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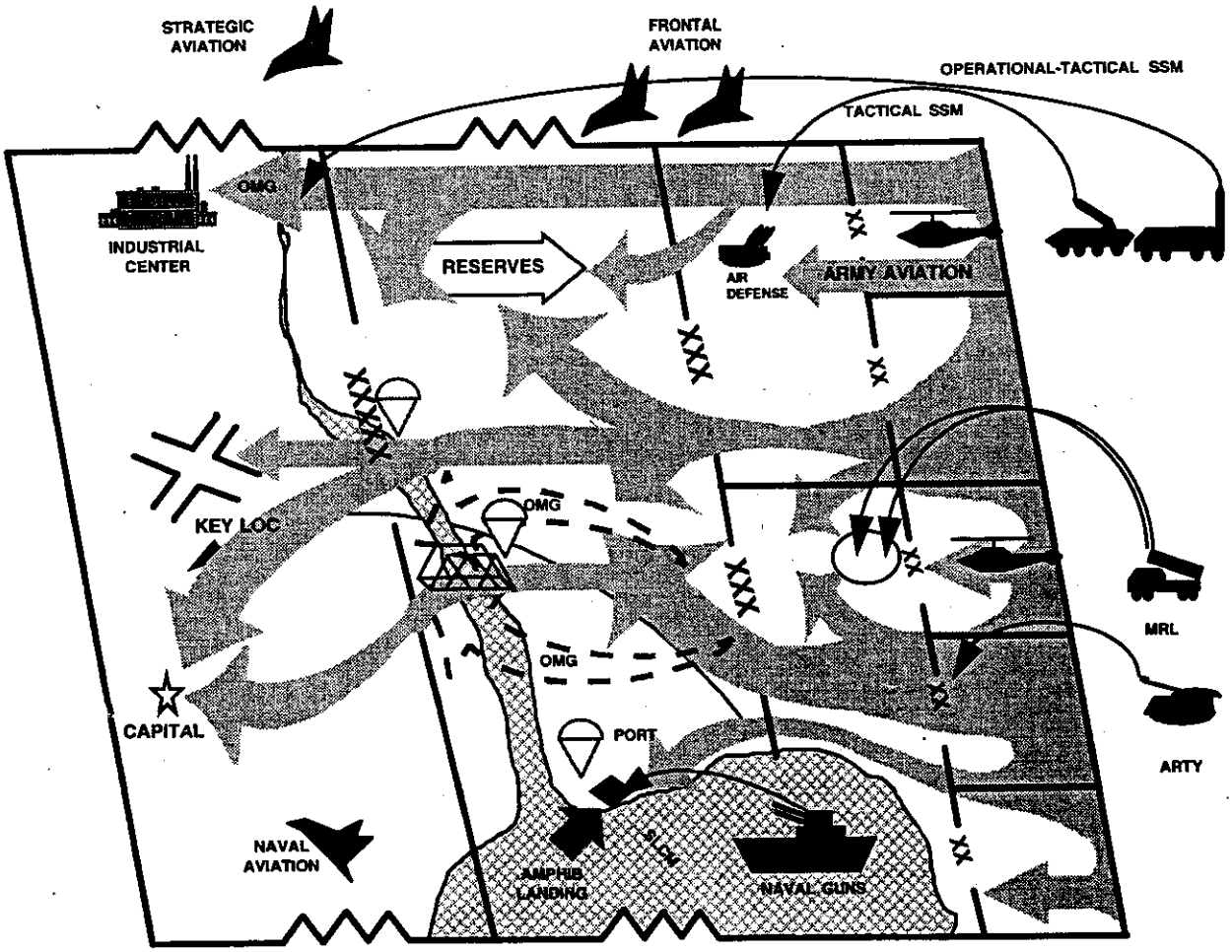
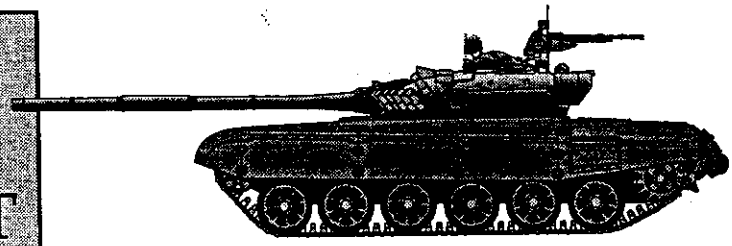
U.S. Army Training and Doctrine Command



HEAVY OPPOSING FORCE (OPFOR) OPERATIONAL ART HANDBOOK



TRADOC
Deputy Chief of Staff for Intelligence

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DEPARTMENT OF THE ARMY
HEADQUARTERS
U.S. ARMY TRAINING AND DOCTRINE COMMAND
Deputy Chief of Staff for Intelligence (DCSINT)
Fort Monroe, Virginia 23651-5000

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Training

Heavy Opposing Force (OPFOR) Operational Art Handbook

Preface

This handbook is the third in a series of six Training and Doctrine Command Pamphlets that documents the capabilities-based OPFOR model. The capabilities-based OPFOR model will become the basis for the forces and doctrine used by the OPFOR units at the Combat Training Centers (CTC) and in the TRADOC Common Teaching Scenario.

The proponent for this pamphlet is the TRADOC Deputy Chief of Staff for Intelligence. This pamphlet serves as the **coordinating draft** for the handbook's final publication as a Department of the Army Information Pamphlet. Users are encouraged to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to the TRADOC ODCSINT, Threat Support Division, ATTN: ATZL-CST, Fort Leavenworth, Kansas 66027-5310. Suggested improvements may also be submitted using DA Form 1045 (Army Ideas for Excellence Program (AIEP) Proposal).

Unless otherwise stated, whenever the masculine gender is used, both men and women are included.

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Introduction

Concept

This Operational Art handbook is one in a series of six Training and Doctrine Command Pamphlets which documents the capabilities-based Opposing Force (OPFOR) model. This model was developed to provide a flexible training threat which can be tailored to represent a wide range of potential threat capabilities and organizations. The model features a heavy and a light OPFOR package, each containing three documents: an organization guide, an operations handbook and a tactics handbook.

The capabilities-based OPFOR model represents a break from past practice in two principal respects. First, while the heavy and light packages are based on the doctrine and organization of foreign armies, they are not simply unclassified handbooks on the forces of a particular nation. The OPFOR packages are composites which were deliberately constructed to provide a wide range of capabilities. Second, the packages are not associated with a fixed order of battle but, rather, provide the building blocks from which a large number of potential orders of battle can be derived.

The capabilities-based OPFOR model will become the basis for the forces and doctrine used by the OPFOR units at the Combat Training Centers (CTC) and in the TRADOC Common Teaching Scenarios. The heavy and light packages were designed to accommodate the existing CTC OPFORs at the time of publication with relatively minor changes but have the flexibility to adapt to the changing training requirements of the force-projection Army.

Heavy OPFOR Package

The Heavy OPFOR is based in part on the military forces of the Former Soviet Union (FSU), with a well-documented military doctrine. While Russia and other countries emerging from the FSU may modify that doctrine, it will continue to be the basis for their doctrines and those of numerous other countries whose military forces have been patterned after those of the FSU. Organizationally, the Heavy OPFOR takes a "building block" approach, which provided a great deal of flexibility.

Heavy OPFOR Operational Art Handbook

The Heavy OPFOR Operational Art Handbook is the third volume of the OPFOR series of handbooks. This handbook provides the customer with an operational overview of the Heavy OPFOR. The topics covered in the handbook include: military thought, strategic operations, offensive and defensive operations, troop control, reconnaissance, artillery support, air defense, engineer support, REC operations, NBC and smoke, and logistics, airborne and special purpose forces.

Heavy Opposing Force (OPFOR) Operational Art Handbook

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Chapter 1
Military Thought

OPFOR planners have developed a very scientific approach to the study of war. This study includes comprehensive analysis of all aspects of human activity applied to war. This approach plays an important unifying role within the military structure of the OPFOR and its allies. The OPFOR functions within a framework designed to systematize and categorize 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 below.) This chapter includes definitions of basic OPFOR military terminology; it outlines the basic theories and doctrine espoused by the OPFOR; and discuses key concepts that strongly influence the application of OPFOR military thought.

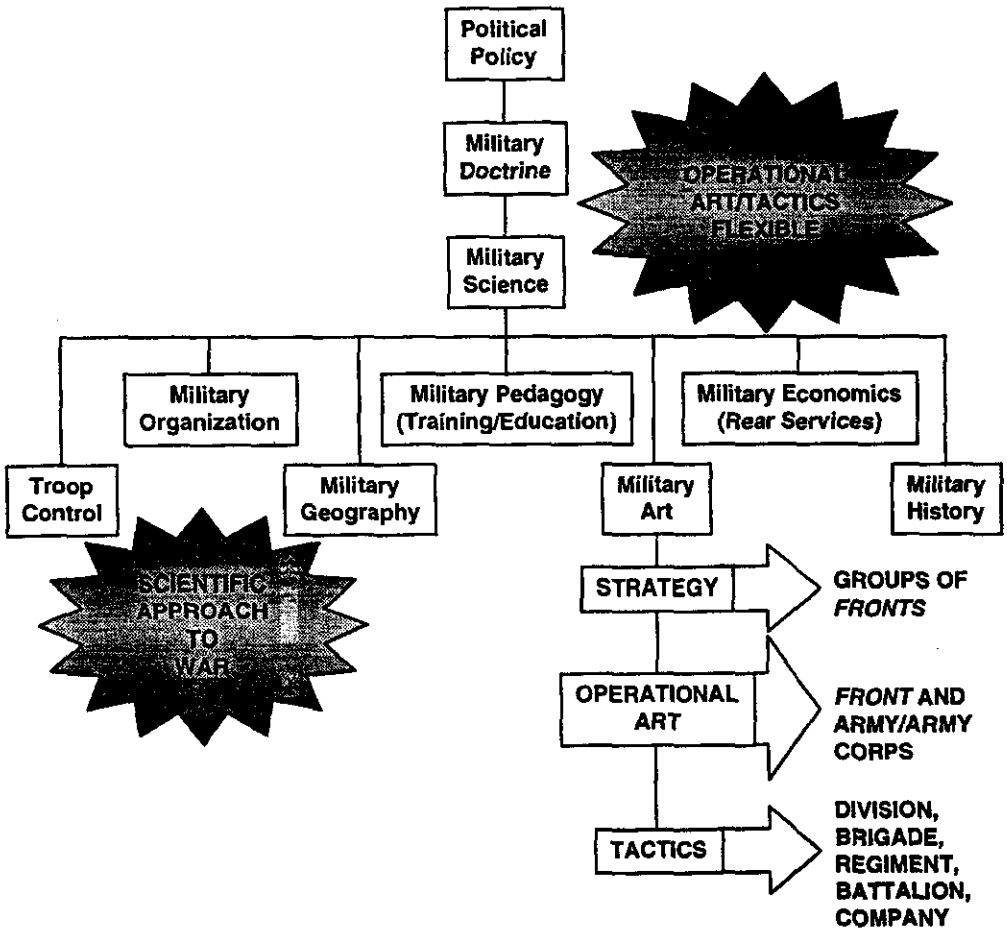

Figure 1-1. Hierarchy of OPFOR military thought.

WAR AND ARMED CONFLICT

OPFOR theorists differentiate between war and armed conflict. War is the more comprehensive of the two; the OPFOR concept 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 may draw from all of these variables to achieve political and military victory in war. Management of the war effort resides with the political leadership.

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

Scientific Approach to War

The OPFOR's scientific approach to war and armed conflict depends heavily on its calculations of the **correlation of forces and means (COFM)**. Such correlations are the basis for its laws of war and laws of armed conflict. The OPFOR views these **laws** as objective and independent of the will and consciousness of the people. The OPFOR believes that these laws determine the course and outcome of a war or armed conflict to the extent that each side is in congruence with them. Although these laws are objective, they are subject to different interpretations. The subjective interpretations of these laws comprise the principles of military art.

COFM 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 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 qualitative and quantitative comparison of weapons, morale, materiel, and the combat situation. At both levels, the COFM is a practical tool for determining the likelihood of victory or defeat in war and armed combat. 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.

Future Battlefield

Future wars will be fought by smaller but more lethal armies. High-precision weapons, high speed maneuver platforms, information warfare systems, and battlefield automation will impact how the OPFOR fights. Flexibility will become increasingly important on the fast-paced, fragmented battlefield of the future. More importance will be attached to joint and multi-national operations, and to a continuous, multi-dimensional combined arms approach to the conduct of warfare.

The OPFOR anticipates a battlefield in which there will be no recognizable frontline. The flanks will not be secure and no rear areas will be safe. Combat will spread over an area of considerable width and depth, with the forces of both sides inevitably intermingled.

In addition, the pace of technological change is accelerating. As a consequence, the intervals between succeeding generations of

weapons systems are growing shorter. Accordingly, OPFOR military theoreticians argue that operational art must not concern itself merely with the weaponry of today. It is vital to forecast developments and adjust concepts to meet the demands of future war.

The OPFOR can influence the battle well beyond the tactical zone. Air power and operational missiles can deliver massive payloads accurately throughout the enemy's operational depth. Heliborne troops can help convert tactical into operational success. Similarly, airborne forces, possessing increased firepower and ground mobility, inserted deep into the enemy rear, can help convert operational into strategic success.

Combat, the OPFOR maintains, will become faster moving and nonlinear in nature. There will be even more stress on tempo and maneuver, and meeting battles and engagements will assume even greater frequency compared with attacks against a defending enemy. Of great significance is the OPFOR's belief that the distinction between the offensive and the defensive will become steadily more blurred and artificial. The defender will, in the future, have the opportunity to seize the initiative from the outset by striking the attacker as he moves forward, or even in his assembly areas. Deep strikes may so disrupt the attacker and so alter the COFM that the defender may be able to launch an immediate counteroffensive, destroying the enemy in a meeting engagement. Similarly, a defender threatened with encirclement may be able to launch effective counterattacks against the flanks of encircling enemy formations. He may also attack enemy second echelons moving up to complete his destruction. This may place him in a position to transition to the counteroffensive.

The OPFOR concludes that offensive and defensive operations will no longer be seen in their "pure" forms. Attacking forces may, in a short space of time, suffer such heavy casualties that they lose the initiative and have to go onto the defensive. The defender must rely more on maneuver and offensive action to achieve the decisive results that are now within his grasp. Moreover, the transition from one type of action to another may take place much more rapidly than ever it did in the past.

MILITARY DOCTRINE

Military doctrine is the highest level of OPFOR military thought. It is the State's officially accepted system of views on the nature of future war and the use of the armed forces. Formulating OPFOR military doctrine is a continuous and evolutionary process. Doctrine is based on the OPFOR's political ideology, national security interests, threat perceptions, foreign policy, economic and military strengths, resources and geography, history and science and technology. Military doctrine has two closely interlinked aspects: the political and the military.

Political Aspect

This aspect of military doctrine brings together politics and military policy in the defense establishment. It 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.

Military Aspect

The military aspect conforms to the political aims. It encompasses the following elements pertaining directly to the OPFOR:

- Organizational development.
- Training.
- Combat readiness.
- Equipment types and numbers.
- Further development of military art.
- Improvements in troop control.
- Research and development priorities.

Cyclical evolutionary change in the OPFOR's military doctrine has occurred and will continue to occur. 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; the manpower, facilities, and methods for conducting operations by means of armed forces; and their comprehensive support. It is the study and analysis of the diverse material and psychological phenomena of armed combat. Its purpose is to develop practical recommendations for victory in war. Basically, military science examines all military affairs--past, present, and future. Military science categorized military knowledge along functional lines into various theories. These are: military art, military organization, military geography, military history, military training and education, military economics, and troop control. The OPFOR regards the theory of military art as the most important. Thus, military art is the basic 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. The three components of military art are each normally related to a specific level of combat activity:

- Military strategy (national- and theater-level).
- Operational art (*front*- and army/army corps-level).
- Tactics (division-level and below).

These components are 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. Thus, they apply in varying degrees of importance to tactics, operational art, and strategy. There are also particular principles that apply to each level alone. 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.

- High combat readiness.
- Surprise.
- Aggressiveness and decisiveness.
- Persistence and initiative.
- Combined arms coordination and an increase in joint operations.
- Decisive concentration of forces.
- Deep battle or deep operations.
- Exploitation of moral-political factors.
- Firm and continuous troop 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 may be capable of doing. However, the principles serve as a basis from

which any examination of OPFOR operations and tactics must start.

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 and means to achieve these missions. Within the OPFOR troop control 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. This also includes the civilian population.

Relationship to Doctrine

Military doctrine and military science are fundamentally interrelated and interdependent. OPFOR military doctrine governs the nature of future war, and the means for prosecuting such a war. During armed conflict, however, doctrine loses its peacetime preeminence to strategy, which is the highest level of military art. Military strategy, like military doctrine, is formulated and approved at the highest military and civilian leadership levels. Military strategy concerns both theory and practice. Therefore, the theoretical arguments of strategy influence military doctrine and its scientific evolution. At the same time, strategy directly implements doctrine. In wartime, future-oriented military doctrine drops into the background. Strategy, not doctrine, governs actual armed conflict.

Operational Art

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

For the ground forces, operational art generally refers to operations at *front* and army or army corps levels. However, operational art is not limited to wartime. It also includes those actions needed to prepare the forces adequately during peacetime. This preparation involves such activities as determining and acquiring improved means and methods of reconnaissance, logistics, and troop control. Practitioners of operational art seek answers to these problems through such diverse means as training, mathematical modeling, and computerization of field headquarters.

Tactics

Tactics concern the refined laws and principles of actual combat by military forces at division level and lower. The OPFOR term **subunit** applies to battalions and lower; **unit** equates to regiment or independent battalion level; and a **formation** is a division or brigade. General tactics study the laws of combined arms combat. Ground force tactics constitute the basis for general tactics.

The OPFOR believes tactics relate directly to combat. Thus, there will be specific tactical principles for each type of unit, weapon, and situation. Tactics change most rapidly to conform with changes in weapons.

However, tactics are inseparably linked with the other components of military art. As such, military tactics occupy a subordinate position with respect to operational art and strategy. It strives to achieve the goals set for it by operational art, in the interests of strategy. (For more information see the Heavy OPFOR Tactics Handbook)

Interrelationships

Separating OPFOR tactics from operational art is often difficult; the maneuver divisions are the tactical maneuver elements that achieve the operational missions of armies and *fronts*. The overriding goal of the combined arms offensive is to turn tactical success into operational success rapidly with 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 conduct operations. First-echelon divisions usually pursue tactical missions in the enemy's tactical depth; armies, normally using their second-echelon divisions, must achieve operational missions in the enemy's operational depth. (See Figure 1-2.)

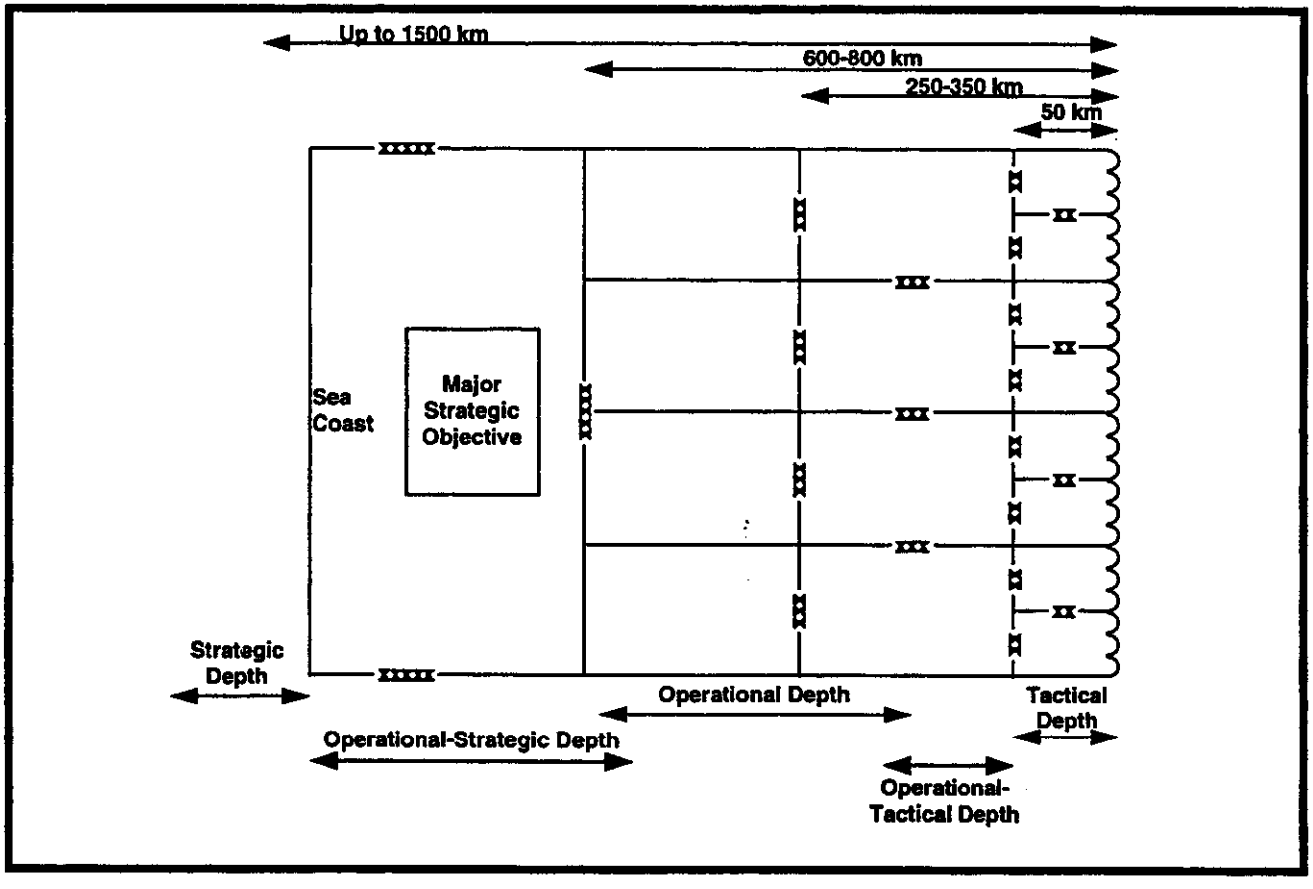

Figure 1-2. Tactical, operational, and strategic depths.

PRINCIPLES OF OPERATIONAL ART

Operational art is not simply a matter of moving forces to seek out and engage in operations. It is a matter of using maneuver to defeat the enemy. Operational art deals with the disruption of the enemy's cohesion on a large scale, with depriving him of the ability to react effectively to changes in the situation, and with 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. Several principles of operational art have been developed by the OPFOR to aid in the achievement of this goal.

The OPFOR principles of operational art do not differ significantly from the published principles of other armies. These principles of operational art are not constant. A major technological development, 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 operations 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.

Speed

Speed of advance is an important principle with high rates of advance regarded as an indicator of success. The importance of speed, and thus time, in modern war cannot be over-emphasized. 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. There is no clearly defined line of safe rear areas. 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 the 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 the enemy command and control system.
- Paralyze the will of enemy commanders.
- Make organized resistance impossible.

Flexibility

Even the most developed plans can and do go wrong in war. Commanders are therefore encouraged to 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. A great deal of effort is being put into attempts to streamline troop control procedures.

Concentration of the Main Effort

A formation that dissipates its forces and means equally across the entire frontage can not achieve victory; this is equally true of the offense and in the defense. **Concentration of the main effort** 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, through the combination of dispersion, concentration, deception, and attack. 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 high-precision weapons. This, too, puts a high premium on surprise and preemption. It also means that concentration should be seen more in terms of the massing of strikes by dispersed reconnaissance-strike and -fire complexes, rather than the physical massing.

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 interlinked 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. Even with modern advances in reconnaissance and intelligence collection capabilities, OPFOR commanders feel 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.

Maskirovka

To achieve surprise, the OPFOR employs an organized *maskirovka* plan. This includes elements of camouflage, concealment, and general deception techniques. The OPFOR's ultimate deception goal is to mislead the enemy about--

- The presence and position of troops (forces).
- Their composition, combat readiness, and actions.
- The plans of the command authority.

The simultaneous use of deception practices against all hostile reconnaissance and intelligence-gathering assets achieves the greatest effect.

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 four basic groups:

- Special combat operations.
- Protection against weapons of high destructive potential.
- Maintenance of combat readiness.
- Restoration of combat effectiveness.

The OPFOR believes that the most effective 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 or battle. This coordinated effort depends on effective and reliable troop control. The combat roles of many diverse elements must be closely coordinated to ensure the mutual and complementary support of all elements involved in the operation or battle. 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.

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Chapter 2
Strategic Operations

The highest component of OPFOR military art is **military strategy**. In its broadest sense, it concerns war as a whole. However, it also includes the planning and conduct of 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

Within the conceptual framework of OPFOR military thought, **military geography** is a branch of military science. 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.)

Theaters

The broadest concept of military geography seems to be that of the **theater** (sometimes called a theater of military operations). **A theater is a geopolitical reference and strategic military territorial designation, but not 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 the land masses but also the airspace, inland waterways, and a segment of the 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 employed to achieve them.

A theater is a **military territorial designation**, not necessarily associated with a level of command. A theater may or may not 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. They can 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, contributing to the total 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

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

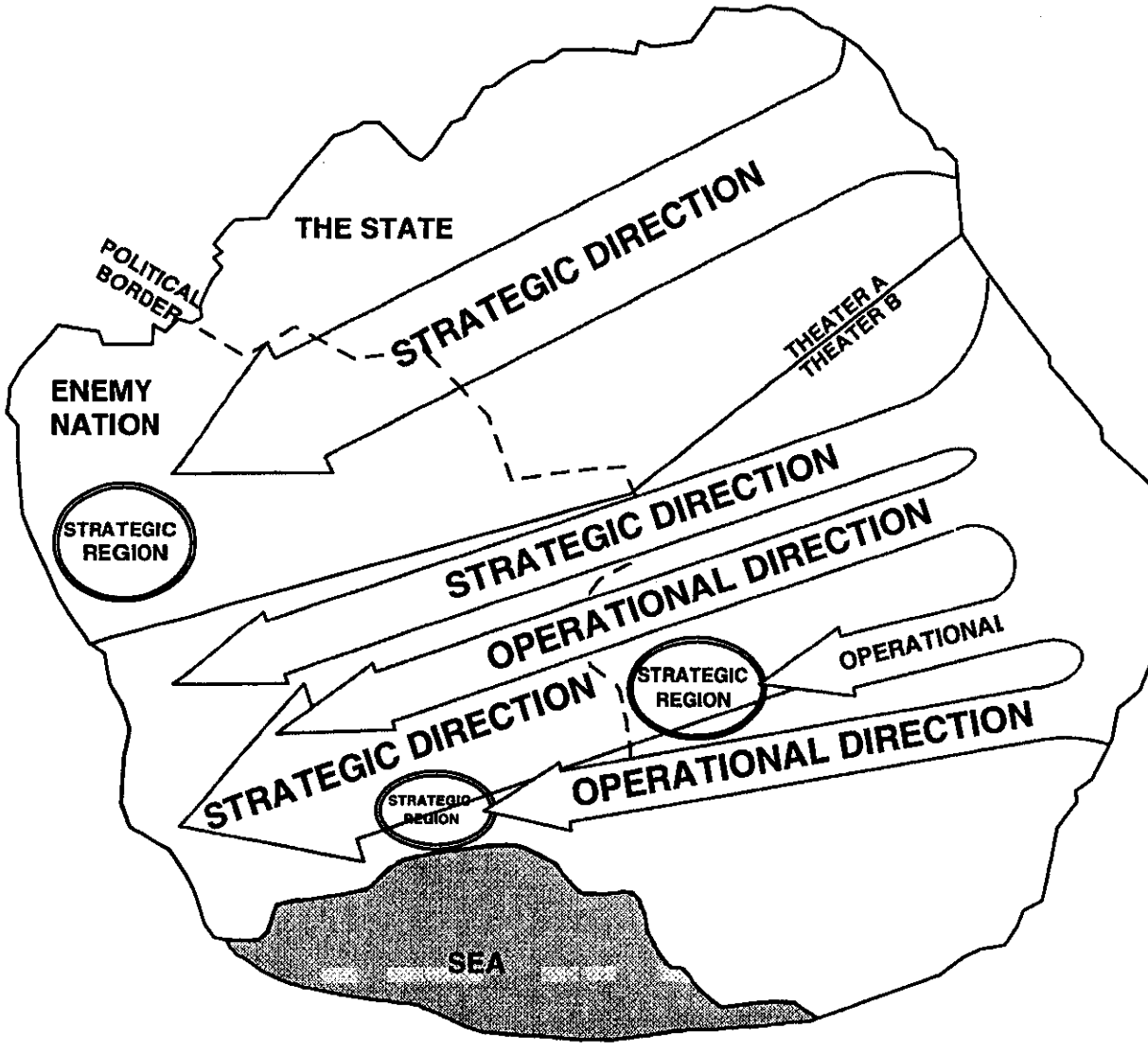


Figure 2-1. Military-geographical concepts.

Staff to the Supreme High Command and the Supreme CINC. (See Chapter 7.)

The OPFOR sometimes establishes a **theater headquarters** to centralize and integrate effectively General Staff control over theater-wide 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 troop formations within the theater.

Strategic Regions

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

- Missile, air and naval bases.
- Major groupings of field forces.
- Major control centers.
- 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 and alter the correlation of forces, economically and politically as well as militarily.

Strategic Directions

Within a theater, the OPFOR may designate one or more **strategic directions** (axes). The strategic direction is part of a theater. It is neither an equivalent expression of the same terrain nor an independent entity of forces. The strategic direction does not move, since it is not a formation. As a geographical control measure, it lies within the theater of which it is a component part.

A strategic direction 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 direction 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 may contain one or several strategic directions leading to or including strategic regions. The strategic direction essentially leads the State's armed forces to the enemy's most important administrative-political and industrial-economic centers. A strategic direction involves the coordinated actions of large formations of the State's various armed forces: *fronts*, fleets, and air armies. Planners must deploy sufficient forces along this direction to achieve the necessary correlation of forces and means (COFM) for attaining the strategic goals.

Operational Directions

Military planners divide strategic directions into **operational directions** (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 formations.

Within a strategic direction, military planners designate one or more operational directions as the main axis, or axes, of advance. However, they may also establish

operational directions (main attacks) in sectors of the theater outside the area designated as the strategic direction. An operational direction is a zone of terrain, including contiguous coastal waters and its airspace, within which an operational, or operational-strategic, formation conducts its operations. Within the context of the theater in which they lie, operational directions 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 direction.

Covering Forces

Included in the **first strategic echelon** are the OPFOR's **covering forces**. These are high-readiness formations permanently located in various theaters, near the State's borders. In peacetime, the bulk of these forces may consist of army corps and 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 should 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 would expand these brigades to full divisions and the army corps to armies.

Mobile Forces

In each theater, the OPFOR would also maintain **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.

The **immediate reaction forces** comprise a high-readiness strike force prepared to move at short notice to meet threats from any direction. For the sake of mobility, the nucleus of this strike force would be airborne formations. 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. These forces are the only permanent assets of the mobile forces.

The **rapid deployment forces** consist of heavier ground force formations, held at secondary levels of readiness. These forces are not normally subordinate to the mobile forces, but rather to operational large formations of the ground forces in the various theaters. However, they can come under the **operational control** of the mobile forces for less immediate redeployment into areas where the General Staff must build up strong strategic groupings for medium- to large-scale conflict. Even in peacetime, most of these forces would maintain the structure of armies and divisions. However, even those potential mobile forces formations in forward areas would probably be at lower readiness levels than the covering forces; formations 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 would strengthen these formations and deploy them to reinforce the 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, the rapid deployment forces would constitute the OPFOR's **second strategic echelon**. If hostilities begin before the OPFOR has time to convert the covering forces' brigades to divisions, some rapid deployment forces could also be part of the second operational echelon of the first strategic echelon.

Strategic Reserves

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 could 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 *FRONT* OPERATIONS

War has outgrown the *front* for both planning and execution. *Front*-level commanders now have weapons whose ranges greatly exceed the scope of *front* 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. *Fronts* and other forces in a theater now conduct strategic operations to achieve strategic goals and missions.

Strategic Goals and Missions

In OPFOR terminology, ***goal*** refers to an overall aim, end, or purpose, which may be political rather than purely military. The term ***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 in the form of a terrain-oriented objective. If military, the mission may be in the form of a line corresponding to the rear boundary of a particular enemy unit or formation; such a 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. The **general** goal defines the desired end result of the war as a whole. Ideally, that would amount to a complete defeat of the enemy or enemy coalition. This would involve the following conditions for victory:

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

Under other circumstances, such a victory could be military unrealistic or politically undesirable. In such cases, the declared strategic goal could simply be quick termination of the war and restoration of the status quo. That could 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 direction).

Particular. The **particular** strategic goal is the desired end result of a campaign or strategic operation. Within a theater (or strategic direction), 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 controlled by the General Staff on behalf of the Supreme High Command.

Strategic Missions

A strategic force consisting of *fronts*, armies, army 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 direction).

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 *fronts*.
- Strategic nuclear forces.
- Air armies.
- Air defense forces.
- A naval fleet.
- Airborne forces.
- National space assets.

They all act under a single unified plan and concept of operations, coordinated in aims, time and area. Their purpose is to achieve strategic goals and missions.

Goals

Such an operation may be **offensive**, with the goals of liberating or seizing politically and economically important areas and destroying the main enemy forces in the course of so doing, and possibly also with the goal of driving enemy states out of the war. Alternatively, it may be **defensive**, with the goal of repulsing the offensives of enemy shock groupings and inflicting heavy casualties on them, protecting strategic regions, gaining time and thus creating the necessary preconditions for the mounting of counteroffensives. It is possible for the forces of a theater to conduct both strategic offensive and defensive operations simultaneously. Whether offensive, defensive or mixed, the focal point for operational-strategic planning will be the theater, with *fronts* and other higher formations executing operations within the context of the theater plan.

STRATEGIC OFFENSIVE

The **strategic offensive** is a military activity conducted to achieve strategic goals. A successful strategic offensive should have the following results: 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 antitank defenses.
- Dependable fire support.
- The conduct of successful deep operations.
- The rapid exploitation of success.
- Successful countermeasures against enemy reconnaissance and attack weapons. Particular targets for countermeasures are nuclear and high-precision conventional weapons.

An OPFOR strategic offensive in a continental theater would consist 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, the major component operations of a strategic offensive may include the following types: long-range fire strike, air defense, *front*, airborne, naval, and amphibious. The strategic offensive also may include missile- and air-delivered nuclear and/or chemical strikes. The OPFOR may execute all or selective combinations of these operations; this depends on whether or not either side has used nuclear weapons. The developing military and political situation would determine 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).[2] It comprises the aggregate combat activities of all branches

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

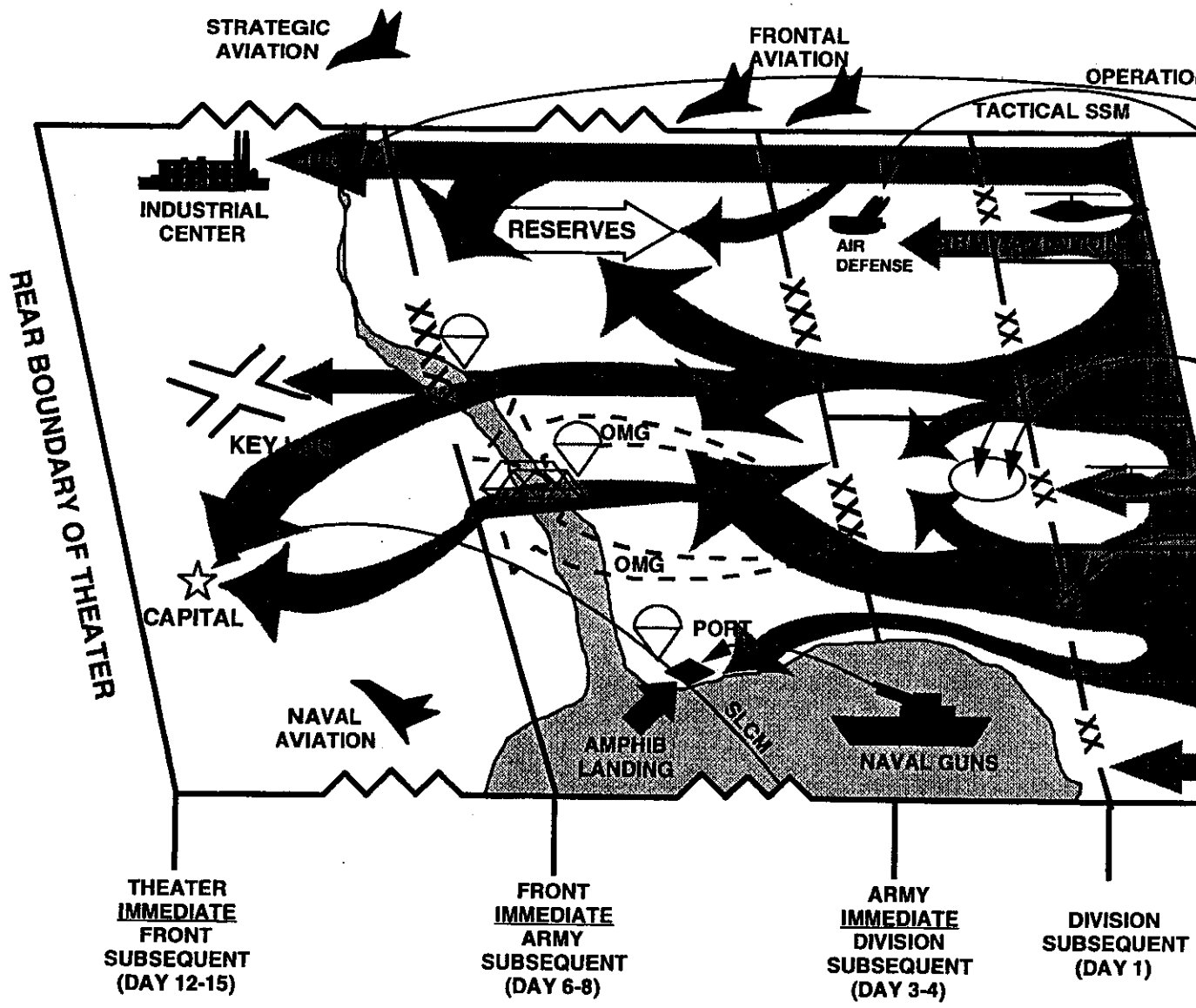


Figure 2-2. Strategic offensive (distances and targets are scenario-dependent)

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 all of the following:

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

Under nonnuclear conditions, the long-range fire strike is a substitute for an initial massed nuclear strike. Its goals are--

- Disruption of enemy mobilization and deployment.
- Destruction of the enemy's nuclear and high-precision weapon capability.
- Establishing air superiority within the theater by destroying or neutralizing enemy air defense and air forces.
- Disruption or destruction of the enemy's state and 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 it 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, there could be 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 could **decisively defeat the enemy**. Although this theoretically could occur simultaneously with ground forces operations, the latter might not begin until a subsequent period of war, if needed at all.

Fire Strikes

The long-range fire strike operation would probably begin with strikes by artillery and operational-tactical SSMs from the *frontal* ground forces. These fire strikes would suppress time-critical enemy air and air defense activities and strike high priority targets. Such strikes would employ conventional and possibly chemical munitions. This would be a preemptive nonnuclear massed attack. The OPFOR would then carry out a sustained assault on enemy air defenses and the infrastructure supporting his air forces. It would systematically destroy enemy airfields, including runways, facilities and aircraft on the ground; it would make every effort to bring enemy fighters to battle in disadvantageous circumstances. Its fire strikes would also target C^2, reconnaissance and target-acquisition systems, and nuclear and high-precision weapons. These targets equate to the enemy's RSCs.

Air Strikes

The air portion of the operation would employ **penetration corridors** in the hope of reducing aircraft losses. **REC** assets would attempt to "blind" enemy air defense radars and associated communications; then, missiles and aircraft could destroy the air defense systems. The first mission of ***front* and army aviation** assets would be to open

corridors through enemy ground-based air defense already under attack by artillery and missiles. Subsequently, these aviation assets would prevent enemy aircraft from moving into such corridors, or enemy air defense from firing into them. Fighters and fighter-bombers would probably attack selected airfields, nuclear facilities, and key command and control points throughout the depth of *frontal* aviation activity. The Supreme High Command could allocate **strategic aviation** assets to the operation to constitute the "shock force"; this force would probably include bombers, fighter-bombers, and fighters. Along coastal axes, **naval aviation** would take part in the operation as far as possible; it would also target enemy aircraft carriers in the theater.

Troop Strikes

As part of the long-range fire strike, the OPFOR would employ battalion-sized **airborne and heliborne raiding detachments** against enemy nuclear, air, and air defense assets, along with the associated C^2 assets, at the operational-tactical depth. However, small **SPF teams** would also conduct raids against the same categories of targets, throughout the entire depth of the theater. In addition, *frontal* **ground forces could conduct spoiling attacks and raids** into the enemy's deep rear areas. All this, combined with air and fire strikes, would create favorable conditions for the *fronts* to accomplish their missions quickly during a subsequent period.

Electronic-Fire Strikes

The electronic-fire strike concept **combines REC with RSCs** to destroy or neutralize, electronically and by fire, priority targets throughout the entire depth of the enemy's formation. It consists of surprise, massed, continuous, and prolonged strikes by missile, aerospace, radioelectronic, and naval assets. It would typically begin with a surprise air attack and continue simultaneously with fire strikes by long-range, high-precision, stand-off weapons. However, the REC portion could 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 conventional and nuclear strike superiority in a theater. Its preemptive strikes disrupt or destroy the enemy's ability to conduct air strikes, other conventional fire strikes, or nuclear strikes. It is even possible that **this phase could result in a decisive defeat of the enemy,** without the initiation of major ground force operations.

If ground operations are necessary, their success depends on a favorable air situation. The OPFOR needs, if not air supremacy, then at least air superiority at the time and in the area of its choosing. Without this, airborne and all but the shortest-range heliborne operations would become exceedingly hazardous or impossible. Forces operating in the enemy rear would be very vulnerable to air attack and would thus have limited effectiveness. Without air superiority, the OPFOR could not inhibit the ability of enemy reserves to maneuver and create new, in-depth defense zones. Likewise, it could not effectively engage enemy long-range nuclear delivery means, deep-strike high-precision systems, and higher formation headquarters. At the same time, failure to severely limit the

enemy's strike capacity would leave the OPFOR's subsequent echelons vulnerable to interdiction.

Air Defense Operation

The **air defense operation** focuses 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 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 operation to achieve the knockout blow would mean that the OPFOR may not yet hold the initiative in the air. Then its immediate priority in the possibly prolonged air defense operation would be to provide friendly forces freedom of movement; simultaneously, it would 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 *front* and air offensive operations.

Participants

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

- *Frontal* aviation.
- The ground-based air defense missile and artillery assets of the ground forces.
- The national air defense forces.
- The 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 would combine 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 range and flexibility of enemy air power requires this unification of theater assets. It would provide protection for--

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

Its would also protect lines of communication and friendly air bases throughout the theater.

Echelonment

Initially, the air defense operation would consist of two echelons: the air and air defense formations of the first-echelon *fronts* and air defense forces protecting the rear area. As the first-echelon *fronts* advance, this could create gaps the enemy could exploit to attack follow-on forces. Therefore, the OPFOR would have to organize an additional air defense echelon to prevent the development of gaps in the rear. This would involve theater resources with a mix of aviation and ground-based air defense systems. The OPFOR could create independent air defense formations as large as a *front* for each strategic direction. This

would ensure continuity of air defense behind the first-echelon *fronts*.

Front Offensive Operations

Single or multiple *fronts* 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-*front* operations. See Chapter 4 for a more detailed discussion of offensive operations from the perspective of individual *fronts*.) In a continental theater, these *front* operations are the most important element of a strategic operation. Only the ground forces can hold, or seize and then retain ground. In the offensive, *fronts* advance rapidly, quite possibly before their mobilization, concentration and deployment are complete. 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 could be of lesser, but by no means insignificant importance. (This assumes, of course, that the OPFOR has a navy and that the theater has a seacoast.) On coastal axes, the OPFOR would use amphibious landings in conjunction with airborne raids. It would target these raids against deep theater-strategic objectives and against shallower operational objectives directly supporting the advance of *fronts* and armies.

Raids on strategic targets would normally take the form of joint operations. They would involve the forces of several arms and services under a single commander. In a coastal region, strategic operations would probably involve amphibious and airborne forces supported by naval surface combatants and by aircraft of the navy and air forces. Elements of the ground maneuver forces airlanded or sealanded in the objective area could 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 control systems and centers.
- Seizing important maritime straits; this forces 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 states as bridgeheads for further operations in the continental heartland.

Airborne Operations

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

It is also quite possible that success in the long-range fire strike operation will lead

to a strategic airborne operation that is independent of, but complementary to the actions of the ground forces. The aim could be to capture important economic or political centers in the hope of precipitating a political collapse of elements of an enemy alliance or at least disrupting political control of military operations. Alternatively, the object could be the opening of a new area of military operations in the enemy's rear.

Naval Operations

A naval operation using surface ships, submarines, aircraft, and naval infantry would be an integral part of the strategic offensive in a continental theater. Missions of this operation could 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 would also support missions ashore. Its support could involve the following tasks: participating in amphibious operations and providing naval gunfire, air defense, and logistics support to land operations. Submarines could also launch cruise missiles. All of these actions would 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 direction.

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

Strategic landings might support theater forces in opening up a new area of military operations. The aim would be to exert a decisive influence on the course of the war as a whole. This landing would call for the employment of a multi-division force, with appropriate naval and air support. However, the OPFOR has never conducted a strategic landing. 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 logistics 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 landings** are risky; the OPFOR certainly would not attempt them outside the range of land-based air cover and support. The purpose of operational-scale landings is to influence the course of land operations, with which they are closely coordinated. Landings of this scale might entail the landing of a naval infantry regiment as the first echelon. The second echelon, consisting primarily of motorized rifle troops, would follow as the main force. The aim is to assist ground or naval forces in a coastal region in surrounding and destroying enemy ground or naval units in that area. Another aim might be to execute a major encirclement against an enemy flank resting on a seacoast. Other possible missions include the seizure of major islands or a group of islands, maritime straits, naval bases, and other important coastal objectives. Thus, it is possible for an **operational** landing to have major **strategic** consequences.

Tactical landings probably would be the most frequent form of amphibious operation. The purpose of tactical landings 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 would divert enemy attention and resources away from the main object of his operations. The naval infantry force employed could 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 could seize bridges or road junctions near the coast and hold them until the arrival of the main land forces. Such landings could stop or delay enemy reinforcements or cut off his line of retreat. They might also help to maintain the tempo of the OPFOR ground forces' advance, or they could be for deceptive purposes. Also possible is the seizure intact of a port or naval base to prevent its destruction or use by the enemy. Thus, landings that are **tactical** in scale may nevertheless have important **operational** repercussions.

Reconnaissance and sabotage landings are 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 command and control and/or logistics.
- Tying down substantial numbers of enemy troops in the defense of long, vulnerable coastlines.

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

Conduct

The preference for smaller-scale landings reflects the limited and subordinate role played by amphibious landing 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 will be by ordinary motorized rifle units, with supporting artillery and staying power. The OPFOR withdraws the naval infantry from combat as soon as possible to keep it available to

insure the success of subsequent landings. This, along with coastal defense, is the primary role of the 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 helicopters in the accompaniment role. Also, the long-range artillery of the main forces may be able to provide support for shallow landings. Of course, for amphibious and supporting air landings to succeed, the OPFOR must have an accurate picture of enemy land, air, and naval forces in range to intervene. Intensive intelligence-gathering will always precede the landing.

An **airborne or heliborne landing** will precede or accompany any important amphibious landing. If the amphibious landing is to be small in scale and shallow, then a heliborne force will suffice. However, a major deep landing will probably require 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, which often land 1.5 to 2 km from the beach, about 15 minutes before the amphibious assault goes in. The immediate mission is the seizure of a line which protects 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).

As soon as the naval infantry secures a beachhead (or better, a port), **motorized rifle** 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 further landings.

As pointed out above, the OPFOR expects to commit motorized rifle units through a secure beachhead to perform combat missions inland. However, these units could share in the assault landing role as well. If that is to be the case, the OPFOR recognizes the need for at least a degree of prior, special training. Motorized rifle subunits may have naval infantry personnel attached to assist in overcoming the special problems of an assault landing.

MULTI-*FRONT* OFFENSIVE OPERATIONS

Normally, the **combined actions of several *fronts*** are necessary to achieve the main strategic missions in a theater. One or more other *fronts* may also act on secondary sectors in support of the main strike or in deception (dummy) attacks. Some *fronts* or even whole 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.

Historically, the OPFOR had only the ability to conduct a series of consecutive but separate *frontal* operations, sometimes interrupted by lengthy pauses. However, its current goal is to plan and conduct strategic operations consisting of simultaneous *frontal* operations. **Ideally, each *front* should be able to conduct two or more successive operations, with brief pauses or even without pauses.** This more effective method could allow *fronts* to achieve deeper missions. However, the depth of operations still depends on the nature of enemy defenses.

Control

Historically, the OPFOR **General Staff** experienced problems in directly controlling multi-*front* operations. This led it to establish intermediate commands in some important continental theaters. There are advantages to having this strategic command structure in place in peacetime and well prepared for war. Where present, these **theater headquarters** not only improve control, but also permit greater flexibility in responding to situational changes within key theaters. They could also improve the OPFOR's capability to conduct theater-wide operations consisting of simultaneous *frontal* operations of more extensive depths and integrated complexity.

Commander's Concept of Operation

The concept of operation 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 them; these include the capabilities of the forces of both sides and their correlation, as well as the military geography of 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 of advantage and power against the enemy. The seizure of territory is often of great importance to alter the correlation of forces between the opposing sides. (In nuclear war, the missions laid down might well be more completely decisive. However, the occupation of territory would be of comparatively less significance, since the nuclear devastation of many of the most productive areas would already have prevented the completion of enemy economic and military mobilization.) The most common missions in a conventional theater offensive are as follows:

Seizure of key political and economic centers. Planners must identify those 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. The seizure of these 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 correlation of forces and worsening 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 the enemy forces often determine these decisions. The OPFOR singles out for destruction the enemy's nuclear 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 the 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 will 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 sector(s).

The need for concentration to achieve the COFM required in main strike sectors limits the number of axes the attacker can use simultaneously. This may 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 on multiple axes across a broad frontage** can split the defense into isolated fragments. The choice of form depends on the 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 encircling formations and second echelons to enemy high-precision weapons may decrease the viability of encirclement.

Forms. The OPFOR identifies six forms of encirclement. (See Figure 2-3.) The six forms are as follows:

- Thrusts in converging directions.
- Penetrations in several sectors to attain the flank and rear of the main enemy grouping.
- Enveloping thrusts to trap the enemy against the sea.
- Splitting the enemy by attacks of two or more *fronts*.
- Thrust by a *front* against one flank, followed by encirclement in coordination with neighboring forces.
- Frontal attacks by the forces of one *front*, followed by two-sided encirclement.

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

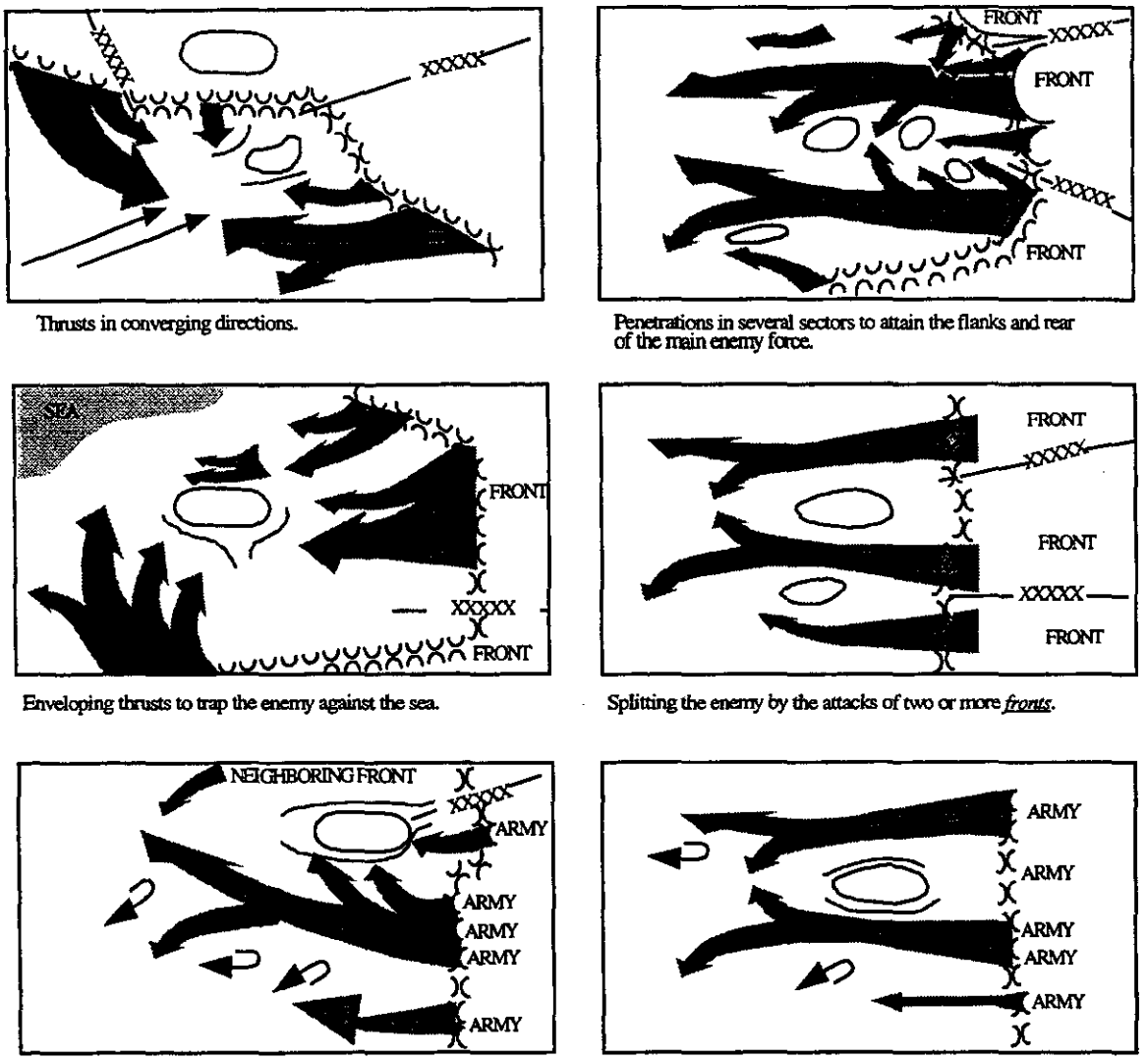
- The enemy is in a salient.
- The enemy has a strong formation sandwiched between two weak ones, (especially if the enemy is intent on defending forward and is reluctant to withdraw).
- The attacker lacks a decisive overall superiority in COFM.

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 which 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. In executing an encirclement, victory would seem to depend on the following:

Choice of axes. 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 direction. Then, the aim is to penetrate on vulnerable sectors (on formation boundaries or 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 which is accordingly ill-defended. Advancing forces must resist the temptation to seize desirable geographical objectives at the expense of tempo and/ or concentration. They must bypass isolated groupings that they cannot overrun. With the enemy main force destroyed, they can take geographical objectives quickly and mop up any bypassed forces.

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

- Deliver a powerful initial blow to rapidly penetrate the enemy tactical zone of defense.
- Thereafter maintain momentum into the operational depth to complete the encirclement.



Thrusts in converging directions.

Penetrations in several sectors to attain the flanks and rear of the main enemy force.

Enveloping thrusts to trap the enemy against the sea.

Splitting the enemy by the attacks of two or more *fronts*.

Thrusts by a *front* against one flank, followed by encirclement in coordination with neighboring forces.

Frontal attacks by the forces of one *front* followed by a two-sided encirclement.

Figure 2-3. Forms of encirclement

- Deliver strong attacks into the encircled grouping from flanks and rear, while still maintaining a favorable COFM on the principal axes throughout the operation.

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

Surprise. 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.

Arms of encirclement. 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 which work in combination with forward detachments and 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 which may greatly slow the completion of his destruction.

The **outer arm** of encirclement presses on into the enemy 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 approx-imately half the force should usually be in each arm of encirclement.

Flank security. Flank security for strike groupings is vital. This may come in the form of the supporting advances by flanking formations (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.

Troop control. Encirclement operations require careful organization of troop control, especially if two or three *fronts* are participating. Decisions on this lie with the General Staff (or theater headquarters), which corrects *front* plans as necessary and issues coordinating instructions. Changes often occur during the course of an operation, for instance when two *fronts* are to participate in attacks on both inner and outer arms of encirclement, thus distracting from cooperation. Sectors have to come under unified command, often changing the subordination of formations. The General Staff (or theater headquarters) also has to be ready to alter plans if the operation does not develop as foreseen, for example, by shifting axes or emphasis.

Air superiority. Air superiority is an essential. Air cover and support are vital to the rapid progress of both fronts 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.

Airborne and heliborne seizure of airfields and ground forces raids can materially aid a vigorous long-range fire strike operation.

Attack on Multiple Axes Across Broad Frontage

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. Even these splitting attacks can be concentrated and mutually supportive. Their timing and

sequence can deceive the enemy as to the main effort.

Enemy forces outflanked by the penetrating force may stay put, defending forward, in which case the OPFOR can **envelop or encircle** them. If they attempt to withdraw, a mixture of **frontal and parallel pursuit** can destroy them. Once enemy formations 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 formations conduct the frontal pursuit, slowing the enemy. Meanwhile, forces on the main attack axes execute parallel pursuit to destroy retreating enemy formations in flank attacks.

Favoring circumstances. An offensive on multiple parallel axes is suitable in the following circumstances:

- In nuclear operations, or when the OPFOR has high-precision weapons available in quantity.
- When the use of nuclear strikes obviates the need for concentration for one large penetration to destroy the defense in the tactical zone and open the way for deep exploitation thrusts by the ground forces.
- When the enemy possesses significant numbers of long-range, precision weapons that threaten to turn the tables on encircling groupings.
- When the OPFOR enjoys such an advantageous COFM that it can achieve decisive superiority on several axes simultaneously.
- When the OPFOR enjoys operational surprise.
- When neither the 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.
- When the OPFOR has a linear objective to reach on a wide frontage (for example, seizing multiple bridgeheads over a major river).

Advantages. In many ways the most dynamic form of operation, an offensive on a broad frontage confers several major advantages:

- **Maximum pressure** across a broad frontage can prevent he enemy from stripping secondary sectors to reinforce the defense on the principal axes or 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 in reaction to the defender's moves.
- **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 frontage.

Requirements for success. Success in such an operation would depend on the following:

- 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 direction. It is also important to identify the axes which 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 *front* level. This should ensure the maintenance of a favorable COFM 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.
- **Troop control** has to be continuous, flexible, and able to react rapidly to changing circumstances.
- 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 it could support an uninterrupted advance.
- **Air superiority** remains a critical element.

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 in wartime. Figure 2-4 shows how two *fronts* can combine efforts to encircle a strong, well-prepared enemy grouping. Figure 2-5 provides an example of how two *fronts* could employ a combination of attacks 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 would attempt 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 control) 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 the conditions for the strategic defeat of the enemy.

From the very start of the offensive, the OPFOR attempts to shift the frame of

combat into the enemy's depth. Its goal is to force him to fight in several directions at once--to his front, flanks, and rear. At the same time, it can destroy his ability to do so, by disrupting the command and control and logistics backup necessary to give direction and power to his fighting formations. 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 *Fronts*

In the typical OPFOR offensive operation, forces of first-echelon *fronts* would strike rapidly into the depths of the enemy's defenses in selected sectors. Theoretically, this could occur within hours after commencement of the long-range fire strike; depending on enemy force capabilities and actions, however, the latter could continue for several days or several weeks before commitment of ground forces. Successful long-range fire strikes and air defense operations can minimize the air, nuclear, and high-precision weapon threats to ground maneuver forces. However, the ground forces must exploit the opportunity quickly. They must act before the enemy has time to recover, reorganize, and meet their 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 forces would execute these in close coordination with airborne and heliborne landings.

The first-echelon *fronts* would probably exert pressure across the entire frontage of the theater. Combined arms and tank armies would advance in dispersed march formations and on multiple axes. In this way, they would fully engage deployed or deploying enemy forces. Ideally, the first echelon would have sufficient weight and force in several locations so the defenders could not determine the location of the main attack. This would prevent or delay the lateral redeployment of enemy troops to reinforce defenses on the most threatened axes.

The OPFOR would look 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 formation boundaries. Once the OPFOR identified the weak sectors, it would try--

- To penetrate the forward defense rapidly in several locations.
- To fragment the enemy forward defense into isolated, noncohesive parts.
- To destroy the defending first-echelon forces.
- To create favorable conditions for developing the offensive deeper into enemy territory.

At the first opportunity, the first-echelon *fronts* and their subordinate armies would send exploitation forces deep into the enemy rear. There they would destroy critical targets and disrupt the enemy defenses. They would also aid the advance of the main *frontal* forces.

Exploitation Forces

These exploitation forces would probably be multiple **operational maneuver groups** (OMGs). These are tank-heavy formations formed at *front* and army levels.

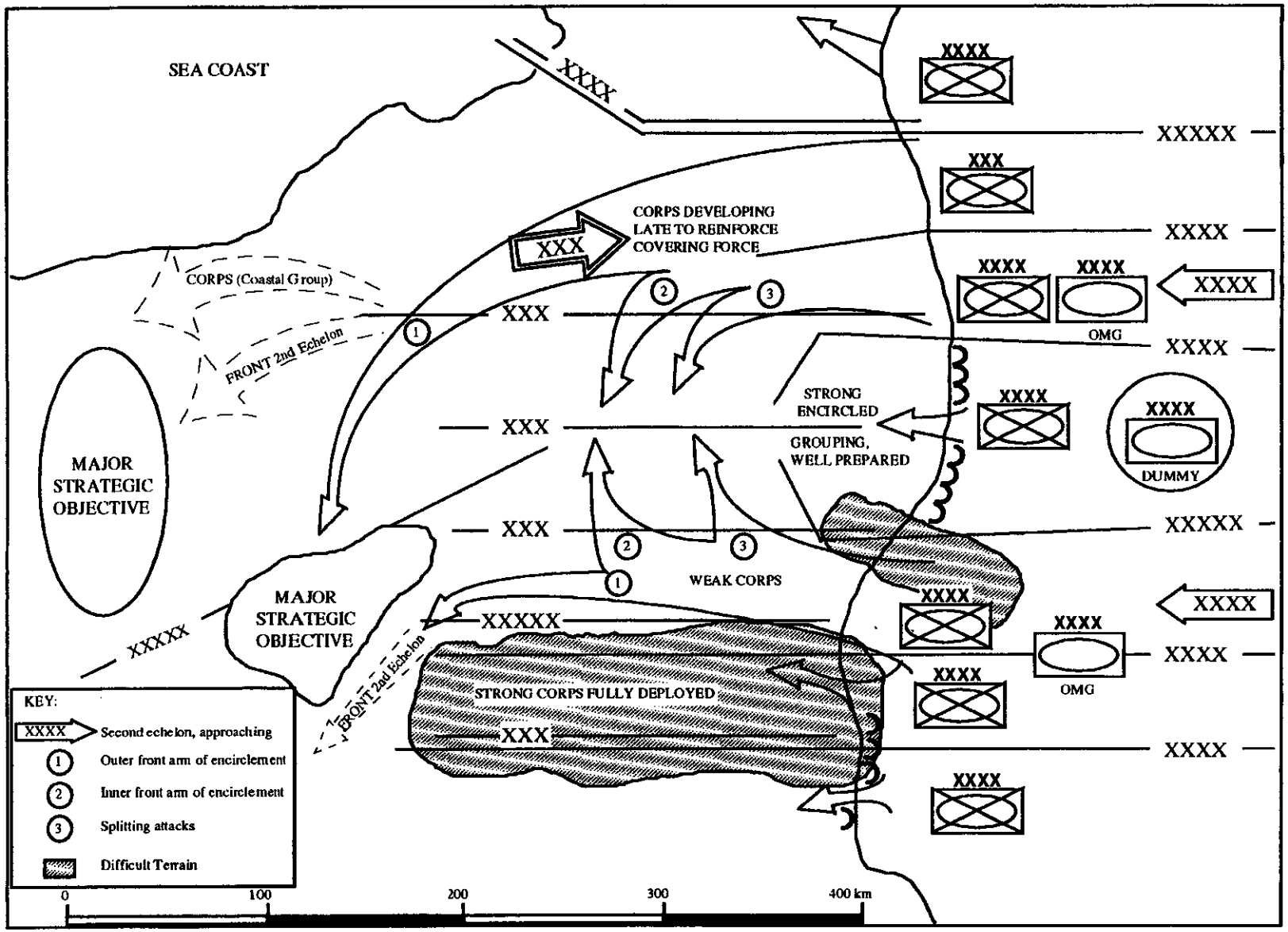


Figure 2-4. Encirclement by two *fronts*.

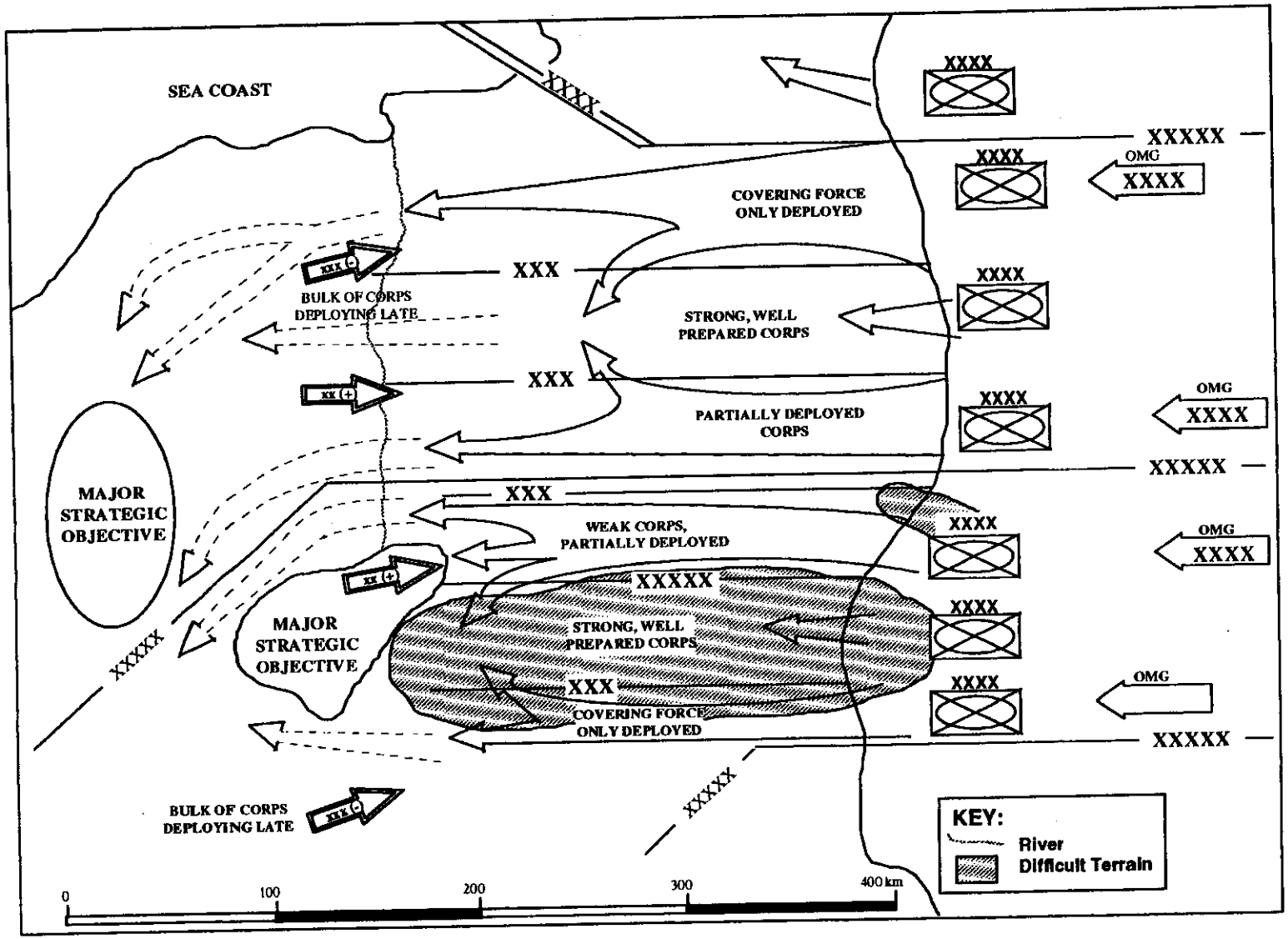


Figure 2-5. Attack by two *fronts* on multiple axes (with encirclements of strong groupings).

(See Chapters 4 and 5 for more detail.) They are especially 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 *front* OMG normally occurs before the first operational echelon has achieved the *front's* immediate mission and long before commitment of the second echelon. In order 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 the ground maneuver portion of an operation, 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 created by artillery, missiles, or air strikes, especially if the OPFOR employs high-precision weapons. In such cases, OMG commitment could begin soon after the start of the long-range fire strike operation and possibly even before the start of the main *front* offensive operations.

Once in the enemy rear, OMGs have three main goals. First, they would **destroy major enemy weapon systems that survived the long-range fire strike.** Their highest priority targets would be those systems that are most threatening to the OMG and to the OPFOR *front's* (or army's) main first- and second-echelon forces. Destruction of enemy nuclear and high-precision weapon systems is especially critical. Second, OMGs would **thoroughly disrupt the enemy's defense system.** Thus, they would reduce the enemy's effectiveness in engaging attacking OPFOR main forces at the forward edge. Disruption activities may 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 defender's lines of communication laterally and to the rear.
- General disruption of the enemy rear area. This would divert command attention and substantial combat resources away from the main battle against the OPFOR at the forward edge.

Third, OMGs would **seize specific objectives and terrain features to aid the rapid advance of the main forces of the *front* or army.** They would 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 *fronts* and armies. Rather, OMGs (along with airborne and heliborne landings) expedite this advance by imposing a deep battle on the enemy. They force the enemy to fight rear and close battles simultaneously. At the same time, OMGs create conditions favorable for initiating the next deep operation further 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 main force could generate a replacement OMG; this is less likely at *front* level, since the successful OMG would have either paved the way for the main forces to achieve the strategic mission or seized major strategic objectives by itself.

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

Mission Depths

The depth of offensive operations depends on the nature of enemy defenses. The *fronts* of the OPFOR's first strategic echelon do not necessarily have to be fully mobilized, concentrated, and deployed prior to hostilities. (Armies constituting the second operational echelon of first-strategic-echelon *fronts* may have to complete this process during the initial phase of war.) **It is only necessary that the attacking force complete the process before the enemy has fully deployed his defending force.** 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, and thus use preemptive attack to generate momentum and engage in operational maneuver. Thus, the OPFOR's the preferred method, wherever 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 can expect 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, while others are 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.

First-Echelon Armies

Even a strategic offensive must begin with divisions of first-echelon armies 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 engage a counterattacking corps reserve. During this time, they would also seize important areas that would facilitate operations deeper into the enemy corps rear area. By doing so, they would 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 *front*.

First-Echelon *Fronts*

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

	IMMEDIATE	SUBSEQUENT	
	Destroy Integrity/ Cohesion of	Complete Destruction of	Destroy Integrity/ Cohesion of
THEATER	COMMZ (Including Theater Res)	Key Points in COMMZ	N/A
FRONT	Army Group	Army Group	COMMZ
ARMY	Corps	Corps	Army Group
DIVISION (Day 2-4)	Rear of Division	Rear of Division	Corps
DIVISION (Day 1)	Res Bde of Division	Res Bde of Division	Rear of Division

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

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

Second-Echelon *Fronts*

In view of their vulnerability to interdiction, especially by nuclear and high-precision weapons, it is not advisable to rely on the timely arrival of second-echelon *fronts* to complete the immediate missions of the theater.[3] The first strategic echelon should be strong enough to reach the nearest strategic objectives (immediate mission) on its own. Second-strategic-echelon *fronts* might deliver the final blows to **complete the destruction of enemy forces** penetrated and encircled by the first-echelon *fronts*.

If necessary, the second-echelon *fronts* could **expand the scope of the strategic offensive** operation either in depth or in breadth. For example, the depth of a theater's subsequent missions could be up to 1,500 km. This would require subsequent *front* 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 penchant for variant planning, the OPFOR has always kept a defensive variant on the shelf. The choice of variant is a function of the relative capabilities of opponents 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 a OPFOR offensive and also

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

in case the enemy has mounted the offensive. In the latter case, successful defense can lead to an OPFOR counteroffensive.[4]

The strategic defensive has the same types of subset operations as the strategic offensive: **long-range fire strike, air defense, *front*, airborne, naval, and amphibious**. However, the operations do not necessarily occur in the same order or with the same priorities. For example, the air defense operation would initially focus on defending friendly forces, assuming that the OPFOR does not hold air superiority. Finally, the strategic defensive may also feature an **antilanding operation**; this is not part of the offensive. *Front* defensive operations, as described below, take on different form.

Multi-*Front* Defensive Operations

Historically, the OPFOR has not overlooked the defensive. In past wars, it conducted large defensive operations in which entire theaters were on the defense. However, changes in the military-political situation and the development of nuclear weapons and other technologies required modification of this concept. They increased the importance of a second echelon and/or a reserve but, at the same time, make them more vulnerable.

Nuclear weapons and high-precision conventional weapons also have erased some of the traditional distinctions between offense and defense. Neither exist in a pure form. This is especially true at the strategic and operational levels. 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 very favorable circumstances, he can also launch a decisive counteroffensive.

Mobilization and Deployment

The choice between offensive and defensive variants, as well as the nature of the OPFOR strategic defensive, 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 and thus avoid strategic surprise. During this threat of hostilities period, the OPFOR should begin to mobilize its **strategic reserves** and to strengthen and deploy its **mobile forces** to reinforce its ready **covering forces**.

Within OPFOR Strategic Offensive

If the OPFOR can complete all or even most of its mobilization and deployment before the enemy has fully deployed his own forces, its probably preferred course of action would be to launch a **preemptive attack**. This could--

- Catch the enemy during mobilization and deployment.
- Achieve surprise.
- Seize and maintain the initiative from the beginning.
- In this case, the best defense is a preemptive offensive action.

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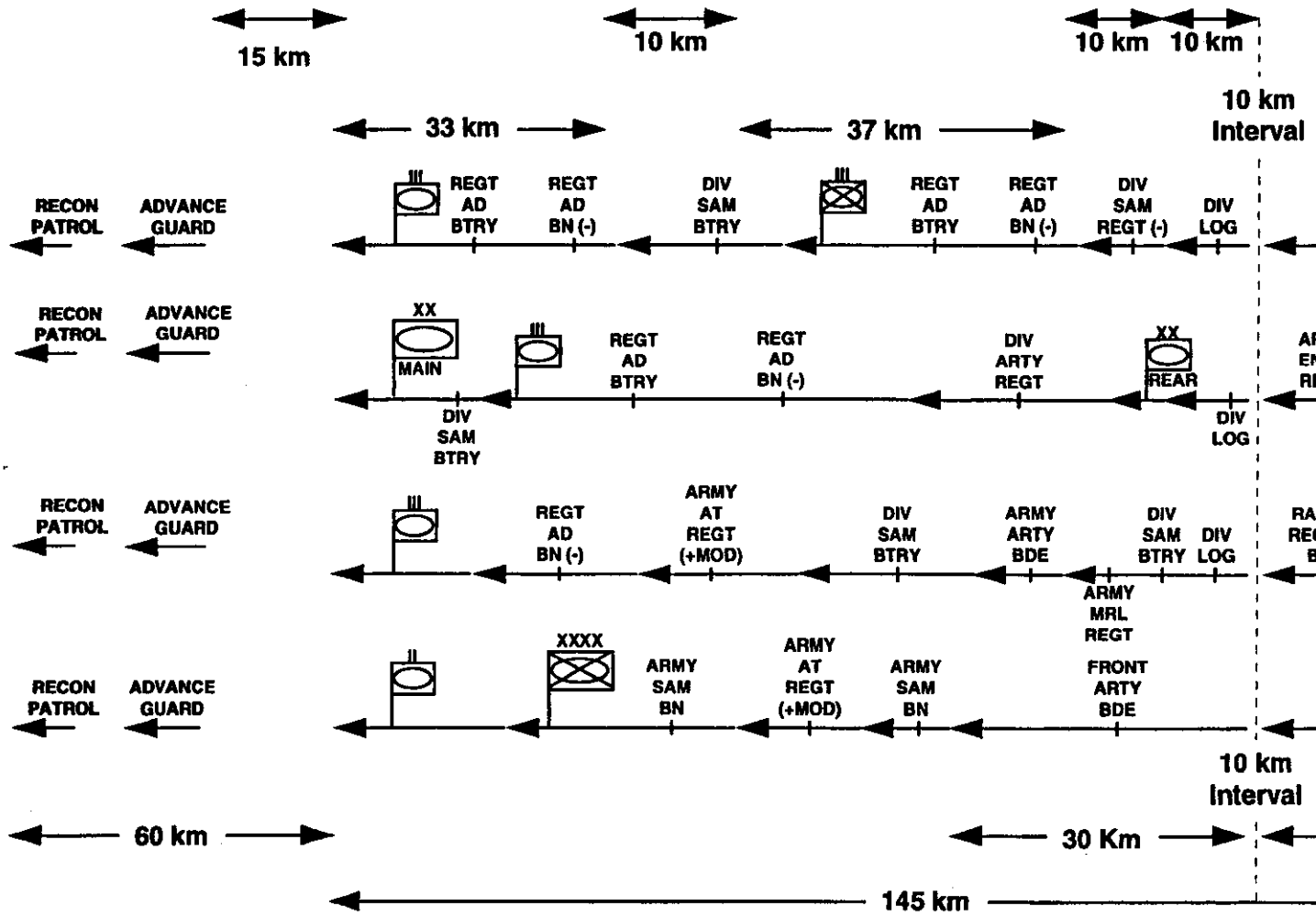
[4] In OPFOR terminology, a **counterattack** is tactical, carried out by divisions. A **counterstrike** is operational, delivered by forces of a *front* or army. A **counteroffensive** is usually on a strategic scale; rarely is it operational.



AD = AIR DEFENSE
EW = EARLY WARNING

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

"Administrative" Marches

As illustrated 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 80 to 100 km separates first- and second-echelon divisions; however,reconaissance patrols and advance guards from a secend 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 will be about 300 km. If only five routes were available, the depth of the army could extend to 500 to 600 km. The army's width will be 150 to 200 km.

Tactical March

Moving from the final assembly area to the line of commitment, first-echelon divisions can spread out more to observe proper tactical intervals, as shown in Figure 3-5. Intervals between regiments grow from 5 km to 10 km, and there should be 5 km between battalions. However, the divisions now move on three routes each, if possible; thus their depth remains about the same as before. The 80- to 100-km interval between first- and second-echelon divisions also remains constant. Such a spacing allows 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 concentration and rest 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 troop control 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 *maskirovka* and regulation of movement.

The organizations 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 troop control. It organizes traffic control along march routes, in assembly and concentration areas, in troop disposition and combat areas, and at choke points. Elements of the commandant's service also assist in establishing and moving command/control posts (CPs).

A **traffic control post** is a group of soldiers headed by a sergeant and sometimes by a warrant officer or officer to implement the missions of the commandant's service at specific locations. Such posts deploy at departure and regulating lines, obstacle crossings and their exit/entrance sites, road junctions and 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. Troops to man these posts may come from a traffic control battalion at army level or an independent route traffic control brigade (or battalion) at *front*. Units from the marching forces can also perform traffic control functions, when necessary.

Air Defense

March columns in operational depth are very vulnerable to air attack. Therefore, it is necessary to work out the air defense plan of the march in great detail. Highest priority for protection goes to the first echelon, the SSM brigade and its mobile missile technical base, and army and division CPs. Army and divisional air defenders move and deploy in accordance with an overall air defense plan. The plan stresses universal, overlapping and redundant coverage. 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 chokepoints. The advancing formation must coordinate carefully with the 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 formation and for the defense of critical points, including assembly and rest areas.

Combat Service Support

Measures such as reconnaissance, NBC defense, operational *maskirovka*, and engineer, topographical, and logistics support are generally the responsibility of the military districts, allied states and *fronts* through which the march passes. This avoids depletion of resources the advancing formation will need on commitment to battle. 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 *front* repair centers.

Deployment of CPs

Continuity of control is fundamental. This means that a formation 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 preferable method is for main CP to move simultaneously with the troops (usually in the first echelon, and ideally on a separate route) 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 on CPs and their movement.)

Communications

Communications security is very tight. Wherever possible, the OPFOR uses mobile means (helicopters and liaison vehicles). It uses army radio nets minimally, primarily for air and NBC warning. During extended halts, it would also use wire, possibly including existing civilian telephone systems.

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 formations 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.
- High rate of movement is possible regardless of weather conditions.

On modern lines, a rail march can achieve 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 non-deployment traffic on the lines could cause further delays. The other disadvantage of rail movement is that it is very vulnerable to air, high-precision conventional or, especially, nuclear 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. It is economical in the use of transport resources and preserves both equipment and personnel. The price, of course, is the destruction of unit and formation integrity and problems in troop control. 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 motorized rifle or tank divisions by air is not practical, the OPFOR may use air transport to deploy high-value items needed forward urgently: SSMs, SAMs, REC equipment, and headquarters elements. Air transport can also move large numbers of personnel rapidly. 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 is probably too slow and too vulnerable to interdiction to be practical when war has already started.

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Chapter 4
Front Offensive Operations

Operational art is the component of military art which falls between military strategy and tactics. Each of the five services of the State's armed forces has its own operational art. Combined arms operational art prescribes the interaction between the ground forces and other forces, especially aviation. Within the ground forces, operational art refers to the operations of **large formations**: *fronts*, armies, and army corps.[1]

Fronts conduct the major ground maneuver component of strategic operations in a theater. (See Chapter 2.) However, a *front* also incorporates the air forces and other assets required for operations in a given area. The *front* is both an administrative and an operational entity. Although *fronts* 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 *front* are the armies, army corps, or divisions assigned to it. These exist in peacetime within the structure of the military districts (MDs). In wartime, the General Staff (or possibly a theater headquarters) coordinates the operations of several *fronts*.

[1] The OPFOR term **large formation** applies to *fronts* and armies, as well as to army corps. Its sometimes expanded form **operational large formation** clearly distinguishes these from tactical-level **formations** (divisions and brigades).

ORGANIZATION

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

- One to four combined arms armies (CAAs) or tank armies (TAs).
- Perhaps one or two army corps (in lieu of armies).
- Perhaps one or two motorized rifle divisions (MRDs) or tank divisions (TDs) not subordinate to an army or army corps.
- Perhaps one independent motorized rifle brigade (IMRB) not subordinate to an army or army corps.
- An air army (also known as *frontal* aviation).
- One or two artillery divisions.
- A surface-to-surface missile (SSM) brigade.
- One or two surface-to-air missile (SAM) brigades.
- A special-purpose forces (SPF) brigade.

(See the *Heavy OPFOR Organizational Guide* for more detail on possible *front* organizations.)

There is no fixed *front* organization. The number of armies/army corps and independent divisions/brigades that might constitute the combat elements of a *front* vary widely. The *front's* composition depends on its mission within the context of the overall strategic operation. Most of the

combat divisions assigned to a *front* are subordinate to the armies (or army corps). However, some divisions (or brigades) may remain independent of a large formation; in this status, they could function as a *front* combined arms reserve. This assignment depends 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 *fronts* is present in the peacetime structure of the MDs. The OPFOR organizes the combat service support or rear service structure of a *front* to meet logistical support requirements. *Front* rear services must support all aspects of the *front* operation, including augmentation of its armies.

If required, the *front* may include airborne forces (an independent airborne brigade or perhaps an entire airborne division) and amphibious forces (naval infantry). Other forces from the **Reserve of the Supreme High Command** may also provide support to the *front*. These assets include the following forces:

- Strategic rocket forces.
- Strategic air armies.
- Naval forces.

