with the latter with regard to timing, targeting, entry and exit routes, and support for the attacking aircraft against air defenses. The OPFOR might have to repeat this phase against well-fortified, deeply echeloned defenses. Army-level attack helicopters can engage some close-in targets, but targets in the immediate operational depth usually require attack by fixed-wing aviation from army group level. In special situations (such as amphibious assaults), strategic aviation and/or naval aviation may participate in air preparation attacks.

Phase III: Preplanned and immediate air support of the attack. Phase III begins when maneuver units launch their

attack. It starts immediately after the end of the fire preparation and continues at least until OPFOR attacking units overrun enemy first-echelon battalions. The majority of air strikes are preplanned. Ground force commanders may request immediate air attack missions against centers of resistance within the limitations of their allocated resources.

The air support phase closely follows the operational plan prepared before the onset of the offensive. It is an extension of the strong artillery fires associated with offensive operations. As in Phase II, the targets generally are those beyond the range or destruction capabilities of artillery and missiles. These targets include enemy nuclear and precision weapons, C^2 systems, and enemy reserves at tactical and immediate operational depths.

Phase IV: Air accompaniment. The specific point at which Phase IV begins is not always clear. However, it begins with the end of Phase III and continues until supported maneuver forces have accomplished their missions. This phase occurs during the advanced stage of offensive operations when the progress of ground forces has outstripped the prepared fire support plan; the commander must then reassess and reallocate air resources.

Once he has allocated air resources before an offensive, the army group commander plays little further direct role in the conduct of air support unless large reallocations are necessary. However, in Phase IV, the army group commander again has the primary role. He probably reallocates significant air resources to support maneuver forces as the combat situation develops.

To a large extent, the army group decentralizes to armies the responsibility for tasking air assets. The army group commander continues to hold some resources in reserve for the execution of deep missions of longer-term interest to the army group. The commander must also reallocate his air assets to maneuver forces according to the development of the combat situation.

The importance of direct air support increases dramatically in this phase because of the increasing difficulty of target acquisition by artillery and, indeed, because of the difficulty the artillery and its logistics support have in keeping up with a high-speed advance. The OPFOR sees air support as a particularly valuable substitute for artillery in meeting engagements and in pursuit.

The main burden falls on attack helicopter units, since they are best able to offer both rapid and intimate support, especially in difficult terrain or a confused situation. However, there is a reluctance to use helicopters outside the protection of the air defense umbrella, at least if fighter top cover is not available.

Air attacks can cover deployment and commitment of second echelons, engage enemy reserves moving forward, and prevent the enemy from establishing new defensive positions. Another important and demanding air-accompaniment mission is escorting airborne or heliborne forces being delivered into the enemy's rear. This requirement for air cover might occur over the enemy rear while the preparation or support phases are still underway over the forward edge of enemy defenses.

Choice of Aircraft

The four phases of air support to offensive ground operations use both fixed-wing aircraft and attack helicopters. The increasing number of attack helicopters enables them to play a greater role in the support of ground forces, freeing fixed-wing aircraft for missions against deeper targets such as nuclear weapons depots and airfields.

In a meeting engagement, air support assets (particularly attack helicopters) screen and support units as they maneuver into position. Also, air strikes attack enemy columns moving forward to reinforce engaged units. The OPFOR might employ attack helicopters in flanking attacks against reinforcing or counterattacking enemy armor columns.

In a pursuit, air support assets attack withdrawing enemy units through armed reconnaissance and in ambushes along withdrawal routes. These assets might be either high-performance aircraft or helicopters. Attack helicopters also can support forward detachments outside the range of artillery fire.

Attack helicopters now provide most of the direct air support to ground forces during the offense. The OPFOR has carefully studied using helicopters along with artillery fire. Fire planners normally employ attack helicopters after completing the artillery preparation; however, they may use both simultaneously. In such situations, helicopters have

entrance and exit corridors parallel to and between artillery fire concentrations and under the trajectory of artillery rounds. Careful planning will permit their helicopters to pass under friendly artillery fire and to quickly provide fire support for attacking ground forces.

Helicopters can support ground forces that penetrate deeply into enemy rear areas. The OPFOR might employ pairs of attack helicopters in low-level flight. Attack helicopters fire in support of ground forces and guide reinforcement helicopters to attack targets if needed. A mixed force of fixed-wing attack aircraft and attack helicopters may strike assigned targets.

Airfields

Effective army group aviation operations in support of advancing troops require appropriate airfields. In some regions, certain types of modern aircraft can use unpaved airfields; they can also use some captured enemy airfields.

When appropriate airfields are available, modern aircraft, with increased operational range and load capability, can give air support for ground forces advancing at high speed. However, some OPFOR aircraft can operate from small, unpaved airfields, ensuring reliable support to the ground forces. The attack helicopter has the required flexibility to provide this support.

Airfields for fixed-wing aircraft. Each air regiment has from two to three airfields, each division has from four to nine, of which two-thirds are active and one-third alternate.

The army group might use 35 percent permanent bases, 35 percent dispersal fields, and 30 percent alternate (maneuver or reserve) fields to operate its fixed-wing aircraft. (Normally, aircraft do not return to the fields from which they launched the mission.) In emergency, aircraft might use highways for recovery or transit missions.

The aim is to ensure survivability of air assets through a combination of maneuver and dispersal, keeping a reserve of airfields for surge operations. The OPFOR makes extensive use of camouflage, concealment, and deception to enhance survivability. Deception airfields can amount to one-third to one-half of all permanent airfields.

Of course, as army groups advance deep, the problem of forward bases for aircraft can become significant. This explains the priority the OPFOR gives, during deep operations, to seizing enemy airfields with airborne or heliborne landings or with forward detachments. Airfield maintenance battalions, which advance with the forward-most ground forces, can restore or improve these as well as suitable highway strips.

Airfields for rotary-wing aircraft. Attack helicopters deploy to forward operating sites that either move forward with the advance or rearward with the withdrawal. For protection, the OPFOR places these sites near second-echelon units of forward divisions or with second-echelon divisions, that is, as close as 35 km from the line of contact. OMGs can take with them resources to create one or more forward operating sites so up to a regiment of combat helicopters can continue to operate from within the OMG once the separation from the main forces has become too great for safe transit or adequate loiter times.

Support for Amphibious and Airborne Landings

Successful action from the air is essential to the success of both tactical and operational landings. Army group aviation missions might include the following:

- Reconnaissance.
- Comprehensive suppression of enemy air defenses.
- Escorting formations to their targets.
- Neutralizing drop-zone or beach defenses.
- Providing direct air support to ground forces.
- Conducting aerial resupply.

Defense

Where elements of an army group in the offensive have transitioned to defense, priority in allocating air support normally goes to those forces that are still conducting a successful advance. Aircraft committed to helping a defending force have their fires integrated into the overall fire plan. The basic aim is to disrupt the enemy's attack plans with air attacks in his immediate operational depth.

The air fire support plan contains several variants, developed in detail. These variants take into account the anticipated actions of the enemy and his most probable avenues of approach. They cover air strikes against attacking forces that are out of range of artillery and SSMs. They also plan to use all fire support weapons to concentrate fire on forces that have reached, or penetrated, forward defensive positions.

Counterpreparation

There is an aviation counterpreparation plan for each planning variant. Its objective is to launch a powerful, surprise, concentrated strike of short duration to preempt the enemy's plan. The OPFOR intends for air strikes, along with intensive delivery of rocket, missile, and artillery strikes, to annihilate or neutralize enemy forces preparing to attack. This first phase of defensive fires should start before the enemy's preparation fires. The targets of the counterpreparation, roughly in order of priority, are--

- Precision weapons.
- Aviation on airfields.
- Artillery in firing positions.
- Enemy maneuver forces preparing to attack.
- Major C^2 installations, headquarters, and communications centers.
- Water obstacle crossing sites.
- Enemy reserves.
- Equipment, ammunition, and fuel dumps.

Phases of Air Support

In the defense, as in the offense, the fire planner utilizes all available fire support to carry out the commander's plan. These defensive fires have four phases:

Phase I: fire interdiction of the advance and deployment of enemy troops.

Phase II: fire to repel the enemy attack.

Phase III: fire support of defending troops.

Phase IV: fire destruction of the enemy during a counterattack or counterstrike.

Choice of Aircraft

In addition to their key role in counterpreparatory fires, fixed-wing aircraft play the primary role in defense against enemy airborne landings. They have the range to strike enemy airborne troops in their assembly areas or to destroy aircraft on airfields prior to takeoff. Fighters can also interdict aircraft in flight, before they reach the drop zone.

In Phase I, the fight in the security zone provides opportunities to use army aviation helicopters. OPFOR helicopters (using terrain or smoke cover) conduct ambushes along the most likely enemy avenues of approach against advancing groupings. Minefields laid by fixed-wing aircraft or helicopters can also be useful in this phase to delay the enemy force or canalize the enemy attack.

Phase II, repelling an enemy attack, is one of the least favorable times to use aviation. Other fire support means concentrating firepower on the forward edge of the defense may have to check their fires as OPFOR aviation approaches that area. However, the combined arms commander normally keeps some aviation assets on call during this phase to provide a quick-reaction strike force wherever the enemy threatens to penetrate the forward defenses.

In support of defending troops (Phase III), helicopters with ATGMs counterattack armored or mechanized forces that have penetrated forward defensive positions. The helicopter force seeks routes that allow it to approach the flank of the enemy force undetected. If terrain variations do not provide adequate concealment for the force, helicopters may use smoke to conceal their approach. Helicopters can also block major enemy penetrations or supplement mobile obstacle detachments by laying mines along threatened flanks and gaps. During withdrawal, helicopters support rear guard units by attacking advancing enemy units from ambushes at minimum altitudes.

Helicopters also provide accompaniment for counterattacks or major counterstrikes by maneuver units (Phase IV) and help in the neutralization of enemy artillery. The army commander can hold attack helicopters in reserve as a mobile counterattack force.

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[1] Naval aviation includes maritime bomber, reconnaissance, and fighter aircraft that can support amphibious landings as part of an army group or theater operation. They might also help to repel enemy amphibious landings or to prevent enemy reinforcement in the theater. National air defense forces include fighter-interceptor and airborne early warning aircraft, as well as strategic surface-to-air missiles (SAMs); their mission is to defend the State against air attack.

[2] Sometimes the OPFOR refers to this as *long-range aviation*.

[3] At the army group level, units with *aviation* in their name normally consist of fixed-wing aircraft.

[4] Some armies may have a mixed aviation squadron instead of a separate helicopter squadron.

[5] A corps would have some of the same aviation assets as an army. These could include a combat helicopter regiment and a separate helicopter or mixed aviation squadron.

[6] An army group could conduct an air operation on a smaller scale to establish local air superiority during an army group operation.

[7] Under certain conditions, the OPFOR recognizes that the long-range fire strike phase of a war could last weeks rather than days. This could arise from opportunity, for example, if the enemy does not have strong air and air defense capabilities. On the other hand, it could be out of necessity, because of the nature of the enemy's ground force defenses or the inability to confirm destruction of his nuclear weapons.

[8] This title is a special distinction. Even the commander of missile troops and artillery and the commander of air defense are not deputy commanders of the army group. Other branch chiefs are simply *chiefs* and not *commanders*.

[9] The tactical-level counterpart is the *reconnaissance-fire complex*, which incorporates the fires of only tube artillery and MRLs under the control of the tactical commander.

Chapter 11
Air Defense Support

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The main focus in this chapter is on air defense of maneuver forces at the operational level. However, operational-level air defense does not exist in isolation from the overall system of OPFOR air defense, which includes the strategic and tactical levels. Army group air defense plays a key role in the air defense operation, which

is a major component of strategic operations within a theater. Army-level air defense also overlaps with tactical air defense coverage.

INTEGRATED AIR DEFENSE SYSTEM

State-of-the-art OPFOR air defense weapons at all levels of military art present a formidable threat to any potential enemy. Air defense effectively supports the concept and requirements of combined arms combat. The OPFOR believes air defense is best accomplished by a large number and variety of weapons and associated equipment integrated into a redundant air defense system.

Goals

The main objective of air defense is to prevent enemy air action from interfering with maneuver force operations. Air defense forces protect ground units and other potential targets from attacks by fixed-wing ground-attack aircraft, cruise missiles, and armed helicopters. Ground forces then can continue their own missions. The secondary mission of air defense troops is to protect air and airborne/heliborne missions forward of the line of contact.

Phases

Air defense of maneuver units consists of three phases. All three phases may overlap or may occur simultaneously.

Phase I includes all actions to destroy enemy aircraft and control systems while they are still on the ground at airfields or in marshaling areas. Aviation resources and surface-to-surface missiles (SSMs) play major roles in this phase.

Phase II includes all actions to destroy enemy aircraft while they are in flight but still at some distance from OPFOR ground forces. Aviation plays a significant role in this phase. Medium-range SAM units at the operational level may also play some role.

Phase III is the destruction of enemy airplanes and helicopters that penetrate the airspace of OPFOR maneuver elements. This role belongs primarily to tactical air defense forces.

Principles

The OPFOR follows several basic principles when conducting air defense: surprise, firepower, mobility, continuity, initiative, coordination, and security. Of these, the element of surprise is the most critical.

Surprise

Achieving surprise is fundamental to any successful air defense operation. The OPFOR is aware of the potential physical destruction it can achieve by attacking an unsuspecting and unprepared enemy. The OPFOR is also aware of the psychological effects of violent and unexpected fires on aviation crews. These effects are often only temporary, but they can reduce the effectiveness of air crews preparing to attack at critical moments.

The element of surprise is also increasingly important because of modern technological advances. The speed and evasiveness of modern aircraft reduce engagement times. Modern aircraft also have a great amount of firepower with which to suppress air defenses. These two factors make it necessary for units to achieve some degree of surprise.

Of course, the air enemy also is trying to achieve surprise, and the OPFOR must give careful consideration to how he might exploit the terrain in making a concealed approach. The principle of surprise is also important in the wider context of denying the enemy's intelligence organization an accurate and comprehensive picture of the deployment of air defense radars. This is a principal means of determining operational formation.

Firepower

The OPFOR force structure includes a wide variety of air defense weapons (both missiles and guns). This mix of

capabilities gives ground force commanders outstanding firepower for air defense.

Mobility

When planning air defense, the commander must always consider the mobility of air defense weapons and the time required for their deployment. The ground forces, for which air defenses provide cover, are quite mobile and frequently change formation as they deploy. The air enemy is mobile, and can attack from many directions or altitudes. Therefore, the commander must use to the maximum the mobility and firepower of his assets, creating optimum groupings and fire plans.

Continuity

Air defense forces must provide continuous protection of critical organizations and assets. Only constantly moving air defense units that have adequate logistics support can ensure comprehensive air coverage. They must provide air defense day or night in all weather conditions. Mobility contributes directly to continuity.

Initiative

The modern battlefield is a fluid and volatile environment where air defense unit commanders must respond to constant changes in the situation. This demands aggressive action, initiative, and originality. Commanders must operate efficiently when communications with other air defense units fail. For example, if the supported unit receives a modified mission, the commander must reevaluate his own unit's deployment in light of the new requirements. He also must be aware of changes in the tactics enemy air forces employ.

Coordination

The OPFOR stresses coordination between supported maneuver and supporting air defense units and between air defense units. It views air defense as a single system composed of various parts. Air defense is an integral element of the ground battle.

All division-level air defense weapons must coordinate precisely with flanking units and with operational-level air defense, strike and assault aviation, and possibly even naval aviation. Failure to coordinate can result in gaps in the air defense umbrella, excessive ammunition expenditure, and casualties to friendly air forces. To achieve efficient coordination, the OPFOR stresses centralization, with army group headquarters playing a key role as a land-air interface.

Security

The OPFOR recognizes that enemy air assets can attack from any quarter. Therefore, it must provide security for units at any depth and from any direction. Air defense must function with unremitting reliability and overall security. This requires careful deployment, uninterrupted ammunition supply, and a comprehensive early-warning system. Commanders must factor security into air defense planning.

AIR DEFENSE OPERATION

The strategic air defense operation focuses on defending friendly forces and contributing to air superiority. The emphasis of air defense depends on whether or not the OPFOR has seized the initiative in the air and decimated enemy air power.

The primary method of achieving the initiative in the air is through the long-range fire strike phase of a strategic offensive (or defensive). If the fire strike succeeds, the air defense operation would focus on defensive actions to protect friendly forces and installations from the enemy's remaining air capability. However, the failure of the long-range fire strike to achieve its stated goals would mean the OPFOR might not hold the initiative in the air. Then, the OPFOR's highest priority in the continuing air defense operation would be to provide freedom of movement to friendly ground forces. Simultaneously, the OPFOR would attempt to cause maximum attrition of

enemy air and air defense assets. The protection of friendly forces from air attack is crucial to the success of both army group offensive operations and the long-range fire strike.

In the air defense operation, the OPFOR attempts to gain the initiative through the combined offensive and defensive actions of the following forces:

- Army group aviation.
- Ground-based surface-to-air missiles (SAMs) and antiaircraft (AA) gun systems of ground forces.
- Electronic combat systems of ground forces.
- Camouflage, concealment, and deception.
- Air defense elements of other branches of the armed forces.

This coordinated operation of offensive and defensive forces should include attacks both against aircraft in the air and against their bases.

The air defense operation combines all ground- and air-based air defense assets in any theater under a single concept and plan within the context of the strategic operation. Together, these assets provide protection for--

- Aircraft and missile systems conducting the long-range fire strike.
- Ground maneuver forces striving to penetrate rapidly into enemy territory.
- Tactical and theater nuclear weapons.

It also protects lines of communication and friendly air bases throughout the theater.

Initially, the air defense operation consists of two echelons: the air and air defense formations of the first-echelon army groups and the air defense forces protecting the rear area. Advancing first-echelon army groups could create gaps the enemy might exploit to attack follow-on forces. An air defense division belonging to an army group could provide coverage of these gaps and of important rear area concentrations. Air defense units at army group level and below provide coverage of forward areas and maneuver forces. This ensures continuity of air defense throughout first-echelon army groups.

OPERATIONAL-LEVEL ASSETS

The inventory of air defense weapons includes a variety of missiles, guns, and support equipment. Air defense weapons exist at nearly every level. As with its other weapon systems, the OPFOR has incorporated recent technological developments into its air defense weapons. In addition, it has developed a variety of SAMs for area coverage while continuing to deploy AA gun systems for point defense.

Surface-to-Air Missiles

An army group normally has one air defense division that provides air defense coverage of the army group rear area. The army group normally does not allocate assets belonging to the air defense division to subordinate armies. However, the number of medium-range SAM brigades and short-range AA gun regiments in the air defense division normally corresponds to the size of the army group. This division can have one or two medium-range SAM brigades. In addition, an army group can have one or two separate medium-range SAM brigades which may provide assets to augment army air defenses at critical points on the battlefield or may be used to cover gaps in the air defense umbrella.

An army usually has one medium-range SAM brigade. Generally, army-level air defense units have two missions:

1. To complement divisional air defense capabilities in the forward area.
2. To engage and destroy aircraft that pass the divisions' air defense systems.

Antiaircraft Guns

The army group's air defense division can have one or two AA gun regiments. These units are capable of only a limited area defense. The towed AA gun systems lack the mobility of self-propelled SAM systems and cannot fire on the move. Thus, they are better suited for short-range protection of individual locations. Within their range capabilities, these AA guns are extremely lethal weapons.

Radars

The OPFOR has extensive and effective radar target detection and fire control systems. The radars fall into two general categories: surveillance and fire control. Surveillance includes early warning, target-acquisition, and height-finding radars. Some fire control radars also have limited target-acquisition capability.

Radars work as systems rather than as separate units. The majority of target-acquisition radars are at the operational level. Army and army group air defense operations centers accumulate and process most target information and pass it to maneuver divisions.

High-level commanders select the weapon system that can best engage a given target. Army group, army, and division target-acquisition radars detect and monitor targets. The radars then provide the necessary data for engagement. They gather the information without unnecessarily exposing the air defense firing battery and radars mounted on transporter-erector-launchers and radars (TELARs) to detection by enemy forces and subsequent neutralization by electronic countermeasures (ECM) or destruction.

Electronic Combat Support of Air Defense

The OPFOR sees the employment of nonlethal air defense-related systems, such as air defense jammers and radar corner reflectors, as a potential combat multiplier, when employed in conjunction with SAM and AA gun systems. Their employment improves the air defense of high-value assets. They also support the OPFOR’s own air operations by disrupting enemy counterair operations.

The goal of these systems is twofold. The primary goal is to force the attacking enemy aircraft to alter their flight profile, bringing them into the targeting umbrella of SAMs or AA guns. Jamming the terrain-following radars or radar altimeters employed by attacking aircraft forces aircraft flying low-altitude flight profiles to gain altitude, placing them in greater danger of SAM or AA gun fire. The secondary goal is to cause the aircraft to miss their target or abort the mission through the disruption of radar-aided bombing and target acquisition systems.

Passive systems such as radar corner reflectors provide a low-cost and effective addition to expensive jammers. These systems can deceive enemy airborne surveillance and target acquisition radars by providing false or multiple targets.

The OPFOR can have an air defense jamming regiment at army group level, with two to four battalions. The battalions employ a variety of radar and communications jamming and target acquisition systems. Air defense jammers target the onboard emitters of enemy aircraft used for terrain-following, navigation, and radar-aided bombing, as well as airborne radar reconnaissance systems. Electronic intercept systems provide targeting information to the radar jammers.

The OPFOR deploys air defense jamming assets, in conjunction with lethal systems, to defend what the OPFOR has identified as high-value assets. Normal practice is to allocate an air defense jamming battalion from the army group’s regiment to each army or corps in the main effort. The remaining battalion(s) protect high-priority army group sites. Examples of these include air bases, major logistics centers, critical lines of communication and chokepoints, and higher-level military command posts.

COMMAND AND CONTROL

The OPFOR combines ground-based air defense assets with fixed-wing aircraft forces to provide an integrated air defense umbrella to ground units. Consequently, effective control of the airspace becomes more complex. The OPFOR recognizes the need for the various air defense forces to adopt common terminology. It also stresses the need for operations conducted with a single integrated plan under unified command and control (C^2).

Centralization Versus Decentralization

Conflicting pressures for centralization and decentralization affect air defense control relationships. Factors favoring centralized control include the greater efficiency and effectiveness of centralized target detection systems and the increased ranges of modern SAMs. Decentralized control provides flexibility and shorter response times for supporting fast-paced operations by ground maneuver units.