OFFENSE IN CONVENTIONAL CONDITIONS

The most important element of a strategic operation in a continental theater is always the ***front* offensive operations.** Only the ground forces can hold, or seize and then retain ground. In the offensive, *fronts* 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 very start, they attempt to shift the frame of combat into the enemy's rear, forcing him to face in several directions at once, and at the same time destroying his ability to do so by disrupting the command and control (C^2) and logistics support necessary to give direction and power to fighting formations. Fragmented enemy forces are vulnerable to destruction in detail, since they lack cohesion and supply. Rapid penetrations also prevent enemy operational or strategic reserves from establishing a new, stable defense line farther to the rear.

Aims

The aims of a *front* offensive are to destroy enemy military forces and to achieve operational missions in support of strategic political and economic goals. A *front* 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 may include--

- An initial, massive, nonnuclear, air offensive.
- SSM strikes.
- Heliborne and airborne landings.
- Deep attacks by operational maneuver groups (OMGs).
- SPF operations.
- Radioelectronic combat (REC).
- Naval and amphibious forces.
- Chemical and nuclear warfare, if necessary.

One aim in an OPFOR *front* offensive is always to **delay or prevent the war from turning nuclear**. It can do this by the swift, early destruction or neutralization of enemy nuclear weapons by nonnuclear means. 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 OPFOR offensive and to resort to tactical nuclear warfare. A top priority target for OPFOR weapons would be enemy nuclear delivery systems and high-precision weapons.

The aims of *front* offensive operations naturally depend on the role of the *front*, its composition, the scope of its operation in terms of depth, width, duration, and speed of advance. They also depend on the relationship of its actions to those of other *fronts* in the theater. Whatever the conditions, however, aims usually include the following:

- Destruction of enemy nuclear and high-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 important territory.
- Elimination of certain enemy nations from the war.

These aims translate into the *front's* immediate and subsequent missions. (See the "Missions and Norms" section below for more detail.) In brief, those missions are as follows:

Immediate missions include the elimination of enemy nuclear and high-precision weapon systems, 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 is designed to **create favorable conditions for the development of the *front* offensive** to the depth of the theater.

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

A *front* executing a **coastal** operation would have 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" under "Forms of Operational Maneuver" later in this chapter.

A *front* attacking in a **mountainous** area must pay particular attention to the destruction of groupings in areas of (or leading to) road junctions, mountain passes, built-up areas, and other vital regions which lead to wide valleys and plains. The plan would normally be to bypass enemy defensive positions, isolate them, and attack them from the flanks and rear. Thus, terrain features normally determine the aim of *front* offensive operations.

A *front* operating in the **desert** would have 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 is typically takes the form of high-speed attacks from the march against the enemy's flanks or rear.

A *front* in the offense is likely to have **cities** in its zone or responsibility. Its aim would be to encircle and destroy enemy forces before they can occupy cities. If that is not possible, the normal plan would be for the *front's* first echelon 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; establishing a sufficient superiority in the correlation of forces and means (COFM) on key axes; combat activeness and decisiveness. These imperatives translate into the following characteristics in *front* offensive operations:

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. OPFOR operational-level forces achieve surprise by conducting actions not expected by the enemy. This forces the enemy to conduct combat operations at a disadvantage.

Surprise in offensive operations results from an integrated system of measures, implemented over time and space. The OPFOR stresses that there are diverse and numerous ways to achieve surprise:

- Keeping the concept of the operation absolutely secret.
- Selecting the right axis and timing for the main strike.
- Concealing the 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 and disinformation.

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. OPFOR commanders and staffs maintain great secrecy regarding the concept of the operation and the composition of the main strike groupings. They pay a great deal of attention to issues such as--

- Communications discipline.
- Concealment of troop control assets.
- Deceptive actions on secondary or false axes.
- Active disinformation to mislead the enemy.
- Skillful use of new tactics and technology to accomplish the operational mission

The importance of surprise has also increased due to the enormous destructive power of modern weapons. The achievement of operational surprise can ensure the success of a mission. In some cases, it may

be so critical that it even determines the outcome of the operation.

Rapid Advance

The OPFOR offensive is characterized by a **high rate of advance**. Over a period of several weeks or more, the OPFOR anticipates an average rate of advance of approximately **40 to 60 km per day** under nuclear or nonnuclear conditions. However, it does not expect this rate to be uniform. (See the "Missions and Norms" section below.)

When confronting an enemy in a defensive position, the OPFOR would target **weak points in the defense**. It would drive to the enemy's rear whenever possible by bypassing his major force concentrations. It would attempt to cripple him quickly by destroying or disrupting his nuclear and high-precision weapons capability, C^2 facilities, and logistics system before he could effectively react.

Even if the OPFOR must deal with an enemy emplaced in defensive positions across its entire frontage, it would still try to avoid a costly, time-consuming battle of attrition. It would try to develop **penetrations** leading to the enemy's rear to topple his defensive structure. It anticipates that elements of a *front* second echelon would probably not have to fight enemy forces in defensive positions. It expects to have overrun prepared positions within the **first two to four 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

A *front* normally conducts a **main attack** over one or more axes. The proximity of one axis to another depends upon whether the *front* 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 opposing 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**. (Under nuclear conditions, he may destroy enemy defenses in a strike sector by tactical nuclear strikes, followed by rapid exploitation by maneuver units.) Under nonnuclear, but nuclear-threatened, conditions, he may attack the sector with massed air and artillery fires (possibly including high-precision weapons) and with numerous **attacks on multiple axes** by maneuver units.

The benefit gained by the attacker using only conventional weapons on the nuclear-threatened battlefield is that the enemy must also avoid concentrating forces. The defender has to leave **gaps or lightly manned sectors** between his units. Whenever possible, the OPFOR commander directs his attack against these undefended or lightly defended areas. He thus achieves a favorable COFM without massing his own forces.

The greater range and increased mobility of modern artillery weapons enable

OPFOR artillerymen to **mass fires** against a target without concentrating the weapons themselves. This practice reduces their vulnerability to a nuclear or high-precision weapons strike. It also hinders the enemy from predicting long in advance where a main attack might occur. Along with artillery fires, the OPFOR's 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 nuclear or high-precision weapons strike.

The OPFOR has a wide range of options for **echelonment**. (See the "Operational Formation" section below.) 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. In those cases, the OPFOR would be 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 would tend to use an attack force **echeloned in depth** to maintain the momentum of the attack after the initial penetration.

Maneuver

OPFOR offensive operations greatly emphasize the role of **maneuver**. An offensive operation has three basic goals:

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

The OPFOR would try to attack the enemy's **weakest points and gaps**, preferring to make multiple penetrations. It would **shift forces** (air, ground, naval) **and means** (such as fire and materiel) to win a decided COFM advantage over the enemy and to make maneuver possible.

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 feels that **modern conventional weapons are approaching the destructiveness of weapons of mass destruction**, that is, NBC weapons. (In a nuclear environment, the OPFOR could effect penetrations by nuclear weapons alone, while ground forces would exploit their results.) In a conventional environment, the OPFOR would continue to mass ground forces and nonnuclear fires while also attempting to minimize detection by the enemy or to deceive him. It would concentrate forces rapidly at the decisive points and times and then disperse them. In a conventional war, **air superiority** would remain a key factor.

Deep Strikes

A nonnuclear OPFOR *front* offensive would probably begin with a massive **air offensive**. This air offensive could begin shortly before, or concurrent with, the initiation of ground force operations. The OPFOR would employ it continuously for several days or even several weeks, using massed assets from *frontal*, strategic, and naval aviation. The two main goals of the air offensive would be to neutralize enemy theater nuclear capability and to gain **air superiority** for the remainder of the operation. Typical targets of the air offensive would be--

- Nuclear delivery systems and high-precision weapons.
- Airfields and aircraft.

- Air defense systems.
- C^2 facilities.

The OPFOR would be willing to accept great losses in its own air assets to achieve its goals. It might be able to conduct the remainder of the offensive with older, possibly obsolescent, aircraft provided it can cripple enemy tactical air power.

Ground attacks by *front* ground forces would follow a massive **fire preparation** conducted by first-echelon armies. (If the OPFOR uses nuclear weapons from the onset, it would probably do so in a massive, in-depth strike before the nonnuclear preparation.) Whether it uses them or not, the OPFOR always includes nuclear strikes in its fire planning.

A *front* could launch an **airborne operation** either at the start of an offensive or at a later time, possibly after completion of 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 an entire airborne division (against a key strategic objective in the *front's* sector), but more likely one of its subordinate regiments (or battalions), or an independent airborne brigade. The airborne force normally plans to link up with advancing ground forces, probably an OMG. Possible objectives would include nuclear and high-precision weapons, C^2 centers, enemy airfields, major bridges, and logistics facilities. The OPFOR equips its airborne forces (except the independent airborne brigades) with BMD airborne infantry combat vehicles. On the ground, especially in the enemy rear, these forces fight as motorized infantry.

Many aspects of a *front* 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.

COMMANDER'S DECISION

A sound decision depends first and foremost on a clear understanding of the concept of the higher commander (theater CINC or General Staff). The commander must understand the role and place of his *front* in the theater plan, as well as the mission of adjacent *fronts* 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 Chapter 7 for a more detailed discussion of this process.)

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 consider the following factors:

Enemy Forces

The commander must assess the composition and operational formation of the enemy and his conventional and nuclear capabilities, together with his likely intentions and the character of his actions. From this assessment, the commander identifies--

- 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 COFM superiority over the enemy on each axis.
- The targets for the initial, massed nuclear strike (a consideration which would come first in the unlikely event of the operation being nuclear from the start).

Friendly Forces

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

Terrain

The geography of the area of operations exerts a considerable influence on the commander's decision. He also takes into account the meteorological situation 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.

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, various types of reserves.
- Measures for the organization of troop control, coordination, and logistics support.

The *front* commander presents his decision graphically on a 1:500,000 or 1:200,000 map. Figure 4-1 provides an example of such a map. Based on the commander's decision and instructions, the *front* 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 an offensive at the start. The staff identifies possible enemy axes and assigns covering forces to protect the *front's* deployment. It works out the lines and areas occupied and held by covering forces, together with plans for their combat and air support and for their coordination with border troops and forces of the first echelon. Then it plans the actions of the first-echelon armies in terms of the time, lines or areas, and form of accomplishment of immediate and subsequent missions. It works out the required density of artillery, tanks and infantry, 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.

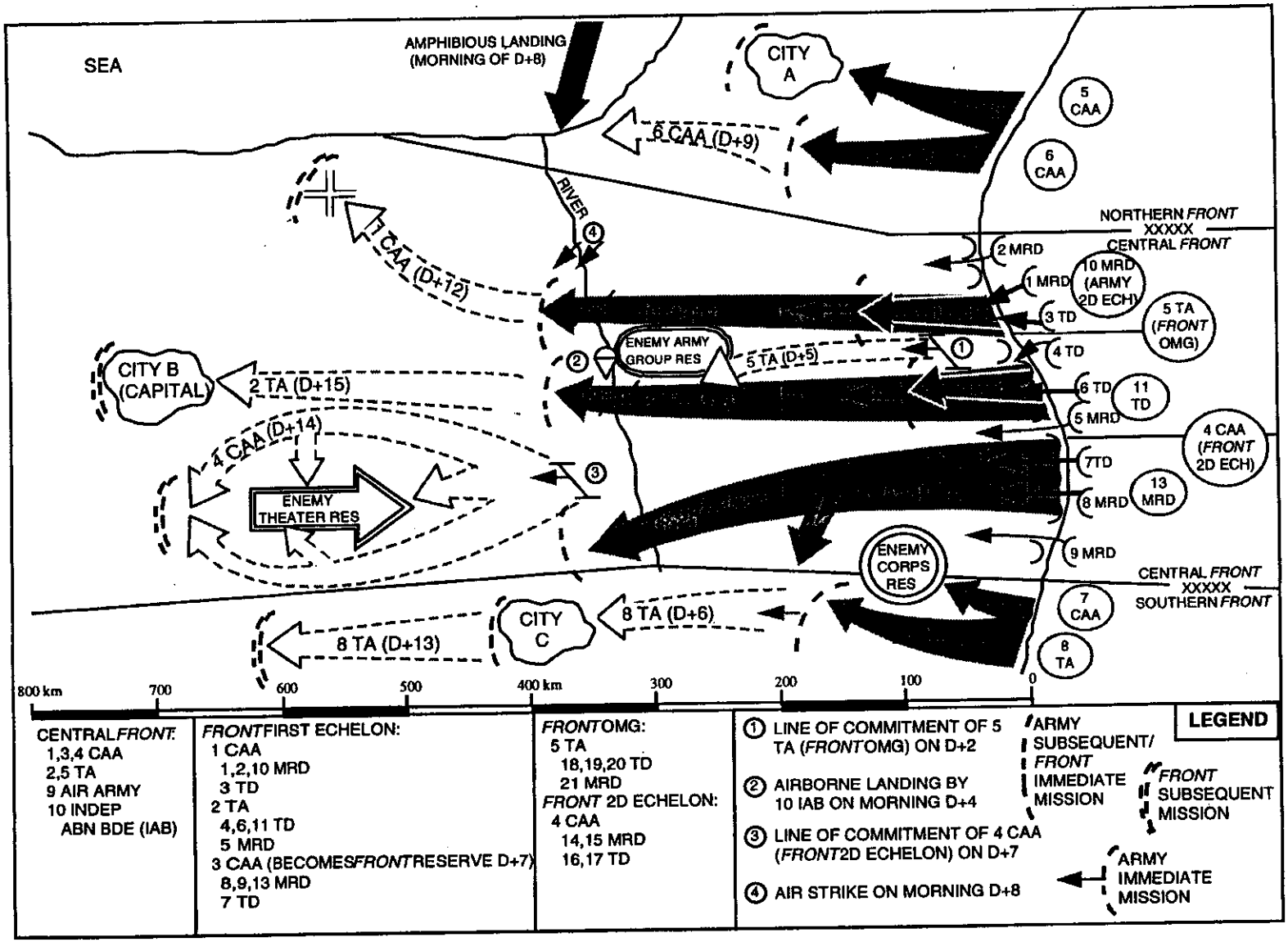

Figure 4-1. Map of *front* commander's decision.

In conventional as in nuclear conditions, plans for the destruction of enemy nuclear weapons receive high priority, as would enemy high-precision weapons. These are targets for SPF, air, missile and artillery troops, and raiding detachments (both ground forces and airborne).

Subsequent Operations

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

Security

A *front* operations plan and directives specifying missions of subordinate troops in the initial *front* 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 of troops and services), 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 *front*) headquarters. With the approval of the same authorities, the 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 (*front*) commander.

Maskirovka

Alongside the real plan, the staff creates another, worked out in just as much detail, for *maskirovka*. 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 *front*. It can mislead the enemy into mistaken deployments and to draw his attention away from real preparations.

Axes

The number of axes on which the OPFOR attacks depends largely on the requirement for the establishment of a decisive COFM superiority on specified directions/axes. Often, a *front* 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 destroy the principal enemy grouping. (Of course, it may happen that a **secondary axis** proves more successful than the main one once an operation gets underway. 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. (In nuclear operations, the main method of destruction would, of course, be nuclear strikes, and this would obviate the need for massing artillery, tanks and infantry

on narrow axes.) In conventional operations, however, force density and the establishment of the requisite COFM superiority over the enemy becomes crucial. (See Chapter 7 for more detail on COFM calculations.)

To reduce vulnerability while establishing conventional superiority on limited sectors, it is necessary to disperse strike groupings laterally and in depth, to conduct engineer preparations of assembly areas, camouflaging forces thoroughly, and then conduct rapid approach marches to attack straight from the line of 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 *front*. The OPFOR term for this basic organization for combat is **operational formation.**[2] The operational formation of a *front* (or army) is the grouping created for the conduct of a particular operation. It must be in accordance with the higher commander's concept. It must also develop the necessary COFM for the achievement of the mission. The *front* 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 *front* 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. As a very general rule, CAAs normally make up the first echelon of the *front*. Tank armies would normally appear in its second echelon or as the *front* operational maneuver group (OMG).[3] A *front* may place TAs in its first echelon to attain greater speed when terrain and other conditions permit this employment. This variant would also be likely if a massive nuclear or high-precision weapon strike preceded the ground offensive or if enemy defenses were unprepared.

To ensure success, the operational formation must--

- Secure decisive COFM 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 troop control and conduct of operations.
- Provide protection from enemy use of weapons of mass destruction.

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[2] In this context, the term (operational) **formation** does not refer to a force of a particular size (division or brigade). Rather, it describes how a *front* (or army) organizes and deploys its forces for combat. Thus, it is the operational-level equivalant of the tactical term **combat formation**

[3] The *front* OMG could be an army corps, which might be more sustainable than a TA.

Elements

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

- A first echelon (containing most of the *front'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.
- *Frontal* aviation.

A *front's* first echelon normally contains most of its forces. The remainder, or **follow-on forces** of the *front* could include--

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

However, the "follow-on" label applies to the OMG only in the very 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 have used 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, if possible, 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 modern 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) before the parent army has to commit additional forces to maintain momentum.

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

Second Echelon

When formed, a second echelon has the task of augmenting and reinforcing the efforts of the first. Only when the commander has made an error in calculating for the operation would the second echelon replace the first. It 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 on the main axis, conduct pursuit, and/or penetrate deeper defense zones.
- Defeat counterattacking enemy groupings and destroy them in flank and rear attacks.
- Destroy bypassed groupings which threaten the development of the operation or unduly restrict deployment and limit operational flexibility.

A *front* second echelon, normally at least one army, has the primary mission of exploiting success achieved by first-echelon forces. It usually does this by continuing the main thrust of the offensive to the ***front* subsequent mission**. Thus, is usually desirable to commit the second echelon (if formed) only **on completion of the *front's* immediate mission**. Circumstances, however, may compel its earlier involvement to reinforce the efforts of the first echelon 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, and it should usually be able to pass the second echelon through a gap in the combat formation of the first echelon or to commit it to a flank. Once the second echelon has been committed, the former first-echelon forces would then normally constitute 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 and not to redeem failure.**

Second-echelon formations are components of a higher formation's **main forces**. Their missions are pre-planned 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 wing of encirclement.
- **Flank protection** for an advance into the enemy rear.
- **Retrieving failure**, either by switching to a new axis of main effort or by replacing exhausted first echelon elements. (This is **not a preferred option**, but remains a possibility of last resort.)

OMG

Perhaps the most significant characteristic of operational formation of *fronts* (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 *fronts* and armies. (For more detail on OMGs and their roles, see the expanded section on "Operational Maneuver Group" later in this chapter and also the sections in Chapters 2 and 5.)

The term OMG is **not synonymous with a 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. It normally consists of forces drawn from the resources of its parent *front* or army. However, a *front* OMG might consist or resources controlled by the General Staff/Supreme High Command (or the theater headquarters). At army level, an OMG probably consists of at least one TD or MRD. At *front*, the OMG would be larger--from two or more divisions to an entire army (or army corps).

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

- The mission.
- The planned direction(s) 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 system is at a low state of readiness, or when enemy defenses are relatively shallow and not supported by large reserves. It could also use the OMG against the enemy's reserves. This would slow or prevent their commitment against attacking second-echelon forces.

Secondary *front* and army offensive operations may not have sufficient forces and combat support to employ an OMG. Formation of an OMG directly impacts the COFM that an army or *front* commander can achieve. The commander may have to 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 desire to place a substantial force in the enemy rear area quickly to achieve simultaneous attacks throughout the enemy's defense.

The OMG and the second echelon are two different variations on the theme of the **follow-on forces**. If the defense is weak or overstretched initially, an OPFOR commander would be 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 requirement for a major intensification of the efforts of the main forces by committing a second echelon. Furthermore, the situation is likely to develop unpredictably, and a pre-tasked second echelon would thus not be appropriate. For both these reasons, major formations deploying OMGs could forsake a second echelon in favor of a combined arms reserve. Should the strength and stability of the defense preclude the planned use of an OMG, the formation could simply become part of this reserve.

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, perhaps more potentially damaging and difficult to counter than the concept of using a second echelon. A comparison of the possible roles of each makes the point quite clear. (See Figure 4-2.)

The role of an OMG is the conversion of tactical into operational success (army OMG) or operational into strategic success (*front* OMG). By operating in the enemy's rear, usually ahead of and separate from the main forces, OMGs crumble the

Tasks of OMG	Tasks of Second Echelon
1. Drive deeply, rapidly into enemy rear, destroying/disrupting enemy nuclear and high-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 ficilitate 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 OMGs and second echelons.

defense from within. By attacking the C^2 and logistics support of the enemy's first echelon and by engaging his operational-tactical or operational reserves and seizing deeper defense lines before the enemy can man them, OMGs help precipitate the collapse of the defense and accelerate the advance of the main forces. 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 *fronts*. 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 to increase effort, to replace or reinforce formations of the first echelon, and to complete unforeseen missions which arise suddenly in the course of the operation. Thus, they cannot receive their missions in advance, like second echelons. In the offense, the *front* commander specifies the composition, possible missions, concentration areas, and methods of relocation of three basic types: combined arms, antitank, and special reserves.[4]

Combined arms reserve. In an offensive against a relatively weak and shallow enemy defense or in other cases, the *front* might employ only a single echelon. If a *front* does not have a second echelon, it would generally retain at least one division as a **combined arms reserve**. If the operation is likely to develop in a highly fluid, unpredictable fashion, a *front* may form a combined arms reserve **instead of a second echelon**, since its mission could not be readily foreseen and pre-tasking is therefore impossible. In that case, or against a partially prepared defense, the *front* would

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

probably retain a larger combined arms reserve of two, three, or more divisions. Such a reserve may 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 may--

- Reinforce or exploit the efforts of first-echelon forces.
- Repel counterattacks.
- Provide flank and rear area security.
- Respond to any other contingency that may arise.

Antitank reserve. Normally, a *front* has an antitank brigade assigned to its artillery division (or an antitank regiment/brigade in addition to the artillery division). The *front's* antitank assets may reinforce first-echelon armies or the combined arms reserve.[5] Alternatively, they may form a *front* **antitank reserve**, often reinforced with engineer assets. (See Chapter 9 for more information on the employment of antitank reserves.)

All commanders from regiment up to *front* 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 motorized rifle 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 nuclear or high-precision weapon strike.

With additional antitank brigade(s) possibly allocated from the Reserves of the Supreme High Command, a *front* may have one or two antitank reserves. As a rule, they operate jointly with *front* mobile obstacle detachments.[6] These assets normally are ready to deploy on tank-threatened axes or at the line of commitment for the *front's* second echelon.

Special reserves. The OPFOR often forms special engineer, chemical defense,

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

[6] A **mobile obstacle detachment** is an engineer 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.

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 weapons of mass destruction). 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 would decentralize most combat support elements to divisions and below. However, a *front* (or army) would retain some long-range systems as part of reconnaissance-strike complexes to conduct deep fire missions. A *front* forms army artillery groups (AAGs) and army groups of rocket artillery (AGRAs) to ensure the concentration of fire on the main axis and the maneuver of massed fire in support of the penetration and the commitment of OMGs and second echelons (or combined arms reserves). Similarly, it forms strong air defense groups to protect the concentration 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 *fronts*. The *front* commander lays down the following for each landing element:

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

He also issues orders for coordination with *front* main forces and the air and naval forces.

Independent airborne brigades and possibly airborne regiments or divisions are available to *fronts* 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 high-precision systems and C^2 and communication facilities). They can seize key crossroads, defiles, and obstacle crossings in advance of OPFOR maneuver elements to help them maintain momentum, or to prevent (or at least delay) enemy attempts to withdraw from or reinforce the battle against either the main forces or OMGs.

Determining Factors

Along with selection of the main and secondary axes, the commander's decision on the operational formation of his *front* (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 quite **flexible** in its organization for combat. There is much misunderstanding of the OPFOR practice of echelonment in the offensive. The OPFOR does not adhere to a rigid formula in all cir-

cumstances. Rather, echelonment results from a careful consideration of the terrain and the enemy--his strength, ratio of force to space, degree of preparation, deployment of reserves. This determines the best organization for the attack.

Given the OPFOR imperative of a high rate of advance, it 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, or by advancing on a narrower frontage, but building up the attack effort in a timely fashion to engage and defeat enemy reserves without any pause for regrouping, or even for operational planning and the issue of detailed orders. It is in the latter case that the OPFOR deploys second echelons (and in extreme cases even third echelons). **An echelon is a grouping with a predetermined mission before the start of the operation.** This aids considerably the rapid and timely commitment of subsequent echelons or reserves.

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.

Against prepared defense. Prepared enemy defenses, especially in a European theater, 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 and 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 *front* operational formation against a prepared defense.

An **army** would do likewise, if on a main axis, and would have a strong AAG and an AGRA concentrated on the main strike sector.[7] In such an operation, an army--and perhaps even a *front* as well--would only be able to penetrate on one, probably narrow axis. It would be difficult to generate a high tempo rapidly as a result of a quick penetration and early commitment of OMGs.

The stability and cohesion of the enemy's defense and his ability to maneuver operational reserves onto threatened axes in a timely manner would remain high. The OPFOR could generate operational maneuver only after a prolonged engagement of attrition. The defeat of the enemy forces would perhaps have to be sequential, not simultaneous. The OPFOR could not use air-delivered forces operationally from the outset against a prepared air defense system and ready reserves that could destroy them long before a linkup with ground forces. Surprise would be difficult, if not impossible to achieve. Thus, the defender would have ample decision-making time, as well as ex-

[7] **Tactical** combat formation (division down even to battalion) is also likely to be in **two echelons.** Divisions and regiments 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 would be shallow (combat action being of an essentially supporting or deception and fixing nature).

cellent targets for his nuclear and high-precision weapons.

Against partially prepared defense. A partially prepared defense might have **strong covering forces** deployed when the OPFOR 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 would be 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 becomes that the OPFOR *front* would have (or need) a **second echelon**. Figure 4-4 shows a typical operational formation of a *front* facing a partially prepared defense that is close to being prepared.

Having caught the enemy off balance, it is essential to keep him so, to keep him in a purely reactive posture and prevent the creation of a stable defense, even in the operational depth. A *front* is then likely to utilize **all available axes** (including difficult terrain), attacking in a **single echelon** with one or even two OMGs and either a relatively strong **combined arms reserve** (perhaps 3 to 4 divisions). Figure 4-5 illustrates this variant of a typical *front* operational formation, against a defense at the lower end of the partially prepared category.

Armies, too, might well attack in one echelon with an OMG. However, an army might form a second echelon under certain conditions: if there is insufficient room to deploy all its constituent divisions in one echelon or if it is advantageous in the conduct of maneuver 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.[8]

In such a situation, the insertion of OMGs successively at army and *front* 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 *front*). 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 nuclear weapons, 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 high-precision weapons.

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[8] 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 the extensive use of forward detachments.

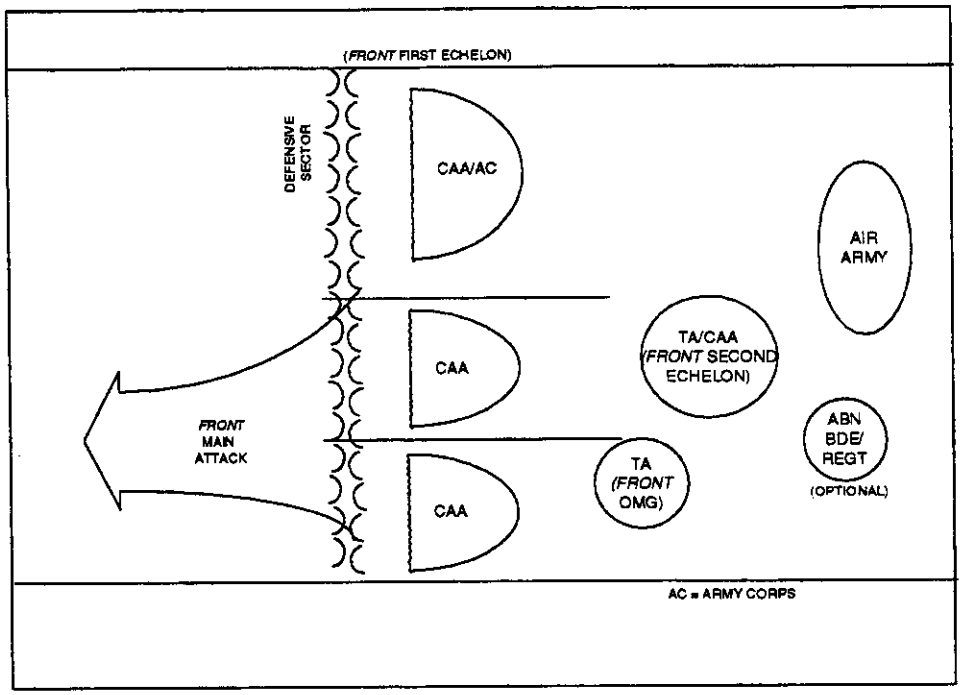

Figure 4-3. *Front* operational formation against prepared defense.

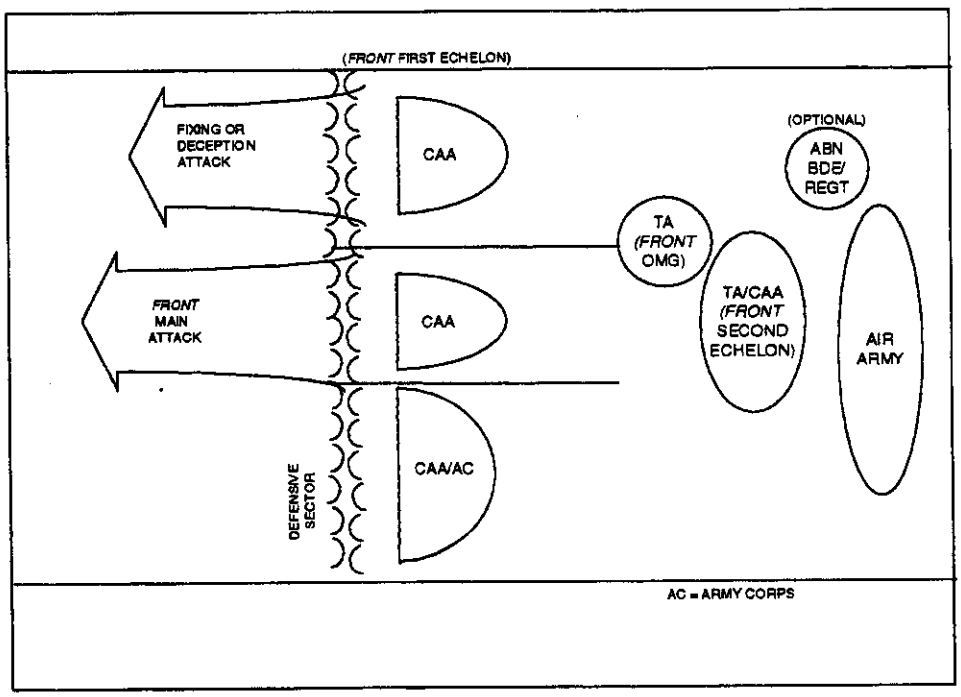

Figure 4-4. *Front* operational formation against partially prepared defense (variant 1).

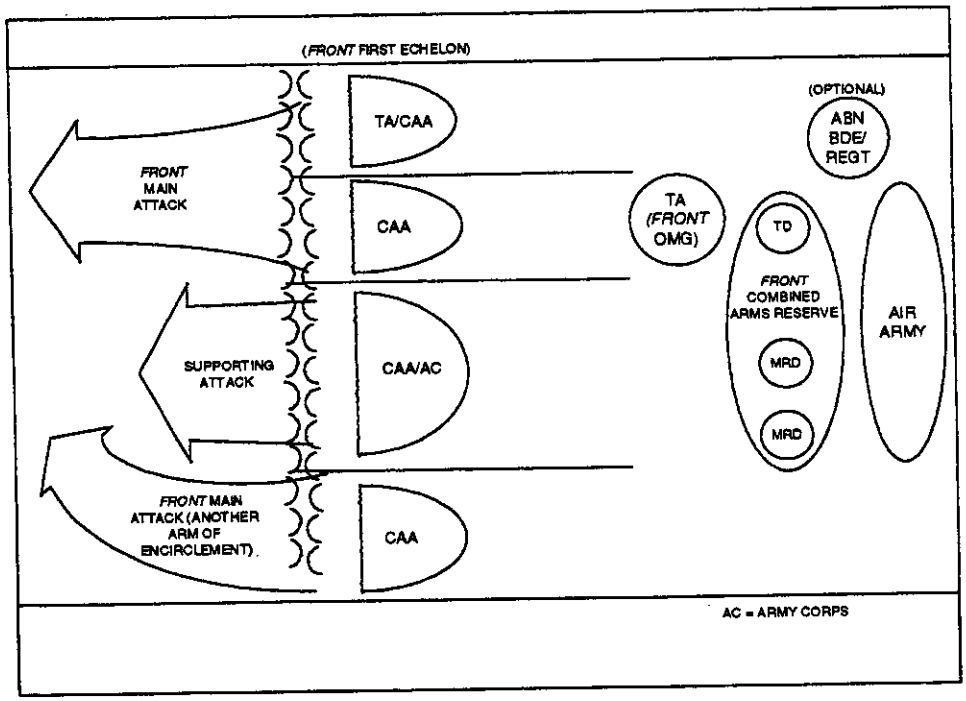

Figure 4-5. *Front* operational formation against partially prepared defense (variant 2).

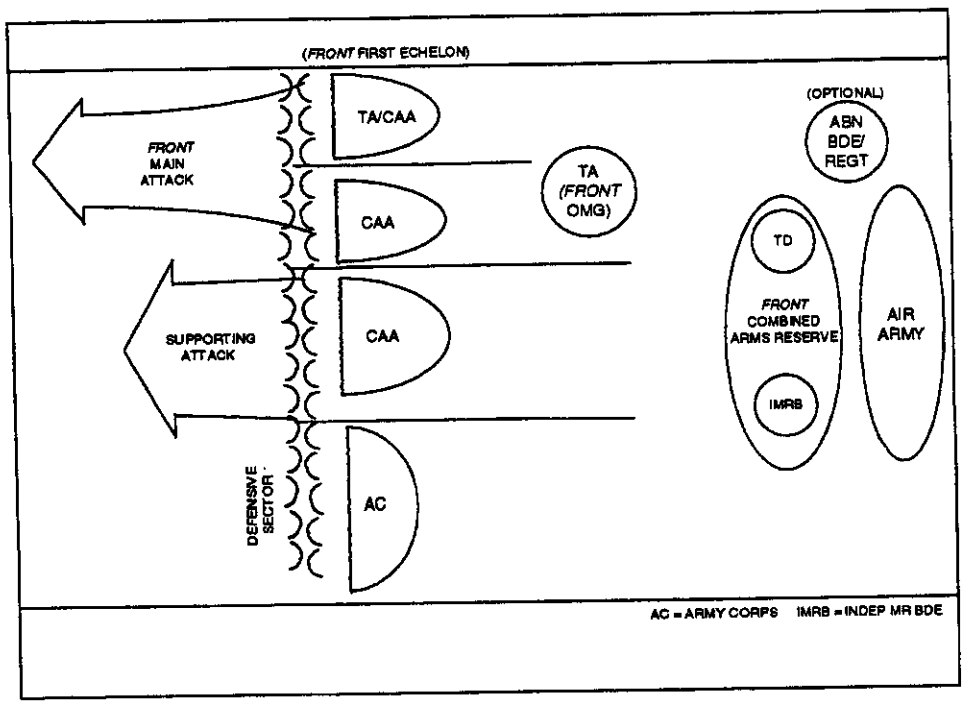

Figure 4-6. *Front* operational formation against unprepared defense.

Against unprepared defense. An unprepared enemy defense--with **weak covering forces**, no preparation of the main defensive area, and few operational reserves--offers the ideal target. 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 generate momentum. In this case, a *front* would probably deploy in a **single echelon**, with an OMG prepared to assist on the main axis. In this case, there would be a relatively small **combined arms reserve**, along with antitank and special reserves. A similar operational formation may occur at army level, though limitations of space may force the holding of a division-sized 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 *front* 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.

Lack of space. As previously mentioned, 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.

Lack of maneuverability. On the other hand, a *front* 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 is 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 OPFOR formations that allows a wider zone of attack for the *front* in question.

OPERATIONAL MANEUVER GROUP

The OPFOR identified a need for a concept which would enable it to exploit fully its growing technical capability while at the same time 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 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 insertion into the enemy's rear can overstretch the defender's resources by forcing him to fight in two directions, to front and rear, while at the same time denying him the means to do so by disrupting his C^2 and logistics systems. At the operational level, this is the role of **operational maneu-**

ver groups (OMGs).[9] It is important to understand that **the OMG is a concept and not a specified formation.** It is possible for virtually any division, army 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** through the conduct of deep operational maneuver into the enemy's rear area. Once in the enemy rear, the main purpose of an OMG is to help to **smooth and accelerate the progress of the main forces** 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, because it sees the concept as a way of exploiting to the full the characteristics of modern weapons systems while denying the same to the enemy.

In contrast to a second echelon (or combined arms reserve), the role of the OMG not to overwhelm the defense from in front, but to erode its viability from within; hence the stress on **early commitment, usually long before that of a second echelon.** The OMG is designed to preempt and negate possible enemy countermeasures--

- By destroying and disrupting the soft infrastructure which 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 nuclear option, by harassing and destroying his nuclear weapons and C^2 system, and by denying the defender a lucrative interdiction target during OPFOR concentration for a penetration. The concept is, of course, most easily translated into practice if the OPFOR achieves at least partial surprise.

Composition

As their name implies, OMGs can be part of either or both operational-level large formations (army and *front*).[10] Their composition is task-oriented and normally determined thoroughly in advance of operations.

Predesignated OMG

If selected for this role in advance, the *front* OMG is likely to be a **tank army** (probably with four divisions) or possibly an army corps. In a strategic offensive operation of limited depth, it is quite possible that the OPFOR would not form large *front* OMGs; instead, the multiple effects of several army-level OMGs could provide suitable force. Alternatively, the *front* level OMG in a limited operation could be a grouping of 2 to 3 divisions, or even a single division.

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[9] Forward detachments and raiding dteachments perform this role.

[10] An army-level OMG is normally division-sized, most probably a reinforced TD

Improvised OMGs

Should the OPFOR achieve an unexpected success, it would automatically adjust the missions and momentum of the operation to exploit its advantage fully. 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 predesignated OMG.

Reinforcement

Operating separately from their parent formations in the enemy's rear, OMGs need substantial reinforcements. These may include:

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

Engineers. Substantial and varied engineer support is necessary, including elements for route clearing, bridging, ferrying, minelaying, exploiting captured POL resources, and even creating improvised runways.

Fire support. Being some distance from the main forces and with the likelihood of meeting strong enemy reserves, the OMG would receive extra artillery. This could well include **long-range guns and MRL** systems. There will also be strong air support, both **fixed-wing and helicopters**; the latter would certainly be under operational control, and quite probably the ground-attack aircraft as well. An OMG may also have a considerable **radioelectronic combat (REC)** component, which would enjoy greatly enhanced effectiveness of communications intercept and jamming by operating from within the enemy rear areas.

Logistics. With no secure land line of communications, an OMG has to carry most of its needs with it and thus needs 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 meetings battles/engagements, should be the norm. At least limited air resupply may well be possible, either by parachute or by air-landing.

Troop 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

A *front*-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 threater CINC) would be of strategic significance. For example, these could include the seizure of an enemy capital or (in conjunction with the OMG of another *front*) a major encirclement. Figure 4-7 illustrates a variant of such missions in the enemy rear. In past wars, a *front* sometimes deployed two TAs as OMGs, working in close cooperation. This gave it a powerful

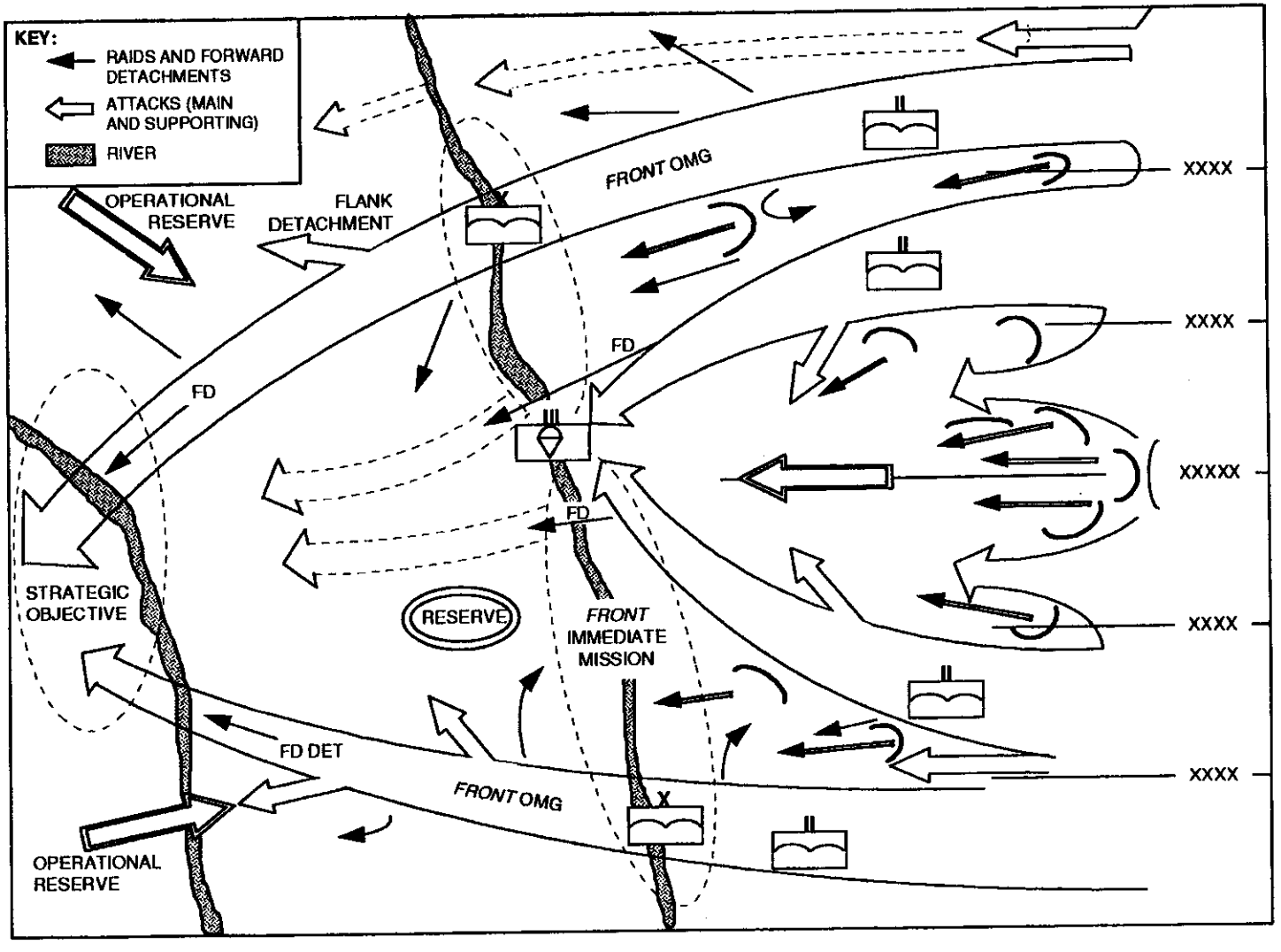

Figure 4-7. *Front* OMGs advance on strategic objective while main forces execute encirclement.

force capable of dealing with strong enemy reserves.

OMGs receive an ultimate **objective**. They may, however, also have the requirement to execute intermediate **missions** en route. The *front* (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 also receives its orders at the same time as the first echelon. Possible missions can include the following:

- Creating the inner arm of encirclement, to help the main forces destroy enemy forward formations by attacks from the rear or establishing blocking positions on withdrawal routes.Conducting parallel pursuit and destruction of withdrawing enemy formations.
- Acting as the outer arm of encirclement, to destroy in meeting engagements enemy operational-tactical (corps) or operational (army group) reserves moving forward to counter the main forces of the *front* 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 (*front* operations often end with occupation of a bridgehead over a major obstacle).
- Seizing key political and/or economic objectives assigned to the *front* (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 for the OMG and routes to them, together with orders for the march and projected support for commitment to combat.

Raids

Whatever the primary missions, OMGs would also conducting **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 nuclear and high-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.

The purpose of these raids is to **help the main forces by reducing the effectiveness of the enemy opposing them.** Thus, they 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 un-

known 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 insertion of the OMG is to be successful.

Assembly Area

The assembly area of the OMG must be close to the line of contact to ensure that 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, perhaps 30 to 50 km (2 to 3 hours march) from the line of contact. In such an area, the enemy could easily mistake the OMG for a second echelon if detected by aerial reconnaissance.

The OPFOR would, of course, take every a precaution to conceal the presence of the formation through normal camouflage means and strict electronic silence. It would also attempt to confuse the defense by locating the assembly area to the flank of the intended line of commitment, and by deploying dummy concentrations behind secondary sectors, backing up its deception with false radio sets and misleading radars. While concealment of a large grouping so far forward is certainly difficult, it does not have to last for 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 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 shorten the time taken to insert the formation. It would largely ignore normal march intervals in the interests of control and speed, and a whole **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-sized** OMG could take **2 to 3 hours** to complete its insertion, 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 loca-

tion 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 CAA are fighting through the tactical zone of defense, reconnaissance groups from the OMG follow and exploit any opportunity to move through gaps created and get into the enemy 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

OPFOR commanders recognize that winning air superiority is no easy task against a first-class enemy, in 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 air defense weapons of the OMG and 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 *front* offensive air operation. Commitment may well take place at night to further confuse enemy reconnaissance and countermoves, both by air and ground forces.

Concentration of Maximum Support

Every available weapon from first-echelon regiments and divisions, as well as army and *front* 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-worthy enemy units in the sector through which the OMG is to move, or to its immediate flanks. Fire support would begin 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 would 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 would deliver supporting attacks on the flanks. (See Figure 4-8.)

Commitment

Therefore, it is essential to insert the OMG **as early as possible** into the enemy's rear. Ideally, this should occur when the enemy's defense is essentially unprepared; then army, and even *front* 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, there being little likelihood that a first-echelon army could substantially penetrate a fully prepared defense. Of course, the reduction of the OMG's combat effectiveness due to its having to complete the penetration is unwelcome--but less so than a loss of tempo. Figures 4-8 illustrates how an army OMG (or part of a *front* 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 *front* OMG can pass.

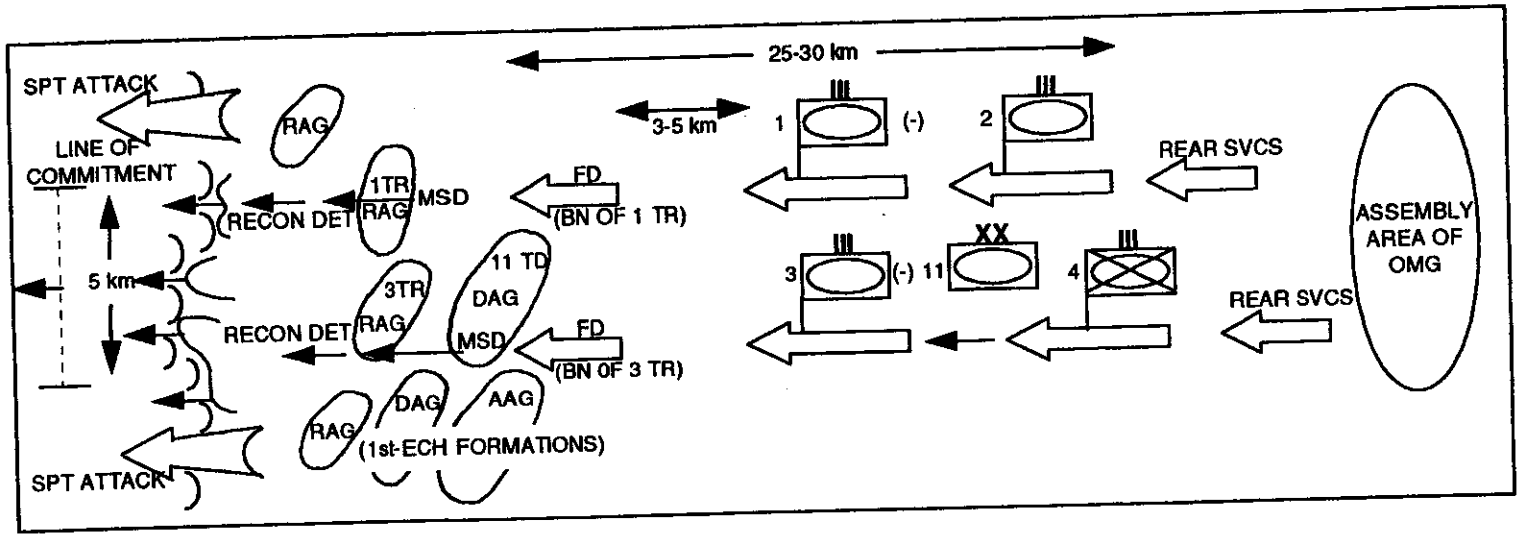

Figure 4-8. Army OMG (or part of *front* OMG) completing a penetration.

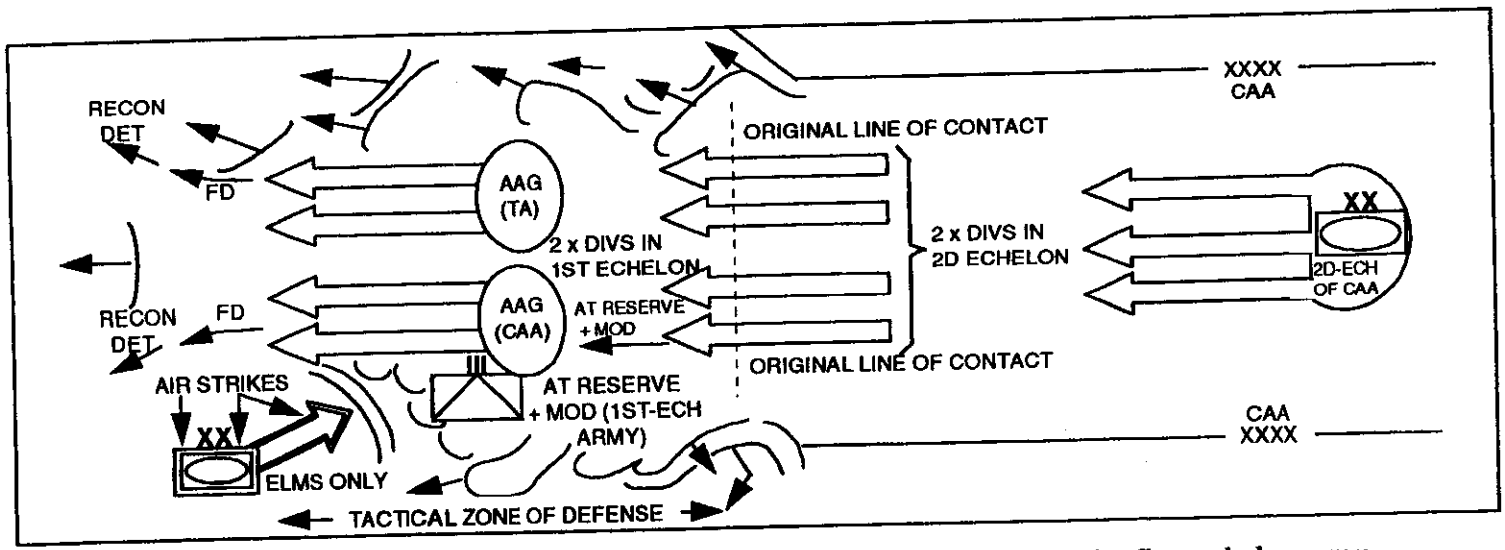

Figure 4-9. *Front* OMG exploiting penetration of tactical zone of defense by first-echelon army.

Sector

The problem of inserting 3,000 to 4,000 vehicles of an army-level OMG through a small penetration sector (4 to 6 km wide) is immense. Obviously it would be impractical to try to commit a *front* OMG of up to four times that size in the same way. The risk would also be quite disproportionate. The loss of a division to an army would be serious for the army, but not of great operational impact on the *front*, given the number of divisions in its overall strength. The loss of an army-sized OMG to a *front* is another matter altogether, and it would have serious operational repercussions. Thus, a *front* is likely to insert its OMG on a broader frontage (perhaps 12 to 20 km), and only after the first echelon has largely completed the penetration of the tactical depth of the defense.

Timing

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

Completing Penetration

Even with partial surprise, it is doubtful whether a first-echelon army can succeed in a matter of hours in creating a gap through the enemy's deployment (without using nuclear or high-precision weapons). Although it is quite likely that an OMG may have to **complete the penetration** of well prepared forward defenses itself, the OPFOR would not expected 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 attacks 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.[11] Its flank and rear attacks on enemy strongpoints on the chosen sector for commitment must speedily and reliably complete the penetration. It must then move rapidly into the enemy rear to seize a foothold in the enemy's second defense line before the latter becomes strongly defended 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 OMG might command the reinforced regiment acting as its forward detachment.

Movement Support Detachments

Almost as important an element is the movement support detachment (MSD).[12] An MSD closely follows the forward detachment and improves the routes being used to commit the OMG across battle-damaged terrain.

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

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

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 disruption of his C^2 system. This negates 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

The third indicator is relative. The ability of the attacking formation 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 COFM and the enemy's morale is low.

Front Missions

First-echelon *fronts* typically receive immediate and subsequent missions. A typical **immediate mission for a first-echelon *front*** would include--

- Neutralizing or destroying, in zone, the enemy's nuclear-delivery and high-precision weapons capabilities.
- Destroying the **main forces of an enemy army group**.
- Creating favorable conditions for developing the offensive deeper into enemy territory.

A typical **subsequent mission for a first-echelon *front*** would include--

- Destroying any newly detected nuclear-delivery or high-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 *front's* subsequent mission normally coincides with the theater's immediate strategic mission. The theater's **second-echelon *fronts*** also receive immediate and subsequent missions that correspond to the overall mission of the strategic operation within the theater.

Dimensions

Fronts may **vary widely** in size and composition and as widely again in their missions. Nevertheless, the following **broad guidelines** give a general impression of the scope of operations:

Depth and Duration

A *front* may execute two successive operations to a depth of 600 to 800 km (even more outside a European theater). Its immediate and subsequent missions largely depend on the nature of the defending enemy forces the *front* must destroy.

The **immediate mission** is the rear of the defending army group. By penetrating to this depth, the first-echelon armies of the *front* would have completed the **destruction**

of enemy first-echelon corps, thus **destroying the cohesion and integrity of the army group**. At this depth, they may also engage the enemy army group reserve. Depending on the preparedness of enemy defenses, the depth of this immediate mission might be about **250 to 350 km**, achieved over a period of **6 to 8 days**.

The *front's* **subsequent mission** is normally 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 6 to 7 additional days. Thus, the total depth of this subsequent mission might be about **600 to 800 km** over a total of **12 to 15 days**. Under favorable conditions, the *front's* first-echelon armies (which, like the *front* itself, may conduct one or more successive operations) may accomplish the *front's* subsequent mission. Against more prepared defenses, however, the *front* would normally have a second echelon to complete this task.

Depending on the overall depth of the theater, the *front's* **subsequent mission** may also include seizure of key points in the **communications zone (COMMZ)**. However, it is also quite possible that the *front's* second operation could be in a **different strategic direction** from the first. Ideally, the *front* can execute such operations without a pause between them. Against stiff opposition, such deep advances without a pause may be logistically infeasible, even if the *front* 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. All 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 a *front* (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 *front* conducts offensive operations within this assigned sector. The width of the zone depends on a number of factors. These factors include the mission, COFM, terrain, weather, enemy disposition, and nuclear or high-precision weapon threat. In an attack against a defending enemy, **a *front* commander would not distribute his forces evenly across the entire zone**. Instead, he would designate main and secondary operational axes, with the desired COFM to achieve the missions in the designated time.

In any conventional operation, there are long **secondary or defensive sectors**, at least at the start, and particularly in attacks on well-prepared defenses. (In past wars, *front* operations generally occurred in one or two sectors, with a total width of only about

7 to 12 percent of the total frontage.) Contemporary **strike sectors** in a *front* 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 300 to 400 km could be appropriate for a *front* with three or four armies in the first echelon operating in European terrain. In other theaters, particularly in mountainous terrain, the zone of action may be wider. The zone of action depends on the number of axes of advance in the *front'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 even greater.

Thus, a *front* with 3 or 4 armies in its first echelon could have a zone anywhere from 180 to 400 km wide. **However, frontages of 250 to 350 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 *front* could approach or even exceed 400 km. (The **depth** of the *front* forces may be 300 to 400 km measured from the forward edge of friendly troops.)

FORMS OF OPERATIONAL MANEUVER

Planning at *front* 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 a *front* could use a combination of the two forms.

Given the relatively limited effects of conventional weaponry against deep targets, the OPFOR must, to a significant degree, destroy the enemy successively.[14] The OPFOR must achieve decisive operational COFM superiorities, 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**. 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). *Fronts* and armies conduct encirclement operations extensively. The OPFOR feels that encirclement operations are the most decisive means of destroying the enemy force. In past wars, it used two basic methods of achieving encirclement. The first was a

[14] This may change with the advent of long-range, high-precision conventional weapons with destructive power approaching that of nuclear weapons, but more selective.

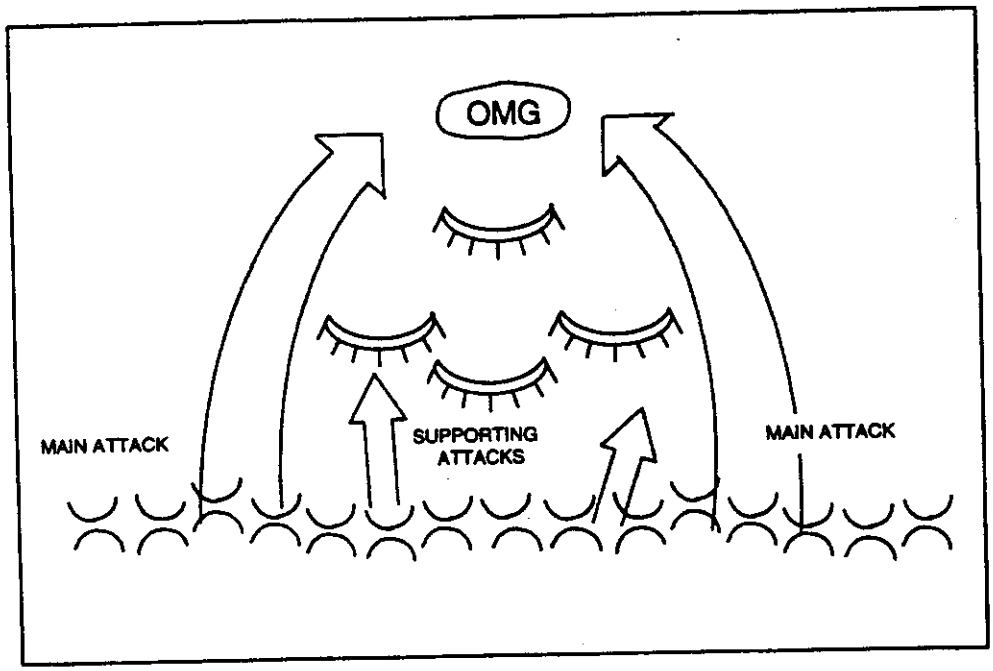

Figure 4-10. Encirclement with double penetration.

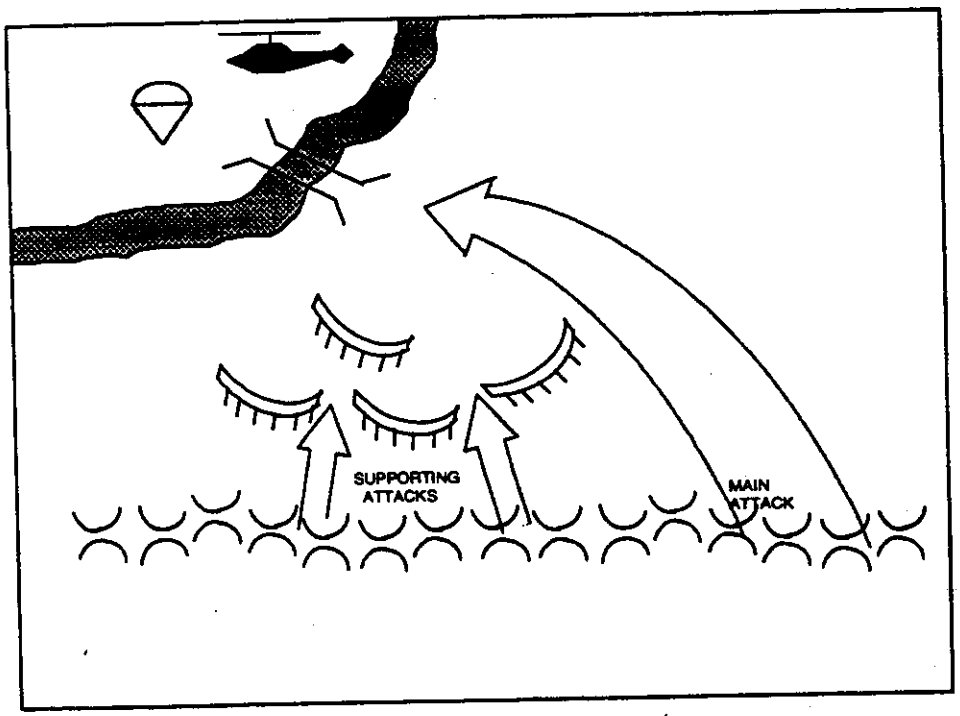

Figure 4-11. Encirclement with single penetration (against a natural obstacle).

double penetration on converging axes. It involved two major penetrations by a single *front* or by neighboring *fronts* to encircle an enemy force. (See Figure 4-10.) The second method was a single penetration followed by flanking attacks. This was most useful when a natural obstacle (the sea or a major river) served to block enemy withdrawal. (See Figure 4-11.)

Despite of the threat of nuclear and high-precision conventional weapons use,encirclements based on **two or more penetrations** on converging axes are the **most likely** types employed today in the strategic operation. (See Chapter 2 for more on encirclement.) The OPFOR would attack on selected **strike sectors** within the *fronts* to create the initial penetrations. The attacking forces would have to form rapidly, create the penetrations, and then disperse to avoid vulnerability to nuclear and high-precision conventional strikes. The goal would then be to maintain a rapid tempo of advance into the depths of the enemy. OPFOR commanders could insert forward detachments at the tactical level and OMGs at the operational level early on to develop the deep offensive. The OPFOR could block major withdrawal, supply, and advancing reserve routes by using OMGs, forward detachments, and airborne forces. It would add the fires of SSMs, artillery, aviation, and naval support throughout the depths of the theater. This would effectively isolate the enemy forces and allow for their subsequent destruction by follow-on OPFOR forces.

The most advantageous form of operation in conventional war is usually the encirclement. It is ideal when the enemy has concentrated the bulk of his forces in the tactical and immediate operational depth, with 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 *front*. Encirclement of a larger grouping than a single enemy corps would require the forces of two or even three *fronts*, with two *fronts* each providing one wing of encirclement and completing the ring deep in the enemy's operational rear. (See Figure 4-7 or Figures 2-4 and 2-5 in Chapter 2 for examples of encirclement operations involving more than one *front*.) Simultaneously with the execution of the encirclement, the *front* must allocate forces (probably an OMG) to drive rapidly for the *front'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. (It would probably also use it to exploit nuclear operations.)

Such attacks are designed to **split the enemy into isolated and noncohesive groupings**. In conventional conditions, it is unlikely that a single *front* would be able to penetrate on as many axes over a broad frontage as in nuclear operations.[15] Ideally, the splitting attacks would focus on **weak or**

[15] This might still be possible using conventional high-precision weapons.

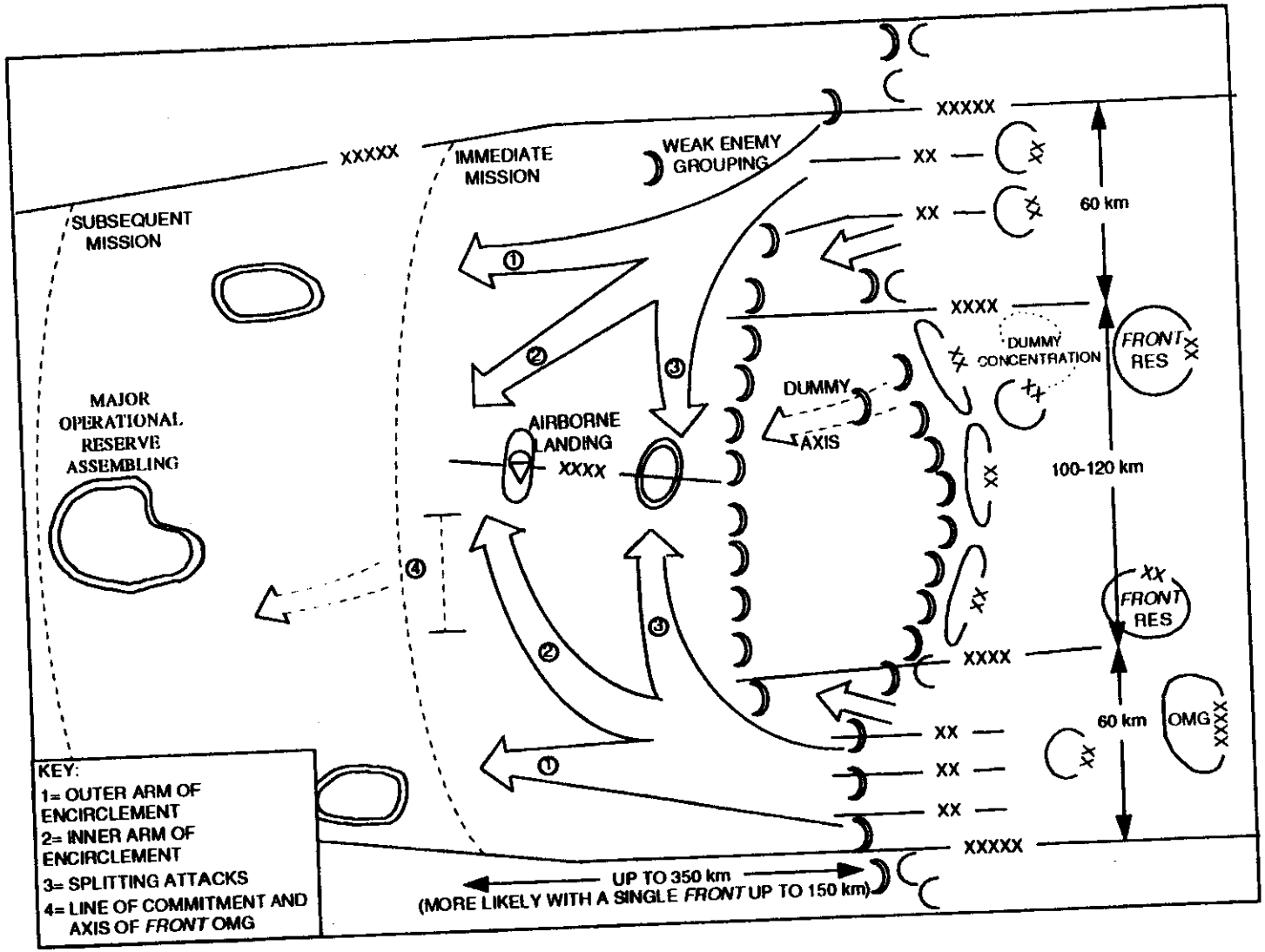

Figure 4-12. Encirclement by a single *front* (variant).

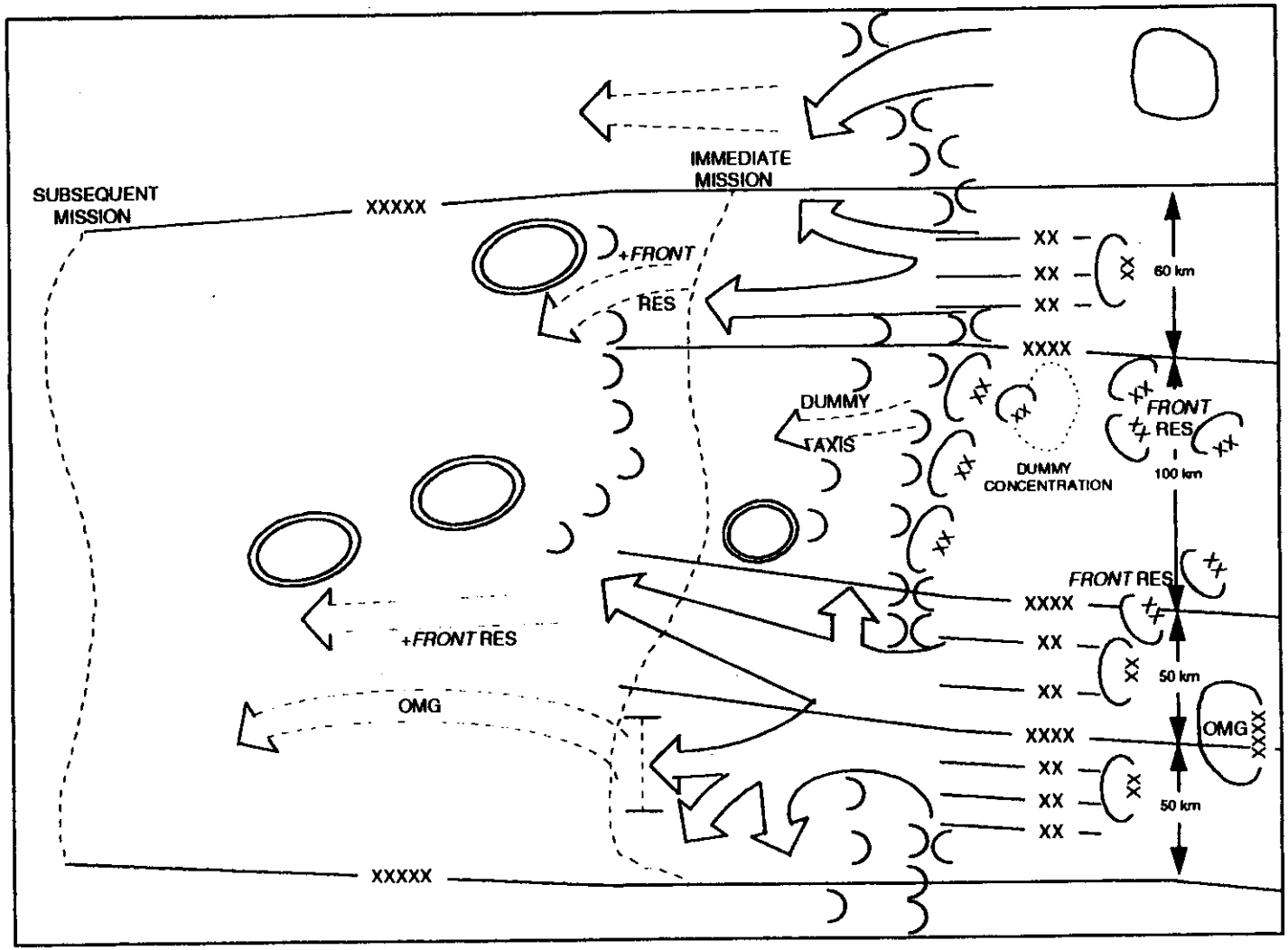

Figure 4-13. Single *front* attacking across broad frontage on multiple axes (variant).

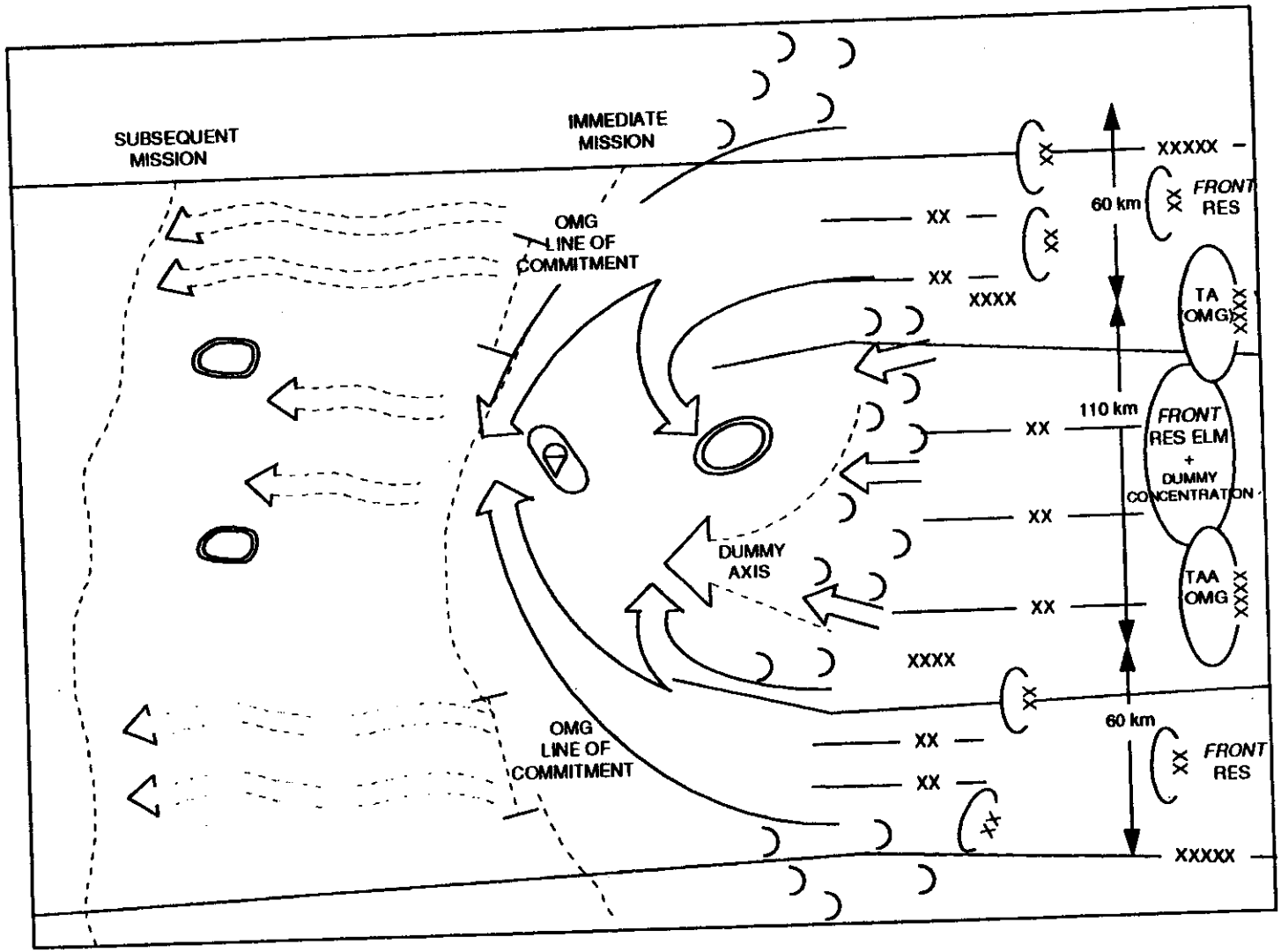

Figure 4-14. *Front* combining encirclement and attacks on multiple axes.

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.

Combined Methods

It is possible to combine encirclement and attacks on multiple axes. (See Figure 4-14.) The elimination of the main enemy grouping in one or more encirclements would then allow an advance 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 concentratedstrike. 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

In nuclear war, the OPFOR can easily preclude enemy reinforcement through ports by using nuclear strikes. In conventional operations, however, it may be necessary to **physically occupy such ports**. 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 OPFOR amphibious force. (See Figure 4-15 for an example.)

TYPES OF OFFENSIVE ACTION

The OPFOR defines offensive (and defensive) actions more in regard to the **enemy situation** (for example, attack against a defending enemy) than to time (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.[16] The goal of such a combat is to rout the enemy rapidly, seize the initiative and create advantageous conditions for subsequent operations. A meeting engagement is the **preferred form of combat action** compared with attacking an enemy prepared for defense, and often, too, compared to the OPFOR's adopting defensive posture. If however, the OPFOR can achieve its operational aims without combat, by

[16] Such an action can occur at any level from company to *front*. The OPFOR differentiates the scale of action by using two different terms. A **meeting battle** connotes a tactical-level action at division or below. At the operational level, *fronts* and armies fight a larger-scale battle or **meeting engagement**.

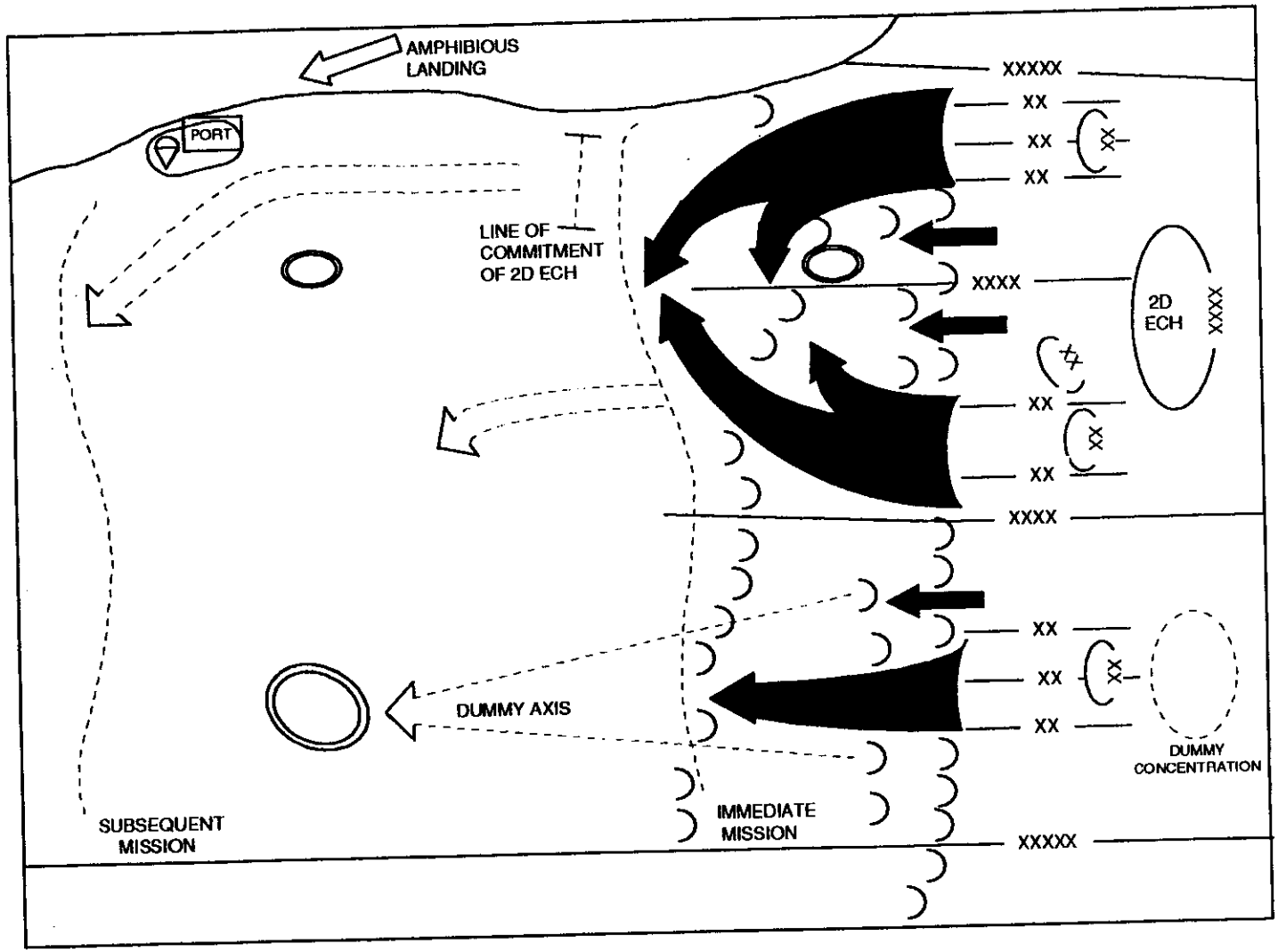

Figure 4-15. *Front* attacking along a coastline.

maneuver, then of course, it would avoid a meeting engagement as well.

Occurrence

An operational-level meeting engagement can arise under various circumstances:

- **At the beginning of the war**, when OPFOR 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 an OPFOR formation is exploiting a penetration or in pursuitand 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. Among its characteristics are the following:

Shortage of time. There will be only **limited time to organize for combat.** To take an extreme example, if both sides are advancing at, say 20 km per hour, the closing speed would be 40 km per hour, so even an initial separation of, for example, 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 thetime 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 which imposes its will upon the enemy, forcing him into a reactive posture. The struggle for the initiative begins well before the main forces actually clash. The engagement often starts with air attacks, long-range artillery fire, and the use of heliborne forces and forward detachments.

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 defense very difficult. It would probably be **combat-ineffective** due to 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** may defeat a larger force. It may do so even though it lacks detailed knowledge of the enemy and elaborate plans of its own. The OPFOR operational commander employs **maneuver** extensively. 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 the conduct of meeting engagements which, properly observed, may **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 nuclear and high-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, open artillery fire, and deploy the main forces is of fundamental importance. This 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 a timely decision 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 COFM 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 providing security against enemy attacks without diverting elements of the main forces and thus weakening the force of the latter'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 the 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 action. It is also possible, when the enemy's frontage is overextended, to deliver frontal attacks into the gaps between enemy columns and 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 an example of an army-level meeting engagement.)

Conclusion

The success or failure of a meeting engagement **creates the conditions for subsequent operations**. Thus, the meeting engagement 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

The **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. *Front* (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 antitank weaponry. The defeat of a thoroughly prepared defense requires--

- Sufficient and reliable **artillery suppression** of the enemy on the **strike sector** and to the immediate flanks.
- The suppression of enemy immediate reserves, artillery, and C^2 by **long-range artillery, missiles, and air strikes**.
- The establishment of the required **COFM superiority** on specified axes, followed by decisive actions by leading tank and motorized rifle 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 leading divisions into prebattle or battle formation depends on the degree of enemy resistance.

Against **strong covering forces**, the OPFOR would have to deploy the main bodies of first-echelon divisions from the outset. However, it would make every effort

to use forward detachments and air landings to cut off enemy withdrawals and seize entries into the tactical zone of defense.

Penetration

The requirement to concentrate sufficient COFM superiority to ensure a penetration determines the density of the attacking forces and the width of the **strike sector**. Generally ,the total width of a *front* penetration, whether on one or two sectors, is 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 the **fire support**. The speed of penetration depends on its **neutralization of the enemy to the entire depth of his tactical zone of defense prior to 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 high-precision and tactical nuclear weapons, artillery, mortars, antitank weapons, strongpoints, C^2 systems, and electronic warfare assets. In addition to this indirect fire, many tanks, ATGMs, and artillery weapons would destroy targets by direct fire. **Air power**, too, plays a vital role in neutralizing the defense. Principal targets for **air strikes** are nuclear and high-precision weapons, artillery, CPs, enemy 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 massive 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. The OPFOR's 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 **complete the destruction of the enemy**. The OPFOR uses three pursuit techniques: **direct** (frontal), **parallel**, and a **combination** of direct 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 **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 nuclear and high-precision weapons and other fire support means.

Units at regiment or above initiate pursuit immediately upon discovering the enemy's withdrawal. Only the orders of a

higher commander can terminate a pursuit. The **pursuit ends**--

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

The OPFOR forces then **regroups** and redeploys its forces for the next operation.

EXPLOITATION OF THE ATTACK

The successful **exploitation** of the attack, **converting tactical successes in the penetration battles into operational success**, depends on an early expansion or reinforcement of effort on the main direction. 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 re-establish a defensive front on successive lines or to initiate counterattacks. The advance must reach the enemy's airfields and deployment areas of operational nuclear and high-precision weapons as fast as possible. Given the mobility and firepower of modern formations, 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. Therefore, it devotes much prior planning to preempting this. **Airborne landings** can establish bridgeheads early and seize dams that the enemy could use to create flooding. The OPFOR plans to rapidly reinforce these 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 that the OPFOR can trap the enemy against it and destroyed him on the near bank. Where assault crossings are necessary, the OPFOR selects sectors in advance across a wider frontage. It should force obstacles should be forced from the march, without pause, and having crossed, forces should not stop to consolidate bridgeheads but press on into the enemy's rear.