In some situations, the army or army group directs the employment of divisional air defense assets. In general, the OPFOR imposes enough centralization to optimize efficiency while allowing sufficient decentralization for effectiveness.

Airspace Management

Airspace management is the most complex aspect of air defense operations. Because of the great variety of systems in the OPFOR inventory, commanders must divide the airspace among air defense systems and aviation.

The commander of air defense at army or army group level is responsible for airspace management issues and procedures.[1] Coordination between aircraft and ground-based air defense systems requires either establishing zones of responsibility that delineate the airspace or assigning specific targets to specific systems (see Figure 11-1). The latter is likely only in a very low air threat environment.

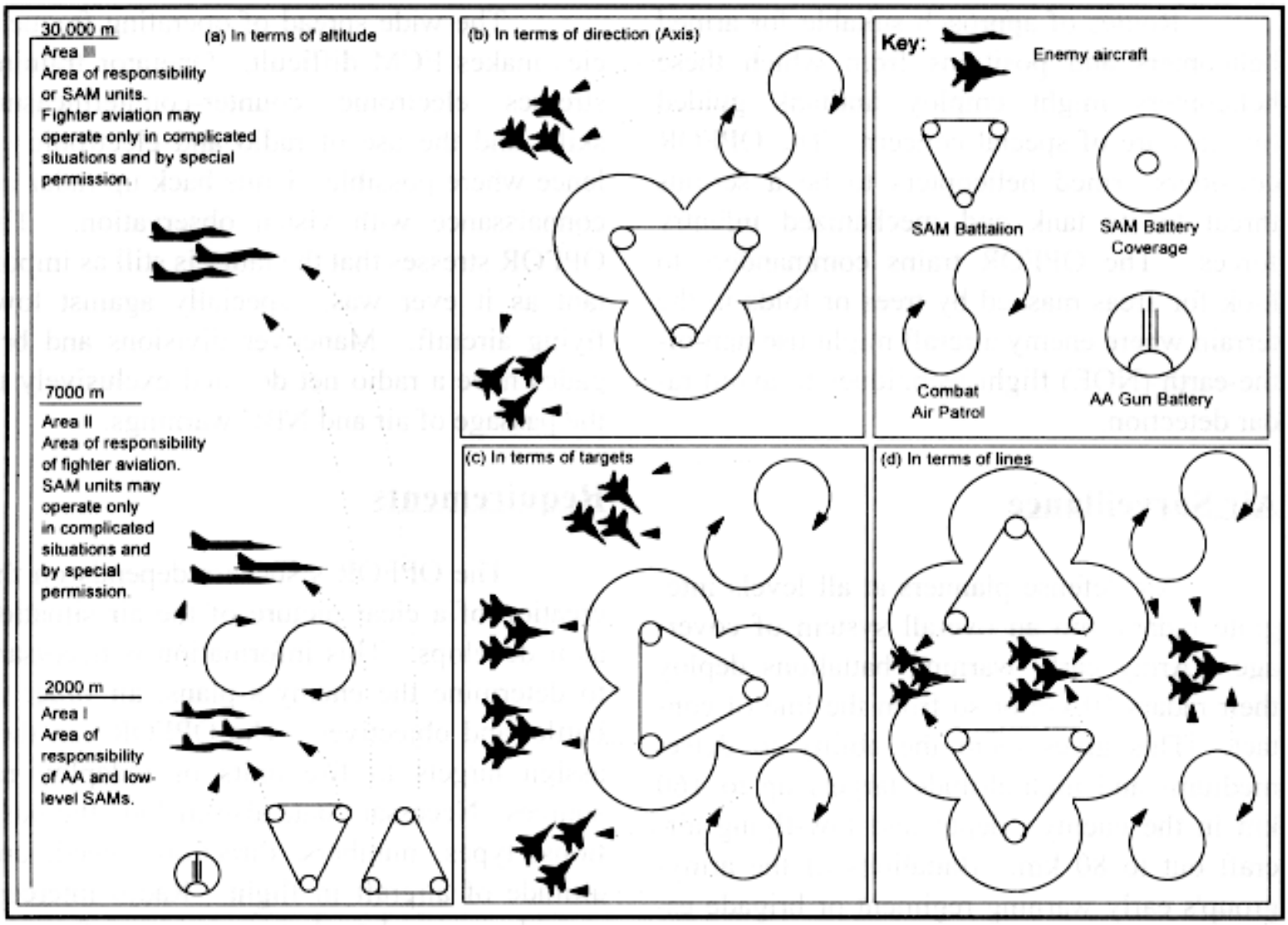

Figure 11-1. Coordination of fighter aviation and ground-based air defenses.

Safe Corridors

The OPFOR assigns aircraft ingress and egress corridors through ground-based air defense sectors for specific time periods. This coordination allows the safe passage of aircraft through the forward edge of OPFOR air defenses.

The OPFOR may also designate time periods during which air defense units refrain from engaging aircraft unless directly attacked. Holding fire when control measures are absent ensures the safe return of OPFOR aircraft. However, the OPFOR would rather risk engaging a small number of its own aircraft rather than allow enemy aircraft to penetrate OPFOR air defenses. Therefore, airspace coordination is usually extremely aggressive.

Zones of Responsibility

The OPFOR might also establish a boundary parallel to and forward of the ground forces forward edge. This boundary is generally at the range limit of medium-range SAMs. Ground-based air defense systems would engage aircraft out to this boundary. Fixed-wing aircraft would engage the enemy beyond this boundary. The OPFOR is unlikely to use this technique unless it possesses air superiority.

RECONNAISSANCE

The concept of reconnaissance in air defense includes terrain reconnaissance and airspace surveillance for suitable weapons positions. It also involves likely routes of approach for low-flying aircraft. (Low-flying aircraft can include both ground-attack fighters and armed helicopters.) Continuous surveillance of surrounding airspace ensures current data on the enemy air situation.

Terrain Reconnaissance

The commanders of the supported unit and the supporting air defense element usually conduct a terrain reconnaissance. They may also conduct a preliminary map reconnaissance. This allows them to tentatively identify positions to deploy air defense weapons in defensive areas. They try to locate positions along routes of march or in areas that advancing units will seize. The OPFOR stresses the identification of all potential attack routes for low-flying enemy aircraft of all types.

Routes of approach suitable for armed helicopters and positions from which these helicopters might employ antitank guided missiles are of special concern. The OPFOR considers armed helicopters to be a serious threat to its tank and mechanized infantry forces. The OPFOR trains commanders to look for areas masked by trees or folds in the terrain where enemy aircraft might use nap-of-the-earth (NOE) flight techniques to avoid radar detection.

Air Surveillance

Air defense planners at all levels integrate radars into an overall system of coverage. Army early warning battalions deploy their radars 10 km or so from the line of contact. This gives them the ability to detect medium- and high-altitude targets up to 160 km in the enemy's depth and low-flying aircraft out to 80 km. Battalions of the army-group's early warning regiment or brigade establish a second line of radar posts about 50 km behind the first to give depth.

Both army groups and armies maintain reserves to expand coverage as the operation develops, to replace casualties, or to establish a new line of radar posts. While offensive operations are in preparation, army posts remain inactive as part of camouflage, concealment, and deception, and the army group reserve radars deploy forward.

Fire control elements turn on radars at the last minute to achieve surprise and to avoid exposing themselves to enemy electronic or physical attack (including antiradiation missiles). The air surveillance radar network is difficult to avoid or defeat. Large numbers of radars are highly mobile and can quickly displace.

The wide spread of operating frequencies makes ECM difficult. Operator training stresses electronic counter-countermeasure skills and the use of radio and electronic silence where possible. Units back up radar reconnaissance with visual observation. The OPFOR stresses that the latter is still as important as it ever was, especially against low-flying aircraft. Maneuver divisions and brigades have a radio net devoted exclusively to the passage of air and NBC warnings.

Requirements

The OPFOR’s success depends on the creation of a clear picture of the air situation as it develops. This information is necessary to determine the enemy’s plans, air order of battle, and objectives. The OPFOR can then assign targets to fire units or redeploy resources. Necessary data also include the positions, types, numbers, direction, speed, and altitude of aircraft in flight. Radio intercept provides some data, but most comes from air defense radars.

The OPFOR further divides air defense intelligence data into two categories: information on enemy air actions and information that can complete the picture of the overall air situation.

It is critical for the OPFOR to obtain data necessary for planning and organizing the air defense system and which allows it to determine probable enemy actions. Such information could include--

- The composition and strength of enemy air power.

- The capabilities of enemy aircraft.
- Knowledge of enemy operational and tactical employment of air power.
- The locations of airfields, C^2 centers, resupply bases, and production facilities.
- Avenues of low-level flight.

ELECTRONIC COUNTER-COUNTERMEASURES

The OPFOR uses electronic and electro-optical means and visual observation to conduct air surveillance. Radar provides an all-weather detection capability. When possible, higher-level radar units pass preliminary targets to air defense commanders and their firing batteries. This reduces the vulnerability of battery radars and radar-equipped gun carriages and missile launchers to ECM and antiradiation missiles.

Measures taken to improve air defense system security include the following:

- **Signals security**. SAM and AA gun system radars, which move forward to cover the initial assault, remain silent until after the assault begins.
- **Frequency spread**. Each of the air defense systems operates within separate radar frequency bands. (No one jamming system could operate simultaneously against all bands.)
- **Frequency diversity**. Tracking and guidance radars change frequencies to overcome jamming.
- **Multiple and interchangeable missile guidance systems**. Some OPFOR systems work on pulsed radar; others work on continuous waves. Some radar tracking systems also possess optical tracking for continued operations in a high ECM environment; others systems use infrared homing.
- **Mobility**. All OPFOR tactical air defense systems are mobile.[2] They can quickly change positions after firing or after enemy reconnaissance units detect them.

MISSIONS AND EMPLOYMENT

It is impossible to defend everywhere adequately. Therefore, the OPFOR must establish priorities to ensure dense coverage of key assets. Priorities include airfields, SSMs, artillery, maneuver units, headquarters and communications centers, and rear area objectives such as logistics units and lines of communication bottlenecks. The OPFOR gives priority to protecting the formation's main axis and, within that, to protecting the first echelon.

Army Group

Army group headquarters plays a major role in the control of the air defense assets of its subordinate units. The army group uses its own air defense weapons for various missions, depending on the situation. Some army group assets might cover the air defense weapons of subordinate armies. Others might provide general air defense coverage of the army group or fill gaps between armies. In any event, army group air defense assets primarily ensure continuous coverage in both detection and engagement capabilities. Army group air defense weapons usually are somewhere to the rear of army air defense weapons to engage aircraft that penetrate forward air defenses.

The army group uses medium-range SAMs in many ways. Some units may augment army assets. Others provide cover for gaps between armies or provide general area coverage, giving depth to the defensive effort but overlapping with army envelopes.

Army

The medium-range SAM units of armies provide medium- to high-altitude air defense cover for the whole army area. They also protect key targets such as the army or army group command posts (CPs), operational-tactical SSMs, artillery groups, and reserves.

Army SAMs also augment the air defense assets of divisions. For first-echelon armies, coverage extends out to about

25 to 45 km over the line of contact. Laterally, this SAM coverage overlaps the envelopes of adjacent armies where possible.

Division

Divisional short- and medium-range SAMs provide area coverage for the entire division, overlapping with flanking formations. Typically, two batteries might be in direct support of two first-echelon brigades while the other two to three protect the division CP, division artillery group(s), second-echelon, and logistics units. Depending on the specific SAM system employed, coverage can extend from about 7 to 25 km over the line of contact.

Air Defense Umbrella

Air defense assets from army group down through division create an area defense. Radars provide an unbroken detection envelope extending well into enemy territory and across the entire zone of operations. Army group and army medium-range SAM units are probably the first to engage enemy aircraft that slip past fighters. While gaps may appear in the missile engagement envelope, the OPFOR strives to maintain continuous coverage.

Figure 11-2 illustrates an example of the vertical coverage and one dimension of horizontal coverage of the OPFOR's air defense equipment.[3] Although now shown in this example, all SAM systems have a minimum range and a minimum altitude. Of course, the range beyond the line of contact depends on where the system deploys in the operational formation.

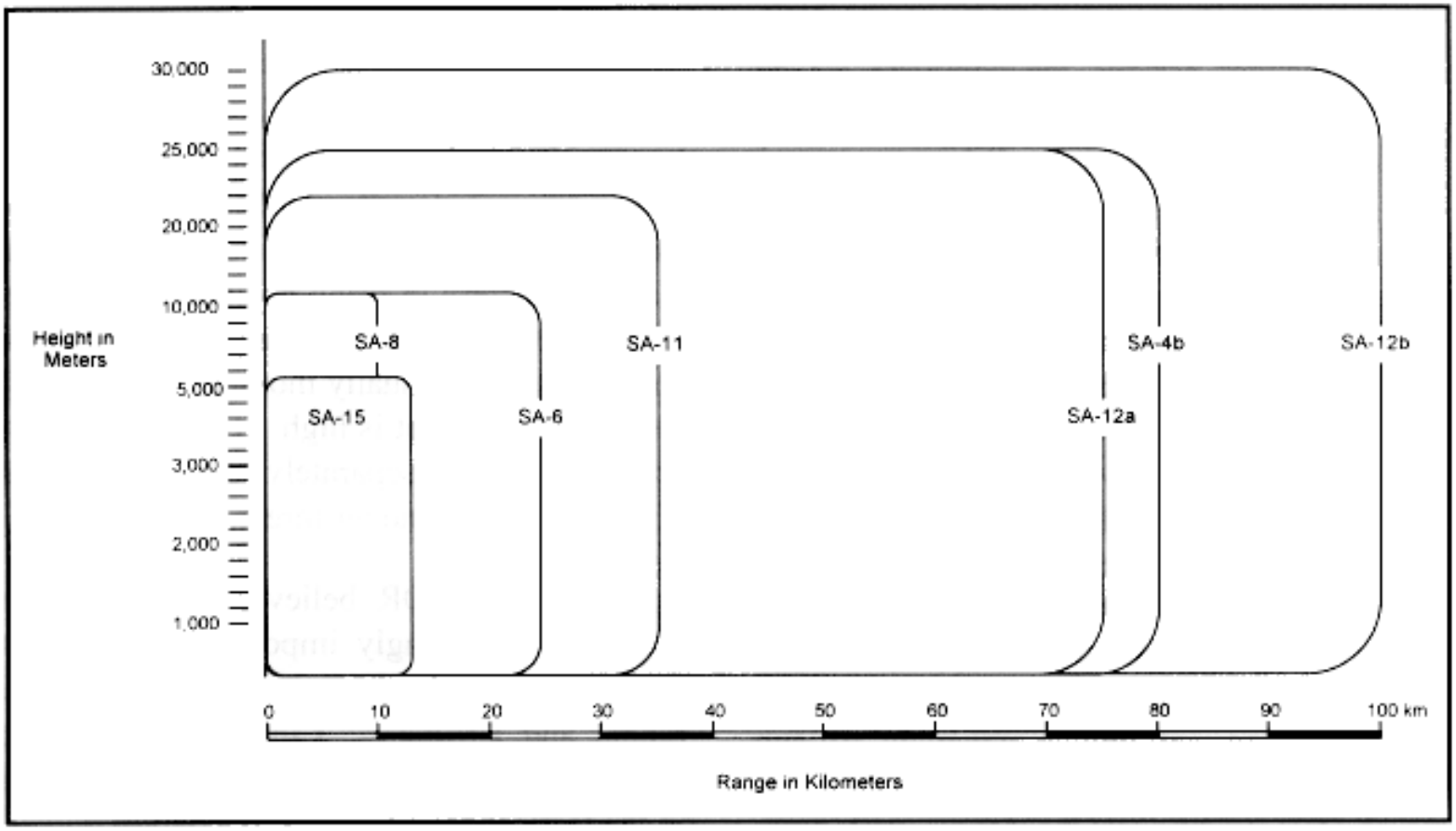

Figure 11-2. Air defense coverage (example).

There is no set pattern for the deployment of SAM brigades or regiments and their subordinate batteries. Actual deployment depends primarily on the supported unit's mission, terrain, and the ground and air situations at a given time and place in the operation. Generally, weapons at army group level and below deploy rearward from the line of contact at from one-third to one-half of their engagement range. Using this rule of thumb, typical distances behind

the line of contact could be--

- First-echelon division short- or medium range-SAMs--5 to 10 km.
- First-echelon army medium-range SAMs--10 to 45 km.
- Army group medium-range SAMs supporting first-echelon army--25 to 50 km.
- Army group medium-range SAMs protecting army group rear area assets--100 to 150 km or more.

This deployment scheme causes enemy aircraft attempting to penetrate to run into overlapping defensive systems.

If the air defense umbrella does not move forward when necessary, tanks and mechanized infantry units can become exposed to enemy ground-attack aircraft and armed helicopters. The only alternative is to move the air defense umbrella with the units. In a fluid, fast-developing situation, textbook efficiency may not be possible. Temporary gaps might appear in the air defense umbrella, both in surveillance and in weapons coverage.

Engagement Procedures

The OPFOR prefers to engage a hostile aircraft prematurely and waste some ammunition rather than allowing the aircraft to expend its ordnance. The OPFOR fires on aircraft as long as they remain within range.

On a priority basis, the OPFOR engages aircraft posing the greatest threat. The preferred technique is to fire at an already engaged target rather than switching from target to target. This continues unless a later acquired target seriously threatens air defense elements.

Air observers and weapon crews outside the attacked sector maintain observation and readiness to fire. This precludes enemy success through simultaneous air attacks from several directions.

OFFENSE

The OPFOR has an extensive air defense system to protect attacking maneuver units. The air defense units of this system are a vital part of the combined arms operation. Air defense weapons can fully support fast-moving tank and mechanized infantry forces in dynamic offensive combat.

Deployment

Guidelines for the deployment of air defense units depend on the assessment of the air threat, terrain, mission, and tempo of operations. The shape of the air defense deployment can change as supported units move from the march into meeting engagements, conduct attacks from a position in direct contact (including forced river crossings), or launch a pursuit. The most common methods follow:

- Where the air threat is low, the commander assigns the complete air defense unit lines of deployment to occupy in succession. When an army is to attack with extensive artillery preparation, much of its air defense deploys forward in advance to cover its artillery group(s) and lines of deployment of tactical units into prebattle and battle formations. The army or army group uses the same procedure to cover the commitment of an operational maneuver group.
- When the air threat is continuous, air defense units may leapfrog forward into successive firing positions, maintaining continuous coverage of supported units.
- In a highly mobile, fragmented operation, the OPFOR might integrate air defense into combat groupings and occupy temporary firing positions on less likely approaches or in gaps between the coverage of the main air defenses.

Air defense units of army group and army conduct what is basically an area defense. They engage enemy aircraft at some distance from the supported maneuver divisions and other high-value assets. Divisional SAM regiments primarily conduct an area defense.

In an offense, the exact location of air defense weapons depends on the following factors:

- The mission of the supported unit.
- The commander's chosen attack formation.
- The terrain.
- Fields of fire and observation.

Nature of Air Threat

Air defense units relocate as necessary to provide continuous and effective protection to the supported unit. OPFOR commanders maintain effective protection by leaving at least one battery in firing position to cover the movement. Air defense elements reinforcing a maneuver unit usually move as a part of that unit if the air threat is high. These air defense assets may move separately to a new location if there is little or no air threat.

The OPFOR believes that air power plays an increasingly important role in contemporary war, thanks to increases in payload, range, and accuracy. Current estimates are that 50 percent of the destructive fire potential in the tactical zone belongs to aviation.

Operations from the air have ceased to be auxiliary and have become a critical component of combined arms combat. Thus, the OPFOR can successfully execute deep, high-speed, nonstop operational advances only if it can negate enemy air power. Operational success depends on air superiority when and where it matters most. Conversely, failure to provide effective air defense against enemy air power can result in operational and tactical failures.

DEFENSE

Air defense must provide all-around security because air attack can come from any direction. The OPFOR must coordinate fires between all air defense units and supported maneuver units. This provides an integrated air defense.

Air defense units provide coverage to all levels of the organization. They must integrate this coverage with the ground battle and ensure continuous air defense.

Deployment

Deployments closely parallel those in the attack, but there are some differences. The positioning of operational-level air defense assets depends on the overall operational formation for the defense. For example, an army-level SAM brigade might deploy near the rear of the army first defensive zone (15-30 km to the rear of the forward edge of the defense) or behind the army second defensive zone (60 to 80 km from the forward edge) to provide cover for an army CP or SSM brigade. An army group SAM brigade might deploy behind the first-echelon army's final defensive line (anywhere from 50 to 150 km from the forward edge) to protect the army group's main CP, SSM brigade(s), airfields, or other high-value assets located there. The SAMs of either operational level might cover lines of commitment for an army or army group counterstrike. The OPFOR sees the threats posed by air reconnaissance and airborne or heliborne assault as being greater in the defense and devotes greater effort to guarding against those threats.

Antilanding Defense

Air defense units are significant in defending ground forces against attacks by enemy airborne and airmobile troops. When the OPFOR detects an enemy airborne operation, army group aviation attempts to intercept and destroy enemy transport aircraft. They try to do this while the enemy is at marshaling airfields or en route to drop zones.

Army group, army, and divisional SAM units engage transport aircraft entering their respective air defense zones. Brigade air defense units near the drop zones also engage transport aircraft. Self-propelled AA guns; vehicle-mounted machineguns; and small arms all fire on descending paratroops and equipment.

MOUNTAINS AND WATER OBSTACLES

Air defense units operating in mountainous terrain have unique problems. The rugged terrain makes maintaining maneuver and air defense unit integrity difficult. This, in turn, makes maintaining comprehensive air surveillance and air defense fire support more difficult, resulting in a greater degree of decentralization than normal.

Air defense forces play a major role in water obstacle crossings. They protect crossing sites and forces from air attack by creating envelopes of protected airspace above and around crossing sites.

Major problems in air defense of water obstacle crossings include--

- Providing comprehensive radar and visual observation.
- Handling simultaneous threats on multiple approach axes.
- Maintaining continuous 360-degree fire coverage.
- Supplying ammunition to firing elements on the far shore.

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[1] At army group and army level, this member of the staff has the title of *commander* (rather than *chief* air defense. Among the branch chiefs on the principal staff, this is a distinction otherwise afforded only to the commander of missile troops and artillery.

[2] When referring to air defense systems, the term *tactical* can also apply to systems employed at the operational level.