Defensive Actions

Ideally, the OPFOR would defeat enemy counterattacks in **meeting engagements**. If the COFM 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 would **shift the attack onto other, more favorable axes** to develop actions into the enemy rear. The best aid for a hard-pressed formation is resolute **offensive action by its neighbors**. Wherever possible, the OPFOR avoids a battle of attrition.

Regrouping

When the OPFOR has completed any of the above types of offensive action, it may have to **regroup and redeploy forces** for the next operation. However, regrouping of *fronts* (or armies) is not likely to take place more than once in a strategic operation, should it be necessary at all.

It is plainly **undesirable** to carry out extensive a **operational regrouping** during the course of a strategic offensive operation. Such maneuvers can too easily lead to loss of momentum and confusion. OPFOR

commanders recognize, however, that some regrouping will probably have to take place, 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 a of time. Any regrouping of higher formations would take place only if ordered or approved by the **senior commander** (General Staff/theater CINC for *fronts* or *front* commander for armies).

OFFENSE IN NUCLEAR CONDITIONS

In planning a *front* offensive operation, an OPFOR commander always considers those situations in which either side would employ nuclear weapons. Destruction or neutralization of the enemy's nuclear-capable delivery systems is essential. Thus, the *front* commander plans continuous reconnaissance to target accurately those systems with a nuclear capability. Planning at *front* level is essentially the same for both nuclear and nonnuclear operations. This applies to missions, employment of forces, main and supporting attacks, and axes of advance.

The similarities end, however, in planning the scheme of maneuver and fire support. Normally, **conventional operations** require successive intermediate operations with a continuous regrouping of forces. *Frontal* aviation has the mission to engage targets deep in the enemy rear area. The artillery has the mission to neutralize the enemy near his forward edge. In contrast, **nuclear operations** keep the number of intermediate operations to a minimum. The *front* normally achieves its missions by high-speed operations along multiple axes of advance, exploiting the results of the nuclear fire plan.

Preparedness for Transition to Nuclear Operations

During the course of conventional operations, a *front* must be constantly ready for a transition to nuclear operations. This phase may occur at any time, but the OPFOR considers it **most likely when the enemy situation becomes critical**. This is generally when the *front* has largely destroyed the enemy's first echelon and is advancing into vital territory, with the enemy unable to stop it by conventional means.

Transition

The switch to nuclear operations introduces a qualitatively new phase. Now it is essential for the OPFOR to deliver the first masses nuclear strike before the enemy. To ensure this, at least 30 percent of a *front's* nuclear systems are always ready to deliver strikes; this proportion would increase as the period of greatest danger approaches. The OPFOR keeps targets under constant surveillance of targets and continually updates the plan for the initial nuclear strike. It makes every effort to detect enemy measures which prove that he is preparing for nuclear use, so that it can deliver a crushing **preemptive strike**. Wherever possible, it practices nuclear dispersion and high-speed movement.

Rapid changes in the situation make the immediate pre-nuclear phase very complex. Therefore, the *front* cannot plan in the same detail it could if operations started with nuclear use. It cannot specify all the targets for all the nuclear weapons available

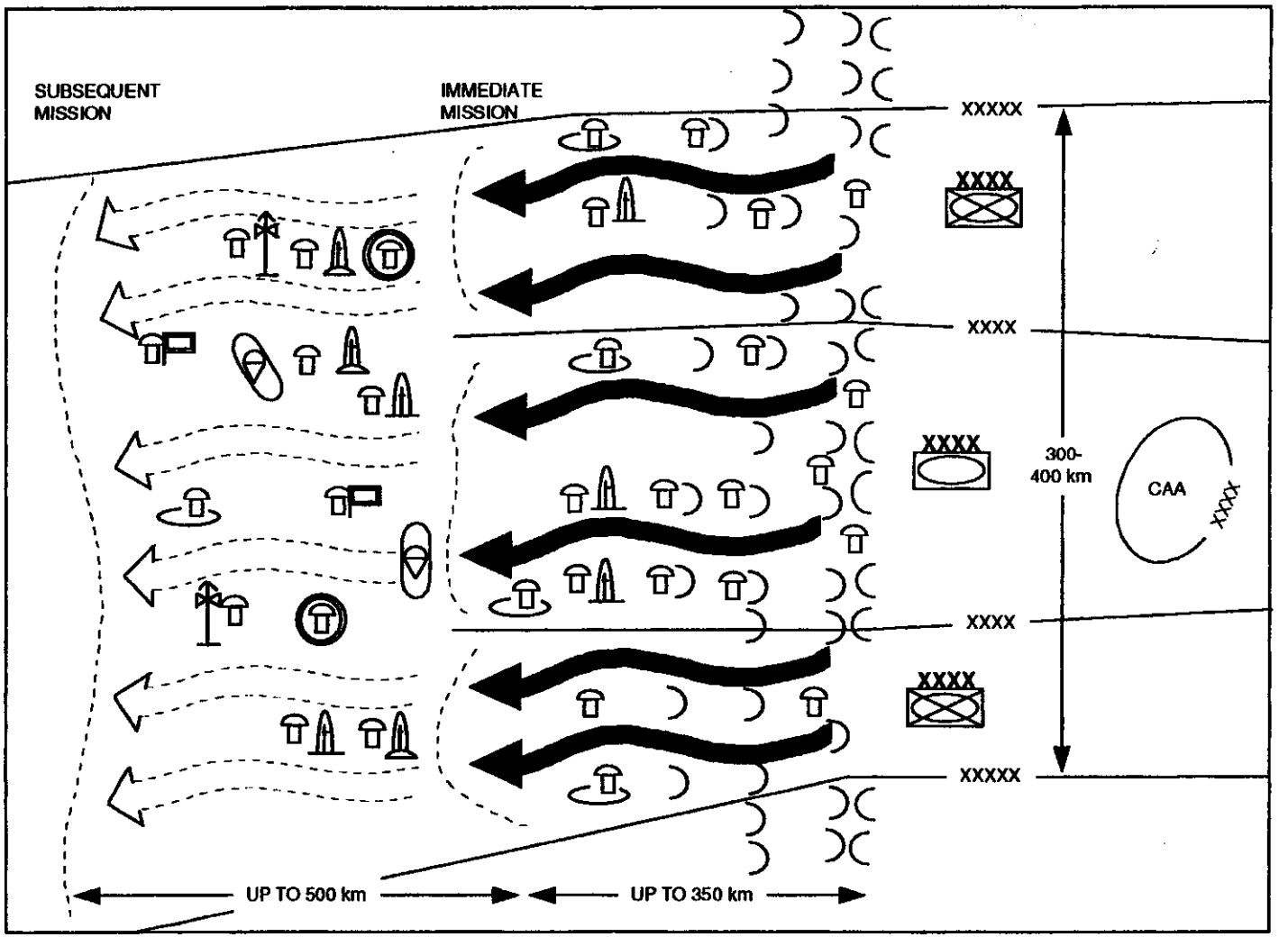

Figure 4-16. *Front* attack on multiple axes in nuclear conditions.

in the initial strike. Rather, army and even division commanders must exercise their **initiative** in selecting targets which can help them achieve their missions.

Missions and Norms

The zones of advance, mission depths, and even rates of advance expected in conventional war do not necessarily change in nuclear conditions. However, strike sector widths tend to increase more nearly to correspond with zones of advance. Concentration on a narrow strike sector is both dangerous and unnecessary, because of nuclear strikes. On the other hand, average rates of advance are not likely to increase. This is due to the destruction and contamination of terrain, as well as to the disruption caused by enemy strikes. In the latter case, the restoration of combat effectiveness and reorganization necessitated by the initial nuclear exchange alone could take one or two days.

Forms of Operational Maneuver

The form a *front* operation takes will, of course, depend on the location and strength of enemy groupings and the characteristics of their actions, the nature of the terrain, and the General Staff's (or theater CINC's) concept of operations. The options are the same as in conventional operations, but not in the same order.

Attack Across a Broad Frontage on Multiple Axes

Figure 4-16 illustrates the **most typical** form of *front* offensive in nuclear conditions, an **attack across a broad frontage on multiple axes**. The OPFOR inflicts decisivelosses on the enemy in the initial nuclear strike. With the resulting favorable COFM on several axes, multiple high-speed thrusts on the shortest route to the strategic objective **split the enemy into isolated groupings for piecemeal destruction**. The OPFOR can make widespread use of **airborne landings** from the earliest stages, thanks to the facility with which nuclear strikes can suppress enemy air defenses.

Encirclement

Even in nuclear operations, **encirclement** is an option, especially where the terrain and enemy deployment favors strikes on converging axes or when nuclear ammunition is scarce. Nuclear weapons can ease considerably the tasks of both inner and outer wings of encirclement, and extensive employment of **airborne landings** is possible. At the earliest possible moment, the *front* would commit its **second-echelon forces** develop the offensive in depth, while the first-echelon is still destroying the encircled enemy. **Single *fronts*** may accomplish small encirclements, or the forces of **two *fronts*** acting in cooperation can conduct larger ones. Figure 4-17 shows an encirclement by a single *front*.

Encirclement Against an Obstacle

A variation on the encirclement theme is the trapping of the enemy **against an obstacle**. (See Figure 4-18.) Strikes to the enemy's flank and rear pin his main grouping against a natural barrier. On this anvil, the OPFOR can then destroy the enemy forces. If the obstacle is a coastline, then the OPFOR may use **amphibious landings**, perhaps preceded by an **airborne landing**. Such landings can seize a beachhead or port, to prevent evacuation, and also help split up the encircled grouping.

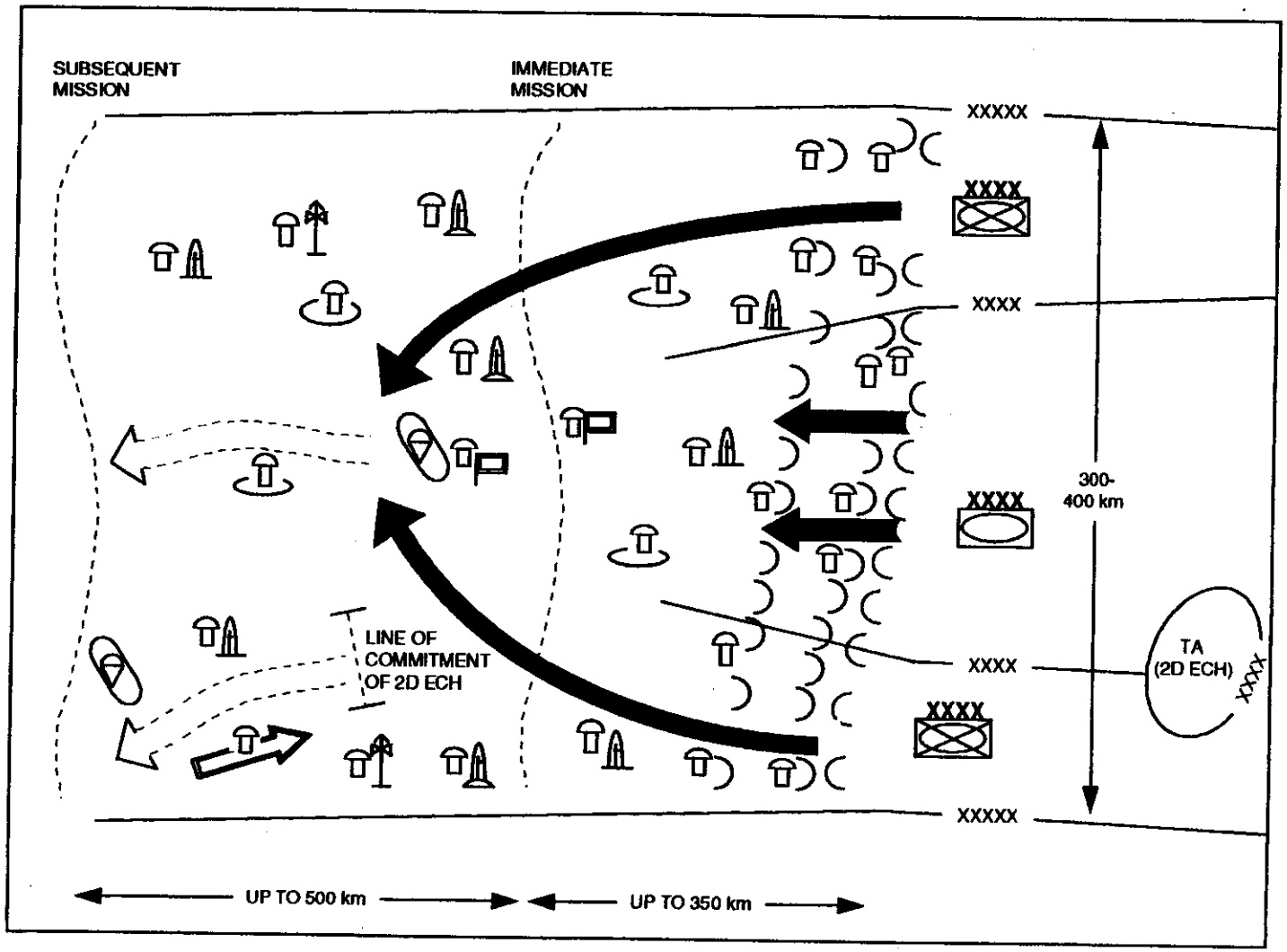

Figure 4-17. Encirclement by a single *front* under nuclear conditions.

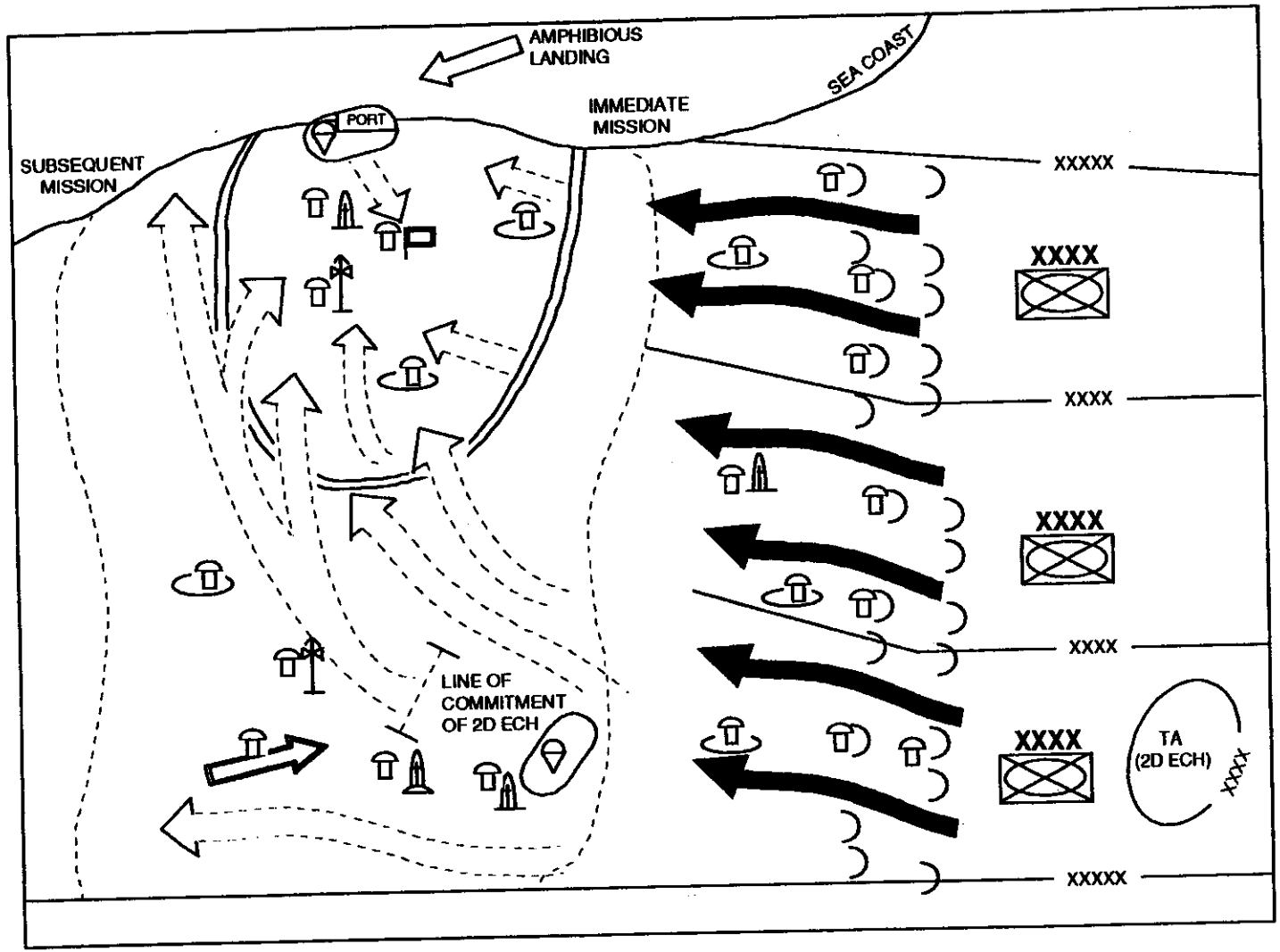

Figure 4-18. *Front* encirclement against an obstacle in nuclear conditions.

Combined Method

It is, of course, possible to combine both encirclement and attacks on multiple axes in the course of operations. As shown in Figure 4-18, the offensive may begin with attacks on multiple axes to the depth of the *front's* immediate mission and then turn to encirclement after commitment of the second echelon. In other cases, the *front's* immediate mission may be to destroy a strong enemy grouping in encirclement, allowing a subsequent advance on a broad frontage against weak forces in deep in the enemy rear.

The Initial Nuclear Strike

The initial nuclear strike can change the situation radically, not always in predictable ways; the enemy, too, may be delivering nuclear strikes. Continuous reconnaissance is necessary to assess the damage inflicted and detect new targets and thus maximize the effectiveness of subsequentOPFOR nuclear strikes. The operations plan would certainly need modification, perhaps even change. For instance, strikes on an axis may have failed to alter the COFM sufficiently, or friendly attack groupings may have suffered great damage.

The content of the *front* mission always includes the destruction of enemy operational-tactical nuclear weapons, main enemy groupings, air and air defense forces, important headquarters and logistics installations, and interdiction targets (chokepoints). The General Staff (or theater CINC) lays down the depth of the *front's* initial nuclear strike and specifies the boundary between strategic and *front* strikes (usually 250 km or more in depth).

In executing its role in the initial nuclear strike, the *front* may fire half or even more of its nuclear weapons (including those at army level) in 2 to 4 hours. (A *front* would always have 30 percent of its nuclear systems standing by at full readiness to participate in the initial nuclear strike.) Most strikes would be air-burst to reduce contamination and collateral damage in areas OPFOR troops are likely to traverse. Surface bursts may be necessary to destroy hardened targets, such as underground headquarters, and to deny routes. The growing accuracy of delivery systems has probably resulted in a lowering of the large yields traditionally favored. It is also possible that the OPFOR could destroy some of these targets with high-precision conventional weapons.

Preservation of Combat Effectiveness

The OPFOR must undertake measures, both before the event and after, to reduce the effects of enemy nuclear strikes. The role of air defense is crucial in this context. Also important is the creation beforehand of combined arms, antitank, engineer, chemical protection, and medical reserves and their rapid post-strike deployment.

To restore combat effectiveness in subordinate formations struck by nuclear weapons, senior commanders must take measures immediately to--

- Move troops out of areas of fire, flood and/or contamination.
- Restore troop control.
- Extract combat-effective elements and, with timely reinforcement and resupply to compensate for some losses, dispatch them to continue the mission.

- Conduct rescue, decontamination, medical and repair and firefighting work to restore some combat capability.

If major losses destroy the very structure of divisions, then they must form composite regiments and battalions of varying structure. The original division may continue as a composite formation, or it may have its composite elements attached to an intact division.

Initial Operations of the Ground Forces

It is vital to fully exploit the results of the initial nuclear strike and as rapidly as possible. The nature of subsequent combat depends very much on the effectiveness of that strike. However, the **meeting engagement** is likely to be the typical form. In any case, it is desirable to destroy as much as possible of the enemy in border areas.

Where the enemy's groupings have disintegrated into individual, isolated fragments with little or no combat capability, forces of the *front* may advance rapidly in prebattle formation, or even in march column, to penetrate deep into enemy territory, while leaving behind elements to mop up any combat effective remnants. Where both sides have taken heavy casualties, either across the entire frontage or on specific axes, it is essential to beat the enemy to the punch in delivering subsequent strikes and in initiating the attack with battle-worthy elements. In either case, rapid and deep penetration is considered essential. Where possible, the OPFOR would avoid decisive engagements by its main forces, and try to leave the tidying-up of the battlefield to second echelons or reserves.

Exploitation of the Offensive

The successful exploitation of the offensive depends on the effectiveness of subsequent nuclear strikes. It also depends on the reinforcement of first-echelon armies on principal axes with reserve divisions or by regrouping from less important directions. (The OPFOR must replace heavy losses, establish new groupings, repulse counterattacks as necessary, and maintain a favorable COFM.)

The commitment of the **second echelon** should change the operational situation sharply in the attacker's favor. It may take place to complete the *front's* immediate mission or at the beginning of the subsequent mission. This does not, however, preclude the possibility of commitment as early as the first day of operations in favorable circumstances. Normally, the *front* commits its second echelon on the main axes, but it may possibly use it to develop the attack on a new direction, or to replace a first-echelon army which has taken heavy losses. A *front* second echelon must be ready for commitment at any time and be ready for any type of mission, given the rapidly changing nature of the nuclear battlefield. Its movement must be covert, preferably at night, and across a wide frontage on several routes. Its commitment may be to the flank of an army, in an interval between armies, or in areas only thinly occupied by the enemy. Strong nuclear strikes would precede its commitment, to impart momentum from the outset.

In exploiting a nuclear offensive, particular emphasis is on **tank and airborne forces**. **Tanks** possess great maneuverability and sustainability, as well as shock power. Tank armies may act separately from the rest of the *front's* first echelon, striking

the flanks or rear of surviving groupings or developing the attack into the enemy rear on key axes. **Airborne** forces can fulfill the principle of simultaneity by--

- Delivering deep attacks hard on the heels of nuclear strikes.
- Destroying or seizing enemy nuclear weapons and ammunition depots, headquarters, and airfields.
- Seizing obstacle crossings and preventing the approach of reserves from the enemy rear or other maneuvers.

The ability of airborne forces to pass over contaminated areas and immediately to exploit deep nuclear strikes confers upon them a unique importance.

Chapter 5
Army Offensive Operations

An army offensive operation is normally part of a *front* offensive operation. However, an army operating on a separate operational direction is capable of independent operations. The army is the smallest OPFOR large formation fully organized and equipped to conduct operational maneuver.[1] It can strike throughout the entire tactical-operational depths of the enemy through a combination of operational maneuver and fires. The forms of maneuver and types of offensive action used at the army level are similar to those at the *front*, only on a smaller scale. Therefore, much of the content of Chapter 4 applies to the army level as well. Therefore, this chapter does not repeat all those elements common to both *fronts* and armies, but 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 a *front* operation. When the army's divisions are actively engaged in *front* combat operations, *front* assets supplement the army's combat support elements.

Combined Arms and Tank Armies

The OPFOR employs two basic types of army: the **combined arms army (CAA)** and the **tank army (TA)**.[2] While both types actually have a combined arms structure, a TA would have a predominance of tank divisions (TDs); a CAA would normally have a predominance of motorized rifle divisions (MRDs) or perhaps a balanced structure of MRDs and TDs.

Divisions

The army has **no permanent organization**, especially concerning the number of divisions it may contain. **A typical CAA has 3 or 4 divisions, with 4 being the most common.** There are normally at least 2 MRDs and one TD, with a possible fourth division of either type.[3] On the other hand, **a typical TA has 3 to 5 divisions, with 4**

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[1] The OPFOR term **large formation** applies to *fronts* and armies, as well as to army corps. Its sometimes expanded form **operational large formation** clearly distinguishes these from tactical-level **formations** (divisions and brigades). In peacetime, when *fronts* do not exist, an army is the largest ground maneuver formation at the operational level. An army corps, although smaller than an army, conducts operations in a similar manner. The main difference is that army corps operations would normally involve narrower frontages, and mission depths would not be as great.

[2] The *Heavy OPFOR Organization Guide* also includes an **infantry army**, which consists primarily of infantry divisions, rather than MRDs and TDs. It has some, but not all of the combat support and combat service support elements normally associated with a CAA or TA.

[3] However, it is also possible to have a CAA with 1 to 3 MRDs and no TD; an army with 1 IMRB and 1 TD could also be a CAA.

again being the most common. There are normally at least 2 TDs and no more than one MRD.[4]

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--

- Perhaps one or two independent motorized rifle brigades (IMRBs).
- One or two independent combat helicopter regiments.
- An independent helicopter squadron.
- An artillery brigade (or regiment).
- Two surface-to-surface missile (SSM) brigades.
- A surface-to-air missile (SAM) brigade.
- An antitank regiment.
- Possibly a special-purpose forces (SPF) battalion.

(See the *Heavy OPFOR Organizational Guide* for more detail on possible army organization.)

OFFENSE IN CONVENTIONAL CONDITIONS

Just as *front* offensive operations provided the vital ground maneuver element in strategic operations within a theater, it is actually the armies that conduct the operational maneuver for the *front*. Within the context of the *front's* offensive operation, an army executes its missions in close cooperation with adjacent armies, air armies of *frontal* aviation, missile troops and artillery, operational airborne and amphibious landing forces, and other elements of the *front*.

Aims

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

Destruction of Enemy Forces

In operations under nuclear conditions, the army would exploit the effects of nuclear strikes to complete the destruction of the main enemy grouping, mop up forces that have survived the initial nuclear strike, and destroy other forces in depth that have escaped or recovered from that first blow. In conventional operations, the general-purpose forces have to accomplish the same mission alone. Whether operations are nuclear or conventional, the first priority is the elimination of the enemy's nuclear capability.

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 *front* operation is not great and the enemy has no strong reserves in that sector, an army operation may achieve the goals of the *front* offensive, or even strategic political goals.

Consolidation on Achieved Objectives

Only when specifically ordered to by *front* would an army stop and consolidate on an objective. Generally, missions are more

[4] However, it is possible to have a TA with 1 to 4 TDs and no MRD.

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

Army Roles in *Front* Offensive

Armies conduct offensive (or defensive) operations in support of ***front* missions**. Therefore, an army's missions depend on its **role in the *front* commander's concept of operations**. Its missions also depend on its **place in the *front'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 *front*. Generally speaking, CAAs 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 hastily prepared defenses or as an OMG or second echelon against stronger defenses.

Traditionally, the OPFOR has used tank armies 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.[5] However, modern MRDs include a significant number of tanks; TDs have evolved into more balanced combined arms organizations with the expansion of artillery and motorized rifle units and subunits. Thus, the traditional difference in the roles of CAAs and TAs has largely disappeared. Any OPFOR army, regardless of its divisional makeup, is designed to accomplish the tasks envisioned on a highly mobile battlefield.

Front First Echelon

First-echelon armies constitute the bulk of *front* forces, and their success is essential to achieving the *front* aim. If they do not accomplish a penetration, OMGs may be unable to conduct deep operations, and there may be insufficient combat power in the second echelon to carry the offensive through to the depth of the *front* subsequent mission. Moreover, OPFOR fears about the effectiveness of interdiction using nuclear or high-precision conventional weapons make it unsure whether the second echelon can arrive in time and in combat-worthy condition to ensure success. The first echelon therefore has the requirement to **reach at least the immediate mission of the *front* without reinforcement**. If the depth of a *front* operation is very shallow and the enemy lacks strong reserves, a **single army operation** could be enough to achieve *front* 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

[5]. This could still be the case, if the OPFOR employs infantry armies.

prepared defense, the army's immediate mission is to--

- Destroy enemy nuclear weapons.
- **Destroy the main forces of enemy first-echelon corps** and immediate operational (corps) reserves.
- Seize lines or areas which **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 nuclear weapons.
- **Complete the destruction of enemy corps** and approaching (army group) reserves.
- Seize those areas which are the aim of the *front* operation.

Front OMG

When acting as a *front* OMG, an army may conduct **one, more probably two successive operations** with little or no pause between them. If not actually leading the advance from near the start against a weak and/or unprepared enemy, such an OMG would be **held 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, if it is to achieve its purpose, the OMG would then operate considerably in advance of the main forces.

Front Second Echelon

A **second-echelon army** usually executes **only one offensive operation**, to carry the *front* operation forward from its immediate to its subsequent mission. It may, however, be committed earlier than the achievement of the *front* immediate mission to--

- Reinforce the efforts of a first echelon which is losing momentum or faced by a superior enemy force, or
- For a specific purpose, such as the reduction of encircled or bypassed forces, pursuit, or even the widening of the penetration (strike) sector.

A second-echelon army would often be still moving up from the OPFOR's strategic rear when the offensive begins. If not committed immediately on arrival, it may then be **held anywhere between 50 and 120 km (normally 50 to 80 km) from the line of contact.** Its march into battle, and often even its commitment, would occur at night whenever possible in an effort to achieve surprise and to minimize the threat of interdiction.

Special Conditions

In **mountainous areas**, or **marshy areas** intersected by rivers, the defensive advantages enjoyed by the enemy may dictate the assignment of less ambitious missions. In such terrain, efforts concentrate on dividing enemy groupings for destruction and seizing communications centers, main road junctions, and defiles through impassable terrain. On the other hand, in **deserts and steppes**, the depth of army operations may increase to some extent.

Changes in Missions

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

- Unexpectedly successful enemy resistance on the army's sector, or that of another higher formation and/or enemy counterattacks/counterstrikes, which lead to a change in the *front* concept.
- The lowering, or even loss of combat effectiveness from heavy casualties.
- Logistics problems.
- The capacity of *front* to reinforce and support the army.

Prerequisites for Success

Penetrating a well-defended position (without using nuclear weapons) can be a very difficult task requiring detailed preparation and great concentration. Success depends on the following:

Selection of Strike Sectors

The OPFOR has to carefully select areas for penetration (strike sectors) that lead to both the achievement of geographical objectives and the destruction of the main enemy grouping. Ideally, it would penetrate **weak enemy groupings** to get to the strong groupings from the flank or rear. Other vulnerabilities it can exploit are **boundaries between enemy formations** (especially when these are international as well) and **difficult terrain** that the enemy has defended only lightly because of its unsuitability for offensive action.

Reconnaissance

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

Correlation of Forces and Means (COFM)

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

Neutralization of Enemy Forces on Strike Sector

It is critical for OPFOR **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, which could stop even the densest armored attack with about two-thirds casualties, to about 10 per km, which would reduce casualties to around 25 percent and thus give the attack a fair chance of success. The problems of movement, coordination, and logistics support involved are not insurmountable in defeating the first echelon of a prepared defense. However, the same may not be true 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. To move both tank and motorized rifle elements and their supporting artillery, as well as the required ammunition through possibly narrow penetration corridors (strike sectors), over battle-

damaged terrain, and in face of enemy interdiction may well overtax the system.[6]

Neutralization of Enemy Tactical Reserves and CPs

Artillery, air attacks and forward, raiding, and heliborne detachments must neutralize enemy tactical reserves and command posts (CPs) if the OPFOR is to destroy the stability of the defense and gain early momentum. The problems of locating and then effectively dealing with such targets in a dense and deep defensive deployment are considerable.

Rapid Penetration

Rapid penetration by the first echelon is essential to **destroy the cohesion of the defense** and **generate operational maneuver** from an early stage. Otherwise, the battle degenerates into one of attrition, precious time is lost, and the danger of nuclear escalation grows. This penetration, in turn, depends on the continuity of fire support and the timely reinforcement of efforts by second echelons (reserves) at all levels. These may be problems on a congested battlefield.

COMMANDER'S DECISION

In making his assessment of the situation and reaching his decision, the army commander considers the same factors as his superior, the *front* commander, but naturally at one level down. The army commander presents his decision graphically on a 1:200,000 or 1:100,000 map. (See Figure 5-1 for a somewhat simplified example.) Usually he needs the 1:100,000 scale because of the increased detail of his plan, compared to the *front* plan. On the map, he indicates--

- Groupings of enemy forces and their possible courses of action.
- The army's operational formation.
- The army immediate and subsequent missions, their contents, depths, and time for accomplishment.
- The axes of main and supporting attacks.
- The combat formation of first-echelon divisions and regiments 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 group of rocket artillery (AGRA).[7]
- The composition, missions, landing areas, and time of insertion of airborne and/or amphibious landing forces.

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

OPERATIONAL FORMATION

Mission requirements and the concept of operations determine the operational alignment of the forces within the army. The

[6] The use of high-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 strike axis.

[7] 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 are physically located in such a small area.

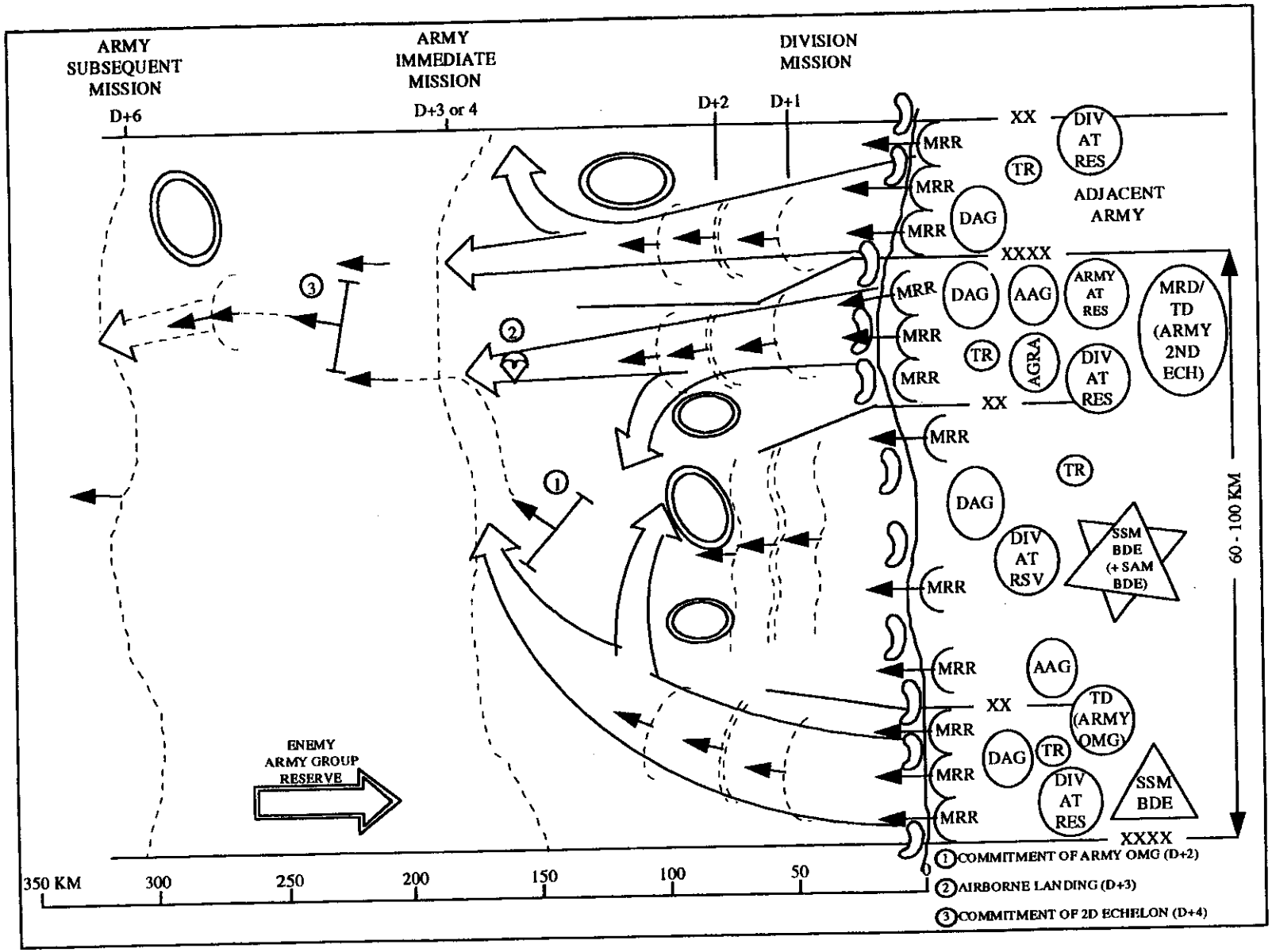

Figure 5-1. Map of army commander's decision.

OPFOR term for this basic organization for combat is **operational formation.**[8] The operational formation of an army (or *front*) is the grouping created for the conduct of 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 COFM superiorities 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 *front's*. In an offensive, army operational formations include most or all of the following elements:

- A first echelon (containing most of the army's forces).
- A forward detachment.
- 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.
- Army aviation.

Against at least partially prepared defenses, MRDs usually accomplish the penetrations, supported by strong artillery groups at all levels up to and including an AAG; the army would save its TDs (if it has any) in the second echelon, for an exploitation role. The army may anticipate light resistance or a meeting engagement. In this case, it is normal to place TDs in the first echelon and decentralize much of the artillery.

First- and second-echelon forces operate in concert to destroy defending enemy forces before them, up to assigned mission depths. 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 of an operation, but more likely on the second or third.

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 regiments 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 regiments of the army's first-echelon divisions exploit the best penetrations into the deep tactical rear of the enemy (to the rear

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.

Against prepared defense. Against **strong, deeply-echeloned, and well-prepared defenses**, an army normally conducts **penetration battles** on strike sectors totaling 4 to 6 km in width, to ensure requisite COFM superiority. Under these conditions, it is even possible that 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, with up to half the division acting in the second echelon and with first-echelon regiments and their leading battalions also in two echelons. Such a penetration would require the support of strong artillery groups, including the RAGs of first-echelon regiments, the DAG (or perhaps two DAGs) of the division, and probably an AAG and/or AGRA.

In a penetration of a **well-prepared** defense, the OPFOR would expect a leading **first-echelon regiment**, as its **immediate mission**, to destroy a first-echelon defending battalion, a depth of 8 to 10 km; its **subsequent mission** would be 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--

- Destruction of a forward brigade.
- Seizure of the position defended by the brigade reserve.
- Penetration to the fire support positions of direct support artillery.

The depth of this mission would be 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 and thus create favorable conditions for the destruction of the rest of his forward division.

The **division's subsequent mission** is:

- Destruction of the enemy divisional reserve.
- Completion of the penetration of the tactical zone of defense.
- Capture of favorable terrain for launching exploitation to the flanks and rear.

This mission would normally be 25 to 30 km deep. The division would also receive a mission of the day, 30 to 40 km from the line of going over to the attack; this mission, in cooperation with adjacent divisions, would probably be the destruction of enemy corps reserves.

Another mission assigned by army to the division commander (or from division to regiment) may be to dispatch a **forward detachment** (or possibly two, in the case of the division) as soon as the first echelon has disrupted the stability of the defense, which is usually at a depth of 16 to 20 km. These **tactical maneuver** elements usually consist of a **reinforced battalion.**[9] These detachments would attempt 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

[9] A division might employ a regiment-sized forward detachment in a meeting engagement or pursuit. In an attack against a defending enemy, however, that would take away too much of the force needed for the penetration; so, the division's forward detachment, like a regiment's, would likely be only a reinforced battalion.

reserves. (For more detail, see the "Forward Detachments" section 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 would prepare and protect routes, a reinforced regiment would launch a supporting attack, and the DAG would fire missions against forces opposing the OMG/second echelon.

Against partially prepared or unprepared defense. In attacks on **partially prepared or unprepared** defenses, penetration is less of a problem. Therefore, a **division's immediate mission** may be the destruction of an enemy first-echelon and (in conjunction with other forces) a reserve brigade. The subsequent mission would be to penetrate to the full depth of a defending division, and the mission of the day could be 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 would normally be 15 to 25 km. The strike sector would be approximately 2 to 4 km per division. (After the penetration, the zone of advance would widen again.) For a division on a supporting attack axis, the zone of advance could extend to 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 would be in the strike sectors.

Forward Detachments

Armies, divisions, and regiments employ **forward detachments (FDs)** as **tactical maneuver forces**. Against an unprepared defense, the army's regiment-sized FD could actually have an operational-tactical mission; that means that it may 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: attack against a defending enemy, meeting engagement, or pursuit. The same applies to regimental FDs, except that employment in an attack against a defending enemy is normally only against an unprepared defense. Divisions serving as army OMGs can use a battalion-sized FD of their own, plus a battalion-sized FD for each of their subordinate regiments. Whatever the level, FDs are tailored forces, reinforced to allow independent operation. Depending on the enemy and the terrain, their nucleus can be either tank or motorized rifle forces; however, tank battalions and tank regiments are the most likely.

FDs serving operational maneuver forces help maintain the forward momentum of the entire force. They fragment enemy forces, preempt or overcome intermediate defensive positions, and destroy the equilibrium of deploying enemy reserves. FDs 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 forestall the enemy. FDs 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 regiments) given such missions receive full support from artillery and direct-support aviation. It is also possible that an **army** could employ a regimental-sized "operational-tactical" FD to achieve

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

Figure 5-2. Forward detachment missions against 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.

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 may initiate the attack. If the enemy has advanced during the night before the offensive, they would then attack on multiple axes across the army's offensive zone to penetrate enemy **covering forces** rapidly. They would 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-sized **heliborne landings**, designed for linkup with the FDs. The purpose of such tactics in support of an operation would be 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 unprepareed defense.

Against partially prepared defense. More often, the OPFOR would find the enemy defense **partially prepared**, with the covering force in place and the tactical zone of defense partially occupied. A regimental FD would not attack under these conditions, but an army or division FD could, if provided heavy fire support. Their mission would be to overcome the covering force and penetrate into the tactical zone of defense to prevent the enemy from establishing a firm, continuous defense; they could also facilitate the commitment of main force (first- or second-echelon divisions) and OMGs. Figure 5-3 shows typical mission depths under such conditions, which would be one step shallower than for an unprepared 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 in 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 prepared defense. If the OPFOR encounters a prepared, fully occupied defense, FDs would 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 could assist the main forces in penetrating the covering force or initiate 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, FDs at all levels of command would lead the operational exploitation or pursuit, helping to encircle and destroy enemy forces. In this role, they would normally advance 30 to 60 km ahead of the main force.

Throughout the operation, strong FDs would probably continue to press the advance into the enemy rear on several axes. Numerous deep penetrations by FDs and/or OMGs early in the operation would result in an **intermingling of enemy and friendly forces.** This situation would complicate or forestall enemy use of tactical nuclear weapons. The OPFOR would probably 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 OMG

An army may form an OMG either from resources that are normally part of it or from *front* assets that are supporting it. An army commander may establish an OMG **before an operation** as part of the initial plan. Or, he may form one **during an operation** to exploit an unforeseen opportunity. At army level, the OMG may be as large as a **reinforced division**, usually based on a TD because of its mobility.[10] The army commander would most likely hand-pick a division for this mission; it would have the latest equipment, a high state of combat readiness, and first-rate division and regimental 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 inserted, the OMG's ultimate task depends on the *front* commander's concept of the operation. It would probably involve preempting 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 would attempt to **avoid a decisive engagement** with large enemy forces; however, it could conduct raids en route. In this case, it would probably launch battalion- or even regimental-sized **raiding detachments** to attack targets crucial to the viability of the enemy defense still resisting the main forces. The relative importance of raiding versus achieving a mission depends solely upon 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 can provide intelli-

[10] It is also possible that a **brigade** might serve as an army OMG.

gence and targeting data. Some **heliborne and airborne landings** can 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** would also try 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 comfortable supporting range of helicopters operating from over the line of contact, it would probably acquire its own air component--**helicopters moving with the OMG**, complete with a mobile forward operating base. It may also be possible to make at least a temporary use of captured airfields or improvised strips to base fighters or fly in resupply. OMGs, airborne/heliborne, and air operations are all crucially interdependent, the successes of each contributing materially to the viability of the others.

Troop control and logistics. Troop control of an army OMG is the result of a combination of radio, 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. It 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 penetration, deeper exploitation, and dissolution of enemy tactical and immediate operational defenses.

Second-echelon divisions and army OMGs. The OMG and the second echelon are two different types of **follow-on forces**. Although it is not an either-or situation, 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 would be 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 that mission could simply become part of that reserve.

An army may form either a second echelon or OMG, or even both in some circumstances. A division designated as an **army OMG** would be held well forward, probably not more than 30 to 50 km from the line of contact, ready for early commitment. (From that distance, it would take about 2 to 3 hours for a division marching on 2 or 3 routes to move forward from its assembly area and pass through a breach in the enemy defenses.) **Second-echelon**

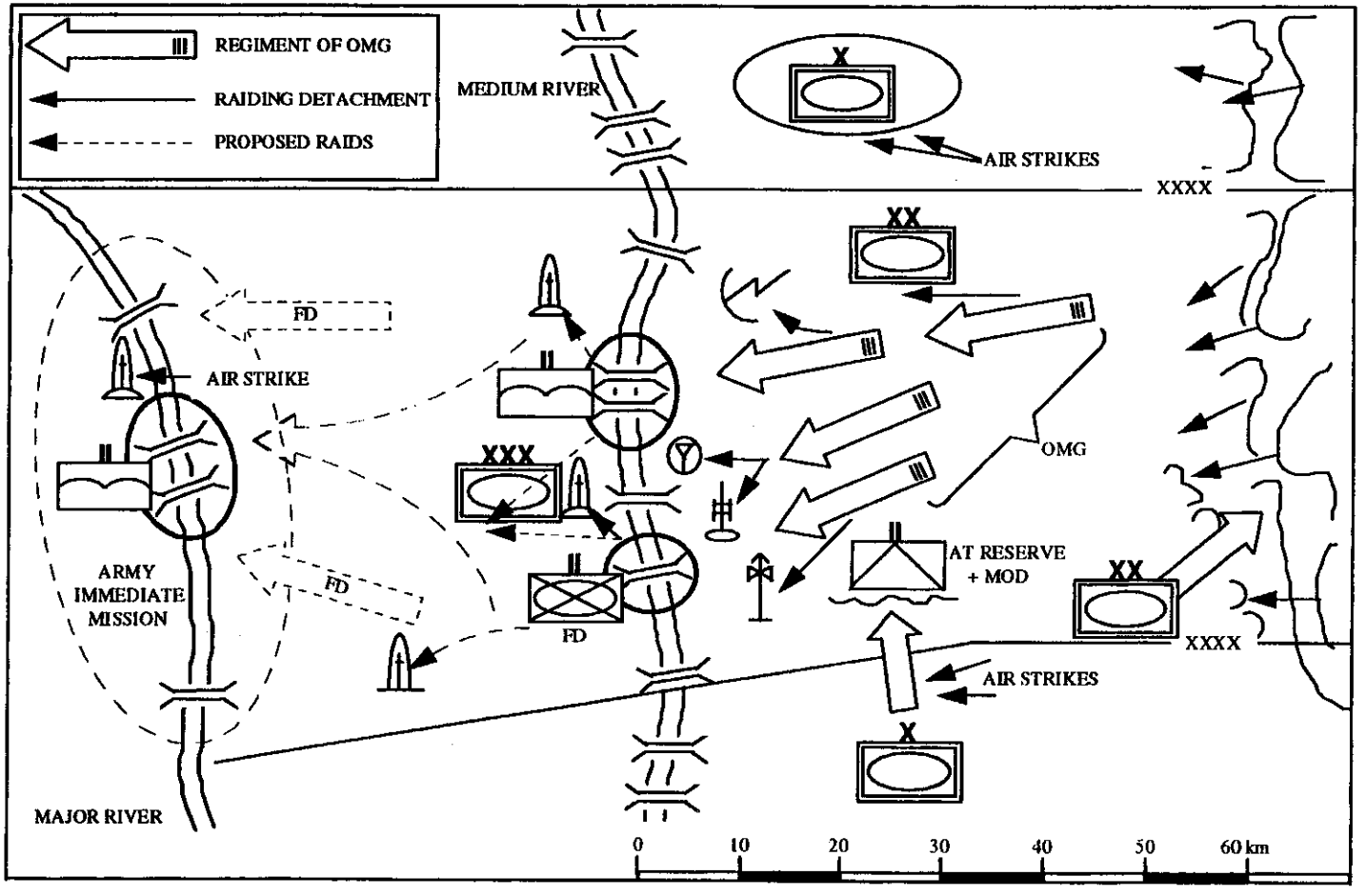

Figure 5-4. Actions of an army OMG in the enemy rear.

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). Their divisional artillery may be temporarily detached to augment artillery support for the penetration. They receivetwo, possibly three, alternative lines of commitment and routes to them. .

Ideally, commitment of either **a second echelon or an OMG** would follow a **clean breach** in the defense and would be at night on a sector 12 to 20 km wide, on three routes to generate maximum combat power on going into the attack. At the time of commitment, they may well receive augmentation by elements of the first echelon and/or the AAG, and maximum air and artillery support would accompany commitment **Often**, however, such forces may have to attack on narrower frontage (strike sector), as little as 5 km wide, to **complete the penetration**. 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. (See also Figure 4-8 in Chapter 4 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 in any detail, **second echelons receive only an immediate mission** and a subsequent axis of advance. Once the army commander has committed his second echelon is committed, it is essential to establish a new one, or a reserve, either by withdrawing other forces from combat or through reinforcement from *front*.

Army Reserves

If an army does not have a second echelon, it would normally retain one or more regiments as a **combined arms reserve** in an offensive. This also could be a mission for an independent motorized rifle brigade (IMRB) in those armies with an IMRB. Other reserve regiments 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 that 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.)

The army's organic antitank regiment normally constitutes its **antitank reserve**. However, an army may also receive an antitank brigade from the Reserves of the Supreme High Command. In that case, the reinforcing brigade would become the army antitank reserve, and the regiment's assets would be decentralized to reinforce the antitank reserves of divisions operating on the armies main axis. Likewise, *front* antitank reserves can reinforce army antitank defense.

Artillery Groups

An army of a *front* first echelon receives artillery units from the *front* artillery division. The army commander then allocates army and *frontal* artillery to his divisions to form division artillery groups (DAGs). He may retain some artillery at army level to form one or more **army artillery groups (AAGs)** and an **army group of**

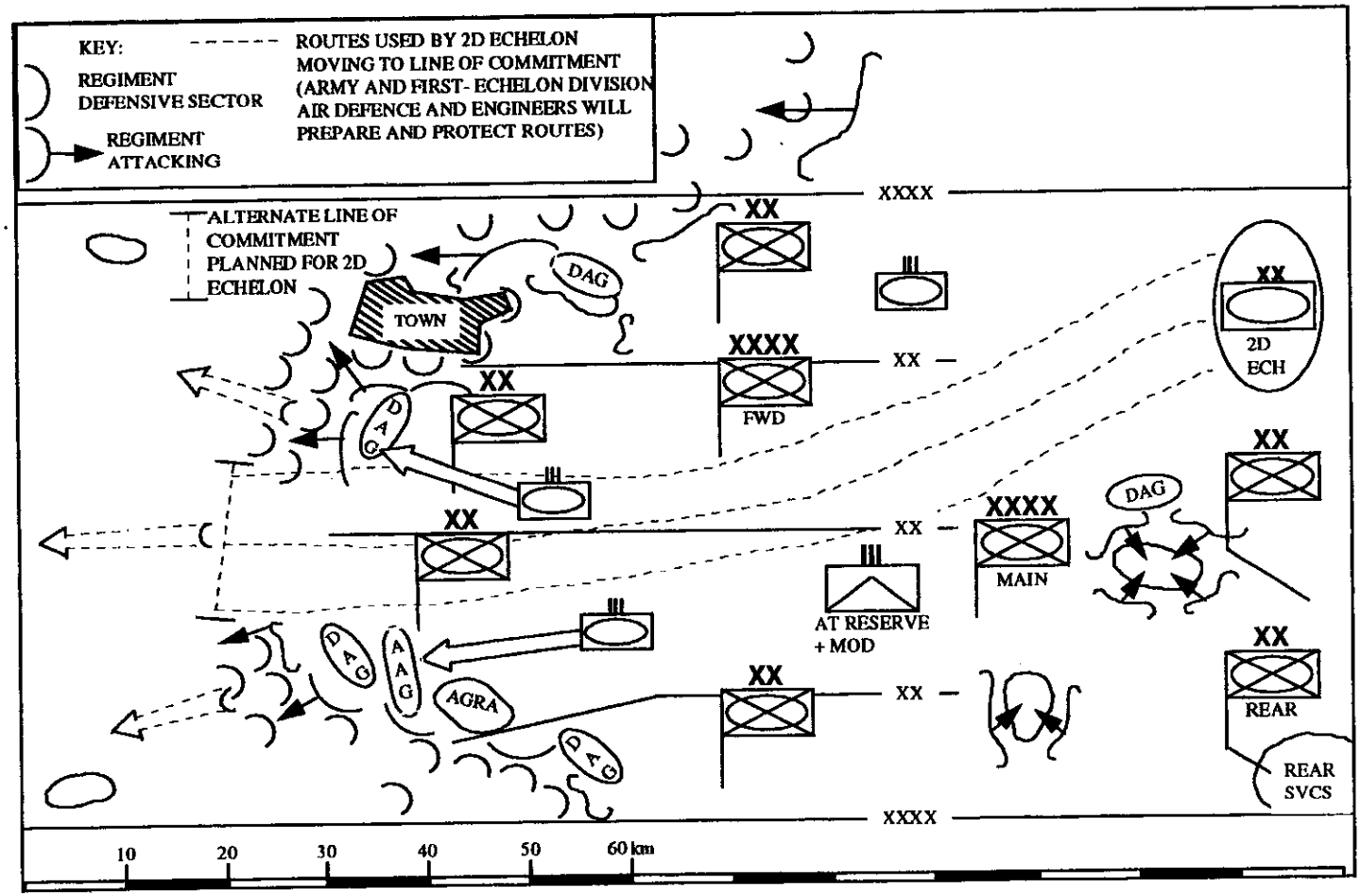

Figure 5-5. Commitment of an army's second echelon.

rocket artillery (AGRA). The bulk of this artillery would be long-range guns and MRLs, though it might 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 divisions.

Together with fixed-wing aviation, these groups have the most important task of neutralizing enemy nuclear weapons 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.

Army artillery group (AAG). With organic and *front*-allocated assets not passed down to its divisions, an army conducting a *front* main or supporting attack would form a strong AAG. The purpose of an AAG is to--

- Engage enemy SSMs and artillery, especially those capable of delivering nuclear or high-precision munitions, along with associated C^2 facilities.
- Reinforce the fires of DAGs on the army's main attack axis.

An army could have 4 to 8 battalions of **tube artillery** for this purpose.[11]. If the number is closer to 4 battalions, the army would form one AAG; with closer to 8 it is also 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 de-

Army group of rocket artillery (AGRA). An army would not normally allocate the **MRLs** of its organic rocket launcher regiment to its subordinate divisions. With these and additional MRL battalions possibly allocated to the army from the *front*-level rocket launcher brigade, the army commander would form an AGRA. Thus, the AGRA would have at least 3 MRL battalions and perhaps as many as 7. With the larger number, an army might form **two AGRAs**. An AGRA is normally reserved 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

When **operating in an air corridor** army aviation can use its **attack helicopters** for **missions across the line of contact.** They will attack enemy gun lines and reserves, especially those trying to deploy. This, of course, would occur only when preceded by suppression of enemy air defense. Attack helicopters also give direct air support to units fighting through the enemy defenses; in that case, 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**. Their actions are closely coordinated with those of the artillery, air defense, and fixed-wing aviation. The army's independent combat helicopter regiment(s) also have **transport helicopters.**

Airborne and Heliborne Landing Forces

Any regiment- or brigade-sized landing of **airborne troops** is more likely to be **air-dropped** than helicopter-delivered, especially 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-sized **heliborne landings up to 50 km** or so into the enemy rear in the case of specialized **airborne troops**. This restriction is due to the payload/range limitations and vulnerability of helicopter. Even then, the airborne troops expect early reinforcement from forward detachments or OMGs. Usually, an airborne battalion could hold out no more than 18 to 24 hours without resupply.

Motorized rifle 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 **motorized rifle company** would be 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 scope a heliborne landing may have. Using such landings, an army can conduct **company- to battalion-sized raids** against vulnerable, high-priority targets such as nuclear weapons, headquarters, and key logistics assets. Such raids commonly seize defiles, river

- 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 motorized rifle battalions involved normally come from a second-echelon regiment, 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 would probably receive, from *front*, additional-

- Engineers and river-crossing equipment.
- Air defense weapons.
- Chemical units.
- Transportation assets.

The army commander would allocate these assets primarily to support the main effort. Subordinates could also receive these assets according to their specific needs.

Influence of Nature of Enemy Defense

As at other levels, the factors which determine an army's operational formation include--

- The aim of and plan for the operation.

(See the "Determining Factors" section in Chapter 4 for more detail on the influence of terrain.) 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 the OPFOR offensive formations. Enemy defenses may not be well prepared in depth or backed up by operational-level reserves. In that case, the army would probably attack in a **single strong echelon** followed by a combined arms reserve and possibly an OMG. If the enemy is well prepared in depth or does have operational reserves, the army would probably attack in two echelons. In other words, if the enemy defense has an operational second echelon or reserve, the OPFOR employ 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.

MISSIONS AND NORMS

OPFOR planners have established **norms** in distances, rates of advance, and time factors for army offensive operations. These norms depend principally 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. The norms discussed in this chapter are optimized for European terrain. These factors guide planning for an operation. Not all norms for a European theater

Army Missions

An **army in the first echelon of a *front* offensive** normally has a mission to attack through enemy defenses to the immediate operational depth, the enemy corps rear area. The achievement of an army's mission is the culmination of successive attacks conducted by its divisions.

A typical **army immediate mission** would be to **destroy the integrity of an enemy corps**. This would include seizing important areas that would 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 *fronts*, armies vary in size and combat missions. These factors, taken together with the nature of the terrain, the strength and nature of the defense, and the

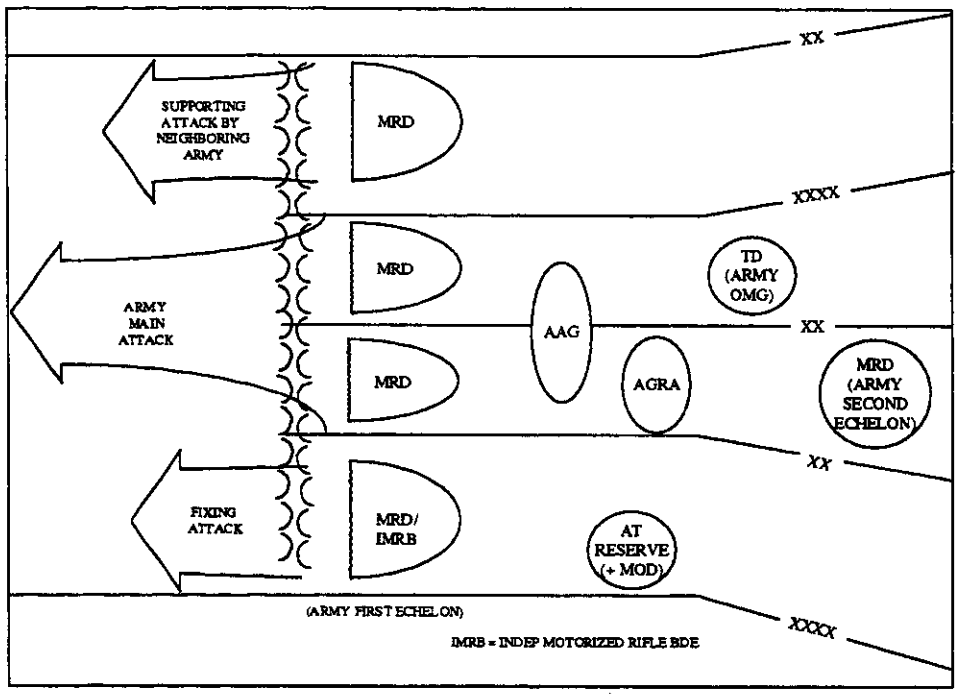

Figure 5-6. Army operational formation against prepared defense.

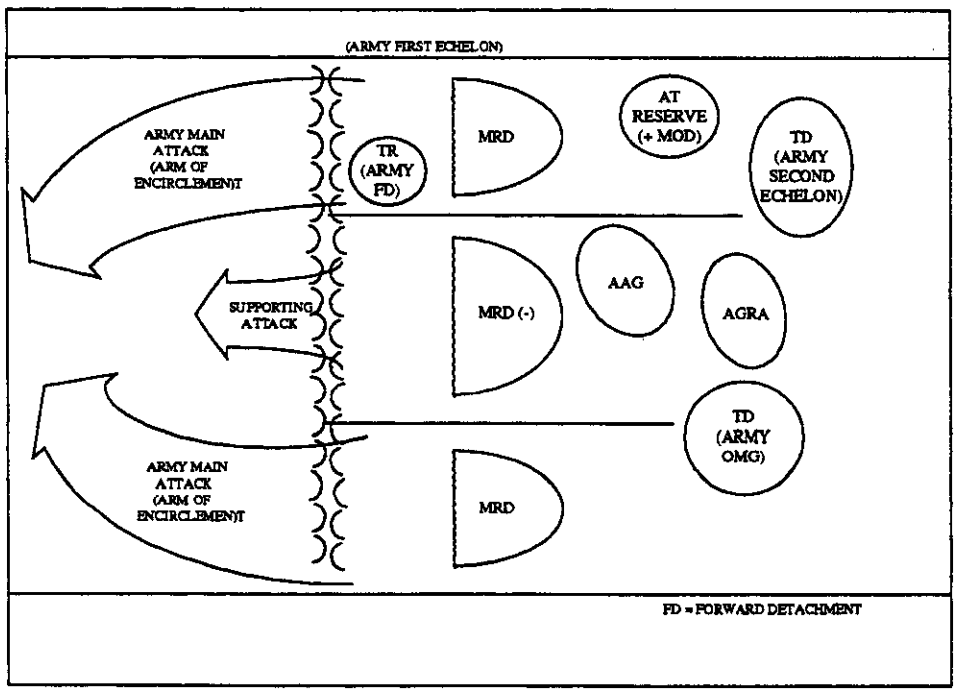

Figure 5-7. Army operational formation against partially prepared defense (variant 1).

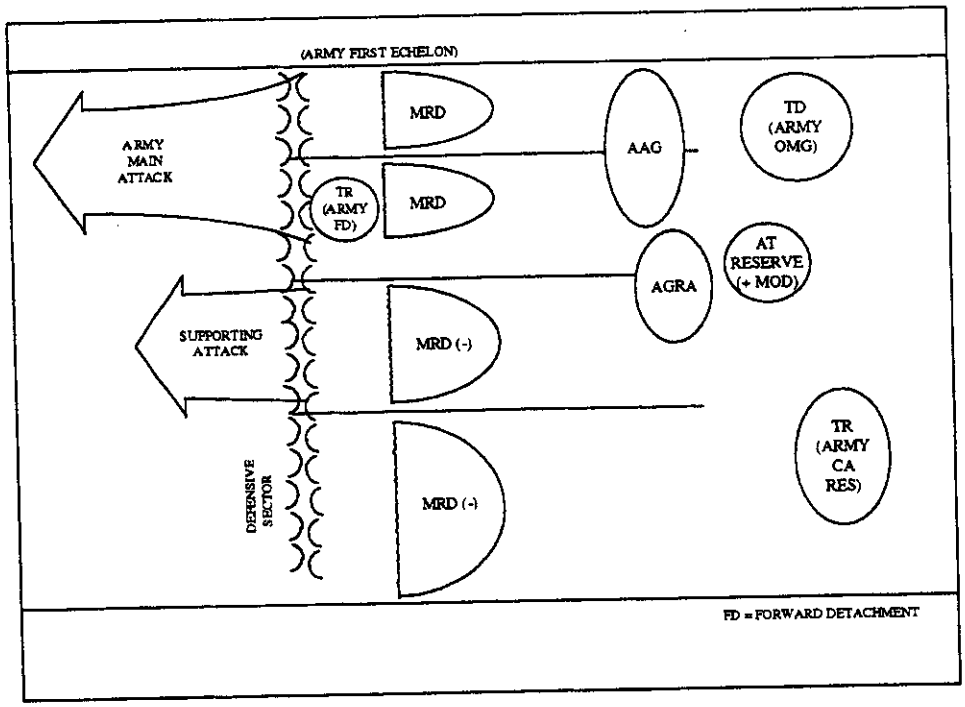

Figure 5-8. Army operational formation against partially prepared defense (variant 2).

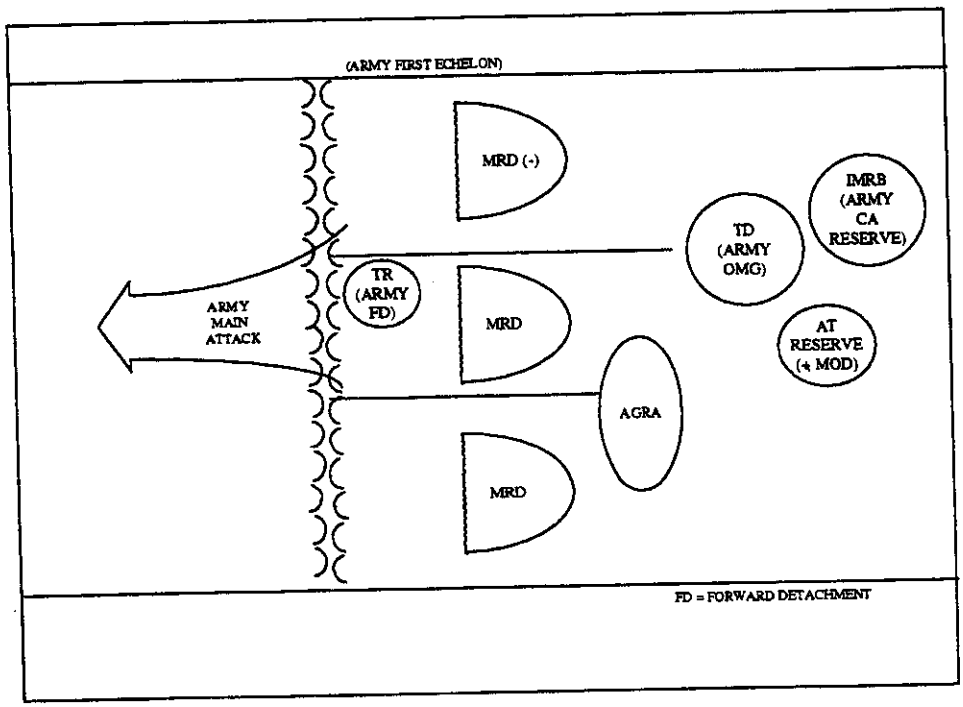

Figure 5-9. Army operational formation against unprepared defense.

The generalizations given below are thus **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's **army's immediate mission** is normally to the rear boundary of a defending corps. By penetrating to this depth, the army would have completed 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 is normally to **complete the destruction of the enemy corps** and engage the enemy army group reserve if possible. This mission would involve 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 would normally have 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 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 pursuit or exploiting the offensive into the enemy rear. All these rates are for normal (European) 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

The sector of responsibility (sometimes called a zone of action, zone of advance, attack zone, or overall attack frontage) of a main axis army, with 4 divisions in the first echelon, is likely to be **60 to 100 km** in normal European terrain. In other theaters, particularly in mountainous terrain, 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. 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. 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 sufficient forces and means, or 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, as forces on previously "passive sectors" transition to the pursuit.

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 *front* commander's concept of operations. Having established the location of the main enemy grouping and thus the areas in which the decisive battles are likely, the army commander works out the method of its destruction in terms of frontage, depth, and main and supporting axes. Operations at *front* level, as portrayed in Chapter 4, are similar in concept at army level but, of course, on a smaller scale. In conventional conflict, an army uses the same two basic forms described for the *front* (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 that usually 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.
- When the enemy is unbalanced, with a strong grouping (its center of gravity) well forward, flanked by two weaker ones (as will often be the case during a counterattack, for instance).

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 would, of course, be the sea. Such an operation can also occur inland, trapping the enemy against a major river or canal or possibly a mountain range. Provided interdiction or airborne landings deny the enemy bridges, ferries, or passes over the obstacle, the enemy grouping can be effectively destroyed. Enemy personnel may be able to exfiltrate, but at the price of abandoning all 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; at that point, the OPFOR can 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 *front*. Again, the OPFOR defines these in terms of the postures of the attacker and defender, not the time available.

Meeting Engagement

As an **operational** large formation, an army conducts a **meeting engagement**. (See the "Meeting Engagement" section in Chapter 4.) Its subordinate formations (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.

Attack Against a Defending Enemy

The army, like the *front*, 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 *front*. (For further details, see the "Attack Against a Defending Enemy" section 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 would be 20 to 40 km from the enemy forward edge (or international border). They are thus out of range of preemptive artillery strikes, but still only 1 1/2 to 3 hours night march from the line of going over to the attack. Where the enemy has succeeded in deploying a covering force, battalion- to regimental-sized **forward detachments** of the first-echelon divisions, with strong artillery and air support, would destroy that force. The main forces of divisions follow the forward detachments in tactical march or prebattle formation, aiming to attack the enemy forward edge close behind of the retreating covering force and gain a lodgment. If, however, enemy resistance in the covering force is very strong, it may be necessary for the OPFOR to commit first-echelon regiments, even divisions. It is important to ensure that the actions of units and formations penetrating the covering force develop in such a way that they can be integrated into appropriate groupings once they come into contact with the enemy main defense area.

There are circumstances in which the OPFOR may have to launch an attack from a position **in close 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

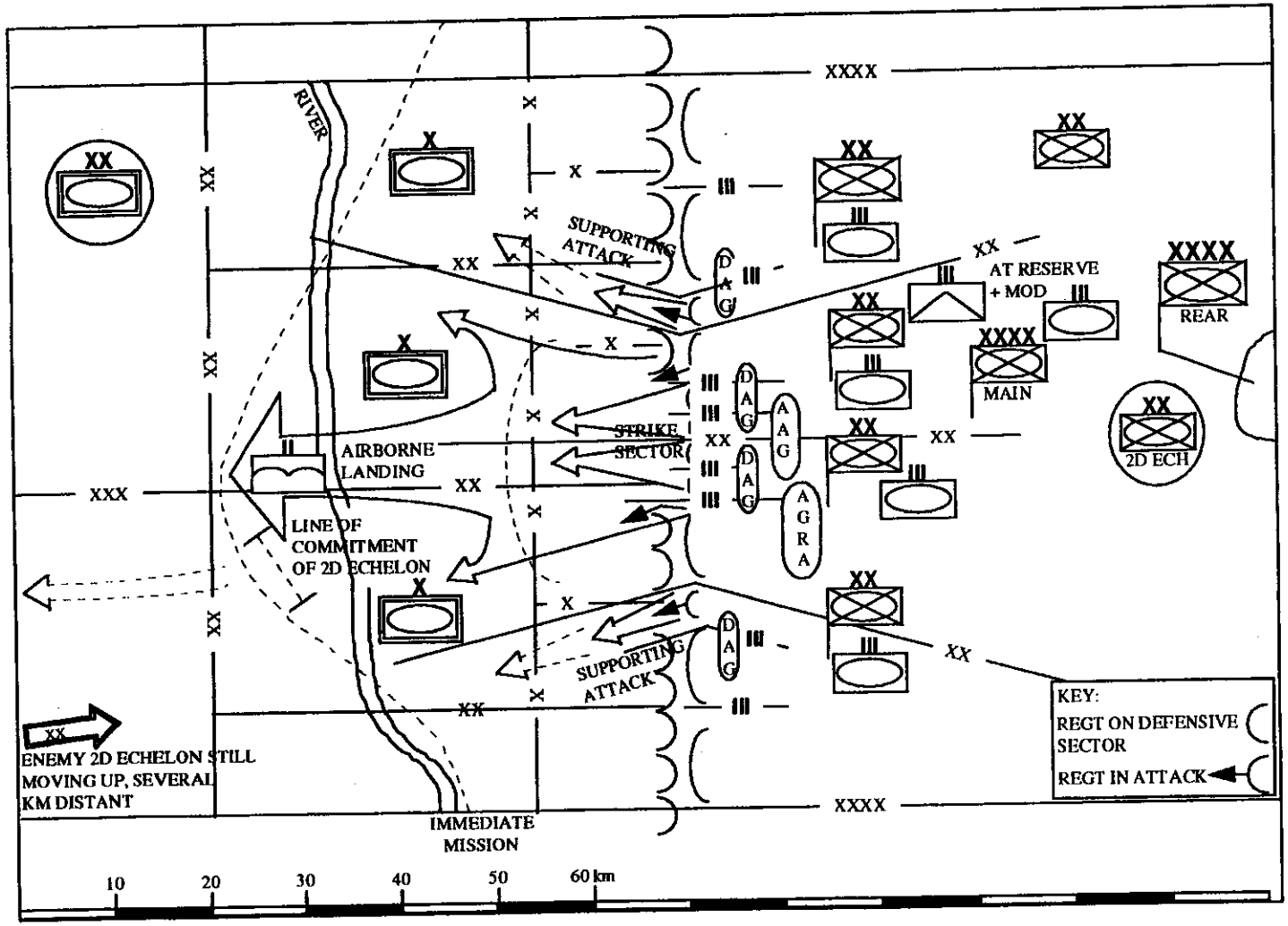

Figure 5-10. Army penetration operation against prepared defense.

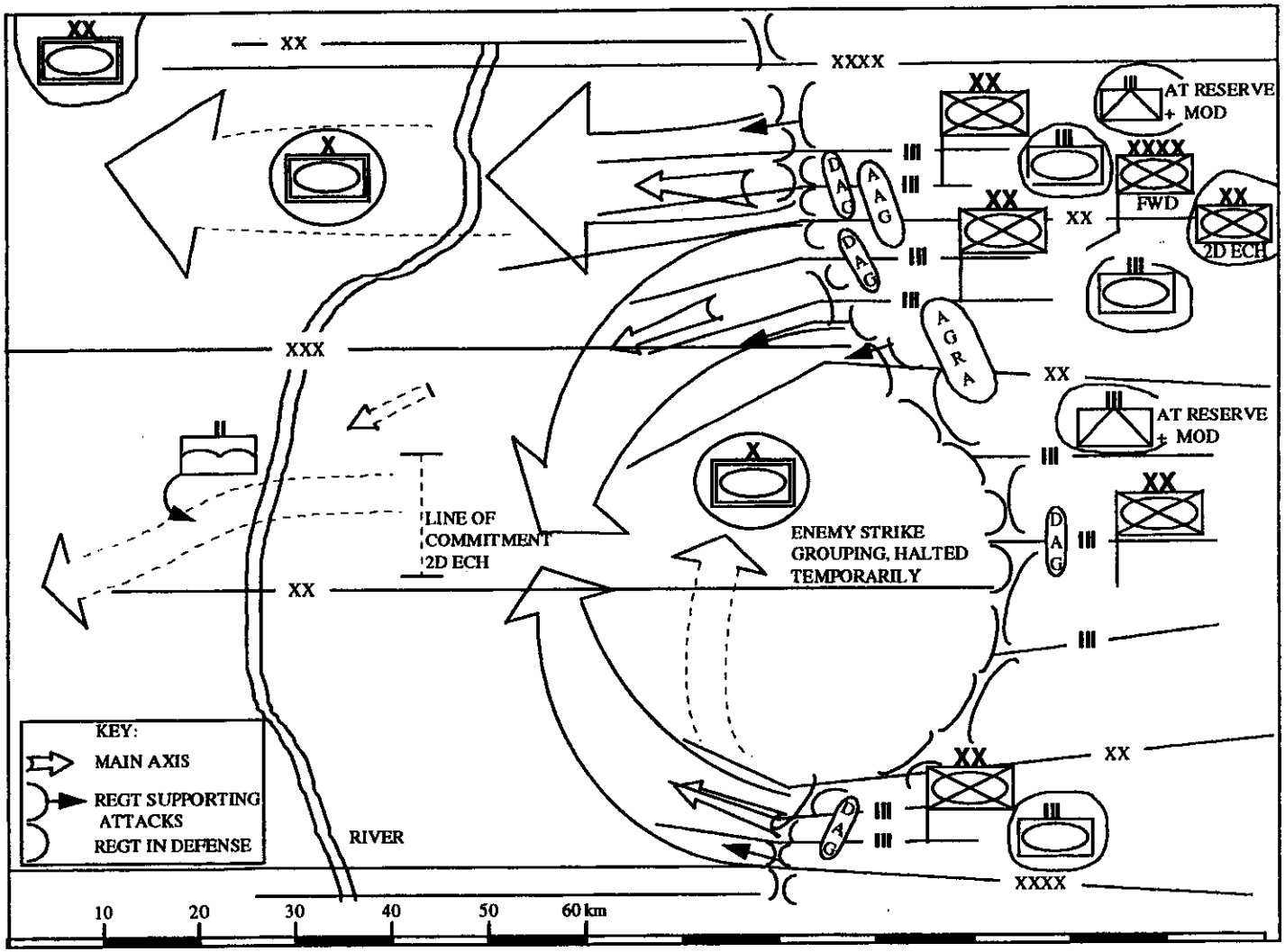

Figure 5-11. Army encirclement operation.

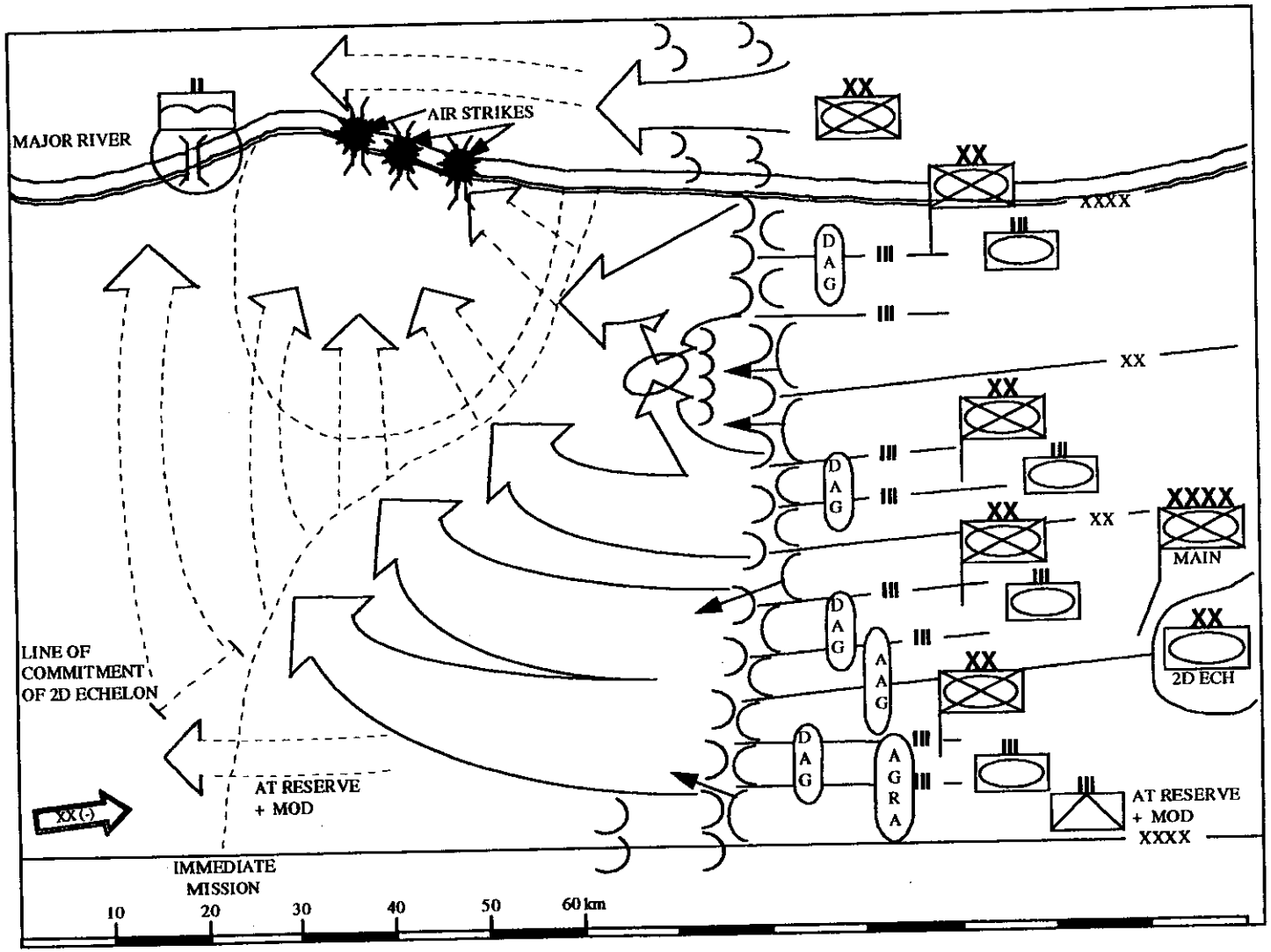

Figure 5-12. Army encirclement against natural obstacle.

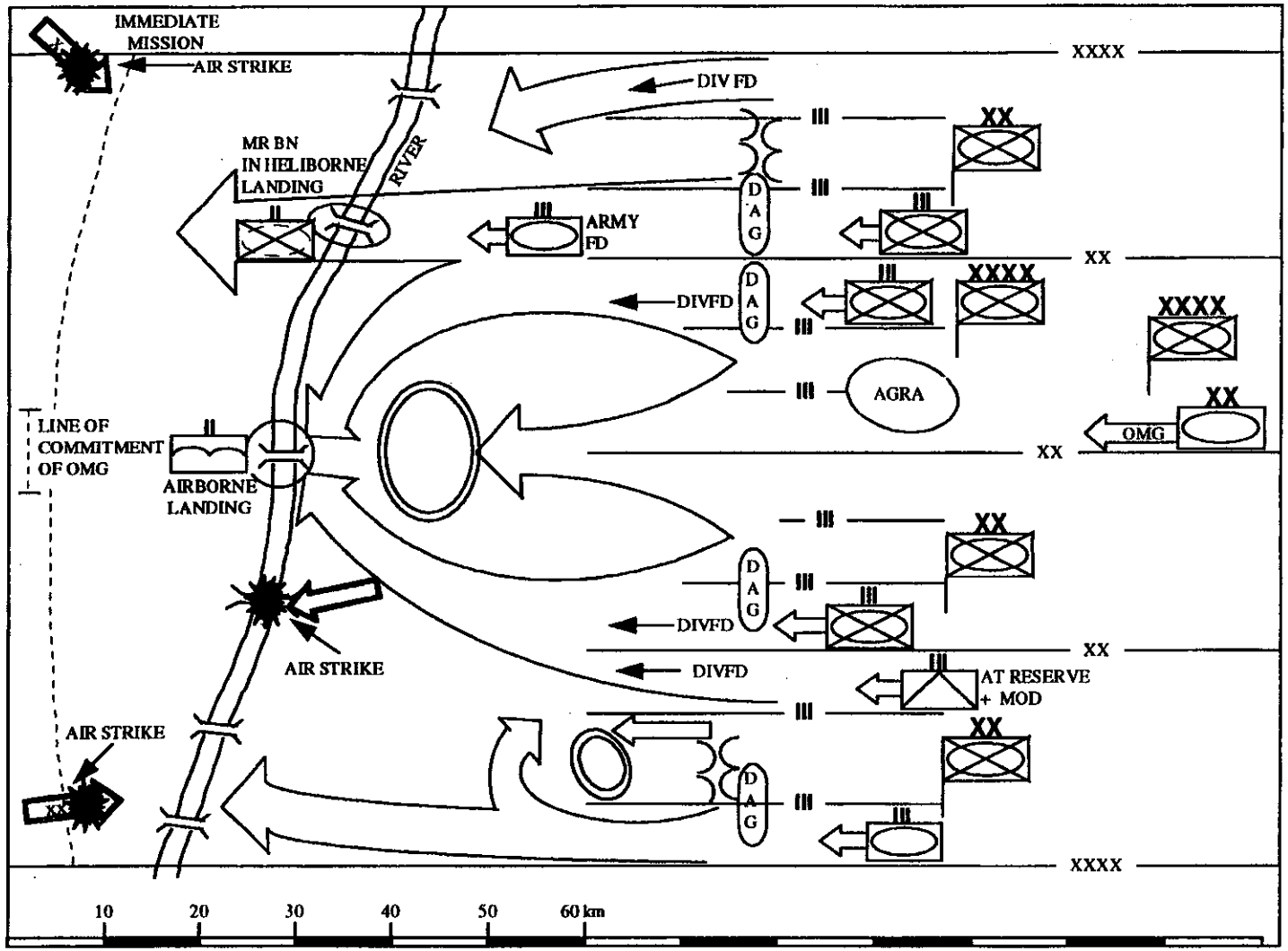

Figure 5-13. Army attack on multiple axes.

he has regrouped or reorganized to meet the counterattack/counterstrike.

Pursuit

The army uses the same pursuit techniques as at *front* level. First-echelon armies normally rely on their **forward detachments** and airborne or heliborne landings to cut off the withdrawing enemy. Operational pursuits may extend to a depth of several hundred kilometers. (For further discussion, see the "Pursuit" section in Chapter 4.)

The OPFOR regards pursuit as a separate and decisive phase of war. The purpose of an offensive is not just to drive the enemy back, but also to destroy him so that he cannot reinforce, reorganize, and 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, as illustrated in Figure 5-15. 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. The OPFOR army's main body conducts a **parallel pursuit**, moving on routes parallel to the withdrawing columns; it tries to overtake them and deliver flank attacks to **split the enemy force** into isolated groupings for destruction in detail. Meanwhile, the army sends **forward detachments** 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.

Pursuit is centrally organized, but its execution is decentralized (as are resources, such as artillery). There must be advanced planning to avoid losing precious time, which could give the enemy the advantage. Therefore, OPFOR planners must identify routes for enemy withdrawal and the OPFOR advance. They must issue an outline plan for operational formation and the scheme of maneuver. They must form preplanned forward detachments and heliborne detachments ahead of time.

The OPFOR must intensify **reconnaissance** (and counter-reconnaissance) efforts for the pursuit to be successful. Early detection of an enemy withdrawal is also important, both to avoid enemy escape and the danger of a nuclear attack, for which withdrawal may be an indicator.

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 OPFOR higher commander terminates it because the pursuing forces or their logistics support become overstretched, or because the COFM has changed for the worse.
- Enemy reserves have arrived.

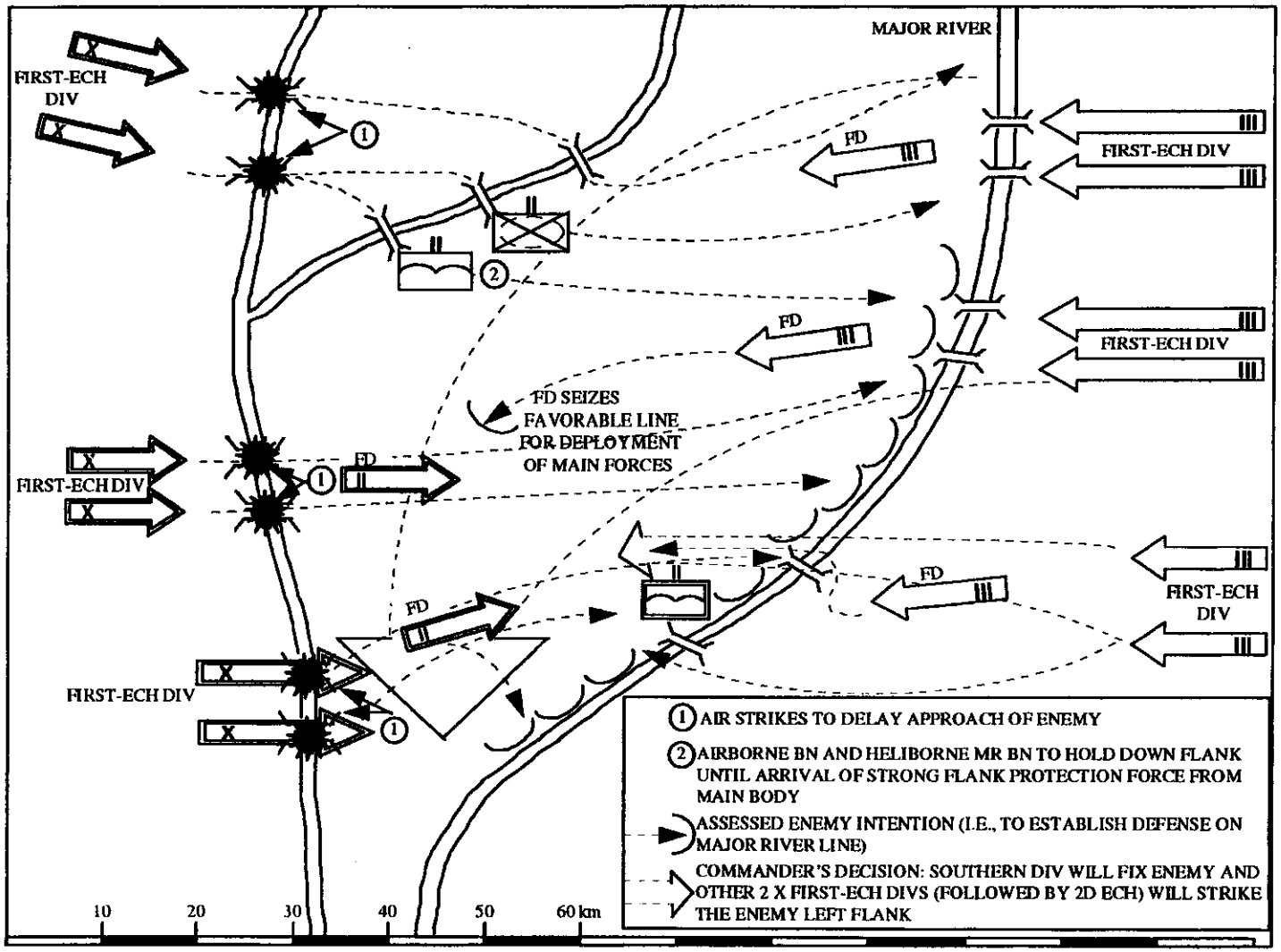

Figure 5-14. Army commander's decision for a meeting engagement.

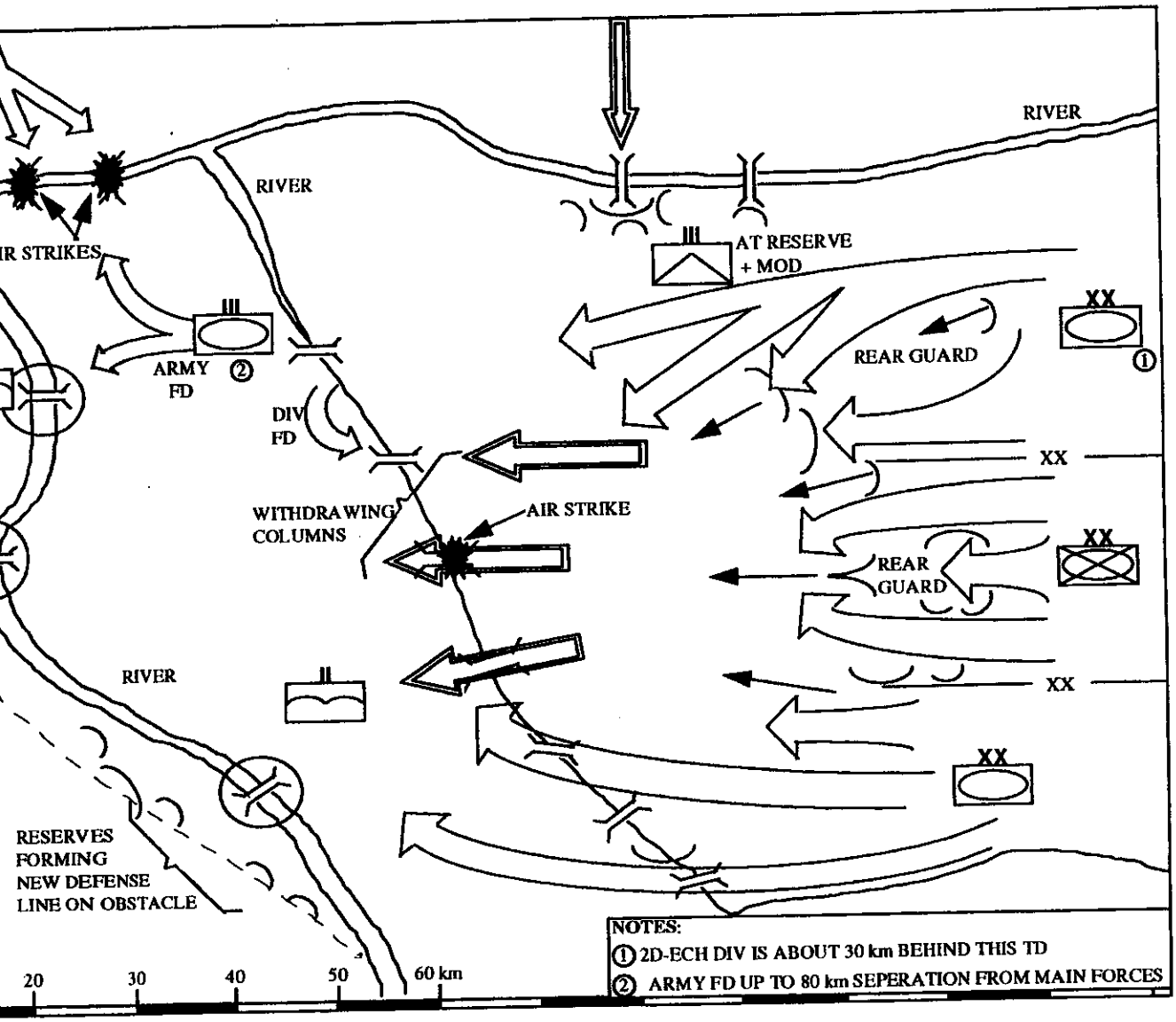

Figure 5-15. Tank army conducting pursuit.

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 would use forward, raiding, and heliborne detachments. Then, as a result of these tactical maneuvers, armies would conduct deep operations with OMGs operating in concert 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 major problems. This chapter has already dealt with one, pursuit; the other four are as follows.

Destroying Enemy Reserves and Repelling Counterattacks

The enemy would use his reserves wherever possible to deliver counterattacks. In less favorable conditions, he would employ them to reinforce the defending first echelon on critical axes or to occupy intermediate lines of defense. The counterattack poses the most difficult problem, since it represents an enemy effort to regain the initiative. The OPFOR must delay, disrupt, and damage approaching enemy reserves by air attacks and then by long-range artillery. First-echelon forces, or perhaps an OMG,should then destroy them in **meeting engagements** if the COFM allows, or strong antitank reserves and flank detachments should block the counterattack. If, however, the enemy enjoys too great a COFM superiority and/or is the victor in a meeting engagement, it may be necessary to change the axis of main effort. Nothing must be allowed 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 very important, whenever possible, to preempt the establishment of defense along a river line.[12] The OPFOR can do this through the use of heliborne or forward detachments at the tactical level and airborne units and OMGs at the operational. Following close behind a retreating enemy, the main forces would try to encircle the enemy against the obstacle, destroy him on the near bank, and thus cross the river unopposed. Should an opposed crossing become inevitable, the OPFOR commander must make the decision for it well in advance. He should issue combat missions at least 1 to 2 days in advance of leading divisions reach ing the obstacle, to allow organization of combat groupings, engineer and air support, airborne landings, and deception measures ahead of time. This is essential if the OPFOR is to achieve the necessary speed and surprise and conduct crossings from the march.

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[12] In European terrain, the OPFOR would expect to encounter--

- A stream 6 to 20 meters wide every 20 km.
- A stream 100 to 300 meters wide every 100 to 150 km (the normal distance to an army immediate mission).
- A major water obstacle over 300 meters wide every 250 to 300 km (roughly the distance to an army subsequent mission.)

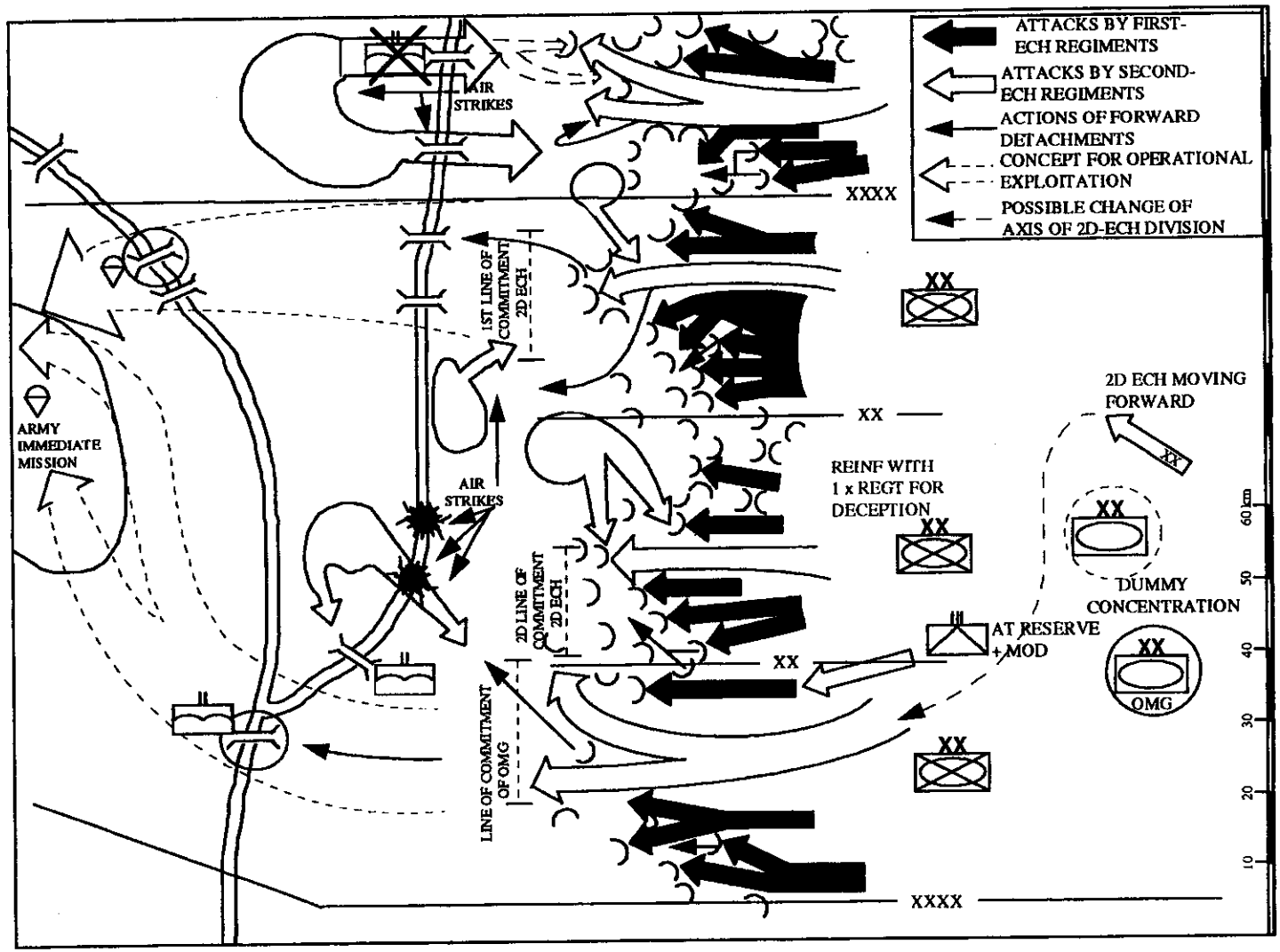

Figure 5-16. Actions in the enemy rear.

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 would attempt to cross with at least two regiments, and each of those would, in turn, attempt a crossing at two points.** As soon as these units have seized tactical footholds, the OPFOR would make efforts to link them up and deepen them into an operational-sized bridgehead. Ideally, formations would not pause to consolidate bridgeheads; rapid forward progress is always of paramount importance. The enemy, however, can often put up a determined fight for river lines, and heavy counterattacks may often force OPFOR formations 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, OPFOR night-fighting equipment may not always be state-of-the-art, and inadequate training standards may exacerbate this problem. When required to attack at night, the OPFOR normally tries to convert it into something approaching daylight conditions with the extensive use of illumination. Moreover, OPFOR soldiers need rest, too; units must carry out equipment maintenance and resupply. Accordingly, the OPFOR would avoid complex maneuvers at night. Divisions and regiments would take turns attacking and resting.

Most offensive action would occur 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 forward detachments.

However, the OPFOR would make 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 would 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 on o a different axis when resistance is too strong.
- Consequently regrouping forces from less favorable axes.

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 onto a new axis only on the instruction, or with the permission, of the *front* commander.** The resultant regrouping must 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, since it could lead to loss of momentum and confusion. OPFOR commanders recognize, however, that some regrouping will probably have to take place. The cause might be that unexpectedly effective resistance forces a change of axis or that the grouping appropriate to the first of a consecutive series of operations is not suited to the next. In any case, regrouping of armies within a *front* or divisions within an army is not likely to take place more than once in a strategic operation, and then only if ordered or approved by the next higher commander.

Tactical regroupings within divisions and regiments, however, occur frequently, since the tactical situation can change often and radically. Another frequent occurrence would be reorganization following the commitment of second echelons, as the old first echelon becomes a new reserve.

OFFENSE IN NUCLEAR CONDITIONS

In offensive operations following the initial massed 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. Figures 4-16 through 4-18 in Chapter 4 illustrate these operations at the *front* level; they are similar in concept at the army level but, of course, on a smaller scale.

Initial Nuclear Strike

The mission in the initial nuclear strike is to--

- Destroy enemy nuclear weapons.
- Inflict heavy casualties on major groupings (especially tank forces).
- Destroy CPs (especially corps and division headquarters).
- Destroy vital logistics assets within boundaries.

These are all possible targets for army SSMs and nuclear-capable artillery. *Front* may lay down the bulk of the targets for the army to engage, especially if operations are to be nuclear from the outset. If the transition to nuclear use takes place during the course of conventional operations, the army commander may be left to select targets for many of his systems using his own initiative.

In the event that nuclear use starts with only short warning and only the one-third of systems held permanently ready to fire are available, initial strikes would concentrate on nuclear systems and CPs. As other weapons come on line, they would strike enemy troop groupings and logistics sites.

Strenuous efforts would be necessary to eliminate the effects of the enemy's first nuclear strike. The first priority is the restoration of troop control. Then, forces that remain combat-effective can strike the enemy from the march in order to complete the destruction of surviving enemy groupings. Meanwhile, damaged units or formations are either restored or amalgamated to resume the offensive.

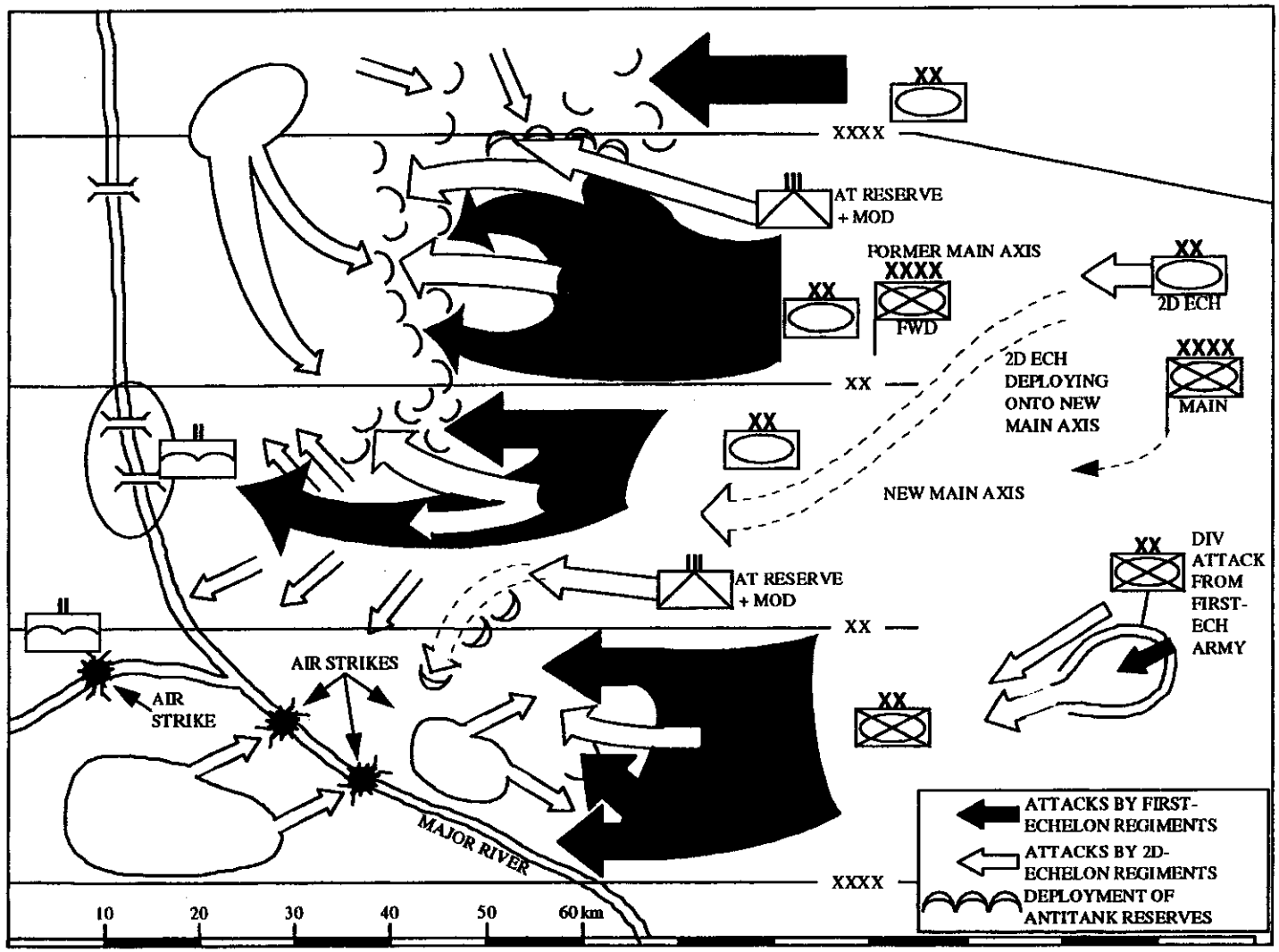

Figure 5-17. Tank army shifting its axis of main effort during a deep operation.

Post-Strike Operations

In a nuclear environment, penetration is not much of a problem and occurs speedily. On the other hand, the enemy's nuclear strikes would affect the rate of advance. The time required to restore combat effectiveness to formations damaged in the initial exchange can amount to 1 to 2 days or more. In the advance, the problems of overcoming or bypassing areas of destruction, conflagration, flooding, and/or contamination would slow down movement. Consequently, it is likely that the **average rate of advance would be much the same for both nuclear and conventional operations**. For planning purposes, the OPFOR considers them to be identical at an average of **40 to 60 km per day** in normal (European) terrain and 30-50 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 has only isolated groupings lacking much combat power, the army can advance in prebattle or even march formation, and mopping up would require 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 plan. It is imperative that the OPFOR move more quickly than the enemy in the mounting of attacks with those elements retaining combat capability and in delivering repeat strikes on surviving forces and reserves. Combat would assume a wholly maneuver character, with frequent **meeting engagements and battles** and extensive use of **airborne landing, raiding and forward detachments**. The OPFOR would bypass strong enemy pockets wherever possible and concentrate its efforts on thrusting into the enemy rear to destroy his nuclear systems, or at least keep them on the move, and to capture airfields. Second echelons or reserves would destroy such bypassed groupings. Meanwhile, the OPFOR would continue efforts to locate and destroy opposing nuclear delivery means.

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Chapter 6
Front and Army Defensive Operations

The OPFOR defines a *front* or army defensive operation as the aggregate of operations and battles of subordinate units unified by a single concept and plan. The subordinate operations include those of--

- First- and second-echelon maneuver forces.
- Reserves.
- Missile troops and artillery units.
- *Frontal* aviation.
- Army aviation.
- Airborne and heliborne 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.

NATURE OF OPFOR DEFENSE

OPFOR *fronts* and armies conduct defensive operations--

- To halt and repulse an enemy offensive.
- To hold key terrain.
- To inflict maximum losses on the enemy.
- To buy time.
- To perform economy-of-force missions.

The general goal of these actions is to defeat advancing enemy forces and to create conditions favorable for transition to the offense. The OPFOR also emphasizes aggressive execution and conduct of counterstrikes.[1] OPFOR defensive operations involve the use of maneuver, mines, and barriers.

It is likely that the OPFOR will defend initially, then follow with a counterstrike. It is possible that, within a given *front* or army offensive operation, subordinate units may execute defensive missions. This may be out of necessity, as when encountering a superior enemy force during the course of an offensive. However, it may be in an economy-of-force role, permitting the concentration of forces on the main attack axes. The primary focus of OPFOR operational-level defensive planning is at the army level.

Operational Formation

For OPFOR commanders, the term **operational formation** means the basic organization for combat by a *front* or army, in the defense as well as the offense. The OPFOR is quite flexible in its organization for combat, which corresponds to the need of the mission. (See Figure 6-1for an example of an army defensive deployment.)

Echelonment

The OPFOR reduces the vulnerability of its defending forces to nuclear attacks and

[1] * In OPFOR terminology, a **counterattack** is tactical, carried out by divisions. A **counterstrike** is operational, delivered by forces of a front or army. A **counteroffensive** is usually on a strategic scale; rarely is it operational.

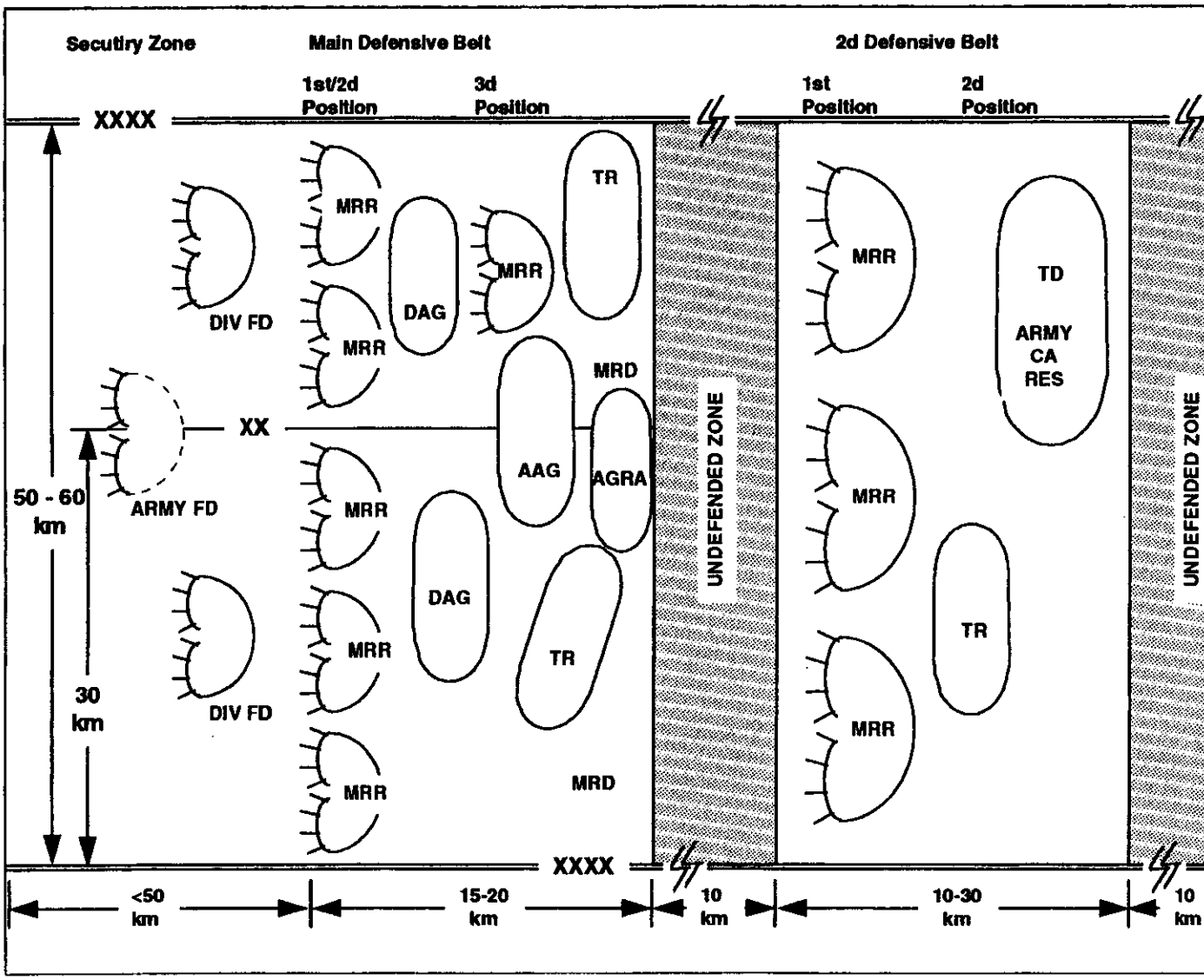

Figure 6-1. Combined arms army defense (variant).

to high-precision weapon strikes by dispersing forces laterally and in depth. The OPFOR achieves depth in an army defense by establishing battalion positions within a series of defensive belts.

OPFOR commanders do not conduct a static positional defense. Reserves and second-echelon forces have planned commitment lines. Should a penetration develop, they would assume blocking positions or initiate counterstrikes on these lines. Echelonment within belts and the belt system itself allows room and the necessary forces for maneuver.

Defending Forward

OPFOR defensive concepts emphasize the need to delay, defeat, or weaken the enemy offensive as far forward of the main defensive belt as possible. Reconnaissance troops attempt to locate enemy forces and determine enemy intentions. When possible, an army or *front* 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 should delay, weaken, and deceive the enemy. Using artillery, rockets, missiles, helicopters, and aircraft, OPFOR commanders would try to attack the enemy in concentration areas prior to an attack. The OPFOR would conduct counterpreparation fires to break up and disorganize enemy formations in advance of the main defense belts. OPFOR missile and artillery forces locate far forward in initial fire positions to strike the enemy as deeply as possible. They would then fall back to planned primary and alternate firing points in the main defensive area.

Threats to the Defense

The OPFOR believes an enemy offensive (or counteroffensive) poses five threats to the viability of the defense.

High-Precision Weapons

Long-range, high-precision weapons, possessing the destructiveness of small nuclear weapons and targeted by all-weather, deep-looking surveillance means, can wear down the attacker as he moves forward from the operational depth. By the time he reaches the forward edge of the defense, he can have been so damaged and disrupted that he lacks the necessary correlation of forces and means (COFM) to penetrate. He may even have been so seriously depleted that the defender can transition to the attack and destroy him in a meeting engagement. Even if he does penetrate, such weapons can be used by formations being outflanked to hit his columns as they drive into the defender's depth, and of course, to interdict second echelon forces that may be needed to maintain the favorable COFM needed to maintain momentum.

Nuclear Firepower

The most potent weapon in the attacker's inventory is the nuclear one. Massed nuclear strikes can rapidly create a penetration. Though there is a growing likelihood that only conventional weapons will be used in future wars, the use of high-precision weaponry will lead to almost nuclear levels of destruction in selected areas.

Air Power

If nuclear weapons are not used, potential enemies can deliver formidable firepower from the air. The development of

long-range, high-precision weaponry, both missiles and air-delivered, is increasing this threat.

Armor

Modern armies base their offensive capabilities on masses of armored fighting vehicles, especially tanks. These possess high mobility, flexibility, firepower, and shock power, and in consequence they can quickly exploit any weakness in the defense to generate operational maneuver into the defender's rear.

Airborne or Heliborne Landings

Armored thrusts are usually complemented and aided by airborne or heliborne (or in coastal areas, amphibious) landings. These threaten to undermine the defense by disrupting its C^2 and logistics systems and by seizing vital ground.

Principles of OPFOR Defense

In reaction to these threats, the five basic characteristics of OPFOR defense are that it is anti-high-precision, anti-nuclear, antitank, anti-air, and antilanding. The requirements for these are to some extent contradictory, and failure fully to reconcile the contradictions must create some problems in defense. A consideration of the following OPFOR principles of defense illuminates these.

Concentration and Dispersal

The OPFOR stresses the need to concentrate its main effort on the enemy's principal axes. This poses two major problems. It is difficult to discern, in a timely manner, the enemy's intentions, given the mobility and flexibility of formations and consequent short periods required for concentration. Moreover, any concentration must be tempered by the possibility of the enemy using nuclear or high-precision conventional weapons to achieve a quick penetration. It is no longer possible to defend continuous lines with high densities of troops. Partial answers to these problems are the following:

Concentration of fire. Given the range of modern artillery, not to mention both fixed- and rotary-wing aircraft, it is considered possible both tactically and even operationally to concentrate the fires of dispersed weaponry on key sectors and so break up the attack. The defense should rely on firepower and the maneuver rather than on numbers of troops.

Dispersal laterally and in depth. Tactically, it is increasingly true that to remain stationary on vital ground is to attract devastating fire. It may be better to defend the approaches to it and dominate the ground itself by fire from flank and rear. Alternatively, minimal forces may be left in place until the conclusion of the enemy's preparatory fire, when earmarked forces will move in. Operationally, it is desirable to defend in great depth; the heavier the expected blow, the greater the depth should be. The second echelon, usually armor-heavy, may well be equal or even superior in strength to the first.

Activeness and Maneuver

The OPFOR defender cannot afford to be passive, relying on positional defense. The initiative must not be surrendered to the attacker. Defensive operations in the future will be characterized by a defensive-offensive mix, with the share of offensive activity tending to increase (especially if nuclear weapons are used). The more ag-

gressive the defense, the more stable it is. Within the context of theater and *front* defensive operations respectively, *fronts* and armies can deliver attacks of limited goals and spatial scope but with important roles in decisive axes.

Preemption. This expression of continuous activeness is highly desirable, especially against enemy nuclear systems. Counterpreparation is also a key to success in conventional defense, by altering unfavorable COFM at the last minute and through the disruption of the enemy's timetables. Spoiling attacks by divisions, armies, or larger formations are also not excluded, even on a strategic scale.

Maneuver. Just as important is the maneuver of combat troops, both laterally from secondary sectors and from the rear to form concentrations either for counterpenetration or for counterstrikes. This avoids lengthy occupation of the counterstrike sector, with its consequent heavy losses to the enemy's preparation, and fulfills the need for anti-nuclear (and anti-high-precision) maneuver (i.e., the frequent relocation of units to get out from under enemy strikes). Successful, timely, man-euver increases the power of the defense and makes it possible to defeat a superior enemy force.

Counterattacks/counterstrikes. These offensive actions, to retake ground or destroy any enemy penetrations, are the basis of a successful defense. Ideally they are launched when the stability of the defense is unimpaired, yet the enemy has already committed his immediate reserves, and those more distant are delayed and disrupted by interdiction. They can be initiated against an enemy temporarily transitioning to the defense or, and preferably, in the expectation of a meeting engagement with a disrupted penetrating force. They must, however, be sure of producing significant operational (or operational-tactical) results. If only a dent is achieved in an enemy penetration, it is better to use second echelons or reserves for counterpenetration.

Counterpreparation. In the event of the attacker making better than expected progress, upsetting the stability of the defense, and still having combat power within reinforcing reach of the battlefield, counterattacks may be eschewed in favor of replacing elements of the first echelon and blocking the enemy's further advance and generation of a operational maneuver. In this case, more decisive countermoves will be left to the senior commander using his reserves (the ultimate aim always being not merely to stop the enemy but to destroy him). As well as the second echelon and reserves, airborne elements or heliborne motorized rifle troops may be available for counterpenetration tasks.

Reconnaissance. Without continuous and aggressive reconnaissance extending well into the enemy's depth, the prospects of success may be compromised. Determining the enemy's main axes, the locations of his groupings, and his timetable are essential to preemptive actions, the disruption of approaching attack forces by long-range fire, timely maneuver and damaging counterattacks.

Deep battle and deep operations. Even in defense, there is a place for deep attacks to disrupt, damage and delay the attacker. These may not be confined to air and missile strikes. In friendly territory, there will also be intensive efforts to organize a partisan movement, the activities of which will be reinforced by regular troops and carefully coordinated with the main forces.

Resoluteness

Not all defensive actions can have a maneuver character. Some key areas and lines have to be held to maintain the stability of the defense, disrupt the enemy, and gain time for the execution of maneuver from unthreatened sectors and from the rear. Defending units and formations do not have the right to withdraw without orders from the senior commander. They must be prepared to hold resolutely, even when communications with superior formations and flanking forces have been lost, even when they are encircled. Generally, attempts to break out of encirclement equate to the effective loss of the formation as a fighting entity, quite apart from the adverse effect such a move is likely to have on efforts to stabilize the defense in depth, or counterattack. The mix of static resistance and maneuver can vary from sector to sector. In some areas, solid retention of occupied lines and areas will be combined with local counterattacks, in others, maneuver defense may be used, and in still others a combination of the two. Methods can vary according to the mission, the terrain, force available, and other criteria. As a result, operations often develop in a nonlinear fashion.

Engineer Preparation

Any OPFOR elements involved in a defense must be prepared to withstand nuclear, high-precision, and conventional artillery attacks. Second echelons and reserves must be protected to survive enemy deep strikes. OPFOR engineers are equipped to achieve the necessary depth and density of prepared defenses.

The OPFOR develops a comprehensive obstacle plan. Extensive use will be made of mines to disrupt and canalize enemy attacks. The element of surprise is important to the development and success of any OPFOR obstacle plan. The OPFOR believes it is more effective to lay a minefield at the last minute, during the course of a battle and directly in the enemy's path, rather than lay it beforehand, giving the enemy time to detect it and prepare breaching means in advance. It is this consideration which makes the mobile obstacle detachment (MOD) and its associated antitank reserve such important parts of tactical and operational formations. There is also growing stress on surprise, rapid surface laying of mines by helicopters and, more importantly, by multiple rocket launchers firing remotely-delivered mines. These can seal gaps in the defense or tie down even deep reserves in order to win time for the defense.

Surprise

It is much easier for the side initiating the offensive to achieve surprise. However, it is still an essential tool for the defense. Surprise can help to compensate for shortage of forces or to persuade the attacker to conduct operations in unfavorable conditions. Surprise is achieved by concealing the defense and by deceiving the enemy as to its alignment and deployment. The OPFOR stresses several guidelines for achieving surprise in defense.

Avoidance of stereotype. The alignment, grouping, and methods used in the defense must not be according to a template, predictable to the enemy even if the intelligence picture is incomplete. This does not mean an abandonment of norms, rather a selective and situationally dependent application.

Counter-reconnaissance. Surprise in the defense can best be achieved through

an active degradation of enemy reconnaissance capabilities. Reconnaissance means must be located and destroyed. They can also be deceived by extensive use of dummy positions and structures, false movement, dummy radio nets, etc. Strict camouflage discipline is, of course, vital to both the concealment of real defended belts, areas, and reserve concentrations and to the success of deception plans.

False forward edge. If possible, a false defensive belt should be created to mislead the enemy into a mistaken fire preparation and attack plan. Where that is not possible, it is desirable to temporarily withdraw troops covertly before the enemy's artillery and air preparation. This technique has been used in the past, and is becoming increasingly important in view of the increased destructiveness of modern weaponry. In view of its complexity, such a withdrawal may be shallow and temporary.

Counterpreparation. To be successful, the preparation of counterpreparatory fires and strikes must be concealed from the enemy. Given the long range and accuracy of modern weapons, many of the participating systems require little if any prior maneuver, provided the correct time and place of the attack have been anticipated. Effective and accurate intelligence is critical to the success of this principal.

Maneuver. Maneuver is essential to maintaining the stability of the defense. Maneuver must, however, be covert or the enemy can disrupt and defeat the counterattacking forces. Thus thoroughly prepared routes coupled with the use of concealment and deception are important to any successful cover of movement.

Air Defense

Defeat of enemy air capabilities is fundamental to successful ground defense. If accomplished, it can restrict or deny enemy air reconnaissance, air preparation, interdiction, and the insertion of significant air assault forces. The main contribution at the operational level should be made by *frontal* aviation (aided by missile troops, special-purpose forces, and raiding detachments) conducting a (ideally preemptive) long-range fire strike. The air defense units of the ground forces attempt to create a dense, seamless, overlapping air defense umbrella with considerable redundancy.

Antilanding Defense

Both large- and small-scale airborne (and on coastal regions, amphibious) landings are now integral parts of offensive operations. Such forces are capable of disrupting the stability of the defense by destroying troop control elements, logistics support, and key weapons systems and by seizing vital ground. It is important for the OPFOR to establish a dedicated antilanding reserve at both tactical and operational levels. Where this is not possible, second echelons (reserves) can locate so as to defend particularly important areas or targets, and engineers can create antilanding obstacles.

Deep Battle

The struggle in the enemy's operational and operational-tactical depth retains its significance in defensive operations. Deep reconnaissance and targeting, diversionary-sabotage action, ground forces and heliborne raiding, and air/missile interdiction are all practiced, though on a reduced scale compared with offensive operations.

Strengths and Weaknesses

The OPFOR recognizes the advantages enjoyed by the defense. The defending OPFOR can choose its ground and protect its forces by digging, creating, or enhancing obstacles. It can conceal its forces, and from the safety of prepared positions destroy enemy attack concentrations by maneuvering fire and then decisively counterattacking depleted and disrupted penetrations. The growth in the range, accuracy and lethality of modern weaponry has done much to enhance the stability of the defense. Traditionally, all the advantages gained the defender have been outweighed by the surrender of the initiative.

The attacker's ability to choose the time and place to launch an offensive, coupled with the contemporary capability for the conduct of deep operations, gives him a crucial edge. This advantage becomes potentially decisive when the defender does not have the choice of ground or time to prepare, either because of the element of surprised or because of being forced onto the defensive by a changing COFM. Finally, all the benefits enjoyed by the defense can disappear in nuclear operations, for the aggressor can always achieve a penetration using nuclear strikes.

FRONT DEFENSE IN CONVENTIONAL CONDITIONS

Goals and Missions

The **goals** of a *front* defensive operation are specified by the General Staff (or CINC of the theater) and depend on:

- The strategic mission and concept of the theater.
- The significance of the axis to be defended.
- The missions of adjacent formations.
- The likelihood of enemy air and ground attacks and their likely strength.
- Whether operations are nuclear or nonnuclear.
- What nuclear resources are available.

In most cases, the goal is to repel enemy attacks, inflict maximum casualties, retain important lines or areas, and possibly also to establish favorable conditions for subsequent offensive operations (including, at the start of a war, the covering of the deployment of strategic groupings and their organized commitment into combat).

In pursuance of these goals, **missions** include:

- Inflicting heavy casualties on the enemy's approach to the defended area (a mission which may be accomplished by nuclear weapons alone, leading to the abandonment of the attack).
- Repelling ground and air attacks.
- Destroying penetrations of defended areas.
- Eliminating enemy airborne, heliborne, or amphibious landings.

Reasons for Assuming Defense

Front-level defensive operations are essentially a temporary form of combat action, assumed when, due to inadequate resources, offensive actions are not possible, or when, considering operational and strategic concepts, they are undesirable. A *front* or army may act on the defensive in the following circumstances:

Prelude to Counteroffensive

At the beginning of a war, superior enemy forces, probably aided by surprise,

may have to be met, at least initially, by defensive action to prevent the enemy seizure of important economic, administrative, and political centers and to gain time for the mobilization, concentration, and deployment of strategic groupings. Such a defense is merely a prelude to a decisive counteroffensive.

After Defeat

Either at the beginning of a war or during the course of operations, a *front* or army 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 strikes.

Repelling Counteroffensive

In the course of offensive operations, a *front* or army may be forced to transition to the defensive to repel a counteroffensive which is too strong to be met in a meeting engagement. If the enemy mounted 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 *front* continues the offensive.

Completion of Mission

At the conclusion of an offensive operation, a *front* or army may assume the defensive because it has taken the designated strategic objective, or because there is a need to regroup and resupply before offensive operations can resume on its axis. A defense can also cover the exposed flank of another strategic grouping of forces conducting an offensive in the theater.

Transition to Defense

The circumstances under which the OPFOR transitions to a defensive operation determine the structure and strength of the OPFOR defense. The primary determining factor is whether or not the OPFOR formation is in contact with the enemy at the time.

Defense out of Contact with Enemy

A *front* preparing to defend prior to the outbreak of war, or preparing deep defenses during the course of hostilities, is preparing a defense **out of contact** with the enemy. Such a defense, is characterized by a relatively long preparation period. Alternative plans are prepared for attacks on different axes; selected groups from armies are briefed on the concept of operations; cooperation is organized; extensive engineering work is undertaken. The combat troops may not be deployed until the last minute to maintain secrecy and to give maximum time to study the enemy deployment. In such a defense, the bulk of the formation's combat power may well be to the rear to allow maximum freedom of and time for maneuver to adjust the emphasis of the defense in accordance with the perceived weight of the attack on various axes.

Defense in Contact with Enemy

After the outbreak of war, the OPFOR is more likely to adopt a defense adopted while **in contact** with the enemy, in expectation of an attack. If a formation is severely damaged by nuclear strikes, is already under strong counterattack, or is defeated in a meeting engagement, preparation time will be strictly limited. Particularly in the latter two cases, preparation must occur simultaneously with efforts to repulse enemy ground and air attacks and 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. Moreover, limited offensive action may be necessary even as the defense is being established in order to seize favorable ground. In these circumstances, typical of defense during the course of the offensive or as a result of a surprise attack, defense is very difficult and uncertain of success.

Operational Concept

The following paragraphs describe the operational formation and defensive layout of a *front* in the defense. This is the ideal *fronts* would try to achieve when adopting defense either out of contact or in contact with the enemy.

Scope

The scope of the defense depends on the composition of the *front* as specified by the General Staff (or theater CINC). A *front* may comprise 1 to 4 combined arms armies (CAAs), tank armies (TAs) or infantry armies and 1 to 2 motorized rifle of tank divisions, perhaps one or two army corps (in lieu of armies), 1 to 2 artillery divisions, 1 SSM brigade, 1 or 2 SAM (SA-4/12) brigades, a special-purpose forces (SPF) brigade and an air army. However, there is no fixed organization for a *front*. A typical *front* would contain a varying number of armies. Structure will depend on the composition and strength of the expected attack, and on the terrain and the nature of the theater.

In some theaters, a *front* might defend on a frontage of 350 to 400 km, and to a depth of 250 to 300 km or more; in other theaters, the area of responsibility may be larger. A determining factor is the need to achieve adequate force density to repel the enemy in nuclear or conventional operations. This implies a first-echelon division per 20 km on a main axis and per 30 or more km on a secondary axis, together with second echelons and reserves appropriate for the weight of the expected attack (with more being required in nuclear operations, due to the consequent lowered stability of the first-echelon divisions). Of course, the deployment of high-precision weapons, and particularly reconnaissance-strike complexes with high-precision warheads may alter this, and other norms given below. In the future, formations may be able to defend greater frontages than at present.

Operational Formation and Tasks

The *front* deploys in a series of defensive belts with alternate positions as appropriate. (See Figure 6-2.) However, these belts are not intended for successive, positional defensive battles. Prepared positions in depth provide protection and lines or areas for counter- penetration, but the basis of the defense is maneuver and counterattack against enemy forces endeavoring to reduce prepared defenses. OPFOR defenses are, in other words, designed to be penetrated, but at a significant cost in casualties, time, momentum and disruption. Having thus created the optimum conditions for a counterattack, the enemy is destroyed by offensive action.

First echelon. The task of the first echelon is to repel attacks with heavy losses, hold important areas, and create favorable conditions for counterattacks. Usually, but not invariably, the bulk of the *front* is deployed in the first echelon. First-echelon armies deploy in the first two or three belts, as follows:

When a defensive operation is organized out of contact with the enemy, a **secu-**

rity zone about 15 to 20 km deep is organized in front of the first belt and defended by troops of the first-echelon divisions. (Actually, security zones can extend out to 50 km, but troop control may be a problem.) Its purpose is to force the enemy into premature deployment, canalize him onto unfavorable axes, establish the enemy's main groupings and intentions, and inflict delay for the preparation for defense and counterstrikes.

The **first belt**, defended by an army's first-echelon divisions, is the main one of the defense. It comprises three or more defensive positions to a depth of about 20 km. The army's second echelon and/or reserves will usually be committed to preserving the integrity of the main belt, or at least to the defense of the tactical zone of defense (the first and second belts together) as a whole.

The **second and third belts** each comprise one or two defensive positions, with 50 to 80 km separating the second from the forward defensive edge and up to 100 km separating the third from the forward edge. The second echelon and reserve of the army is held in these belts. From them, counterstrikes are mounted against penetrations into the tactical zone of defense, with counterattacks destroying the enemy, or with counterpenetration being practiced against very strong and successful penetrations. The total depth of a first echelon army is about 100 to 120 km.

Second echelon and/or combined arms reserve. The *front's* combined arms reserve comprises several MRDs and/or TDs. Its primary role is the reinforcement of forces operating on decisive axes, the relief of battered formations, the destruction of airborne landing forces, or the execution of other, unexpected, missions. A second-echelon army deploys 150 km or more from the forward defensive edge. Its primary role is to act as a counterattack force, used 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, it may establish a defense on vital lines in the operational depth on the enemy's main axis. The second echelon and reserve deploy in the defensive belts (usually two or three) established by *front* troops. If time permits, defenses will be prepared in the operational zone as alternate positions which can be occupied by withdrawing forces. The total depth of this defense, with two or three army belts and two *front* belts, may reach 250 to 300 km.

Antitank reserve and mobile obstacle detachment(s). The antitank reserves are established from large antitank units. They almost always work in close cooperation with the mobile obstacle detachments (MODs), of which the *front* usually establishes two. Together, these antitank forces are used to reinforce the antitank defense of the first echelon, act as counter penetration groupings, or deploy to support the commitment of *front* counterstrikes.

Command posts. A *front* may deploy up to six CPs (excluding dummies) as follows:

- The **main CP** deploys 100 to 120 km from the forward edge of the battle, 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. It is constantly manned by an operations group from *front* HQ, and all communications are duplicated.
- The **forward CP** will always be set up to control *front*-level counterstrikes.

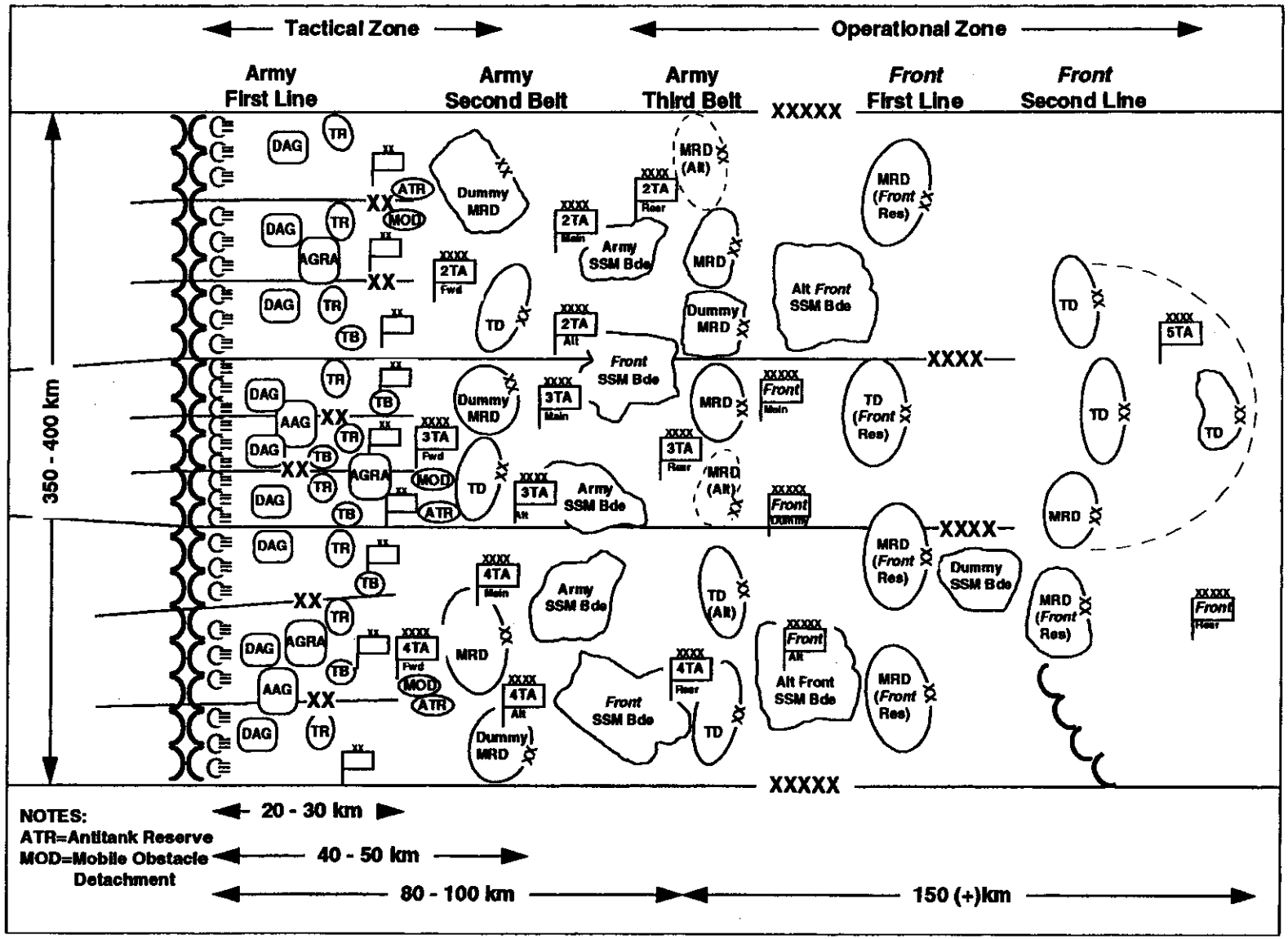

Figure 6-2. *Front* defensive deployment.

- The **rear CP** deploys with the *front* forward base, up to 150 kms to the rear. It is able to take over from the main CP if required to do so.
- An **airborne CP** is used when the *front* commander visits an area of operations.
- An **auxiliary CP** may be established to ease troop control problems of formations operating on an independent axis.

SSM brigade. SCUD brigades are assigned a primary area 60 to 80 km from the forward edge and one or two alternate areas which are 15 to 30 km apart.

***Frontal* aviation.** Fighter-bomber and reconnaissance airfields are located 100 to 150 km from the forward edge, with bomber bases 200 to 300 km distant. Each aviation division is assigned an airfield complex which includes four to six operational airfields and two or three reserve fields.

Conventional System of Fire

The basis of the defense is a coordinated and integrated **system of fire** that is primarily antitank (AT) in nature. The AT weapons deploy to achieve interlocking fires along the forward edge and in depth. The AT reserves up to *front* level provide a quick-reaction AT force to block penetrations, generally in conjunction with MODs. Commanders carefully integrate their obstacle and barrier plans with their fire plans to create fire sacks (kill zones).

In nonnuclear operations, the conventional system of fire includes the organization of fire strikes, the establishment of multi-layered, massive fires of all types of weapon immediately in front of the forward edge of the battle and to the flanks and rear, and preparation for the maneuver of fire onto all axes. Generally, aircraft will engage targets beyond artillery range, and moving and point targets. The system of fire and air strikes are designed to accomplish the following:

- Destroy enemy nuclear systemsand high 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 counterprepartory fires, where intelligence makes it possible.
- Bring to bear the full weight of available fire support to support counterstrikes.
- Cover flanks, intervals in combat formations (covered only by obstacles), and gaps created by enemy nuclear strikes.

Engineer Support

Engineer works are vital to the stability of the defense. Of course, such work is a combined arms task, and not just an engineer responsibility. Complete preparation of a *front's* defensive belts may to require 8 to 10 days.

First Priority

Divisions occupying defensive belts concentrate on --

- Digging weapons pits and trenches, constructing OPs, CPs, and medical centers.
- Creating obstacles in front of the forward edge of the battle, 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.

Second Priority

After the initial tasks are completed, work will be done to --

- Integrate weapons pits into section, then platoon, trenches and prepare alternate positions for tanks and other weapons.
- Improve deployment lines 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.

Reconnaissance

With the initiative in the hands of the attacker, timely intelligence is vital to forestalling the enemy with a counterpreparation and to prepare timely countermoves. The organization of reconnaissance includes: the planning and issuing of missions to troops executing reconnaissance tasks, including--

- The establishment of a reconnaissance reserve.
- The coordination of reconnaissance efforts with combat and combat support.
- The organization of communications, including with groups operating in the enemy rear.
- The collection, assessment, and analysis of information and dissemination of intelligence to higher, lower and flanking formations.

Maskirovka

It is crucial to deceive the enemy as to the concept of the defense and the missions to be executed by the defending formations and to decrease the effectiveness of nuclear and high precision conventional strikes. *Maskirovka* measures include:

- The concealed movement of troops and secret occupation of defensive positions.
- The establishment of all types of concealment (against optical, radar, EW, thermal, magnetic and acoustic intelligence gatherers) to hide the main forces and vital targets.
- The establishment of dummy operational formations (or parts of them), SSM deployments and CPs and a deceptive system of engineer obstacles and positions.
- The establishment of a security zone or forward positions to conceal the actual forward edge of the battle.
- The establishment of dummy airfields and EW sites; the use of the media to spread disinformation.

All measures of operational *maskirovka* are interconnected and coordinated in terms of time, place and objectives.

Types of Defensive Action

Defense Before Enemy Penetration of Forward Edge

Much depends on whether the defense is assumed in or out of contact with the enemy. If **out of contact**, the *front* initiates the engagement by hitting the enemy on the distant approaches with air and missile strikes, especially with high-precision weapons. Principal targets are nuclear and high-precision weapons, the main groupings, airfields, air defense forces, CPs, and key logistics elements. Before the attack is launched, a surprise counterpreparation is executed by air, missile, and artillery strikes. (A *front*-level counterpreparation is fired over a period of 25 to 30 minutes with an artillery density of 40 to 50 weapons per km of frontage. It is normally conducted on a 20- to- 25 km wide sector on the junction of two armies, and to a depth of 25 to 30 km.)

If the *front* transitions to the defense **in contact**, or worse, when facing a counterattack in the course of the offensive, the defense is much more difficult to establish, since operations may commence before preparations are completed and reorganization executed in accordance with the concept for defense. In such circumstances, elements of the *front* may have to continue their attack in order to seize an advantageous line.

In either eventuality, during the actual start of the enemy attack or counterattack, all weapons that can be brought to bear open intensive fire to disrupt attacking groupings, separate tanks from infantry, and neutralize fire support. In this way, they can create favorable conditions for the destruction of mechanized forces by AT systems. As soon as the enemy's likely or actual axes of attack are identified, measures must be undertaken to reinforce these to increase the density of AT weapons and obstacles and to increase the depth of the defense. The mission of the aviation, artillery, mobile AT reserves, and other troops must also be adjusted and confirmed.

Defense After Enemy Penetration of Main Defensive Belt

Where the enemy achieves penetration, 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. Regiments and divisions mount counterattacks to destroy minor penetrations and 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. As the penetration of the tactical zone of defense develops, army mobile AT reserves move to the threatened axes, and 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. Such units 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 zones continues, army and *front* engineers prepare new defense lines and develope the obstacle system to add further depth to the defense on the threatened axes,

Operational-Level Counterstrikes

The counterstrike is the key to successful defense. No matter how well prepared, forces which defend passively are more likely to be defeated.

Missions. 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. **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. In the most favorable of circumstances, when the enemy has committed all his reserves, has taken heavy losses, has had his C^2 disrupted, and has lost air superiority, the immediate mission may be to encircle and destroy the main enemy grouping, and the subsequent mission may be the seizure of favorable lines in the enemy's rear from which a general *front* offensive or counteroffensive may be launched. 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 to inflict a decisive blow against an important grouping.

Conduct. Ideally, counterstrikes are mounted against penetrations that have been disrupted and stopped. They may, however, be launched against a grouping that is still advancing, in which case a meeting engagement results. They are preceded by a short but intense artillery and air preparation and executed into the flanks or rear of the penetration, exploiting gaps and ruptures in the enemy's operational formation. The flanks of counterstrike groupings are protected by mobile AT reserves and MODs, and measures, especially air interdiction and remote mining, are undertaken to prevent enemy counteraction by reserves. After the restoration of the defense, the troops are regrouped so that a deep operational formation and reserves are reconstituted. Alternatively, if the enemy's reserves are exhausted and his deployment unbalanced, the counterstrike may be developed into a counteroffensive.

Army level. Army-level counterstrikes are launched either on the instructions of the *front* commander or on the basis of the army commander's decision, approved by *front*. They are supported by a maximum effort of *front* reserves (especially air), and elements of the *front* combined arms or special reserves may also be committed. If the enemy attack is very strong, army second echelons may be used, not for counterstrike, but to hold prepared lines in depth. In the event the enemy breaks into the second defensive belt 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, and creating favorable conditions for mounting a *front* counterstrike.

***Front* level.** *Front* counterstrikes are generally launched to destroy enemy forces on the most decisive axis. Counterstrikes aim to recover ground lost during the enemy attack. It is also possible that the containment of the enemy offensive may trigger the mounting of a counteroffensive by a *front* or group of *fronts*. This may be launched on a weak enemy sector. The most favorable conditions for the *front* counterstrike exist when first-echelon armies maintain their combat capability and firmly hold positions on the flank of the penetration, when enemy spearhead is halted or appreciably slowed, and when the enemy has taken heavy losses and committed his immediate reserve. Ide-

ally, the *front* counterstrike should be launched against both flanks of the penetration, since 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, may preclude a double encirclement. Time is not an element that can be sacrificed, particularly if surprise may be compromised. To launch the *front* counterstrike, as many forces must be used as can be brought to bear, i.e., the *front* second echelon and combined arms and special reserves, all the available resources of *frontal* aviation and those elements of the first echelon which are in the vicinity of the counterstrike possibly (if the air situation permits) combined with air landings to block any retreat or the forward movement of enemy reserves. The counterstrike cannot be decisive if it uses insufficient troops to gather a significant superiority over the enemy.

Defense Against Enemy Airborne and Heliborne Landings

The enemy may endeavor to unbalance the defense and increase his momentum through the use of tactical and operational landings. Initially, these can be combated by air defense troops and aircraft. If they succeed in landing, they must, where possible, be destroyed before they have time to organize, or at least before they can seize and consolidate on their objectives. This task belongs to *frontal* aviation and the antilanding reserve, or where the latter is not formed through shortage of troops, elements of the second echelon or reserve.

FRONT DEFENSE IN NUCLEAR CONDITIONS

In nuclear operations, the situation can change even more rapidly, both on the ground and in the air. On one axis, the enemy may penetrate to the operational depth, on another he may only penetrate the tactical zone of defense, on others he may be stopped on the forward edge of friendly troops. Generally, troops are involved in a series of scattered defensive combat actions. Under such circumstances, army and *front* commanders must show resourcefulness and exceptional skill in troop control.

Priorities

Defending formations and units must limit and contain enemy maneuver through the firm defense of vital lines and areas and, through resolute defense and the use of engineer obstacles, force the enemy to attack along axes disadvantageous to him. Where the enemy is canalized and forced to offer a good target, decisive losses can be inflicted by conventional (including high-precision) or possibly by nuclear strikes, with countermoves completely eliminating the threat. If the enemy breaks through on several axes, the *front* must concentrate on destroying the enemy's main grouping and not be diverted onto areas where countermoves are easier because the enemy has relatively fewer forces. Only after the destruction of the main grouping can efforts be shifted to other axes.

Forms of Counterstrike

Counterstrikes are still best launched from the flank or flanks of a penetration, but a frontal attack is possible where a sufficient number of nuclear weapons can weaken the enemy so that his grouping can be split up and destroyed piecemeal. In the course of defensive operations, *fronts* should use their nuclear rounds sparingly to ensure the capability of inflicting decisive losses just before the launching of the counterstike. Even

more than in conventional combat, meeting battles/engagements will take place as each side endeavors to exploit the destructiveness of nuclear strikes with quick thrusts/counterthrusts and reserves are hurried to restore the situation.

Nuclear System of Fire

The planning and troop control of nuclear use is centralized when, as would usually be the case in defense in the course of nuclear operations, the availability of nuclear rounds is limited. When preparing for defense in peacetime, or when transitioning to defense in the course of an offensive conducted without nuclear use, a *front* should have enough nuclear weapons to foil all enemy attacks, and the *front* could quickly follow its massed nuclear strike with a counteroffensive. When striking deep targets, and when the meteorological situation is favorable, surface bursts are generally used. They are also used against forces advancing and deploying to attack unless an immediate counteroffensive over that ground is planned. The principal nuclear targets are:

- **SSMs and artillery.** The former, along with nuclear-associated logistics, are attacked as soon as they are located.
- **Main forces.** Enemy strike groupings, especially tank-heavy ones, are hit when concentrating, attacking, penetrating the defense, or prior to a counterstrike.
- **Airfields.** Those basing nuclear-capable aircraft are of equal priority to SSMs, but airfield attack generally is a vital part of the struggle for air superiority.
- **Air defenses.** Key systems that are defending attack corridors used by enemy strike aviation are destroyed as part of the battle for air superiority.
- **CPs.** The disruption of enemy command and control should be timed for crucial moments in the operation.
- **Logistics installations.**

ARMY DEFENSE IN CONVENTIONAL CONDITIONS

Goals and Missions

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 a *front* main grouping.
- 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 formations.

In pursuance of these goals, the army's **missions** are to--

- Destroy enemy nuclear and high-precision conventional 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

As with *front*, army-level defensive operations are most often a forced and temporary form of combat employed in support and in the interests of offensive actions (*i.e.*, to inflict losses on the enemy's strongest groupings and thus support the conduct of offensive operations on an important direction of the theater of operations). Army defensive operations should be more frequent than those of a whole *front*. An army may act on the defense in the following circumstances:

Front Defensive Operation

An army may assume defensive operation within the context of a *front* defensive (whether at the beginning of a war or during the course of operations). In this context, it may defend in the first echelon, either on a main or secondary axis, or it may act in the second echelon, where its primary role is to launch counterstrikes.

Front Offensive Operation

There are several circumstances in which an army may act on the defensive while most or all of the rest of the *front* continues to advance:

- When the enemy launches a counterattack.
- When defending a bridgehead.
- When repelling enemy attempts to break out of encirclement.
- Defending an extended frontage to free forces to concentrate on an offensive axis.
- As an economy-of-force measure.

Forced Defensive Action

The following conditions may force an army onto the defense:

- Heavy losses inflicted by nuclear strikes, high-precision conventional weapons, or massed air attacks.
- The enemy deploys his forces before the army does.
- Defeat in a meeting engagement.
- Encountering an enemy with superior forces.

Transition to Defense

Going over to the defensive during the course of an offensive often occurs in an adverse ground and/or air situation, even under enemy attack. The main forces of the army may be already engaged in combat, with divisions at varying depths and on different axes. All elements of the army may not transition to defense simultaneously; some may continue to attack to seize favorable lines from which to defend, and others may 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 *front*, the higher formation having concentrated its efforts either on continuing the offensive on another axis or on supporting the defense on a more dangerous axis. Of course, an army assuming the defensive ahead of the enemy's attack and on ground of its own choosing would be considerably better placed to create a stable, enduring defense.

In the OPFOR view, transition to the defense occurs either in direct contact with the enemy or out of direct contact with the enemy. After the initiation of hostilities, the OPFOR considers the most likely form of

defense to be that executed in direct contact with the enemy. This also occurs during an offensive when an OPFOR army must assume a defensive mission. This may be because it encounters a superior enemy force. Sometimes an army may perform an economy-of-force role, permitting the concentration of forces on the *front's* main attack axis.

In Direct Contact

An entire army would probably not shift to the defense in direct contact with the enemy. If its forward tactical units go over to the defense, their initial priorities, then, would be to establish good defensive positions; this might require offensive actions to seize suitable terrain. Planning time for these units would obviously be limited but, depending on the enemy situation, follow-on forces could have a great deal of time. They would establish typical defensive positions as discussed above. OPFOR formations in direct contact with the enemy during the assumption of the defense are unlikely to withdraw to establish a security zone. Ground 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 *front* and army forces must block an enemy counteroffensive. If under no direct enemy pressure, the OPFOR army would probably establish a security zone. The time available for preparation of the defense depends on the enemy situation.

Operational Concept

The following paragraphs present the operational formation and defensive layout of an army in the defense. This is the ideal, which armies would try to achieve when adopting defense either in contact or out of contact with the enemy.

Scope

A combined arms army of 2 to 4 divisions may defend a sector 100 to 150 km wide and 100 to 150 km or more deep on an important axis. Much depends on the relative strengths of the sides and on the terrain in the sector: in mountainous, desert or arctic regions, an army may well hold a wider sector, while on a key axis which is greatly threatened in normal terrain, it may defend a narrower sector.

Operational Formation and Tasks

The operational formation of the army a may be in one or two echelons with a combined arms reserve. It depends on the operation and the army's missions, the composition of the enemy groupings, and character of their actions, and the terrain. 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 NBC or high-precision weapons attack. Even during conventional defense, it is necessary to meet all the requirements of defense in nuclear conditions. (See Figure 6-3 for an example of how an army might deploy in the defense.)

Selection of the forward defensive edge. The selection will often depend on the conditions in which the army goes onto the defensive. First-echelon forces doing so in the course of an attack usually do so on the lines they have reached, though sometimes only after seizure of more favorable terrain further on. Sometimes, it is desirable to establish the first defensive belt 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, and division and regimental commanders confirm it on the ground. Individual division commanders specify the number of defensive positions created within the defensive belt of each division and their precise location.

First echelon. The tasks of the first echelon are to repel enemy attacks with maximum casualties, prevent penetration, and, should that be impossible, to hold vital ground and support the second-echelon (reserve) counterattacks.

First-echelon divisions establish the **first defensive belt**, usually the main defensive belt. Within it, each division can hold three or more positions, with each regiment holding two defensive positions and each battalion, one. The basis of each position is company strongpoints, integrated into battalion defended areas, each 3 to 5 km wide and about 2 km deep, with gaps of up to 5 km between such battalion positions. Generally a regiment is responsible for a frontage and depth of up to 10 km each, and a division for a sector up to 30 km wide (as little as 20 km on a key axis) and 20 to 30 km deep.

Whenever possible, the army establishes a **security zone** in front of the first defensive belt. This is 15 to 50 km deep and held by forward detachments consisting of reinforced battalions drawn from the second-echelon regiments of first-echelon divisions. These conduct a mobile defense, withdrawing from one prepared position to another when the pressure grows too strong. Their purpose is to delay the enemy, force him to deploy and attack on unfavorable directions, and detect his grouping and intentions. The battle for the security zone is supported by strong combat support elements, especially artillery. On the most important directions, 3 to 5 km forward of the forward edge, **forward positions** may be established by battalions detached from first-echelon regiments.

Second echelon. The strength of the second echelon depends on the army's strength, the width of the army's sector, the army's mission, the a importance of the axis, the conditions under which defense was undertaken, and the strength of the enemy. The normal mission of the second echelon is to launch counterattacks, but in the event of an attack too strong to be defeated at army level, the second echelon may reinforce the efforts of the first echelon on the main axis, possibly relieving troops that have lost combat effectiveness, or hold firmly in the second or third defensive belt or hold a line which can canalize the enemy into area where he can be destroyed by a *front* counteroffensive. The second echelon may also have the mission of destroying enemy air landings. The initial deployment area of the second echelon is likely to be in the second defensive belt (i.e., at the rear of the tactical zone of defense, about 50 km from the forward edge of the defensive area); elements may also be found in the third defensive belt, about 50 km from the second, though this may often be only prepared, but not manned initially. The location of these belts depends on the terrain, a the likely character

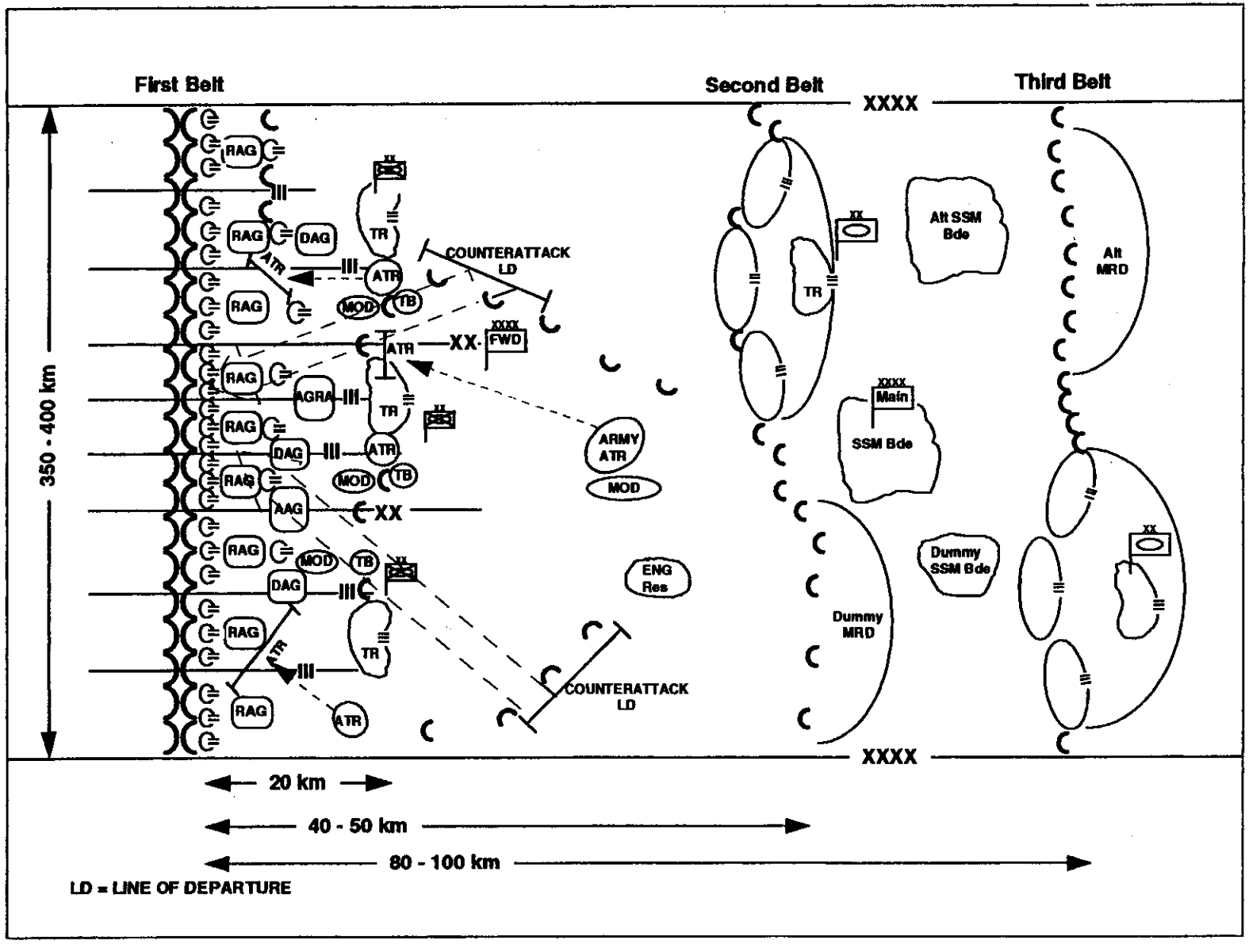

Figure 6-3. Army defensive deployment.

of the enemy's actions, and the concepts for the army's operation.

Reserves. A combined arms reserve is formed when there is no second echelon created or possibly in addition to a second echelon. Often, a dedicated antilanding reserve is created. Special reserves that may feature in the operational formation are engineer, chemical defense, and medical reserves. There is always an AT reserve, based on the army's AT regiment but often reinforced with other artillery, tank and/or motorized rifle assets. This almost invariably works in tandem with a MOD. The AT reserve and MOD deploy on or near the most important or most threatened axis ready to move quickly to pre-reconnoitered counter-penetration positions.

SSM brigades. Each brigade has one main and one or two alternate deployment areas. For SCUD brigades, positions are 60 to 80 km from forward edge of the defensive area, to the flank of the likely direction of attack. for shorter-range SS-21 brigades, positions are 15 to 30 km from the forward edge. The brigade's principal tasks are:

- Destruction of nuclear and high-precision weapons.
- Iinfliction of NBC strikes on the enemy's main forces and his airfields (if nuclear weapons are being used).
- Disruption of C^2.
- Destruction of air defenses.
- Disruption of logistics support.

Army artillery group (AAG). An AAG may not be formed, particularly if the army is defending a very 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 defensive area (having started further forward if it was used to support the battle for the security zone). The principal tasks of the AAG are to--

- Destroy tactical nuclear weapons.
- Conduct counterbattery fire.
- Reinforce the artillery of first-echelon divisions.
- Disrupt the approach and deployment of strike groupings (including, if possible, a counterpreparation).
- Support the launching of counter-strikes.
- Inflict casualties on, and separate, enemy tanks and infantry in the assault.
- Destroy enemy CPs and logistics elements.
- Aid in the destruction of airborne or amphibious landings.

Army group of rocket artillery (AGRA). 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 the *front*-level MRL brigade, the army commander would form an army group of rocket artillery (AGRA). These 3 to 7 battalions in the AGRA do not include any SSM units. With closer to 7 battalions, and army might form **two AGRAs.** An AGRA 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.

Conventional System of Fire

Particular attention is paid to **AT defense** throughout the defended area, especially on the best tank approaches. The AT capability of a TD or MRD should be capable of a repulsing the attack of two enemy

divisions. However, the defense of a division may be reinforced by troops from a less threatened axis or by an army AT reserve and MOD. AT weapons are deployed within the defended positions of battalions (for the most part, within company strongpoints) on tank-threatened axes, and firing lines for the 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.** Short but powerful fire strikes by one or several artillery battalions are planned on obstacle crossings, defiles, road junctions and likely routes approaching the forward edge.
- **Fire to the immediate front.** Massive fire concentrations and barrages, both moving and standing, are prepared on several lines in front of the forward edge (but approaching no closer than 400 meters from friendly positions). Such fires are planned on likely assembly areas and approaches.
- **Fire in depth of the defense.** In depth, both fire concentrations and barrages are planned in likely areas of penetration, on the axis of planned counterstrikes, and to the flanks.

The principal organizers of the fire system are the divisional commanders. The army commander, however, is responsible for--

- Coordination between divisions.
- Conducting the maneuver of fire to threatened areas and to cover boundaries and flanks.
- Organizing a counterpreparation.
- Organizing the preparatory and support fire for counterstrikes.
- Calling on fire from second-echelon or flanking formations.

Types of Defensive Action

Destruction of Enemy Nuclear Weapons

During the conduct of a conventional defense, it is vital to destroy enemy nuclear weapons to reduce the enemy's capabilities before nuclear operations start. They are consistently the high-priority target. Meanwhile, the combat readiness of friendly nuclear forces is maintained at a high level, with protection from the enemy (including special operations forces) achieved by combination of *maskirovka*, engineer work and dispersion. Constant reconnaissance and upgrading of target information is carried out in the interests of nuclear fire planning.

Security Zone Battle

When a security zone can be established, the forces allocated to it hold critical positions on the main approaches. They are supported by strong artillery groupings engaging from temporary fire positions, with gun and MRL artillery hitting targets 15 to 25 km from the forward edge of the defensive area and howitzers targets 10 to 15 km distant. Also located in the security zone are deep fire systems such as SS-21 and 9P140 to hit the enemy on distant as well as on the near approaches. During the fight for the security zone, the axis of the enemy's main attack is determined. First-echelon divisions improve their defenses, reconfiguring their plans and regrouping as necessary onto critical axes.

Counterpreparation

The counterpreparation is designed to inflict heavy losses and delay on enemy forces preparing to attack the forward edge. To fire a counterpreparation, a division needs 3 to 5 hours planning time, but at army level, 6 to 8 hours may be needed. A successful counterpreparation needs a lot of artillery: 30 to 40 guns, MRLs, and mortars per km. To produce the right density, 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. To be successful, a counterpreparation must also take the enemy by surprise, preferably as the enemy is completing his attack preparations, and be based on accurate reconnaissance data. It usually lasts 25 to 40 minutes, with fire reaching 10 to 15 km over the forward edge (20 to 30 km if air power is deployed as well), and it is combined with the jamming of enemy artillery and air support nets.

Spoiling Attacks

A counterpreparation may well be followed by a spoiling attack to inflict further casualties, disruption and delay. Usually, elements of the army second echelon (reserve) are used in this role to avoid compromising the stability of the defense.

Repelling Enemy Attack

The battle for the tactical zone of defense as a whole, and for the main defensive belt in particular, normally requires not merely regimental and division counterattacks but also a counterstrike by the army second echelon (reserve). Generally, army, and even *front* second echelons (reserves) are committed to maintain control of the bulk of the tactical zone of defense, quite probably to recover control over the main defensive belt itself.

Counterstrikes

The army counterstrike against forces penetrating into the depth of the defense is usually the decisive move of the defense, regaining the initiative from the attacker. Ideally, the destruction of the penetration creates favorable conditions for going over to the offensive. When conditions are less favorable, however, the army counterstrike may be mounted with more limited aims, e.g., the destruction of the most threatening grouping penetrating the defense or the restoration of the defense on a favorable line. Where the enemy penetrates the army on several axes in superior strength (especially if he has launched airborne or amphibious landings that have to be countered), the army's response may be limited to counter-penetration to restore the stability of the defense and create favorable conditions for the launching of *front*-level counterstrikes. 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 axes of counterstrikes are crucial, though of the two, timing is perhaps the most important.

Timing. The counterstrike should be launched before the firmness and sustainability of the first echelon's defense are compromised, when the enemy has taken heavy losses and has been slowed down or even stopped, but before he has consolidated his gains. Especially favorable moments within this general prescription are when the enemy is relocating his artillery, and/or when he has exhausted his immediate reserves, and while deeper reserves are still

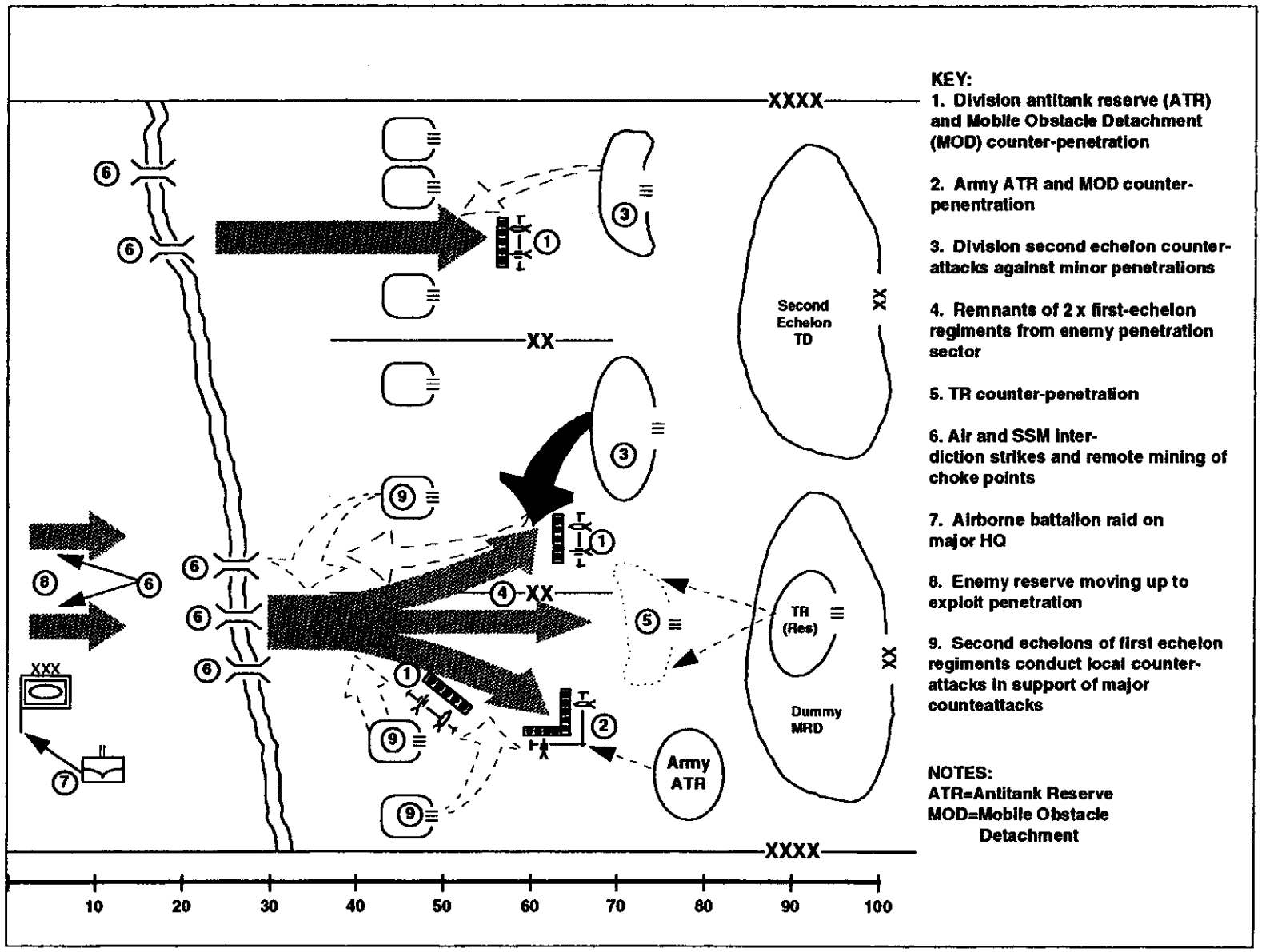

Figure 6-4. Army-level counterpenetration and counterstrike

too far away or are delayed by air attack. The army commander faces an exceptionally difficult problem with the timing of his counterstrike. The time the second echelon requires to move from a location 60 to 80 km from the forward edge of the defensive area and deploy, combined with the time to issue and react to orders, may be in the order of 7 to 9 hours minimum.