[3] This example depicts only those systems listed as the baseline in FM 100-60. The SA-8, and SA-15 are division-level short-range SAMs; the SA-6 is a division-level medium-range SAM; the SA-11 is an army-level medium-range SAM; the SA-4 is an army- or army group-level medium-range SAM; the SA-12a and SA-12b are army group-level medium-range SAMs. If the OPFOR substitutes other systems, ranges and altitudes can vary.

Chapter 12
Engineer Support

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OPFOR military art relies on extensive engineer support at every level. Strategic engineer support involves planning and conducting engineer activities in support of operations within a theater. Engineer units at the operational level facilitate the mobility and high rate of advance of combined arms forces while enhancing the survivability of forces.

ORGANIZATION

Engineer troops form elements of combined arms organizations--army groups, armies, corps, divisions, and brigades. These engineer elements range in size from brigades down to companies.

At both army and army group levels, engineer units include an engineer brigade, a pontoon bridge regiment, and possibly an assault crossing battalion. At corps level, an engineer battalion may appear in lieu of the engineer brigade. At army group level, an engineer battalion may appear in place of or in addition to the engineer brigade, and a water crossing regiment may provide pontoon bridge and assault crossing assets. These and other nondivisional engineer units support their commander by conducting engineer missions in support of committed forces. In essence, army group and army or corps engineers reinforce first-echelon divisions as required. However, their primary responsibility is to support

and ensure the mobility of operational formations.

OPERATIONAL EMPLOYMENT

Operational employment of engineer units does not follow strict organizational lines. Operational employment of engineer, engineer reconnaissance, and road and bridge units generally involves the formation of one or more of the following functional groupings:

- Mobile obstacle detachment (MOD).
- Movement support detachment (MSD).
- Engineer reconnaissance patrol.
- Obstacle-clearing detachment.

As with artillery, the OPFOR does not always employ engineer units as complete entities. The army group chief of engineer troops can use his resources to form task-oriented groupings according to the army group commander's decision for the operation and his instructions on engineer support. He forms groupings to--

- Conduct engineer support at army group level.
- Reinforce first-echelon armies and operational maneuver groups (OMGs).
- Reinforce army group surface-to-surface missile (SSM) and air defense troops.
- Support deception operations.
- Act as MODs.
- Act as an engineer reserve.

MISSIONS

The OPFOR recognizes several basic technical tasks that engineer troops perform in support of combined arms operations. The nine basic tasks follow:

1. Reconnoiter the enemy and the terrain.
2. Prepare fortifications.
3. Prepare and maintain routes of movement.
4. Clear passages through obstacles and areas of destruction.
5. Equip and maintain gap crossings.
6. Establish engineer obstacles.
7. Carry out engineer camouflage, concealment, and deception measures.
8. Extract and purify water and establish supply points.
9. Carry out engineer measures to eliminate the aftereffects of nuclear and precision weapons strikes.

The three primary engineer tasks performed in combat are reconnaissance, obstacle clearing, and establishing engineer obstacles.

Support to Offensive Operations

In the offense, the engineers' primary mission is to help maintain high rates of advance. Emphasis is on--

- Clearing and maintaining routes for maneuver elements.
- Clearing or removing mines and other obstacles.
- Crossing gaps.
- Creating obstacles to assist in flank protection and protection against counterattacks.

Engineer reconnaissance, performed independently or with other reconnaissance elements, plays a significant role in

achieving high rates of movement. Basic engineer tasks also include the support of logistics operations in the rear area.

The aims of engineer support at both army group and army level are--

- Creating the necessary conditions for timely and concealed movement and deployment for the attack.
- Maintaining and enhancing the protection of troops and equipment against all forms of attack.
- Repelling likely enemy counterattacks.
- Maintaining momentum in the offensive despite enemy and natural obstacles and possibly NBC-contaminated areas.

Preparation

To prepare for offensive operations, army group and army engineer tasks include--

- Performing engineer reconnaissance of the terrain and the enemy.
- Preparing assembly areas for first- and second-echelon forces, reserves, and command posts (CPs).
- Constructing protective positions for SSM units, air defense units, and CPs.
- Establishing and improving road networks to support maneuver forces.
- Preparing alternative airfields and highway strips to support air assets.

Conduct

During offensive operations, engineer support includes--

- Continuing reconnaissance of the enemy and the terrain.
- Improving road networks.
- Providing support when crossing water obstacles.
- Constructing protective positions for SSM units, air defense units, and CPs, as they relocate.
- Helping to repel enemy counterattack.
- Maintaining airfields.
- Supplying engineer equipment, materials, and technical assistance to maneuver units and combat formations.

Commitment of Second Echelon or Operational Maneuver Group

The commitment of a second echelon or OMG is one of the most critical and vulnerable periods of combat. Engineer troops are vital in ensuring success. They facilitate the second echelon's or OMG's timely arrival on the line of commitment and provide support for its deployment and protection against flank attacks. Tasks include--

- Reconnaissance of the axis of advance and the sector of commitment.
- Route preparation and obstacle breaching.
- Obstacle emplacement to increase the stability of a defensive line that the army or army group antitank (AT) reserves establish.
- Operational camouflage, concealment, and deception to conceal movement and deceive the enemy.

Support to Defensive Operations

Engineer forces at army group and army levels are heavily engaged in the preparation and conduct of a operational defense. The OPFOR defense relies on a combination of positional defense and maneuver defense, exploiting the advantages of both. Comprehensive engineer preparation in the entire depth of the tactical and operational zones of defense is an important precondition for holding occupied lines, as well as for troop maneuver.

Engineer support for defensive operations places emphasis on fortifying friendly troop positions, performing engineer camouflage measures, and adapting the terrain for defense. The defense is also conducive to the extensive use of various obstacles to interfere with the enemy's advance.

The type and scale of engineer support depends on the operational situation, enemy forces, and the conditions under which an OPFOR army or army group assumes the defensive. If it is during the course of the offensive, support may have to begin with the protection of threatened axes by MODs and AT reserves and the route work needed for regrouping. If the OPFOR assumes a defense out of contact with the enemy, support can begin with the creation of defensive works and the improvement of routes for the formation to deploy. In a maneuver defense, the goals of engineer support are to hold up the enemy advance and facilitate the organized withdrawal, maneuver, or counterstrike by friendly forces.

The most important engineer tasks are to--

- Establish the necessary conditions for organizing the defense.
- Build fortifications of zones, lines, and positions.
- Prepare and maintain maneuver routes.
- Protect personnel and equipment from the effects of both direct and indirect fires.
- Enhance the effectiveness of weapons.
- Create an engineer obstacle system.
- Improve obstacles as time permits.

Preparation

Engineer support for preparing defensive positions consists of the following:

- Conducting engineer reconnaissance of the enemy and terrain.
- Preparing fortifications for protecting weapons, personnel, and equipment.
- Constructing routes for blocking and counterattacking forces.
- Constructing obstacles (coordinated with the fire plan and natural obstacles).
- Preparing camouflage and deception measures.
- Maintaining the water supply.

Other engineer tasks in the defense are clearing obstacles, crossing gaps, and eliminating the effects of fire strikes.

Conduct

During defensive operations, engineer support consists of improving on and expanding the scope of all the above measures and undertaking new tasks as situations develop. Support for counterstrikes is similar to that for the commitment of second echelons in the attack.

Support to Information Warfare

The OPFOR has responded at all organizational levels to the challenge posed by enemy advances in sensors and weapons. A wide variety of engineer activities contribute to information warfare. This support involves three interrelated areas:

- Deception (signature-enhancing measures).
- Camouflage and concealment (signature-reduction measures).
- Obscurants (measures used both to conceal and enhance real and decoy equipment).

In addition to the specific activities conducted by engineer troops, all OPFOR units use one or more forms of technical camouflage. The purpose of these techniques is to alter the appearance of personnel and equipment and to blend them with the surrounding terrain. Capabilities available include--

- Camouflage paint.
- Artificial camouflage (nets and screens).
- Antiradar camouflage (radar-absorbing nets, paints).
- Mock-ups (decoys).

- Light and thermal camouflage.
- Smoke camouflage.

March

The OPFOR implements deception and protective measures in preparation for and during a march to hamper or prevent the enemy from discovering the true deployment of units and their actions and intentions. Measures include--

- Selecting terrain with good natural concealment.
- Selecting routes of march that minimize tracks and dust.
- Constructing artificial screens and concealment (such as horizontal and vertical screens, corner reflectors).
- Movement at night, in fog, or under conditions of low visibility, including smokescreens created by use of obscurants.

Offense

During the offense, the aims of deception are essentially the same as on the march. They include--

- Selection of terrain with good natural concealment.
- Use of obscurants.
- Use of artificial and natural camouflage screens.
- Use of concealed routes for movement of supplies and reserves.
- False route preparation to provide misleading indicators.

Defense

The OPFOR uses various deception measures to mislead the enemy about size and location of forces and weapons systems and about the nature of defensive engineer preparations. Measures include--

- Use of screening characteristics of terrain, darkness, and other conditions of limited visibility during engineer preparation of defensive positions and positioning of forces.
- Camouflage painting of material.
- Use of local materials and standard-issue camouflage screens.
- Strict camouflage discipline.
- Construction of false strongpoints, decoy positions, and equipment.
- False actions to draw attention from defensive preparations.

ENGINEER RECONNAISSANCE

Engineer patrols and groups, observation posts, and photographic reconnaissance posts perform engineer reconnaissance. They serve as a means of collecting information including--

- Observation.
- Ground and aerial photography.
- Exploitation of documents, prisoners, and local residents.

When enemy forces are within visible range, the OPFOR establishes engineer observation posts. When conditions restrict visibility, it supplements these with listening posts.

The specific missions of engineer reconnaissance are to--

- Discover enemy engineer measures taken to fortify positions and strongpoints and to lay and clear minefields and demolitions.
- Determine the conditions of roads and bridges.
- Find fording sites and suitable entry and exit points for amphibious combat vehicles.

- Find local building materials and water-supply sites.
- Determine the potential of the terrain for cover and concealment.
- Raid, observe, photograph, or perform direct observation of enemy engineer activity.
- Determine the characteristics of obstacles and locate bypass routes.
- Determine requirements for special engineer equipment.

March

A primary goal of engineer reconnaissance at the operational level is to provide comprehensive information on the trafficability of march routes. Elements performing engineer reconnaissance make the following determinations:

- The degree of trafficability of the entire route.
- The location and nature of obstacles and forces or assets needed to overcome them.
- The condition of crossing sites over rivers, canals, streams, and ravines.
- The location and quantity of material potentially useful for improving the march route.
- The nature of the terrain and location of areas without natural concealment.

If the march occurs in the rear of friendly forces, the commander can send the engineer reconnaissance patrol in advance to obtain the required data. When the OPFOR conducts a march in anticipation of contact, the engineer reconnaissance patrol is normally part of troop reconnaissance and reports on engineer aspects of the route.

The purpose of route reconnaissance is to select suitable routes along the axis of advance and to identify suitable halt areas that provide concealment. The reconnaissance element relays topographical and terrain information back to the parent unit. Reconnaissance can occur throughout the battle area.

Reconnaissance determines the condition and trafficability of movement routes and the trafficability of off-road terrain, including bridge conditions and detour routes. Patrols mounted on combat vehicles or onboard helicopters usually perform this reconnaissance. Aerial photography is an important method of gaining general information for engineer intelligence while on the march.

Offense

During the offensive, the primary engineer reconnaissance mission is to obtain more precise information on--

- Enemy obstacles and destruction created both during attack preparation and during the attack.
- Troop movement routes and trafficability on off-road terrain.
- Locations where the enemy established obstacles during his withdrawal.
- Locations for establishing obstacles during enemy counterattacks.
- Water obstacles on friendly forces' axes of advance and on advantageous positions in a meeting engagement or battle.

Engineer reconnaissance during the offensive seeks to obtain information on the nature of enemy fortifications and defensive positions, as well as the composition and types of equipment and obstacles of the enemy. The basic methods for obtaining this information are observation and aerial or ground photography.

Defense

Engineer troops assist in reconnaissance and preparation of the defense by determining the protective and camouflage features of the terrain and by helping select positions for CPs and unit strongpoints. Engineers also determine road and bridge conditions in the defensive area, availability of local materials for construction of positions, and the status of the water supply.

Engineer observation posts usually consist of two or three engineers who have a periscopic rangefinder and, possibly, photographic equipment. These posts are located approximately 2 to 3 km apart along the frontline. They monitor the conditions of roads, barriers, bridges, and the water supply as well as help monitor radiation and contamination levels in

the defensive area.

Preparation

In the defense, engineer elements observe enemy preparations for the attack and determine the character and extent of enemy engineer activity. Emphasis is on--

- Observing enemy engineer reconnaissance activity and obstacle-clearing elements.
- Enemy route preparation through or around obstacles.
- The composition and character of enemy engineer and maneuver elements in forward areas.

Engineer reconnaissance patrols also reconnoiter terrain to determine the best areas for constructing defensive positions and obstacles, establishing CPs, and setting up water-supply and distribution points. Engineer personnel attached to combat reconnaissance patrols gain information on enemy engineer preparations.

Conduct

During actual defensive combat, engineer observation posts--

- Monitor enemy engineer activity.
- Evaluate zones of destruction.
- Report areas where the enemy is breaching defensive obstacles.

At least one of the posts provides detailed photography of the area of interest. When the OPFOR is on the defensive, engineer reconnaissance elements reconnoiter terrain and the enemy situation to determine routes best suited for a return to offensive action.

FORTIFICATIONS

Preparing fortified positions is a task for engineers on the march and in the offense and defense. Fortified positions increase weapons effectiveness and protect personnel, weapons, and materiel. Engineers give priority to digging in CPs and SSMs. Fortification preparation combines and uses to best advantage the terrain's protective properties, local construction materials, and engineer excavation equipment. The OPFOR works at night for concealment, although preparing dummy positions must proceed during daylight hours.

March

The OPFOR recognizes the growing vulnerability of its forces to deep interdiction using precision weapons. It establishes rest, halt, and assembly areas to protect the formation from attack during a march. It positions rest or halt areas on terrain with sufficient camouflage and protective properties and adequate water sources.

Offense

Normally, the OPFOR approaches field fortification in a way that benefits the offensive by allowing a smooth and protected movement to contact with the enemy. It locates assembly areas far enough behind friendly lines to deny the enemy ground observation and to lessen direct-fire effects.

Defense

When the OPFOR assumes the defense out of contact with the enemy, advance engineer deployment allows better use of terrain features and constructed fortifications. Engineers also have more time to construct lines of communication and conceal forces and stockpiles. In most cases, engineer units have to concentrate only on the most important axes. In a maneuver defense, the center-of-resistance system of preparing positions prevails; fortification efforts often extend only to battalion defensive areas prepared for a perimeter defense.

The full preparation of defensive positions involving entrenchments, communications trenches, positions for tanks and infantry vehicles, and protective CPs is a labor-intensive process. It often exceeds the capability of organic engineers and even that of those likely attached as reinforcements. Consequently, the OPFOR's approach is to use all available

personnel and equipment. Units of all arms and services receive training in preparing field fortifications and emplacements.

MOVEMENT SUPPORT

Information gathered as a result of engineer reconnaissance is critical for determining the selection of march routes. The routes selected should require the least amount of engineer preparation and employment of engineer assets for route clearing.

Route Preparation and Maintenance

The capability of engineer units to prepare and maintain routes depends on the amount of work required. However, the OPFOR has several planning estimates. Optimally, a road-construction company, or engineer company suitably reinforced, can maintain up to 80 to 100 km of road per day in moderate terrain. These figures assume minimum earthmoving and obstacle-reduction requirements during summer. If roads receive severe damage, this capability drops to 20 to 40 km per day. Similarly, one engineer company can prepare 50 to 70 km of cross-country routes per day. The OPFOR reduces these planning figures by 25 to 30 percent at night, 20 to 25 percent in the spring and autumn, and 15 to 20 percent in winter. It increases the capabilities by a factor of 1.5 to 2.0 when preparing cross-country routes for tracked vehicles only.

Movement Support Detachment

To support the preparation and maintenance of lines of movement, the senior or combined arms commander normally creates an MSD before the march. The MSD mission includes--

- Route reconnaissance.
- Mineclearing on routes while on the march and in rest and concentration areas.
- Reinforcement of bridges and minor repairs to roads.
- Creation of column tracks.
- Construction of bypasses.
- Construction of passages through debris and regions of destruction and through contaminated areas.
- Route marking.

An MSD's composition depends on the mission, terrain, time and equipment available, and the enemy. It usually consists of a reconnaissance and obstacle-clearing group, one or two road and bridge construction and repair groups, and a route-marking group. In addition, it usually has at least one mechanized infantry or tank platoon to provide security and chemical scouts to monitor the chemical and radiological situation. Figure 12-1 shows the normal position of the MSD in march columns.

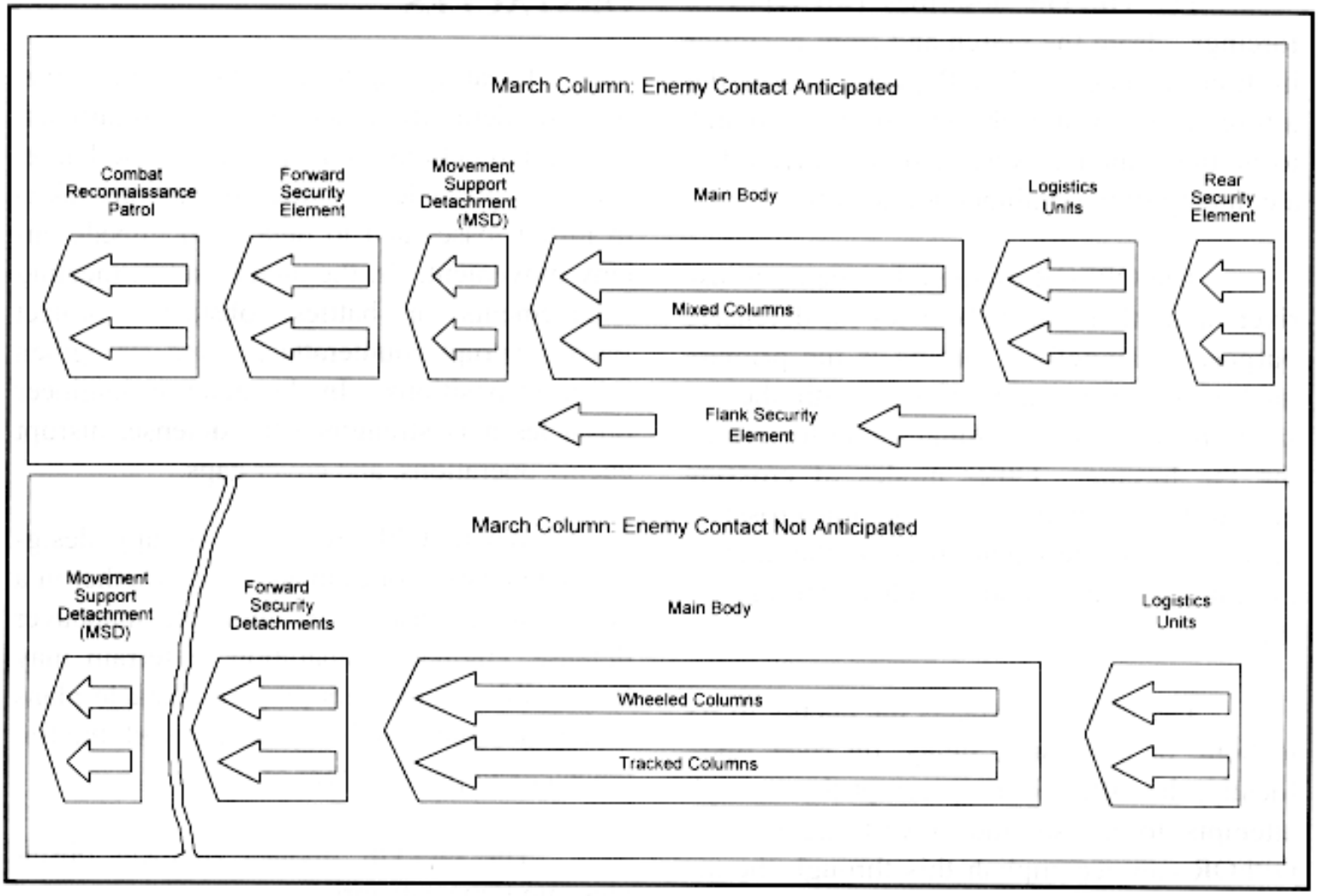

Figure 12-1. Position of movement support detachment in march columns.

OBSTACLE CLEARING

The OPFOR anticipates having to overcome obstacles to its mobility on the march and in the offense and defense. However, this task is most characteristic during the attack. In the offense, troops must cross remotely emplaced obstacles in assembly areas and on movement routes; they must also overcome all types of obstacles in front of and in the depths of the enemy defense.

Creating passages for mobility in all environments is primarily an engineer task. Nevertheless, maneuver units share the responsibility. The methods for creating breaches and passages depend on the situation and on the type of barriers the enemy uses. The OPFOR defines obstacles as explosive, nonexplosive, or a combination of the two.

Of the obstacles the OPFOR expects to encounter, mines are the most significant. The advent of remotely delivered, scatterable mines has increased the threat to the rear area. It has also made clearing explosive obstacles a primary task for troops on the march.

The MSD has the task of mineclearing during the march. Minefield breaching during the offense is generally the responsibility of the combined arms unit. Engineers reconnoiter the minefield, but the initial breaching is not primarily an engineer task.

GAP CROSSING

The OPFOR identifies two methods of overcoming water obstacles--crossing (when not expecting enemy contact) and forcing (when expecting enemy contact).

Crossing is also a generic term identifying the site of a river crossing or the act of crossing. Crossing often involves using bridges, ferries, or amphibious combat equipment. However, the assault crossing is an expeditious forcing, executed using only organic means. It requires minimal preparation and engineer support.

The OPFOR describes two types of forcings--from the march and from positions in direct contact. OPFOR planners consider a forcing of a water obstacle from the march to be the principal water-crossing method in a contemporary combined arms battle.

The OPFOR expects the enemy to use rivers and other water obstacles for defensive purposes. Therefore, forcing is the primary method of overcoming rivers, with the assault crossing as the normal mode for effecting the forcing. Other modes of crossing may follow after the initial assault crossing, depending on the capabilities of the enemy, the time available, and the characteristics of the river.

The OPFOR expects the enemy to try to hold, or at least to delay, on river lines. Ideally, the OPFOR can preempt the enemy's attempts to do so and thwart them. The OPFOR can accomplish this through the actions of forward detachments and airborne or heliborne forces and by crushing enemy main forces on the near side as they try to withdraw. Whether or not these succeed, army groups and armies endeavor to cross water obstacles on a wide frontage, from the march without pause, and to develop the attack into the depth without halting to consolidate. If a forcing from the march does not succeed, the OPFOR could mount a further effort with brief, or even detailed, preparation.

Divisions organize crossings over small rivers (up to 60 m wide) using divisional engineer resources. The forcing of medium rivers (60 to 150 m wide) is an army task using the army's organic and attached means. Major rivers (those over 150 m wide) are an army group-level problem.

OBSTACLES

Creating engineer obstacles and carrying out demolition activities are significant engineer functions in all phases of the battle. Engineer obstacles include any actions taken to inflict losses and to delay and impede enemy movement. In the attack and in meeting engagements or battles, obstacles protect flanks, disrupt counterattacks, and strengthen captured positions. In the defense, engineer obstacles may strengthen the defense, disrupt enemy operations, and cover gaps.

Where OPFOR troops occupy designated defensive zones in advance, whether in a positional defense or a deliberate maneuver defense, engineer preparation of terrain may be possible. Engineers prepare obstacle plans in advance and closely tie them in with the fire engagement plan (system of fires).

The OPFOR divides engineer obstacles into three categories:

1. Explosive obstacles (minefields, groups of mines, and objects prepared for demolition).
2. Nonexplosive obstacles (antitank ditches, escarpments, abatis, wire barriers, and water obstacles).
3. Combination obstacles (a mix of explosive and nonexplosive obstacles).

Of the three categories, explosive obstacles constitute the nucleus of all engineer obstacles.

Mobile Obstacle Detachment

The MOD is the basic building block of the OPFOR's countermobility effort. The OPFOR forms MODs at every level from brigade to army group. They are a standard feature of tactical and operational formations.

Organization

Both army group and army use their engineer units to form MODs specializing in the rapid laying of mines and constructing obstacles. The MOD is a temporary, ad hoc task organization primarily composed of engineers. Its mission

is denying key terrain to the enemy, particularly those avenues of approach most suitable for tanks. The OPFOR has specifically designed and created the MOD to maximize minefield and explosive-obstacle support to maneuver forces during combat.

An MOD can vary in size depending on the operational situation and the needs of the maneuver commander. Although the MOD can operate independently, it normally operates with AT reserves to provide flank protection and to repel enemy counterattacks. Antitank reserves may provide covering fire over the minefields that the MOD emplaces. The MOD sometimes operates with two mechanical minelaying platoons.

Employment

MODs lay minefields, dig AT ditches, emplace demolitions, and create other obstacles, such as abatis or log cribs to block forest roads. In the defense, they help prepare the obstacle system and, once the attack begins, they wait concealed to create fresh obstacles on the most threatened axes. Whether on the attack or in the defense, MODs--

- Protect the deployment lines of attacking (counterattacking) forces.
- Cover the flanks of units.
- Fill in gaps that exist or develop within the operational (tactical) formation.
- Cover gun lines.
- Limit enemy mobility.
- Help to seal in encircled enemy forces.
- Inflict damage and losses on enemy forces.
- Create deceptive obstacles as part of the deception plan.

In the defense, MODs also can help to--

- Reduce the tempo of the enemy offensive.
- Gain time for the mounting of counterattacks or counterstrikes.

MODs normally work closely with the AT reserves during the course of an operation or battle. Their work materially contributes to the AT reserve's survivability and the stability of its defense.

Offense. In the offense, the MOD usually moves forward with the AT reserve either on an open flank or in a central position ready to deploy to any threatened axis. In the latter case, it usually advances behind the first echelon to ensure a prompt response to any threat.

The OPFOR considers surprise a critical variable in mine warfare. Enemy reconnaissance can discover minefields laid too far in advance and can take measures to overcome them. Therefore, it is often more effectual to lay a minefield during the course of a battle, preferably at the last minute, directly in the path of a developing threat. Using mines in this way is not only tactically advantageous, but also economical. This may be an important consideration when supplies are limited.

The OPFOR uses MODs aggressively, maintaining close contact with the enemy and attempting to mine areas in which the enemy has already committed himself. An MOD may join AT reserves to counter enemy counterattack threats.

Defense. In the defense, the OPFOR commander may hold the MOD and other forces in reserve and can quickly employ them during an enemy attack to mine potentially vulnerable gaps. Engineer tasks during the defense implement obstacle plans, particularly AT obstacles. Together with AT reserves, MODs provide a quick-reaction AT force to block enemy penetrations.

Engineers create obstacles on approaches into the defensive position, in front of artillery and air defense firing positions, in the gaps between strongpoints, and on flanks. They normally construct barrier systems in coordination with the overall system of fire.

Engineers can lay mines and construct obstacles in front of the forward edge and on likely enemy tank approach routes. They can also lay obstacles in the depth of friendly units in the main defensive zone, and at subsequent defensive lines,

all the way back to the army group's final defensive line. However, simultaneous obstacle construction in all three areas can only occur when sufficient time, equipment, and personnel are available. In any of these three areas, minefields and other obstacles require barriers, security, and marked maneuver passages.

A maneuver defense featuring movement from line to line necessitates a carefully planned system of passages and procedures for closing planned gaps in obstacles before the enemy arrives. The army's final defensive line, which aims to prevent further enemy penetration and create conditions for counterstrikes, may use remote minelaying to reinforce threatened axes.

Minelaying

The methods and extent of minelaying depend on--

- The OPFOR's intentions.
- The operational or tactical situation.
- Terrain characteristics.
- The type of mine.
- Time available.
- Available engineer support.

Emplacement means may be manual, mechanical, or remote. Manual emplacement is not possible when there is little time or during high-speed maneuver operations. Therefore, mechanical and remote means have recently become more prevalent.

Rapidly laid and scatterable AT mines in support of maneuver operations will predominate on most future battlefields. The same types of minefield may also support a less than fully prepared defensive position. If the OPFOR plans only a temporary halt or defensive action, it can mechanically surface-lay small protective minefields. It may also use remotely laid minefields (probably with self-destruct options) and controllable minefields. The OPFOR may use not only mechanical minelayers, but also air and artillery means to emplace such minefields.

Minefields may also protect fully prepared defensive positions the OPFOR intends to maintain for some time. If so, the OPFOR can take much longer to carefully bury and camouflage the mines and integrate the minefields into the total defensive scheme. Mine density is also greater, sometimes layed in three separate belts. It is also more likely to have a mix of AT and antipersonnel (AP) mines. In setting up a fully prepared defense, troops of all units are likely to take part in preparing obstacles and laying mines.

Remote

The OPFOR continues to develop methods of remote minelaying including delivery by minelaying helicopters, fixed-wing aircraft, tube artillery, rockets, or missiles. Maneuver forces use remote mining to protect their flanks or strike targets deep in enemy territory. Remote minelaying can be useful against columns and areas of enemy concentrations, CPs, firing positions, and other targets.

The OPFOR employs remotely delivered minefields against chokepoints to delay and cause bunching that could create vulnerability to air or artillery attack. Remotely delivered minefields fill gaps created by enemy minefield breaching efforts, cause confusion and delay in forming-up points, and halt attacks in areas not covered by an MOD (or gain time for an MOD to do its work). Such unpredictable minefields are becoming increasingly important in OPFOR thinking.

The OPFOR does not use these systems indiscriminately. Mechanized infantry and tank divisions, corps, armies, and army groups have a finite number of organic delivery systems, some of which the division commander might call on to perform minelaying missions. It is likely that a variety of other missions could take priority over minelaying.

Minefields

No other army in the world approaches the OPFOR's commitment to the offensive use of mines. It usually emplaces mines in groups or in minefields. The five basic types of OPFOR minefields are AT, AP, mixed, decoy, and antilanding.

The AT minefield serves to destroy or disable armored vehicles. The AP minefield targets personnel. Mixed minefields consist of both AP and AT mines. Decoy minefields are a significant form of deception. Antilanding minefields prevent landings by amphibious, airborne, or heliborne assault forces.

The OPFOR also makes distinctions between controlled (command-operated by hard wire or radio linkage or autonomously sensor-controlled) and uncontrolled minefields. The best way to detect OPFOR minefields is by the amount of time needed to emplace them and the different types of mines found in them.

Fire Sacks

The OPFOR stresses the importance of covering minefields with long-range AT weapons. The most forward row or belt of the minefield created in front of OPFOR defensive positions is normally just within the range of OPFOR direct-fire weapons. The purpose of minefields is not only to inflict damage on attacking enemy forces. It also slows and canalizes enemy forces into predetermined fire sacks (kill zones) covered by massed artillery fire and long-range AT fire.

Chapter 13 Electronic Combat

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The OPFOR is keenly aware of the dependence of modern military forces on communications that support command and control (C^2) and intelligence. Effective communications contribute to sound C^2; the loss of communications is the loss of C^2. The loss of C^2 in combat ultimately ends in defeat. The OPFOR therefore seeks to control the electromagnetic spectrum and deny its use to its enemy during combat actions, while retaining its own capabilities.

To support this the OPFOR has actively developed systems and techniques to degrade the C^2 assets of enemy forces. It has also taken measures to provide secure, dependable communications, information collection, and information processing for its own forces. The OPFOR has combined these capabilities with detailed, integrated planning to form the integrated doctrine of electronic combat (EC).

CONCEPT

EC consists of the use of all means of manipulation of electronic emissions throughout the electromagnetic spectrum. These means constitute the five components of EC: signals reconnaissance,

electronic jamming, electronic protection measures (EPM), destruction, and electronic counterreconnaissance. (See the Components section in this chapter for further detail.) The purpose of EC is to--

- Disorganize enemy C^2.
- Suppress, capture, or destroy enemy C^2 systems.
- Detect enemy electronic systems.
- Degrade enemy intelligence and equipment.
- Protect OPFOR electronic assets.

EC is the primary contributor to the conduct of information warfare (IW) during combat operations, supporting to various degrees all six elements of IW.

Integration and Planning

Integration and planning are critical to the overall success of EC. The OPFOR planning process stresses close coordination among the reconnaissance, EC, and combat planners. This is to ensure the supported combat units receive massed jamming and other resources at the critical times and places. It also ensures that a more complete interruption of enemy electronic control occurs through the combination of jamming with physical destruction.

The OPFOR accepts that it is not possible to completely deprive enemy forces of their means of control for extended periods of time. It also recognizes the value in exploiting enemy communications for their intelligence value until a time when their disruption can most influence the course of action. If destruction is not feasible at that critical time, the net is jammed. Even a few minutes of disruption, if properly timed, are immensely valuable.

Therefore, OPFOR EC planners have established models to estimate critical times in the enemy C^2 process. These critical times are the total time needed to complete the following C^2 steps:

- Collection and reporting of data.
- Evaluation and decision.
- Issuance of orders and preparation.
- Completion of action.

Target Priorities

The OPFOR assigns enemy C^2, communications, computer, and intelligence nets a priority based on the expected impact on the battle at the time the OPFOR targets them. It selects targets with the intention of disrupting them either by physical destruction or by jamming. Although EC target priorities depend on the command level and can change as the combat situation develops, they generally are as follows:

- Precision weapons systems and NBC delivery means.
- C^2 systems.
- Conventional artillery, tactical aviation, and air defense systems.
- Intelligence collection systems (including radar stations).
- Engaged maneuver units.

- Reserves.
- Logistics centers.
- Point targets that jeopardize advancing forces.

ASSETS

The OPFOR has developed state-of-the-art EC systems specifically for military use. However, it can also take advantage of a wide variety of extremely capable off-the-shelf systems commercially available at relatively low cost. Together, these systems are capable of providing the level of electronic intercept, direction-finding (DF), or jamming sophistication required on the modern battlefield.

The OPFOR also has modernized those systems that can disrupt enemy communications and electronics through deception. Where practical, the OPFOR mounts EC systems it uses at the tactical and lower operational level on tracked vehicles to match the mobility of the maneuver units they support. It integrates this equipment into signals reconnaissance and jamming units that support combined arms combat.[1]

Ground Forces

The EC assets of the OPFOR's ground forces are found primarily within a number of signals reconnaissance and jamming units. While some of these EC assets exist at the tactical level, the following paragraphs focus on the assets available at the operational level.

Army Group

An army group can have one or two signals reconnaissance brigades, and may have a jamming regiment or battalion. A signals reconnaissance brigade consists of a radio intercept battalion, a radio DF battalion, and a radar intercept and DF battalion. In lieu of a second signals reconnaissance brigade, an army group may have a signals reconnaissance regiment or separate battalion of the types found at army level. Assets from these units typically deploy where they can best support the operations of a subordinate army or corps conducting the main effort in the offense or defense, as well as supporting army group-level taskings.

The jamming regiment has three battalions of like composition. Each battalion has a mix of VHF and HF jammers, along with the intercept and DF assets that provide targeting support. The battalion also includes fuze jammers that deploy to protect high-value assets from artillery proximity-fuzed munitions. Some army groups might have only a single jamming battalion instead of an entire regiment.

An army group typically includes an unmanned aerial vehicle (UAV) regiment with three UAV squadrons. The multimission UAVs are capable of carrying signals reconnaissance or jamming payloads, as well as other sensors that provide targeting for artillery, surface-to-surface missiles (SSMs), or army group aviation.

The army group may allocate all or part of the three UAV squadrons to support operations of an army or corps in the army group's main effort. The remaining UAV assets support army group-level targeting.

Compared to other airborne EC systems, UAV-borne systems have the main advantage of being able to get in close to the intended target with a relatively low-cost platform and minimal risk to the operator.

Thus, UAVs provide high levels of payoff in terms of intelligence and targeting.

An entire small UAV system (including aircraft, ground control station, launcher, and payloads) costs a fraction of what a large airborne standoff jamming (SOJ) platform can cost. Nevertheless, due to the proximity of the UAV-borne jammer to its intended target, it could in some instances deliver a higher level of jamming energy on the target than a high-power SOJ system. One drawback is that the small payload capacity of most UAVs precludes mounting jammers capable of covering the entire radio frequency range of interest. This means that a particular UAV-borne jammer usually can attack only one type of target. The limited jamming range of the UAV-borne system generally requires a high level of reconnaissance support to ensure that the UAV flight path takes it close enough to the target.

An army group also can have an air defense jamming regiment, with two to four battalions. Normal practice is to allocate an air defense jamming battalion to each army or corps in the main effort. The remaining battalion(s) protect high-priority army group assets. The battalions employ a variety of radar and communications jamming and target acquisition systems that target the onboard emitters of enemy aircraft. Electronic intercept systems provide targeting information to the radar jammers. This jamming capability supports the OPFOR's own air operations as well as improving the air defense of high-value assets. (For more detail on EC support to air defense, see Chapter 11.)

Army

As with the army group, subordinate levels of command have a mix of signals reconnaissance and jamming systems. An army can have one to two signals reconnaissance battalions. In lieu of these separate battalions, a high priority army may have a signals reconnaissance regiment, composed of three such battalions. These units differ from the battalions of the signals reconnaissance brigade in that they each include a mix of intercept and DF systems. The army can also have a jamming regiment or battalion of the same type found in the army group.

Corps

A corps can have a signals reconnaissance battalion and/or a jamming battalion. These battalions, if present, have the same structure as those found at the army level.

The signals reconnaissance battalions at corps and army normally have a higher proportion of VHF intercept and DF systems in relation to HF, whereas HF composes a greater proportion of systems at army group level.

Air Force

The Air Force has airborne assets that support the EC mission. It can employ airborne platforms in either an escort or a stand-off jamming role. The escort jammers provide protection to aircraft conducting a strike on targets in enemy territory. The SOJ platforms remain well behind the OPFOR's forward edge to avoid loss of these high-value assets and crews.

The use of an airborne platform can greatly enhance the effectiveness of both intercept and jamming, particularly of radio relay. These systems offer the advantages of greatly increased range, mission flexibility, mobility, and brute jamming power.

The reconnaissance aviation regiment of the army group's air army provides a wide variety of sensor packages on its fixed-wing aircraft. This regiment has up to three squadrons of high-performance

reconnaissance aircraft, some of which are available in EC configurations.

An air army may also have substantial jamming capabilities in an airborne jamming aviation regiment and a heliborne jamming squadron. The regiment has two squadrons equipped with high-performance fixed-wing jamming platforms. The heliborne squadron has two to three flights, with a mix of heliborne jamming platforms.

A separate helicopter squadron with one heliborne jamming flight may also be organic to the air army, as well as to an army or corps. This flight consists of four to six heliborne platforms.

Space-Related Assets

Space-based warning, surveillance, navigation, and meteorological systems provide substantial benefits to the military commander. Aside from its own satellites, the OPFOR has access to many of these capabilities from other countries through ground stations or commercial firms. Radar reconnaissance satellites can lock onto intercepted signals to provide target location information. The OPFOR also has large-area radar surveillance satellites in its inventory.

EC activities targeting space-based systems involve a much greater degree of technical difficulty. The accuracy to which the OPFOR can determine the precise location of a space object plays a vital role in the employment of antisatellite jamming. Communications jammers designed to jam satellite uplinks or intersatellite links require accurate satellite location information.

The OPFOR could employ several methods to obtain satellite tracking information. Of these, some require little or no technical expertise. A large amount of satellite tracking data is available through computer bulletin board services or directly from several publications. The OPFOR and a second party could transfer satellite tracking information as part of an intelligence-sharing agreement. Finally, active and passive sensors are available, such as radars, optics, and passive detection equipment.

The OPFOR is continuing to expand its use of satellite communications in support of military operations. Space-based communications provide a more secure means of C^2 than ground-based systems, significantly contributing to protecting the OPFOR's use of the electromagnetic spectrum.

COMPONENTS

Essential to the success of OPFOR EC is the collection of accurate and timely information. OPFOR reconnaissance attempts to develop an accurate picture of the enemy's electronic order of battle, together with equipment types, emission characteristics, operating procedures, and operator characteristics. In addition to EC-dedicated systems, all reconnaissance, surveillance, and target acquisition assets at the various command levels feed the information-gathering and analysis process that supports EC. Signals reconnaissance provides the primary means of locating targets of specific interest to the EC effort. One of the most valuable assets for confirming EC targets remains ground reconnaissance forces. The OPFOR obtains some technical information concerning enemy electronic equipment from open-source material, such as technical manuals and field manuals.

Signals Reconnaissance

Identification and location of enemy electronic emissions and understanding their nature and use are key to countering and exploiting them. Signals reconnaissance is the sum of all means used in this collection

and analysis. In the OPFOR, signals reconnaissance is the mission of--

- Airborne signals reconnaissance assets of the Air Force.
- Signals reconnaissance units at army group, army, corps, and division levels.
- Signals reconnaissance assets of the ground forces' jamming units.

The OPFOR expects to identify targets not only by DF, but also through signals analysis. For the latter, it plans to exploit lax enemy communications security and poor electronic counter-countermeasures. Specialists perform technical analysis to identify high-priority targets. In accordance with the EC plan, specialists target emitters for destruction, jamming, signals exploitation, or deception. Because signals reconnaissance systems only locate electronic emitters, not necessarily units, the OPFOR attempts to avoid enemy deception efforts by using other reconnaissance means for confirmation.

When signals reconnaissance units support a specific brigade or higher organization, an EC liaison representative augments the organization's main command post. He passes targeting information required for physical destruction through the supported unit's chief of reconnaissance.

The OPFOR has the ground-based capability to intercept and DF enemy emitters within the following distances from the forward edge of friendly troops:

- Artillery ground radar--about 25 km.
- VHF communications--about 40 km.
- HF groundwave--about 80 km.
- HF skywave--unlimited.

Greatly extended ranges are possible when mounting intercept and DF systems on airborne platforms, as well as when ground-based systems are targeting airborne emitters.

The fielding of radio communications systems employing spread-spectrum modulation techniques greatly complicates OPFOR signals reconnaissance efforts. Even when not coupled with encryption systems, these systems provide a significant electronic counter-countermeasures (ECCM) capability, with the potential for truly low probability of intercept and increased resistance to jamming. However, the OPFOR has developed a few high-technology EC systems designed to perform DF on these radios.

Direction Finding

The purpose of DF is to locate transmitting enemy radio and radar emitters. The OPFOR DF ranges are equivalent to that for intercept. The OPFOR uses DF to--

- Provide approximate locations of enemy electronic emitters.
- Provide locations that, when applied with intercept, terrain analysis, or other means, have sufficient accuracy to target with artillery fires.
- Develop a "picture" of the battlefield to reveal enemy unit locations and intentions.
- Provide adequate locations for firing on most radars and jammers.

Because of the length of transmission, the peculiarity of their signal characteristics, and power output, it is easy to locate jammers and identify them as targets for attack by suppressive fires. Due to a radar's unique signal parameters, DF can locate radars with greater precision than it can for radio emitters, often within 50 to 200 m.

It is possible to evaluate information from DF resources quickly, but this usually requires further confirmation by other sources. DF targets within conventional artillery range receive priority. Among these, targets that are time-sensitive and considered a serious threat receive priority and are candidates for immediate engagement.

With the OPFOR's older systems, if an enemy emitter remains active for at least 25 seconds, the targeting sequence can continue even after emissions cease. Newer systems are shortening the timelines considerably.

Priorities

The signals reconnaissance priorities correspond to the maneuver commander's EC information requirements. Priorities for intercept and DF are similar in both the offense and the defense, though they vary by phase.

Communications intercept and DF priorities include--

- Reconnaissance C^2 nets.
- Fire support nets.
- Air defense nets.
- Maneuver force C^2 nets.
- Electronic warfare nets.
- NBC-related communications.
- Engineer nets.

Radar intercept and DF priorities include--

- Radar jammers.
- Ground and battlefield surveillance radars.
- Target acquisition radars.
- Countermortar and counterbattery radars.
- Air defense radars.

Deployment

In the ***offense***, signals reconnaissance assets normally locate with the organization conducting the main attack, as far forward as possible. The unit commander coordinates with the chief of reconnaissance to ensure continuous coverage of the most critical sections of the battlefield. The signals reconnaissance unit commander and his staff select alternate positions for the signals reconnaissance assets that have line-of-sight (LOS) along the avenue of approach. This enables the assets to leapfrog forward in support of the battle.