Axes. The direction of the counterstrike is determined by the aim, by the terrain, and also by the time taken to achieve a concentration on one axis rather than another. Normally, it is mounted against one or both flanks of the enemy penetration as the most likely way quickly to cut off spearheads from their reinforcements, attack enemy nuclear weapons and CPs, and split up and destroy his forces piecemeal. However, head-on blows to split the enemy are not excluded; they may be dictated by the terrain, or the lack of time to move forces to a flank, when it would achieve surprise, or when it is necessary to re-establish the defense on a specific favorable line. Whichever axis ischosen, routes to the line of departure and deployment lines must have been chosen and prepared in advance, and lines to cover them should be firmly held. (Counterstrikes are planned for two or three sectors, with one or two deployment lines per sector, about 10 km apart.)

The necessary COFM superiority over the enemy must be achieved. To this end, the army second echelon (reserve) can be reinforced by forces of the first echelon on the axis of the counterstrike and, after regrouping, by other first-echelon elements drawn from sectors not under heavy pressure. The counterstrike must be preceded by powerful fire strikes. Therefore, the bulk of the army-level artillery is combined 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 move of reserves.

ARMY DEFENSE IN NUCLEAR CONDITIONS

Nuclear weapons enable the defender to disrupt an attack by superior forces, even to foil offensive preparations and alter the COFM so as to enable the defender to transition rapidly to the attack. However, even massive nuclear use may not be enough to destroy the enemy. Maximum use must still be made of conventional fire, maneuver, and attack, and some ground will still have to be firmly held.

Inflicting Losses on Approach to Defense

During the enemy's approach, if the number of nuclear weapons is limited, the aim may be merely to delay and weaken rather than to alter the COFM fundamentally. As a rule, aviation is tasked against moving targets and the missile troops against fixed targets and known choke points, both acting in the enemy's operational depth. Ideally, the enemy is hit when passing through difficult terrain or defiles or in his assembly areas.

On the rear approaches, especially if the availability of nuclear weapons is limited, surface bursts, persistent chemical, and incendiary materials may be preferred to create large contaminated areas and zones of destruction and flooding on enemy axes of attack. Forcing an enemy to operate in such sectors, coupled with casualties and delay, may force the enemy to abandon his offen-

sive intentions. Of course, much depends on the meteorological conditions, the safety of friendly forces, and the nature of future actions that are envisaged.

Targets are, in principle divided among systems as follows:

- **SSMs** strike enemy missiles (especially if ready to fire), groupings of the first echelon in forming-up points, deployment lines, second echelons in assembly areas, CPs, air defense batteries, bridges and defiles on routes of advance, and airfields (especially of nuclear-armed aircraft).
- **Aircraft** attack enemy nuclear missiles, marching columns (especially tank-heavy ones), airfields (particularly with nuclear-armed aircraft), radar, air and air defense control systems, air defenses, and CPs.
- **Artillery** hits enemy short-range nuclear systems and artillery, enemy attack groupings, and important CPs.

Counterpreparation and Spoiling Attacks

When the enemy needs time to deploy, the OPFOR defenders may have adequate time to plan counterpreparatory fires of spoiling attacks. Assuming that the OPFOR has enough nuclear ammunition availabe, a **counterpreparation** may be nuclear as well as conventional. It is probable that the nuclear threat would preclude the redeployment of second-echelon artillery and forces from other areas; so such an eventuality is desirable. Even if nuclear rounds are in short supply, the addition of chemical to a counterpreparation is said to increase its effectiveness considerably. If the prospects of doing major damage are good, airbursts and nonpersistent chemical will be used followed by an immediate **spoiling attack** could put in by elements of the first echelon of the defense. Success may be exploited by the main forces of the first echelon, or by the second.

Repelling Enemy Attacks

The conduct of the defense follows the same principles as in conventional operations. The situation, however, develops more rapidly and radically. Massed enemy nuclear strikes may render the first-echelon divisions incapable of mounting tactical counterattacks and force them to defend vital areas (even when encircled), which can create favorable conditions for army-level counterstrikes. Reserves, including AT reserves with MODs, and the maneuver of artillery fires assume increased importance for the rapid blocking of gaps created in the defense by nuclear strikes. On the other hand, the defeat of enemy airborne or amphibious landings may be easier if nuclear strikes on them can precede mopping up.

Counterstrikes

The use of nuclear preparatory strikes may ease the problem of assembling enough fire support to get counterstrikes off to a successful start. Moreover, while it is best to attack the flanks of a penetration, they may also make it easier to conduct splitting attacks from the front. Rapid reactions are stressed, with counterstrikes following immediately on a nuclear and short (10- to- 15 minute) conventional preparation (which could include one minute of nonpersistent chemical).

Great stress is on the location and early destruction of enemy nuclear weapons. Heliborne forces may be used to destroy nuclear delivery systems, CPs and commu-

nications, and to seize ground to block the movement of enemy reserves. The possibility of converting a successful counterstrike into a general counteroffensive must be foreseen; this may require the regrouping of forces, recreation of reserves and reinforcement from *front* during the course of the defensive operation.

REACTION TO ENCIRCLEMENT

The most decisive engagements, inflicting the heaviest casualties, are generally encirclements. These are becoming even more likely in modern warfare, given both the increased level of mobility of forces and the availability of airborne and heliborne troops to seal the trap. There are several circumstances in which formations may become encircled:

- 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 are defending important areas which cannot be given up.
- When forces are deliberately left in the enemy rear to defend a city, which will interfere with enemy communications and split the attacker's forces.
- When forces are trapped against an obstacle.

The OPFOR has devoted some attention to the correct reactions to encirclement, both to reap benefits and minimize consequences.

Costs and Benefits

All but inevitably, the enemy sees encirclement as but a prelude to the destruction of the trapped grouping, and success in accomplishing its elimination usually creates a significant gap in the defender's order of battle, further undermining his ability to resist. However, an encircled force can, in certain circumstances, contribute materially to the stability of the defense. Indeed, aggressive action by the encircled forces, perhaps reinforced or working in conjunction 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 preconditions for surrounded forces to have an impact on the enemy's operations and still survive to breakout or be relieved. Firm troop control and adequate logistics stocks or support are crucial, and decisive steps must be taken to ensure that the gap which is opened between the encircled force and the main forces is not so wide as to preclude operational coordination with, and support from, the main forces.

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 troop control 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.

- Redeploying 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 can destroy in detail.
- Maintenance of stable communications.
- Creation of a strong air defense umbrella.

In addition, the main forces, with some help from the encircled force, must prevent the enemy from tightly sealing off the encirclement and then increasing the interval between the two. 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 forces. Indeed, the latter usually play the major role in the operation and thus dictate the plan. Usually, the axes of the encircled and relieving forces must be convergent, on the shortest route separating them (though 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. The subsequent mission either to continue the advance against the rear of those enemy fighting the main forces, or to seize and consolidate on an important line (perhaps with the aid of air-delivered troops) until link-up is achieved. The enemy will tries, not merely to halt the breakout, but to rout it. The operational formation of the encircled forces must be organized with this in mind. Screening forces are needed to cover both flanks and the rear, and these need to be supplemented with strong combined arms and AT reserves and MODs. Extensive use should be made both of forward detachments to lead the breakout (and probably, on false axes as well, for deception) and of raiding detachments to destroy enemy high-precision weapons and disrupt C^2.

WITHDRAWAL

A withdrawal may be necessary in some circumstances. These are--

- To establish a more stable defense on more favorable ground.
- To shorten the line, thus releasing troops for thickening the density of the defense or for offensive missions elsewhere.
- To avoid encirclement.
- To conform with the retreat of the flanking formations.

Chapter 7
Troop Control

This chapter examines the OPFOR system of **troop control**. It explains how the OPFOR expects to direct the forces and actions described in other chapters of this handbook. It provides insights on the OPFOR theory and practice of controlling combined arms forces in war. Most importantly, it shows how OPFOR commanders and staffs think and work.

Although dealing briefly with strategic control of forces, the chapter focuses on **operational (*front* and army) troop control**. As operational-level combined arms formations, OPFOR *fronts* and armies share a common decision-making and planning process. They also share a parallel staff organization and command/control post structure, tailored to match the differences in scope and span of control.

CONCEPT

In the OPFOR military system, **troop control** encompasses more than the U.S. concept of command and control (C^2) or command, control, and communications (C^3). Troop control includes all the measures necessary to effectively manage forces in combat. This represents a **systematic and scientific approach** to staff planning and decision-making processes. It stresses efficient staff organization, in-depth planning, and extensive use of automation to assist decision making. Its objective is to attain maximum combat effectiveness from all resources, thereby enabling full exploitation of the combat situation.

Definitions

The OPFOR specifically defines **troop control** at the tactical and operational levels (or "control of forces" at the strategic level) as the actions of commanders (or higher commanders/CINCs[1]), staffs, services, and other organs of control for--

- Maintenance of continual combat readiness and combat efficiency of troops (forces).
- Preparation for combat operations (battles).
- Leadership of troops (forces) during the accomplishment of assigned missions.

The OPFOR defines the **troop control system** as the totality of human elements, physical infrastructure, and technical equipment required for troop control functions. The three key elements are--

- Control organs (commanders and staffs).
- Command/control posts.

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[1] The OPFOR uses separate and distinct terms for commanders at different levels, as follows:

- **Commander**--a tactical-level commander. that is, a commander of a division-sized organization or smaller.
- **Higher commander**--a commander of an operational-level organization, such as a *front* or army, as well as military districts, air defense districts, or branches of troops and services.
- **Commander-in-chief (CINC)**--a commander of a strategic-level organization or structure, such as the Supreme CINC of the armed forces, the CINC of a theater, or the CINC of one of the five components of the armed forces (ground forces, air forces, strategic rocket forces, navy, and air defense forces).

- Communications and automated support systems.

In the OPFOR definition, the **troop control process** includes the following:

- Continuous receipt, collection, study, reporting, and analysis of information on the situation.
- Decision making for operations (battles).
- Issuing of missions to subordinate troops (forces).
- Planning of operations (battles).
- Organization and maintenance of continuous coordination of troops (forces).
- Preparation of troops (forces) for combat operations (battle) and providing direct leadership of them.
- Creation of troop control systems.
- Monitoring of and assistance to subordinate higher commanders and commanders, staffs, and troops (forces).

The OPFOR concept of troop control emphasizes command and control. Communications are merely a means of executing it. The OPFOR views troop control as the foundation of effective combat, while it defines **communications** as the transmittal and reception of information in systems of troop control (control of forces) and weaponry; the basic means of support for troop control (control of forces).

Laws

The **laws of control** are the foundation of troop control. These laws provide the conceptual framework for OPFOR command and staff planning, and the science of troop control as a whole. Four statements can **summarize** these concepts:

- How one organizes the control structure depends on the nature of the controlled element and what one wants that element to accomplish.
- Complex control systems with multiple elements of control must have compatible (if not standard) control structures, control equipment, and control processes.
- The control process must be timely.
- Effective control depends on the proper management and use of information.

Based on the theoretical laws of control, the OPFOR has established a multitude of **practical control principles** that guide personnel. These principles become the rules to follow in accomplishing control activities to meet the requirements of the modern battlefield.

DEMANDS OF MODERN BATTLEFIELD

The preceding chapters have examined the demands of doctrine and the organization, techniques, and deployments through which OPFOR commanders hope to meet these requirements. The whole OPFOR system for waging war, however, totally depends on its troop control system. The fundamental theory, laws, and principles of troop control guide OPFOR decision making and planning at all levels. The OPFOR maintains that adherence to these precepts provides some assurance of success in combat. Many of these principles and requirements are interrelated, as the following discussion shows.

Timeliness

In modern war, **victory is likely to go to the side that reacts fastest** (whether in meeting engagements or in mobilization

and strategic redeployment). The overriding need for speed drastically **reduces the time available** for decision making and the issue and implementation of orders. The need for wide and deep-ranging maneuver, coupled with dispersion to avoid the threat of nuclear and high-precision weapons, has dictated 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.

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 troop control process has produced a cadre of **professional, highly trained staff officers**. Once selected to fill a senior staff position, an OPFOR officer can expect to serve in this capacity for most of his career. Thoroughly educated in all aspects of operational art and tactics, these officers are capable of functioning from the General Staff down to regimental level. They are also intimately familiar with the **standardized, uniform approach** to staff work and planning.

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. The OPFOR has saved further time by extending the use of prepared **calculations and nomograms** (i.e., graphs reflecting the relationship of elements in one or more calculations), and by cutting drastically the volume of paperwork.

Normative Planning

Troop 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 troop 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.

OPFOR officer training emphasizes an objective and scientific approach to command. In the OPFOR view, it is **not the intuitive genius of commanders**, but scientifically developed methods of evaluation, decision making, and planning that lead to the "right" decisions in combat. Only the use of standard OPFOR methods can provide a high probability of reaching an acceptable solution. An understanding and consistent application of **approved methods, norms, and calculations** is essential to the proper exercise of command. **These tools do not dictate decisions to the commander, but provide him with the parameters for a successful solution to his combat requirements.** The effect is to improve the quality of decision making by less skilled commanders, while allowing latitude for creativity to brighter, more experienced officers.

In the OPFOR view, **scientifically substantiated** troop control provides tactical

and operational commanders with the means to seize and maintain the initiative on the battlefield. To this end, troop control relies heavily, but not solely, on quantitative **norms**, mathematical **calculations**, and the extensive use of 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 has begun. (See the section on "Calculating the Battlefield" later in this chapter.)

Apart from saving time, the extensive employment of standardized tables, graphs, etc. also has an additional advantage. When commanders and staffs are tired, possibly frightened, and under great pressure, constructive, even rational thought becomes an early casualty. Reducing their work as far as possible to mechanical processes, with which they are thoroughly familiar, can **enhance their ability to cope**.

Automation

Another solution to the problems of time and control on the battlefield of the future is the **computerization of troop control**. However, a particular OPFOR organization might or might not be highly automated. The degree of automation probably corresponds closely to the overall level of equipment modernization and sophistication in a particular force.

Automation greatly aids the process of **parallel planning** and allows subordinate headquarters to make rapid last-minute adjustments to plans as a result of changes by their superiors. It enables headquarters to handle the growing volume and complexity of work without a possibly counterproductive growth in size. Above all, perhaps, it frees commanders and staffs from much routine drudgery and allows them time for the more creative aspects of their work. It makes possible a fruitful fusion between **scientific calculation** and foresight and the **creativity** expected of commanders, all within an acceptable (and very short) time frame. It makes **initiative** possible by providing commanders with adequate information on which to base their decisions.

Computers do not replace traditional military skills nor override competent staff work, far less take the man out of the decision-making loop altogether. Rather, they can streamline procedures and aid decision making. Thus, for instance, a commander can have his computer set out for him, in a matter of minutes, the **possible variants that are available to him in making his decision**, together with their logistics requirements and forecast outcomes. The commander can consider all the plus and minus points of each option presented to him and make his decision accordingly. **He does not have to follow the computer's advice or heed its forecasts.**

Centralized Control and Decentralized Battle Management

The Supreme High Command and commanders down through the operational level have recognized that this principle of **centralized control and decentralized battle management** is essential to the successful conduct of a fluid, deep operation.

Unity of Political and Military Leadership

The State can achieve victory in war only when the government and military are acting in concert. This principle requires

unity of actions of command elements and control organs at all levels. Every link in the troop control system must reflect the State and OPFOR view of war and armed conflict. Every branch of the State's armed forces must form a cohesive, interactive, and compatible structure. The organization and methodological approach to troop control must be consistent at all levels of command. Such a structure should facilitate the most effective use of OPFOR military power in modern warfare. This requirement is especially acute when combined arms operations are the predominant form of military action.

One-Man Command

One individual (the commander) has complete authority and responsibility for the actions of subordinate troops (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 troops (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 troop control in a theater. A single theater CINC (or the General Staff) must direct ground, long-range fire strike, air defense, airborne, amphibious, and naval operations. Developing a theory of troop control and appropriate staffs, methods, and hardware are critical tasks for OPFOR military planners.

Centralization of Control

It is necessary to maintain control at high levels, and subordinate control organs must firmly and persistently execute the adopted decisions and plans of the higher authority. Once the commander has established missions and objectives, subordinate organizations must accomplish them in order to facilitate 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.

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 weapons of mass destruction. It could also be important in the management of long-range fire strikes and air defense operations and in the employment of long-range, high-precision weaponry. As warfare has become more complex and deadly, the need for well integrated combined arms groupings (including air power) has grown.

However, the OPFOR has increasingly come to **doubt the applicability of centralized control** on the modern battlefield. On the future maneuver-dominated, fast-changing battlefield of vastly increased spatial scope and 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 operational maneuver group (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.

Decentralized Battle Management

At the operational level, centralized control continues to be essential to the effi-

cient management of resources, force packaging, etc., that is necessary to achieving the goal. On the other hand, it is necessary to **leave the detailed implementation of the operational plan much 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, division, regimental, and even battalion commanders. This is especially true on the battlefield on which radioelectronic combat and deep strikes can threaten the communications, and even the very survivability of higher headquarters. Thus, there is growing interest in task-oriented control, where the **superior commander states the mission in broad terms**, accompanied by his concept of operations, which contains the essential elements of the his plan. Thus, in the event circumstances change, a subordinate who is familiar with his superior's concept can adapt his efforts to ensure a worthwhile contribution to the overall goal. In other words, a superior has to tell a subordinate **what** he is supposed to accomplish **rather than how** he should do it.

Initiative

This, of course, places a demand for **initiative** on division, regimental, and even battalion commanders. Initiative and a creative approach have become the main criteria for describing the tactical maturity in a commander. This is not, however, initiative in the U.S. sense of the word: OPFOR thinkers deride what they see as a reliance on "native wit" in place of foresight and a sound plan. To an OPFOR commander, initiative consists of intelligent anticipation, or at least correct interpretation, of the higher intent, and effective implementation of it without detailed guidance: it 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/tactical situation.

Closely linked to the principle of centralization is the necessity of **prompt and flexible response** to situation changes. Lower-level commanders and staffs must display **broad initiative and creativity** in determine the **method** of carrying out their assigned missions. They must have the capability to make decisions and assign missions to subordinate troops not only by directions (directives, orders) of higher commands, but also independently. The likelihood of reaching the optimum decision in the required time is increased by the use of **normative planning and scientific substantiation**. The staff must quantify combat factors to allow a commander to scientifically analyze options and substantiate the reasons for the ultimate decision.

TROOP CONTROL SYSTEM

The OPFOR has designed a **troop control system** that is, at least in theory, well-tailored to suit the rigorous demands of a fluid, fast-changing battlefield. **Centralization of control at the operational level** keeps the focus on the overall goal and ensures the direction of resources towards 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 constructive direction of the battle continues. The streamlining of staff procedures and the ongoing spread of automation is increasing the ability of headquarters to act within considerable time constraints.

Flexibility

One key characteristic of the OPFOR troop control system is **flexibility**. It is a mistake to view OPFOR troop control 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 data-intensive combat models. 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**.

Structure

To the OPFOR, the basic objective of troop control is maximum effectiveness in the accomplishment of assigned missions. The **commander's role** is key to successful troop control, especially in maintaining the combat readiness of troops (forces), planning operations (battles), and efficiently controlling those troops (forces) in combat. The commander does not do this alone, but rather with the support of a whole troop control infrastructure. The key elements in this structure are **organs of control** and **command/control posts**. These require support from communications systems.

Strategic-Level Organs of Control

The OPFOR concept of **one-man command** extends to the highest level of wartime troop control. The political head of the State is also the **Supreme CINC** of the armed forces (OPFOR). In these dual roles, he epitomizes the unity of political and military leadership required to lead large-scale, high-intensity modern warfare. He alone has the authority to make final strategic military decisions and ultimate responsibility for the use of the armed forces. However, like OPFOR commanders at every level, the Supreme CINC relies heavily on his "deputy commanders" and staff, in this case the **Supreme High Command** and the **General Staff**. Another possible strategic-level organ of control is the **theater headquarters**.

Supreme High Command

In wartime, the **Supreme High Command** assumes strategic leadership of the armed forces. It is responsible for the preparation and conduct of military campaigns and strategic operations. It would also resolve issues regarding the overall wartime situation of the State and the allocation of strategic resources. The Supreme High Command allocated forces to theaters and establishes general plans for the conduct of strategic operations in the theaters..

In addition to the Supreme CINC, this primary strategic organ of control includes the **Minister of Defense, two First Deputy Ministers of Defense, and the CINCs of the five services of the armed forces.** (See Figure 7-1.) In peacetime, the Minister of Defense is responsible for the day-to-day administration of the armed forces. He has direct control over the five services and is responsible for their

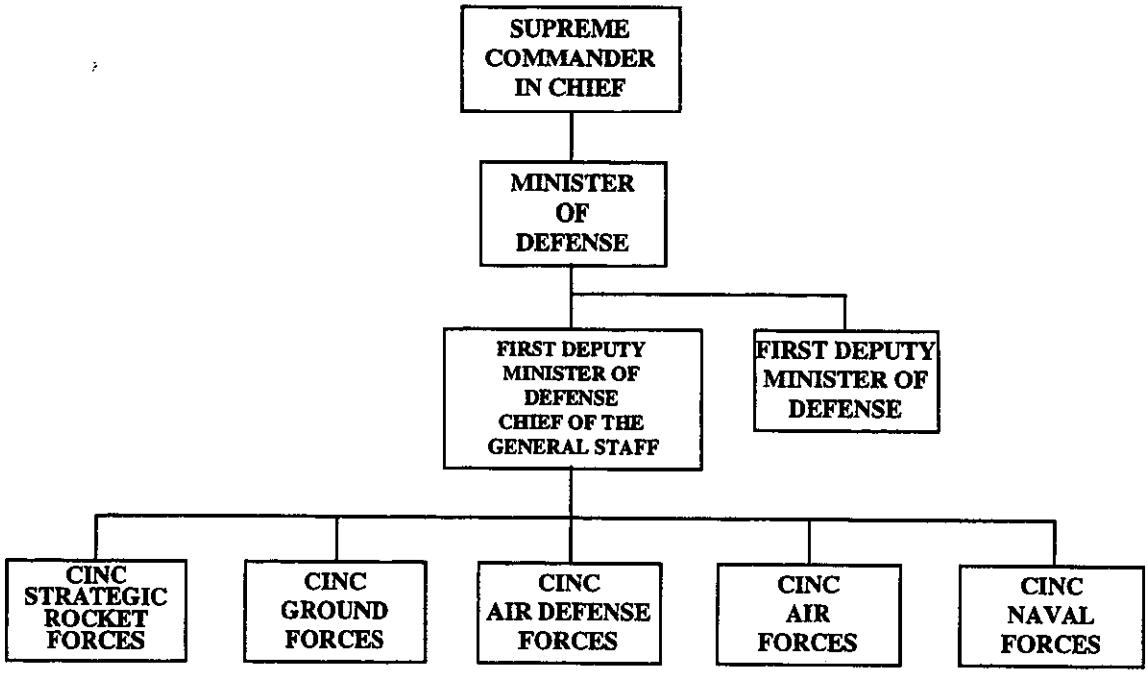


Figure 7-1. The Supreme High Command.

readiness and overall development. The CINCs of the five services each have their own staffs and are responsible for the peacetime administration, management, and training of their respective forces. In wartime, the direct role of the Minister of Defense diminishes. In wartime, the service CINCs report directly to one First Deputy Minister of Defense, who is also the **Chief of the General Staff**.

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 main staff directorates. These include the main directorates for operations; organization and mobilization; intelligence; and signal troops. (See Figure 7-2.) Working with the staffs of each of the services, its Main Operations Directorate drafts for the Supreme High Command detailed plans for strategic operations. Once the Headquarters of the Supreme High Command[2] has approved these 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 needed to perform strategic operations.

[2] The term **Headquarters of the Supreme High Command** refers to both the organization itself and its meeting place.

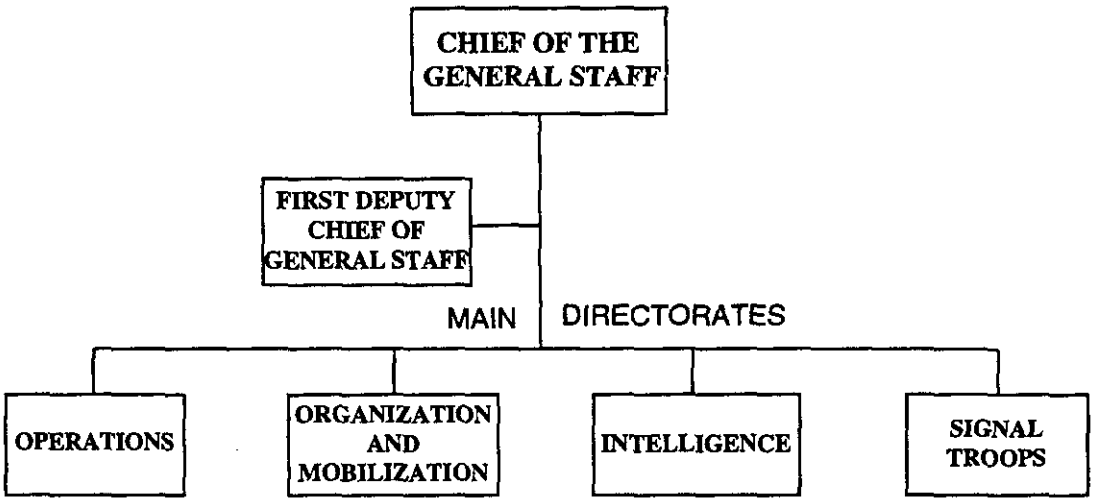


Figure 7-2. The General Staff.

Theater Headquarters

The OPFOR may have an intermediate high command level between the General Staff and the field forces in a theater. If formed, such a **theater headquarters** acts to centralize and integrate effectively General Staff control over theater-wide offensive (or defensive) operations. These peacetime theater headquarters permit the establishment of a permanent command structure closer to that required in wartime. They provide more flexible and responsive strategic control of forces.

Operational-Level Organs of Control

Within the troop control system, the **organs of control** include the commander, his staff, the chief of staff, and the chiefs of the branches of troops and services and their staffs. They perform the functions required to control the activities of troops (forces) in preparing for and conducting combat. The primary functions of these organs 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 troop control functions of the control organs. After the control organs have acquired and processed the information, they review the situation to determine if a decision is necessary. Any decision required should be both scientifically derived and timely. After making the decision, the control organs must **organize, coordinate, disseminate, and support the missions of subordinates.** Additionally, it is their function to train and prepare troops for combat, and to monitor the pre-combat and combat situations.

Commander

The OPFOR commander is the principal actor in the troop control process. Because the commander's decision is the basis for planning and executing combat tasks, his role activates and guides all other control organs. He is an integral component of the troop control system, rather than a user of it. Under the principle of **one-man command**, OPFOR commanders have complete authority over their subordinates and overall responsibility for their actions. This central-

ized 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 **tactical** level, the commander's responsibility derives from the principle of **one-man command**. It is the fundamental concept of command in the OPFOR. It makes the commander personally responsible for the morale, discipline, military training, and combat activity of his command. Only the commander can make decisions, and he, individually, is held to account in the event of failure. This helps to explain the persistent tendency to overcontrol and interference which would be left to subordinates' own devices in other armies.

At the **operational** level, the situation is somewhat different. Orders are issued over the signatures of the commander, as well as his first deputy commander (chief of staff). This is indicative of the fact that the commander does not act alone, but rather with the support of a whole troop control infrastructure. This change reflects an acceptance of the fact that the complexity of the control process and the sharp rise in the level of responsibility is really **beyond the capabilities of a single individual**. This sharing of responsibility and risk contributes to the much greater display of initiative at the operational level.

Duties. The commander is responsible for the combat capability of subordinate formations, the organization of combat operations, the maintenance of uninterrupted troop control, and the successful conduct of combat missions. He **clarifies the mission** he has received (that is, he determines his formation's 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 the troops and staff for combat and gives out his instructions about the timing of preparations. The commander makes his own **assessment of intelligence data** supplied by the chief of reconnaissance. Then, with advice from the chiefs of branches of troops and services, 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 formation 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 must also keep his superiors informed as to the situation and character of friendly and enemy actions and his current decisions.

Personal control. At all levels, though particularly at the tactical level, OPFOR commanders believe that personal contact with subordinates is of great importance. In the offensive, **tactical commanders** usually move well forward with a small command group. This concept of **forward command** can produce timely and effective reaction to developments on the main axis. Even at division level, commanders try whenever possible to achieve personal observation of the battlefield (that is, carry out a commander's reconnaissance) to gain a feel for the battle. They like to issue orders to

subordinates face-to-face to ensure that the latter are thoroughly conversant with the concept, and to be on hand to supervise the execution of their decisions. Tactical commanders typically lead from the front, setting an example for their subordinates.

Operational commanders, on the other hand, are less likely to be visible to the fighting troops. They cannot exercise continuous troop control of large formations from the frontline. **It is the task of the army and *front* commander to turn tactical success into operational success and not to supervise the achievement of the former.** Only on rare occasions would operational commanders go down to the CPs of main-axis subordinate formations from their own nearby forward CPs to check on work or issue fresh instructions. However, the operational commanders are most likely to remain at their main CPs, in order to oversee the overall operation.

Temporary commanders. It is quite possible that a commander may use one of his trusted staff officers or a senior line officer to take over temporary command of a particularly important subordinate force fulfilling a mission of vital operational importance. This is a task commonly allotted to the **first deputy commander**.

The Staff

The commander controls and supervises subordinates through the "basic control organ"--the staff. However well-trained and broadly experienced an OPFOR commander may be, only full use of his staff can allow him to prepare his troops (forces) effectively 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 preserves his energies.

Duties. The staff releases the commander from having to solve administrative and technical problems, thereby allowing him to concentrate on the operation (battle). It translates his decisions into plans and helps him to control the actions of his subordinates. The staff is also responsible for keeping the commander informed of developments and for the provision of advice as required. In the decision-making and planning process, the staff--

- Prepares the data and estimates that 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).

Streamlined procedures. Staffs must accomplish planning and issue orders at a speed appropriate to fast-changing situations. Time constraints are severe, and to cope with this problem, staffs use **parallel planning** methods, **networks** and **automation**.

Supervision and monitoring. OPFOR commanders recognize that the issue of orders does not automatically ensure their execution, or even that they are correctly understood. Thus, they place great emphasis on **supervision** after they issue an

order. The **chief of staff** checks on the work of the staff, and each staff section checks that the orders which it has prepared are properly understood, with the chief of staff resolving any problem. Supervision of formations/units ideally occurs during personal visits by the commander or appropriate **staff representatives**, possibly after observation of their actions from the ground or air. During the development of an action, senior commanders expect subordinate commanders to use their **initiative** and react aggressively to any changes in the situation. However, they also require subordinates to **keep the senior commander and chief of staff fully informed** of their decisions.

The OPFOR makes extensive use of special **staff representatives**. These officers are thoroughly familiar with the commander's concept. They **monitor** the actions of the grouping to which the commander has attached them and inform its commander if his orders seem to conflict with the concept. They refer any disagreement upwards, before the subordinate commander executes his plan.

Organization. All major control organs (headquarters) have the same basic organization, although it differs in size and complexity. The higher the level, the larger and more complex the staff is. Therefore, the organization of command and staff elements is similar at *front* and army level. The main difference is that the army-level directorates and departments are smaller. Therefore, the following description of *front*-level staff organization also applies to the army level. Its organization is both **different from and leaner than typical U.S. counterparts**.

The staff theoretically comprises two elements: the principal staff and the primary staff. **Principal staff** officers are directly subordinate to the commander. These officers include deputy commanders (such as those for the rear, armament, or aviation) and their staffs; chiefs of troops and services and their staffs; and the chief of staff. **Primary staff** officers are all staff officers who are subordinate to the chief of staff and are actual members of the "staff" in their primary duties. For example, the chief of the operations directorate and chief of reconnaissance are primary staff officers.

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, to issue instructions in the name of the commander to subordinate formations and the chiefs of branches of troops and services. 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.

The chief of staff's key position in the troop control process dictates that he must **constantly be abreast of the situation and be able to predict likely changes**. This imposes the following responsibilities:

- To always be aware of the assigned missions of subordinates and adjacent formations.

- To know the current situation, status, and capabilities of friendly and enemy forces and quantitative and qualitative correlation of forces and means (COFM).
- To know the current NBC situation and its effects on the accomplishment of the mission.
- To be ready at any time to report on the above and brief his conclusions from his own estimate of the situation.
- To make proposals regarding a possible decision.
- To determine the measures for supporting combat operations and organizing troop control.

Thus, he must be intimately familiar with the commander's concept and the decision-making process.

In the **decision-making process**, the chief of staff's duties are to--

- Direct and oversee all the work done by the staff (preparing some key documents personally).
- Brief the deputy commander, chiefs of staff departments, and chiefs of branches of troops and services about their missions and give instructions about issuing preliminary instructions (warning orders), calendar plans, and calculations for the decision making process.
- Then, lead the planning process.
- Coordinate the operation of all organs of control.

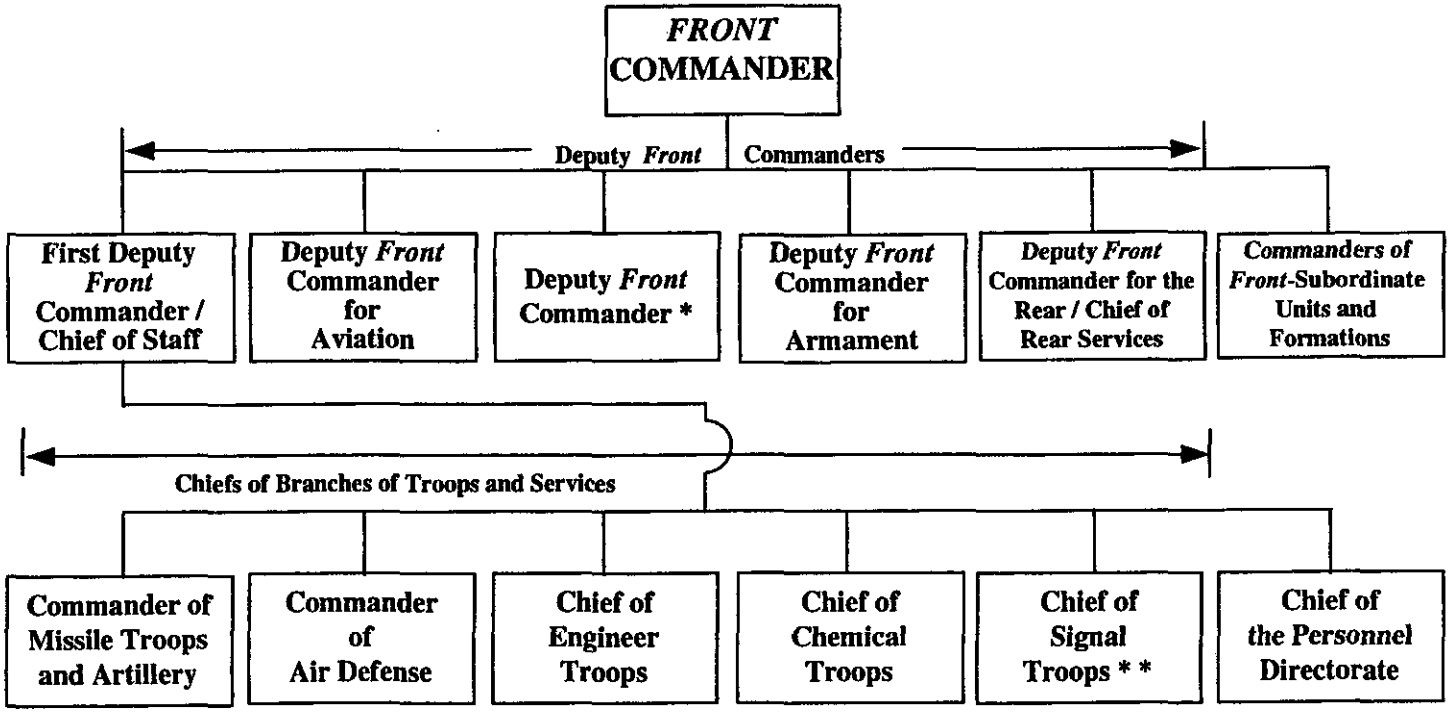
To execute these responsibilities and duties, the chief of staff **organizes and directs the planning process** and activities of the various staff members and chiefs of troops and services. This includes but is not limited to:

- Defining times and methods of receiving situation data.
- Collecting necessary elements of information; establishing priorities for analyzing and processing situation information.
- Determining who reports situation data and conclusions to the commander and when.

The chief of staff also determines the method of **disseminating orders** to subordinate units and prepares reports for higher headquarters. He issues instructions focusing automated systems in the decision-making process, including what and whose calculations to use in the process and when. The chief of staff establishes command/control posts and determines the personnel and work schedules for them. In addition to the primary staff, he also **monitors** the work of the various chiefs of troops and services and their staffs to ensure that the work corresponds in time and concept to the commander's requirements.

Principal staff. Figure 7-3 depicts the **principal staff** officers of a *front* headquarters. These officers are immediately subordinate to the *front* commander.

The positions of **first deputy commander** and chief of staff are actually two different organizational positions; either a single person (as in many tactical organizations) or two individuals may fill them. If the positions are separate, the first deputy commander may serve as a redundant commander in a forward or alternate CP. The commander may also designate him to control a strike axis or OMG, occupying an auxiliary or forward CP.



* Duties as assigned by the *Front* Commander.

** Chief of Signal Troops is identical with Chief, Communications Directorate, *on the Front Staff.*

Figure 7-3. Principal staff organization (*front*).

The *front* (or army) commander also has **chiefs of branches of troops, special troops, and services** subordinate to him. They normally report to him through the chief of staff. The CMTA at the operational level is a **commander** (rather than chief) of missile troops and artillery, and 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 staffs and departments.

As at every level from regimental upward, chiefs of branches of troops and services **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 unit or formation. 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 the artillery, engineer, or air defense subunits' readiness and performance. Like the primary staff, they interact continuously with the corresponding chiefs of branches of troops and services at both higher and lower levels of command.

Although directly subordinate to the commander of their own unit or formation, they also receive and issue directives and instructions through a chain of **special subordination** within their branch of troops or service.[3] For example, because of the complex coordination required to integrate *front* and army fire support planning in an offensive, the army commander of missile troops and artillery (CMTA) can be specially subordinate to the *front* 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 *front* and army commanders.

Thus, each chief of one of the combat arms branches (troops), special troops, or services actually has a **dual chain of command**. He is 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 seems to work well. It 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 sometimes creates problems of responsiveness.

Chiefs of branches of troops and services have the following a **duties**:

- Reporting to the commander information on enemy capabilities in their specialist fields and on their own capabilities.
- Advising on the employment of their respective troops.
- Preparing calculations for the commander's decision.

[3] **Special subordination** within the OPFOR system implies subordination to an individual or organization outside of the direct chain of command, or to someone who is not a direct superior. This relationship exists for most principal staff officers who are specially subordinate to the higher chiefs of branches of troops or services, such as the army's chief of engineer troops to the *front's* chief of engineer troops.

- Planning the combat employment of subordinate troops and issuing missions to them (based on the commander's instruction and with his approval).
- Organizing coordination and supervising the timely accomplishment of missions.

The **chief of the rear** (deputy commander for rear services) is not only a staff officer but the commander of logistics assets. His duties are to--

- Prepare initial data for the logistic plan.
- Issue missions to rear service elements.
- Supply all necessary materiel and its transport to the troops.
- Prepare and maintain supply routes and traffic control.
- Organize the collection, evacuation, and repair of damaged vehicles and equipment.
- Provide medical services.
- Prepare mobile missile technical bases and fuel depots for missile units.
- Organize defense and security and the maintenance of order in the rear.
- Exploit the local economy and captured stocks.
- Arrange for the movement of rear service elements to keep pace with operations.

For more detail, see Chapter 15.

Primary staff. As at higher levels, the *front* **chief of staff** has **four directorates** subordinate to him: operations, intelligence (reconnaissance), organization and mobilization, and communications.[4] So are several **sections and services**. (See Figure 7-4.) Additionally, both the chief of reconnaissance and the chief of communications (chief of signal troops) are normally subordinate to him, since they head two of the directorates.

The **chief of operations** (chief of the operations directorate) **prepares** preliminary instructions (warning orders), calendar plans, and, sometimes personally writing them out, operational directives. He also prepares some of the calculations required for the commander to make his decision, and he plays a key role in planning the operation. During the course of the operation, the chief of operations is responsible for--

- Collecting and analyzing situation information.
- Reporting to higher headquarters and disseminating to subordinate and adjacent formations.
- Organizing and maintaining continuous coordination.
- Organizing the deployment and relocation of CPs.
- Organizing signal communications.
- Controlling the accomplishment of combat missions by subordinates.

The **chief of reconnaissance** (chief of intelligence/reconnaissance directorate/department) is responsible for--

- Preparing the reconnaissance plan.
- Allocating forces to achieve the set goals and issuing missions to the intelligence/reconnaissance directorate/department staff (after the chief of staff has signed the plan and the commander has approved it).
- Coordinating all the efforts of different reconnaissance means in terms of missions and objectives.

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[4] At army level, these may be called departments.

- Organizing continuous communications with reconnaissance forces and with subordinate headquarters.
- Receiving and analyzing reconnaissance information and disseminating it within the headquarters and to superior, subordinate, and flanking headquarters.

For more information on reconnaissance, see Chapter 8.

The **chief of communications** heads the communications directorate. The staff of this directorate is responsible for signal planning, to include organizing signal reconnaissance, coordinating signal 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 troops** (on the principal staff), he exercises operational control over organic and attached signal units. He also performs special staff supervision over the signal staffs and units/subunits of subordinate levels of command.

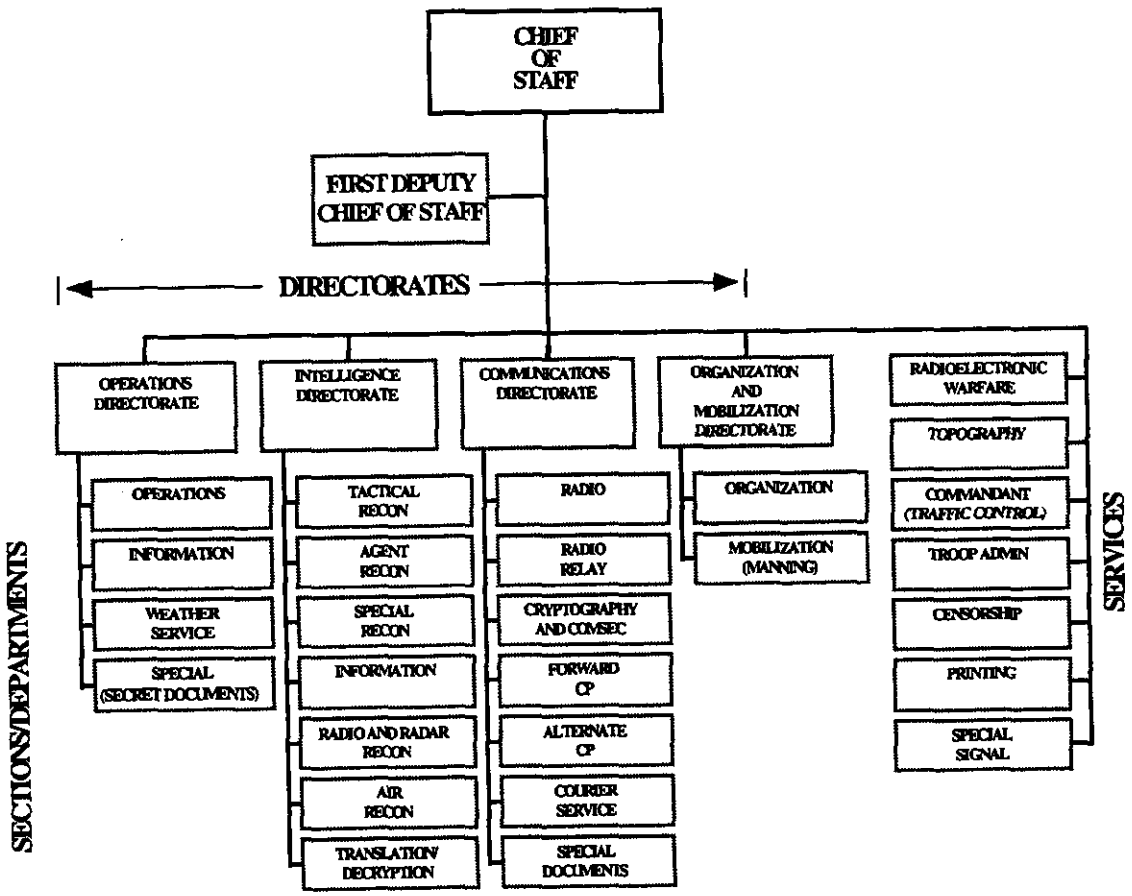


Figure 7-4. Primary staff organization (*front*).

COMMAND/CONTROL POSTS

The OPFOR plans to exercise strategic, operational, and tactical control over its wartime forces from an integrated system of **command posts and control posts** (both abbreviated as CP). It has designed this system to ensure uninterrupted control of troops (forces). Because the OPFOR expects the troop control system to come under heavy attack in wartime, its military planners have created a command/control post structure that emphasizes survivability through dispersal, stringent security measures, redundancy, and mobility of control organs. They have constructed a command/control post system that can sustain damage with minimum disruption to the actual process of troop control. In the event of disruption, they can quickly reestablish control. This extensive system of command/control posts extends from the wartime-hardened command facilities of the national command authority to the specially designed command vehicles from which OPFOR regimental and battalion commanders control their units and subunits. The number, size, and types of CPs depend on the level of command.

OPFOR ground forces use six basic command/control posts to minimize detection and identification by the enemy. (See Figure 7-5.) This increases the survivability of the troop control system and increases the flexibility of the commander.

Theater-Level

A **theater headquarters**, if established, uses the same number and types of CPs as the *front*: 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.

Formation	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[2]		X	X
Army	X	X	X[3]	X	X	X
Front	X	X	X[3]	X	X	X
Theater[4]	X	X	X[3]	X	X	X

Footnotes:
[1] Does not normally exist in offensive operations.
[2] Terminology may be either forward command post or forward control post.
[3] Although termed a forward control post, it may contain both the means and authority of command.
[4] Not all theaters have their own CINC and headquarters/CPs.

Figure 7-5. OPFOR command/control post system.

Operational-Level

The operational-level troop control system is **not a rigid structure**. Its organization and deployment can vary with the mission, situation, and combat formation of the particular *front* or army. *Fronts* and armies use the same types of command posts (main and alternate) and control posts (auxiliary, forward, and rear). *Front*-level airborne control posts may be aboard fixed-wing aircraft; helicopters are more likely to serve this purpose at army level. Staff personnel form various functional groupings and colocate with different CPs, depending upon their roles and the tasks associated with the post. Figure 7-6 shows the typical deployment of *front* CPs in the advance.

Main command post. The OPFOR establishes a **main CP** at regimental/independent battalion level and above. It consists of the **commander** (or higher

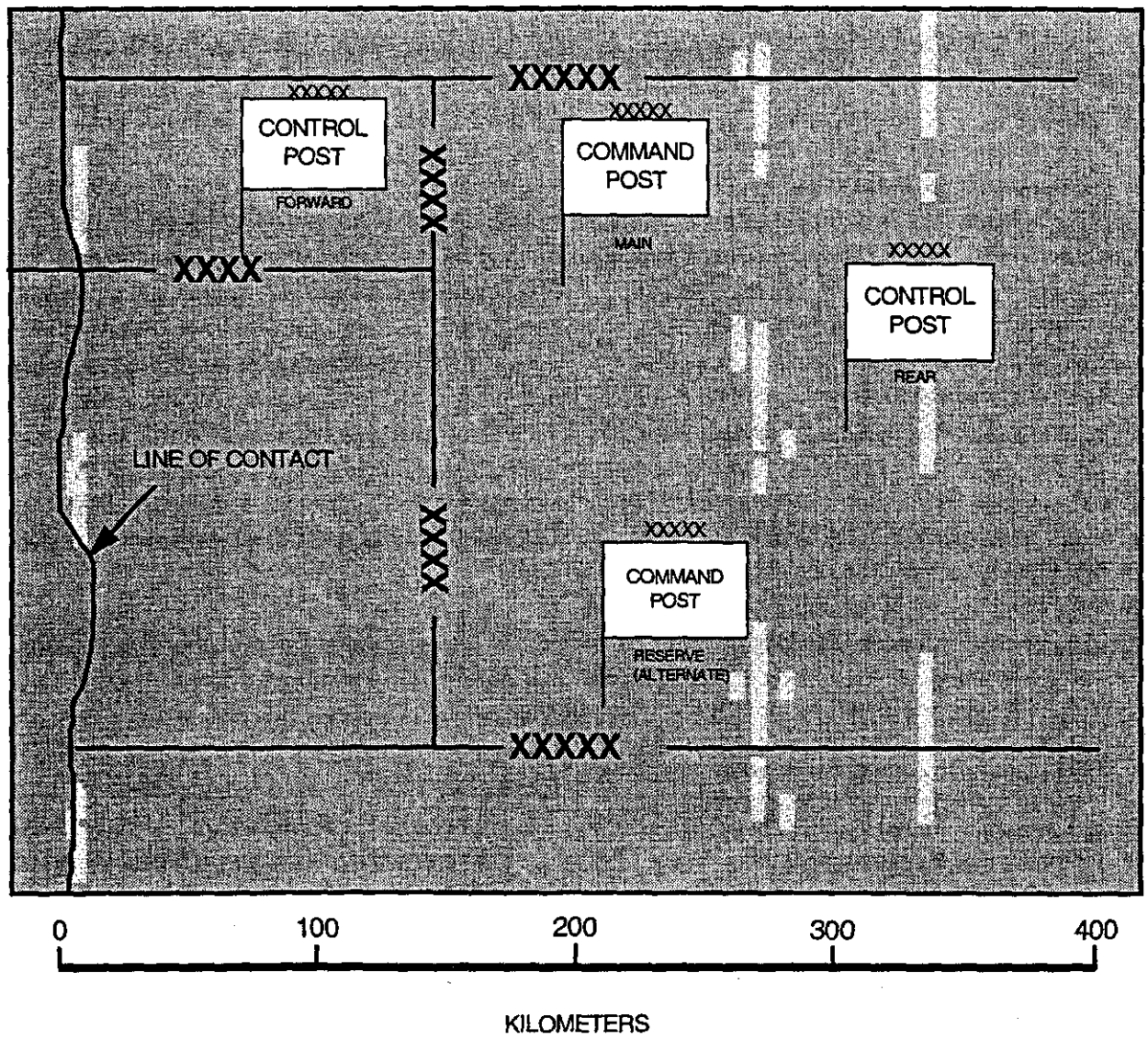


Figure 7-6. *Front* command and control posts in the advance.

commander) and his staff.[5] Its organizations include a communications center, a control group, a support group, and if necessary, an airborne control element. At all levels , the main CP is the principal focus of control. At army and *front* levels, it is also generally the main 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 formation/unit staff in translating the commander's decision into plans and orders. The main CP coordinates the movement and deployment of units/formations and monitors their combat effectiveness (including supply status).

Alternate command post. The purpose of the **alternate CP** is to be a substitute for the main CP. Sometimes referred to as the reserve CP, it consists of officers designated specifically by the commander, with personnel and equipment taken from the staff and other control organs, as well as from communications and service subunits. Thus, its equipment normally duplicates, but is less extensive than, that of the main CP. It also has reduced manning levels. Its primary function is to monitor the situation and assume troop control responsibilities in the event the main CP becomes dysfunctional. While it is usual to create an alternate CP in defense, it is less common during the offensive. If a formation does not establish an alternative CP, it may designate a subordinate headquarters to perform its function. Additionally, 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 but lateral from the main CP. The **deputy commander** is usually in the alternate CP if he is not part of the forward CP.

Forward command/control post. OPFOR brigades and divisions have a **forward command post**. It usually consists of the **deputy commander** of the division/brigade, and officers of the staff, branches of troops, and services. The division forward CP's location is as close to the forward attacking (first-echelon) regiments as possible. Its purpose is to further the control of the commander on the main strike axis. A *front* or army may deploy a **forward control post**, which performs the same function as the forward command post at tactical level. The main difference is that the commander would rarely become a part of it.

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 subunit/unit commanders. The commander may bring with him a small group of principal advisers, for example, the chiefs of the operations, reconnaissance, and signals staff sections, the chiefs of artillery and perhaps engineers, 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

[5] Below regimental level, the OPFOR uses only one type of CP, called a **command observation post (COP)** because it allows visual observation of the combat action under control. Such a COP consists of the commander and his most important advisors. Regiments and independent battalions may deploy a **forward observation post** if required to better control combat actions; this is an element of the main CP which moves forward with the commander. At division and higher, the commander (higher commander) normally remains in the main CP, unless an exceptional circumstance compels him to go forward to determine what to do; even then, he returns to the main CP as soon as he has observed the situation.

staff (remaining in the main CP) has the authority to issue orders in the commander's absence. In defense, the only reason for forming a forward CP would be to control the counterattack/counterstrike.

Auxiliary control post. At *front*/army level and above, the operational commander creates an **auxiliary CP** to provide troop control over subordinate formations operating on isolated or remote axes of the *front*. 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 subunit.

If a single army were operating on an isolated axis with an isolated mission, it would most likely possess an auxiliary CP of its parent *front*. It may be no more than the headquarters of that particular army itself, in both numbers and organization. (The exception would be probable augmentation of communications personnel.) However, in many cases the *front* may deploy a small "**operations group**" to assist the army commander and staff who are controlling forces on the separate axis. An army auxiliary CP would operate in the same manner as the *front's*.

Rear control post. At regimental/independent battalion level above, there is a **rear CP**. The **chief of the rear** (deputy commander for rear services) 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 subunits, 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 unit (formation) for limited periods. From this CP, the chief of the rear organizes logistic support for the concept of operations he receives from main CP. He monitors supply status and reports it to the main CP.

Other types. Though all command/control posts are ideally mobile, several have the specific designation of "mobile control 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 very fluid and spread over a wide area, and to maintain continuity of control when other CPs are displacing. *Front* and army commanders normally establish airborne CPs in fixed-wing aircraft, although they may also use command post variants of the HOOK heavy-lift helicopter or the HIP medium helicopter. Divisions may use command post variants of the HIP. Higher command levels could also deploy **rail (trainborne) control posts**.

Operations groups. It is quite common for armies or *fronts* to form temporary **operations groups** to assume control over part of the formation. 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. Higher commanders can also set up operations groups with a commander and a team of specialists to plan and control special operations, such as an amphibious landing.

Survivability

The OPFOR troop control system stresses the need to maintain continuous, reliable control of forces, and takes numerous measures to prevent disruption and enhance survivability. CPs are usually mobile (that is, in vehicles) but may also be fixed or bunkered. By emphasizing the use of mobile CPs, planners hope to minimize the disruption of troop control that would occur with the enemy's destruction of this element of the troop control system. Security of CPs is very important, and the OPFOR takes a number of measures to ensure it. Nevertheless, the system does have its weaknesses and vulnerabilities.

Mobility, multiplicity, and redundancy. The OPFOR has configured its troop control 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 troop control system. Thus, they are able to provide effective control in varied situations.

Maskirovka. The OPFOR plans to use ***maskirovka*** at the strategic, operational, and tactical levels to mislead the enemy as to the nature of forthcoming operations, the concept of the operation, and possible targets for enemy weapons. *Maskirovka* elements applying to the troop control system include electronic deception; dispersal,

CP	Distance from Line of Contact (km)			Frequency of Displacement[1]
	March Formation	Prebattle Formation	Battle Formation	
Front Forward	80-150	80-150	25-40	1-3 per day
Front Main/Alternate	150-250	150-250	100-150	1 per 2-3 days
Front Rear	250-350	250-350	150-250	1 per 2-3 days
Army Forward	20-40	20-40	10-20	Constantly moving
Army Main/Alternate	75-150	75-150	25-40	1 per day[2]
Army 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

Footnotes:

[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 main CP may move only once every 2 days. In the course of an army operation, planners envision 2 or 3 moves.

Figure 7-7. Deployment of command/control posts in the advance (part 1).

camouflage, and concealment of troop control facilities; and disinformation. These measures combine with the mobility, multiplicity, and redundancy of the troop control system to provide a high degree of survivability even if the enemy destroys individual elements of the system.

Location. The commander decides where to locate the CPs and how they move. He locates CPs well dispersed in areas affording good concealment and with a good road net access, either on or just off the main axis. Higher headquarters dictate the locations of their 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.

Figure 7-8 shows the typical dimensions of the control group and support group and the normal distance separating the two; it also shows where the CPs made up of these groups normally move in relation to other elements of the combat formation. The OPFOR locates CPs so that no single tactical nuclear 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 colocated 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. The commanders decide where to locate the CPs and how they will move. They generally deploy *front* and army CPs in depth to facilitate control of their entire zones of action. 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. 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. Due to dispersion in a mobile environment, CPs are often responsible for their own local ground defenses.

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, the commandant's service carefully reconnoiters and marks out the new location. Engineer preparation provides protection and concealment.. (See Chapter 3 for additional detail on the deployment of CPs during the march.)

CP	Dimensions of CP (km^2)[1]		Separation of Control and Support Groups (km)[2]	Remarks
	Control Group	Support Group		
Front Forward	2.25-4	0.75-2	1	Moves with first-echelon armies
Front Main/Alternate	16-25	8-15	2-3	Moves behind first-echelon armies
Front Rear	16-25	8-15	2-3	Usually colocated 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 colocated with rear service elements
Division Forward	0.06-0.16	0.04-0.08	0.2-0.3	Moves with first-echelon regiments
Div Main/Alternate	1-2.25	0.5-0.75	0.5-1	Moves behind first-echelon regiments
Division Rear	1-2.25	0.5-0.75	0.5-1	Usually colocated with rear service elements

Footnotes:

[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 7-8. Deployment of command/control posts in the advance (part 2).

During an offensive, the main CP at *front* and army levels normally relocates to a position previously occupied by the forward CP. (See Figure 7-9.) Since the forward CP moves more frequently, the main CP could skip an intermediate position of the forward CP and move directly to the next one. However, the main CP could also follow in the steps of the auxiliary CP, possibly for deception or to avoid detection. The rear CP normally follows in the steps of the main CP.

Defense. CPs are a high priority for air defense. Ideally they 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. Engi-

neer support normally digs in and camouflages key elements.

Systemic vulnerabilities. Good camouflage, the remoting of communications facilities and the deployment of alternate CPs makes most of the troop control system fairly survivable. Nevertheless, one of the most important element often remains vulnerable. The **forward CP** 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 the main and alternate CPs** control would cause a significant disruption. The OPFOR practice of obedience to a predetermined command structure is also a potential weakness. Though the OPFOR emphasizes initiative and creativity in combat, it is not the type of initiative that would allow an operational or tactical formation to rebound in a timely or

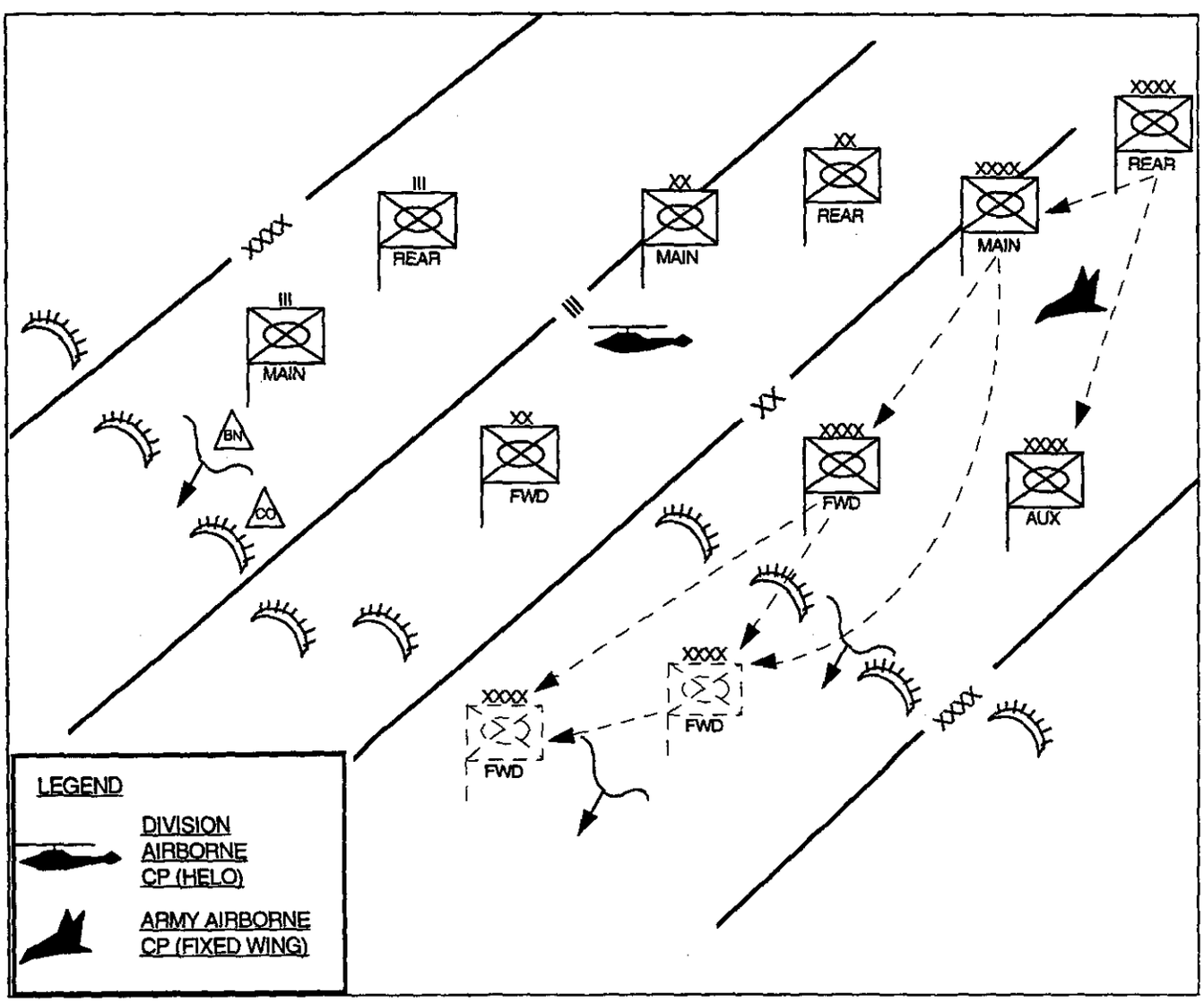


Figure 7-9. Movement of CPs in the offensive.

efficient fashion after the destruction of its control system. The majority (up to 80percent) of the command and staff personnel are in a central location (the main CP). Destruction of both the main and alternate CPs would be catastrophic, despite the fact that the OPFOR expects forward, rear, or auxiliary CPs to assume control in this event. It is not the elimination of the commander that would provide the greater disruption, but rather the destruction of the majority of his staff, who plan, monitor, and coordinate combat activity and operations. 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 limiting the effects of the disruption.

Communications

Chief characteristics of the communications supporting the troop control system are centralization, 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 security and survivability of the control structure.

Assets

Signal units and subunits assigned at all levels from *front* to battalion support internal headquarters and provide communications with higher, subordinate, and adjacent organizations. Signal troops use three different means to ensure continuity:

- Landline as far forward as possible.
- Multichannel radio-relay.
- Troposcatter and satellite links down to army level (and below, for instance in the case of OMGs).

Encrypted communications are common from regiment upward.

At the operational level, each *front* normally has one or two signal brigades, plus an independent signal regiment (or battalion), an independent radio relay battalion, and an independent troposcatter communications battalion. Each army has a signal regiment(or battalion), an independent radio relay battalion, and possibly an independent troposcatter communications battalion and an air signals company.

Responsibilities

The commander at each level is responsible for the organization of communications to meet immediate requirements. He tasks his **chief of signal troops** with establishing and maintaining continuous communications. The chief of signal troops 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. (For more on his role, see the "Staff" section earlier in this chapter.)

Higher-to-subordinate and right-to-left. Responsibility for command communications is from **higher to subordinate** headquarters; however, if the higher headquarters does not establish communications, the subordinate headquarters must provide them using its own equipment. Communications with supported organizations are the responsibility of the headquarters of the supporting organization. The OPFOR normally establishes lateral communications from **right to left**; but, if the organization on the

right does not establish such communications, the unit on the left must do so.

Skip-echelon. Additionally, the principle of **skip-echelon** communications provides for commanders to establish communications that can skip an immediate subordinate or superior. This helps to eliminate the effects of disruption or loss of a command level. By design, OPFOR command nets provide communications with subordinate units two levels down, in a skip-echelon manner. This communications structure allows, for example, a *front* to control a division, or an army to control a regiment, if necessary.

Communications reserve. The chiefs of signal troops at all levels have the requirement to maintain a **communications reserve.** This consists of signal personnel and equipment withheld from action for use as replacements for signal casualties or to establish new communications should unforeseen circumstances so dictate. In a combat situation, .this reserve occupies a camouflaged and concealed position generally near the main CP. If it is necessary to employ the reserve, the chief of signal troops must constitute a new reserve. The relationships between the main CP alternate (support) communications center, the alternate CP, and the communications reserve is unclear.

Nets

OPFOR signal troops deploy and op- to subordinate organizations and direct lines of communication between corresponding commanders. A **general-purpose** (regional) support communications net provides service to all troops located in its area of deployment. (See Figure 7-10.) At *front* and army level, the OPFOR deploys three types of **communications centers**--CP, support, and auxiliary. Near the main CP communications center, it deploys a **support** (sometimes called "alternate") 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 troops (forces) operating at a considerable distance from higher headquarters' CP and support communications centers. It can also serve formations/units 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. These are as follows:

Command. Commanders use these nets primarily to pass **orders.** Channels generally are direct from a superior to his immediate subordinates, but they also permit skipping echelons. The branches of troops and services have separate nets that are similar and parallel.

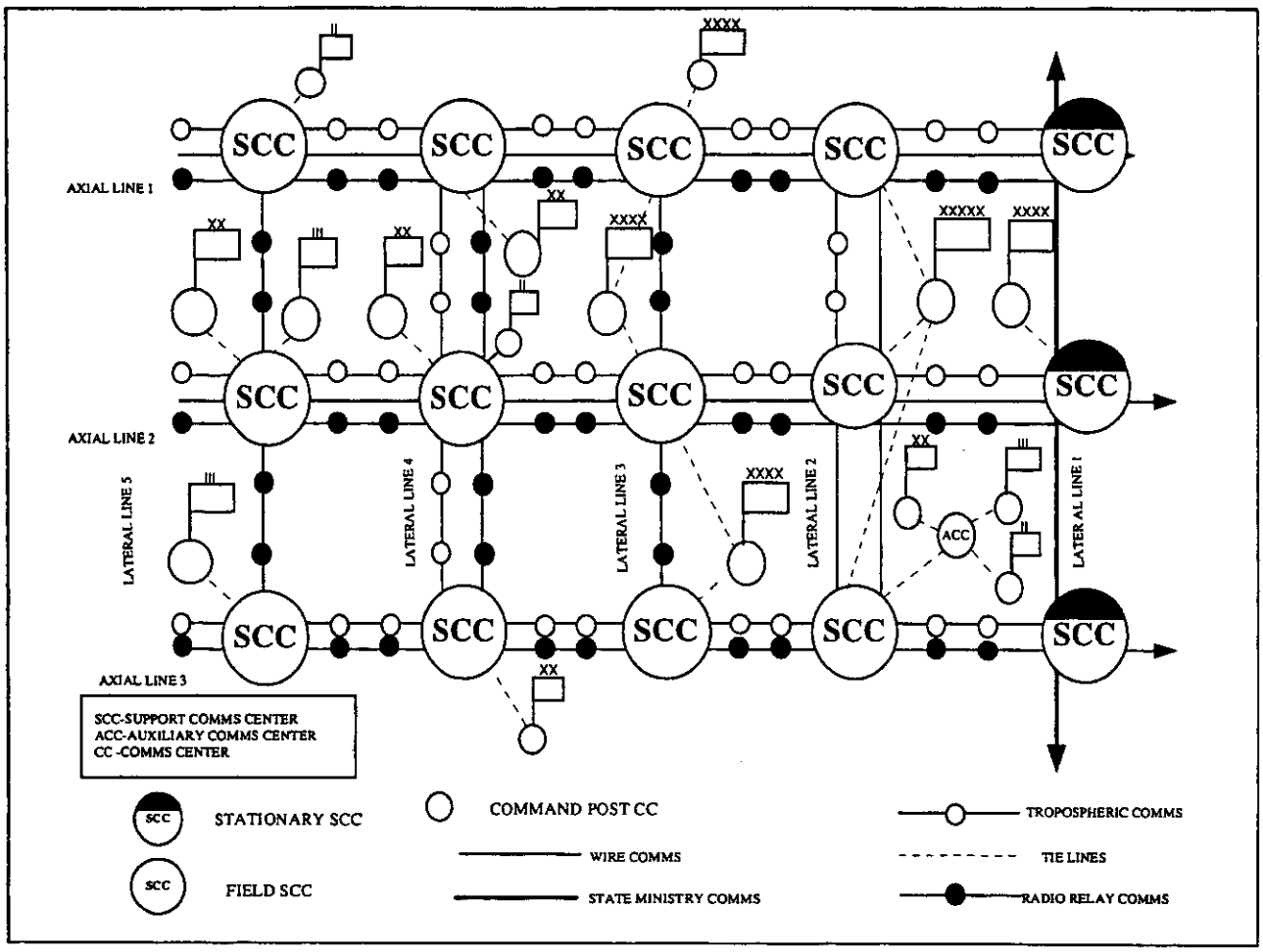


Figure 7-10. Representative support communications net.

Chief of staff. When the commander is working from a forward or airborne CP, the **chief of staff** duplicates the command net so he, as well as the commander, is in touch with all major subordinate headquarters. This enables both to keep fully in touch with the operational situation. It 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 stay on listening watch and 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 his level and for keeping subordinate and superior staffs informed of his 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 timely fashion. The CMTA at *front* or army has his own staff communications for control of missile and artillery units subordinate to him and to direct the actions of similar forces at the next lower level; the deputy commander for aviation at each level may have similar communications. The chiefs of engineer and chemical troops must use the main staff communications network. Should the command net fail for any reason, staff nets provide alternative channels of communication.

Coordination. The OPFOR can use **coordination nets** between commanders to ensure mutual understanding and unity of purpose and action with **flanking formations**. These nets also allow coordination between first echelons and **second echelons, reserves, or OMGs** at the critical time of the latters' 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 can use these links to communicate with units and formations executing special missions (for example, from *front* to an army OMG) and with airborne or air assault groupings operating beyond the line of contact.

TROOP CONTROL PROCESS

Troop control is a continuous process at all levels of command. The OPFOR recognizes seven elements in this process:

- Acquiring and processing information.
- Decision making and planning.
- Disseminating missions and organizing coordination.
- Organizing and directing combat support.
- Preparing troops for combat.
- Organizing and maintaining control.
- Monitoring readiness and executing missions.

With the exception of actually monitoring and adjusting ongoing combat activity, all troop control functions can occur in a static or dynamic context. **Static** control encompasses those control functions required before beginning combat activity. **Dynamic** control involves those functions mandated by the development of the operational (or tactical) situation once forces have begun to implement the commander's decision. These functions include reassessing the main strike axis in the face of unexpected success in a different sector. Staffs at the operational level often begin planning a subsequent operation while conducting one in real time. That portion of the staff involved in planning subsequent activities is performing static control. Those officers occupied with the multitude of control tasks required by the ongoing operation are performing the same functions, but in a dynamic control environment. Thus, dynamic and static control, even within a single control organ, are not mutually exclusive and may occur simultaneously.

Acquisition and Processing of Information

Acquiring and processing information is always the first function in the control process. This function is a continuous, active process of requesting, receiving, collating, analyzing, and disseminating the information needed for decision making and planning. However, the physical collection of information is not actually part of the troop control process.

Strategic-Level

At the **General Staff level and above**, military and political information requirements are global in scope. To achieve the State's policy goals worldwide, there is a continuous requirement to evaluate changes in the military or political capabilities and intentions of foreign nations in relation to the State, its allies, or its clients for **threats and opportunities** they present. 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 when required.

Operational-Level

***Front* and army 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 and peacetime data bases.

Information Requirements

The commander and staff must bring together all available data applicable to their mission and use the data skillfully to achieve their objective. At a minimum, this data will include information on enemy and friendly forces, terrain, weather, climatic and seasonal conditions, and the social, economic, and political situation in the zone of combat action.

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 COFM. He must receive information concerning enemy locations, reinforcing units, C^2 systems, and defensive positions. Most important is information pertaining to the disposition and potential use of nuclear weapons. The required degree of detail, of course, will vary in different situations and at various levels of command.

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. Additionally, they must consider how missions of other friendly forces may affect the accomplishment of their own assigned tasks.

Combat environment. The NBC environment, terrain, and seasonal conditions also provide OPFOR planners insight as to what they can and cannot do effectively during the conduct of a combat action. They use this information to determine routes, use of NBC weapons, and types of camouflage. This information can also help determine the effects that 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 greatly interests OPFOR military planners. This information includes what repair and medical facilities might become available to them during the course of their combat actions. Information about the hostile population may enable them to adjust their security posture while regrouping or passing through the area. This information is useful in an assault on the enemy's rear area, or during an

encirclement. The current emphasis on deep penetrations by exploitation forces (OMGs) makes this use of information particularly relevant to OPFOR operational and strategic planners.

Decision Making and Planning

The **commander's decision** is the basis for troop control. The OPFOR commander does not prepare a plan. He must assess the situation and make a decision. At the higher formation (*front* and army) level, he bases this 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 presented by his chief of staff. (This differs from the tactical level, where the commander normally bases it on personal observation of the battlefield and selects one of a number of "off-the-shelf" solutions to standard tactical problems.) The decision includes the concept, organization for combat, axes of advance, missions for major subordinates, and troop control organization.

The commander conveys this to the **chief of staff**, who, with his subordinates, fleshes it out with **detailed planning** tailored to the circumstances of the battle 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 units/formations, the missions of combat support and combat service support elements, the air defense plan, coordinating instructions, and the deployment of CPs.

Since the conditions of modern warfare dictate quick decisions, **the commander must use his staff effectively 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 rear services 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 process of troop control.

Phases in Decision Making

The decision-making process reflects the OPFOR desire to **scientifically substantiate**, as much as possible, the data received on the combat situation, using the general analytical process of "concept--algorithm--decision." Before the receipt of the operational directive and during the course of combat, elements of the staff conduct certain analyses. At *front* and army, the operations directorate continually updates and reevaluates the analysis of the numerical strength of its own forces and the terrain. The reconnaissance (or intelligence) directorate/department continually updates and reevaluates the estimate of the enemy.

The **receipt of a mission from a higher authority** sets the OPFOR combat decision-making process in motion. This process consists of **four phases**:

- Clarifying the mission.
- Estimating (evaluating) the situation.
- Determining and evaluating possible decision variants.

- Selecting a variant and formulating the decision.

OPFOR troop control experts emphasize that 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.

Figures 7-11 through 7-15 below set out the process through which the commander reaches the decision. **Readers should note that there are significant differences, compared with U.S. procedures, in the sequence of thought and the weight given to individual factors.**

Clarification of Mission

In clarifying the mission, the commander seeks to develop a clear understanding of the higher commander's concept of operation. The commander and key members of his staff study the mission provided in an operational directive, combat order, or combat instruction. They ensure that they understand the role their formation/unit will play in the overall operation and how the formation/unit helps achieve the higher commander's objective in relation to all other participating forces.

The OPFOR may use a variety of methods in clarifying the mission. The commander himself can initially study the directive, order, or instructions received and then involve the necessary staff element(s). If time is limited, the commander reads it to the chief of staff and other key officers. They post its data to a **situation map** immediately. Subsequent work parallels the plan of the next higher control element.

Upon the receipt of the preliminary instructions (or operational directive), *front* staff officers **review** the strategic-level CINC's operational concept. Then they begin an analytical process that includes the **computation** of the required rates of advance and the overall required COFM. They determine the number of axes, quantity of forces, allocation of time requirements, and required echelonment, based upon these calculations of the COFM. Army staff officers perform the identical process but base their information upon the preliminary instructions (or operational directive) of the *front* commander. They **issue preliminary instructions** to subordinate staffs and commanders upon the completion of this phase.

At this point, the commander has begun to conceive an **outline of what he must do** to carry out his mission. He cannot determine **how to do it** without assessing the objective factors that affect his ability to accomplish the task, that is, an estimate of the situation.

Function	Main Issues Considered	Commander's Deductions and Influence on Decision
1. Clarify the Senior Commander's Mission	From senior commander's concept of operation, identify: (a) Which enemy he plans to attack and how; what percentage of destruction of enemy he requires. (b) His zone of advance and main/secondary attack axes (strike sector). (c) Major targets for conventional artillery (and nuclear strikes, if used). (d) Operational formation and nature of maneuver. (e) Own mission, including aim, immediate and subsequent missions and timings, reinforcing or supporting assets, boundaries, strike sector, routes, and deployment times.	*Deductions:* (a) Own formation's role in senior commander's plan. (b) Where to attack and required rate of advance. (c) 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 sector). (b)His operational formation and maneuver plan. (c) Outline missions for subordinates. (d) Priorities in planning operation.

Figure 7-11. Clarification of 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, commo centers, and logistics sites. (e) Morale of troops and personal qualities of commander. (f) Enemy options during operation, including sector of main effort, counterattack plans, possible use of NBC weapons, air strikes.	*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 sector), 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.	*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) Subordinates' missions. (c) Plan for deployment.

(Continued)

Figure 7-12. Estimate of situation (part 1).

Function	Main Issues Considered	Commander's Deductions and Influence on Decision
2. Estimate the Situation (continued)		
(c) Assess flanking formations	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 formations on air operations. (b) Priorities of cooperation with flanks. *Used as guidance in planning:* (a) Zone of advance (to link with flanking formations). (b) Measures to coordinate with flanking formations.
(d) Assess terrain	Commander assesses terrain in sequence: (a) In the assembly area. (b) From the line of departure to the line of contact. (c) In the depth of enemy positions, including general nature of terrain and its effects on observation, fire, and *maskirovka*.	*Deductions:* (a) Effect of terrain on accomplishment of mission (and use of nuclear weapons, if necessary). (b) Most favorable axes for operations. *Used as guidance in planning:* (a) Zone of advance and main/supporting attack axes (strike sector). (b) Routes, deployment lines, objectives, second-echelon commitment line, and river-crossing sites.

(Continued)

Figure 7-13. Estimate of situation (part 2).

Function	Main Issues Considered	Commander's Deductions and Influence on Decision
2. Estimate the Situation (continued)		
(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 sector), and operational formation. (b) Measures to anticipate changes in conditions (floods, snow storms, etc.).
(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 sector), 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 7-14. Estimate of situation (part 3).

Estimate of Situation

This estimate must take into account all the situation influences that hinder or facilitate mission accomplishment. It is possible to do this either sequentially by elements of the situation or in relation to the elements of the decision. Staff members contribute greatly in helping the commander assess the situation, since they are constantly gathering and processing information critical to control tasks in their specialty areas. The general content of the estimate is quite similar to that used in the U.S. Army. The OPFOR estimation process differs from ours, however, in its emphasis on **quantitative methods**. This is most clearly evident in OPFOR preparation of quantitative and qualitative assessments of the combat potentials of the opposing combatants. Other manifestations are a wide variety of calculations concerning factors such as unit relocation times, densities of weapons per kilometer, and time required to cross a water obstacle.

After clarification of the mission, staffs perform a sequence of evaluations under the general rubric of **estimate of the situation**. First, they determine the **enemy's** status, capabilities, and intentions, and suggest the attack sectors for the subordinate maneuver elements. They establish immediate and subsequent missions for the force as a whole. Second, they perform an estimate of **own forces**. They determine the capabilities, status, and strengths of subordinates and calculate the COFM. If the existing COFM is not sufficient, they revise plans or draw up plans for reinforcement. If the desired COFM is present, then they allocate combat, technical, and rear support and plan the coordination of forces. Third, following the estimate of own forces, the staffs perform the estimate of **adjacent (or coordinated) forces**, in which they coordinate with other friendly formations/units on such matters as targeting, terrain difficulties, and timing.

Following this evaluation of enemy and friendly forces, staffs analyze the **zone of combat and battlefield conditions**. They estimate the influence of terrain and the influence of political and economic factors on the COFM and combat actions. At this point, they make refinements to formation/unit boundaries due to terrain difficulties or the actions of other friendly elements. They make decisions regarding locations of assembly areas, river-crossing points, and locations of command or control posts. Additionally, they make adjustments to calculations and plans according to the degree of hostility or friendliness of the local population. They also analyze and evaluate the electronic situation, the NBC situation, the time of year and day, climate, and other factors effecting troop actions.

Assessment of Decision Variants

In the OPFOR view, the most likely way to reach a good decision is by assessing several **variants** of a developing concept of the operation (battle) and determining the optimum solution. The staff looks for the variant that achieves the designated mission on time and at the least cost in men and materiel. The process of selecting that optimal variant demands **modeling the different variants** of the concept and comparing the outcomes in terms of the decision criteria set by the commander. Already during the estimating phase, the OPFOR began to use computer-assisted, mathematical modeling of variants. Critical to this modeling effort is the evaluation of the potentials of the opposing combatants for input into the calculation of the COFM. The COFM data are

key to the commander's decisions with respect to where to attack, where to defend, and where to plan the strike sector (main attack). The commander makes a final selection on the basis of the relative merits of each variant and his own experience, logic, and intuition.

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) COFM calculations. (d) 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 sector).
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 sector), operational formation, and maneuver plan. *2. Missions of Subordinates:* Includes groupings, missions, axes, timings, and the percentage of losses that is acceptable in OPFOR formations. *3. Cooperation:* How to coordinate operations in terms of missions, place, and time. *4. Support:* Includes combat support and troop control.	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 7-15. Evaluation of variants and formulation of decision.

Formulation of Decision

The decision-making process is complete when the commander has **selected the optimal variant** and formulated his decision in enough detail to report it to his higher commander. Simultaneously, the commander provides it to his staff for further planning and for disseminating of the finalized missions to the troops. The commander has reached a well-founded decision and can now turn his attention to other functions of troop control that will transform his decision from a concept on his map to the physical application of combat power against the enemy.

All other control activities either lead to, depend on, or support the **commander's decision**. In the OPFOR view, the decision is the result of the creative thought and will of the commander. It defines the objective of combat actions and the forces, resources, procedures, and times for achieving it. The decision must be detailed enough to establish clearly the missions of subordinate forces and to indicate the nature of coordination and support required to carry out those missions. (Figure 7-16 presents an OPFOR view of the content of the commander's decision.)

Time

Time, to OPFOR decision makers and planners, assumes a role of unparalleled importance on the battlefield. If they cannot achieve timelines at all levels, they feel that they cannot accomplish their tactical, operational, and strategic military objectives. The effectiveness of the their control 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.