In the ***defense***, the unit commander coordinates positioning of his signals reconnaissance assets with the chief of reconnaissance. Initially, many of the assets supporting tactical and operational missions may locate within the security zone, behind the security-zone forces in their initial positions. The depth to which the OPFOR deploys these assets depends on the terrain and disposition of forces in the security zone. As security-zone forces fall back to their successive positions, signals reconnaissance assets fall

back to previously reconnoitered positions offering good LOS. If deployed within the main defensive zone, assets take up position behinds the first-echelon battalions of the first-echelon brigades. They choose terrain offering good LOS and reposition frequently to avoid enemy EC activities and subsequent destructive fires.

Electronic Jamming

A major part of EC is the requirement to jam, at critical times, enemy C^2 and weapon system voice and data communications that the OPFOR cannot destroy by firepower. All types of emitters are vulnerable to both jamming and deception. The jamming mission belongs to the airborne jamming assets of the Air Force, ground-based radar jammers, and ground forces' jamming units.

Jamming secure voice and data communications may force the enemy to transmit in the clear, which allows exploitation of combat information. Jamming can also aid in DF by forcing the enemy to transmit longer, allowing time for tip-off and multiple fixes. When not dedicated to a jamming mission, jammers may assist in signals reconnaissance. Jammers may also support EPM by providing a jamming shield to protect OPFOR communications from enemy electronic warfare efforts. To accomplish this, jammers emit jamming signals on those frequencies the OPFOR wishes to use. Due to considerations of signal geometry and strength, the jammers do not affect OPFOR communications, but do affect the enemy's signals reconnaissance receivers.

The primary OPFOR methods of jamming are--

- Radar jamming by using barrage, sweep, and spot noise, pulse, chaff, and decoys.
- Pulse and simulation jamming of command guidance systems.
- Radio jamming of AM and FM signals using barrage, sweep, or spot noise.

The OPFOR can supplement the radio jamming capability of its operational-level ground forces with assets allocated down from national level. These may include a considerable number of airborne radio-jamming and ground-based and airborne radar-jamming sets. Aircraft and air defense units have jammers that attempt to disrupt enemy target acquisition radars, weapon guidance systems, or aircraft navigation aids. Aircraft also may have some deceptive transmitters, mainly to project false locations to enemy air defense systems. The OPFOR continues to modernize its radar jamming assets in response to enemy advances in radar technology. This effort emphasizes the OPFOR intentions to disrupt enemy ground and airborne radars and support its own air activities and air defense of high-value rear area targets.

Effectiveness

A number of technical factors govern jamming effectiveness. These factors include--

- Target link distance (distance between the enemy transmitter and receiver).
- The distance between the jammer and the enemy receiver.
- Radio LOS between the jammer and the targeted receiver.
- Antenna polarization.
- Effective radiated power of the jammer and the enemy transmitter.
- Weather, terrain, and vegetation.

The most important of these are the distances of the target receiver from the jammer and from the transmitter.

Radios utilizing spread-spectrum modulations reduce the impact of conventional jammers. The effectiveness of jamming against these radios varies, depending upon the type of jamming employed. Options include narrow-band, partial-, or full-band jamming.

Priorities

Priorities for jamming vary with the operational or tactical situation. The following are general guidelines for initial priorities:

- Attack enemy communications and command guidance systems for artillery, rocket, and SSM forces.
- Disrupt enemy communications, target acquisition, and guidance systems for air defense forces.
- Jam enemy critical C^2 links.
- Protect friendly C^2 systems.

The OPFOR carefully coordinates its jamming activities with the signal officers at each level of command. The primary intent is to minimize, or preferably, avoid the accidental disruption of friendly systems.

Deployment

The enemy also considers jammers priority targets for destruction. Because of their high power and unique electronic signature, they are relatively easy to detect and locate. The majority of ground-based jammers must deploy within the range of indirect fire weapons, and are highly susceptible to damage. Taken together, these factors dictate the OPFOR must thoroughly plan and execute jammer deployment for their survival.

Jammers must be mobile to both survive and maintain favorable transmission paths against enemy emitters that are moving as the operation progresses. A fluid, high-tempo operation requires the jammers to displace frequently. The OPFOR preselects primary and alternate sites for each phase of the operation. These sites must--

- Be accessible and concealed from enemy direct fire weapons.
- Provide for continuity of mission.
- Facilitate electronic massing of several jammers against priority targets.
- Facilitate communications.

In the ***offense***, jamming assets normally deploy slightly behind the forward maneuver units. Jammers positioned near the forward edge selectively jam critical communications links, normally using barrage and spot noise or pulse signals. The priority of support is to support the units conducting the main effort.

In the ***defense***, jamming assets normally locate in the security zone and in the main defensive zone behind the first-echelon battalions of the first-echelon brigades. They select terrain offering good LOS and reposition frequently. In the security zone, priority is to disrupt enemy reconnaissance nets. As the enemy approaches the main defensive zone, priorities shift to divisional and brigade-level fire support and maneuver nets, in that order. Deployment of jamming assets would orient on those areas projected to

be the enemy's main effort.

Electronic Protection Measures

Electronic protection measures (EPM) are any active or passive procedures to protect the friendly use of electronic systems. OPFOR commanders try to enforce a high level of EPM consciousness in their subordinates and equipment operators.

The OPFOR objective for EPM is the satisfactory operation of its electronic equipment in the face of enemy disruption efforts. EPM are the responsibility of every soldier who uses or supervises the use of radios, radars, or other electronic emitters.

The OPFOR achieves its EPM objectives through strict enforcement of signals security, equipment redundancy, system design, operator skill, and alternate methods of communication. It places emphasis on individual and organizational field-expedient techniques. Operator EPM training occurs at all organizational levels. The OPFOR practices major moves while in conditions of radio silence or even total electronic silence. Its use of battle drills lessens its dependence on extensive radio orders in the attack.

The OPFOR employs alternate passive EPM, such as wire, visual methods (such as flags or flares), messengers, and manual encryption. The OPFOR is also expanding its employment of secure communications devices. It practices false positioning of different types of emitters and establishes dummy nets for deception purposes. The OPFOR may protect its communications from enemy electronic warfare by using a jamming screen.

Destruction

Physical destruction is integral to OPFOR electronic combat doctrine. It is the preferred method of disrupting enemy communications and radars. Even a small raid or harassing fires on a headquarters can interrupt the enemy planning cycle.

Critical C^2 nodes, air defense radars, satellite terminals, and enemy electronic warfare assets are priority targets. The OPFOR can physically attack in three ways:

- **Indirect fire**. This includes artillery, mortars, rockets, and SSMs.
- **Ground attack**. While fighting in the enemy's rear, the OPFOR may attempt to destroy C^2 and communications elements by using tank or mechanized infantry, special-purpose, airborne or heliborne forces as raiding or enveloping detachments.
- **Air attack**. The OPFOR may attack with high-performance aircraft or helicopters. Ground forces may plant a transmitter within the enemy perimeter for beacon bombing.

Compared with other methods of disruption, physical destruction provides the longest-lasting effects, as the enemy must reconstitute its control. The effects of jamming last only as long as the jamming does, or until the enemy employs some form of ECCM, such as changing frequency or increasing signal power levels. The effects of deception, while potentially the greatest, are the most difficult to successfully achieve. Often, only well after the outcome of an operation are their effects known.

Electronic Counterreconnaissance

The OPFOR attempts to limit the enemy's use of the electromagnetic spectrum to gather critical

intelligence information required to accurately estimate OPFOR unit strengths, composition, and activities. The goal is to disrupt the enemy's control process by either denying critical information, or by feeding false information into the enemy's information systems.

All enemy sensor types are potential targets for deception operations supporting the counterreconnaissance effort. False radio nets, dummy command posts, deception jammers, and even radar corner reflectors all contribute to providing a false or misleading picture of OPFOR capabilities and intentions. Targets include ground-based and airborne signals reconnaissance platforms, and radar surveillance systems.

DECEPTION SUPPORT

Deception in EC is part of the OPFOR's overall deception efforts. The OPFOR is responding to the challenge posed by advances in enemy sensors and weapons by emphasizing the use of camouflage, concealment, and deception.

Regulations require planning for deception activities in all combat actions. The OPFOR seeks to confuse the enemy to the extent where the enemy is unable to distinguish between real and decoy targets, units, and activities. It believes that this can cause the enemy to come to false conclusions about OPFOR intent, deployments, and troop movements.

The OPFOR employs several components of deception simultaneously for maximum effectiveness. In this multidisciplined approach, no aspect lends itself more to use of deception than interference with enemy communications. The purpose of electronic deception is to cause misinterpretations of intent, disruptions, and delays. Electronic deception is normally part of an overall deception plan. This ensures that what the enemy collects electronically agrees with, or at least does not refute, the indicators presented by other deception means.

The OPFOR seldom, if ever, uses electronic deception alone. Electronic deception normally consists of manipulative, simulative, and imitative deception. The OPFOR may use one or all of these types of electronic deception in its deception activities.

The OPFOR is continuing the development and fielding of dedicated tactical non-communications means of deception. It practices extensive use of dummy positions, using field-expedient materials. It simulates troop movements by such means as use of civilian vehicles to portray movement to radar, and marching refugees to portray movement of troops in the rear. Simple, inexpensive radar corner reflectors provide masking by approximating the radar cross sections of military targets such as bridges, tanks, aircraft, and even navigational reference points. Corner reflectors can be quite effective when used in conjunction with other EC systems, such as ground-based air defense jammers.

Manipulative Electronic Deception

The OPFOR uses manipulative electronic deception to counter enemy electronic warfare and collection efforts by altering the electromagnetic profile of friendly forces. Specialists modify the technical characteristics and profiles of emitters that could provide an accurate picture of friendly intentions. The objective is to have enemy analysts accept the profile or information as valid and therefore arrive at an erroneous conclusion concerning friendly activities and intentions.

Simulative Electronic Deception

Simulative electronic deception seeks to mislead the enemy as to the actual composition, deployment, and capabilities of the friendly force. The OPFOR may use controlled breaches of security to add credence to its simulative electronic deception activities. There are a number of techniques the OPFOR uses.

With ***unit simulation***, the OPFOR establishes a network of radio and radar emitters to emulate those emitters and activities found in the specific type unit or activity. The OPFOR may reference the false unit designator in communications traffic and may use false unit callsigns.

With ***capability simulation***, the OPFOR projects an electronic signature of new or differing equipment to mislead the enemy into believing that a new capability is in use on the battlefield. To add realism and improve the effectiveness of the deception, the OPFOR may make references to "new" equipment designators on other or related communications nets.

To provide a ***false unit location***, the OPFOR projects an electronic signature of a unit from a false location while suppressing the signature from the actual location. Radio operators may make references to false map locations near the false unit location, such as hill numbers, a road junction, or a river. This would be in accordance with a script as part of the deception.

Imitative Electronic Deception

Imitative electronic deception injects false or misleading information into enemy radio and radar communications networks. The communications imitator gains entry as a bona fide member of the enemy communication system and maintains that role until he passes the desired false information to the enemy.

The OPFOR exercises extreme care in entering the enemy communications system because each emitter produces its own signature. Most techniques require extensive technical support and specially trained operators.

The modern battlefield contains a variety of target acquisition, surveillance, and electronic radars. Each class of equipment produces an individual signature. The OPFOR uses repeaters, transponders, and reflectors that substitute an altered or generated-signal in imitation of the radar's normal return echo to deceive it. Successful deception requires a much better understanding of the technical characteristics of the enemy radar than that required for jamming.

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[1] In addition, the potential exists for the use of the high-powered, fixed broadcast facilities located throughout the State to disrupt enemy strategic communications in the HF and lower radio frequency bands.

Chapter 14
NBC and Smoke Support

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BIOLOGICAL

The proliferation of nuclear, biological and chemical (NBC) weapons can dramatically alter the nature of conflicts.[1] The use of NBC weapons can have an enormous impact on all battlefield operations. Not only

does the sheer killing and destructive power of these weapons affect the battlefield, but the strategic, operational, psychological, environmental, economic, and political consequences of their use affect campaign designs.

The OPFOR would prefer to avoid the use of nuclear weapons. Both nuclear and biological weapons characteristically have lethal effects over much larger areas than do chemical weapons. The effects of biological weapons can be difficult to localize and to employ in operations without affecting friendly forces; the effects on the enemy can be difficult to predict. Unlike nuclear or biological weapons, chemical agents can be used to affect limited areas of the battlefield. The consequences of chemical weapons use are more predictable and thus more readily integrated into operations plans.

Because chemical employment is more likely than nuclear or biological, this chapter begins by focusing on OPFOR chemical capabilities. This includes the offensive and defensive use of chemical weapons, NBC (primarily chemical) protection, and employment of smoke. Because the OPFOR may also have some nuclear and biological capabilities, these also deserve mention, regardless of the low probability of their employment.

PREPAREDNESS

Due to the proliferation of NBC weapons, the OPFOR must anticipate their use, particularly the employment of chemical weapons. OPFOR planners believe that the best solution is to locate and destroy enemy NBC weapons and their supporting infrastructure before the enemy can use them against OPFOR troops or the State. In case this fails and it is necessary to continue combat operations despite the presence of contaminants, the OPFOR has developed and fielded a wide range of NBC detection and warning devices, individual and collective protection equipment, and decontamination equipment.

Multiple Options

In response to foreign developments, the OPFOR maintains a capability to conduct nuclear, chemical, and possibly biological warfare. Force modernization has introduced a degree of flexibility previously unavailable to combined arms commanders. It creates multiple options for the employment of forces at strategic, operational, and tactical levels with or without the use of NBC weapons. Many of the same delivery means available for NBC weapons can also be used to deliver precision weapons that can often achieve desired effects without the stigma associated with NBC weapons.

The OPFOR might use NBC weapons either to deter aggression or as a response to an enemy attack on the State. It has short-, medium-, and intermediate-range SSMs capable of carrying nuclear, chemical, or biological warheads. Most OPFOR artillery is capable of delivering chemical munitions, and most systems 152-mm and larger are capable of firing nuclear rounds. Additionally, the OPFOR could use aircraft systems and cruise missiles to deliver an NBC strike.

Targeting

The OPFOR considers the following targets to be suitable for the employment of NBC weapons:

- NBC delivery means.
- Precision weapons.
- Prepared defensive positions.

- Reserves and troop concentrations.
- Command, control, communications, computer, and intelligence (C^4I) centers.
- Key air defense sites.
- Logistics installations, especially port facilities.

Enemy NBC delivery means (air, artillery, missiles, and rockets) normally receive the highest priority. The suitability of other targets depends on the OPFOR's missions, the current military and political situation, and the NBC weapons available for use.[2]

Influence on Correlation of Forces

In past wars, the correlation of forces (COF) in a particular sector could be changed only by a slow process of providing more men and equipment. NBC weapons can bring a sudden change of great magnitude to the balance. Their use can change the COF on any axis of advance and to the entire depth of the enemy's dispositions. This constitutes both a threat and an opportunity to the commander and strongly reinforces the policy of preempting enemy use of nuclear or chemical weapons.

CHEMICAL

The OPFOR is equipped, structured, and trained to conduct both offensive and defensive chemical warfare. Much training revolves around the use of lethal agents. Besides offensive chemical capability, the OPFOR has a large inventory of chemical protection and decontamination equipment.

Weapons and Agents

The OPFOR has a variety of systems capable of delivering chemical agents, including aircraft, multiple rocket launchers (MRLs), artillery, mines, rockets, and missiles. The OPFOR classifies chemical agents according to the effect they have on persons. It identifies six major types: nerve, blood, blister, choking, incapacitant, and irritant.

Nerve agents are fast-acting chemical agents. Practically odorless and colorless, they attack the body's nervous system causing convulsions and eventually death. The OPFOR classifies nerve agents as either G- or V-agents. The V-agents are quicker-acting and more persistent than the G-agents. ***Blood agents*** cause death by blocking the oxygen transferal mechanisms in the body. ***Blister agents*** can kill or disable through skin contact or inhalation. Mustard gas is a common blister agent. Skin or eye contact can cause painful blisters. Inhalation can cause severe and often fatal lung damage. ***Choking agents***, such as phosgene and diphosgene, block respiration by damaging the breathing mechanism, which can be fatal. Poisoning from choking or blood agents comes through inhalation, since both types of agents are nonpersistent. ***Incapacitants*** (psychochemical agents) disrupt a victim's mental and physical capabilities. ***Irritants***, also known as riot-control agents, cause a strong burning sensation in the eyes, mouth, skin, and respiratory tract.

Chemical agents are also categorized as persistent or nonpersistent. ***Persistent*** agents, such as V-agents, some G-agents, and the blister agent mustard, can retain their disabling or lethal characteristics, depending on environmental conditions, for days, weeks, and in some cases, years. ***Nonpersistent*** agents generally last a shorter period of time, depending on weather conditions. The OPFOR would likely use nonpersistent agents across the front of an attack before a combat engagement. It would use persistent

agents deep within the enemy's rear and along troop flanks to protect advancing units.

Offensive Chemical Employment

In the offense, likely chemical targets include--

- Troops occupying defensive positions across the front of an attack, using nonpersistent agents delivered by MRLs to neutralize these troops.
- NBC delivery systems, troop concentration areas, headquarters, and artillery positions, using all types of chemical agents delivered by field guns, MRLs, missiles, and aircraft.
- Bypassed pockets of resistance that pose a threat to the flanks or rear of attacking forces.

The OPFOR perceives that chemical weapons have a unique role; their use does not depend on initiation of nuclear warfare. It is possible that the OPFOR would use chemical weapons early in an operation or from its outset, principally against enemy positions in the forward battle area.

Simultaneously with strikes across the front, the OPFOR could use chemical strikes throughout the depth for enemy defenses. These chemical strikes combine with other forms of conventional attack to neutralize enemy nuclear capability, command and control, and aviation. Subsequent chemical attacks may target logistics facilities.

The basic principle of chemical warfare is to achieve surprise. The OPFOR may use massive quantities of chemical agents against unprotected troops or equipment. It may also use agents to restrict the use of terrain. For example, contamination of key points along rear area lines of communication can seriously disrupt rear area resupply and reinforcement, while simultaneously keeping those points intact for subsequent use by the attacking OPFOR.

Initially, the use of chemical weapons is subject to the same level of decision as nuclear weapons. Commanders can employ them more freely once the Supreme High Command has released initial authority for their employment. In a nuclear war, the OPFOR can employ chemical weapons to complement nuclear weapons.

Defensive Chemical Employment

Used in the defense, persistent chemical agents can deny the enemy certain terrain and canalize attacking forces. The use of chemical agents impedes an attacking force, destroying the momentum of the attack by causing attacking troops to adopt protective measures.

NBC PROTECTION

The OPFOR's ability to protect itself against NBC weapons and to operate in contaminated environments is at least the equal of U.S. forces. OPFOR planners readily admit that casualties would be considerable in any future war involving the use of NBC weapons. However, they believe that the timely use of active and passive measures can significantly reduce a combat unit's vulnerability. These measures include but are not limited to protective equipment, correct employment of reconnaissance assets, and expeditious decontamination procedures.

The OPFOR believes the best way to protect against NBC weapons is to destroy delivery systems, which are always a high-priority targets. Other operational-tactical responses to the threat include--

- **Dispersion**. (Concentrations must last for as short a time as possible.)
- **Speed of advance**. (If the advance generates enough momentum, this can make enemy targeting difficult and keep enemy systems on the move.)
- **Concealment**. (Camouflage and deception complicate enemy targeting.)
- **Continuous contact**. (The enemy cannot attack with NBC weapons as long as there is intermingling of friendly and enemy forces.)

Organization

The OPFOR conducts rigorous training for a chemical defense. All troops have protective clothing, and all combat and many noncombat vehicles have excellent overpressure and filtration systems.

Chemical defense units are organic to all maneuver units brigade and above and are responsible for nuclear and biological as well as chemical protection and reconnaissance measures. Army groups have a chemical defense brigade[3]; armies or corps have a battalion; divisions have a battalion; separate brigades have a company; and divisional brigades have a platoon. There is a chemical staff at each level.

The OPFOR uses helicopters for NBC reconnaissance. Some chemical defense reinforcement from operational level would go to main-axis divisions. Army group, army, and corps units must deal with the threat to rear areas and provide chemical defense reserves. In addition, artillery and SAM regiments and brigades have chemical defense platoons. Medical and SSM units have some decontamination equipment. Engineer troops also are important, performing functions such as road decontamination, building of bypasses, and purifying water supplies. Of course, all arms have a responsibility for chemical reconnaissance and at least partial decontamination without specialist support.

Equipment

The OPFOR is at least the equal of any force in the world in its NBC protection capability. Chemical troops can accomplish a number of tasks in support of combat troops. They have a wide variety of dependable equipment that, for the most part, is in good supply. Individual items of equipment are adequate to protect from contamination for hours, days, or longer, depending on the nature and concentration of the contaminant. Antidotes provide protection from the effects of agents. Agent detector kits and automatic alarms are available in adequate quantities and are capable of detecting all standard agents. Decontamination equipment is also widely available.

SMOKE

The OPFOR employs smoke extensively on the battlefield whenever the situation permits. The OPFOR distinction between toxic and neutral smokes in its doctrinal literature drives planning on when to mask. The OPFOR intends to force the enemy to use chemical protection systems, thus lowering his effectiveness.

Organization

An army group typically has a smoke battalion, either as part of its chemical defense brigade or as a separate battalion. In either case, the smoke battalion has three smoke companies, each equipped with nine smoke-generating trucks. A typical army also has a smoke battalion; it can also have a smoke company as part of its chemical defense battalion.

Agents

The OPFOR may use a number of different smoke agents together. For instance, chloride obscurants are particularly effective liquid obscurants. Liquid chloride obscurants consist primarily of titanium, silicon, or tin tetrachlorides. Obscurants such as fog oil block portions of the electromagnetic spectrum more fully when seeded with chaff. The vast quantities of white phosphorus (WP) on the battlefield also suggest that random mixtures of this agent will combine with other obscurants, both manmade and natural.

The OPFOR recognizes the need to counter target acquisition and guidance systems operating in the IR and microwave regions of the electromagnetic spectrum. It has fielded obscurants, including chaff, capable of attenuating such wavelengths.

Delivery Systems

The OPFOR has ample equipment for the use of smoke. Its munitions and equipment include--

- Smoke grenades.
- Smoke barrels, drums, and pots.
- Large area smoke generators (ground and air).
- Mortar, artillery, and rocket smoke rounds.
- Spray tanks (ground and air).

Smoke delivery systems are plentiful. Smoke-filled artillery projectiles, smoke bombs, spray tanks, and generator systems are also common. Artillery can fire WP rounds (which have a moderate degrading effect on thermal imagers and a major one on lasers). The OPFOR still uses smoke bombs or pots dropped by fixed- or rotary-wing aircraft. The OPFOR makes considerable use of smoke pots, which are largely neglected by most countries.

All armored fighting vehicles can generate smoke through their exhaust systems. A platoon can produce a screen that covers a battalion frontage for 4 to 6 minutes. In addition, forward-firing smoke grenade dispensers can produce a bispectral screen up to 300 meters ahead of vehicles.

Types of Smokescreens

The OPFOR recognizes three types of smokescreens: blinding, camouflage, and decoy. Classification of each type as frontal, oblique, or flank depends on the screen’s placement. Smokescreens are either stationary or mobile depending on prevailing winds and the dispensing means used. Each basic type can serve a different tactical purpose. However, simultaneous use of all types is possible.

Blinding

Blinding smokescreens can mask friendly forces from enemy gunners, observation posts, and target-acquisition systems. They can restrict the enemy's ability to engage the OPFOR effectively. The OPFOR probably prefers these smokes for use against enemy positions. Delivery of WP and plasticized white phosphorus (PWP) is possible using MRLs, artillery, mortars, fixed-wing aircraft, or helicopters. The OPFOR lays blinding smoke directly in front of enemy positions, particularly those of antitank weapons and observation posts. Blinding smoke can reduce a soldier’s ability to acquire targets by a

factor of 10, and its use can reduce casualties significantly.

Blinding smokescreens are part of the artillery preparation for an attack and the fires in support of the attack. Likely targets are enemy defensive positions, rear assembly areas, counterattacking forces, fire support positions, and subsequent mission lines. The screening properties of a blinding smoke-screen can couple with dust, high explosive (HE) combustion effects, and the incendiary effects of phosphorus. This can create an environment in which fear and confusion add to the measured effectiveness of the smoke.

Camouflage

The OPFOR uses camouflage smoke to cover maneuver, to conceal the location of units, and to hide the nature and direction of an attack. The camouflage smokescreen is useful on or to the front of friendly troops.

These screens are normally effective up to the point where forces deploy into battle formation. The number, size, and location of camouflage smokescreens vary depending on terrain, weather, and tactics. Camouflage also forces attack helicopters to fly above or around a screen, thus exposing themselves to attack. Camouflage smoke can also cover concentration and assembly areas, approaches of attacking forces from the depth, or withdrawals.

Establishing camouflage smokescreens normally requires use of a combination of smoke grenades, smoke barrels, smoke pots, vehicles mounting smoke generating devices, and aircraft. Some decontamination vehicles also have the capability to generate smoke.

Two vehicles can lay a smokescreen long enough in distance to cover a battalion advancing to the attack. For larger smokescreens, the OPFOR divides the line into segments and assigns two vehicles to each segment. Doctrinally, camouflage smokescreens should cover an area at least five times the width of the attacking unit's frontage.

The threat of enemy helicopter-mounted ATGM systems concerns the OPFOR. Consequently, its doctrine calls for advancing forces to move as close behind the smokescreen as possible. The higher the smokescreen, and the higher an enemy helicopter must go to observe troop movement behind the smokescreen, the more vulnerable it is to ground-based air defense weapons. There is considerable observation-free maneuver space behind a screen of this height. Conversely, smoke pots provide a screen 5 to 10 m high. This screen masks against ground observation but leaves the force vulnerable to helicopters "hugging the deck" and popping up to shoot.

Smokescreens can also degrade night-vision sights. The protective effect is greater with a darker smoke cloud because of the better absorption capability of that cloud. The purpose of protective smoke is to shield electro-optical devices from potentially harmful laser radiation. The protective smokescreen is useful in front of, around, or above friendly positions.

The protection camouflage smoke produces interacts as a ***protective*** smoke. Protective smokescreens are a good means of reducing the effects of thermal radiation from nuclear explosions.

Decoy

A decoy screen can deceive an enemy about the location of friendly forces and the probable direction of attack. The site and location of decoy screens depend on the type of combat action, time available, terrain, and weather conditions. For example, one use of decoy screens is a river crossing in which

several possible crossing sites simultaneously receive screening.

Smokescreen Employment

The OPFOR follows general guidelines in its use of smoke. Artillery, mortar, and aircraft are the primary means of smoke dissemination. Artillery and aircraft are useful in spreading screening smoke throughout the tactical depth of the enemy's defense. They are also useful in screening the flanks of attacking units. The OPFOR can place smoke on enemy firing positions and observation posts before and during an attack. (See Figure 14-1.)

System	On Friendly	Placement Between	On Enemy	Uses			
				Blinding	Camouflage	Decoy	Signal
Smoke Grenade	X	X		X	X	X	X
Smoke Generator	X	X			X	X	
Smoke Pot	X	X			X	X	X
VEESS	X				X	X	
Vehicle Dust	X				X	X	
Helicopter	X	X	X		X		
Mortar/ Artillery Smoke		X	X	X	X		X
Rocket		X	X	X			
Aerial Bomb		X	X	X			
Aircraft Spray	X	X	X	X	X		
Mortar/ Artillery HE Dust		X	X	X			

Figure 14-1. Smoke system characteristics.

The OPFOR may place 2 to 3 hours' worth of screening smoke along a wide frontage to cover units conducting water obstacle crossing operations; it may locate these screens on both sides of the river. It may also place floating pots and barrels in the river.

To deceive the enemy, the OPFOR may use decoy screens at one or more likely crossing sites. If the enemy fires into the decoy screen, black smoke devices and fires ignite to simulate burning vehicles or equipment. Other disinformation might include speakers that simulate the sound of tanks operating.

As the situation dictates, the OPFOR may screen other important locations and possible targets, including--

- Troop concentrations.
- Bridges.
- Railroad junctions.
- Unloading areas.
- Nuclear storage sites and nuclear delivery systems under imminent air attack.

The OPFOR may also screen avenues of approach to such locations. It tries to eliminate reference points that could aid enemy aviation in targeting a screened location.

Camouflage, blinding, and decoy smokescreens are useful in concealing the direction and time of attack. They also help minimize losses. Screens set down on a broad frontage can also cover maneuver forces. Reliable communications and continuous coordination between units using smoke and the forward air warning and air defense posts are essential. The OPFOR also uses smoke--

- To mark targets for friendly aircraft.
- To screen logistics routes and activities within the range of enemy fire and observation, possibly including the evacuation of casualties or the evacuation and repair of tanks.
- To cover the movements of guns into firing positions and from position to position.
- To screen engineer units when they clear minefields.
- To mark passages through engineer barriers.
- To screen flamethrower operators or subunits as they approach their targets.

Signaling Smoke

Aside from smokescreens, the OPFOR also uses smoke for signal purposes. Smoke can mark enemy positions or, occasionally, friendly avenues of approach for close air support and helicopter or artillery assets. By prearrangement, colored smoke may--

- Identify friendly units.
- Control the laying and lifting of artillery, mortar, and small-arms fire.
- Identify targets.
- Coordinate fire and maneuver of combat arms units engaged in local assault operations.

NUCLEAR

The OPFOR believes a theater war is most likely to begin with a phase of nonnuclear combat that may include the use of chemical weapons. The OPFOR emphasizes the destruction of as much as possible of enemy theater nuclear capability during the nonnuclear phase. To do so, it would use air and missile attacks, airborne, heliborne, and special-purpose forces, and rapid, deep penetrations by ground forces.

The OPFOR hopes to deny the enemy a credible nuclear option.

Dispersal and Rapid Concentration

The availability of nuclear strikes, as well as precision weapons and the longer ranges of conventional artillery, reduces the requirement for massed artillery formations. Improved troop mobility permits both the rapid concentration and quick dispersal essential to the survival of tank and mechanized infantry formations as they maneuver on a nuclear-threatened battlefield.

In this context, the OPFOR believes that the "quality" of mass must compensate for the reduced quantity formerly provided by concentrations of troops and equipment. This quality takes the form of intense strikes with conventional air and artillery, precision weapons, and possibly NBC weapons.

Being under nuclear threat, the enemy also must disperse his formations, which can make him more vulnerable to penetration by an attacking force. Enemy troops are also highly mobile and capable of rapidly concentrating to protect a threatened sector. Therefore, surprise and timing of operations are extremely critical. They complicate enemy targeting and deny him the time to use his mobility.

In a war nuclear from its start, the OPFOR would direct nuclear strikes against the strongest sectors of the enemy's defenses and throughout his operational depth. This would create gaps through which divisions, in "nuclear-dispersed" formations, would attack. These divisions would be lead by forward detachments, advancing at top speed into the depth of enemy defenses.

The aim of the forward detachments would be to seize or neutralize remaining enemy nuclear weapons, delivery systems, and C^4I facilities. By attacking from different directions and across a broad frontage, the divisions would try to split and isolate the enemy

The exploitation force would probably attack in two echelons to take full advantage of the speed of advance it could expect to achieve. The echelons essentially would be an initial exploitation force and a follow-on relief exploitation force. Commanders would ensure a rapid tempo of advance by assigning tank units to the first echelon and by using mechanized infantry units with tank elements on the main axis. Tanks are quite effective in the first echelon, because they have maneuverability, firepower, lower vulnerability to enemy nuclear attacks, and the capability to achieve penetrations of great depth.

Transition to Nuclear

Even when a conflict does not involve the use of nuclear weapons from the outset, OPFOR commanders deploy troops based on the assumption that a nuclear-capable enemy might strike with nuclear weapons at any moment. The OPFOR continuously updates its own plans for nuclear employment, although it prefers to avoid nuclear warfare. As long as it achieves its objectives, and there are no indications that the enemy is going to use nuclear weapons, the OPFOR would remain nonnuclear. However, it could attempt to preempt enemy nuclear use with an initial, in-depth, theater nuclear strike. Otherwise, any OPFOR decision to go nuclear would have to be made early in the conflict, so that sufficient nonnuclear power would remain to follow up and to exploit the gains of nuclear employment.

Weapons

Nuclear delivery systems include aircraft from both strategic and army group aviation, and surface-to-surface missiles (SSMs) with ranges from 70 to 500 km. Most artillery 152-millimeter or larger is capable of firing nuclear rounds, if such rounds are available.

The OPFOR classifies nuclear weapons according to yield or explosive power and type of burst. They consider nuclear weapons very high in explosive power if their yield is over 500 kilotons, high if between 100 and 500, medium if between 15 and 100, and low if up to 15 kilotons. Types of burst that the OPFOR may employ are air, ground (surface), underground, and underwater.

Planning

Although the opening stages of an offensive are likely to be conventional, planning focuses on the necessity of--

- Countering enemy employment of nuclear weapons.
- Maintaining the initiative and momentum of the offensive.
- Maintaining fire superiority over the enemy (preempting his strike).

The fire plans for divisions and higher levels include contingency plans for nuclear strikes.

At all stages of an offensive, the OPFOR keeps nuclear forces ready to make a strike. The decision to initiate nuclear warfare occurs at the highest level of government. Theater-level planners develop the fire plan for the initial massive nuclear strike for approval by the Supreme High Command.

The Supreme High Command may delegate employment authority for subsequent nuclear strikes to the army group or possibly to the army or corps level. The division chief of artillery submits to the army commander, for approval and integration into army and army group fire support plans, recommendations for the subsequent employment of the division's nuclear and chemical weapons.

In deliberately planned operations, the OPFOR plans nuclear fires in detail. In more fluid situations, as in meeting engagements, exploitation, and pursuit, the commander keeps some nuclear weapons systems at high readiness to fire on targets of opportunity.

Target analysts favor airbursts and using large yields. Maneuver forces follow up as closely as safety and circumstances permit on strikes near the line of contact. Airborne troops may exploit deep strikes.

Nuclear allocations vary with the strength of the enemy defense and the scheme of maneuver. A main attack probably receives the highest percentage of weapons; however, the OPFOR may also reserve weapons for other large, important targets.

Types of Strikes

The OPFOR categorizes nuclear strikes as either massed or individual strikes. The category depends on the number of targets hit and the number of nuclear munitions used.

A massed nuclear strike employs multiple nuclear munitions simultaneously or over a short time interval. The goal is to destroy a single large enemy troop grouping, or several troop groupings, as well as other important enemy targets. A massed strike can involve a single branch of the armed forces, as in a nuclear missile strike, or the combined forces of different branches.

An individual nuclear strike may hit a single target or group of targets. A single nuclear munition, such as a missile or bomb, conducts the strike.

Offensive Nuclear Employment

Once the Supreme High Command releases nuclear weapons, two principles govern their use: mass and surprise. The OPFOR plans to conducts the initial nuclear strike suddenly and in coordination with nonnuclear fires. Initial nuclear strike objectives are to destroy the enemy's main combat formations, C^4I systems, and nuclear and precision weapons, thereby isolating the battlefield.

Nuclear strikes target and destroy the enemy's forward defenses and are, in effect, the main attack. Other fire support means support secondary or supporting attacks. The OPFOR plans a high-speed air and ground offensive to exploit the nuclear strike.

If the enemy continues to offer organized resistance, the OPFOR might employ subsequent nuclear strikes to reinitiate the offensive. Nuclear strikes can eliminate the threat of a counterattack and clear resistance from the opposite bank in a river crossing. In pursuit, the OPFOR plans nuclear strikes on choke points where retreating enemy forces present lucrative targets.

Defensive Nuclear Employment

If nuclear weapons degrade the enemy offensive, the defender could gain the opportunity to switch quickly to an offensive role. A drastic change in COF is the primary goal when the OPFOR employs nuclear weapons in the defense. Primary uses in the defense are to--

- Destroy enemy nuclear and precision weapons and delivery means.
- Destroy main attacking groups.
- Conduct counterpreparations.
- Eliminate penetrations.
- Support counterattacks.
- Deny areas to the enemy by use of surface bursts.

BIOLOGICAL

Biological weapons consist of pathogenic microbes and micro-organism toxins, both of which can incapacitate or kill people or animals and destroy plants, food supplies, or materiel. The type of targets being attacked determines the choice of agents and dissemination systems.

Probable targets for biological warfare pathogen attack are nuclear delivery units; airfields; rear area logistics facilities; and C^4I centers. The OPFOR may use clandestine means to conduct attacks before the war begins.

The OPFOR may target biological weapons against rear area objectives such as food supplies, water sources, troop concentrations, convoys, and urban and rural population centers rather than against frontline forces. Some biological agents are extremely persistent, retaining their capabilities to infect for days, weeks, or longer. The prolonged incubation period makes it difficult to track down the initial location and circumstances of contamination.

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[1] NBC weapons are a subset of ***weapons of mass destruction (WMD)***, although the latter exclude the delivery means where such means is a separable and divisible part of the weapon. WMD are weapons or devices intended for or capable of causing a high order of physical destruction or mass casualties (death

or serious bodily injury to a significant number of people). The casualty-producing elements of WMD can continue inflicting casualties on the enemy and exert powerful psychological effects on the enemy's morale for some time after delivery. Existing types of WMD include chemical, biological, and nuclear weapons. However, technological advances are making it possible to develop WMD based on qualitatively new principles, such as infrasonic (acoustic), radiological (enhanced-radiation), or particle-beam weapons. In addition, conventional weapons, such as precision weapons or fuel-air explosives, can also take on the properties of WMD.

[2] The same list of targets would apply for enemy use of NBC weapons against the OPFOR.

[3] In lieu of a chemical defense brigade, an army group may have separate battalions of the same types that normally comprise such a brigade.

Chapter 15
Logistics

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REAR AREA SECURITY

Logistics is the process of planning and executing the sustainment of forces in support of military operations. It includes the development, acquisition, storage, movement, equipping, distribution, and evacuation functions of supply, field services, maintenance, health service support, personnel, and facilities. Logistics functions occur across the entire range of military operations. Logistics alone cannot win a war, but its absence or inadequacy can cause defeat.

OPFOR commanders believe there will be no continuous frontline in future conflicts. Instead, combat will have a highly fluid, dynamic nature spread over a wide area. Attrition will not occur evenly across the frontage. There will be areas of intense, local destruction and long secondary or defensive sectors where logistics demands will be much lighter. Secure rear areas and predictably developing operations have, in the OPFOR view, become a thing of the past. Under these circumstances, the OPFOR does not consider the traditional logistics system, where forward divisions collect supplies from dumps to the rear and evacuate their casualties and damaged equipment to the rear, as entirely correct.

The OPFOR has a modern and highly mechanized support system. Materiel-handling equipment is increasing in both quantity and quality. Pallets, containers, and packages have greatly improved the efficiency of logistics efforts. The OPFOR has increased the depth and range of forward service areas and increased the mobility and range of logistics formations in support of frontline forces. The OPFOR designs logistics operations to continue to sustain forces throughout conflict, adapting as conditions change.

CONCEPT AND PRINCIPLES

OPFOR logistics concepts emphasize centralization and planning at the highest level possible. This relieves lower units of the responsibility to maintain a large organic rear service organization. In comparison to other armies, the OPFOR plans, directs, and accomplishes a greater percentage of logistics support at levels above division. The following paragraphs detail the primary principles of OPFOR logistics support.

Centralized Planning

Logistics resources must be under centralized direction. This requires concurrent operational and logistics planning and coordination with civilian industry and transportation. Centralized planning ensures coordination of civilian war production with military requirements. The bulk of logistics resources are at army group and army levels. The OPFOR believes this contributes to operational and tactical flexibility. Army group and army commanders familiar with the overall operational concept can quickly plan to strip resources from stalled divisions or armies and reallocate them to formations making better progress.

Tailoring Logistics Units

Tailoring allows allocation of logistics resources to the combat elements most essential to mission success. It also allows the OPFOR to assign priorities for logistics support. Subordinate formations receive assets according to the importance of their mission, the nature of the terrain, and the level of

fighting anticipated. Commanders can reallocate not only their own resources in line with changes in the situation, but can take away their subordinates' organic resources if the situation warrants.

Fixed Supply Priorities

The OPFOR places primary emphasis on maintaining the supply of ammunition, fuel, and weapons. Its logistics system operates on the following sequence of priorities:

- Ammunition of all types.
- Petroleum, oils, and lubricants (POL).
- Technical supplies.
- Rations and clothing.

These priorities can change with the evolving combat situation. For example, during an attack, the principal demand is for ammunition. On the other hand, a unit advancing rapidly with no opposition has a greater need for POL than for ammunition.

Delivery Forward

Higher headquarters handle supply requirements for subordinate units. The concept governing resupply is not demand-pull, but supply-push, with resources distributed to subordinate commanders in accordance with priorities established at the higher level. Higher headquarters use organic transportation assets to deliver supplies and services directly to subordinate units. For example, an army headquarters uses its own trucks to deliver supplies to its subordinate divisions. This philosophy ensures economy in the use of both stocks and transport while maintaining the operational commander's intent. The concentration of the bulk of transport assets at higher levels is the base of the forward delivery system.

In emergencies, supply delivery bypasses one level. A division may deliver supplies directly to subordinate battalions, or a brigade may deliver directly to subordinate companies. This does not prevent a unit in a critical situation from using its assets to obtain supplies from higher headquarters. As a basic principle, however, each level must keep up with its subordinates.

Forward Positioning of Support Elements

The OPFOR establishes supply bases, repair facilities, and medical facilities well forward. This helps ensure the flow of supplies from the central logistics level directly to combat units. Forward medical facilities attempt to locate in areas of greatest need. The emphasis is on the quick return of lightly wounded personnel and repairable equipment to combat elements. Personnel and equipment requiring additional attention evacuate to the next-level facility. The divisional teams move on to the next battle area and start again, with army group and army resources following as fast as possible.

Standardization of Equipment

The system of equipment standardization is both extensive and effective. Extensive standardization has reduced the volume of repair parts and improved the ability to repair forward through cannibalization.

Complete Use of Transportation

Logistics planners base their estimates on the use of all movement resources available. The logistics system uses rail transport as far forward as possible to move supplies to army group- or army-level

depots. Other transportation assets, primarily motor assets, move supplies from that point forward. Doctrine calls for using tactical combat vehicles to move additional POL and ammunition stocks, particularly in the preparation phase before offensive action. In an emergency, large-scale air resupply may provide support. The mobility of rear services must match that of combat formations. If logistics support elements fail to achieve this, the OPFOR may sacrifice operational success.

Complete Mobile Support

From division to company, materiel and servicing facilities operate from wheeled vehicles. The OPFOR boxes critical supplies for upload on support and combat vehicles. This system supports a continuous, rapid offensive.

Maintenance of Stock Levels

Units hold supplies as far forward as possible. When consumed, supplies are replaced as quickly as possible. The aim is to keep divisional stocks intact for as long as possible. Thus, when the resupply chain breaks down, the division can continue to fight using its mobile stocks until such time as the army can resume its support. Ammunition and fuel holdings at all levels include an emergency reserve, up to 30 percent of the total. Only the higher commander can authorize the use of the emergency reserve.

Use of All Possible Resources

OPFOR troops forage for food in local areas using captured stocks of food, ammunition, and equipment. Special staffs exist at higher levels to organize their exploitation. Fuel is particularly valuable, and the engineers of the fuel supply service have special pumps to exploit filling stations.

Force Restoration

Units may maintain strength by piecemeal replacement of casualties during combat, particularly when lightly wounded personnel and damaged equipment can return to parent units quickly. Once casualties are sufficient to threaten total loss of combat effectiveness, the unit withdraws to the rear and reconstitutes. Timely replacement of ineffective units and formations in the first echelon is vital to the maintenance of momentum. The commander may choose to withdraw heavily attritted units and consolidate them to form a smaller number of combat effective units.

CENTRAL-LEVEL LOGISTICS

Organization

The joint policy and control agency in charge of logistics support for the armed forces is the Office of the Chief of Logistics within the Ministry of Defense (MOD). The Chief of Logistics, a deputy minister of defense, provides logistics input to plans developed at the highest levels of the State government.

Supply and service functions common to all military units for which the Chief of Logistics has responsibility include--

- Food.
- Clothing.
- Personal equipment.

- Fuel and lubricants.
- Medical and veterinary services.
- Post exchange.
- Transportation planning.
- Research and development.
- Procurement.
- Storage.
- Issue.
- Maintenance of common-use items.

While these areas are the direct responsibility of the Chief of Logistics, other troop component items are the responsibility of other directorates and troop commands.