Influence on correlation of forces and means (COFM). A myriad of COFM factors are important to OPFOR decision makers and planners, but time is the critical determinant. They believe that effective troop control can give one of otherwise equal opponents **at least a 2:1 advantage in combat effectiveness**. Given forces with equivalent combat potential, they say that the actual COFM will favor the side which has the better control system and, consequently, more skillfully realizes its potential capabilities. Decreasing the time required to make effective decisions in battle, represents the thrust of their improvement efforts in the control process.

Time segment analysis. In considering the impact of time on the effectiveness of troop control, the OPFOR divides the control cycle into four **time segments**, as follows:

T_1 = time which elapses from the occurrence of some significant event until relevant information concerning the event reaches the commander and his staff. (This is indicative of the intelligence collection process and data transmission times.)

T_2 = time taken by the commander to reach a decision. (This includes the time required to clarify the task, estimate the situation, and adopt a plan variant.)

T_3 = time required for transmission of the decision to subordinate commanders. (This dissemination process is a function of the efficiency of the communication system.)

T_{Action} = time which elapses between receipt of the order by subordinate commanders and mission accomplishment.

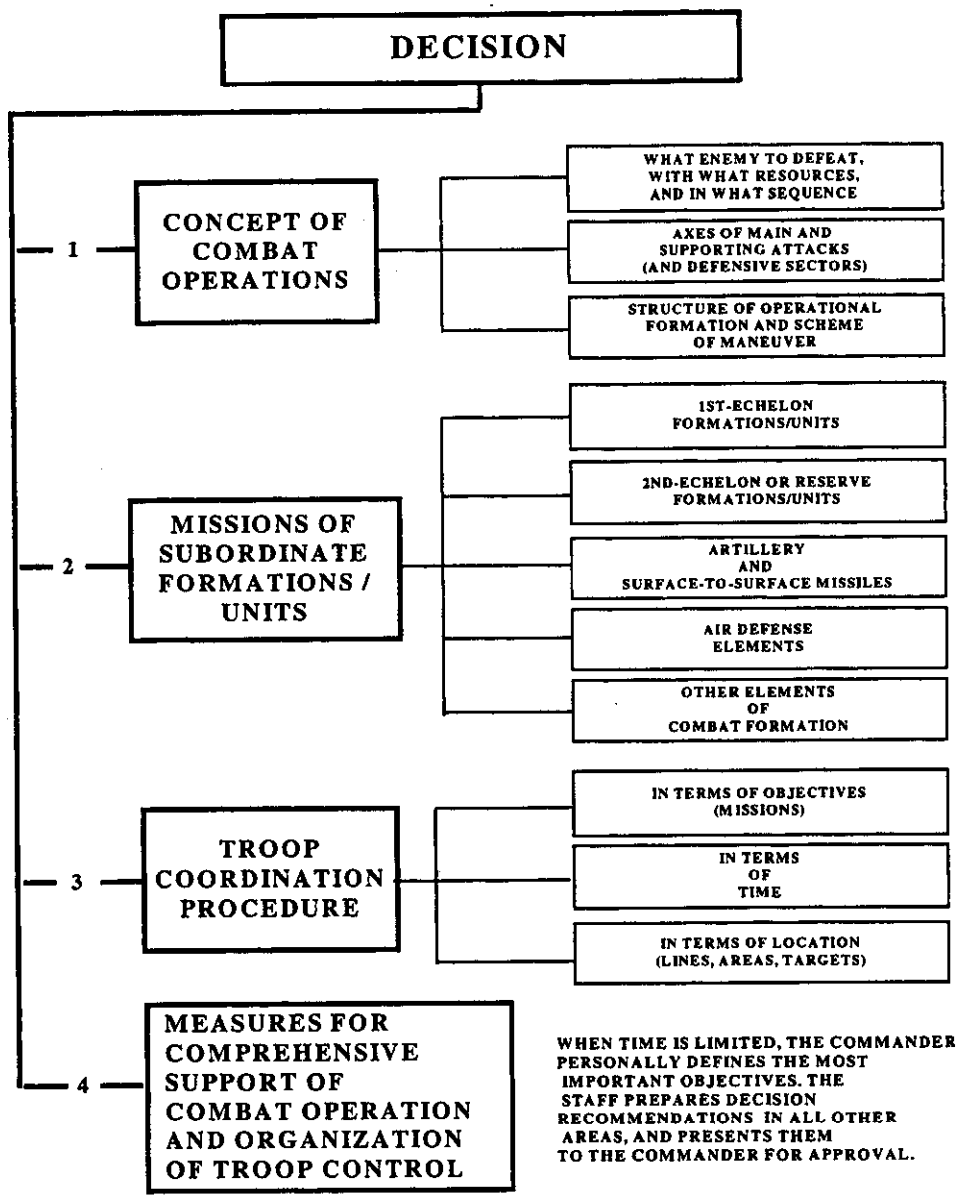


Figure 7-16. Content of the commander's decision.

Of these, the first three phases combine to comprise **control time**:

$$T_{Control} = T_1 + T_2 + T_3$$

A closer look shows this control time ($T_{Control}$) to be the total time required for the **decision-making process**. 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, or **action time**. 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

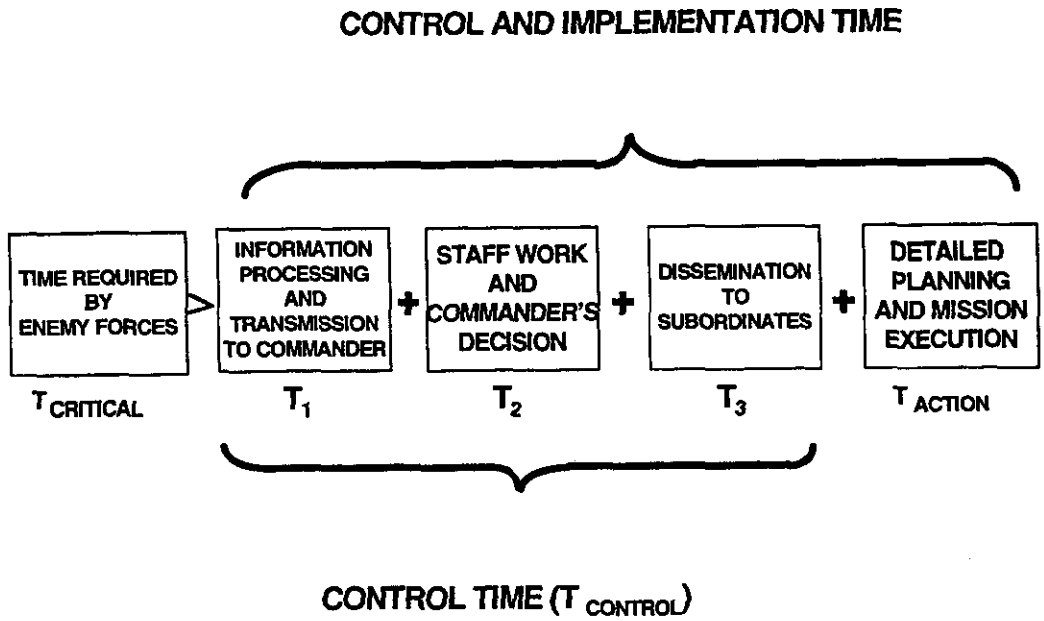


Figure 7-17. Time segment analysis.

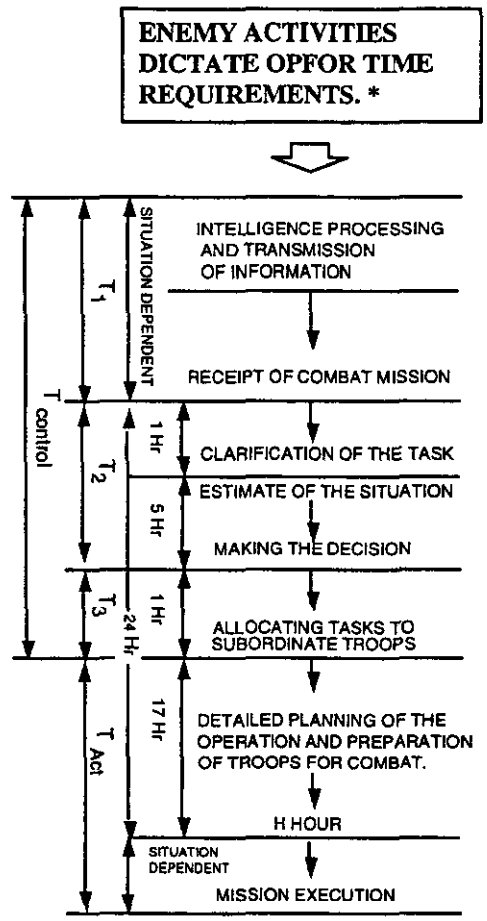
his control cycle and implement his decision will dictate the **critical time** ($T_{Critical}$).Thus, OPFOR success in battle requires the following inequality:

$$T_{Control} + T_{Action} < T_{critical}$$

OPFOR control time and action time must not exceed the critical time. While this is a very simple and even self-evident rule, it shows that the OPFOR recognizes the absolute criticality of seizing and maintaining the initiative in using time efficiently. Figure 7-17 depicts a graphic representation of this phenomenon.

The OPFOR's goal is to accomplish detailed planning of *front* operations within 24 hours of mission receipt. (See Figure 7-18.) Computerization and battlefield automation will spur more aggressive time goals in the future.

Networks. The OPFOR's scientific approach to decision making and planning makes extensive use of time-dependent network methods, commonly referred to in the U.S. as Critical Path Methods (CPM) or Program Evaluation Review Techniques (PERT). It applies these methods both to planning operations and to the internal work of the control organs themselves. Using historical and exercise-derived data on the time required to perform various combat and control activities, the OPFOR has created a data base of **time norms** that they can use to compute the overall time required for a given combat action (operation). The data base helps ensure that it can accomplish the action (operation) within the critical time. This assurance can significantly aid the OPFOR's ability to synchronize battlefield actions (operations).



* Enemy activity dictates $T_{Critical}$ and the OPFOR must ensure that $T_{Contol} + T_{Act} < T_{Critical}$ in order to achieve mission success.

Figure 7-18. Time goals in OPFOR *front*-level decision making and planning.

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: **sequential, parallel, and executive**. The two primary methods of combat planning are the sequential and parallel. Commanders may use either of these methods, depending on the intensity of the situation, and a combination of the two is appropriate in some cases.

Sequential. The sequential method (sometimes called the series or successive method) approaches planning as a **consecutive** process. This method involves planning by each level of command in sequence from the higher level to the next lower. After the higher-level commander has completed his planning process, he passes the problem to his subordinate commanders by issuing missions and plans . In turn, each subordinate commander then begins his own, similar planning process and finally passes the problem to his own subordinates. Work at

each subordinate level depends on the completion of the superior staff's plan.

The major benefit of the sequential planning method is its **security**, since it involves fewer communications between command levels. It also allows the more experienced commanders to perform significant amounts of the initial planning, and then aid and control their subordinate commanders with the subsequent planning. Because each subordinate commander and his staff have a clear and complete picture of the senior commander's view of the upcoming operation, as well as access to advice from a superior staff that has completed its work, the **quality** of planning under this method normally is very high. It facilitates coordination and minimizes confusion. The sequential method's major deficiency that it is **time-consuming**. It can also lead to the suppression of subordinate commanders' initiative and tends to **over-centralize** the control system. Nevertheless, the sequential method would probably be the best method of executing **preplanned** offensive actions not subject to changing situations.. This would be the preferred method if **sufficient time** is available. Unfortunately, neither of these conditions is typical of the modern battlefield.

Parallel. The parallel method (sometimes called the concurrent method) allows the staffs of two or more levels of command to undertake planning **simultaneously**. According to this method, subordinate staff officers conduct combat planning without waiting for the completion of planning by the staff of their parent organization. The essence of parallel planning is that all levels of control accomplish simultaneously the basic work on making a decision, allocating tasks to troops (forces), and planning an operation (battle). See Figure 7-19 for a graphic representation of the parallel planning concept.

In parallel planning, the commander transmits **preliminary instructions** to his subordinate commanders when he has clarified his assigned mission. These preliminary instructions inform the lower-level commanders of the nature of the coming mission and indicate those actions they must take in preparation for their specific mission. This allows subordinates to begin their situation assessments and information acquisition while awaiting amplification of their missions. The commanders and staffs of the subordinate organizations provide the higher-level commander with situation data. This feedback provides timely information concerning the battlefield situation and aids the higher-level commander's decision-making process. In addition to feedback to their superior, the lower-level commanders, in turn, issue **preliminary instructions** to their own subordinate commanders and receive status report feedback from these subordinates. When the highest staff completes its planning, it issues final, detailed **operational directives/combat orders** to its subordinates, who then complete their planning and issue their own final **operational directives/combat orders**.

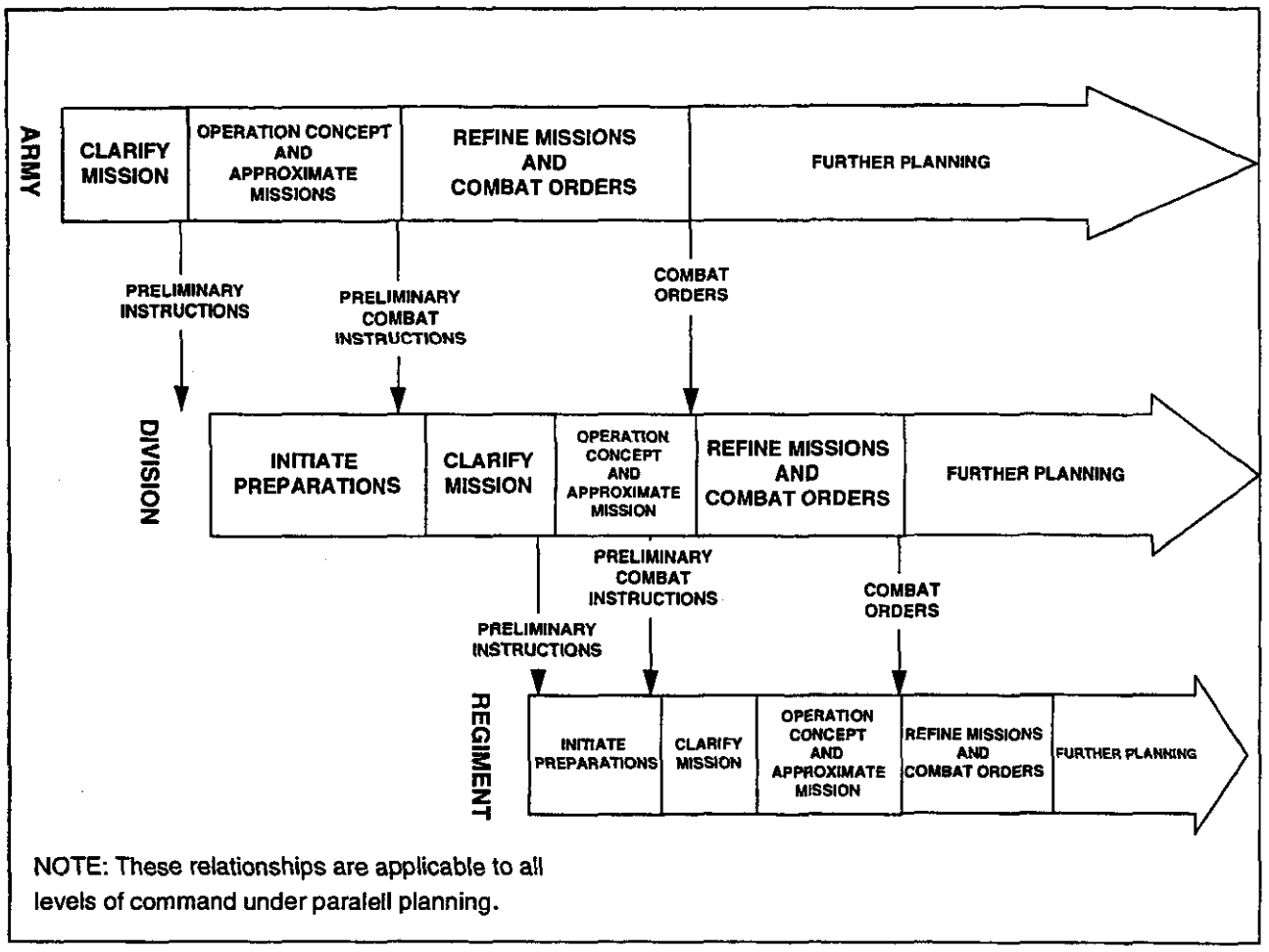


Figure 7-19. The parallel planning concept.

Thus, the process of preparing for combat, while not truly parallel at each level, takes place **concurrently** at different levels of command. The main advantage of the parallel method is the conservation of time; it is much faster than executing the planning process sequentially. However, it places a premium on good communications and experienced, well-trained staffs, who undertake planning with limited information and adjust the plan as expanded data become available. It requires a more clear-cut organization of work, at all levels of command, and well-coordinated activities for all control organs. Nevertheless, the parallel planning system is obviously more suited to the battlefield environment, where **limited time** is available. With a shortage of time, the OPFOR feels the commander must focus his attention on solving the main problems and grant subordinates broad **initiative** in resolving the remaining functional area problems. Should developments affect the initial concept in any way, the final decision (combat order or operational directive) can reflect this, and subordinates can tailor their planning accordingly.

However, the parallel method also carries a **risk**: changes in the superior commander's concept can negate much of the time advantage if subordinates do not receive such adjustments quickly. Use of this method demands giving more independ-

ence to lower-level commands and that those commands employ more **initiative.** The caution and reluctance of many officers and staffs to exercise initiative causes them to prefer the sequential planning method. Many officers are uncomfortable with the parallel planning method and hence do not practice or employ it sufficiently during training and exercises. OPFOR planners recognize that the use of the parallel method is imperative in high-speed operations.

Executive. Finally, there is the executive method (sometimes called the "directed," "immediate," "instantaneous," "command," or "on-the-spot" method). This involves the commander's giving an order directly to an executing unit with only minimum staff preparation. Staff activity is directive in nature, concerned with coordinating the immediate details required to activate the commander's decision as quickly as possible. A commander might use this method during combat actions to respond rapidly to a swiftly changing situation. However, this method is the one with the highest potential for deviation from a good, or even acceptable solution. Therefore, the OPFOR does not prefer it and generally envision it as useful only in extreme circumstances.

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 control organs must still **disseminate** the finalized missions to subordinate elements and **plan** the operation (battle) in accordance with the commander's concept of the operation (battle) and the adopted 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 troop control task. The commander usually establishes the general procedures of staffs and other control organs 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 troops as well, sufficient time to prepare for their combat missions. In order to decrease the time required for this task, the OPFOR is applying technology, such as graphic display panels and other sophisticated signal equipment.

Dissemination of 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, com-

manders provide basic instructions for preparations that are not mission specific. These instructions, prepared by the chief of operations, contain the missions of the subordinate elements and the **general concept of the operation** of the higher commander. Very similar to a warning order in the U.S. Army, they allow subordinate units to prepare for the flurry of activity demanded of control organs upon receipt of a new mission. They enable the subordinate formation/unit to begin its 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 instructions are useful when available time is severely limited.

Preliminary combat instructions. At the operational level, the commander issues **preliminary combat instructions** (sometimes called "combat instructions" or simply "instructions") in a four-paragraph format. 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 formation/unit 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 **tactical** order given by a commander. (See Figure 7-20 for order format.) These orders are **complete** mission statements, with complete information for accomplishing the tactical tasks of a unit or subunit. Commanders give them in both written and oral form from army down to divisions and from division down to regiments. (Within regiments, commanders normally give them orally, down to squad level.)

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 if for theater-level operations; at *front* level, the *front* commander and his chief of staff sign it. The General Staff (or theater headquarters) disseminates it to *fronts*, and a *front* disseminates it to armies. The normal eight-paragraph format is probably similar to that of a combat order, as shown in Figure 7-20.

TRADITIONAL FORMAT	MODIFIED FORMAT
1. Enemy Situation: a concise statement of the enemy forces and their disposition, as that information relates to the mission of the issuing unit.	1. Enemy Situation: a concise statement of the 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 impacts on the mission of the issuing unit; includes coordination procedures for nonorganic/attached units.	3. Missions of Higher and Adjacent Units: a description of the missions of higher and adjacent units, and their impacts on the mission of the issuing unit; includes coordination procedures for nonorganic/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 the combat missions of subordinate elements, normally in order of: first echelon, second echelon, artillery, air defense, and reserves.	5. "I Order...": establishes the 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 individual subunits 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 subunits.	7. Preparation Times: establishes the times by which individual subunits 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. Troop Control: contains all troop control-related information.

Figure 7-20 Formats for a combat order.

Detailed Planning

When the commander decides on the final **concept of the operation**, the staff turns its attention to **detailed planning**. The commander communicates missions to subordinate commanders so they can complete their own decision-making and planning processes. Thus, the army planning process provides formal **combat orders** to the divisions and other major subordinate forces. It also provides plans or extracts of them to ensure the detailed management of special functional areas of combat support or service support.

The focus of the **planning** process is to establish the **detail** needed to **transform the commander's concept into reality**. As a rule, planning formally begins after the commander defines his concept of the operation and ends with higher commander's

approval of all documents of the **operations plan.** The specific content, volume, and sequence of planning depend on the level of the organization conducting it. (At regimental level and below, decision making and planning are a simple, interconnected process.) At higher levels the OPFOR recognizes a more **formal separation of decision making and planning**. Regardless of the organization involved, planning is a function of all the control organs. The basis of planning is the higher commander's operational directive or combat order, the immediate commander's decision and instructions for further planning, and the information from the estimate of the situation. Instructions received through the chain of special subordination, such as integrated fire support planning conducted by the CMTA and the deputy commander of aviation, also guide planning of various components of the operation.

Detailed planning is a prerequisite for success in battle. Modern combined arms warfare integrates the actions of many types of forces and combat equipment, as well as an enormous diversity of support requirements. It also involves the potential for severe and sudden changes in the situation. In terms of detail, OPFOR planning considers forces **an echelon below** those dealt with in the commander's decision. Thus, *front* operational planning looks at divisional requirements in detail (just as division staffs take a detailed look at battalion activities in their planning for tactical missions).

Operations Plan

Echelons of command down to army compile operations plans. An operations plan is a series of documents prepared by the staffs based on the commander's decision on how to carry out a mission. The plan must--

- Provide for the specific sequence and methods for carrying out each subtask required to assure mission success.
- Optimally allocate forces and resources to each mission.
- Provide concrete methods to coordinate the actions of maneuver, fire support, and materiel support.
- Develop a system that can control all these activities during combat.

From the completed operations plan, the staff creates its operational directive of combat orders to inform subordinates of their missions, roles, and time requirements in executing the plan.

Documentation of the plan may take several forms. The primary document is the **map** of the operations plan. (See Figures 4-1 and 5-1 for examples of maps of *front* and army commanders' decisions.) It includes a complete depiction of the commander's decision in graphic form. Formal, **written plans** with accompanying maps signed by the commander and chief of staff usually supplement the map at *front* and army. (A division may have a similar combination of written documents and map, called a combat (battle) plan. At regimental level and below, the map may be the only permanent record of the plan.) Additionally, the staff uses combination charts, schedules, and a wide variety of formatted planning aids during the planning process. They can provide these aids to subordinates who receive only those portions of the plan required to execute their missions. The necessary calculations, justifications, and reference data accompany the plan. Security is a constant concern, and there is close control over actual documentation.

The operations plan details the commander's thinking and reflects the input of various control organs according to their functional responsibilities. It normally includes the following **specific points**:

- Assessment of the enemy situation and probable intentions (likely characteristics of enemy operations).
- Scope, aim, and concept of the operation.
- Operational formations of the subordinate organizations (organization for combat).
- Distribution of forces and means (allocation of main forces and support, i.e., artillery, along the operational axes).
- Correlation of forces and means (COFM).
- Location and direction of strike sectors for main and supporting attacks.
- Width of strike sectors and overall zones of action for subordinate armies (or divisions).
- Unit/formation boundaries.
- Information concerning the commitment of the second echelon.
- Immediate and subsequent missions of subordinate formations/units (including their depth, time limit for accomplishment, and rate of advance).
- Missions of support units.
- Missions of adjacent forces.
- Missions of forces controlled by higher headquarters in the unit's/formation's area of responsibility.
- Targets for nuclear weapons (both those of subordinate units and those controlled by higher headquarters).
- Availability, time of delivery, and distribution of nuclear and chemical munitions in terms of the different missions and the receiving armies (or divisions).
- Arrangements for security of friendly troops during nuclear strikes.
- Distribution of aircraft sortie resources of *frontal* aviation in terms of the different missions.
- Availability and technical status of tanks and self-propelled vehicles at the start of the operation.
- Availability, delivery, and distribution of supplies.
- Troop control signals and alarms.
- Locations of CPs.
- Measures for reconstitution of disrupted control.

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 plan annexes for the initial nuclear strike; preparation and occupation of assembly areas, departure areas, march routes and lines of movement, *maskirovka*, airborne and amphibious landings; special-purpose forces; protection from weapons of mass destruction; troop control; and computer support, among others.

Planned Flexibility

Operational-level troop control is highly **flexible**. This flexibility comes from mission-type orders from the General Staff (or theater headquarters) to the *fronts* and from *fronts* to armies. 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.

The **continual updating** of the operations plan at *front*/army theoretically prevents disruption of planning and decision making. Disruption of planning would be difficult, since operational planning occurs up to 3 days in advance. However, by **limiting a commander's time to plan**, an enemy could force the OPFOR staff to undertake parallel, or even executive planning. It may also be possible to create a condition in which the commander makes a poor decision as a result of insufficient time to acquire and process information on the combat situation.

There is also a **danger** that the OPFOR emphasis on detailed planning **could create a rigidity** inconsonant with the nature of the modern battlefield. Officers at both tactical and operational levels clearly recognize this danger. They realize that a commander cannot operate according to a preset plan, without taking into account changes that have occurred. Such a commander would, as a rule, suffer failure in combat, since control would lag behind the development of the actual situation.

The OPFOR's response to this concern is **planned flexibility**. It helps OPFOR commanders to adjust the composition of forces on various axes, as well as their methods of operations and support. Planning continues the process of forecasting and **modeling** begun by the commander in his decision process. It produces a **series of variants, or contingency plans**, that the commander can implement without completely changing his concept of the operation (battle). For example, such planning allows for potential enemy use of either conventional or nuclear weapons. 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. The OPFOR uses mathematical calculations to support this planning process, since the plan and the decision require **scientific substantiation**.

CALCULATING THE BATTLEFIELD

Military art is aptly named, for it requires creativity in understanding and applying the **objective** laws of war and the **scientific realities** that govern military operations. A thorough grasp of these scientific certainties is, in the OPFOR view, the first essential step, without which artistry has no firm foundation. While many in the U.S. might go along with this principle, most would differ from the OPFOR in their assessment of the degree to which combat is calculable. The OPFOR believes that it is possible to reduce almost all aspects of warfighting to **mathematical calculation**. This of course, is one of the reasons why many commanders have so readily accepted computers and why automation fits so peculiarly well into the OPFOR system of troop control.

Scientific Substantiation

In the OPFOR view, the quality of the commander's decision and subsequent planning is a direct result of the correct use

of standard, approved methods, norms, and calculations. This **scientific substantiation** involves qualitative calculation and assessment of all aspects of military actions, and the correlation of the resulting outcomes with scientifically developed normative parameters for modern combat. Use of this normative planning process should provide a high probability of reaching the optimum decision, while also reducing decision-making time. Timeliness in this process often means automation.

Today the requirement to control forces on a scientific basis dominates the commander's thinking and to the work of the staff. The OPFOR realizes that the days are long past when the commander could decide everything in troop control based only on his individual experience and intuition. Now, scientific substantiation of decisions, relying on a deep, comprehensive analysis of situation information, is of extraordinary importance. At all levels, staff officers must make the necessary mathematical calculations demanded by the operational and tactical missions. These calculations provide scientific substantiation for decisions and also serve a troop control purpose by creating the aura of "scientifically correct" decisions (thus leading to higher confidence in those orders from those designated to fulfill them).

The use of **quantitative methods** permeates the OPFOR command and control system. The four most common types used in the decision-making and planning process are--

- Norms.
- Calculations and nomograms.
- Correlation of forces and means (COFM).
- Modeling concepts.

Norms

Norms represent **scientifically derived guidelines** for the use of resources. The military defines and uses norms as follows:

Types

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, characterizes 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 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.

Uses

The use of norms is all-pervasive in the military, as the numerous examples scattered throughout this handbook 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.

There are three principal methods used to do calculations using norms:

- Their direct application in mathematical **formulas and tables** derived from them.
- Relating them to other variables in **nomograms**.
- Their use in the **network** (critical path) method.

The use of computers or the programmable calculators can greatly accelerate all three methods. The following subsections provide examples of the OPFOR approach to using norms, calculations and nomograms in the decision-making and planning process.

Formulas and Nomograms

OPFOR decision makers and planners at every level use an extremely wide variety of **mathematical calculations** to provide a quick method of accurately assessing a required element of information concerning military activity. **Tactical** calculations include, for instance, determination of march duration's, strike sectors, and time requirements. Chiefs of branches of troops and services also make tactical calculations on technical aspects of their missions: the chief of engineer service/troops determines necessary mine densities or bridging requirements for a particular water obstacle, and the chief of chemical service/troops determines radiation doses and levels of contamination. At **operational** level, the staff departments and directorates provide input to the calculation of COFM performed by the operations directorate. The OPFOR can express these operational or tactical calculations in normal mathematical notation as **formulas**, which are readily adaptable to automation.

In many cases, however, they embody the calculations in **nomograms** for use in the field. A nomogram is a special graph which reflects the relationships of the elements in one or more calculations. It provides a rapid means of solving for the desired variables without using computers or lengthy manual calculations. The following examples demonstrates the simplicity and practicability of these methods. The first example uses a formula and then a nomo-

gram to solve the same problem. The second uses a combination of the two methods to solve a more complex problem.

Example 1: Expected Time for Encounter and Distance of Probable Line of Contact

The OPFOR uses this calculation to determine the possible time of contact between two forces, and the distance to that contact. It requires the following information:

- Distance between the force groupings.
- Travel speed of friendly forces.
- Travel speed of enemy forces.

The **formulas** for these calculations are as follows:

$$t_e = D/(V_f + V_e)$$
$$d_1 = t_e \times V_f$$

where

t_e = Expected time of enemy encounter (hours).

D = Distance between the force groupings of the two sides (in km).

V_f = Travel speed of friendly forces (in km/hr).

V_e = Travel speed of enemy forces (in km/hr).

d_1 = Distance from the probable line of encounter with the enemy to the initial position of friendly forces (in km).

The problem is to determine the expected time of encounter and the distance to the probable encounter line with the enemy. The OPFOR has determined at 1800 hours that the enemy is 64 km away and is moving at an average speed of 15 km/hr; the friendly force has a travel speed of 20 km/hr. Using the formulas,

$$t_e = 64/(20 + 15) = 64/35 = 1.83 \text{ hours, or 1 hour 50 minutes}$$
$$d_1 = 1.83 \times 20 = 36.6 \text{ km.}$$

Based on these calculations, contact should occur in 1 hour 50 minutes (at 1950 hours) at a distance of 36.6 km from the initial friendly position.

Alternatively, the staff could use the **nomogram** in Figure 7-21 to get an estimate of the expected time to contact between the two forces and the distance to the point of contact. To determine the solution, they need only to perform the following steps:

- Find the "20" and "15" marks on the friendly forces travel speed and enemy travel speed scales, respectively.
- Draw a line through these points to the intersection with the unnamed scale below them (at "35").
- Then, trace downward, along the bent diagonal line, to the intersection with perpendicular established from the "64" mark on the scale for distance between friendly and enemy forces.
- From the point of intersection, draw a horizontal line to the expected encounter time scale, and head the calculation result: 1 hour and 50 minutes.
- Add this figure to the starting time (1800 hours) to produce the expected time of encounter: 1950 hours.

To calculate the distance to the probable encounter line, using the **nomogram**:

- From the result obtained above (1 hour 50 minutes), draw a horizontal line to the intersection with the diagonal speed line that leads to "20" on the unmarked speed scale (in this case, only the friendly force speed is

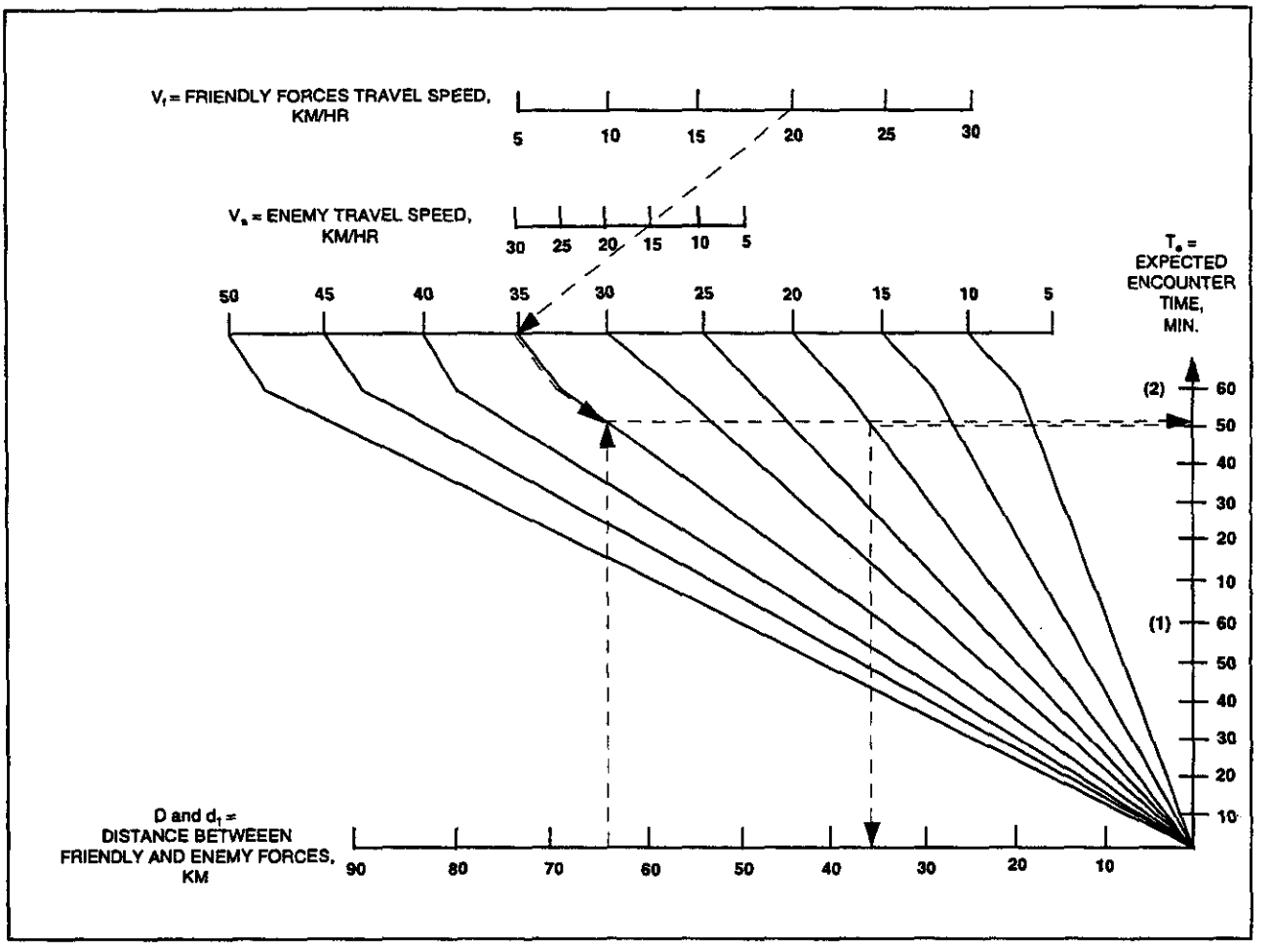


Figure 7-21. Encounter time and distance nomogram.

relevant, rather than the combined speeds of both forces).

- From the obtained point, drop a perpendicular line to the scale for distance between friendly and enemy forces, and read the calculation result (somewhere around the 36.6-km mark).

The result might not be quite as precise as the one obtained with the formula, but can save calculation time and is close enough for an estimate.

Example 2: Rate of Advance as Function of Superiority

Despite the problem of establishing definite norms, empirical evidence shows a correlation between the rate of advance (R, in km per day) and the coefficient for calculating the influence of the COFM (Ci), using the formula

$$R = 140 \times Ci.$$

The quantity 140 represents the maximum possible speed of advance in a European theater (in km per day).[6] Using the **formula** and the **nomogram** in Figure 7-22, it is possible to evaluate approximately the nec-

[6] The OPFOR would have separate formulas and nomograms for other theaters.

essary COFM to achieve a planned rate of advance, or to determine the likely rate of advance with a given correlation.

For example, the staff plans an average rate of advance of 40 km per day on a force grouping's sector. It can find the superiority necessary as follows:

$$Ci = R/140, \text{ or } Ci = 40/140 = 0.29.$$

It enters the quantity 0.29 on the nomogram, and it follows that a COFM of 3.4:1 is necessary on the force grouping's sector.

If, on the other hand, a force grouping's sector has a known COFM superiority of 2.5:1, the staff can determine the rate of advance as follows: From the nomogram, it is clear that Ci = 0.13 corresponds to a superiority of 2.5:1. According to the formula,

$$R = 140 \times 0.13 = 18.2.$$

Therefore, the average rate of advance should be 18.2 km per day.

Uses

Calculations **take the guesswork out** of determining such necessary control information as--

- Movement times of units from assembly areas to contact.
- Depth of a march formation in multiple columns, time required to negotiate an obstacle or bottleneck,
- Length of time needed for an artillery unit to change position.

Many calculations are minimodels of combat activity that contribute directly to the overall effort to **model variants** of the concept of operations (battle). These calculations can facilitate the comparative evaluation of different variants of the plan. They do not, of course, exclude the need for further and more detailed calculations and mathematical modeling at the stage of adopting a decision and planning troop actions. Determining when and at what level to use calculations and nomograms, or some more complex means, is the responsibility of the commander.

Correlation of Forces and Means

One of the more complex calculations required for decision making and planning is the development of aggregate **correlation of forces and means (COFM)** data.[7] The OPFOR defines the COFM as an **objective index of the combat power of opposing sides, which allows a determination of the degree of superiority of one over the other**. It calculates the COFM on a strategic, operational, and tactical scale throughout an entire zone of action, in the main sector and other sectors. It uses various reference manuals, tables, and computers to speed calculations.

Level of Analysis

OPFOR decision makers and planners calculate the COFM with varying degrees of quantification and refinement depending on the level of analysis. At the

[7] Often more simply referred to as correlation of forces. In OPFOR terminology, however, **"forces and means"** include personnel and combat equipment. In this sense, **"forces"** refers to the number of subunits/units/formations, such as motorized rifle, tank, or artillery units, assigned to conduct combat and combat support actions. **"Means"** applies to the calculation of the **weapon systems**, such as guns, tanks, aircraft, or missile launchers, as well as materiel and facilities supporting the forces. In COFM, the OPFOR stresses the "means," that is, the weapon systems.

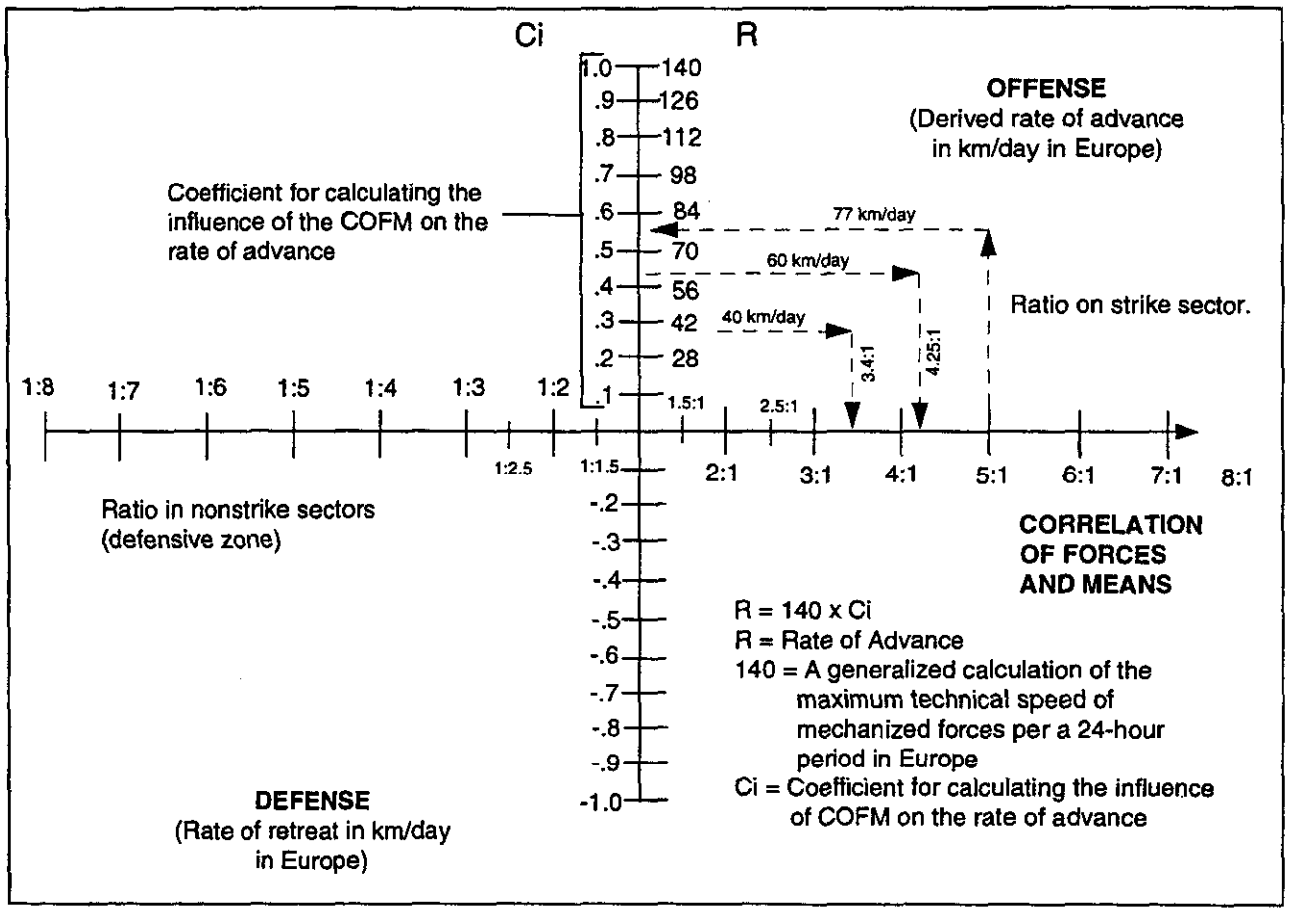


Figure 7-22. Nomogram for rate of advance in Europe as a function of the COFM..

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 COFM analysis down to army level. At the **operational** level, the *front* staff does it down to division, and the army staff does it down to regiment. The actual COFM takes into account both the quantity and quality of weapon 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 rely on **tactical density norms** (for example, tanks or artillery pieces per km of frontage) for the **OPFOR side**.

Combat Potential Values

By scientific research, 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 weapon 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 carried out under average expected conditions.

Aggregate CPVs

Therefore, the COFM 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 and formations. If different weapons happen to have the same CPV, it does not mean that they are interchangeable but only that they perform equal shares of the combat mission. It is impossible to totally replace tanks with aircraft or motorized rifle troops with missiles. In combined arms combat, however, it is possible to make up partially for a deficiency in certain weapons with others which have an equivalent influence on the course of combat. While tanks may kill tanks, so do other (fire support) weapons; air defense weapons do not normally kill air defense weapons.

Overall COFM

Calculating the **overall COFM** in a zone of action involves the following steps:

- Determine the number of each type of weapon system in a unit or formation.
- Multiply the number of weapons by the established CPV for that specific weapon system.
- Sum the weapon CPV totals for each unit or formation.
- Sum the unit or formation CPV totals for each side (OPFOR and enemy).
- Divide the OPFOR CPV total by the enemy CPV total.

See Figure 7-23 for an example of how the OPFOR calculated the aggregate (unit) CPV for a motorized rifle regiment and Figure 7-24 for an example of the overall COFM calculation for a hypothetical situation.[8]

Adjustments

The OPFOR may adjust unit/formation CPVs to reflect the conditions of a specific combat action. These include--

- Type of combat action (offense or defense).
- Terrain.
- Losses already incurred.
- Logistical support.
- Training and morale.
- Other factors that may impact on the ability to accomplish an assigned mission.

[8] The purpose of these examples is only to illustrate the calculation process. **THEREFORE, THE CPVS APPEARING HERE DO NOT REFLECT ACTUAL CPV VALUES THE OPFOR WOULD USE.** The actual values would differ according to the specific equipment model and its relationship to whatever standard unit of armament the OPFOR has selected as the baseline for comparison.

UNIT: 302d MRR				
SYSTEM	WEAPON CPV*	X	NUMBER OF WEAPONS	= WEAPON CPV TOTAL
Tank	10		31	310
ICV	4		143	572
SP Howitzer	2		18	36
Mortar	3		18	54
SP AA Gun	1		6	6
SP SAM	2		6	12
Manportable SAM	1		48	48
ATGM Vehicle	2		9	18
ATGM Manpack	1		18	18
AT Grenade Launcher	1		140	140
UNIT CPV TOTAL				**1214**
* For illustrative purposes only.				

Figure 7-23. Calculation of unit combat potential value (example).

SITUATION			
OPFOR	UNIT CPV*	ENEMY FORCES	UNIT CPV*
MRD	6441	Mech Div	6164
MRD	6441	Aviation Bde	2596
TD	6265	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	20685	CPV TOTAL	9000
Overall COFM = OPFOR/Enemy CPV Total = 20685/9000 = **2.3:1**			
* For illustrative purposes only.			

Figure 7-24. Calculation of overall COFM (example).

Strike Sector Assessment

The calculation of the COFM is central to decision making and planning both before and during the course of combat actions. However, what is really important at the operational-tactical level is not the overall COFM but the creation of local superiority in selected **strike sectors**. Every *front*, army, and division have 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 7-25.)

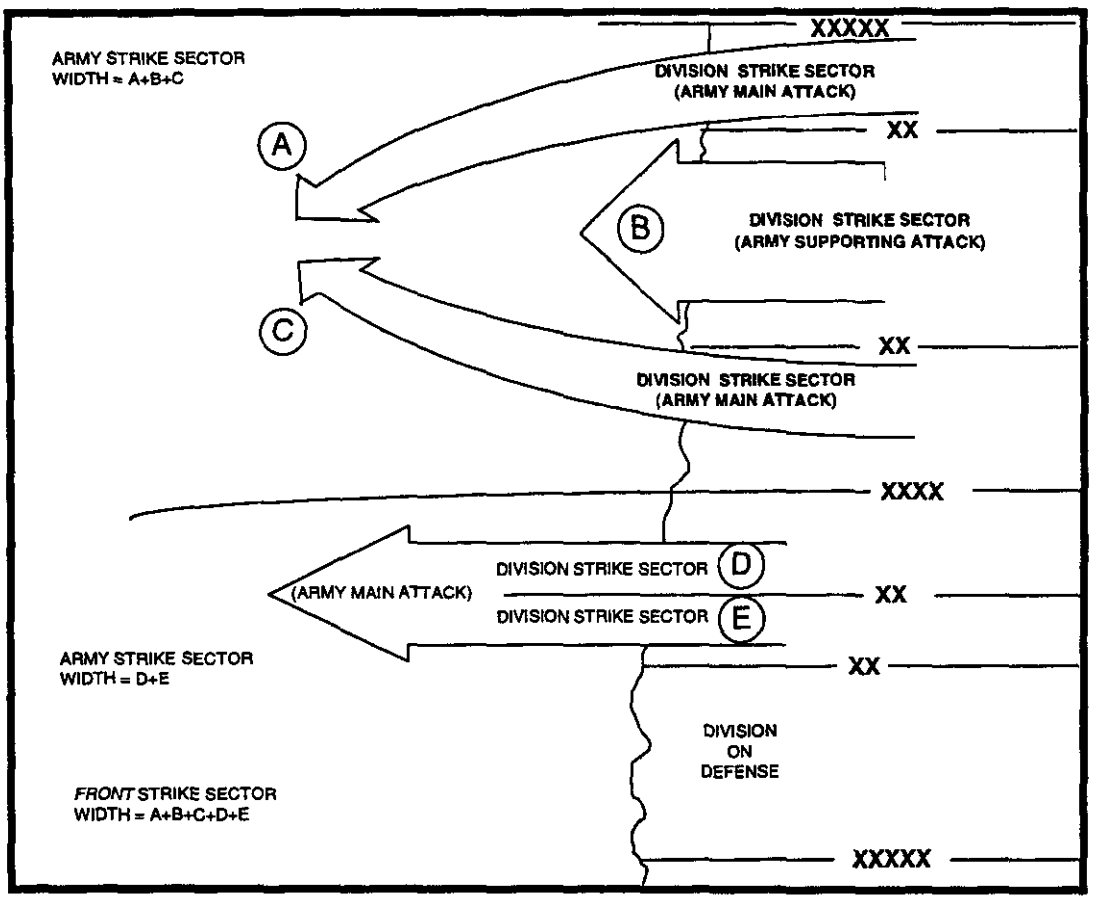


Figure 7-25. Strike sectors.

Norms for COFM Advantage

OPFOR military scientists believe that it is possible to achieve victory with a slightly superior, equal, or even inferior **overall COFM** in relation to the enemy. The critical task is to create such a **decisive COFM advantage in the 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 COFM of 4:1 gives only a 75 percent probability of achieving the objective, while a 5:1 advantage raises the probability to over 90 percent. Generally, they would like to have a strike sector COFM somewhere between 4:1 and 6:1. Although they might seek as much as a 7:1 superiority to reduce casualty rates, their **benchmark figure seems to be 5:1 in the strike sectors.** They are normally willing to defend in the remaining (nonstrike) sectors with no more than a 1:1 COFM, and believe it is possible to defend successfully even at a 0.5:1 negative correlation.

OPFOR planners must not limit their calculations only to the CPVs of the forces conducting and defending against the initial strike. They must include all forces on both sides involved in continuing the offensive to the **entire depth of the planned operation,** that is to the subsequent objective of the organization planning the attack. Therefore, the COFM calculations must take into account probable changes in the disposition of

.	OVERALL WIDTH OF ATTACK ZONE FRONTAGE (km)	STRIKE SECTOR WIDTH (km)
Front	300-400	25-30
Army	60-100	8-12
Division	15-25	2-4

Figure 7-26. Operational and tactical planning norms for overall frontage and strike sector width.

the sides and their composition in connection with losses, their replacement, and the arrival of follow-on echelons and reserves. OPFOR commanders must find a scheme of maneuver and fire support that will maintain a favorable COFM throughout the course of the operation.

Norms for Width

Operational and tactical staffs do have planning norms that recommend the width of strike sectors at different levels. (See Figure 7-26.) Note that the total strike sector width for a *front* or army is the cumulative total of division strike sectors in the first-echelon divisions of first-echelon armies. (See Figure 7-25.) The OPFOR uses COFM methodology to allocate sufficient forces and means to strike sectors and to determine more precisely the optimum width of these sectors

Formulas

It is critically important to create a decisive superiority in a force grouping which is to penetrate the enemy defense. The defensive sectors, however, must not be so weak that the enemy can attack through them to attain the flank or rear of the force grouping or shift forces from them a to meet the main attack. To assist the commander in evaluating 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 COFM along the entire frontage (attack zone)

C_{ss}=COFM achievable/required in strike sector

C_m=Minimum COFM allowable outside strike sector.

Determining width. The first formula allows the staff to **determine the total width of strike sectors** possible, given a known COFM in the strike sectors:

$$W_{ss} = W_o (C_o - C_m) / (C_{ss} - C_m)$$

For example, a *front* with a total frontage of 300 km and an overall COFM of 1.4:1 is willing to defend on nonstrike sectors with a COFM of 1:1. The staff needs to know the total strike sector width possible if they plan to have a 5:1 COFM advantage in those key sectors. They calculate--

$$W_{ss} = 300 (1.4 - 1) / (5 - 1) = 30 \text{ km}$$

They now know that they can expect greater than 90 percent probability of achieving their mission if the total width of strike sectors in the first-echelon divisions of their first-echelon armies does not exceed 30 km. The remaining 270 km must be nonstrike sectors.

Determining COFM. The second formula allows the staff to **determine the COFM** 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 *front* 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). They have calculated an overall COFM of 1.4:1 and are still willing to accept a 1:1 COFM in nonstrike sectors. They use the above formula to calculate--

$$C_{ss} = 300 / 25 (1.4 - 1) + 1 = 5.8:1$$

This strike sector COFM gives a slightly higher probability of success than the previous variant with a 30-km strike sector width.

Increasing COFM. If the resulting C_{ss} had been too low (less than 4:1), the planners would have the following options:

- Reduce the strike sector width.
- Reduce the minimum COFM in nonstrike sectors (accept more risk).
- Request more forces.
- Weaken the enemy grouping with fire strikes.

In peacetime planning, they would also have the option of upgrading existing forces with newer, more capable equipment with higher CPVs.

(1) **Reducing the width of the strike sector** does not proportionately increase the strike sector COFM. For example, an army with a total frontage of 75 km, an overall COFM of 1.5:1, and a minimum COFM of 1:1 might have calculated its strike sector COFM using a sector width of 12 km, using the 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. Applying the formula

$$C_{ss} = 75/8 (1.5 - 1) + 1 = 5.69: 1$$

they would find that this resulted in a 38-percent increase in the COFM.

(2) The same army staff tried to solve its original COFM problem by **accepting greater risk on the nonstrike sectors.** They might be willing to defend with a 0.5:1 COFM disadvantage there. The result would be

$$C_{ss} = 75/12 (1.5 - 0.5) + 0.5 = 6.75:1,$$

greatly improving the chances for success in the strike sector.

(3) **Bringing in more forces** would chiefly influence the COFM along the entire frontage, that is W_{ss}. Given the original COFM problem in the strike sector, the same army staff could determine the new overall COFM (C_o) that is required to achieve a 5:1 superiority in the strike sector, using the 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 desires strike sector COFM, 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 COFM.

(4) **Weakening the enemy through fire strikes** depends on calculating the minimal degree of destruction of the enemy which would enable the achievement of the necessary COFM, at least on the strike sector. The enemy, however, is likely to retaliate against strikes to alter the COFM, and calculations must also take one's own losses into account. The formula to calculate the necessary degree of fire destruction is

$$M = 100 - (C_i/C_n) \times (100 - F), \text{where}$$

M = The necessary destruction of the enemy, as a percentage
C_i = The initial COFM
C_n = The necessary COFM
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

$$M = 100 - (4.13/5.00) \times (100 - 30)$$
$$= 42 \text{ percent}$$

For quick calculation of both the necessary degree of damage and the effects of enemy resistance on the COFM, the staff could use the nomogram in Figure 7-27.

Other variables. Absolute norms for the necessary COFM 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. These include deep missile and air strikes; actions by OMGs and airborne and amphibious landings in the operational depth; radioelectronic combat; and the effectiveness of troop control. 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 sides.

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. For obvious practical reasons, however, the OPFOR must usually **approximate combat** through field training exercises, command post exercises, and mathematical simulation models.

Physical Versus Mathematical

Other than actual combat, according to the OPFOR, the **most reliable** method for assessment of different variants is the **physical modeling** of an operation (battle), that is the conduct of exercises with participation by troops and their control systems. The **most economical** method is **mathematical modeling**. The tradeoffs are obvious: More reliable methods consume more resources; cheaper methods are subject to a greater degree of departure from reality and can create dangerous illusions which might be far from accurate. The more complex the operation

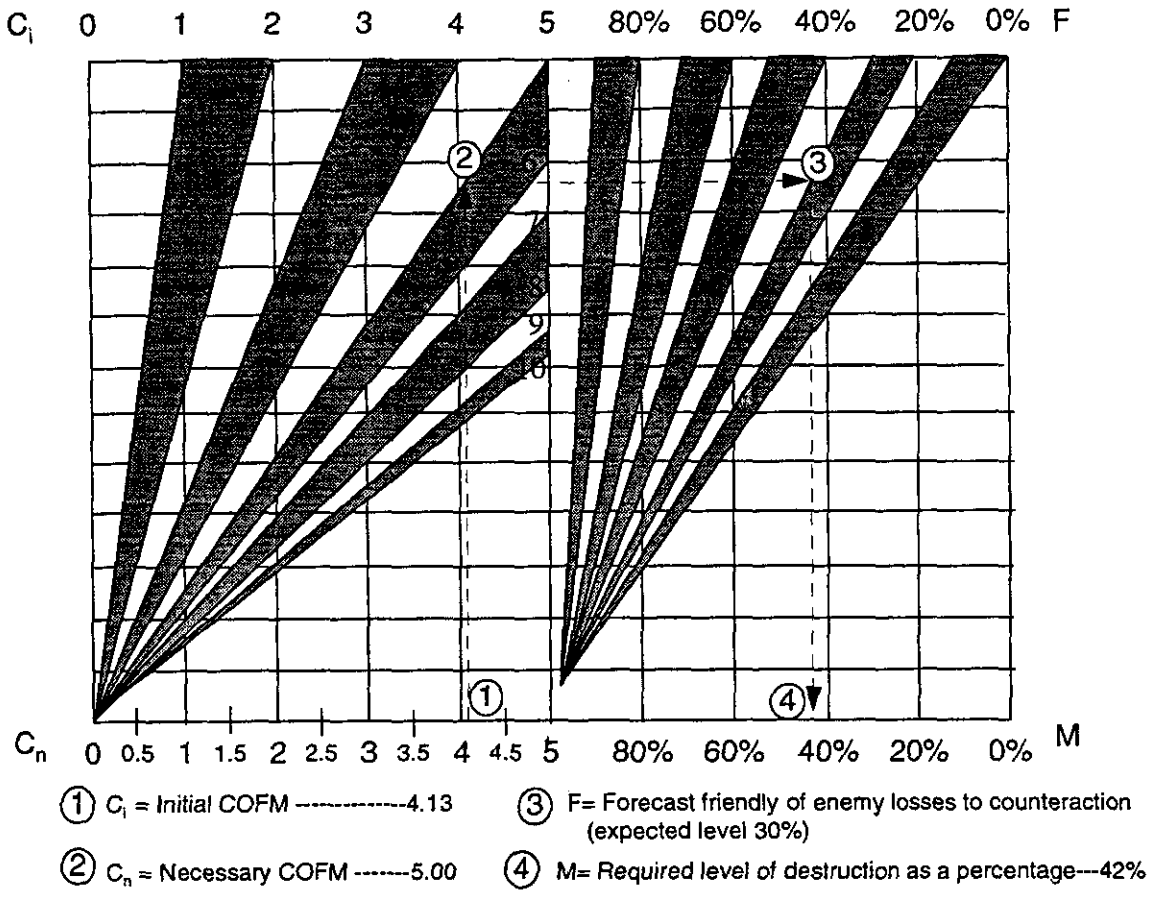


Figure 7-27. Nomogram for required level of destruction.

being modeled, the greater the potential for error. The **most efficient** methods are those which **combine physical and mathematical** attributes, by employing computer simulations and mathematical calculations in conjunction with exercises. This combination gives a fairly high degree of reliability for a fairly low cost.

Uses

The OPFOR considers operations research (and modeling in general) as the **branch of military science** which describes military operations in mathematical terms and provides **scientific substantiation** for decision making. When modeling combat operations, the OPFOR establishes norms and develops new mathematical methods. Along with historical combat experience, exercises provide current data for mathematical modeling. In turn, the OPFOR can test the accuracy and applicability of norms and calculations in exercises. In actual combat, staffs can use modeling in **estimating the situation**. Then they can model variants of a decision/plan before the commander makes his final **decision**. They can also keep the more promising nonselected variants "on the shelf" as **contingency plans**.

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Chapter 8
Reconnaissance

The OPFOR considers reconnaissance the most important element of combat support. All OPFOR commanders and staffs organize reconnaissance to acquire information about the enemy's nuclear weapons and other means of mass destruction; force disposition and intentions; and terrain and weather in the area of impending combat. This information is crucial to the planning process for OPFOR troop control system. Reconnaissance can decisively influence the outcome of a battle, operation, or campaign.

CONCEPT

Reconnaissance and intelligence collection are extremely important in OPFOR military operations. Since OPFOR strategists place significant emphasis on the destruction of enemy nuclear delivery systems and high-precision weaponry, and on conducting high-speed, continuous, combined arms operations throughout the depth of the theater, reconnaissance is even more important. 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 command's area of responsibility.

OPFOR operational and tactical concepts require continuous, timely and accurate intelligence on the enemy, terrain and the meteorological situation. Without it, not only will success elude the OPFOR, but failure could be much more expensive than it would be for enemy forces with their generally more cautious offensive concepts: so expensive, in fact, that whole OPFOR units and formations could be combat-ineffective. Thus, the OPFOR devotes substantial effort to all forms of reconnaissance. Commanders must confirm their plan only after thorough reconnaissance. Six principles of reconnaissance guide their efforts.

Principles

The OPFOR uses the following principles to guide its reconnaissance activities: continuity, aggressiveness, focus, timeliness, accuracy, and reliability. These intermingling concepts require reconnaissance units to satisfy all these principles simultaneously and continuously.

Continuity

The modern, fluid battlefield demands continuous reconnaissance to provide an uninterrupted flow of information under all conditions. This reconnaissance supplies 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) and remotely piloted vehicles (RPVs). OPFOR reconnaissance units attempt to maintain contact with the enemy at all times, and 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 OPFOR reconnaissance answer specific requests for information, but it must continuously collect

information on all aspects of the enemy, weather, and terrain so that it can meet future requirements. Units conducting reconnaissance and intelligence collection must maintain a high state of combat readiness at all times, 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 use maximum assets on the battlefield to ensure success. The OPFOR employs all collection resources with vigor and adheres carefully to the reconnaissance plan. However, it must be ready to alter the plan when its own initiatives or enemy actions so dictate. Although reconnaissance is the primary mission, all reconnaissance units train to defend themselves. Many are equipped and ready to attack, sabotage the enemy, or conduct reconnaissance by battle. The OPFOR stresses initiative, resourcefulness, and daring in the conduct of reconnaissance. OPFOR 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 whatever is necessary to fulfill the commander's intelligence needs.

Commanders must use all available means to seek information. The need for intelligence determines the techniques to use. These include clandestine infiltration by special-purpose forces and 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 often destroy high-value targets which they have found. Nuclear weapons, especially if readied for firing, are a mandatory target, but elements of reconnaissance-strike complexes, multiple launched rocket systems (MLRSs), and forward operating sites for attack helicopters or ground-attack aviation are also important.

Focus

The actions of reconnaissance units must serve the commander's needs and focus upon those elements and objectives critical to support and accomplish combat operations. Each level of command, from theater down to regiment, develops a comprehensive reconnaissance plan in accordance with the mission of the organization. Reconnaissance resources are always scarce; the commander must carefully define and limit the ground reconnaissance objectives. The commander must concentrate reconnaissance assets on the critical sectors of the battlefield.

The commander must be flexible to use reconnaissance assets effectively. He must redirect the reconnaissance effort and even alter the plan if the situation changes. The reconnaissance plan must coordinate all available assets into an integrated plan.

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, and to adjust his plans using

increased data automation to fit a changing battlefield situation.

Accuracy and Reliability

The OPFOR uses all available alternate reconnaissance means to verify the accuracy and reliability of the reported information. An OPFOR commander bases his decisions on accurate and timely reconnaissance information. Intelligence must portray the true enemy situation in spite of enemy camouflage, deception, and physically destroying sources. A multiplicity of overlapping acquisition helps defeat enemy countersurveillance. To maximize results, the commander's plan requires accurate information on enemy's size, location, equipment, and combat readiness. Accuracy is crucial to destroy nuclear delivery means and associated logistics, C^2, and communications. Reconnaissance-strike complexes and other high-value weaponry are also important.

Characteristics

In addition to the above six principles, the OPFOR reconnaissance assets must have these characteristics:

- **Flexibility.** The OPFOR must be able to switch priorities from one target to another without degrading the overall mission.
- **Survivability.** It must be able to sustain itself wherever it is operating, without relying on others for transport, subsistence, etc.
- **Security.** A reconnaissance asset should be as secure as possible during operations. This means operating in a manner which conceals activities and areas of interest at all times. Reconnaissance activity should not reveal the parent unit's plan of action. The OPFOR does not expect to conceal its reconnaissance activities entirely, but will attempt to mask the scale, specific objectives, and the area of concentration of the main reconnaissance efforts.
- **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

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.

Front

The *front* conducts reconnaissance to locate the most critical enemy targets including the following:

- Nuclear and high-precision weapons
- Air defenses.
- Intelligence gathering assets, especially those which are integral to reconnaissance-strike complexes.
- Higher headquarters and communications centers.
- General support artillery groups.
- Operational-strategic groupings and their movements.

Army

The army repeats these priorities and additionally 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 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.
- Air defense weapons' deployments.
- Location of brigade and battalion CPs.
- Nature and extent of obstacles, natural and manmade.
- Locations of field defenses.

STRATEGIC ASSETS

OPFOR's strategic reconnaissance acquires and analyzes information about the military-political situation in the individual countries and coalitions of probable or actual enemy nations, their armed forces, and military-economic potential. Strategic reconnaissance provides the information required by the highest military-political leadership (the Supreme High Command and possibly theater CINCs). The information on a potential enemy includes the following:

- Intentions and capabilities.
- Military, industrial, and economic potential.
- NBC capability (especially location, readiness, and plans for nuclear forces and strikes).
- Preparation and disposition of forces in the various theaters.

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 that OPFOR planners try to achieve. SPF provide reconnaissance and combat capabilities for both strategic and operational employment, normally well beyond 100 km in advance of the forward edge of friendly troops. See Chapter 17 for more information on SPF.

The intelligence chiefs of *fronts* and armies may utilize SPF. The OPFOR *front* has an independent SPF brigade. OPFOR armies may have a SPF battalion to operate

from 100 to 500 km beyond the forward edge. The divisional reconnaissance and REC battalion has a reconnaissance assault company of similar troops. These troops conduct both reconnaissance and long-range sabotage operations in the enemy's rear area with these priorities:

- Nuclear delivery means and high-precision weapons.
- Headquarters and other C^3 installations.
- Road, rail, and air movements.
- Airfield and logistics facilities.
- Air defense C^2.

Radioelectronic Reconnaissance

Radioelectronic reconnaissance is an integral part of the OPFOR concept of radioelectronic combat (REC). The overall scope of REC involves the interception and analysis of electromagnetic (radio and radar) waves, coupled with measures to disrupt or destroy the enemy's radio and radar assets. The OPFOR actually organizes the radio and radar reconnaissance establishment entirely separate from the REC structure. (See Chapter 13 for more detail on REC.)

Air

Aerial reconnaissance includes visual observation, aerial photography, UAV/RPV reconnaissance, and radioelectronic reconnaissance. Since most reconnaissance aircraft must penetrate enemy airspace, many of these missions are possible only when the OPFOR has established air superiority.

Fixed-Wing

The OPFOR air force has varying reconnaissance to meet specific needs. These units use high-performance aircraft to conduct aerial reconnaissance, including visual, photo, and radioelectronic reconnaissance missions. The latter category includes side-looking airborne radar (SLAR), as well as radar intercept and direction finding (DF). Aircraft on photographic reconnaissance missions normally fly at high speed and low altitude. They fly in pairs or singly, out to about 600 km beyond the forward edge of friendly troops. Aircraft with SLAR normally work at high altitude and may not need to cross the forward edge to achieve their objectives. Similarly, radar reconnaissance aircraft may not need to cross the forward edge in order to identify radar emissions and locate radars by triangulation.

Helicopters

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.

Satellites

The Main Intelligence Directorate controls satellite reconnaissance to support the OPFOR. These satellites provide unique capabilities of non-invasive 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 radar 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 utilizes 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 satellites orbit over foreign countries and the oceans. They may detect infrared signatures from intercontinental ballistic missile (ICBM) launches and search for unknown electronic signatures that may indicate the presence of new equipment

Radar Reconnaissance

The OPFOR uses several classes of radar reconnaissance satellites to play a major role in gathering information on electronic order of battle. These satellites locate command and control points, battlefield radars, and forward units. Some may also monitor transoceanic shipping and air traffic.

OPERATIONAL ASSETS

Operational reconnaissance supports *front* and army commanders. It acquires and analyzes information about an actual or probable enemy to prepare OPFOR formations to successfully conduct combat operations. Operational reconnaissance usually collects 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 a *front*.

Fronts and armies conduct operational reconnaissance using their own resources, plus those of their subordinate divisions and regiments. Operational reconnaissance collection assets include radar and radio intercept, aerial reconnaissance, and SPF.

Front

The *front* reconnaissance directorate coordinates the *front's* reconnaissance effort. The *front* may have the following reconnaissance organizations and assets.

Special-Purpose Forces

Each *front* has specially trained SPF troops to insert by parachute, helicopter, light aircraft or infiltration to conduct special reconnaissance. The *front* may have a SPF brigade with a varied structure. It may contain from 900 to 2,000 personnel and may deploy 80 to 100 SPF teams. Of course, the OPFOR commanders do not insert all of the assets at the outset to operate simultaneously and may retain some in the reconnaissance reserve.

Radioelectronic Assets

The OPFOR fields an impressive capability for radio and radar intercept and DF. A *front* may have a radio reconnaissance brigade. This brigade is also termed a radio and radar intercept and DF brigade or radiotechnical reconnaissance brigade.

Aerial Assets

The OPFOR *front* commander normally controls aerial reconnaissance but may allocate aircraft to army or division headquarters to support a particular operation or battle. The number, composition of units, and types of fixed-wing aircraft and helicopters can greatly vary. The OPFOR also

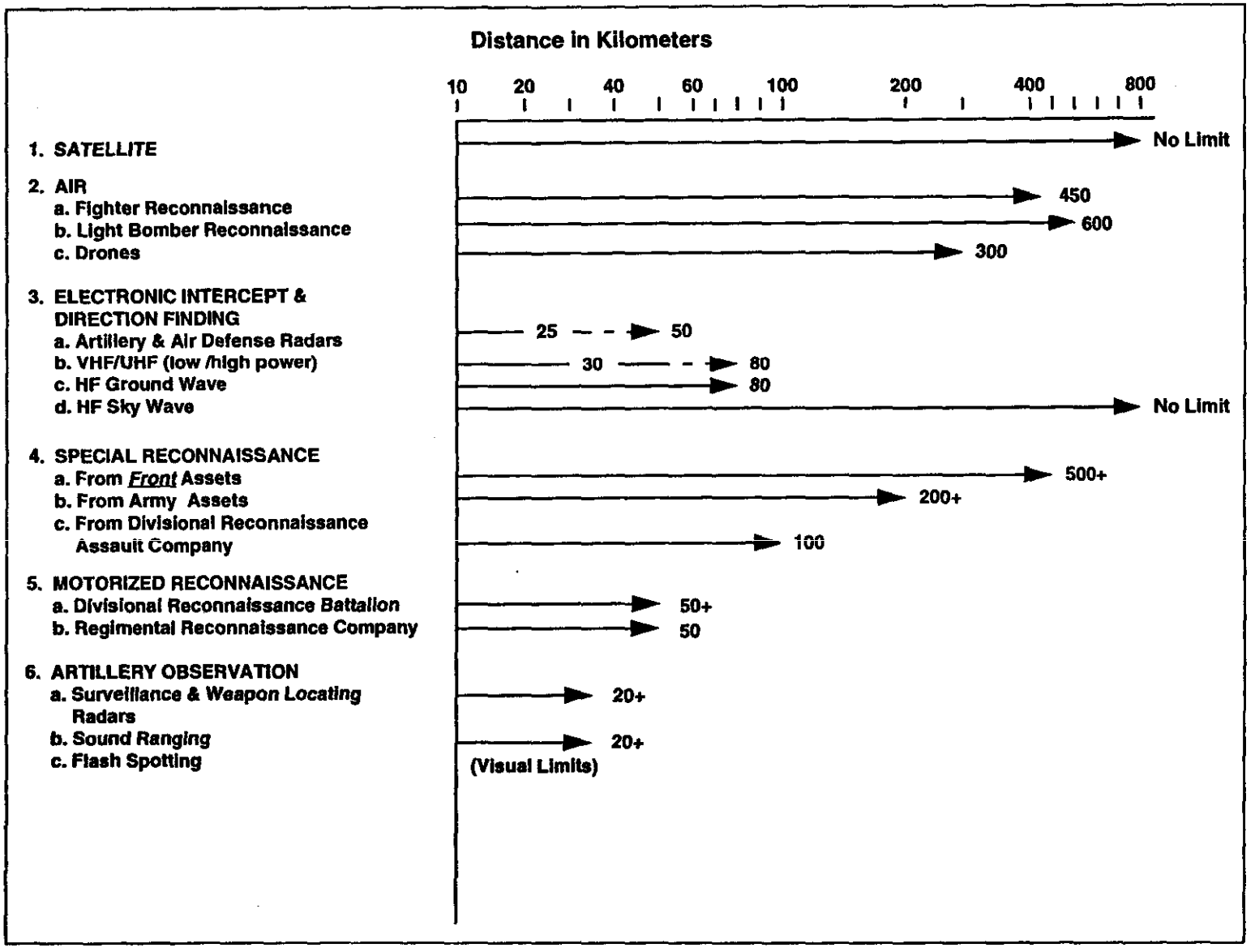

Figure 8-1. Effective ranges of OPFOR reconnaissance means.

employs drones, UAVs/RPVs to conduct aerial reconnaissance.

Artillery Assets

The *front* has an organic artillery reconnaissance regiment or battalion to obtain and transmit meteorological and topographic information. This unit's meteorological section is especially significant in NBC conditions. The sound-ranging systems can locate targets up to a range of 20 to 25 km but are not as effective in highly mobile operations. OPFOR artillery units have organic battlefield surveillance and countermortar/counterbattery radars to detect targets up to 20 km or more. each brigade of the *front's* artillery division also has an artillery reconnaissance battery.

NBC Assets

From *front* to regiment, chemical protection units and chemical reconnaissance subunits deploy numerous chemical and radiological reconnaissance patrols to detect, report on, and mark all contaminated areas. Helicopters also perform this mission.

Engineer Assets

OPFOR engineer units, from *front* to regimental level, have reconnaissance specialists to accompany maneuver unit reconnaissance elements. These engineer assets help OPFOR units and formations maintain a rapid rate of advance.

Medical Assets

The OPFOR conducts medical reconnaissance to identify areas potentially dangerous to health, including the presence of biological agents. Medical troops normally conduct their own reconnaissance of potential casualty staging posts, field hospital sites, and other medical facilities.

Airborne Forces

The airborne forces are elite troops whose primary purpose is to conduct active combat operations in the enemy's rear area. The airborne forces may conduct reconnaissance operations and relay information directly to the main command post to their headquarters as they operate against targets in the enemy's rear area.

Army

At the combined arms army or tank army level, the Chief of Reconnaissance (COR) heads the reconnaissance department (intelligence staff). It coordinates operational reconnaissance like the *front's* reconnaissance directorate described above. At army level, drones and RPVs also serve as aerial reconnaissance assets.

Forward Detachments

Armies, division, and even regiments 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

An army may have a SPF battalion. It can deploy 10 to 15 teams.

Drones

An army may have a drone squadron (or regiment). Each squadron has 4 drone launchers, and even older-model drones have a range of approximately 300 km. Drones normally fly at low altitude and subsonic speeds; unlike UAVs and RPVs, drones fly a set course.

Radioelectronic Assets

An army normally has a radio reconnaissance battalion. This is also known as a radio and radar intercept and DF or a radiotechnical reconnaissance battalion. some armies have a full radio reconnaissance regiment.

Artillery Assets

An army-level artillery brigade (or regiment) has an organic artillery reconnaissance battalion or battery. An army's rocket launcher regiment also has an artillery reconnaissance battery. 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 motorized rifle and tank units perform their own close reconnaissance tasks with organic resources and provide reconnaissance detachments of up to reinforced battalion strength. Leading units and subunits may also conduct reconnaissance by battle, attacking the enemy to determine his strength and disposition.

Special regimental reconnaissance troops carry out reconnaissance, operating respectively up to 25 to 30 km forward of their line of contact (or even more in faster-developing nuclear operations). They may operate out to a maximum distance of 50 km. Division-level reconnaissance troops also operate out to approximately 50 km; the airborne qualified reconnaissance assault company may be inserted up to 100 km deep without it's vehicles. Task-oriented reconnaissance groups, reinforced by engineer and NBC reconnaissance and often by motorized rifle and tank elements, also move forward. Generally, these groups endeavor to avoid combat in fulfilling their tasks, though they may direct artillery fire or air strikes. Typical missions include:

- Locating, identifying and reporting on enemy nuclear delivery means, Headquarters, communications centers, troop concentrations and movements of enemy units.
- Determining the strength and dispositions of the enemy's defenses; locating his boundaries and gun areas.
- Providing topographical information on routes to and also bypassing enemy positions and on lateral routes.
- Identifying the extent and depth of minefields and the types of mine employed and assessing obstacles and possible crossing points.
- Establishing the extent of zones of contamination.
- Identifying potential communications facilities and other sites for the use of their own forces.

The OPFOR reconnaissance staffs, with input from other branches of service and special troops, must prepare a detailed reconnaissance plan on a map with explanatory notes. This plan specifies--

- Organization of reconnaissance activities for a specific time.
- Goals and mission for each reconnaissance activity.
- Completion times.
- Reporting procedures.

Chapter 9
Artillery Support

OPFOR operations and tactics rest on the three basic principles of speed, maneuver and massed firepower. Modern technology has improved massed firepower and added to the capabilities of OPFOR field artillery. The integration of these assets into a unified fire support plan is a major task for the combined arms commander. It is also fundamental to the success of any operation. Artillery and integration of fire support are the focus of this chapter.

FIRE SUPERIORITY

OPFOR planners emphasize the superiority of firepower to neutralize enemy combat forces. They now believe there are increasing chances for a prolonged or even conventional-only war. If needed though, the majority of OPFOR artillery 152-mm and above have a nuclear capability. The OPFOR continues to upgrade its artillery to further this goal of massive fire superiority.

Nuclear Fires

OPFOR military doctrine distinguishes between fire support and nuclear attack. However, the two are closely related. Fire support units must plan and deliver nuclear strikes. They must also adjust the fire plan to account for the effects of nuclear strikes on the enemy. Such strikes greatly affect the tempo of combat activity. This, in turn, influences the type of fire support required; for example, mobile fire support systems, such as combat aircraft, may be more in demand. It also influences the kind of logistics support needed, such as fuel or ammunition.

Decisiveness of Fire Support

Integrated fire support is a decisive element on the modern battlefield. In the offensive, it is the principal means of achieving an advantageous correlation of forces and means (COFM) over the enemy. It can blast gaps in the defenses, disrupt, immobilize, or destroy enemy groupings in the tactical depth, and repel counterattacks. In 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, even though it may only be achieved for a limited time, at the crucial point in the battle.

ASSETS

In the OPFOR ground forces, the branch of **missile troops and artillery** is responsible for:

- SSMs from *fronts* to army/army corps.
- Field artillery (MRLs, field guns, gun-howitzers, howitzers, mortars 120-mm and larger, and 82-mm automatic mortar 2B9).
- Antitank (AT) artillery.

Motorized rifle units from division to battalion have their own organic field artillery: an artillery regiment to a division, an artillery battalion to a regiment, and a mortar battery to a battalion. The same is true of

the tank division except that the tank battalion has no organic artillery or mortar unit.

Front

A *front* contains one or two artillery divisions with several long-range gun, gun-howitzer, and howitzer brigades, a MRL brigade, and an AT brigade. A high-powered artillery brigade with heavy guns and mortars may provide additional support. A *front* also has at least one SSM brigade.

Army/Army Corps

The combined arms army (CAA) and the tank army (TA) each normally have an artillery brigade with five gun battalions (152-mm) and an artillery reconnaissance battery/battalion. The army also has an MRL regiment and an SSM brigade. The CAA has an AT regiment. An army corps has the same artillery assets as the CAA, except that it has only one battalion of MRLs, and both the artillery brigade and the AT regiment are smaller.

TROOP CONTROL

OPFOR commanders believe in exercising fire control at the highest possible level to ensure maximum flexibility, maximum effort at the decisive point, and logistics economy. What that level is depends on the phase of the operation. During a penetration, control is at army level. In an attack on broad frontage against weak opposition, it focuses at division level.

In pursuit, control may devolve to individual maneuver regiments. In defense, army would control a counterpreparation or support for an army counterstrike, while the rest of the operation may see the division as the main focus.

Commander of Missile Troops and Artillery

At regiment and above, an artillery officer who plans and coordinates artillery fires serves on the staff of maneuver unit commanders. His title is the chief of artillery at regiment and division level and the commander of missile troops and artillery (CMTA) at army/army corps and *front* level.

At the army/army corps and *front* 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/army corps and *front* commander. He can rapidly allocate missile and artillery assets.

Centralization

The OPFOR initiates and accomplishes fire planning at the highest possible levels. An army commander and members of his staff are usually at *front* headquarters before the *front* completes its planning. This prior knowledge lets the army staff begin its own fire plan before receiving the final *front* operations order and fire plan. The highest level of participating units coordinates and approves the fire plan. It 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 fires of all artillery units within a division are incorporated into the army or *front* fire plan. 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.

TARGET INTELLIGENCE

OPFOR artillery, from *front* down to division, has organic reconnaissance units which obtain and transmit meteorological and topographic information. In the *front's* artillery division, each artillery and MRL brigade has an artillery reconnaissance battery to serve this purpose. The *front* may also have an independent artillery reconnaissance regiment (or battalion).

At army/army corps level, the artillery brigade has an organic artillery reconnaissance battery or battalion; there may also be an independent artillery reconnaissance regiment or battalion. An army's rocket launcher regiment also has an artillery reconnaissance battery. The SSM brigades do not have reconnaissance assets, but rely on external intelligence support.

AIMS

OPFOR military planners stress that massed firepower is the key to success in combat. These fires can annihilate or neutralize, the enemy's combat capabilities. This enables OPFOR ground forces to attack successfully and quickly exploiting weaknesses caused by such overwhelming fires. Commanders try to accomplish their missions by fire and then by rapid exploitation with maneuver forces. The OPFOR continues to expand and upgrade their fire support systems to achieve massive firepower.

Fire Superiority

Fire superiority is a firepower advantage over the enemy in a given battle or operation. It is a unit's ability to execute its own fire missions successfully while suppressing enemy counterfire. The OPFOR believe that fire superiority is relatively assured for the side that--

- Opens fire first.
- Achieves surprise.
- Delivers highly accurate and effective fire.
- Masses fires effectively, either through maneuver by fire or maneuver of the fire support means.

To gain and keep fire superiority, an OPFOR unit maintains continuous fire on the enemy's fire support systems, especially on his artillery.

An extensive fire preparation in the offense can win fire superiority. This vital advantage should continue during the entire battle. In the defense, OPFOR fire planners may achieve fire superiority by quickly massing fires in selected sectors for a given period of time; for example, it 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 and artillery into a simultaneous attack throughout the enemy's defenses. The combined arms commander must increase the volume of air strikes and artillery fire to destroy enemy AT

systems during preparatory fires. This can also provide continuous fire support for the 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 OPFOR 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 assure 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 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 engineer works. 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 lose its combat effectiveness temporarily.
- 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. These fires put psychological pressure on enemy personnel in concentrated defensive areas, command posts, and rear installations. Successful harassment fire inhibits maneuver, lowers morale, interrupts rest, weakening enemy combat readiness.

ORGANIZATION FOR COMBAT

OPFOR 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. To achieve surprise and to limit susceptibility to enemy fires, OPFOR artillery tries to be short but violent in the offense and more prolonged in the defense. The OPFOR concentrate fires on critical points in the offense or disperses them throughout the sector in the defense. This requires not only a numerical superiority in artillery pieces but also rapid fire, long range, and mobility. Above all, the OPFOR stress the importance of thoroughly integrated fire and maneuver plans.

The regimental artillery battalion provides the flexibility and responsiveness required in a fluid combat situation. Numerous longer-range tube artillery and MRL battalions from division, army, and *front* 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 to perform their mission.

Allocation Procedures

The OPFOR has a carefully designed system to calculate artillery requirements in terms of weapons and rounds needed to produce a required effect on enemy targets. These norms are strictly adhered to. If insufficient artillery or ammunition is available to achieve the necessary result, the OPFOR does not fire less and hope for the best. Rather, it engages fewer targets, if necessary, adjusting the tactical, or even operational plan. Alternatively, it may prolong the preparatory fire to take in more targets.

OPFOR combined arms theory calls for artillery support to regiment- and division-sized battles that exceed the capabilities of organic artillery resources. To do this, the OPFOR uses organic and attached artillery to form **artillery groups**. A higher headquarters allocates artillery to a maneuver force to execute a given operation:

- *Front* and army/army corps normally allocate artillery battalions according to the importance of the army/army corps and division missions.
- A division may allocate some of its organic and attached artillery to leading regiments.
- A regiment may attach some artillery to leading maneuver battalions.
- The MRRs in a division's second echelon normally retain their organic artillery.
- The army may temporarily attach second-echelon divisional artillery to first-echelon divisions.

The OPFOR does not normally reinforce second-echelon divisions, regiments, and battalions with additional artillery until the commander commits them.

Artillery Groups

Temporary, mission-oriented groups are a command and organizational structure that ensure flexibility in concentrating artillery fire. The goal of forming is to provide ample fire support to the maneuver commander for the conduct of an operation. Army, corps, division, and regimental artillery groups provide continuous artillery support to maneuver commanders with the required degree of centralized control. The groups assets are positioned to best support the commanders concept of maneuver.[1] Artillery groups usually consist of a least two battalions of similar or mixed type units: field guns, howitzers, gun-howitzers, and MRLs. A designated commander and staff provide the group's troop control. The commander and staff of the artillery regiment or battalion usually form the core of the group.

Army Artillery Group

The army artillery group (AAG) is formed from *front* assets allocated to an army and the army's own assets, less any decentralized to divisions. The *front* commander usually distributes *front* artillery assets to committed armies in proportion to the importance of the assigned tasks. When an army commander receives *front* artillery assets, he decides which artillery he will allocate to his first-echelon divisions. He bases his decision on the concept of the operation.

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[1] 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 are physically located in such a small area.

The division executing the major army mission gets the most artillery.

The AAG may use the remaining artillery battalions for the primary counterbattery mission of the army. The group comprises largely the longer-range systems. Its primary tasks are counterfire and the engagement of deep targets such as nuclear weapons, headquarters, air defenses, and reserves. It can also maneuver concentrations of fire to help main-axis divisions to advance.

An army could have 4 to 8 battalions of **tube artillery** for this purpose.[2] If the number is closer to 4 battalions, the army would form one AAG; with closer to 8, 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 (e.g., divisional support, counterbattery, or destruction of fortifications). An AAG may not be formed in fluid operations or if the army has a very wide frontage.

Army Group of Rocket Artillery

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 the *front*-level MRL brigade, the army commander would form an army group of rocket artillery (AGRA). These 3 to 7 battalions in the AGRA do not include any SSM units. With closer to 7 battalions, and army might form **two AGRAs.** An AGRA is normally reserved 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.

Division Artillery Group

Divisions on a main axis would be augmented from army resources, either with *front* or army artillery or units taken temporarily from second-echelon/ reserve divisions. The division commander allocates this artillery, and the division's own organic regiment, less any units decentralized to regiments, to form a division artillery group (DAG). The division may organize more than one DAG if necessary due to span of control, number of battalions available, and assigned missions.[3]

The DAG may vary in size from 2 to 4 battalions. With as many as 6 to 8 battalions if on a main axis, a division would normally form **two DAGs.** The mission of a DAG is to provide general support artillery fires for the division. In the offense, support is concentrated on the regiment that is making the best progress. In defense, it is used to bolster the position of regiments that are the main targets of attack. The DAG also assists the army with the counterbattery mission; if capable, it may perform this mission itself.

Regimental Artillery Group

The regimental artillery groups (RAGs) provide fire support to first-echelon maneuver regiments. When a meeting engagement is anticipated, or during penetra-

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[2]. An army corps would form a **corps artillery group (CAG)** to serve the same function, but on a smaller scale. It might comprise 4 to 6 battalions and include the corps' organic MRL battalion.

[3]. If an independent motorized rifle brigade replaces a division in an army/army corps structure, it may form a **brigade artillery group (BrAG).**

tions, leading regiments receive additional resources to form strong RAGs, as will regiments engaged in pursuit or independent missions. A RAG has artillery battalions from organic, attached, and supporting non-divisional artillery units. Normally, RAGs have 2 to 4 artillery battalions and, temporarily, the numerical designation of the supported regiment. The RAGs engage targets that hinder the advance of the attacking forces.

Regrouping

Wherever possible, changing situations are met 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. For instance, on the commitment of a second echelon, artillery may be detached from a "tired" formation and used to reinforce the fresh one. The centralization of logistics support at *front* and army/army corps level makes substantial regroupings relatively quick and easy. Artillery groups established for the defense normally remain intact until the offense resumes.

Higher headquarters form or dissolve DAGs and RAGs in accordance with plans and the tempo of operations. They generally reorganize or dissolve the groups formed to support the offense when supported maneuver units enter the exploitation phase. The RAG is normally released from firing preparation targets first, followed in turn by the DAG. When higher headquarters dissolves these groups, army and *front* assets may revert to centralized control; thus they can provide long-range reinforcement for divisional and regimental artillery.

Through his chief of artillery, the division commander may assign specific artillery units to support designated maneuver units. In a fluid situation, such as in exploitation or pursuit, lead elements will have artillery support. The division commander retains the ability to form new groups as the situation may require. He uses the division command net to order these changes.

Reconnaissance-Destruction Complexes

OPFOR technological advances in reconnaissance, target acquisition, and weapon systems have produced a new strike **concept** in fire control and support capabilities. This concept incorporates these advances into a greatly accelerated strike system known as reconnaissance-destruction complexes (RDC). Using advanced reconnaissance assets and modern technology, this automated system delivers long-range air and artillery fires even more quickly. The OPFOR would use it to attack enemy targets in real time or near-real time. These targets include:

- Long-range nuclear and conventional weapons.
- C^2 facilities.
- Long-range minelaying capabilities.
- Air defense assets.
- Weapon guidance systems.

The OPFOR wants to neutralize enemy high-precision weapon systems to maximize it's own offensive capabilities. In order to locate similar enemy systems, the OPFOR may use--

- Sound ranging.
- Advanced radar reconnaissance aircraft.
- Drone systems/RPVs/UAVs.
- Ground surveillance radars.
- Weapon-locating radars.

- Ground-based radio and radar direction-finding systems.

There are two types of reconnaissance-destruction complexes that differ mainly in the levels of command and types of weapons.

Reconnaissance-Strike Complex (RSC)

The **operational-level** commanders control the **reconnaissance-strike complex**. They target enemy nuclear delivery systems such as air and artillery assets. In order to attack enemy targets, these complexes may use MRLs with antipersonnel submunitions and mines, SSMs with terminally homing submunitions and mines, tactical aircraft, and helicopters.

Reconnaissance-Fire Complex (RFC)

The **reconnaissance-fire complex** has tube artillery or MRLs under the control of a **tactical** commander. The complex would attack similar enemy systems. The OPFOR preselects the artillery units in the RFC while planning offensive and defensive operations. The reconnaissance units locate targets which have priority over the preplanned targets of the RAG or DAG. The RFC staff calculates the firing data and sends it to the firing units. The reconnaissance unit observes the results and controls any additional necessary fires. The artillery units in the RFC remain as long as required. When these units complete the requirements, the senior artillery commander returns them to their parent units, RAG or DAG.

METHODS OF FIRE

The OPFOR uses various fires on 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 and/or destruction of enemy artillery batteries. Combat with enemy artillery is one of the OPFOR artillery's most important missions. It enables OPFOR ground forces to achieve fire superiority on the battlefield. Combat with enemy artillery requires more than counterbattery fire. It requires the destruction of the C^2 centers as well as his artillery. It also requires the cooperation of the other combat arms and combat 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 objectives and troop formations. Its intention is to destroy them in a short period of time or to redistribute fires to destroy several targets simultaneously. The method also may shift the main combat effort from one direction 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 the defenses, including gaps created by enemy nuclear strikes.
- Seal off enemy penetrations.
- Assist neighboring units.
- Support a unit that is defending all directions.

Wide use of maneuver by fire helps the defending unit having fewer weapons. It also enables the defending commander to achieve fire superiority at the critical time in decisive sectors. The defensive 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--

- Type of target; for example, equipment or personnel, defensive positions, hard- or soft-skinned vehicles, point or area, and disposition.
- Type, caliber, and number of weapons engaging the target.
- Range to the target.
- Whether the target is under direct observation during the artillery attack.
- Types of ammunition available.
- Time available to prepare for firing.

Ammunition Expenditure

The OPFOR uses a general table of **ammunition expenditure norms** as the basis for artillery fire planning. (See Figure 9-1.) This table does not consider time. These norms might apply to any of the methods of fire described above. These norms are based on unobserved targets at a range of 10 km or less from the artillery. The table also assumes that batteries have occupied of their firing positions and are laid based on survey data. Finally, the meteorological data used should be no more than 3 hours old.

The ammunition expenditure rate decreases by 25 percent when the artillery uses observed fire or adjusts from a known point. 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. An example of ammunition expenditures is given below.

To neutralize a platoon in a hasty defensive position covering 6 hectares, a 122-mm howitzer battalion would have to fire 900 rounds weighing 19,800 kg. To neutralize a self-propelled (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 formation in defense presents a multiplicity of such targets. For example, a two-battalion defense to be penetrated would consist of 60 to 70 targets requiring between 30,000 and 40,000 rounds for neutralization, 2,500 to 3,000 tons, depending on caliber and the effectiveness of target acquisition.

The massive level of expenditure implied in this example suggests that the OPFOR can expect to run into logistics problems if it has to mount frequent attacks

TARGET	REQUIRED EFFECT	RIFLED BARREL							MORTARS				A
		CALIBER IN MILIMETERS											
		76	85	100	122	130	152	203	82	120	160	240	
(Missile) Launcher	Target annihilation	800	720	540	300	280	200	70			140	60	51
Battery (platoon) of armored self-propelled artillery (mortars)	Target neutralization	1000	900	720	450	360	270	120		450	220	120	56
Battery (platoon) of unarmored self-propeled or dug-in towed artillery (mortars)	Target neutralization	540	480	360	240	220	180	100	400	240	160	100	40
Battery (platoon) of towed artillery in the open	Target neutralization	250	220	150	90	80	60	30	180	90	40	20	15
SAM Battery	Target neutralization	250	240	200	150	150	100	60					
Signal and radar vans or radar control point in the open	Target neutralization	420	360	280	180	180	120	60	350	180	80	40	30
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	100	50	32
Dug-in troops and weapons, tanks, infantry fighting vehicles, and APCs in hastily prepared defensive positions, and assembly areas	Neutralization of 1 hectare of target area	400	350	250	150	150	110	45	300	140	85	45	24
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	8	4	10
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	100	50	32
Command post in the open (or mounted in vehicle)	Neutralization of 1 hectare of target area	120	100	80	50	50	40	15		25	20	10	30
ATGM, antitank gun or other individual target in the open	Target neutralization	250	240	180	140	140	100	90	240	140	80	35	

Figure 9-1. Ammunition expenditure norms.

on a defending enemy rather than fight a series of meeting engagements and battles. Even in the latter case it can expect problems. The OPFOR possesses a large number of ammunition vehicles, but these pose traffic control problems and limit the mobility of their parent formations/units. A further problem is posed by a defender exploiting his mobility. If the OPFOR anticipates the need for considerable preparation, it must preposition the required ammunition to conserve unit stocks. Should the defender then move, perhaps from a false forward edge, there can be a problem in recovering the ammunition, particularly if it has been depalletized and stacked on the gun lines.

Unit of Fire

The **unit of fire** is a fixed number of rounds per weapon, or weapon system, for planning and accounting purposes. It is not an authorized allowance or a daily expenditure rate; nor is it similar to the U.S. basic load. A basic load is a quantity of nonnuclear ammunition that is authorized and required to be on hand at all times. This is stated in number of rounds or weight.

By contrast a unit of fire is the basic factor to **plan ammunition requirements** in each action. It is established by directives based on combat experience. The weapon unit of fire refers to the number of rounds required for a particular weapon to accomplish a hypothetical mission. The ammunition that is actually located with the weapons system consists of multiples (or fractions) of the unit of fire. Ammunition distribution and stockage also use units of fire as a basis of measurement.

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. This plan is coordinated and approved at the level of the highest participating formation. In an army attack, the army commander lays down timings and specifies the engagement priorities. His CMTA then allocates targets and timings to the AAG, AGRA, and DAGs. With the fire units, time, and ammunition remaining, the divisional commanders and their chiefs of artillery apportion tasks to their DAGs and RAGs. Regimental commanders may then use what is left for targets of purely regimental interest.

Fire Planning

Although the CMTA carries out basic fire planning, senior commanders often give artillery orders and amendments to orders while moving. Units initially engaging the enemy conduct detailed fire planning. As the battle 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 at a greater distance to be in the best location to support the battles with fire. The single, coordinated fire plan includes nuclear fires, chemical strikes, conventional fires, fixed-wing aircraft, and fire support helicopters. Fire preparations precede major offensive actions, whether or not nuclear weapons are to be used.

Target Priorities

The priority given to each target 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. The approximate order of importance is:

- Nuclear delivery means and high-precision weapons.
- Conventional artillery and air defense systems and mortars.
- Defensive strong points, especially ATGM and tanks within them.
- Command posts, OPs, communications and radar facilities.
- Reserves and logistic support units and routes used by the units moving up to counterattack.

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 is accomplished by the continuous supporting fire of artillery through the depth of the defense. The duration of these fires varies with circumstances. There are four stages in the fire support of the offense. (See Figure 9-2.) Each phase may be repeated for the commitment of a subsequent echelon.

- **Phase I**: fire support for the movement forward.
- **Phase II**: fire preparation for the attack
- **Phase III**: fire support of the attack.
- **Phase IV**: fire accompaniment.

OPFOR fire planning to support strategic operations in a theater is very complex. It includes air, air defense, *front*, 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 is trying to achieve this centralized fire planning and to execute an **integrated fire destruction of the enemy**.

Fire Support for the Movement Forward

Phase I applies to conventional support of any uncommitted force moving toward commitment against the enemy. This phase shows the OPFOR's concern with the enemy's long-range attack capabilities. This first phase covers a unit's movement from the assembly area to the line of deployment against the enemy forward edge of defense; this is where the attacking unit shifts from march to prebattle formation. This phase may also cover a follow-on force's movement forward before commitment.

It 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 high-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.

This phase may begin more than an hour before the attacking force reaches the enemy's forward edge of defense. The aim is to protect the advancing columns by destroying or harassing enemy systems that could interfere. Fire for this phase is likely to be conducted largely from temporary fire positions, with the artillery shifting to its main positions for the preparatory phase. It ends when the maneuver units are ready to deploy into battalion columns.

Fire Preparation for the Attack

Phase II, fire preparation, 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 him 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 weapon systems, C^2 elements, and troops in the tactical and immediate operational depth of the enemy's defenses. 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 OPFOR 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 being used for the preparation.
- The number and type of fire preparation missions allocated to missile troops and aviation by higher headquarters.
- The role of nuclear 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. This final battle formation is usually within 1,000 meters 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:

- Nuclear and chemical delivery systems.
- High-precision weapons.
- C^2 centers.
- Air defense equipment.
- Artillery and mortar batteries.
- AT 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.

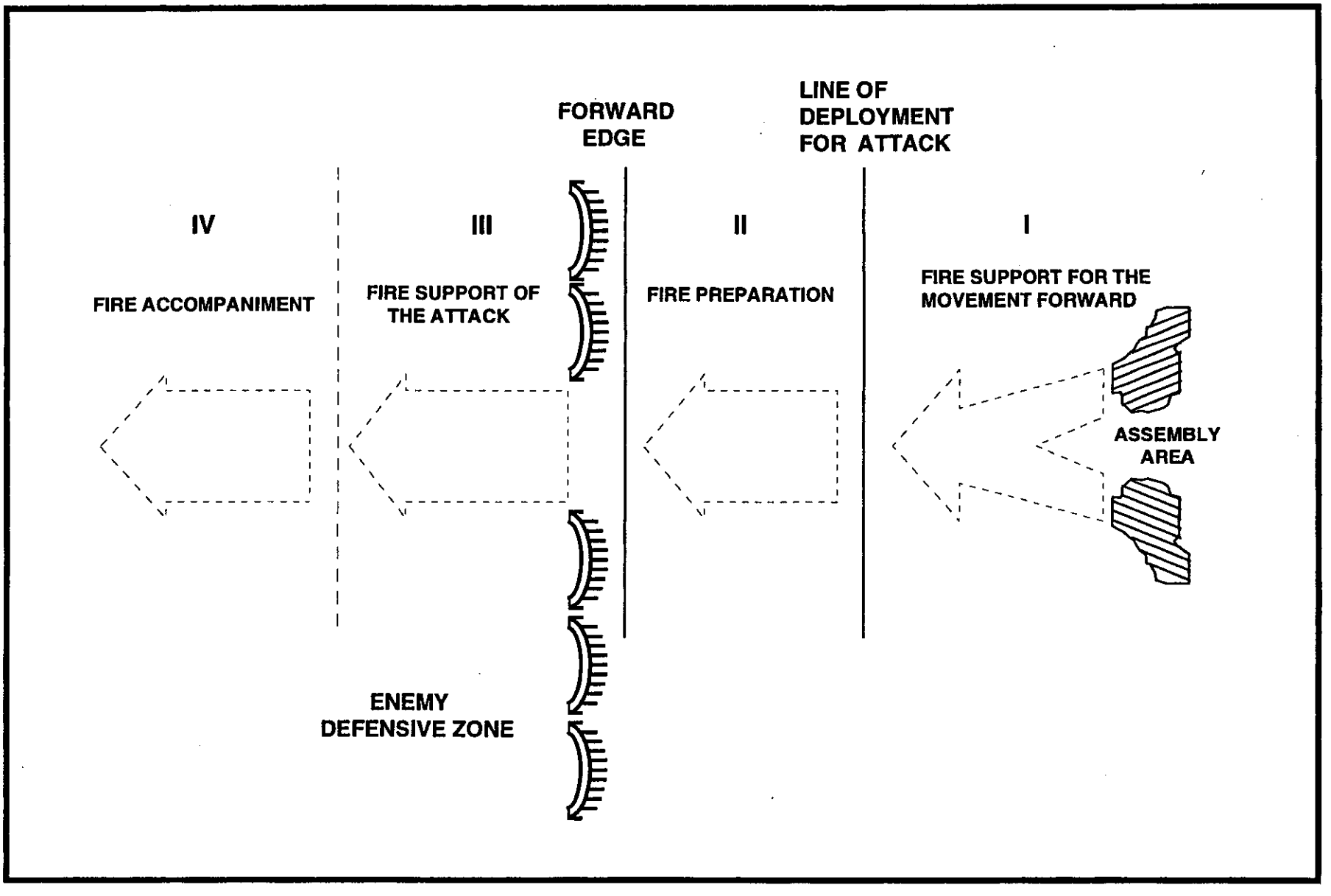

Figure 9-2. Phases of offensive fire support.

Fire Support of the Attack

Phase III is fire support of the attack. This phase starts when the supported maneuver units cross their final coordination line and deploy into battle formation. It continues with their advance through the enemy's first-echelon brigade defensive positions. The army, division, and sometimes the regiment plan and organize the fire support of the attack phase. It is vital that the enemy does not identify the transition from preparatory 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, forward fire is preplanned on sequential lines moving progressively deeper into the enemy's deployment, directly in front of, and on the flanks of, attacking OPFOR 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 that the fire of the artillery and the advance of the maneuver units do not get out of phase. This also hastens the forward movement of assaulting tank and motorized rifle troops. 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 weapon 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 line of attack to a safety line, determines the length of time artillery fires 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 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.

Fire Accompaniment to Depth of Enemy Defense

Phase IV, fire accompaniment to the depth of the enemy's defense is the fourth and final phase. It 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:

- Nuclear delivery systems.
- High-precision weapons.
- Enemy aircraft on the ground.
- Artillery units.
- C^2 centers.
- AT weapon 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. During this phase, 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 fires on the counterattack force as it advances and deploys for the attack. It does this in conjunction with tanks and motorized rifle troops. During pursuit, accompanying artillery fires on the withdrawing enemy and destroys or neutralizes enemy units left behind to cover the withdrawal.

In Phase IV, artillery units fire various types of missions, depending on the tactical situation. If the attackers encounter an enemy strong point in the depth of the enemy's defenses, the supporting artillery attacks the target with a fire concentration or 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, to force a water obstacle, or to 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 no longer content merely to deliver the normative number of rounds to the target. They recognize that, under current conditions, the **density** of fire is important (i.e., the number of rounds per minute landing on each hectare). In several circumstances, a high density of fire, 24 to 30 rounds per minute per hectare minimum, is desirable, for the following reasons:

Surprise

The first salvo is the most destructive and should therefore be large. The OPFOR believes that the greatest returns are achieved in the first 3 to 5 minutes of any fire mission, and one third to one-half of the ammunition allocated to the target should be fired in that time.

Accuracy

In a mobile, fast-developing battle, 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 lose both time and surprise.

Armored Mobile Targets

Tanks and APCs or SP guns can move out of a fire concentration in 4 to 5 minutes. Therefore the required number of rounds to neutralize or annihilate a target must be delivered in less than that time.

Enemy Counterbattery

The enemy may locate OPFOR artillery as little as 2 to 3 minutes after it opens fire, and deliver counterbattery fire in a further 4 to 7 minutes. Short engagements can lessen OPFOR 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 the maneuver troops close with the enemy. Therefore, it is important to deliver short, high-density fires.

Density Norms

The OPFOR plans to achieve certain **density norms** for artillery. These norms depend on the tactical situation. For example, even under nuclear-threatened conditions, the OPFOR wants high numbers of tubes per kilometer of frontage to penetrate well-prepared enemy defenses. Some **average guidelines** for desired densities are as follows:

- **Attack of a well-prepared defense, in the direction of a main attack:** 60 to 100 tubes per kilometer of frontage.
- **Attack on a defense in contact with the enemy in the direction of a main attack:** 60 to 80 tubes per kilometer of frontage.
- **Attack on a supporting axis:** 40 tubes per kilometer of frontage. These densities include all calibers of guns, howitzers, and mortars. Densities computed in number of tubes may increase by 50 to 75 percent when the fire planners include MRLs.

To reduce mission times and increase fire densities, the OPFOR has adopted both technical and organizational solutions. Performance has been improved by increasing rates of fire, introducing improved rangefinders, survey, and meteorological forecasting, eliminating the need for adjustment. Even more important has been the allocation of more artillery to each mission. The battalion is now the basic fire unit and now engages targets previously engaged by batteries. Some missions, especially counterbattery fire, will be fired by two or even three battalions. Figure 9-3 shows the desired minimum densities of weapons at the operational level.

Survivability

Until recently, the **time** required for mission accomplishment was not a major consideration in OPFOR artillery planning; it was only a factor in coordination with supported maneuver units. The OPFOR now recognize the need to move quickly after firing artillery missions. They have incorporated this into their training and maneuvers. The OPFOR now wants to drastically reduce the time required for fire missions. The following are the most important reasons for this:

- **Target mobility.** Targets on today's battlefield are normally armored and highly mobile. They can relocate within minutes from the time they come under fire.
- **Increased effectiveness of fire.** The same ammunition allocation is much more effective against a target when units fire the entire allocation within a short period of time. This is especially true for the initial fire assault of a long fire preparation and for short, intense fire preparations.
- **Increased survivability.** The OPFOR believes that enemy target acquisition capabilities have improved considerably. This allows

Division Breakthrough Sector				
Sector Width	Dutch/ Belgian	U.S.	German	UK
4 km	130	120	115	110
6 km	120	115	110	105
12 km	110	105	100	95

NOTES:

a. Number of weapons includes MRLs, guns howitzers, and mortars, including those used for direct fire. It includes weapons from second echelons or reserves, used to intensify the preparation.

b. Norms are based on achieving neutralization (i.e. 25-30% destruction) of enemy forces in sector.

c. If artillery strength to achieve the norm is lacking, air power may be used to make up the shortfall. This, however, can occur to only a limited extent,since the primary need is for sustained firepower. The figures for attacks on the main axis are arrived at by counting up the number of targets to be engaged, the number of rounds required, and the time available to fire those rounds. For instance, a penetration could initially face two defending battalions and their supporting arms. These would present approximately 60 to 70 targets to be engaged by direct fire, about half of which would have to be hit simultaneously. Artillery strengths can be reduced somewhat if air power is available to compensate or if the enemy is overstretched and thus offers fewer targets.

Figure 9-3. Density of artillery per kilometer of frontage required for a defending enemy.

enemy artillery to acquire and fire on OPFOR artillery batteries within 4 minutes from the time the first OPFOR round is fired.

Reduced Mission Times

As a result of this perception of the threat, OPFOR artillery planners goal is to reduce mission times to 4 minutes. This is especially important for the accompaniment phase. However, in a large-scale attack, the preparation and support phases may often be longer. When the enemy is defending and the OPFOR has overwhelming fire superiority, it feels its own vulnerability to enemy counterbattery fire is greatly reduced.

Increased Density of Fire.

When the rounds strike a target over a shorter period of time, the result is an increase in the density of fire on the target. In OPFOR artillery computations, density of fire is measured by the number of rounds striking a hectare of the target area in one minute. Apparently, the OPFOR have not yet formally established minimum density "norms"; however, 25 to 30 rounds per hectare per minute is the minimum acceptable density against most types of targets. Densities might even be higher for a moving target. The OPFOR considers quick, dense artillery fire to be extremely effective in annihilating or neutralizing enemy defenses,

especially ATGM positions. They think it is also effective in annihilating or neutralizing moving targets, because the effect is so intense and sudden that the target is unable to escape or take cover. The OPFOR is developing technical, operational, and organizational ways to increase fire density. Listed below are some of its current initiatives:

- **Technical:**
  - ◊ Increase the rate of fire newer generations of artillery weapons.
  - ◊ Use improved rangefinders to reduce adjustment time on the target and to eliminate the need for registration for many types of missions.
  - ◊ Use electronic computers to reduce mission computation time.
  - ◊ Increase availability of more effective munitions to achieve results with fewer rounds.
- **Operational:**
  - ◊ Fire accurately from emergency occupied positions.
  - ◊ Fire for effect without registration.
  - ◊ Use entire battalions to fire missions that previously were fired by individual batteries.
- **Organizational**
  - ◊ Use more artillery to accomplish the same mission. This is the reason for designating the battalion as the basic firing unit, rather than the battery
  - ◊ Expand and modernizing divisional and non divisional artillery units.
  - ◊ Provide more large-caliber and long-range artillery weapons.

Vulnerability to Counterbattery Fire

The OPFOR sees its artillery as being very vulnerable to enemy artillery and aircraft. This is particularly true of towed weapons. Of course, vulnerability can be decreased considerably by varying deployment patterns, digging weapons in, and shifting fire units frequently. The problem is that all these measures slow down artillery response times and affecting the continuity of support.

Equipment and Organizations

The OPFOR is now introducing qualitative and quantitative changes in field artillery equipment and organizations. At the same time, it is also revising its deployment doctrine. The density of artillery fire support assets in combined arms formations has greatly increased. Improved munitions, SP weapons, electronic fire direction computers, and improved target acquisition assets have enhanced the mobility.

Density of Fires Versus Weapons

At the tactical level, the OPFOR apparently computes combat power ratios on the density of artillery weapons. They currently emphasize density of fire rather than weapons. The artillery battalion is now the basic tactical and fire unit. Two or three battalions now fire missions that a single battery previously fired. Artillery units practice conducting fire missions without first firing registration; they adjust fires with ground surveillance, counterbattery radars, and sound-ranging equipment. Batteries receive two or three alternate firing positions within a battalion firing position and should reposition after one or two fire missions.

Movement

In the offensive, an artillery battalion leapfrogs its batteries forward in bounds of some 3 to 4 km. By day, it takes a towed howitzer battery about 30 minutes to move, from receipt of the movement order until it is ready to fire the first round in its new position. At night, the same move requires about 40 minutes. (See Figure 9-4.) On the average, a battery requires up to 10 minutes and an artillery battalion up to 20 minutes to leave a location and move out into a march column.

The senior commander usually determines the length of a day's march column and the average speed. An artillery march column has 25- to 50-meter intervals between vehicles and 100 meters between batteries. A mixed column of tracked and wheeled vehicles normally moves at a speed of up to 25 km per hour at night, if possible. The commander heads each subunit. During the day, the column may have an average speed of 25 to 30 km per hour. An artillery battalion occupies some 1.5 to 2.5 km of road space, depending on vehicle spacing.

Numerous small attacks may reduce the ability of towed field artillery to keep up with maneuver units if these attacks require the artillery to deploy. There also are problems in moving artillery pieces across water obstacles. Normally the OPFOR uses amphibians or ferries for towed artillery; or they wait for a bridge before the bulk of field artillery crosses. Artillery often must wait until combat engineers have cleared a lane through minefields.

Continuity of support becomes difficult during a high-speed advance, due to the constant requirement for artillery subunits to redeploy. The problem is aggravated when water obstacles or minefields have to be passed. Towed artillery is incapable of giving effective support once the rate of advance exceeds 6 to 8 km per hour. In mobile operations, the accuracy of fire must suffer from the lack of time to survey in its weapons properly, and possibly from the difficulty of updating meteorological information. The spread of SPs and automation will go some way towards alleviating this problem, but it will not solve it.

TIME REQUIRED FOR ARTILLERY TO MOVE (MINUTES)						
Fire Unit	Evacuation of Movement		Occupation of Fire Position		Fire Position (per km)	
	By Night	By Day	By Night	By Day	By Night	By Day
D-30 Battery	5 to 7	9	3	3 to 5	10 to 12	18
D-30 Battalion	11	14	3	3 to 5	23	32
D-20 Battery	10	13	3	3 to 5	12	18
D-20 Battalion	11	14	3	3 to 5	23	32
BM-21 Battery	3 to 5	6.5	3	3 to 5	10 to 12	18
BM-21 Battalion	7	9	3	3 to 5	23	32
120mm Mortar Battery	5.5	8	2.5	3	12	18

Figure 9-4. Artillery movement times (minutes).

These problems have diminished considerably for units equipped with SP howitzers. First of all, the 122-mm SP howitzer is amphibious. Both the 152- and 122-mm SP howitzers have excellent mobility on the road and cross-country. The 152-mm SP howitzer requires only 20 percent less time than an equivalent towed battery to move from one position to another and be ready to fire.

Types of Fire

During the offense, OPFOR artillery may conduct the following types of fire:

- Fire assault.
- Controlling fire.
- Fire concentration.
- Massed fire.
- Successive fire concentrations.
- Rolling barrage.
- Direct fire.

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 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:

- The area/nature of the target to be destroyed.
- The number of rounds allocated for its annihilation/ neutralization.
- The range to the target.
- The number of tubes available.
- The types of ammunition available.
- 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 2 to 4 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. It can neutralize a moving target or a target deployed in the open. Controlling fire may fire against the target in the time intervals between fire assaults.

Controlling Fire

OPFOR 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 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. This type of 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. OPFOR artillery uses fire concentration against the enemy's--

- Troop concentrations.
- Strongpoints.
- Artillery batteries.
- C^2 centers.

The dimensions of the fire concentration target area depend on the fire mission and the firepower of the artillery subunit 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. This depends on factors such as target disposition and whether the target is "observed."

Massed Fire

OPFOR artillery masses fire against an important enemy objective with all or most of a given formation's artillery. The goal is to destroy it 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 meters, 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 meters, the target has subdivisions of numbered targets or target sectors. The fire planners designate target or target sectors to the assigned artillery groups or subunits to annihilate or neutralize with fire concentrations. The artillery units fire the mission simultaneously to the extent possible.

Successive Fire Concentrations

OPFOR 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 suppression or destruction of specific targets, or target groupings: 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/counterstrikes in the defense. Successive fire concentrations may be single or double. In a single successive fire concentration, the artillery unit fires initially on the single line of targets closest to the attacking troops. It 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 two artillery groups to fire simultaneously.

The first group fires on the line of targets closest to the 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 300 to 1,000 meters 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. Attacking troops normally deploy into a special battle formation at the line of attack. Here, preparatory fires become supporting fires. The time required for troops to travel from here 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 regiment or battalion commander gives a signal to shift fire to each subsequent line of concentration. These successive fire concentrations move against enemy targets.

Rolling Barrage

The support phase of the attack normally uses the rolling barrage. The rolling barrage is a continuous curtain of fire. It successively shifts from one phase line to another in front of attacking troops. Like successive fire concentration, it may 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 meters. The spacing depends on the density of targets in the target area. Planned intermediate phase lines lie every 100 to 200 meters. Artillery units fire on each phase line for at least 5 minutes at a rate of 4 to 6 rounds per 100 meters 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. (See Figure 9-5.)

The division or regimental 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

The OPFOR regards fire over open sights as being economical of ammunition and at the same time giving a better guarantee of the destruction of point targets than indirect fire. This role is not limited to tanks, ATGM and other traditional direct fire weapons. Often substantial numbers of guns may be used in this way, particularly

TYPE OF WEAPON	WIDTHS (in Meters) per Weapon	per Battery	per Battalion
Field guns	20-25	150	450
Howitzers	35	200	600-650

Figure 9-5. Sector widths for rolling barrage.

against structures which require large rounds for their demolition.

DEFENSE

In the defense, the fire planners allocate fire strikes by all available means against likely avenues of approach to defense positions. The CMTA closely coordinates nuclear and chemical weapons, conventional artillery, and supporting aircraft. Intelligence efforts concentrate on determining enemy formations and locating their 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 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.

Phases of Fire Support

In the defense, as in the offense, the fire planner utilizes all available fire support to carry out the commander's plan. Emphasis is on the integration of artillery, air, antitank, and REC assets into an overall defensive fire plan. Several variations of the plan are produced, 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 superior fire support. Maneuvering massed firepower against key groupings at the crucial moment then becomes critical. Fire support in defense is planned in five phases. These are:

- Phase I: counterpreparatory fire.
- Phase II: fire interdiction of advancing enemy troops.
- Phase III: fire to repel the enemy attack.
- Phase IV: fire support of defending troops.
- Phase V: fire destruction of the enemy during acounterattack/-counterstrike.

Counterpreparatory Fire

Counterpreparatory fires are an intense delivery of rocket, missile, artillery, and air strikes. Their intent is to annihilate, neutralize, or at least disrupt enemy forces preparing to attack. This first phase of the defensive fires should surprise the enemy. The aim is to anticipate the enemy's preparatory bombardment by a few minutes. The intelligence necessary to achieve this is not, of course, easy to acquire, and the time required to organize it may be lacking (i.e., 6 to 8 hours at army level). When accomplished successfully, however, it can be devastatingly effective. The OPFOR uses all

appropriate fire support to reduce the effectiveness of the enemy's preparatory fires.

Fire Interdiction

Fire interdiction of advancing enemy troops occurs when the enemy deploys into battalion columns. It continues until the enemy forces reach their line of departure. This may include preplanned fires on choke points, massed fires by artillery groups, and MRLs emplacing minefields.

Fire on distant approaches is carried out by fixed wing aviation, SSMs, and long-range artillery using either nuclear and chemical or conventional munitions. Where possible, enemy units are destroyed as they move up, but if target intelligence is inadequate, disruption and delay can be inflicted by creating barriers of radiation or chemical contamination and by using remotely-delivered mines. 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 defensive is adopted 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 the maintenance of strict radio silence and the destruction of enemy reconnaissance vehicles by specially chosen AT systems firing from temporary fire positions. As much of the artillery as possible remains silent until needed to repel a major attack, and batteries used prior to the main enemy attack will fire from temporary fire positions or as roving batteries to confuse enemy artillery intelligence.

Fire to Repel Enemy Attack

This is the most important phase of defensive artillery fire. The phase begins when the enemy crosses the line of departure and ends when he enters the first defensive positions. Fires create a zone of continuous fires in front of the defense. Fire to repel the enemy attack coordinates artillery fire with AT weapons and all weapons of the maneuver units. The OPFOR employs fire on individual targets, fire concentrations, and barrage fires.

Largely tactical in nature, most artillery assets are controlled by the forward divisions in this phase. An AAG may still be held for counterbattery and to give the army commander the means to shift support quickly from one axis to another and to support army-level counterstrikes. 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.

DAGs and RAGs attempt to break up attacks and split armor from the infantry with preplanned linear and box concentrations both in front of forward edge positions and minefields, in gaps between strongpoints, and eventually in depth. Generally, guns and MRLs start to engage the enemy 15 to 25 km from the line of contact, and howitzers open fire when the enemy is within 10 to 15 km. Short but intense fire assaults, no more than 15 to 20 minutes in duration, are fired, followed by displacement to nearby alternate fire positions to avoid counterbattery fire.

Fire Support of Defending Troops

Fire support of the defending troops occurs when artillery battalions attack the enemy forces that penetrated the defensive positions of first-echelon maneuver battalions. Its purpose is to create fire sacks to destroy 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. He also uses fire concentrations and barrage fires against the enemy.

The enemy is expected to penetrate the defense, but to pay an appropriate price 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 may even be used in the direct fire role as a backstop against armored penetrations. Generally, the artillery plays a key role in creating suitable conditions for the launching of a counterattack/counterstrike.

Fire Destruction of the Enemy During Counterattack/Counterstrike

The fifth, and last, phase is the destruction of the enemy during the counterattack/counterstike. Its goals are to recover lost positions, to destroy the penetrating enemy forces, and to capture a line to launch offensive operations. This phase has three subphases for artillery support:

- Support for the forward movement of troops.
- Preparation of the counterattack/counterstrike.
- Support of the counterattack/counterstike.

A successful counterattack or counterstrike requires a stabilized line of contact. This line allows enough time for the second-echelon forces to advance and deploy for the counterattack/counterstrike. A density of at least 50 to 60 weapons per km of frontage is necessary to ensure the success of a counterattack/counterstrike, and the preparation should last at least 30 to 40 minutes. Artillery requires two hours to prepare, including one of daylight. This factor, and the time required to move second echelon artillery forward, must be taken into account in planning.

Organization for Combat

The artillery organization for combat in the defense resembles that in the offense. The artillery planner locates **artillery groups** so that 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

Artillery and aviation fire support in defense are planned to accomplish the following, in rough order of priority/order of occurrence:

- A *front* counterpreparation is normally fired on the junction of two armies, using the assets of both. It is conducted on a sector 20 to 25 km wide with a density of 40 to 50 weapons per km to a depth of 25 to 30 km (including air strikes). Normally, 2 to 3 fire strikes are delivered in a period of 25 to 30 minutes.
- An army counterpreparation is executed on a sector 10 to 15 km wide with a density of 30 to 40 weapons

per km, to a depth of 10 to 15 km (or 25 to 30 km if air power is available). It lasts 25 to 30 minutes.

- Destruction of enemy nuclear delivery means and high-precision weapons.
- Destruction of aviation on airfields and destruction, or at least neutralization, of enemy artillery. This includes use of smoke to blind enemy OPs, attacks, and fire units.
- Disruption of C^2.
- Support for covering forces in the security zone.
- Neutralization or disruption of enemy march columns, concentrations, and units deploying to attack.
- Defensive fire to protect forward units, cover gaps, or halt units which have achieved a penetration.
- Support for counterattacks/ counterstrikes.
- Contamination of terrain, or of obstacles to hamper clearance.
- Battlefield illumination.

Types of Fire

The OPFOR plans defensive fires to disrupt enemy's attack. Descriptions of the types of defensive fires appear in subsequent paragraphs.

Barrier Fire

Barrier fire is a continuous curtain of defensive fire across the approach of attacking tanks and infantry. It also has applications in offensive operations against enemy counterattacks. Barrier fire is useful with fire concentrations, massed fires, and directly aimed fire from tanks and guns. The three types of barrier fire are--

Standing barrier fire. Standing barrier fire uses a single line of concentration to disrupt an enemy attack and is planed well in advance. The OPFOR plans artillery fires for likely tank avenues of approach. A ground observation point observes these fires planned in front of, and to the flanks of, the defensive positions. All the artillery in a formation, except MRLs, fire the standing barrier fire. The fire planner assigns each battalion or battery a sector on the line of fire concentration. The width of each unit's sector is computed based on 50 meters of coverage per gun (howitzer) or mortar.

The line of concentration for the standing barrier fire must be no closer than 300 to 500 meters from friendly troops for troop safety. This allows gunners to fire AT weapons in direct fire at enemy tanks and APCs as they come through the 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 combines 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. Rolling barrier fire lands on several lines of concentration. Each line lies successively closer to OPFOR defending troops. Lines of concentration for the rolling barrier fire should impact on terrain that a ground observation point can see. Distances between lines of

fire concentration are 400 to 600 meters or more. The final line of concentration closest to friendly troops is 300 to 400 meters from forward defensive positions. The fire planner assigns every battalion or battery participating 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 meters 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 APCs 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 APCs or tanks have passed through the last zone of fire concentration.

ANTITANK RESERVES

AT reserves comprise units or subunits of AT artillery, often reinforced by other means (e.g., engineers, tank and/or motorized rifle 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 regimental level. Almost invariably, these reserves work in conjunction with engineer mobile obstacle detachments which create AT obstacles.

In a *front*, there may be one or more AT reserves, based on an AT brigade or one or more regiments. In an army, the AT reserve is formed from the AT regiment, while at divisional level, the AT battalion fills the role. The addition of other elements depends on the mission and the assessment of the threat.

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 are to destroy a wide variety of battlefield targets, but 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 caliber 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 with their 360-degree traverse are particularly effective in this role. The AT forces often include direct-fire field artillery. Antiaircraft guns can also fire against ground targets.

OPFOR guns and howitzers have the sights necessary for direct-fire engagements. Some weapons may reinforce the AT firepower of motorized rifle strongpoints. Should enemy armor penetrate, however, artillery subunits may be used. They can delay and disrupt the attackers and thus create favorable conditions for a counterattack/counterstrike into the enemy's flank.

Special Weapons

Special AT weapon 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 very effective AT weapons, but limited by minimum ranges, low rates of fire, and visibility requirements. OPFOR AT forces therefore have a mix of ATGMs and direct-fire weapons (guns and grenade launchers). The direct-fire weapons provide quick-response fires at medium, short, and point-blank ranges, on broken ground, and under favorable visibility conditions.

Organization

Since neither *front* nor army/army corps has a fixed organizational structure, the AT units at these levels will also vary. A CAA or an army corps may have an AT regiment. *Front* and army AT assets can be part of first-echelon divisions or the army/army corps combined arms reserve; they may also form the nucleus of an army/army corps AT reserve.

Missions

The importance of the AT reserve continues to grow. This is partly because armies today have become almost totally mechanized. Therefore, defense must first and foremost be antitank in nature. It is also 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 antitank reserve in ensuring stability in defense and in maintaining the momentum of an offensive in the face of counterattack. Missions which can be assigned to an AT reserve include:

In the offensive (or meeting engagement).

- Repeling 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.

In the defensive:

- 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/counterstrike force.
- Gaining time for the mounting of a counterattack/counterstrike through counterpenetration.

Deployment

The sectors which can be reliably held by AT units are:

- A division AT battalion, 3.5 to 5 km.
- An army AT regiment, 8 to 10 km.
- A *front* AT brigade, 20 to 25 km.

Where a reserve is held, 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 in 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, great stress on the surprise use of AT reserves.

Deployment of the AT reserve, and the laying of their protective minefields by MODs, is often left to the last minute, sometimes done under the enemy guns and relying on smoke cover to protect deployment. While risky, it ensures that the reserve has deployed on the correct axis because the enemy has already committed himself to that direction. The sudden appearance of such a reserve may inflict considerable delay and disruption if it has not been anticipated.

Chapter 10
Air Support

The OPFOR has a variety of aviation assets, at the strategic, theater, *front*, and army levels, as well as in the navy. Any or all of these assets may become involved in strategic operations in a theater, as described in Chapter 2 and in the first parts of the present chapter. The last part of this chapter concentrates on the roles of *frontal* and army aviation in direct support of ground forces operations.

ORGANIZATION

OPFOR combat air power consists of five categories. These are strategic aviation, theater aviation, naval aviation, *frontal* aviation, and army aviation.

Theater and Strategic Aviation

Each **theater** has an **air army** comprising medium and light bomber aviation, tanker and jamming support, and long-range fighters and reconnaissance. Strength depends on the assessment of the enemy and the importance of the theater. There are also **strategic air armies** subordinate to the **Supreme High Command**. Elements of such an army, including long-range bombers and ECM[1] and tanker support, may well support a theater in strategic operations.

Naval Aviation

Maritime strike, reconnaissance, and tactical aviation can support amphibious landings which are part of a *front* or theater operation. They may also help to repel enemy amphibious landings or to prevent enemy reinforcement in the theater.

Frontal Aviation

High-performance fighters and fighter-bombers and some light bombers comprise the **air armies** of the State's military districts. In wartime, they come under *front* command for operational and operational-tactical missions, hence the term ***frontal* aviation**. *Frontal* aviation also controls a substantial number of medium and heavy-lift and ECM helicopters. It can use these to support high-priority army operations. The strength and composition of the air assets of a *front* can vary considerably, according to the importance of the *front's* mission and the phase of the operation.

The OPFOR has organized these assets so that 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 OPFOR's doctrine for a fast-moving offensive. The aviation organization centralizes control over most fixed-wing *frontal* aviation aircraft. However, it decentralizes some control over the attack helicopters.

The size and composition of an air army can **vary greatly**, according to the

[1] Aircraft dedicated to electronic countermeasures (ECM) may jam enemy radars or dispense chaff. (See "Suppression of Enemy Air Defenses" section in this chapter or Chapter 13, "Radioelectronic Combat," for more detail.)

needs of the supported *front*. However, **most** air armies would have--

- A fighter aviation division.
- Either a fighter-bomber or bomber aviation division.
- An independent reconnaissance aviation regiment.
- An independent helicopter REC squadron.
- An independent mixed aviation regiment (or squadron).
- An independent signal regiment (or battalion).

In addition, **some** air armies may have one or more of the following:

- An independent ground-attack aviation regiment.
- A transport helicopter regiment.
- An independent REC aviation regiment.
- An independent helicopter squadron.

(See *Heavy OPFOR Organization Guide* for more details on organization.)

The OPFOR organizes its *frontal* aviation assets on a functional mission-related basis, in **homogenous formations**. For example, an aviation division is normally homogeneous. 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 independent mixed aviation regiment (or squadron) comprising both fixed-wing transport aircraft and transport helicopters.

Army Aviation

Attack helicopters, and some transport and airborne command post (CP) helicopters, are directly subordinate to a combined arms or tank army, hence the term **army aviation**. An army normally has--

- One or two independent combat helicopter regiments with a mix of attack helicopter and medium-lift transport helicopter squadrons.
- An independent helicopter squadron with a mix of light, medium-lift, heavy-lift, and reconnaissance helicopter flights (and possibly some jamming and airborne CP helicopters).

On occasion, these assets may come directly under divisional command during the course of operations. Army aviation, reinforced as necessary by *front*, also provides lift for heliborne landings and direct air support for the ground forces. In the latter role, it is conceivable that the *front's* Su-25/FROGFOOT ground-attack aircraft could supplement army aviation. The scale of assets allotted to an army depends on the importance of that army in the *front* scheme of maneuver. (See *Heavy OPFOR Organization Guide* for more details on organization.)

Trends

OPFOR discussion on organization forms of aviation has centered on--

- Organization of bomber "strike groups."
- Improved interaction with maneuver formations, including organization of support for army-level operations.
- Development of improved night air reconnaissance and fire support of ground maneuver units.

Army-level organic aviation is likely to show a steady increase in strength. Some **divisions**, especially if acting in the OMG role, may have **operational control** attack helicopters. Integration of air assets with ground force elements can also occur at lower levels for specific missions. The OPFOR has conducted experiments with a

concept of land-air assault groups. At **army level**, these would be of reinforced (motorized rifle) regiment size, with about twelve attack helicopters under operational command and further attack and transport helicopters and fixed-wing sorties on priority call. At **division level**, such a group would comprise a reinforced motorized rifle battalion with four to six attack helicopters under command and further aircraft on priority call. To improve air-ground interface the group would require more forward air controllers (FACs). It would also be necessary to organize more intimate cooperation between artillery and air assets, especially helicopters.

FRONT AND ARMY ASSETS

There can be **considerable variations in the size and quality** of aviation assets allocated to a particular OPFOR *front* or its ground armies. The priority for organizational strength and equipment modernization depends on the importance of a *front* within a theater and that theater's importance in 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.

Fixed-Wing Aircraft

As permitted by economic constraints. the OPFOR continues to introduce high-performance aircraft with--

- Improved avionics.
- Improved ECM and electronic counter-countermeasures (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.

Technical Limitations

Regardless of the size and strength of aviation organizations in a particular geographic region (theater or *front*), the OPFOR may suffer from significant weaknesses in the struggle for air superiority. These technical limitations generally fall into the categories of range, sortie rates, and air-to-air combat capabilities.

Range. Many OPFOR aircraft are not readily usable in the **long-range fire strike** because they lack the necessary **combat radius**. Indeed, many of those with the required theoretical range may find themselves short in practice. Their engines are not very fuel-efficient and consume precious fuel while they wait to form up for raids. To a limited extent, mid-flight refueling can overcome this problem, but only long-range bombers widely practice this. (Only recently has the OPFOR attempted this with light bombers.)

Sortie rates. While the latest generation of combat aircraft approaches comparable capabilities with their U.S. contemporaries, this brings its own drawbacks. Inevitably, **the sortie rate drops as equipment gains in sophistication**. The widespread failure of the ground support organization to cope with the demands of new aircraft, avionics and ordnance further exacerbates this problem.

Air-to-air combat. In areas where the majority of the fighter inventory comprises MiG-23s (or the even older MiG-21s), these may be hopelessly outclassed by more

modern enemy aircraft. Their pilots, too, may not achieve U.S. standards. While new aircraft a such as MiG-29 and Su-27 are decidedly more capable, it is probable that their pilots do not, and will not for some time, exploit their superior performance to the full. There is also little doubt that the OPFOR lags significantly behind the world's most advanced air forces in airborne warning and control systems (AWACS) and in air-to-air missile armament (especially those for beyond-visual-range engagements). While technical superiority confers only a marginal advantage in land combat (unless the disparity is very great), it can be potentially decisive in the air.

Helicopters

The size of helicopter forces is expanding at a constant rate. Newer helicopters have antitank guided missiles (ATGMs) that have greater standoff range and accuracy. They are replacing older aircraft. Attack helicopter tactics closely support ground maneuver unit tactics. Helicopters now provide most of the direct air support to the ground forces..

Fire Support Helicopters

The OPFOR continues to add ATGMs to the helicopters to increase their antitank capability. Most of the helicopters with an antitank role are in the attack helicopter squadrons of army-level independent combat helicopter regiments. However, some medium-lift transport helicopters and general-purpose light helicopters at both *front* and army level 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; they also have 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.

Reconnaissance Helicopters

Helicopter reconnaissance is generally **confined to the protection of the ground forces' air defense umbrella.** Helicopters perform such tasks as route or NBC reconnaissance. However, more daring use of helicopters is certain when the situation becomes very fluid, and especially in the case of OMGs. Of course, all missions crossing the line of contact can also provide information in the form of in-flight reports.

Capabilities

While OPFOR aircraft and their avionics and weapons systems are constantly improving, they still generally **lag behind other advanced nations qualitatively.** This technological gap has much more significant impact on aviation than on the ground forces and can aggravate the problem of insufficient numbers.

The OPFOR is **working on the problems** of providing more reliable air support by improving the accuracy of munitions delivery. Air-to-air missiles (AAMs), antiradiation missiles (ARMs) and improved ATGMs are in service, and work is continuing in this field. 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 OPFOR inventory, improving payload-range characteristics.

Pilots

The OPFOR probably considers its **aircrews** adequately trained to meet the tasks which may confront them. However, there still appears to be insufficient versatility and exercise of **initiative** to meet the demands of the more dynamic, fast-changing battle situations. To a considerable extent, this problem is systemic, since OPFOR commanders **tie their pilots fairly rigidly to ground control.** (The deployment of an efficient AWACS, however, would mitigate this problem somewhat.) In recent years, senior commanders have been taking a more critical attitude, and changes in training methods, tactics, and troop control are now evident. The role of **ground-controlled intercept (GCI)** has evolved into one of assessing the air situation, disseminating intelligence, and if necessary, changing missions or introducing reserves into combat, but **the conduct of the flight is left much more to the pilots.** The more competent aircrews, often operate in independent sweeps or as a cutting edge, while the poorer crews and aircraft perform less demanding roles or even serve as decoys, tying up enemy fighters so that the better aircrews can ambush enemy bombers. The quality gap between OPFOR and U.S. pilots is undoubtedly narrowing.

Night and Weather Conditions

OPFOR aviation also continues to improve nighttime and poor-weather air reconnaissance and ordnance delivery in support of ground maneuver formations. Despite their heavy emphasis on night combat, the OPFOR recognize limitations in its ability to maintain continuity of air support at night and in poor weather. Such conditions have slowed air operation because OPFOR aircraft and ground-based equipment were inadequate and flight personnel training was limited. Also, some of the mutual identification and target designation systems for complex weather conditions and for night flying were unsophisticated.

The OPFOR is evidently making efforts to correct these shortcomings. The all-weather/night Su-24/FENCER fighter-bomber is a capable asset to support ground forces. It has an increased range and payload to attack deep targets. Many modern fixed-wing aircraft and combat helicopters have radioelectronic and infrared instruments. These enable pilots to conduct sorties at night and in poor weather at low altitudes. The pilots can then 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.

Radioelectronic Combat

The OPFOR continues to improve its **radioelectronic combat (REC)** capabilities, including sophisticated jamming equipment. It may deploy equipment on its aircraft--

- To jam multiple enemy radars using a single transmitter.
- To jam only when the target radar reaches a certain intensity.
- To select the correct jamming signal for the specific target radar.

The OPFOR presently has the capability to jam the enemy air defense network's major surveillance and acquisition radars. It is also experimenting with advanced deception jamming techniques. All these capabilities would allow OPFOR aviation to provide increased support which combines accuracy in ordnance delivery, greater flexibility in employment, and increased responsiveness to combined arms commanders.

Tasks of *Frontal* Aviation

Frontal 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. It has a role in nuclear, as well as in conventional operations.

Initial Nuclear Strike

Whether it occurs at the outset, or during the course of a previously conventional operation, *frontal* aviation would play a key role in the **initial nuclear strike**. Dual-capable aircraft would deliver nuclear ordnance and others a mixture of chemical and conventional weapons against targets to the rear boundary of the theater nuclear strikes (about 250 km from the line of contact). Immediate post-strike reconnaissance would establish which targets required additional strikes and identify fresh targets.

Destruction of Enemy Nuclear Forces

The task of destroying **enemy nuclear forces** is a continuing top priority during conventional and nuclear operations alike. It is a combined arms mission, in which aviation cooperates with missile troops, long-range artillery, airborne forces, special-purpose forces, and REC. In the first 2 to 3 days of an operation, 50 to 70 percent. of ground-attack and bomber sorties would attack enemy air bases for nuclear and dual-capable aircraft and enemy missiles, nuclear storage facilities, and associated C^2. Much of the effort against elusive nuclear missile targets would be in the form of armed reconnaissance missions.

Long-Range Fire Strike in Conventional Offensive

The goal of the long-range fire strike is to win **air superiority** in the initial stage of hostilities. It may fail to do so, wholly or partially, or it may succeed, only to find that enemy reinforcement renews the air challenge. Thus the struggle for air superiority is an ongoing one throughout the strategic operation and across the entire theater, waged with particular vigor on the main axis. A substantial proportion of theater and *frontal* aviation must devote continuous efforts to suppressing enemy air defenses, airfields, and helicopter forward operating sites.

Air Defense

The enemy's air forces are his most flexible and rapid means of maneuvering massed firepower across his entire frontage and into the depth of friendly territory. The OPFOR expects that 50 percent of the firepower employed in the tactical zone to be air-delivered. 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**, but unless and until the OPFOR accomplishes that difficult mission, its fighter aircraft, in conjunction with ground forces' air defenses ,has to keep enemy air forces off the backs of the soldiers on the ground.

Support of Ground Forces

Besides the long-range fire strike at the onset of theater-level hostilities, OPFOR doctrine calls for **air support of ground forces** in offensive operations. The OPFOR recognizes four phases of air support within an offensive operation and five phases in the defensive. (See later sections in this chapter for detailed descriptions of these phases.)

For the enemy, as well as for OPFOR commanders, 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 battle and 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 and naval aviation play an important part in destroying or disrupting the arrival of strategic reserves in the theater.

Reconnaissance

Aerial reconnaissance includes visual observation, aerial photography, and radioelectronic reconnaissance. Photographic reconnaissance encompasses all types of optical cameras utilizing conventional fixed-frame and strip photography, infrared photography, and television systems. Aerial radioelectronic reconnaissance includes side-looking airborne radar (SLAR), communications and non-communications emitter intercept and direction-finding operations.

The greatest potential weakness of aerial reconnaissance is the necessity for air superiority in order to accomplish the majority of missions. The further the aircraft must penetrate enemy airspace, the greater the threat from enemy fighters and air defense weapons.

Support for Amphibious and Airborne Landings

Successful action from the air is essential to the success of both tactical and operational landings. *Frontal* aviation may have the following missions:

- Carry out reconnaissance.
- Suppress enemy air defenses comprehensively.
- Escort formations to their targets.
- Neutralize drop-zone or beach defenses.
- Provide direct air support given until artillery lands.
- Carry out possible air resupply.

LONG-RANGE FIRE STRIKE

The OPFOR approach to the **initial stage of a nonnuclear theater offensive** includes a massive **long-range fire strike**. It employs initial, massive nonnuclear air strikes throughout the theater. (See Chapter 2 for further discussion.)

Concept

In essence, the contemporary long-range fire strike is a **conventional substitute for the initial massed nuclear strike** at the very outset of a war. Its aim is to win nuclear, and conventional, air superiority. **Victory in the air is essential for victory on the ground**. Without a large measure of success in the air, the *frontal*, airborne, and amphibious operations in the theater cannot

be successful. At the operational level, air power is the prime nuclear delivery means for any likely enemy. Moreover, in the OPFOR view, 50 percent of the firepower, even in the tactical zone, is now air-delivered, and, at least in the initial period of war, air power is likely to be the main enemy operational reserve of firepower.

In the long-range fire strike, OPFOR military strategists have a viable, **nonnuclear offensive option** to gain the operational initiative. Using the option can **create the conditions of victory** in the period directly after the outbreak of hostilities. The concept of the long-range fire strike includes OPFOR fixed-wing aircraft from *frontal* aviation and intermediate-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 may be available to neutralize enemy air defenses and to **create approach corridors**. The majority of the aircraft attack enemy nuclear weapon systems, C^2 centers, and airfields.

OPFOR fire planning to support strategic operations in a theater is very complex. It includes air, air defense, *front*, 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 is trying to achieve this centralized fire planning and to execute an **integrated fire destruction of the enemy**. The following paragraphs discuss the air portion of this 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 *front* operations**. This commitment precludes their use for direct air support of ground force operations. (Ground force commanders rely on attack helicopters to fill this initial fire support role.) Integrated fires of artillery, attack helicopters, and operational and tactical missiles 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 the following types of targets: airfields, nuclear delivery and storage sites, and C^2 facilities. It may also target for destruction some industrial complexes which support the enemy nuclear and air forces.

Enemy Nuclear Missiles and High-Precision Conventional Weapons

One top priority is to eliminate the enemy's **nuclear missile** capability. Thus, the long-range fire strike must destroy enemy operational and operational-tactical missile forces and their associated C^2, storage facilities, and logistics. Arms control agreements may help to make this a more achievable objective by dramatically reducing the target set. On the other hand, the spread of **high-precision conventional weapons**, with the destructiveness of small nuclear systems, may serve to increase the numbers of top priority targets.

Enemy Air Power

The first priority is the destruction of nuclear-carrying and dual-capable aircraft and the infrastructure that supports them.

Second priority goes to attacks on the more sophisticated conventional enemy aviation, including AWACS, ECM, fighter, and interdiction aircraft. Of minor importance in the long-range fire strike are enemy direct-air-support forces. Although air-to-air combat is one method of winning air superiority, the OPFOR may be unsure of its ability to defeat enemy air forces in the air without large numerical superiority. Thus, it sees the principal means of accomplishing this mission to be the destruction of aircraft on the ground, the closing of air bases, and the disruption of enemy C^2, air navigation and logistics systems. Enemy naval aviation is also a force to deal with, whether at sea or in bases.

Capabilities of Air Forces

The main weight of firepower delivered in the long-range fire strike is air-delivered. It is therefore worthwhile summarizing the capabilities attributed to aviation units.

Fighter-Bomber Aviation Regiments

Although organizations vary, a typical fighter-bomber aviation regiment might have an authorized strength of about 32 aircraft (excluding 6 two-seat trainers that may or may not be usable). For the initial strike, a regiment could presumably achieve 90-percent serviceability. There may be no nuclear withhold for the first strike, so it could involve as many as 28 aircraft. (The unservicability rate could go up to 15 percent or more for subsequent raids, and a 5-percent nuclear withhold is likely in dual-capable units.) To neutralize an operational SAM site, the OPFOR would task 4 fighter-bombers; 2 would suffice to suppress an early-warning radar site. If all went well, 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 a *frontal* aviation bomber aviation regiments is about 30 combat aircraft (excluding training aircraft, which may or may not be usable). Assuming 85-percent serviceability for the first strike and no nuclear withhold, an initial strength of 26 aircraft could be available. (The unservicability rate will rise to 20 percent for subsequent actions, and a 15-percent nuclear withhold is likely.) In theory, 9 bombers could close an airbase for 12 hours (excluding aircraft need for air defense suppression). Bombers could probably mount 2 sorties in the first 24 hours, declining thereafter.

Air Superiority

The long-range fire strike strives to establish **air superiority**. It is a principal component of the overall OPFOR effort to negate enemy nuclear attack capabilities. This operation differs from a general offensive; the strikes do not directly support a coincidental advance by ground maneuver formations. The OPFOR believes it can achieve air superiority with the **destruction of 50 to 60 percent of the enemy's air power**.

Broad Spatial Scope

Due to its scale, a **theater** probably plans and directs an long-range fire strike. Given the range of modern aircraft and the ease and speed with which they can redeploy, the long-range fire strike has to be

theater-wide and -deep. Thus, in a European theater, for instance, it could occur on a frontage of 500 to 1,000 km and to a depth of 1,000 to 1,500 km. However, a *front* may conduct an air operation on a smaller scale during a *front* operation to establish local air superiority.

Preemptive Nature

In theory, the long-range fire strike is counter-offensive. In practice, to be successful, it must be **preemptive**. The first, massed strike must achieve at least partial operational and tactical surprise. The OPFOR must strike airbases before aircraft have had time to fly to dispersal fields and strike nuclear missiles before they have deployed into hidden sites. Obviously, measures to achieve surprise must necessarily be conjectural. They may include the following:

Attack Without Redeployment

Aircraft from the OPFOR's 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 which lack the range to participate in the first strike from their home bases may move up as the initial strike is taking place to join in the second strike and replace casualties. Alternatively, they may use forward bases to stage through and not remain in the forward area.

Timing

To catch enemy air and nuclear forces unprepared, the OPFOR plans to launch the long-range fire strike **before preparations for ground operations are complete** (that is., before the enemy thinks that the period of tension might probably lead to actual hostilities). The first air attack normally precedes the opening of the ground offensive by at least 24 hours, probably by days or even weeks. However, it is possible that **airborne** operations would commence 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.

Weapons and Methods

In keeping with tradition, the OPFOR is likely to use **unexpected** weapons and methods. These might include the following:

- **Long-range surface-to-surface missiles (SSMs) and submarine-launched cruise missiles (SLCMs).** The OPFOR might use long-range SSMs and SLCMs to spread chemical contamination and/or mines on enemy airbases to pin aircraft to the ground prior to the first air strike. If missile strikes achieve sufficient accuracy, they can also deliver high-precision conventional warheads against key C^2 and logistics installations and nuclear missiles.
- **Fuel-air explosive (FAE).** Relying as they do on blast, rather than fragments for their effects, FAE munitions would be excellent weapons for killing personnel, wrecking aircraft and maintenance equipment, and rendering unserviceable the doors of hardened aircraft shelters. With overpressures of 205 pounds per square inch (greater than those of small nuclear weapons), such muni-

tions affect wide areas. Delivery means could be SSMs, SLCMs, and air-to-surface missiles (ASMs), perhaps given terminal guidance by special-purpose forces (SPF) teams with laser designators.

- **Remotely-piloted vehicles (RPVs).** The OPFOR has noted with interest other armies' methods of using RPVs for air defense suppression. These included the use of RPVs to simulate raids, coupled with the use of air- and ground-launched ARMs to destroy radars activated to meet the dummy attacks.
- **ECM.** The OPFOR may well aim to deploy more, and more sophisticated, ground- and air-based jamming platforms than the enemy anticipates.
- **SPF.** Even before the long-range fire strike begins, some SPF teams may possibly carry out sabotage and the murder of selected key officers. They might also have the mission of incapacitating personnel, through contamination of food or water supplies.

Indications and Warning

To achieve the required aircraft availability at the outset, and acceptable sortie rates, a **maintenance standdown** may be necessary prior to the long-range fire strike. This, occurring during a period of crisis, would be a major intelligence and warning indicator. This warning could allow the enemy to put his air defenses on alert and rebase his air groupings to avoid the worst effects of the coming blow.

Complexity

The coordination and control of the various combat arms in time and space is both difficult and essential. As past wars have shown, managing up to 100 modern aircraft in the air at one time is very difficult. The complexity can increase logarithmically when there are thousands. When enemy engages in electronic warfare, the required coordination of efforts may well be impossible to achieve.

Duration

The OPFOR normally expects an long-range fire strike to last **several days.**[2] It might involve two or three massed strikes on the first day and one or two on subsequent days. The first massed strike is the most massive, intended to cause decisive losses to the enemy's air and nuclear missile forces, and to lower his strength and ability to conduct effective retaliatory strikes. In the first 24 to 48 hours, the OPFOR intends to destroy the bulk of the enemy's aviation. This is not to say that offensive counter-air actions and actions against surviving nuclear missiles or high-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.

[2] 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, due to the nature of the enemy's ground force defenses or the inability to confirm destruction of his nuclear weapons.

Quantity and Quality

Even if the OPFOR does not neutralize the enemy's air power in the first 48 hours, it might be unwise for enemy ground forces to count on getting the level of air support they think they need to compensate for any OPFOR superiority in numbers. There are perhaps three main reasons:

Air Defense

Enemy deep interdiction may run into an air defense system of unparalleled depth, density and sophistication. Take a stylized block of OPFOR air defense 70 km wide and 350 km deep, with weapons evenly spaced on a flat earth. An aircraft penetrating at 300 feet would be vulnerable to 300 missile engagements on ingress alone. Confusion, fear, ECM, and fatigue could degrade the effectiveness of the defenses. Even so, an aircraft would have only a 50-percent chance of reaching the target if the probability of kill (P_k) of each individual firing is only one quarter of one percent--a modest claim for the OPFOR air defenders, given that the U.S. is calculating on a kill from 60 percent of Hawk firings and 80 percent of Patriot's.

Air Forces

The technological and skills gap between U.S. and OPFOR air forces is slowly but perceptibly closing. Fighting Su-27s and MiG-29s is not the same as combating MiG-23s. Moreover, in air as in ground combat, numbers can compensate for qualitative inferiority. Even partial success in the long-range fire strike can widen any initial superiority to uncomfortable levels.

Requirements for Success

The goal of the long-range fire strike is to win **air superiority**. It should render enemy runways inoperable and destroy aircraft, CPs, radars, and ground-based air defense sites. However, such results **might not be achievable** in actual combat.

As far as the OPFOR is concerned, **a standoff in the air war could be a satisfactory outcome**. That would mean that neither side could bring its full weight of air power to bear on the ground battle for the crucial first week or so. That would be acceptable to the OPFOR, as long as it had ground forces superiority in numbers and (in its perception) in the ability to conduct operational maneuver. In the final analysis, the most effective air superiority weapon is a tank sitting at the end of the enemy's runway, and that is the situation the OPFOR would hope to reach as early in the war as possible. In fluid operations, the opportunities for deep raiding tactics would offer the ground forces an opportunity to make a major contribution to victory in the air.

Continuous Reconnaissance

Continuous reconnaissance of enemy nuclear and air assets does not, of course, start with the outbreak of hostilities. It is continuous in peacetime, probably intensifying in period of crises.

Surprise

The long-range fire strike is critically dependent for success on surprise and very precise timing and coordination. This may be very difficult to achieve. Surprise action against enemy airfields and C^2 can be decisive.

Concentration of Effort

The long-range fire strike concentrates on the most important strategic and operational directions. It must mount massed effort against the enemy's aviation groupings, both in the air and on the ground.

Activeness

The OPFOR must maintain continuous action over enemy airfields and against his aircraft, both day and night. Between massed 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 the **strategic air army** and much of ***frontal* aviation**. Some **strategic missiles** may attack enemy bases and destroy C^2 centers. **Operational and operational-tactical missiles** do the same for targets within range and neutralize air defenses. **Long-range artillery** can hit near air defense missiles and radars. **SPF** carries out 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, massed 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 operation, and the air war as a whole, are likely to settle down to a battle of attrition in which victory will go to the technologically superior a side. The first strike actually comprises four phases: the pinning, supporting, main, and follow-on attacks.

Pinning Attack

The long-range fire strike opens with a massive strike on all airbases by strategic, submarine-launched (low-trajectory), and operational missiles. The purpose of this attack is to **pin** enemy aircraft to their airfields. The first salvo may be FAE warheads to destroy personnel and equipment caught in the open. Immediately following it may come a minelet and perhaps persistent chemical bombardment to close runways and taxiways for the time it takes aviation strike groupings to arrive.

Supporting Attack

The **support echelon** comprises 25 to 30 percent of *frontal* aviation and 5 percent of long-range aviation devoted to the long-range fire strike. The mission of the support echelon is to--

- Open up the 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 *frontal* aviation's light bomber forces, 30 percent of its fighter-bombers, 25 to 30 percent of its fighters, and 55 to 60 percent of its reconnaissance assets.

Main Attack

The **strike echelon** includes about 60 percent of *frontal* aviation and 75 percent of long-range aviation. Breaking down the *frontal* aviation component in more detail, it 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 nuclear assets and enemy aircraft and personnel on airbases.
- Destroy or neutralize CPs.
- Close airfields so that aircraft cannot rebase or get fighters into the air before the second massed strike.

Accompanying reconnaissance 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 which managed to rebase before being hit). These forces comprise about 10 percent of *frontal* aviation and 15 to 20 percent of the medium 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. Out of the total number of prepared airfields, normally 35 percent are permanent, 35 percent are dispersal, and 30 percent are for maneuver or reserve. Deception airfields can amount to one-third to one-half of all permanent airfields.

Subsequent Actions

From the pinning missile strike to the end of the follow-on attack is normally about 2 to 2 1/2 hours. *Frontal* aviation follows up with a further attack in the middle of the day on CPs, air defenses, and runways. Then there is a further massed strike toward the end of the day. The OPFOR repeats this on the second, and it continues until the OPFOR has won air supremacy, 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 counter-air 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 military districts designated to provide reserves.

Suppression of Enemy Air Defenses (SEAD)

Whether in the course of the support strike or during subsequent operations, the OPFOR has to 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/axes. It is necessary to create **penetration corridors** through the enemy air defense system. These are normally 10 to 15 km wide and of whatever length is necessary to get strike aircraft to their target area. Within the corridor, the OPFOR must suppress all defending systems. It must carry out additional suppression on some long-range systems (such as Hawk sites up to 35 km for the center line of the corridor, or of Patriot sites up to 100 km from the

center line). The assessment of which long-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. As illustrated in Figure 10-1, the OPFOR normally creates one or two corridors in each *front's* sector (probably largely coinciding with the intended main axes of the *front*). It creates these corridors through the defense using a combination of electronic and physical attack of enemy radars and missiles sites.

Electronic Attack

The OPFOR first attacks enemy early-warning and ground-controlled-intercept (GCI) radars using ground-based and aircraft **standoff jamming (SOJ)** and the laying of **chaff** on a broad frontage. This inflicts time delays on the defense's reaction, which pass through the system and are exacerbated by attacks on key nodes and communication links in the enemy air defense structure. 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 on 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 jammers (ESJ), SOJ and self-screening jammers (SSJ)** on attack aircraft. The breakdown of centralized control and the engagement of targets out-of-range can lead to a rapid depletion of ammunition stocks for relatively poor returns. (For more information on radioelectronic combat, see Chapter 13.)

Maskirovka

The sowing of **chaff trails** protects the entire penetration corridor. In past experience, these have been over 36 km wide and 360 km deep, lasting for several hours. The chaff trail conceals the size and formation of the raid and provides cover from which aircraft can emerge to fire standoff missiles (for example, ARMs). Both ESJ and SSJ takes place from within the chaff trail, both to protect the sowing aircraft and to give added general protection against all types of threat emitter. SOJ aircraft can then follow the raid and operate from within the trail. The OPFOR aircraft can also use chaff for navigational purposes, for example, signaling turns by using bursts. Of course, aircraft can lay **false chaff trails** for deceptive purposes. The OPFOR can achieve further deception by launching groups of RPVs to simulate raids, causing enemy radars to expose themselves to ARM attacks and fire units to waste ammunition. Enemy fighters may also be vectored against them, wasting time and fuel.

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 Hawk site. SS-21 SSMs could destroy SAMs sufficiently near the deployment areas of the SSMs. (With a circular error probable of 50 meters and a FAE warhead with a blast radius of about 120 meters, such an SS-21 attack would have a 90-percent chance of destroying the target.) SCUD SSMs with improved accuracy could attack more deeply deployed

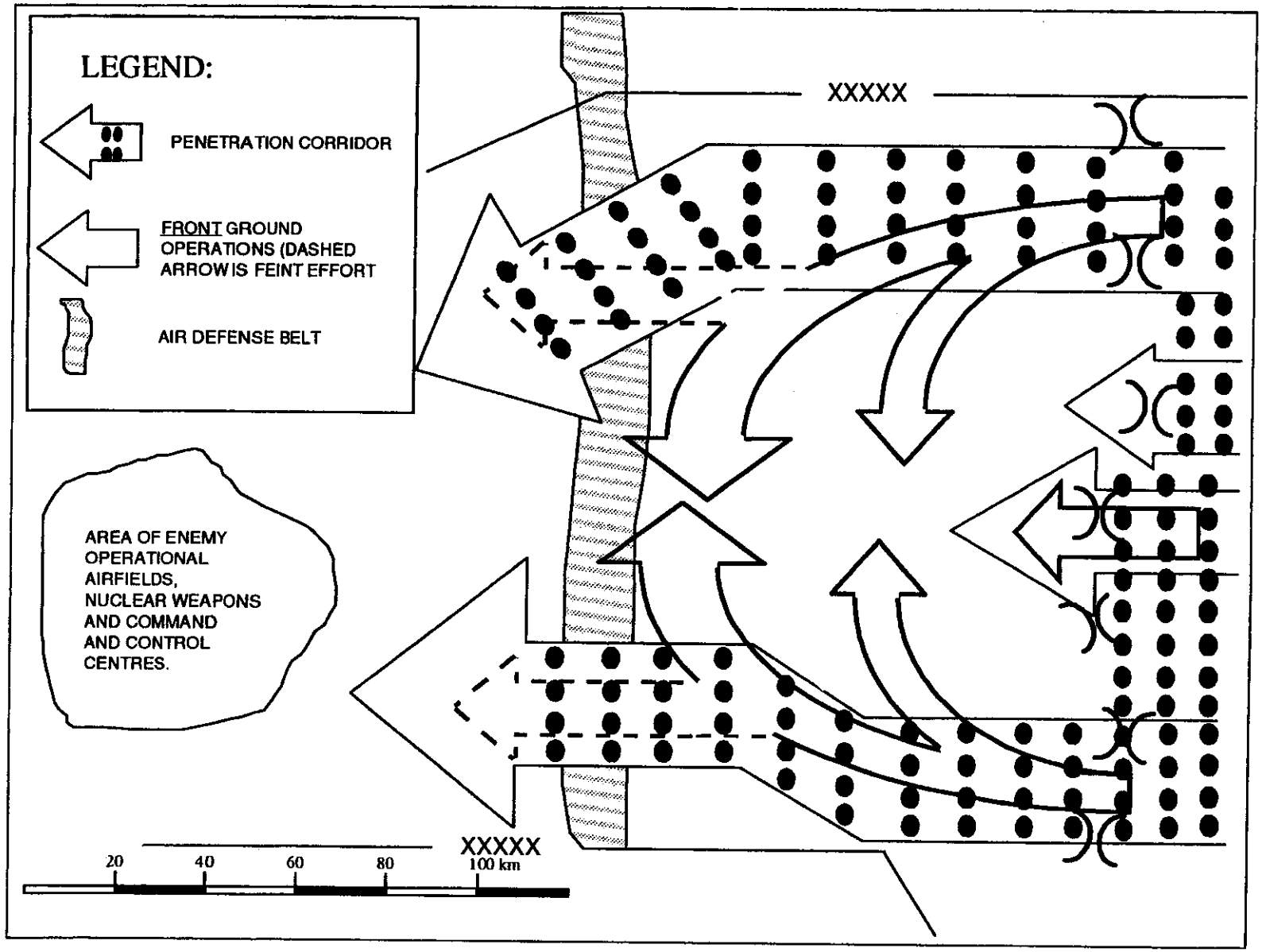

Figure 10-1. Penetration corridors for deep air operations.

SAMs, while long-range artillery and multiple rocket launchers could engage those close to the line of contact. SPF sabotage of SAMs, their associated radars, and C^2 is also possible.

Actions of Fighter Aviation

Fighter escorts protect bombers to their targets. The high-performance, long-endurance Su-27s 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 such as MiG -23s 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 10-2 illustrates a typical fighter-bomber raid formation.

Continued OPFOR practice of the direct escort of strike formations and rigid insistence on GCI in a heavy ECM environment may well result in high loss rates for little return. They are certainly counterproductive in the case of the more modern fighters, preventing the full utilization of their theoretical capabilities

Front Air Offensive

The OPFOR uses the term ***front* air offensive** to describe a *front*-level operation similar to the long-range fire strike, but on a smaller scale. Its goal is to gain **local air superiority** and fire superiority as part of a *front* plan. It is combined arms in character, but uses only *front* resources and thus is distinct from the theater-level long-range fire strike and air defense operations.

AIR DEFENSE OPERATION

The **air defense operation** is a component of a strategic operation unifying air defense assets in a theater (both aviation and ground-based) with the objective of defending friendly forces, allowing them freedom for maneuver, and contributing to the achievement of **air superiority**. The aim is thus more modest than that of the long-range fire strike. Mounted after the long-range fire strike, its purpose is to **defeat the enemy's residual air capability**. Alternatively, it 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. While more **defensive** in nature, it does not exclude **offensive** action. On the contrary, the OPFOR must never allow defensiveness to degenerate into passivity. It must still execute offensive counter-air missions. **The goal is still the achievement of air superiority, but over a greater period of time, or perhaps only for limited periods.**

Concept

The air defense (antiair) operation 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 initial long-range fire strike or subsequent actions may have done so. If they have, the air defense operation would focus on **defensive actions** to protect friendly forces and installations from the enemy's remaining air capability. On the other hand, the OPFOR may not yet hold the initiative in the air. Then their immediate priority in the air defense operation would be to provide friendly forces freedom of movement; simultaneously, they would try to

cause maximum attrition of enemy air and air defense assets.

The air defense operation would combine 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. It would **provide protection** for--

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

Assets

The OPFOR would attempt to gain the initiative through the actions of the following forces:

- *Frontal* aviation.
- Missile troops and artillery of the ground forces.
- 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 formations of the first-echelon *fronts* and air defense forces protecting State territory to the rear. As the first-echelon *fronts* advance, the OPFOR would organize an additional air defense echelon to prevent the development of gaps. (The enemy could exploit these to attack follow-on forces.) The OPFOR could create independent air defense formations as large as a *front* for each strategic direction. This would ensure continuity of the air defense effort from the rear of the first-echelon *fronts*.

Missions

The target set for **offensive** missions is much the **same as in the long-range fire strike**. **Defensive tasks**, in order of priority, are:

- Protection of administrative-political, military-industrial, and communications centers.
- Cover for air bases, missile troops, and higher formation headquarters.
- Cover for defiles or choke points vital to operational maneuver (for example, bridges over major rivers).
- Defense of concentrations and deployments of major ground forces groupings, especially on main axes, and then of second echelons or reserves.
- Protection of airborne and amphibious landing forces in the concentration areas, while loading, and en route to their objectives.

Airfields

As the ground forces advance in an offensive operation, a gap may open between the forward elements of *fronts* 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 ensure that there is a seamless web of defensive aviation deployed in depth. Given the larger number of bases becoming available, it is even possible that the

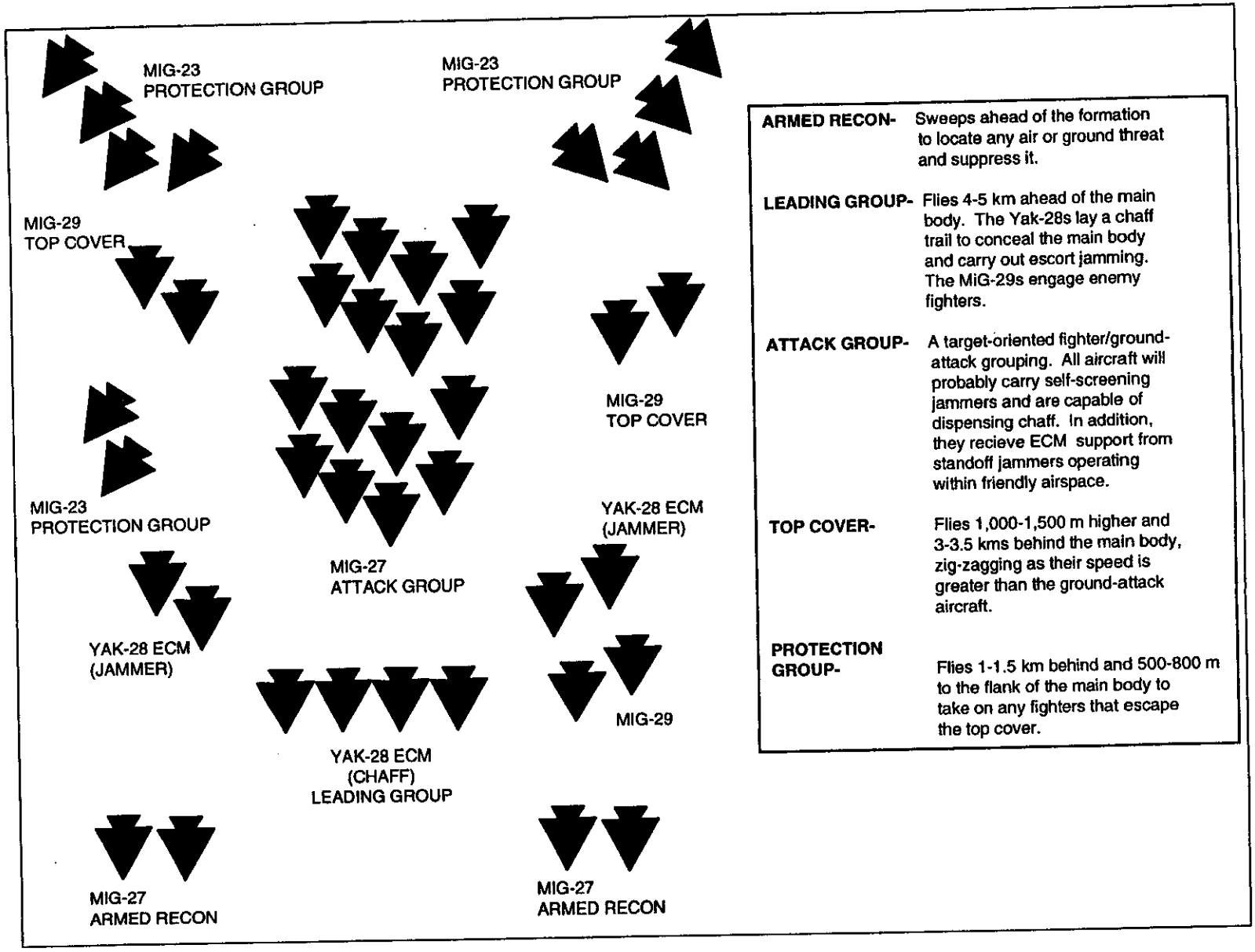

Figure 10-2. A regimental-sized raid by *frontal* aviation.