Logistics Stockpiles

The logistics storage of OPFOR war materials consists of four major categories: state, strategic, mobilization, and mobile reserves. Government warehouses store state reserves consisting of food stuffs, petroleum products, manufactured goods, and strategic raw materials. While these stocks are separate from the military items held in strategic reserve, the OPFOR military will likely use part of these stocks.

Strategic reserves are stocks of supplies and equipment controlled by the MOD. These stocks are similar to stocks in State reserves and not planned for early use in a conflict.

The OPFOR holds mobilization reserves for issue to newly activated, large military units and for resupply to combat units in the early stages of a conflict. A directorate in the MOD determines the level and configuration of these stocks. The directorate also is responsible for accountability and maintenance. The military districts coordinate mobilization measures between military and civilian sectors.

Deployed ground units hold and transport mobile logistics reserves consisting of ammunition, fuel, rations, and equipment. Ground forces maintain these supplies for use in the conduct of ground operations and distribute them to both tactical and support elements. Published norms establish quantities of these supplies. The OPFOR maintains an emergency reserve of supplies, and only the unit commander can order the use of these supplies.

OPERATIONAL LOGISTICS

Operational logistics covers the support activities required to sustain campaigns and major operations. A dependable logistics system helps commanders seize and maintain the initiative. Conversely, attacking the enemy's support system can often threaten or weaken its center of gravity. Strategic concentration, operational maneuver, and the exploitation of operational or tactical success often hinge on the adequacy of logistics and the ability of the force to safeguard its critical lines of communication (LOCs), materiel, and infrastructure.

The OPFOR concentrates the bulk of logistics units at two levels--army group and army. This concentration supports the OPFOR philosophy of streamlined, highly mobile combat elements at division and below. These higher levels maintain the responsibility and the primary means for logistics support.

Army Group

The army group does not have a fixed organization. The OPFOR tailors the army group to meet specific objectives based on forces available, mission requirements, enemy forces, and the geography of the area of operations. Tailoring affects both the number and type of subordinate combat elements and the number and type of assigned logistics units. The logistics operation of the army group is extensive and complex, serving as the major connecting link between the industrial base of the State and forces engaged in combat.

An army group is likely to have one materiel support brigade, consisting of three ammo/cargo transport battalions, one POL transport battalion, and perhaps a tank transport heavy-lift battalion. An army group may receive an entire tank transport heavy-lift regiment. See FM 100-60 for details on logistics units.

Army

The army is the highest-level peacetime combined arms formation. It has a permanent staff plus assigned combat support and combat service support elements. Except for its reduced size, the army logistics base is similar to that of the army group. An army also has one materiel support brigade.

Like the army group, the army rear area uses rail, highway, air, and pipeline when possible. If distances between the army and its subordinate divisions' rear area become great, or the number of units to be supported changes, the OPFOR establishes a forward army logistics base. Multiple transport modes service this forward base as much as possible. Motor transport moves the bulk of materiel from this forward base.

SUPPLY

Supply is an operational function of MOD subordinate directorates, of other directorates, and of troop commands at MOD level that handle special-purpose equipment and supply. The Main Organization and Mobilization Directorate of the General Staff is responsible for management of the uninterrupted supply of all forces in the initial phases of conflict.

During conflict, it is essential to maintain supply stock levels at or near the norm for as long as possible in all formations. This means that, when interdiction, enemy counterattacks or the rapid pace of operations interferes with or temporarily halts operations, formations can continue combat action by using their mobile stocks until supply lines reopen. To achieve this, the OPFOR practices skip-echelon resupply where possible.

For example, army group materiel-support elements, where they can, bypass the army rear and deliver direct to division, or army transport may dump a supplementary reserve of ammunition for an artillery preparation with the division artillery group or on the gun lines. This procedure speeds up the operation of the system by avoiding time-consuming transloading. An army may be resupplied daily and divisions up to twice a day. Ideally, this takes place by night or in conditions of poor visibility. A high rate of advance may necessitate resupply in fair weather conditions.

To simplify logistics planning and to standardize ordering and issuing procedures, the OPFOR divides the major classes of supplies into specific quantities or distribution lots. The OPFOR calls these quantities "units of fire" for ammunition, "refills" for POL, "daily ration" for food, and "sets" for spare

parts and accessories. Planners compute these amounts based on physical conditions or limitations.

Ammunition

Ammunition stockage norms, planned consumption rates, and allocations are based on an accounting unit which the OPFOR terms "unit of fire." This accounting term refers to the fixed number of rounds issued to a particular weapon (weapon unit of fire) or to a combat unit (organizational unit of fire) on the basis of operational employment, technical characteristics, and past experience. A weapon unit of fire may or may not be equal to the number of rounds carried on board a particular system (combat load).

The ammunition officer or his staff calculates expected usage. He orders appropriate amounts by type and keeps a running account of the amounts on hand in units and in depot stocks. The chief of logistics integrates the ammunition order into his supply transport plan. He allocates transportation assets to move ammunition between depots and user units.

The number of units of fire allocated varies with the unit's mission, the enemy situation, and the availability of ammunition. Planners assign a multiple of the unit of fire for weapons before each major operation or phase. The multiple assigned is situation-dependent.

Petroleum, Oil, and Lubricants

Fuel and lubricant supply are second in priority following ammunition, for three major reasons. First, the number of different types of fuel and lubricants that have to be moved is limited compared with the varying types of ammunition. Second, at least 20 percent of the POL can move forward as far as the army rear by pipeline, lessening the dependence on road transport. Also, pipelines are also difficult to interdict, yet they are flexible because it is possible to quickly change the fuel being pumped by simply inserting a separating plug. Third, vehicles can use captured POL stocks.

All available means move POL to army group and army units. At army group, depots maintain a 12-day supply. At army level, POL depots maintain a two- to three-day supply stored in tanks. Depots store oil and lubricants in 150- to 500-liter drums. Logisticians establish advance bases near division rear boundaries when the distance between army depots and first-echelon divisions exceeds 100 km. Divisions carry a three- to five-day stock of POL.

Planners base their computation of fuel requirements on the refill. The refill is the amount of fuel carried in a vehicle's internal fuel tanks. The refill for a unit or subunit is the sum of the refills of the total combat equipment and transport means (subdivided according to types of fuel). For aircraft, armored vehicles, missiles/rockets, and other equipment, which are fitted with fuel tanks or containers integral to their fuel system, the refill is the total amount of fuel they can take on. For wheeled vehicles the refill is the amount of fuel which allows a road range of a predetermined length. If, to do so, the refill exceeds the total capacity of the fuel tank/containers, provision is made for barrels and containers to accommodate the remaining fuel. For motors of special vehicles, generators, and other machines and systems, the refill is the amount of fuel which is required for the operation of these motors for a certain length of time. A division normally carries three refills (including the vehicles' initial fill), with another two to three at army level and two or three times that at army group. As with ammunition, divisions keep up stocks for as long as possible by timely resupply from army group or army.

Tactical pipelines may deliver fuel as far forward as division rear areas. Pipeline brigades or battalions may be at army group and army levels. A brigade can lay about 45 miles of 4-inch pipeline per day,

while a special pipeline battalion can lay up to 19 miles per day.

A recently developed pipelaying machine requires only two operators to lay and couple pipe. Tactical pipelines normally connect to portable fuel tanks. When the pipeline extends over flat terrain, pipelaying units locate mobile pumping stations at approximately 9-mile intervals. In rough or mountainous terrain, the stations would be closer together.

Rations

The OPFOR issues rations based on meals per man per day. Three meals per man per day multiplied by the number of soldiers in a given unit equals a daily ration for that unit. Staff planners at the MOD develop norms for a day's supply of rations. Basic ration norms determine the amount of food products issued to feed one man for a 24-hour period. The chief of logistics is responsible for all ration support. He must provide a timely and uninterrupted supply of rations and technical equipment for the preparation of food under field conditions.

Vehicles

Procurement and resupply of vehicles and end items are the responsibility of the various chiefs of arms and technical services. The system does not have a resupply procedure for unit end items while the unit is tactically engaged. A new unit replaces a unit in combat that has suffered critical losses.

Mobile contact teams fix repairable equipment, returning it to action as soon as possible. This is the only way to replace equipment end items. Contact teams do not replace damaged equipment in the field if it requires more than a few hours work. Under this system, users submit requests to the next higher maintenance unit that supplies the item from stocks on hand. Army group through brigade levels maintain mobile reserve supplies on trucks and replenish these supplies as soon as possible.

Water Supply

Engineers, in cooperation with the medical service, plan water supply in the field. When time permits, they develop a water supply plan. The plan includes a survey, a water supply chart, and a work schedule. The water supply chart indicates which water wells to use, where to dig new wells, and how to deploy water supply stations. The schedule also shows daily water requirements, transportation requirements for hauling the water, and equipment for handling it.

Engineers organize water supply points in the rear of army groups and armies. Under the direction of the local commander, organic engineer units, or the soldiers themselves, set up water supply points for all lower echelons. Engineers carefully calculate the daily requirements for areas with widely scattered water points to determine the amount of transportation needed.

Engineer, Signal, Chemical, and Medical Items

The chiefs of the services from army group to brigade levels procure items peculiar to these services through separate channels. The chief of logistics handles medical supplies through independent channels.

Supply Distribution System

An army group receives its supplies from the national storage depots or in some cases directly from the industrial production line. Army group and army logistics bases are large complexes providing all

combat service support needs.

Army group assets deliver items directly to army depots. In turn, army assets deliver equipment to supported divisions. At division level, supply bases are as close to the ongoing battle as possible. If necessary, logisticians bypass intermediate echelons to deliver items directly to the user.

Supplies move in bulk mainly by rail and pipeline. They also move by road from the strategic rear to the dumps in the operational rear. The conditions of the ongoing battle dictate the location of dumps and stockpiles. Being highly mobile, divisions do not create stockpiles but maintain mobile stocks as far forward as possible.

Air resupply may occur on a small or moderate scale when other methods have failed or when extreme speed is essential. High-value cargo, such as nuclear warheads or NBC protective clothing, have high priority for air supply.

TRANSPORTATION

The various **transportation services** under the MOD are traffic management, railroad operations, railroad maintenance and construction, highway construction and maintenance, highway regulation, and operation of all transport modes including pipelines.

Traffic management for the MOD is the responsibility of the Central Military Transportation Directorate. This directorate is subordinate at MOD level to the Chief of Logistics and is responsible for managing defense transportation requirements using military and civilian resources. The directorate has staff elements down to army level. These elements advise chiefs of the rear on transportation planning requirements.

Extensive use of **motor transport** begins at army group level. At army group and army levels, the OPFOR has a materiel support brigade with three motor transport battalions for ammunition and general cargo plus a POL transport battalion. This massive amount of transport at army and army group levels supports the concept of "delivery forward." This allows commander at these levels the flexibility to mass logistics support assets to engaged divisions. As a result, the division does not have to support itself.

A major strength of motor transport is the great quantity, and extensive use of, trailers. The OPFOR pulls loaded trailers forward to fighting units and exchanges them for empty trailers. They return empty trailers to rear logistics bases for reloading. In this way, fighting units maintain maximum quantities of critical supplies.

Second-echelon unit logistics elements support first-echelon units. This practice increases the transport capability for logistics support to first-echelon regiments and divisions. Logistics bases can locate deeper in army group or army rear areas. This placement reduces congestion in the main combat area, but requires long LOCs that could be targets for enemy air interdiction. To help control the huge numbers of vehicles, the OPFOR places special traffic control elements along march routes at critical points to direct column movement.

MAINTENANCE AND RECOVERY

Forward positioning of maintenance and recovery operations provides effective support for the high-speed tempo of combat operations. Lower-level units have a limited maintenance capability and depend on higher-level maintenance units to provide direct and backup support. The OPFOR designs its maintenance system to accomplish repair as far forward as possible. Repair facilities move near the scene of combat rather than waiting for damaged equipment to be evacuated to them.

In the army's area there are substantial army group assets. The exact numbers depend on the importance of the axis and the severity of the fighting anticipated. These units deploy to locations convenient for the various damaged vehicle collection points that divisions establish. They perform as many repairs as possible before the momentum of the advance demands their forward displacement. Armies and tank armies have their maintenance capabilities augmented by army group as required. Army units can provide mobile detachments for forward operations if necessary.

Maintenance facilities in the field provide repair for--

- Tracked and wheeled vehicles.
- Artillery and ordnance.
- Engineer equipment.
- Signal equipment.
- Chemical equipment.

Fixed and mobile repair facilities extend repair capabilities forward into the battle area and provide service on the above items.

In wartime, the types of repair performed at each level depend on the combat situation. Generally, they are of a lesser degree than in peacetime. The OPFOR classifies three categories of repair: routine, medium, or capital.

Routine repairs, such as replacements, adjustments, or repair of individual components require only a short time to fix. Maintenance personnel do not dissemble major components as part of routine repair; levels above division perform this function.

Medium repairs, include major overhaul of at least two basic assemblies. Brigade or division-level units perform this level of maintenance.

MEDICAL SUPPORT

The OPFOR military medical system provides support to ground forces under the direction of the Military Medical Directorate of the MOD. The directorate supervises distribution of medical equipment and training of medical personnel.

Medical Doctrine

The OPFOR divides the range of medical treatment into three categories. The first category of procedures includes only mandatory lifesaving measures. The second category includes procedures to prevent severe complications of wounds or injuries. The final category of treatment includes procedures

accomplished only when there is a low casualty load and reduced enemy activity.

In anticipation of an overtaxed combat medical support system, doctrine emphasizes the importance of "self-help" and mutual aid among individual soldiers. Each soldier has a packet of field dressings and an NBC protection kit. He also receives a required number of hours of first-aid training each year. The concept of self-help and mutual aid extends beyond the battlefield to casualty collection points and battalion aid stations. Self-help and mutual aid reduces the demands made on trained medical personnel, particularly when the use of NBC weapons results in a sudden and massive influx of casualties.

The expectation of high-speed offensive operations calls for a highly mobile medical support system. Its component units must be capable of repeated forward deployment with a minimum loss of efficiency. Mobility is particularly important for medical support units of battalions and regiments that may redeploy several times during a 24-hour period. Repeated forward redeployment of medical units and continuous rearward evacuation of casualties demand close coordination between medical levels and medical and combat commanders.

The basic principle of combat medical support is multistage evacuation with minimum treatment at each level. From company through army group, each level has specific responsibilities for the care of the sick and wounded. Besides treating the wounded, medical personnel handle virtually all of their own administration, especially at lower levels. As casualties move through the combat evacuation system, medical personnel at each level make effective use of medical facilities by repeated sorting of the wounded (triage). They treat the lightly wounded who can return to combat and those casualties who would not survive further evacuation without immediate medical attention. The OPFOR believes army-level mobile field hospitals should perform major medical treatment.

Medical System

In wartime, each command level of the OPFOR from company to army group has organic medical support units or personnel. At each level, medical support units are subordinate to the combat unit commander and to the next higher level of military medical service. This system responds to the needs of combat units and allows close coordination between medical levels for the treatment and evacuation of casualties.

The system returns as many soldiers to duty as quickly as possible. Apart from emergency life saving treatment, medical personnel give priority to soldiers who can return to action. The OPFOR has designed the system in anticipation of mass casualties that weapons of mass destruction produce. Medical units move forward with the troops they are supporting, setting up facilities in areas where heavy fighting occurs.

Army Group

In addition to the four to six field hospitals supporting army operations, there may be one or two rear hospital bases established in the army group rear base. These comprise the same elements as mobile hospital bases. These hospital bases deploy at or near railheads in different locations. The mobile elements serve as medical reserves, or they may set up new mobile hospital bases if the interval between those operating in the army rear and the army group rear base becomes too large.

Army

Army resources deploy to support the axis likely to see the most casualties. Independent medical detachments reinforce forward divisions, supplementing their effort and easing the problem created by frequent moves by the divisional medical battalion. A further two to four separate medical detachments are medical reserves. Their job is to deal with the sudden influx of mass casualties that could result if the enemy uses weapons of mass destruction.

The army has two to four medical battalions, one or two evacuation battalions. Also operating in the army rear, from 40 to 50 km from the line of contact (at least initially), would be field hospitals from the army group. One mobile hospital deploys in support of every two to three divisions in contact.

Evacuation

At each level, it is the higher echelon's responsibility to collect casualties from the lower. With limited ambulance assets available, divisional companies can only move 80 casualties. Army group and army battalions can move 300 casualties each in one lift. The separate air ambulance brigade can transport 180 casualties.

Most wounded, especially when evacuated back to the army, can expect to be backloaded in empty load-carrying vehicles returning from ammunition runs. From army backwards, ambulances and rail transport are more common. Of course, as with ammunition and POL supply, the OPFOR uses skip-echelon evacuation when possible.

REAR AREA SECURITY

The OPFOR expects any enemy to make an effort to conduct reconnaissance, espionage, and diversionary action in its operational rear. These can be particularly effective in areas where the local population is not sympathetic to the cause. In addition to these threats, the OPFOR anticipates attacks on their areas by airborne and heliborne forces as well as larger-scale attacks by enemy operational maneuver forces.

The OPFOR uses a dedicated rear area security force to counter any threats. Each army group deploys a considerable counterintelligence effort. They can assign up to an entire division for security tasks. The security force is equipped and trained for conventional as well as unconventional warfare. As airborne and amphibious threats grow, there is increasing stress on deploying antilanding reserves, including, or even based on, heliborne units to provide a rapid reaction.

All logistics and communications units are capable of self-defense. The convalescent sick and wounded provide a reserve of manpower for elements near medical locations or second-echelon forces.

Chapter 16
Airborne and Special-Purpose Forces Operations

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The OPFOR views airborne and special-purpose forces as means to carry the battle into the depths of the enemy's position. The General Staff uses these highly mobile forces against strategic forces or for power projection. It may also allocate such forces down to the operational and tactical levels.

AIRBORNE OPERATIONS

The primary theater role of airborne units is to support the rapid advance of a large combined arms force deep into the enemy's operational or operational-strategic depth. Airborne units are an integral part of many operations at army group and army levels. Airborne and heliborne forces are especially critical given the fluidity and rapid tempo that characterizes the modern battlefield. The OPFOR expects to capitalize on the added vertical dimension airborne and heliborne forces provide when working in concert with fast moving operational maneuver groups (OMGs) or forward detachments. Airborne and heliborne forces have the capability to surprise the enemy, rapidly envelop key objectives or exploit targets weakened by the effects of deep fires.

The OPFOR also uses airborne forces as a means of projecting power. Major portions of invasion forces could consist of airborne units. Airborne troops are well suited for such roles. They train for operations in a variety of geographical environments. They also train specifically to establish, defend, and expand an airhead. Their equipment is air-transportable.

To allow flexibility in employment during wartime, airborne forces are directly subordinate to the Supreme High Command, with operational control exercised by the General Staff. Theaters can receive airborne units for strategic operations. Airborne units can be assigned to army groups, armies, and corps for specific operational-depth missions.

MISSIONS

The OPFOR categorizes airborne missions based on the depth and importance of the objective, the size of forces involved, and the level of command of the originating commander. The three categories of missions are strategic, operational, and tactical. The location of enemy forces, the level of the controlling headquarters, the significance of the target, weapons systems capabilities, and geography also determine the scope of the operation. Other factors to consider when deciding how far behind enemy lines to insert an airborne force are the--

- Size of the force.
- Potential for reinforcement of the force.
- State of advance of friendly forces designated for linkup.

Strategic Missions

In wartime, the Supreme High Command establishes strategic missions, which the General Staff controls. The outcome of a strategic mission should have significant impact on the war or campaign. The use of airborne forces in a power-projection role is also a strategic mission.

Airborne forces conduct strategic missions against deep targets. Forces from other arms and services can also participate. Linkup with advancing ground forces may not occur for several days. Since, troops on the ground receive supplies by air drop or airlift, the operation requires substantial air combat and transport support.

Objectives of strategic missions could be national capitals or other administrative-political centers, industrial or economic centers, ports or maritime straits, or air fields. Strategic missions also may establish a new theater or neutralize one member of an enemy coalition.

Operational Missions

Airborne forces are not organic to an army group. However, the higher command may allocate such forces to support an army group in a given operation. Operational objectives include--

- Headquarters or command posts.
- Communications facilities.
- Enemy precision and nuclear weapons.
- Logistics facilities.
- Airfields.
- Ports.
- Bridges and other water or gap crossing sites.

Typical missions can include deception operations, blocking a withdrawing enemy, or enveloping enemy defensive positions.

Tactical Missions

While recognizing the need to limit the use of airborne forces to primarily strategic and operational missions, the OPFOR also recognizes the need for the capability to insert troops to perform missions at tactical depths. A tactical airborne mission could have the same types of objectives as an operational mission. On occasion the army group or army may allocate airborne troops for such missions, but the force is more likely to consist of mechanized infantry troops from a maneuver division. In either case, the units involved would normally rely on helicopters for tactical insertions, rather than fixed-wing aircraft. The primary function of these tactical airborne or heliborne landings in army group and army operations is to cooperate with forward detachments and OMGs in reaching operational objectives.

Heliborne units can perform reconnaissance missions by insertion into the enemy rear area. They may perform rear area security missions, or screen, delay, or defend against an enemy approach to a vulnerable flank. Ambushes, raids, sabotage, and deception operations are examples of other missions suited to heliborne operations. Heliborne units can also lay and clear mines in the enemy rear. A division commander may order and control a tactical mission, but the army commander (and the army group commander if it involves airborne troops) must approve the mission.

AIRBORNE OR HELIBORNE LANDINGS

Airborne landings require many valuable assets. Therefore, only after careful consideration would a commander make the decision to use airborne forces. If other units are capable of fulfilling a given mission, they execute it instead of airborne units. Heliborne landings also require valuable assets but are often more economical than airborne landings.

The use of airborne forces in an operation depends upon whether it would enhance the likelihood of surprise, deep penetration, and rapid exploitation. Also essential is a favorable correlation of forces in the drop or landing zones and the objective area. These criteria, together with the achievement of at least temporary local air superiority and the availability of airborne and airlift assets, constitute the main elements in a planner's decision to conduct an airborne or heliborne operation.

The OPFOR can launch battalion-size landings throughout the tactical depth. The commander usually assigns the landing force an objective within range of OPFOR artillery, and most operations occur during daylight. Linkup with friendly forces is planned to occur within hours of the landing.

Army Group, Army, and Corps Operations

The OPFOR intends to employ airborne forces in support of army group, army, or corps operations. The General Staff places the force under the operational control of the supported commander to ensure airborne objectives support the overall mission of the army group, army, or corps. The supported commander establishes the airborne units' objectives and time of deployment.

Airborne landings in support of army group, army, or corps operations can occur at distances of up to 250 km from the forward edge. This does not mean, however, that an airborne unit will typically be dropped at such great distances forward of ground forces. Many factors can affect the decision of how far forward to insert an airborne force. The size of the force, the potential for reinforcement of the force, anticipated enemy resistance, the air situation, and the projected rates of advance for designated link-up forces are all important considerations. An airborne brigade is the most common size force used to accomplish operational missions.

Military transport aviation allocates air transport support units required for deployment. Either transport aircraft or heavy-lift helicopters or a combination of the two can air-land airborne units or insert airborne battalions. Aircraft of civil aviation can augment military capabilities. Civil fleet equipment consists of some medium- and long-range passenger transports and larger numbers of short-range transports and helicopters. Staging bases and associated airfields are located at distances that protect aircraft and troop concentrations from tactical aircraft and short-range SSMs. Airfields and equipment are camouflaged and concealed against aerial observation, and aircraft are placed in revetted positions at least 200 m apart. Most heliborne operations require at least a squadron of transport helicopters allocated from the army group or army.

Planning and Preparation

Planning considerations for airborne and heliborne operations include the mission, troops and support available, terrain, the depth of the operation, flight routes, air superiority, drop zones (DZs) or landing zones (LZs), surprise, security, and the enemy situation. Deception operations are planned to mislead the enemy as to the true purpose and location of air activity. Given routine readiness conditions, the time required to prepare transport aviation and to plan a battalion or larger airborne mission is, as a minimum, approximately 24 hours. This planning time includes--

- Notification of alert and moving out: 2 hours.
- Preparation of air units: 18 hours.
- Embarking troops and equipment and final aircraft preparation: 4 hours.

When exercising a preplanned contingency or starting from an increased readiness condition, the preparation time is reduced by 5 to 8 hours. The time required to plan for a battalion heliborne assault is similar. Troop embarkation times can be reduced if few or no vehicles accompany the force. The force selected to conduct the assault may require training, and this adds at least one day to the preparation time. To avoid this delay, the OPFOR trains selected battalions in each division for heliborne operations.

Aerial reconnaissance, clandestine agents, sympathizers, maps, signals reconnaissance, long-range

patrols, or air-dropped reconnaissance teams all provide intelligence information for an airborne operation. Reconnaissance of the DZ or LZ, by both air assets and special-purpose forces (SPF), continues throughout the planning and execution stages of the operation. If enemy troops are located in the area, they are attacked and neutralized with air, artillery, or SPF. Reconnaissance takes place when the airborne and heliborne operation is first conceived, when troops are embarked, when the formation is airborne, and while aircraft are en route to drop or landing zones. The enemy armor, artillery, and air threats are of major concern. Reconnaissance activities also occur outside the projected objective area, as a deception measure.

Airborne and heliborne operations require extensive coordination between the committed force and the controlling army group or army headquarters, supporting aviation, and ground maneuver forces. The following principles contribute to success:

- Surprise should be used to advantage. Extensive security measures are necessary in all phases of the operation to prevent early detection and to minimize enemy reaction time. Night airborne operations are a primary means of achieving surprise. False insertions aid deception and surprise when conducting heliborne operations.
- Landings should be in undefended areas or in areas where enemy defenses have been effectively neutralized.
- There must be effective air cover for the en route formation. Suppression of enemy ground-based air defense weapons along the flight route is imperative. Artillery fires at and beyond the line of contact are essential to the support of heliborne forces.
- Airborne assaults receive fire support from air strikes, missile strikes, and artillery, as it advances within supporting range of airborne forces.
- Attack helicopters escort transport helicopters to prepare the LZ before the landing of troops and to provide fire support once the assault force has landed.

Command and Control

A division commander is the lowest level ground force officer likely to order an airborne or heliborne operation. The army group and army would know of and approve the operation in advance.

The commander of the airborne or heliborne force is the commander of the unit forming the basis for the landing force and is responsible for preparing and positioning troops for loading. He shares with the aviation commander the decision to proceed with the landing, based on the assessment of the situation at the DZ or LZ. After the landing, the ground force commander is solely responsible for conducting the operation.

While the ground force commander can plan the scheme of maneuver, final approval of the plan comes from higher authority. The ground force commander follows the operations plan as closely as possible.

Preparation for an airborne or heliborne landing includes the following:

- Determining the composition, strength, and capabilities of the enemy forces in the DZ area (or those near enough to interfere with the landing operations and subsequent attack of the objective).
- Determining the nature of the terrain and condition of the road network.
- Locating natural and manmade obstacles that would interfere with air drop of men and equipment.
- Selecting suitable primary and alternate DZ or LZs.

Conduct of Airborne or Heliborne Operations

A typical DZ is three by four km; a typical LZ may be smaller. An airborne brigade normally receives one primary and at least one alternative DZ. Within a brigade DZ, each airborne battalion has a designated, individual DZ. The commander designates alternate zones for emergency use. Follow-on forces normally use the zones used by the initial assault wave. Heliborne forces use one or more LZs depending upon the situation and size of the assault force. The commander designates at least one alternate LZ.

Air Movement

The OPFOR considers the air movement phase of an airborne or heliborne operation to be its most vulnerable phase. The OPFOR emphasizes the necessity of creating a threat-free flight corridor from the departure area to the DZ or LZ. All along the flight path, fire support assets target enemy air defenses. Fighters and fighter-bombers escort transport aircraft during an airborne operation to protect them from enemy fighters and ground fires. Attack helicopters can escort transport helicopters during a heliborne operation to protect them from ground fires.

Passive defense measures taken during the air movement phase include conducting movement during hours of darkness, using more than one flight route, maintaining radio silence, and flying at low altitudes. The OPFOR will likely use electronic combat measures during air movement, including escort jammers, which suppress enemy air defense and surveillance systems.

Air Drop

Airborne forces normally conduct combat air drops at an altitude of from 150 to 300 m. They emphasize the necessity of dropping at low altitude to minimize the amount of time individuals are in the air. Low-altitude drops also increase the likelihood that a unit's personnel and equipment would land close together.

Heliborne Landing

Forces inserted by helicopter have the advantage of arriving on the LZ as organized units. To minimize their vulnerability to ground fires, helicopters will remain on the ground in the LZ only long enough to disembark troops. If the LZ is under effective enemy fire, the landing force commander, after consulting the aviation commander, may divert the force to an alternate LZ.

Drop Zone/Landing Zone Procedures

If the main body of an airborne force lands during daylight hours, personnel move directly to their predesignated attack positions. However, if the force lands at night, personnel assemble before occupying predesignated attack positions. If the DZ is not on the objective, personnel assemble in battalion assembly areas. Personnel dropped during the hours of darkness assemble as companies and move to battalion assembly areas.

The air drop or landing and reorganization phase are the second most vulnerable period in an operation following the air movement phase. The DZ must be cleared before an enemy force arrives. If the DZ is under strong enemy attack, personnel assemble and move immediately to the perimeter to establish defensive positions. Personnel use any available light armored vehicles to reinforce defensive positions, and do not sort out the vehicles until after repelling the enemy attack. If the DZ is not on the objective

and units assemble first, they try to avoid combat with enemy units. If required to actively defend against an air attack, at least one entire platoon per company or one company per battalion is responsible for the mission. For a planned follow-on air landing, the brigade's initial assault force leaves a rear detachment at the drop zone. This detachment provides security on the drop zone for the landing of the follow-on force.

In the mountains, DZs might be closer to the objective and located on several sides of an objective to compensate for decreased speed of movement. If DZs are not near the objective, the OPFOR plans to move only on roads to reach the objective area. Finally, the OPFOR relies more on radio communications in the mountains even though radios are less reliable in such regions.

The heliborne force lands on its objective if possible. If it is not on the objective, the LZ should be as close as possible but outside of the direct fire range of the objective. After landing, the heliborne assault force organizes rapidly in an assembly area.

Movement to Objective

Speed and security are the primary concerns during movement to the objective. If the airborne force is moving at night, it can use established road networks to reach the objective before dawn. If movement is during the day, the unit moves cross-country using terrain features to provide concealment when possible. During movement, the airborne force maintains radio silence until making contact with the enemy, with only the commander transmitting messages.

Since, the information received before departure is perishable, reconnaissance missions during the ground movement phase are extremely important. The reconnaissance is conducted by teams from the reconnaissance company of the airborne brigade and the reconnaissance platoon of an IFV-equipped airborne battalion or by a designated platoon of an airborne battalion. Reconnaissance teams may have engineer or chemical defense elements attached.

Rapid execution is especially important to the heliborne force. The force departs the assembly area in pre-battle formation, with reconnaissance out front and on the flanks. The assault force will attack the target as quickly as possible to gain surprise and maintain momentum.

Offense

Once on the ground, offensive tactics of IFV-equipped airborne forces are similar to those of mechanized infantry forces. Before the attack, supporting units deploy to provide maximum support. Airborne forces at the final objective attack to destroy the enemy or to seize control of the enemy-held area or facility. The heliborne force can be reinforced with combat engineers, antitank weapons, artillery, and chemical defense troops. The force will usually attempt to attack its objective from several directions at once. A heliborne force is generally assigned an objective less heavily defended than that assigned to an airborne force.

Defense

Once the force has seized an objective, it must defend that objective until the arrival of ground forces. Usually, the force establishes a perimeter defense. In some cases the terrain and the enemy’s situation may permit establishing a defense in depth, with a small mobile reserve. A number of factors influence the capability to remain on the objective: days of supply on hand, a secure air resupply corridor, the

availability of air support, and the enemy's ability to respond to the envelopment. Heliborne forces, especially those drawn from the regular ground forces, have little sustainability and their time on the objective should not exceed from four to six hours before linkup occurs.

Linkup

Airborne or heliborne units either await a linkup with friendly forces or, when necessary, fight their way back to friendly lines. The rule of thumb is that the probability of overall success is greater the sooner the linkup occurs. To accomplish linkup, the unit sends its reconnaissance element to meet advancing ground force units. The reconnaissance element provides information on the best approaches into the area, the security situation on the objective, and the enemy situation. A linkup with ground forces normally completes the mission of an airborne or heliborne force. Once linkup occurs, operational control of the unit returns to the parent headquarters.

SPECIAL-PURPOSE FORCES OPERATIONS

The OPFOR maintains a broad array of special-purpose forces (SPF) that the Main Intelligence Directorate of the General Staff controls. The SPF conduct a variety of sensitive missions, including covert action abroad. In wartime, SPF may operate far behind enemy lines for extended periods of time. They would conduct reconnaissance, sabotage, and attacks on a variety of military and political targets. The OPFOR SPF are as highly trained as any in the world. Expert in the use of a variety of weapons, demolitions, and mines, they are an effective and flexible force, capable of conducting a wide variety of missions.

CONCEPT

The SPF conduct operations to achieve military, political, economic, and/or psychological objectives or achieve tactical goals in support of strategic objectives. Such operations may have either long-range or immediate impact on the enemy. The OPFOR concept of SPF operations includes special reconnaissance, direct action, and diversionary measures.

Special Reconnaissance

The OPFOR defines special reconnaissance as a type of intelligence-reconnaissance activity conducted for the purpose of undermining the military, political, and economic potential and morale of a potential or actual adversary. Its principal tasks are to--

- Obtain intelligence on military and economic installations.
- Destroy or disable those installations.
- Organize sabotage, subversion, and acts of terrorism.
- Train rebel forces.

In peacetime or during war, military and civilian intelligence services organize special reconnaissance activities; intelligence agents and SPF execute them.

Direct Action

Direct action involves an overt, covert, or clandestine attack by armed individuals or groups to damage or

destroy high-value targets or to kill or seize a person or persons. Examples of direct-action missions for SPF units are assassination, abduction, hostage taking, sabotage, capture, ambushes, raids, and rescue of hostages (civilian and military). Implementation of direct-action missions depends on the size of the enemy's defenses, the element of surprise, and the assets available to the SPF unit commander.

Diversionary Measures

The term *diversionary measures* refers to direct actions of groups or individuals operating in the enemy's rear area. These measures include the destruction or degradation of key military objectives and the disruption of C^2, communications, junctions, transport, and lines of communication (LOCs). They could include misdirecting military road movement by moving road markers and generating false communications. They also involve the killing personnel, spreading disinformation, destruction of military hardware, and other actions to weaken the morale and will of the enemy by creating confusion and panic. Diversionary measures may contribute to the conduct of information warfare.

MISSIONS

SPF operations are part of the concept of deep operations. The SPF's simultaneous attack of both front and rear areas to disrupt or destroy enemy forces includes the following basic missions:

- Neutralize weapons of mass destruction and precision weapons.
- Attack air defense facilities and airfields.
- Disrupt lines of communication.
- Attack C^2 facilities.
- Exploit surprise to disrupt defensive actions.
- Undermine morale and spread panic.
- Disrupt enemy power supplies and transportation networks (power utilities, POL transfer and storage sites, and internal transportation).
- Conduct reconnaissance for future ground force operations or for airborne and/or amphibious landings.
- Organize local guerrilla or partisan groups.
- Prevent efficient movement of reserves.
- Assassinate important political and military figures.
- Provide terminal guidance for attacking aircraft, missiles, and precision weapons.

In addition to these basic missions, SPF may have specific missions in peacetime, transition to war, and wartime

Peacetime Missions

During peacetime, the Main Intelligence Directorate carefully coordinates reconnaissance programs geared to meet the intelligence requirements of the OPFOR in war. Aside from SPF troops, it maintains agent networks in the target country to support SPF operations. Some of these agents actively engage in subversion; others are "sleepers," prepared to act on call in time of war. The OPFOR trains agents to operate as political agitators, intelligence collectors, and saboteurs. The agents establish residence near

military targets such as airports, missile bases, arsenals, communications centers, logistics centers and depots, and routes used for troop movements. Just before the beginning of hostilities, airborne SPF troops link up with agents already operating in the target area.

Clandestine SPF sabotage agents do little intelligence collection. Their job is to assimilate into the local culture, establish residences near transport and power installations, and when ordered, emplace explosive charges in preselected targets.

Another important task for clandestine SPF sabotage agents in peacetime is to acquire houses and plots of land to prepare safe areas where sabotage teams (civilian and military) can find refuge after landing behind enemy lines in times of hostilities. These places are usually in the country, forested areas near the sea, or in the mountains.

Agents provide incoming sabotage and assassination teams with safe areas, motor transport, fuel, and supplies. They then guide the teams to their objective. Both intelligence and sabotage agents come under the command of senior army group intelligence officers. These intelligence officers can transfer agents from one category to the other at any time or order them to fulfill both roles.

Transition to War

Before hostilities begin, SPF conduct clandestine operations in the target area. This increases the probability of destroying key targets well before enemy rear area security measures tighten. This is the most critical period because clandestine elements can efficiently use the enemy's lack of awareness as an opportunity to disorganize and disrupt the local population. Missions generally include the following:

- Conduct strategic and operational reconnaissance.
- Train and assist guerrillas operating in foreign countries.
- Organize local guerrilla or partisan groups.
- Weaken the target country’s military capabilities or will to fight through either subversion or direct action.
- Assassinate key military and political figures.

The General Staff directs the planning of SPF wartime missions, which form an integral part of combined arms operations. Intended to support theater- as well as army group- or fleet-level operations, SPF are capable of operating throughout enemy territory.

Wartime Missions

SPF plays an important role in support of both the offense and defense. They may perform their missions separately, in support of strategic objectives, or in support of an army group or army operation. Missions generally include some of the following:

- Conduct deep reconnaissance operations.
- Conduct direct action along strategic or operational axes, including ambushes and raids.
- Destroy critical air defense systems and associated radars.
- Support follow-on conventional military operations.
- Assist foreign guerrillas to prepare for offensive operations.
- Provide communications, liaison, and support to stay-behind partisan operations in the defense.

The OPFOR conducts operations in the enemy's rear to undermine the enemy's morale and to spread panic among the civilian population and the political leadership. Refugees can hamper deployment, defensive maneuver, and logistics.

ORGANIZATION

The Main Intelligence Directorate of the General Staff assigns SPF to strategic and operational commands. Though organized into brigades and battalions, these forces would infiltrate and fight as small teams composed of from 5 to 12 men. (See FM 100-60 for details on SPF organization.) A typical team would consist of an officer as leader with a warrant officer or senior sergeant as second in command. Other members of the team receive training as radio operators and weapons, demolitions, and reconnaissance specialists. The size and composition of teams are not fixed, but flexible according to the mission.

Once deployed, the teams would conduct reconnaissance and tactical operations against various targets (such as ship and submarine bases, airfields, command and intelligence centers, communications facilities, ports and harbors, radar sites, and nuclear weapons facilities). The SPF have the potential to achieve results disproportionate to their size against a list of critical and often vulnerable, targets.

SPF Brigades (General Staff or Theater)

If the General Staff creates a theater headquarters, it might place an SPF brigade under the operational control of the intelligence directorate at that level. However, this brigade remains under the command of the General Staff's Main Intelligence Directorate.

The OPFOR would employ SPF throughout the theater for reconnaissance and to disrupt communications, destroy bridges, seize choke points, and direct attacking aircraft, missiles, and precision weapons to prime targets. SPF structure can vary from one theater to the next depending on the command's requirements and the number of targets. The General Staff would also reserve some SPF brigades under its own control to engage strategic-level targets located beyond the range of theater- or army group-level SPF.

SPF Brigade (Army Group)

The army group-level SPF brigade conducts operations in support of operational-strategic objectives and army group military offensive and defensive operations. In wartime, SPF brigades would deploy throughout the enemy operational and operational-strategic depth. This normally means inserting elements (by parachute or other means) from 500 to 1,000 km behind enemy lines. Initially, SPF would focus on targets to the depth of the army group’s subsequent mission, which generally would be the rear of the enemy army group (from 600 to 800 km deep). If the army group must then conduct a second mission into the enemy’s communications zone, SPF activity could extend to 1000 km or beyond.

SPF Battalion (Army)

The army-level SPF battalion’s primary missions might include conducting reconnaissance, creating confusion (diversionary measures), and destroying targets. The battalion structure is flexible and can change according to the mission. A SPF company might operate as a single unit, when conducting a sabotage mission into the enemy's rear areas, or it can divide into smaller forces. It normally inserts

elements (by parachute or other means) from approximately 100 to 500 km behind enemy lines. It is assigned missions which target items of special interest to the army commander. This means that the focus of SPF activity is initially to the depth of the enemy corps (250 to 350 km).

Glossary

AA - antiaircraft

AAG - army artillery group

abn - airborne

AC - army corps

ACE - aviation control element

ACRV - artillery command and reconnaissance vehicle

AD - air defense

AG - artillery group

ARAG - army rocket artillery group

ARM - antiradiation missile

ALCM - air-launched cruise missile

alt - alternate

AM - amplitude modulation

amphib - amphibious

AP - antipersonnel

APC - armored personnel carrier

arty- artillery

ASM - air-to-surface missile

AT - antitank

ATGM - antitank guided missile

aux - auxiliary

bde - brigade

BLUFOR - Blue Force

bn - battalion

BRAG - brigade artillery group

btry - battery

C^2 - command and control

C^4I - command, control, communications, computers, and intelligence

CA - combined arms

CAG - corps artillery group

CINC - commander in chief

CMTA - commander of missile troops and artillery

COF - correlation of forces

COMMZ - communications zone

COMSEC - communications security

COR - chief of reconnaissance

CP - command post

CPV - combat potential value

CRAG - corps rocket artillery group

CS - combat support

CSS - combat service support

DAG - division artillery group

det - detachment

DF - direction-finding

div - division

DZ - drop zone

EC - electronic combat

ECCM - electronic counter-countermeasures

ech - echelon

ECM - electronic countermeasures

engr - engineer

EPM - electronic protection measures

ESJ - escort jamming

EW - electronic warfare

ESO - electromagnetic spectrum operations

FAC - forward air controller

FAE - fuel-air explosive(s)

FD - forward detachment

FM - frequency modulation or field manual

fwd - forward

GCI - ground-controlled intercept

HE - high-explosive

HET - heavy equipment transporter

helo - helicopter

HF - high-frequency

hr - hour

HUMINT - human intelligence

HQ - headquarters

ICBM - intercontinental ballistic missile

IFV - infantry fighting vehicle

IR - infrared

IW - information warfare

kg - kilogram(s)

km - kilometer(s)

LC - line of contact

LD - line of departure

LGP - laser-guided projectile

LOC - line of communications

log - logistics

LOS - line-of-sight

LZ - landing zone

m - meter(s)

MA - mechanized army

MC - mechanized corps

mech - mechanized

MIBN - mechanized infantry battalion

MIBR - mechanized infantry brigade

MID - mechanized infantry division

mm - millimeter

MOD - mobile obstacle detachment or Ministry of Defense

MRL - multiple rocket launcher

MSD - movement support detachment

NBC - nuclear, biological, and chemical

NOE - nap-of-the-earth

OMG - operational maneuver group

OPFOR - Opposing Force

POL - petroleum, oils, and lubricants

PWP - plasticized white phosphorus

recon - reconnaissance

regt - regiment

RFC - reconnaissance-fire complex

RPV - remotely-piloted vehicle

RSC - reconnaissance-strike complex

SAR - synthetic-aperture radar

SAM - surface-to-air missile

SATCOM - satellite communications

sep - separate

SLAR - side-looking airborne radar

SLCM - submarine-launched cruise missile

SOJ - standoff jammer/jamming

SP - self-propelled

SPF - special-purpose forces

SSJ - self-screening jamming

SSM - surface-to-surface missile

STANAG - standardization agreement

TA - tank army

TBN - tank battalion

TBR - tank brigade

TC - tank corps

TD - tank division

TELAR - transporter-erector-launcher and radar

tk - tank

TRADOC - (U.S. Army) Training and Doctrine Command

UAV - unmanned aerial vehicle

U.S. - United States

VEESS - vehicle engine exhaust smoke system

VHF - very-high-frequency

WMD - weapons of mass destruction

WP - white phosphorus

References

REQUIRED PUBLICATIONS

These required publications are sources that users must read in order to understand this publication fully.

Field Manuals

FM 100-60, *Armor- and Mechanized-Based Opposing Force: Organization Guide*. 16 July 1997.

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By Order of the Secretary of the Army:

DENNIS J. REIMER
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
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