OPFOR could create new air armies for the support of second-strategic-echelon forces.

Air Defense Tactics

The main focus of fighter aviation effort is on protecting the main strike grouping, 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**, to include 2 to 3 at low altitude and 2 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 **second echelon** is committed in the area of the line of contact or somewhat over it. The operations of these fighters are developed and reinforced by others on standby on airfields (in reserve). 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 the Air Defense Support chapter) illustrates the four possible ways of separating the activities of fighter aviation and SAMs.

Re-Roling of Aircraft

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 counter-air 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 (if indeed this is achievable at all), it remains uncertain whether **re-roling from a defensive to an offensive posture** could be achievable within a time frame acceptable to the army. Still, this possibility is important when assessing any strategy which is defensive.

AIR SUPPORT OF GROUND FORCES

One of the primary missions for *frontal* and army aviation is to provide **continuous fire support to ground maneuver formations**. 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**, and for the provision of 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 formations. It is a key component of integrated fire support, serving as a complement to artillery.

Air support is extremely important for maintaining a high rate of advance. **Maneuver units can outrun their artillery support, and artillery units can outrun their logistic support.** Maneuver units thus need air support to cover and support their advance.

Furthermore, aviation assets generally can **strike targets that are out of range of artillery**. The *front* 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.

Concept

The OPFOR concept of **integrated fire support** embraces all combat support provided to the ground-gaining arms by missile troops and artillery and by aviation forces using nuclear and conventional ammunition. Fixed-wing combat aircraft and attack helicopters provide aerial fire support to OPFOR ground maneuver formations. Air support assets are an integral element of combined arms formations at *front* and army levels.

Fixed-wing aircraft support *fronts* and armies in theaters. These assets accomplish the missions of air defense cover, air reconnaissance, 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. Exercises routinely employ attack helicopters to provide immediate fire support to tank and motorized rifle units during both the offense and defense. Helicopters also perform a variety of logistics, reconnaissance, liaison, troop control, 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.

Troop Control

Command relationships are different from those prevalent in other countries' air forces. The commander of *frontal* aviation is not the coequal but the subordinate of the *front* commander. In fact, his actual title is **deputy *front* commander for aviation**. His CP is normally 10 to 15 km from the *front* main CP to ensure a close relationship. This ensures that there is no danger of *frontal* aviation conducting separate, divergent operations in its own parochial interests instead of subordinating the air effort to the needs of the ground operation. Of course, the *front* commander takes advice from his air com-

mander, and he must act within the constraints of the operational directive from the General Staff (or theater CINC). Indeed, the *front* has an obligation to contribute substantial assets to the initial long-range fire strike. Since air superiority is important for their success, this is of direct benefit to the ground forces.

In past wars, the OPFOR sometimes placed fixed-wing aviation under the operational control of an army. Tank armies operating as OMGs in the enemy depth often received a division or more of fighter and ground-attack aviation, and sometimes fighter-bombers as well, in direct support. This was necessary, once a gap had opened between them and the combined arms armies of the *front's* first echelon, because of their relative lack of self-propelled artillery, that could keep up with a rapid advance; air power became the main source of fire support. While this use of fixed-wing aviation is not excluded **in future war, it is less likely**, particularly in the absence of air superiority. The contemporary OMG is better equipped with artillery, and an army-sized OMG has its own attack helicopter force.

Planning and Preparation

Frontal aviation and the ground forces have an integrated troop control structure. This ensures close and continuous coordination in a combined arms offensive. At *front* level, the **deputy commander for aviation** serves as chief of aviation on the *front* staff. This deputy commander and his staff evaluate the situation based on the *front* commander's concept of the operation. They then plan the air portion of an operation and recommend the proper employment of air assets to the *front* commander.

This **aviation staff** then formulates plans to support the *front* commander's operations. If time is very short, the **army staffs** may concurrently develop plans for their appropriate levels, based upon preliminary instructions from the *front*. The *front* commander has overall responsibility to integrate air support with the ground combat missions. To achieve a coordinated combat plan, *frontal* aviation sends personnel and communications equipment to the armies.

The **army** commander and his **aviation staff** reconcile the allocated air assets with the air support requirements of the 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 the fixed- and rotary-wing aircraft. Their 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 *front* fire support plan.**

Then, the **deputy *front* 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. The air staff at army and the air representatives at maneuver division and regiment level then confirm, for the respective commanders, the air resources allocated to them. Normally, the deputy *front* commander for aviation **holds a percentage of his forces in reserve** to meet 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 regiment**. Then, the regimental commander explains his objectives to the commander of the supporting air unit and to the **forward air controller (FAC)** assigned to his regiment. He also seeks their recommendations.

Both *front* and army commanders pay particular attention to the **coordination of artillery and missile fire with preplanned and on-call air strikes**. This fire can then neutralize or suppress enemy air defenses before attack aircraft arrive.

Nuclear Fires

Ground and air commanders and their staffs coordinate plans for the delivery of nuclear strikes. The **combined arms forces' commander** decides the employment tactics for nuclear weapons immediately within the ground force zone of advance to the depth of the range of his missions. His decisions cover these crucial details: the target and the type, method, and time of delivery of nuclear strikes for his own missiles and for the aircraft operating in the zone of advance. The commander in charge of the entire operation is usually the *front* commander or above. **He assigns aviation missions to deliver nuclear strikes beyond the range of ground force missiles.**

Centralization Versus Decentralization

The OPFOR normally maintains strict **centralized control** of air support resources. 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 or formation will accomplish the missions he requested.

Such centralized control 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 objectives. Operations on separate and disconnected axes may use **decentralized employment** of aviation. They may especially use **combat helicopters** for this. 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 OPFOR's doctrine for a fast-moving offensive.

Aviation Control Element

The staff of the army and division usually has an **aviation control element**. At army, this element generally consists of the following personnel: an air controller, an intelligence officer, a liaison officer, and communications personnel. Aviation control elements at division level are similar to, but smaller than, those at army level.

Aviation control elements advise on the use of air assets. They transmit air support requests to the aviation organizations, maintain communications and control with aircraft in the battle area. They also advise the commander of air reconnaissance information. The aviation control element has two sections. One section chief collocates with the commander; the other collocates with the chief of staff.

Principles of Employment

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:

- Early attainment of air superiority.
- Employment in mass.
- Coordination and integration with other arms.
- Strict, centralized control.

Air Superiority

Air superiority is a necessary condition for the effective support of the ground forces, and indeed for the operation as a whole. (See earlier discussion under "Long-Range Fire Strike.")

Mass

The OPFOR does not spread resources evenly across its frontage but mass them on **key sectors and axes**. From the outset, strategic and *frontal* aviation concentrate on punching a few **corridors** through enemy air defenses and attacking air bases. (See Figure 10-1.) The OPFOR makes every effort to maintain air superiority over these corridors, even if it cannot do so over the whole theater of operations. **The principal air and ground forces thrusts probably go through these corridors.** Similarly, concentrations of ground-attack aviation support key thrusts forward by the ground forces.

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 *front* and army levels, the CPs of supporting/organic aviation commanders are near the ground forces CP. The combined arms commander establishes air support priorities. The details of planning and execution are then left to the **aviation commander and staff**, working in close coordination with their artillery and air defense counterparts. Divisions receiving direct air support have an **air representative** and maneuver regiments have an experienced pilot to act as a **FAC**. When a request for direct air support is approved, 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 the enemy and friendly forces. It then passes control to the FAC who visually directs the attack.

Air-ground coordination. 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, their planners do not normally use attack helicopters, fixed-wing ground attack aircraft, and artillery simultaneously in the same fire zone. However, the OPFOR has considered the possibility of using attack helicopters during artillery firing. Attacks by fixed-wing aircraft and artillery fire sometimes coincide in time, but they are on separate target sectors.

The OPFOR prefers to use **experienced pilots** from the supporting aviation unit as **FACs**. They want qualified helicopter pilots to direct helicopter strikes and

qualified fighter-bomber pilots to direct fighter-bomber strikes. However, either FAC may direct strikes by both types of supporting aviation so long as he can establish adequate air-ground communications. The OPFOR is aware of the need for ground force commanders and their deputies to learn the capabilities of modern aircraft; this allows them to guide air strikes if the FAC becomes disabled.

The FAC provides pilots with the following information:

- The target location, either in grid coordinates or in relation to a predetermined reference point.
- The time to execute the strike.
- Information on the ground situation.

The FAC normally does not attempt to mark the target. However, he frequently uses pyrotechnics to mark friendly troop locations. He may signal the pilots when they should climb and identify their target. The pilot has primary responsibility to pinpoint the target. However, the FAC adjusts the strikes for successive target runs. Briefly transmitted coded messages and prearranged signals maintain communications security between the FAC and aircrews.

Minimum safety distances between friendly troops and air strikes during peacetime exercises vary between 200 and 700 meters. In actual combat, the OPFOR likely accepts less rigid safety distances.

The OPFOR establishes **vectoring and target designation posts** as necessary to exercise control of helicopters and aircraft in a designated air sector. The posts support the introduction of aviation into an area of combat operations. They may also direct ground strikes. The posts also accomplish direct coordination between ground-attack and fighter aircraft and ground air defense units. These posts have radar, communications, and automated equipment and may be ground- or air-based.

Centralized Control

The OPFOR regards **centralization of control of fixed wing aviation assets** as a prerequisite for success. It is the corollary of mass, using the a mobility and maneuverability of aircraft to **concentrate them at the decisive point and time from bases dispersed to reduce vulnerability**. Centralized control simplifies the integration of aircraft being used in different but complementary roles (for example, reconnaissance, strike, air superiority), and their coordination with the ground forces and air defenses. It also expedites the **reallocation of assets** to meet any sudden change in the operational situation.

On the other hand, the OPFOR has largely **decentralized control of helicopters** to armies, and even divisions on occasions, (for example, if a division is acting as an OMG). This is partly because it regards attack helicopters essentially as flying artillery and partly because of the limited range of helicopters. It is also partly due to the fact that the *front* may attempt to advance on multiple, separate axes, all of which would require some air support.

Continuity

The achievement and maintenance of air superiority requires 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 mass and continuity, it **cannot use air assets to perform missions which can be executed by other means**. Thus, for instance, missile strikes might be better suited to some air defense suppression and airfield attack tasks than manned aircraft. Following this principle, the OPFOR normally employs its ground-attack aircraft outside artillery range, 30 to 40 km, sometimes up to 70 km from the line of contact. However, there may be exceptions to this rule.

Surprise

To reduce attrition 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.
- Making limited use of radio and radar.
- Degrading the enemy early warning radar net.
- Making decoy raids.
- Using *maskirovka* 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 *front* maintain a reserve of number of sorties.

Reconnaissance and Targeting

Air reconnaissance is the principal method to gather target intelligence. The *front* commander's staff prepares an overall reconnaissance plan. This plan details tasks for operational-level aviation assets. Army and *front* assets also provide intelligence to support division combat actions. *Frontal* aviation's independent reconnaissance regiment(s) and the army's 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.

Targets

Air reconnaissance determines the enemy's intentions and collects intelligence to plan air and ground operations. It has five major categories of targets:

- Nuclear weapon systems and storage depots.
- High-precision conventional weapons.
- Active and potential enemy airfields.
- Defensive positions and systems (air defense, C^2 centers, and electronic warfare centers).
- Enemy reserves, supply depots, and approach routes (particularly key intersections and bridges).

Aircraft crews on any mission should immediately report observed enemy activity. Dedicated reconnaissance regiments have the primary responsibility for air reconnaissance. These regiments have specially equipped reconnaissance aircraft. Aviation assets also have airborne electronic intelligence collectors.

The aircraft transmit perishable target intelligence by radio to ground CPs. The processing of data from an air

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 ATGM or rockets.
MULTIPLE	Group of 10-20 single targets, occupying an area of 1-1.5 km.	Attack by a small group (2-8) of 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 10-3. Classification of air strike tar gets.

reconnaissance mission takes two to eight hours. OPFOR planners are modernizing their techniques to shorten this time.

In training exercises, the OPFOR has shown some reservations about conducting **armed reconnaissance** flights before establishing air superiority. 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.

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.

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)**.[3] Under this concept, an operational-level commander centrally controls **long-range MRLs, SSMs, fixed-wing aircraft, and helicopters**, linked through an automated system for processing and disseminating reconnaissance data. The goal is to attack en-

[3] 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.

emy targets in real time or near-real time. The long-range strike assets target their enemy counterparts, including nuclear delivery systems and high-precision weapons. An RSC may combine with radioelectronic combat (REC) assets to conduct an electronic-fire strike.

Mission Types

The OPFOR recognizes the importance of air support for the ground forces. It uses the following types of air support missions to support these requirements: on-call, preplanned, and immediate.

On-Call

Planners may **pre-designate a target for on-call attack** by aviation assets. However, the ground forces commander can choose the time for the strike at his discretion. This gives him flexibility to move quickly if the target is no longer a problem to the attack. The ground forces can then 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 would also keep a portion of available air assets, the size dependent on the phase of the operation, in readiness to execute **on-call attacks against unexpected targets**. In very fluid situations, fighter-bombers may also participate in "free hunting" sorties, i.e., armed reconnaissance missions, in which they attack targets of opportunity.

Preplanned

Most attacks 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, in coordination with artillery and air defense staffs. They may be either part of a timed program of attacks or on-call at the discretion of maneuver commanders.

Air crews of the aviation regiments and squadrons study preplanned target assignments closely to determine the best attack techniques. They use large-scale maps for reference. In some cases, they use scale models of the terrain and targets to learn the terrain in their sector. The models help the crews to determine ingress and egress routes and to plan tactical maneuvers.

Once airborne, the aircraft proceed 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 aircrews also use prearranged signals for mutual identification. Aviation control elements 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. When 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.

Immediate

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 aviation control element. Otherwise, army or *front* must approve this request, depending on the size of support the maneuver division requested. As with preplanned support, the aviation control element at each command level participates directly to evaluate each air support request and 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 *frontal* aviation aircraft and crews. Aircraft in categories one and two respond to ground force requests for immediate air support. Before takeoff, pilots are briefed 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 him 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 logistic requirements compared to those of fixed-wing aircraft. This very often allows deployment close to the main battle area, plus enhances their ability to respond to on-call missions. The OPFOR indicates that helicopters have other advantages over high-performance aircraft: their ability to concentrate and maneuver undetected for a strike and the enhanced capability of their pilots to evaluate more rapidly and exactly the battlefield conditions. The OPFOR is aware of the vulnerability of helicopters to high-performance enemy fighters. It thus prefers to employ them in ground support only to the range of their air defense umbrella.

Conversely, the OPFOR employs **fixed-wing aircraft** more frequently in strikes on previously reconnoitered, fixed or semifixed targets, in the immediate rear, or at greater depths. 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.

Planning

Air strikes in **direct support** of ground maneuver formations are **primarily preplanned, with some on-call**. The combined arms commander identifies the targets, times, and desired damage for air strikes. The aviation commander determines the force, size, ordnance, and attack technique that will accomplish the strike mission.

The staff plans these **preplanned** strikes in great detail and integrates them with other forms of fire support. Large scale maps and, in some cases, terrain models familiarize pilots with targets, and help them plan approach and departure routes. Using them, pilots can develop attack techniques.

Pilots practice and develop variations to acquire a ready response to changes in the situation.

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, communication codes, and approach and departure routes. Under favorable conditions, some aviation assets may also "free hunt" targets.

The combined arms commander holds a portion of available air assets in reserve, ready to execute **immediate** missions against unexpected targets. Maneuver force commanders have discretion to time the **on-call** strikes against predesignated targets. Aircraft and helicopters designated for on-call missions can be airborne in holding areas or on the ground at forward airfields.

Readiness Categories

The OPFOR recognizes **three levels of combat readiness** for *frontal* aviation fighter-bomber aircraft and crews. Figure 10-4 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.

Transit time can vary according to the proximity of the airfields to the target. It can be very short for attack helicopters, since these are held on 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 *maskirovka* and surprise in paralyzing hostile air defenses. To this end, it employs the following attack techniques and radioelectronic combat (REC) measures.

Attack Techniques

As far as possible, aircraft approach the target area along corridors created through the enemy ground-based defenses. They usually make the approach at the lowest permissible altitude given weather and terrain restrictions, ideally at a 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 antiaircraft effectiveness, visual detection, and recognition.

Radioelectronic Combat

REC plays a large role in neutralizing air defenses. As long as enemy air defense relies on radioelectronic equipment, the OPFOR considers neutralizing it through interference a major way to reduce aircraft losses. OPFOR aircraft possess radioelectronic jamming equipment. Special SOJ and ESJ aircraft protect the raid, and raiding aircraft use SSJ. Moreover, the ground forces attempt to neutralize or destroy all identified air defense weapons and radars within range with fire and ground-based radar jamming. All these efforts help to reduce OPFOR aircraft losses.

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 10-4. Levels of combat readiness.

Offense

The OPFOR has steadily increased the offensive air capabilities of their fixed-wing and helicopter assets to support their fast-moving ground forces. The OPFOR studied the U.S. Army use of air support in Vietnam. They applied these lessons to their own combat experience in the intervening years. They continue to improve the quality

and quantity of all aircraft to achieve their tactical, operational, and strategic goals.

Phases of Air Support

Besides the long-range fire strike at the onset of theater-level hostilities, OPFOR doctrine calls for air support of ground forces in offensive operations. The OPFOR recognizes four phases of air support within an offensive operation, as follows:

- Phase I: air support for movement forward.
- Phase II: air preparation.
- Phase III: preplanned and immediate air support.
- Phase IV: air accompaniment.

These 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 OPFOR plans to coordinate the fire support of SSM, artillery, and air assets into the **integrated fire destruction of the enemy** throughout the entire depth of the enemy's defenses. Fire support in an offensive begins when the OPFOR unit leaves the assembly area. The combined arms commander must increase the volume of air strikes and artillery fire to destroy enemy AT systems during preparatory fires. It continues after the supported formation completes the penetration.

Air support for movement forward. The OPFOR introduced this phase to support the movement of an operational maneuver group (OMG). However, Phase I also applies to conventional 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.** It 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 weapons, long-range artillery and SSMs; they also include aircraft on airfields and combat helicopters. The OPFOR uses aviation, SSMs, long-range guns, and MRLs to destroy or suppress these deep targets. The deepest targets are the responsibility of aviation. Air support for the movement forward may extend over several hours.

Air preparation. Phase II, like Phase I, occurs prior to 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, the air preparation extends no farther than the enemy's immediate operational depth (i.e., to the rear areas of defending corps, about 250 to 350 km). Air attacks destroy those targets which conventional artillery and missiles cannot, due to distance, mobility or to their hardened nature. Targets thus include--

- Enemy nuclear delivery means and high-precision weapons.
- Airfields and forward operating sites for helicopters.
- Artillery.
- Electronic warfare sites.
- C^2 centers.
- Deep defensive positions.
- Reserves and their approach routes (e.g., key roads junctions, defiles).
- Logistics sites.

Depending on the combat situation, the air 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 length and organization of the preparation reflects--

- The nature of the enemy's defenses.
- The type and density of fire support means used for the preparation.
- The role of nuclear strikes in the attack plan.
- The nature of the ground attack.

Air preparation usually takes place simultaneously with missile and artillery preparation and 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 may have to repeat this phase against well-fortified, deeply echeloned defenses. In special situations, such as amphibious assaults, strategic aviation and/or naval aviation may participate in air preparation attacks.

Preplanned and immediate air support. Phase III begins when the maneuver formations launch their attack. 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 OPFOR 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 weapons, C^2 systems, and enemy reserves at tactical and immediate operational depths.

This phase starts immediately after the end of the fire preparation. It continues at least until OPFOR attacking units overrun enemy frontline battalions.

Air Accompaniment

OPFOR ground forces may have air accompaniment as they penetrate deeply into enemy defenses. The specific point at which Phase IV begins is not clear. However, it begins with the end of Phase II and continues until the supported maneuver forces have accomplished their missions. This phase occurs during the advanced stage of offensive operations when the progress of the ground forces has outstripped the prepared fire support plan; the OPFOR commander must then reassess and **reallocate air resources**. Once he has allocated air resources before an offensive, the *front* commander plays little further direct role in the conduct of air support unless large reallocations are necessary. However, in Phase IV, the *front* commander again has the primary role. He probably reallocates significant air resources to support maneuver forces as the combat situation develops.

Responsibility for tasking is, to a large extent, decentralized to armies, though the *front* commander continues to hold some resources in reserve for the execution of deep missions of longer-term interest to the *front*. The commander must also reallocate his air assets to maneuver formations according to the development of the combat situation. The importance of direct air support increases dramatically in this phase due to the increasing difficulty of target acquisition by artillery, and indeed because of the difficulty the artillery and its logistics sup-

port has in keeping up with a **high-speed advance**. Air support is seen as particularly valuable in meeting engagements/battles and in pursuit, as a **substitute for artillery**.

The main burden falls on the **attack helicopter** units, since they are best able to offer both rapid and intimate support, especially in difficult terrain or a confused situation. Helicopters have other advantages over high-performance aircraft. They can concentrate and probably maneuver undetected for an attack. They can conduct ambushes. Helicopter pilots are more capable of evaluating battlefield conditions rapidly and exactly. On the other hand, they are somewhat vulnerable to enemy fighters and ground fire, and there is a reluctance to use helicopters outside the protection of the air defense envelope, at least if fighter top cover is not available.

As well as hitting forward enemy groupings to help the attacks of maneuver units, air attacks can cover deployment and commitment of second echelons, engage enemy reserves moving forward and withdrawing units, and prevent the enemy from establishing new defensive positions. Another important and demanding air accompaniment mission is the escort of airborne or heliborne forces delivered into the enemy's rear. This requirement for **air cover** might take place 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. Thus, they free fixed-wing aircraft for missions against deeper targets such as nuclear weapon depots and airfields.

In a **meeting engagement**, air support assets, especially attack helicopters, screen and support OPFOR units as they maneuver into position. Also, air strikes attack enemy columns moving forward to reinforce engaged units. OPFOR exercise scenarios frequently have attack helicopters employed 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 may 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 the ground forces during the offense. The OPFOR has carefully studied using helicopters in conjunction with artillery fire. Fire planners normally employ attack helicopters after the completion of the artillery preparation; however, they may use both simultaneously. In such a situation, the 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 provide fire support quickly for attacking ground forces. (See Figure 10-5.)

Helicopters can support ground forces which penetrate deeply into the enemy rear areas. The OPFOR may employ a

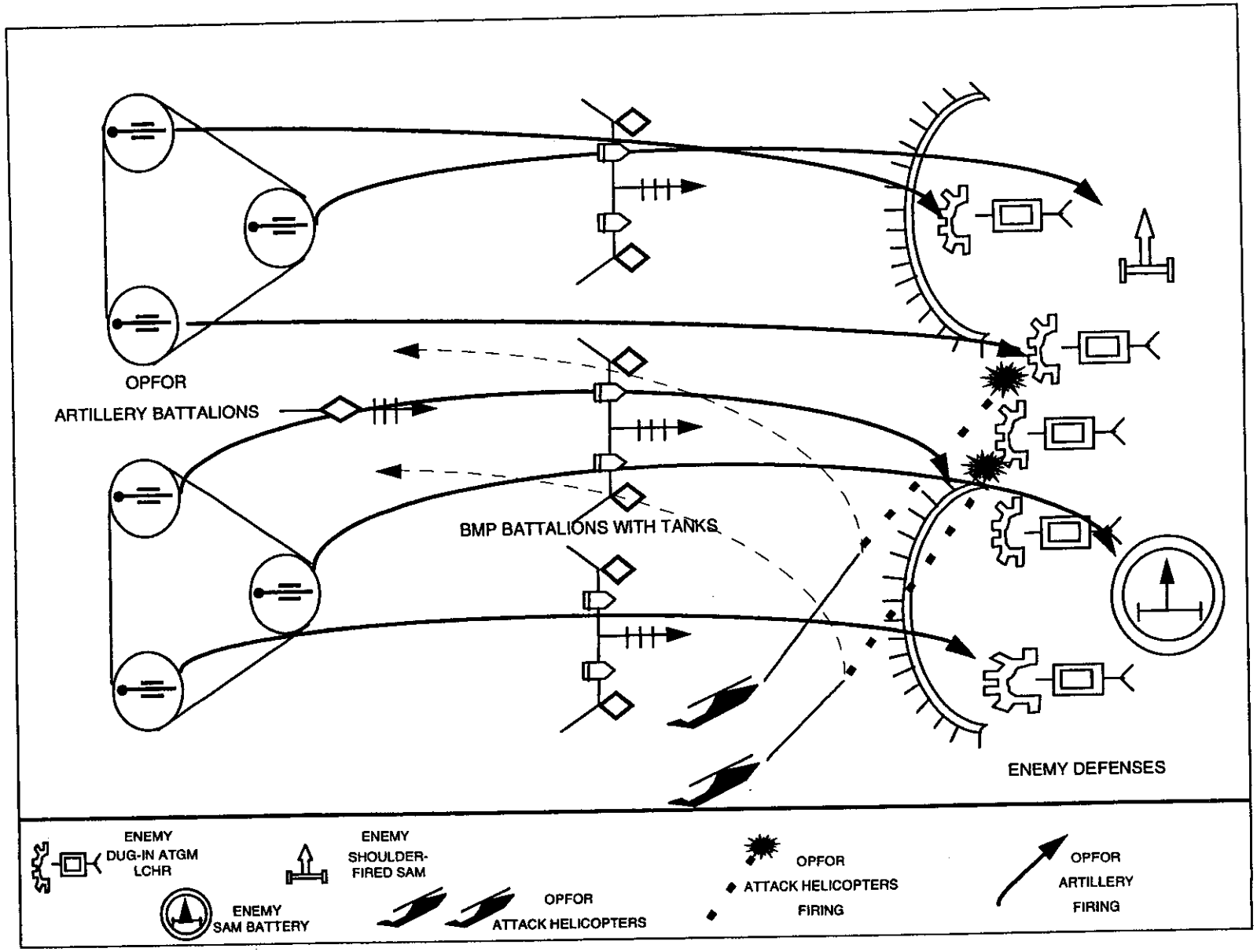

Figure 10-5. Coordination of artillery fire and attack helicopters

pair of attack helicopters at an altitude of 1,000 to 1,500 meters. The attack helicopters fire in support of the 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 *frontal* 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 OPFOR ground forces advancing at high speed. However, the OPFOR wants a type of aircraft that can operate from small, unpaved airfields, ensuring reliable support to their ground forces. The attack helicopter has the required flexibility to provide this support.

Fixed-wing. Each air regiment has 2 to 3 airfields, each division thus 4 to 9, of which two-thirds are active and one-third alternative. The *front* as a whole probably makes use of 35 percent permanent bases, 35 percent. deployment fields, and 30 percent of the total as maneuver/alternative fields for dispersal in the face of attack or for the use of temporary groupings. (Normally, aircraft do not recover to the fields from which they launched the mission.) In emergency, highway strips can also be used 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. Extensive use is also made of *maskirovka* to enhance survivability. Of course, as *fronts* advance deep, the problem of forward bases for aircraft can become significant. This explains the priority the OPFOR gives, during deep operations, to the seizure of enemy airfields by airborne or heliborne landings or forward detachments. *Frontal* aviation's 4 to 9 airfield maintenance battalions, which advance with the forward-most ground forces, can restored/improve these, as well as suitable highway strips.

Rotary-wing. Attack helicopters deploy to forward operating sites which move forward with the advance or rearward during a withdrawal. For protection, they are usually sited near second-echelon units of forward divisions or with second-echelon divisions, i.e., 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 that up to a regiment can continue to operate from within the formation once the separation from the main forces has become too great for safe transit or adequate loiter times.

Air Allocation

The procedure for distributing *frontal* aviation sorties to the armies, and in turn to the divisions, is a **top-down** method starting 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 commander does not let air assets 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 is required, however, to maintain a daily **reserve** of 10 to 20 percent of sorties to meet daily contingencies. As a rule of thumb, each ground army operating on the main axis is allocated an average of 2 to 3 regimental sorties per day, with armies on

secondary axes receiving up to one. The strength of *frontal* aviation must be maintained 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 that air power can play in the offensive is to keep enemy air off the backs of the ground forces. This requirement is vital and ongoing. There are, however, periods when the failure to achieve or maintain air superiority would assuredly result in failure, and the addition of offensive air support may well 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 may well attack in waves of 4 to 12 aircraft each. On the other hand, regimental sorties may be employed 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 and/or counterattack. This is especially the case if the second echelon or OMG 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-sized force. Air defense must be impregnable, and if the artillery has not kept up in adequate strength, direct air support may well be necessary to complete the penetration, destroy or neutralize enemy artillery, interdict reserves, repel counterattacks, and even to lay smoke. During this period, the bulk of *frontal* aviation is committed in support (traditionally 70 to 80 percent).

Repelling counterattacks/ counterstrikes. If the enemy succeeds in getting his timing right, he can mount a counterattack/counterstrike at a time when the attacker is unbalanced and in poor shape to meet it. Air power may be the main or only means of breaking up the attack, or at least of disrupting and slowing it down.

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, are relatively light in artillery. Moreover, their artillery may find that keeping up with the maneuver units becomes a real problem, as does logistics support. The ground maneuver force thus looks to ground-attack aviation to compensate for the deficiencies, especially when forcing water obstacles or breaching lines in the enemy 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. In the event an encircled grouping establishes a viable defense (a very unwelcome development), air action can also play a major role in preventing enemy aerial resupply.

Defense

Where elements of a *front* in the offensive have transitioned to defense, priority in allocating air support normally goes to those formations which are still conducting a successful advance. Aircraft committed to helping a defending grouping have their fire 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 tactical rockets. They also plan to use all fire support weapons to concentrate fire on forces that have reached, or penetrated, forward defensive positions.

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 five phases:

- Phase I: counterpreparatory fire.
- Phase II: fire interdiction of the advance and deployment of enemy troops.
- Phase III: fire to repel the enemy attack.
- Phase IV: fire support of defending troops.
- Phase V: fire destruction of the enemy during a counterattack/ counterstrike.

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. Air strikes, along with intensive delivery of rocket, missile, and artillery strikes, are intended to annihilate or neutralize enemy forces preparing to attack. This first phase of the defensive fires should start before the enemy's preparation fires. The targets of the counterpreparation, roughly in order of priority, are as follows:

- Nuclear delivery systems and high-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.

Helicopters

The OPFOR uses helicopters for counterpenetration (Phase II), in ambushes (using terrain or smoke cover) against advancing groupings (Phase II), and in repelling an enemy attack (Phase III). They also provide accompaniment for counterattacks/counterstrikes by maneuver units (Phase V) and help in the neutralization of enemy artillery.

In support of defending troops (Phase IV), helicopters with ATGMs coun-

terattack 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, the helicopters may use smoke to conceal their approach. During withdrawal, helicopters support rear guard units by attacking advancing enemy units from ambushes at minimum altitudes. They may also lay minefields.

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Chapter 11
Air Defense Support

The OPFOR system of air defense supports all levels of military art: strategic, operational, and tactical. This chapter briefly addresses the air defense operation, which is a major component of strategic operations within a theater. However, the main focus is on air defense of maneuver forces at the operational level, as it overlaps with tactical coverage.

AIR DEFENSE OPERATION

The air defense operation focus on defending friendly forces and contributing to OPFOR air superiority. 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 phase of a strategic offensive (or defensive) operation. If that operation 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 that the OPFOR may not yet hold the initiative in the air. Then its immediate priority in the possibly prolonged air defense operation would be to provide freedom of movement to friendly forces; simultaneously, it would 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 *front* offensive operations and the long-range fire strike.

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

- *Frontal* aviation.
- The ground-based surface-to-air missile (SAM), air defense artillery systems and radioelectronic combat (REC) systems of the ground forces.
- The national air defense forces.
- The 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 would combine 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 range and flexibility of enemy air power requires this unification of theater assets. It would provide protection for--

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

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

Initially, the air defense operation would consist of two echelons: the air and air defense formations of the first-echelon *fronts* and air defense forces protecting the rear area. As the first-echelon *fronts* advance, this could create gaps that the enemy could exploit to attack follow-on

forces. Therefore, the OPFOR would have to organize an additional air defense echelon to prevent the development of gaps in the rear. This would involve theater resources with a mix of aviation and ground-based air defense systems. The OPFOR could create independent air defense formations as large as a *front* for each strategic direction. This would ensure continuity of air defense behind the first-echelon *fronts*.

CAPABILITIES

Current OPFOR air defense systems present a formidable threat to any potential air enemy. OPFOR air defense efforts appear to be nearly state-of-the-art when viewed as a whole. The OPFOR employs air defense weapons in types and quantities unmatched by any other military force. In addition, its air defense doctrine is comprehensive in threat evaluation and formulated response. The doctrine is cohesive in both organization and equipment. Air defense effectively supports the concept and requirements of combined arms combat. Thus, it is an integral component of the OPFOR combined arms force. Successful 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 OPFOR air defense is to prevent enemy air action from interfering with maneuver force operations. It can achieve this reduction in two ways:

- Forcing enemy aircraft to expend ordnance while still beyond the effective or optimum ranges of their weapons.
- Destroying or aborting aircraft when they come within effective range of OPFOR air defense weapons.

The air defense forces protect ground force units and other potential targets from attacks by fixed-wing ground-attack aircraft, cruise missiles, and armed helicopters. OPFOR 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

OPFOR air defense of maneuver units can involve three phases. **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 SSMs play the major role in this phase. **Phase II** includes all actions to destroy enemy aircraft while in flight but still at some distance from OPFOR ground forces. OPFOR aviation plays a significant role in this phase. Medium-range SAM units may also play some role. **Phase III** is the destruction of enemy airplanes and helicopters penetrating the airspace of OPFOR maneuver elements. This role belongs primarily to OPFOR tactical air defense forces. All three phases may overlap. All phases may also occur simultaneously.

PRINCIPLES

The OPFOR follows several basic principles when conducting air defense. These principles include: **firepower, surprise, mobility and maneuver, creativity and initiative, coordination of actions, and security**. All of these principles are important to the overall

success of air defense. However, the OPFOR views the element of surprise as the most critical to a successful air defense operation.

Firepower

The OPFOR employs a wide variety of air defense weapons, both missiles and guns. Its force structure includes a significant number of these weapons with a suitable mix of capabilities for ground force commanders. This mixture gives the OPFOR outstanding firepower capabilities.

Surprise

The achievement of surprise is fundamental to any successful air defense operation. The OPFOR is aware of the potential physical destruction which 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 attacking air crews at critical moments.

In addition, the element of surprise is increasingly important due to modern technological advances. Today, the speed and evasiveness of modern aircraft reduce engagement times. Modern aircraft also have great firepower 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, for this is a principal means of determining OPFOR operational formation.

Mobility and Maneuver

The OPFOR commander must always consider the mobility and maneuver capabilities of his air defense weapons and the time required for deployment. The targets for which they must provide cover are very mobile and frequently change shape as they deploy. The air enemy is even more mobile, and is able to attack from a variety of directions or altitudes. The commander must utilize to the maximum the mobility and firepower of his assets, creating optimum groupings and fireplans. Only constantly moving air defense units with adequate logistical support can ensure comprehensive air coverage. These units must provide continuous air defense.

Creativity and Initiative

The future battlefield will be a fluid and volatile environment where air defense unit commanders must respond to constant changes in the situation. The OPFOR recognizes that air defense unit commanders must exploit the full capabilities of their equipment to complete their missions. 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 employed by enemy air forces.

Coordination of Actions

The OPFOR stresses coordination between supported maneuver and supporting air defense units and between air defense units. The OPFOR perceives air defense to be a single system composed of various parts. It does not view air defense as a series of different actions that bear no relation to each other or the conduct of the ground battle. Air defense is an integral element of the ground battle.

All regiment- and division-level weap-ons must coordinate precisely with flanking formations and with air defense, strike and assault aviation and possible 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 *front* headquarters playing a key role as a land-air interface.

All-Around 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.

ASSETS AND ORGANIZATION

The OPFOR 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 newly designed air defense weapons. The OPFOR has also improved weapons already in production. In addition, it has developed a variety of air defense missiles while continuing to develop antiaircraft artillery (AAA).

Surface-to-Air Missiles

An OPFOR *front* has one or possibly two SAM brigades. In addition, a *front* may have an independent SAM regiment. The SA-12 SAM brigade is composed of three SAM battalions. The SA-12a/GLADIATOR and the SA-12b/GIANT are replacing the SA-4 in *front*-level SAM units.

An OPFOR army usually has one SAM brigade equipped with the SA-4/GANEF or SA-11/GADFLY. The SA-11 SAM brigade has four SAM battalions. The SA-4 SAM brigade has three SAM battalions. The SA-11 is replacing the SA-4 in army-level SAM brigades. Generally, the army-level air defense units have two missions:

- To complement divisional air defense capabilities in the forward area.
- To engage and destroy aircraft that pass the divisions' air defense systems.

Radars

The OPFOR has extensive and effective radar target detection and fire control systems. These 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. OPFOR radars work as systems rather than

as separate units. The majority of target acquisition radars concentrate above division level. Army and *front* air defense operations centers therefore accumulate and process most target information and pass it down to divisions. High-level commanders select the weapon system that can best engage a given target. *Front*, army, and division target acquisition radars detect and monitor the targets. These radars provide the necessary data for engagement. They do this without unnecessarily exposing the air defense firing battery and radars mounted on transporter-erector-launcher and radar (TELARs) to detection by enemy forces and subsequent neutralization by ECM or destruction.

TRENDS

Coverage

The most evident trend in OPFOR air defense developments in recent years has been the progressive **increase in the size of the engagement envelope**. Overall, OPFOR engagement ranges have lengthened, and minimum altitudes and ranges have shortened. Operational level weapons now offer comprehensive, overlapping area coverage. The increasing number and variety of associated radars have also increased surveillance coverage, warning time, and the number of simultaneous engagements possible.

Continued Modernization

The OPFOR is dedicated to improving the quality of air defense systems and capabilities. If economically feasible, the OPFOR will continue to upgrade and increase the lethality of its air defense weapons. Consequently, air defense forces continually receive new weapons systems and modify previously fielded systems. The overall quality of OPFOR air defense assets will continue to improve. Technological developments in remotely-guided standoff weapons will affect future OPFOR air defense weapon development.

Redundancy

The more recently fielded weapons systems have redundant missile guidance features. These capabilities provide an enhanced ability to conduct successful engagements in a sophisticated counter-measures environment.

TROOP CONTROL

The lethality of air defense weapons and their deployment at lower levels in the force structure is increasing. 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 troop control. The OPFOR combines ground-based air defense assets with fixed-wing aircraft forces to provide an integrated air defense umbrella to the ground units.

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 for the support fast-paced operations by

maneuver units and in meeting unforeseen local contingencies.

The regimental air defense staff sometimes plays a role in the employment of company air defense weapons. On occasion, the division air defense staff dictates how maneuver regiments employ their air defense batteries. In some situations, the army or *front* 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 multitude of air defense weapons in the OPFOR inventory, commanders must divide the airspace among various systems. Coordination between fighters and ground-based systems is accomplished by allocating zones of responsibility to each. These zones are delineated both horizontally and vertically. There are generally four basic ways of dividing the zones of responsibility: in terms of altitude, direction (axis), targets, and of lines. (See Figure 11-1.)

A geographic division of the airspace might include establishing a line parallel to, and well beyond, the ground forces line of contact. This would be beyond the maximum range of SA-4/SA-12 SAMs. Air forces of the *front* engage enemy aircraft forward of this boundary. Ground-based air defense systems engage aircraft to the rear of this boundary. There also may be "safe corridors" through the engagement envelopes of ground-based systems. These would allow safe passage of OPFOR aircraft beyond the line of contact. The OPFOR may use these corridors in conjunction with time periods in which SAM units refrain from engaging aircraft unless directly attacked. The OPFOR may also establish time periods to fire on all aircraft or on no aircraft.

RECONNAISSANCE

The OPFOR concept of **reconnaissance** in air defense includes airspace surveillance and terrain evaluation for suitable weapon 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 the 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 OPFOR 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 ATGMs are of special concern. The OPFOR considers armed helicopters to be a serious threat to its tank and motorized rifle forces. OPFOR commanders are trained to observe 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.

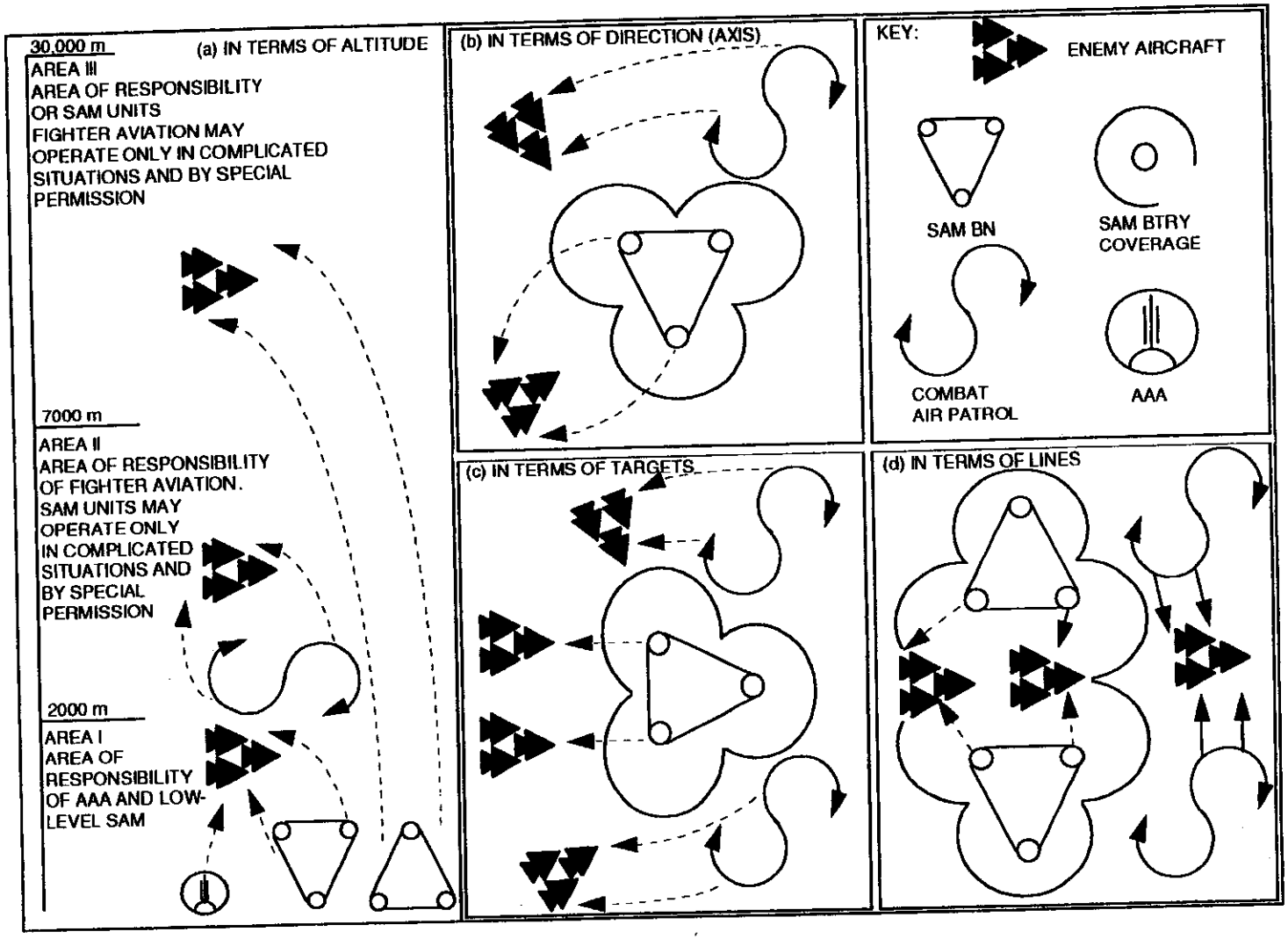

Figure 11-1. Coordination of fighter aviation and SAM defenses.

Air Surveillance

OPFOR air defense radars at all levels are integrated into an overall system of coverage. Army early warning battalions deploy their radars 10 km or so from the line of contact, giving 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. *Front* establishes a second line of radar posts about 50 km behind the first to give depth. Both maintain reserves to expand coverage as the operation develops, replace casualties, or establish a new line of radar posts. While offensive operations are in preparation, army posts remain inactive as part of *maskirovka*, and the *front* reserve radars deploy forward.

Fire control radars are only turned on at the last minute to achieve surprise and avoid exposing themselves to enemy electronic or physical attack (including anti-radiation missiles). The OPFOR 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 and the use of frequency hopping makes ECM very difficult. OPFOR operator training stresses ECCM skills and the use of radio and electronic silence where possible. Radar reconnaissance is backed up by visual observation within units. The OPFOR stresses that the latter is still as important as it ever was, especially against low-flying aircraft. OPFOR regiments and divisions have a radio net devoted exclusively to the passage of air and NBC warnings.

involves all information on enemy air actions, while the second provides a picture of the overall air situation.

It is critical that the OPFOR obtains data that allows it to determine **probable enemy action**. This is the data necessary to the planning and organization of the air defense system. This information includes--

- 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.

The success of the OPFOR depends upon the creation of a clear picture of the **air situation** as it develops. This is the data necessary to determine the enemy plans, air order of battle, and objectives in order to assign targets to fire units or redeploy resources. It includes the positions, types, numbers, direction, speed, and altitude of aircraft in flight. Radio intercept provides some data by, but most comes from air defense radars.

ECM AND ECCM

The OPFOR uses electronic and electro-optical means and visual observation to conduct air surveillance. Radar provides an all-weather detection capability. Whenever possible, higher-level radar units pass preliminary targets to air defense

OPFOR air defense units employ the following measures:

- **Signal security**. The radars of the SAM and AAA systems that moved forward to cover the initial assault remain silent until after the assault begins.
- **Frequency spread**. Each of the diverse air defense systems operates within separate radar frequency bands. (No one jamming system could operate simultaneously against all bands.)
- **Frequency diversity**. OPFOR 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 wave. Some radar tracking systems also possess optical tracking for continued operations in a high ECM environment. Other systems use infrared homing.
- **Mobility**. All OPFOR tactical air defense systems are extremely mobile. They can quickly change positions after firing or after enemy reconnaissance detect them.

MISSIONS

It is impossible to defend everywhere adequately. Therefore, the OPFOR must establish priorities to ensure dense coverage of key targets. Priorities include: air and missile nuclear delivery means (including

Front

Front headquarters plays a major role in the control of the air defense assets of its subordinate units. The *front* uses its own air defense weapons for various missions, depending on the situation. Some *front* assets may cover the air defense weapons of armies of the *front*. Others may provide general, *front*-wide air defense coverage or fill gaps between armies. In any event, *front* air defense assets primarily ensure continuous coverage in both detection and engagement capabilities. *Front* air defense weapons usually are somewhere to the rear of army air defense weapons to engage aircraft that penetrate forward air defenses.

Front SA-12s are used in a variety of ways. Some fire 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 SA-4/SA-11 units of OPFOR armies provide medium- to high-altitude air defense. They augment the air defense assets of divisions. Laterally, this SA-4/SA-11 coverage overlaps the envelope of adjacent armies.

SA-11s protect key targets such as the army or *front* CP or operational-tactical SSMs. Army SA-11s cover the whole army area against low- to medium-altitude attack,

Division

Divisional SA-8s, SA-6s, or SA-15s provide area coverage for the entire division, overlapping with flanking formations. Typically, two batteries might be in direct support of two first-echelon regiments, while the other two to three protect the division CP, DAG, secondechelon, and logistical units. Each regiment has an air defense battalion with a SA-13 battery to cover the RAG and regimental CP, a 2S6 battery to protect the maneuver battalions, and an SA-16/18 battery to augment the efforts of other batteries in protecting key targets.

Air Defense Umbrella

Front-through-division air defense assets create an area defense. Radars provide an unbroken detection envelope extending well into enemy territory and across the entire zone of operations. *Front* SA-4/12a/12b and army SA-4/SA-11 SAM units are probably the first to engage enemy aircraft that slip past OPFOR fighters. While gaps may appear in the missile engagement envelope, the OPFOR strives to maintain continuous coverage.

Overall, the division's air defense capabilities have progressed from a point defense system to an area defense system. The area defense weapons of *front*, army and the division's point defense weapons will combine capabilities. This combination gives OPFOR ground forces a comprehensive, overlapping, and mobile area air defense system.

Figure 11-2 illustrates the vertical coverage and one dimension of the horizontal coverage of air defense equipment of the OPFOR. It assumes that weapons are deployed up to the following distances from the line of contact:

SA-12	25 km or more
SA-6/8/11/15	5 km
2S6 and SA-13	2 km
SA-16/18	1 km

Generally, weapons at army level and below deploy rearward from the line of contact at one-third to one-half of their engagement range. However, aircraft attempting to penetrate should run into overlapping defensive systems.

If the air defense "umbrella" does not move forward when necessary, OPFOR tanks and motorized rifle units become exposed to enemy ground-attack aircraft and armed helicopters. They may then suffer major losses. 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. Holes can appear in the air defense umbrella, both in surveillance and in weapons coverage.

High Ammunition Expenditure

The OPFOR prefers to engage a hostile aircraft prematurely and waste some ammunition rather then waiting in an advantageous position and 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 continuesunless a later acquired target seriously threatens the air defense elements. Air observers and weapon crews outside the

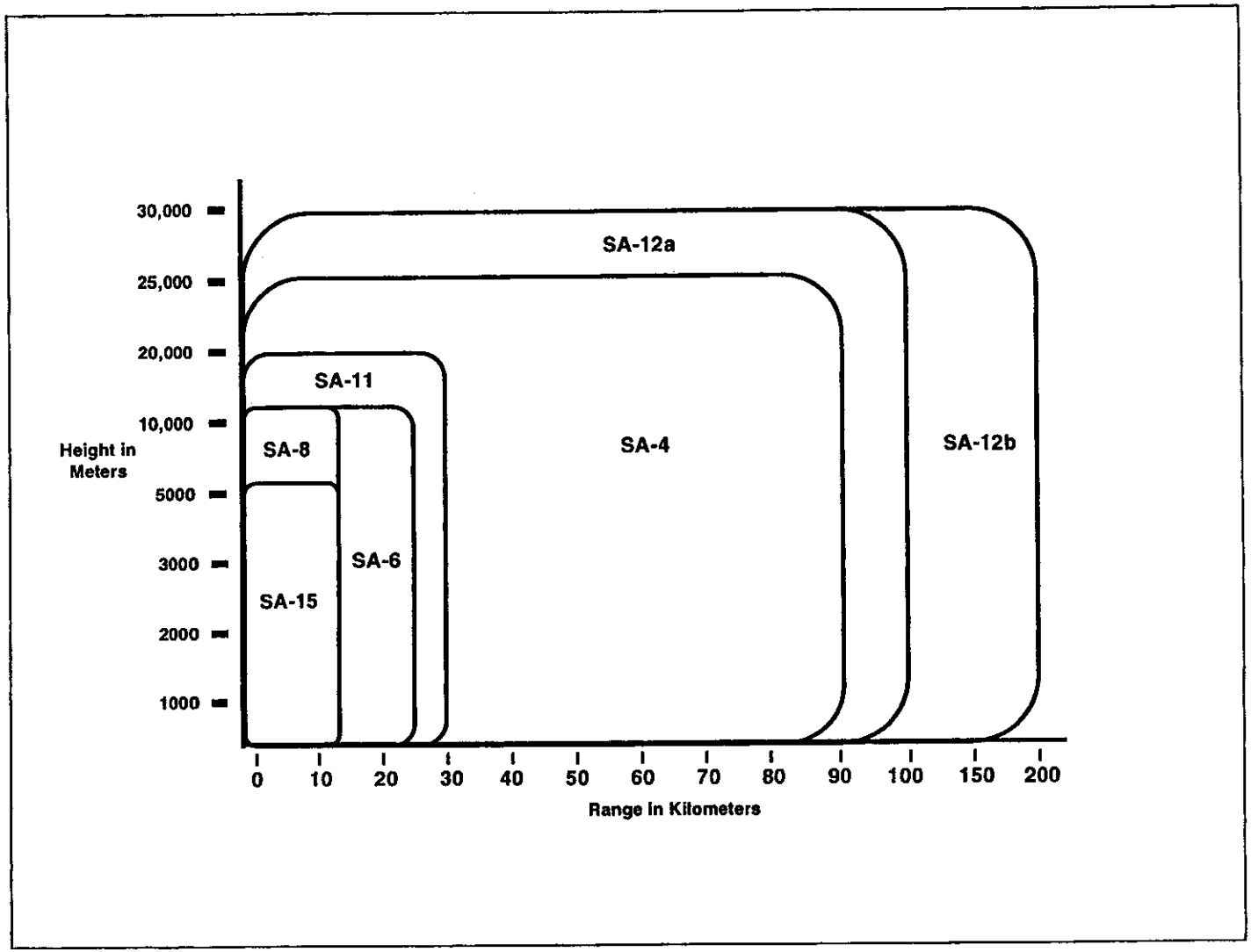

Figure 11-2. Air defense coverage.

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 the attacking maneuver units. The air defense units of this system are a vital part of the combined arms operation. OPFOR air defense weapons can fully support fast-moving tank and motorized rifle forces in dynamic offensive combat. If necessary, even some mobile strategic systems can deploy.

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 formations move from the march into meeting engagements or battles, conduct attacks from a position of close contact (including forced river crossings), or launch a pursuit. The most common methods are the following:

- Where the air threat is low, the complete air defense unit may be assigned lines of deployment to occupy in succession. When a division is to attack with detailed preparation, much of its air defense deploys forward in advance to cover its DAG and lines of deployment into prebattle and battle formation. The same procedure is used for commitment of an OMG, at which stage very dense air defenses are seen to be essential.
- When the air threat is continuous, fire units may leapfrog forward into successive fire positions, maintaining continuous coverage of supported units.
- In a highly mobile, fragmented battle, air defense may be integrated into combat groupings. and occupy temporary firing positions on less likely approaches or in gaps between the coverage of the main defenses.
- Air defense ambushes are often set up. Batteries or individual weapons may cover gaps or the main approaches but away from their main firing positions to avoid compromising the latter prior to the main threat developing, and to confuse enemy intelligence.

Air defense units of *front* and army conduct what is basically an area defense. They engage enemy aircraft at some distance from the supported maneuver divisions and themselves. Divisional SAM regiments conduct primarily an area defense. There is, however, a significant element of point defense in support of the division's maneuver regiments. Air defense artillery batteries conduct largely point-type defenses because of the capabilities of their weapons and the units they defend.

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 observations.

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 no air threat.

The OPFOR believes that air power plays an increasingly important role in contemporary war, thanks to the increases that have taken place 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 been transformed into 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 will depend on the achievement of air superiority, when and where it matters most. Conversely, the failure of the OPFOR to provide effective air defense against enemy air power can result in operational and tactical failures.

Mountains and Water Obstacles

Mountains

Air defense units operating in mountainous terrain have unique problems. The rugged terrain makes maintaining the unit integrity of both maneuver and air defense units difficult. This makes maintaining comprehensive air surveillance and air defense fire support more difficult. It results in a greater degree of decentralization than normal.

Water obstacles

OPFOR air defense forces play a major role in water obstacle crossings. They protect crossing sites and forces from air attack. They accomplish this by creating envelopes of protected airspace above and around the crossing sites.

Major problems identified in air defense of water obstacle crossings are as follows:

- 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.

Ambushes and Roving Units

Air defense ambushes and roving units cover gaps in air defenses. **Ambushes** provide air defense coverage on **less likely** approach routes for enemy aircraft. Both techniques can deceive the enemy as to the disposition of other air defense elements. These tactics are especially valuable when the air defense assets are inadequate.

Roving air defense elements function much like the ambushes. These is, however, one difference: an ambushing unit lies in wait for approaching enemy aircraft while a roving unit moves to the **most likely** areas of enemy air attack. There it occupies a series of predesignated positions in the supported unit's area. The roving unit occupies these positions according to a prearranged schedule or on order from the air defense unit commander.

The OPFOR believes that sudden, intense ground fire from an unexpected location or direction can be highly effective in destroying attacking aircraft. The OPFOR believes that such fire can seriously degrade air crew performance. It can cause the crew to fire their weapons prematurely or forces them to break off their attack. The OPFOR also thinks that ambushes and roving air defense units can make the enemy believe that significant air defense elements exist in areas where there are actually only a few weapons. This can reduce the effectiveness of enemy reconnaissance. It can also decrease the likelihood of enemy air attack in the area concerned.

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. OPFOR sees the threats posed by air reconnaissance and airborne or heliborne assault as being greater and needing to be guarded against. There are more opportunities for the employment of air defense ambushes and roving air defense subunits.

Antilanding Defense

Air defense units play a significant role in defending OPFOR ground forces against attacks by enemy airborne and airmobile troops. When the OPFOR detect an enemy airborne operation, *frontal* aviation attempts to intercept and destroy enemy transport aircraft. They try this while the enemy is at marshaling airfields or en route to the drop zones. *Front*, army, and division SAM units engage the transport aircraft entering their respective air defense zones. Regimental air defense units near the drop zones also engage the transport aircraft. The self-propelled antiaircraft guns, vehicle-mounted machine guns, and small arms all fire on paratroops and equipment descending to the ground.

Chapter 12
Engineer Support

OPFOR military art relies heavily on intensive combat engineer support at every level of command. Strategic engineer support involves the planning and conduct of engineer activity in support of operations within a theater. OPFOR engineer units at the operational/tactical level facilitate the mobility and high rate of advance of combined arms forces while enhancing the survivability of forces.

ENGINEER TROOPS

Engineer troops include two basic types of engineers: combat engineers (sappers) and special-category engineers. Combat engineers (sappers) are those whose tasks may require direct contact with the enemy. Special-category engineers do not normally engage the enemy; they generally use utility vehicles as their primary transportation. Together, these engineer troops perform the most difficult and complex engineer support missions. These are generally missions which require specialized training and the use of various engineer equipment or munitions.

Engineer troops carry out specialized functions in their area of expertise for all services of the OPFOR. The **Chief of Engineer Troops** of the Ministry of Defense manages the engineer troops. *Front*, army, and division staffs also include a chief of engineer troops. In maneuver regiments, there is a **chief of engineer service.**

Organization

Engineer troops form elements of combined arms organizations--*fronts*, armies, divisions, and regiments. These engineer elements range in size from brigades down to sections. Some of them bear the designation engineer or combat engineer (sapper). There are also specialized elements whose designations correspond to specific engineer tasks. The latter include the following:

- Engineer reconnaissance.
- (Field) fortification, bunker construction, engineer construction, technical (construction).
- Road/bridge construction.
- Obstacle-clearing.
- Bridge, pontoon bridge, assault crossing.
- Engineer obstacle, mine warfare, minelayer (sapper).
- *Maskirovka.*
- (Field) water supply.

At both army and *front* levels, engineer units include a combat engineer brigade, a pontoon bridge regiment, and possibly an assault crossing battalion. At army level, a combat engineer battalion may appear in lieu of the combat engineer brigade. At *front* level, a combat engineer regiment or a combat engineer battalion may appear in lieu of or in addition to the combat engineer brigade. These and other nondivisional engineer units support their commander by conducting engineer missions in support of committed forces. In essence, *front* and army 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 combat engineer, engineer reconnaissance, and road and bridge subunits 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, engineer units are not always deployed as complete entities. The *front* chief of engineer troops can use his resources to form task-oriented groupings according to the *front* commander's decision for the operation and his instructions on engineer support. He forms groupings to:

- Conduct engineer support at *front* level.
- Reinforce first-echelon armies and OMGs.
- Reinforce *front* surface-to-surface (SSM) and air defense troops.
- Act as MODs.
- Act as an engineer reserve.

MISSIONS

The OPFOR stresses several basic technical tasks that engineer troops perform in support of combined arms operations/battles. The nine basic tasks are the following:

- Reconnoiter the enemy and the terrain.
- Prepare fortifications.
- Prepare and maintain routes of movement.
- Clear passages through obstacles and areas of destruction.
- Equip and maintain gap crossings.
- Establish engineer obstacles.
- Carry out engineer camouflage measures.
- Extract and purify water and establish supply points.
- Carry out engineer measures to eliminate the after effects of nuclear and high-precision weapon strikes.

At least six of these nine tasks may involve special-category engineers as well as combat engineers (sappers). The three which are primarily combat engineer tasks are reconnaissance, obstacle clearing, and establishing engineer obstacles.

Support to Offensive Operations

In the offense, the primary mission of the engineers is to assist in maintaining high rates of advance. Emphasis is on clearing and maintaining routes for maneuver elements; clearing or removing mines and other obstacles; crossing of gaps; and 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 logistic operations in the rear area.

The basic aims of engineer support at both *front* and army level are as follows:

- Creating the necessary conditions for timely and concealed move-

ment and deployment for the attack.

- Maintaining and enhancing the protection of troops and equipment against all forms of attack.
- Repeling of likely enemy attacks.
- Maintaining momentum in the offensive despite enemy and natural obstacles and, in nuclear operations, the creation of areas of mass destruction.

Preparation

To prepare for offensive operations, *front* 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/control 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 the conduct of offensive operations, engineer support includes:

- Continuing reconnaissance of the enemy and the terrain.
- Improving road networks
- Providing support for the crossing of 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 OMG

The commitment of an OMG or second echelon is one of the most critical and vulnerable periods of combat. The engineer troops play a vital part in ensuring its success. Engineer troops ensure the OMG's or second echelon's timely arrival on the line of commitment, and provide support for their deployment and protection against flank attacks. Tasks include:

- Reconnaissance of the axis of the advance and the sector of commitment.
- Route preparation and obstacle breeching.
- Obstacle emplacement to increase the stability of a defensive line established by the army or *front* AT reserves.
- Operational *maskirovka* to conceal movement and deceive the enemy.

Support to Defensive Operations

Engineer support for defensive operations places emphasis on fortifying friendly troop positions, carrying out engineer camouflage measures, and adapting the terrain for defense. The defense is also conducive to the extensive use of various obstacles that interfere with the enemy's advance.

The type of engineer support depends on the conditions under which an OPFOR army or *front* assumes the defensive. If it is during the course of the offen-

sive, support may have to begin with the protection of threatened axes by MODs and antitank reserves and the route work needed for regrouping. If the OPFOR assumes the defense is assumed out of contact with the enemy, then support can begin with the creation of defense works and the improvement of routes for the formation to deploy. The goals of engineer support to defensive operations are to:

- Establish the necessary conditions for organizing the defense.
- Protect personnel and equipment from the effects of both conventional fire and weapons of mass destruction.
- Enhance the effectiveness of weapons.
- Create or improve obstacles.

Preparation

Engineer support for the preparation of defensive positions consists of the following actions:

- Engineer reconnaissance of the enemy and terrain.
- Preparation of fortifications for protection of weapons, personnel, and equipment.
- Construction of routes for blocking and counterattacking forces.
- Construction of obstacles (coordinated with the fire plan and natural obstacles).
- Camouflage and deception measures.
- Water supply.

Other engineer tasks in the defense are obstacle clearing, gap crossing, and eliminating the effects of nuclear strikes.

Conduct

Support during the conduct of the defense consists essentially of improving on and expanding the scope of all the above measures and undertaking new tasks as the situation develops. Support for counterstrikes is similar to that for the commitment of second echelons in the attack.

ENGINEER RECONNAISSANCE

Engineer patrols and groups, observation posts, and photographic reconnaissance posts perform engineer reconnaissance. Means of collecting information include observation; ground and aerial photography; and exploitation of documents, prisoners, and local residents. When enemy forces are within visible range, the OPFOR establishes engineer observation posts. When visibility is restricted, it supplements these with listening posts. The specific missions of engineer reconnaissance are:

- Discover enemy engineer measures taken to fortify positions and strong points 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 carry out direct observation of enemy engineer activity.
- Determine the characteristics of obstacles and locate bypass routes.
- Determine requirements for special engineer equipment.

March Reconnaissance

A primary goal of engineer reconnaissance at the operational level is to pro-

vide comprehensive information on the passability of march routes. Elements performing engineer reconnaissance make the following determinations:

- Degree of passability of the entire route.
- Location and nature of obstacles, and forces/assets needed to overcome them.
- Conditions of crossing sites over rivers, canals, streams, and ravines.
- Location and quantity of material potentially useful for improving the march route.
- Nature of the terrain and location of areas without natural concealment.

If the march takes place 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 passability 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.

Engineer Reconnaissance in the Offense

During the offensive, the primary engineer reconnaissance mission is to obtain more precise information on the following:

- Enemy obstacles and destruction created both during attack preparation and during the attack.
- Troop movement routes and trafficability in off-road terrain.
- Locations where the enemy established obstacles during his withdrawal.
- Locations for establishing obstacles during enemy counterattacks.
- Water obstacles on friendly forces' axis of advance and on advantageous positions in a meeting engagement/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.

Engineer Reconnaissance in the Defense

Engineer troops assist in reconnaissance and preparation of the defense by determining the protective and camouflage features of the terrain and aiding in selection of positions for CPs and subunit 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 with a peri-

scopic rangefinder and possibly photographic equipment. The locations of these posts are approximately 2 to 3 km apart along the frontline. They monitor the conditions of roads, barriers, bridges, and the water supply as well as assist in monitoring 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, and the composition and character of enemy engineer and maneuver elements in the 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, and 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, in the offense, and in the defense. Fortified positions increase weapons effectiveness and protect personnel, weapons, and materiel against enemy attack. Priority is given 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. Most work is done at night for concealment, though the preparation of dummy positions must proceed during daylight hours.

March

The OPFOR recognizes the growing vulnerability of its forces to deep interdiction using high-precision weaponry. The OPFOR 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. If possible, it locates them away from probable nuclear targets.

Offense

Normally, the OPFOR approaches field fortification in a manner that benefits the offensive by allowing a smooth and protected movement to contact with the enemy. It locates assembly areas far enough behind the friendly lines to deny the enemy ground observation and to lessen direct fire effects.

Defense

The OPFOR's full preparation of defensive positions involving entrenchments,

communication ditches, positions for tanks and infantry vehicles, and protective CPs is a labor-intensive process. It exceeds the capability of organic engineers and even that of those likely attached as reinforcements. Consequently, the OPFOR's approach is to utilize 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 n the amount of work to be done. However, the OPFOR has several planning estimates. Optimally, a road-construction company (or sapper 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 in the summertime. If the roads receive severe damage, this capability drops to 20 to 40 km per day. Similarly, one engineer company can prepare up to 50 to 70 km of cross-country routes per day. The OPFOR reduces these planning figures by 25 to 30 percent at night, by 20 to 25 percent in the spring and autumn, and by 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 a **movement support detachment (MSD)** before the march. Its mission includes the following:

- 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.

The MSD repairs existing routes and creates new routes to support the maneuver of forces. Another task is reacting to the effects of enemy nuclear strikes (fire fighting, structure repair, removal of debris).

The composition of an MSD depends upon the mission, terrain, time and equipment available, and the enemy. It usually consists of a reconnaissance and obstacle-clearing group, one or two road/bridge construction and repair groups, and a route-marking group. In addition, it usually has at least one motorized rifle 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.

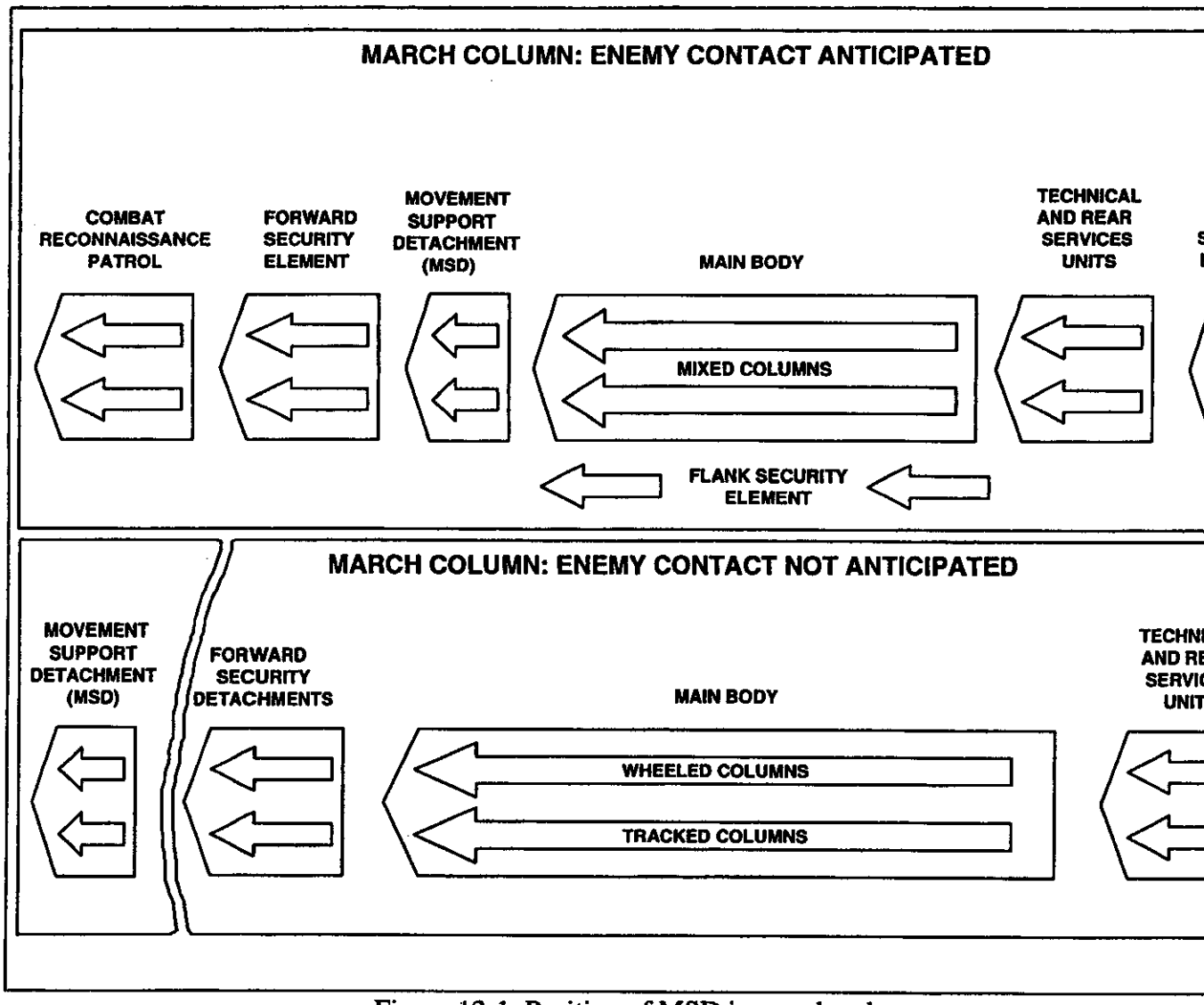

Figure 12-1. Position of MSD in march columns.

OBSTACLE CLEARING

The OPFOR anticipates having to overcome obstacles to its mobility on the march, in the offense, and in the 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 a primary engineer task. Nevertheless, maneuver units/subunits share the responsibility. The methods for creating breaches and passages depend on the situation and on the type of barriers used by the enemy. By OPFOR definition, obstacles are explosive, nonexplosive, or a combination of the two.

Explosive Obstacles

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/subunit. Engineers reconnoiter the minefield, but the initial breaching is not primarily an engineer task.

Scatterable Minefields

The sudden creation of surprise minefields to fill gaps in existing ones, or in front of exploitation forces, or even in the enemy's own depth is a serious worry. Such minefields can cause much delay and disruption, quite apart from their casualty-producing effect. Their unpredictability makes it difficult to prepare to deal with them. Extensive use of remotely-delivered mine(field)s in the area of commitment of an OMG or second echelon, coupled with strong air and artillery strikes, could produce catastrophic results, even on an operational scale.

Minefields in Enemy Defenses

In front of the forward edge of the enemy defenses and within the enemy's defensive area, mineclearing normally involves a combination of mechanical and explosive means. Maneuver forces create initial breaches with organic mechanical means, and engineer troops widen lanes with explosives.

GAP CROSSING

The OPFOR identifies two methods of overcoming water obstacles: Forcing (when expecting enemy contact) and crossing (when not 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. Forcing is often mistaken as being synonymous with "assault crossing." However, the assault crossing is an expeditious forcing, executed in waves 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 contemporary combined arms battle in a European theater. The OPFOR expects the enemy to use rivers and other water obstacles for de-

fensive 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 prempt his attempts to do so and thwart them by the actions of forward detachments and airborne/heliborne forces, and crush his main forces on the home bank as they try to withdraw. Whether or not these succeed, *fronts* and armies endeavor to cross water obstacles on a wide frontage, from the march without pause, and develop the attack into the depth without halting to consolidate. If a forcing from the march does not succeed, the OPFOR would mount a further effort with brief or even detailed preparation. Crossings over small rivers (up to 60 meters wide) are organized at divisional level, using divisional engineer resources. The forcing of medium rivers (60-150 meters wide) is an army task, using the army's organic and attached means. Major rivers (those over 150 meters wide) are a *front*-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/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.

The OPFOR divides engineer obstacles into three categories:

- Explosive obstacles--minefields, groups of mines, and objects prepared for demolition.
- Nonexplosive obstacles--antitank ditches, escarpments, abatis, wire barriers, and water obstacles.
- Combination obstacles -- a combination of explosive and nonexplosive obstacles.

Of the three categories, explosive obstacles constitute the nucleus of all engineer obstacles.

Mobile Obstacle Detachment

The **mobile obstacle detachment (MOD)** is the basic building block of the OPFOR countermobility effort. MODs are formed at every level from regiment to *front* and are a standard feature of tactical and operational formation.

Organization

The MOD is a temporary, ad hoc task organization primarily composed of combat engineers with the mission of denying key terrain to the enemy, particularly those avenues of approach that are 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.

A MOD can vary in size depending on the operational situation and the needs of the maneuver commander. The OPFOR may employ MODs at the regimental, divisional, and army levels. Although the MOD can operate independently, it normally operates

with antitank (AT) reserves to provide flank protection and repel enemy counterattacks. The division's AT battalion and the regiment's AT battalion normally operate as their units' respective AT reserves. Antitank reserves may provide long-range covering fire over the minefields emplaced by the MOD. MODs sometime operate with two mechanical minelaying platoons.

Employment

MODs lay minefields, dig AT ditches, carry out demolitions and create other obstacles such as tree blow-down to block forest roads. In defense, they help to prepare the obstacle system and, once the attack commences, they wait concealed to create fresh obstacles on the most threatened axes. Whether on the attack or in defense, they are used to:

- Protect the deployment lines of attacking (counterattacking) forces.
- Cover the flanks of formations (units).
- Fill in gaps which exist or develop within operational (tactical) formation.
- Gain time for the mounting of countermoves.
- Cover gun lines; help to seal in encircled forces.
- Create deceptive obstacles as part of the deception plan.

MODs normally work in close conjunction with the AT reserves during the course of an operation or battle, their work materially contributing to AT reserve's survivability and to the stability of it's defense.

In the offensive, 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, they usually advance behind the first echelon to ensure a prompt response to any threat. The OPFOR considers the element of surprise as a critical variable in mine warfare. Minefields laid in advance can be discovered by enemy reconnaissance and timely measures can be undertaken to overcome them. It is therefore often more efficacious to lay a minefield during the course of a battle, preferably at the last minute, directly in the path of a developing threat. Such a use of mines is not only tactically advantageous, but economical in resources: this may be an important consideration when supplies are limited, e.g., when the OPFOR must go over to the defense during operations in the enemy's depth.

The OPFOR uses the MODs aggressively. They maintain close contact with the enemy and attempt to mine those areas to which he has already committed himself. 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, to block enemy penetrations. A MOD may join AT reserves to counter enemy counterattack threats. 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 coordinated with the overall system of fire.

Minelaying

The methods and extent of minelaying depend on the following:

- OPFOR intentions.
- The operational/tactical situation.

- Terrain characteristics.
- The type of mine.
- The time available.
- The engineer support available.

Depending on these factors, 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 become more prevalent in recent years.

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 will 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 which the OPFOR intends to maintain for some time. In this case, the OPFOR takes much greater time to carefully bury and camouflage the mines, and integrate the minefields into the total defensive scheme. Mine density is also greater. Such a minefield sometimes has up to three separate belts. It is also more likely to have a mix of AT and antipersonnel 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 to include delivery by minelaying helicopters, fixed-wing aircraft, rockets, or missiles. Multiple rocket launchers also have a remote mining capability. Remote mining is offensively oriented, with maneuver forces using this technique 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 objectives.

OPFOR helicopters are also a primary means of laying mines, especially along the flanks of advancing units. Helicopters fitted with minelaying dispensers can quickly surface-lay minefields. The helicopter most often used in minelaying operations can carry an estimated 200 to 210 AT mines. The principal advantages of helicopter mine delivery include responsiveness and greater flexibility.

Remotely delivered minefields can be employed against choke points, to delay and cause bunching which can create a target vulnerable to air or artillery attack. They fill gaps created by enemy minefield breaching efforts, cause confusion and delay in forming-up points, and halt an attack in an area not covered by a MOD (or gain time for a MOD to do its work). Such unpredictable minefields are becoming increasingly important in OPFOR thinking.

The OPFOR does not use these systems indiscriminately. Motorized and tank divisions, armies and *fronts* have a finite number of organic delivery systems, some of which the division commander may call upon to perform minelaying missions. It is likely that a variety of other missions will 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. There are five basic types of OPFOR minefields:

- Antitank (AT).
- Antipersonnel (AP).
- Mixed.
- Decoy.
- Antilanding.

The AT minefield serves to destroy or disable armored vehicles. (See Figure 12-2.) The AP minefield targets personnel. (See Figure 12-3.) 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 method to distinguish 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 but also to slow and canalize enemy forces into predetermined fire sacks (kill zones) covered by massed artillery fire and long-range AT fire.

MASKIROVKA

The OPFOR concept of *maskirovka* involves a triangular relationship between three interrelated disciplines:

- Camouflage and concealment (signature-reduction measures).
- Deception (signature-enhancing measures).
- Obscurants (measures used both to conceal and enhance real and decoy equipment).

The OPFOR is responding to the challenge posed by advances in sensors and weapons by emphasizing *maskirovka* at all organizational levels. Engineer camouflage measures support these *maskirovka* programs. The OPFOR uses six types of technical camouflage:

- Camouflage paint.
- Artificial camouflage (nets and screens).
- Antiradar camouflage.
- Mock-ups (decoys).
- Light and thermal camouflage.
- Smoke camouflage.

The fundamental purpose of these six is to alter the appearance of personnel and equipment and blend them with the surrounding terrain.

March

The OPFOR carries out *maskirovka* measures in preparation for and during a march, to hamper or prevent the enemy from discovering the true deployment of units, their actions, and intentions. These measures include:

- Demonstration actions.
- Selection of terrain with natural screens (thick woods, gullies, buildings, etc.).

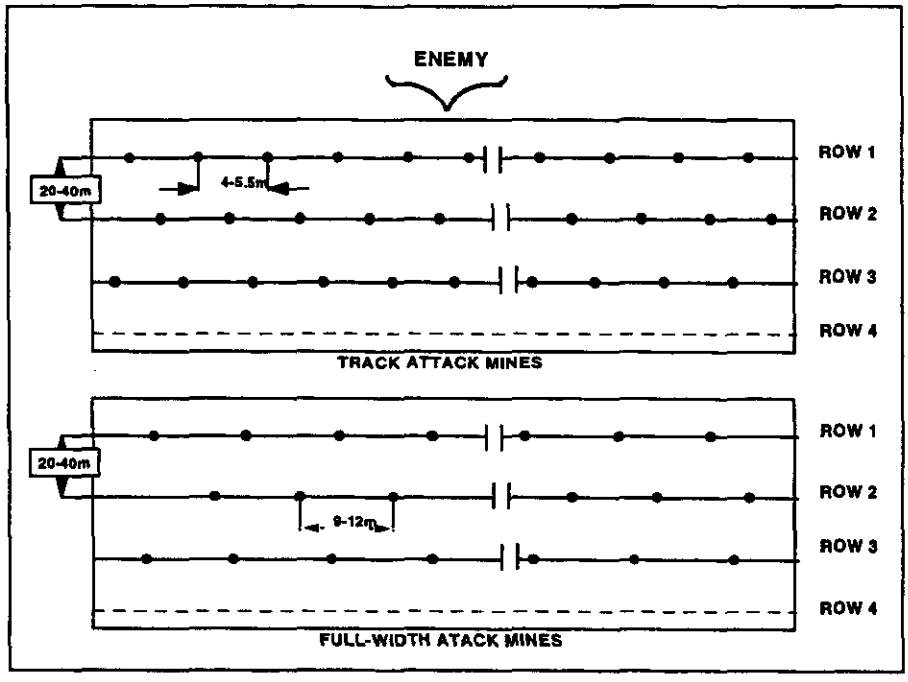

Figure 12-2. Antitank minefield configuration.

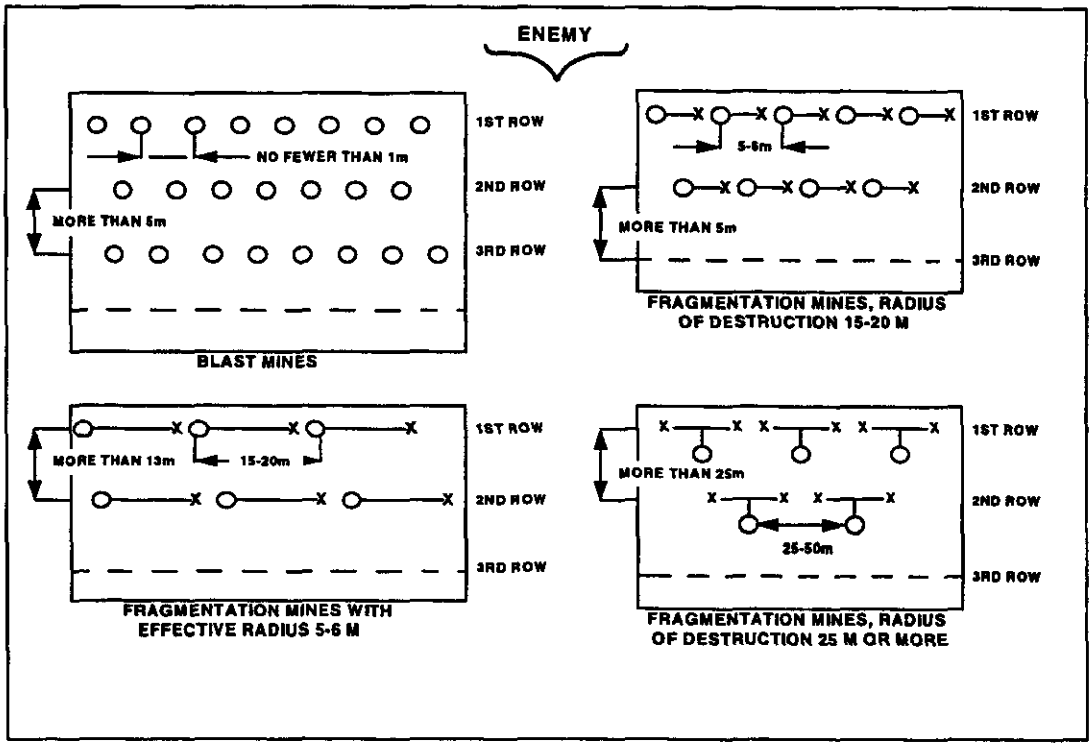

Figure 12-3. OPFOR antpersonnel minefield configuration.

- Selection of routes of march that minimize tracks and dust.
- Construction of artificial screens (horizontal and vertical screens, corner reflectors).
- Movement at night, in fog, or under other conditions of low visibility, including smoke screens created by use of obscurants.
- Convoy and light discipline.
- Concealed rest halts enhanced by individual vehicle screens.

Offense

During the offense, the aims of *maskirovka* are essentially the same as on the march. These measures include--

- Selection of terrain for its screening effect.
- Use of obscurants (smoke screens).
- Use of artificial and natural camouflage screens.
- Simulation of characteristic defensive measures to "mine" the terrain in view of the enemy with decoy minefields or to give the appearance of reinforced defensive positions.
- Use of concealed routes for movement of supplies and reserves.

Defense

The OPFOR use various *maskirovka* measures to mislead the enemy about size and location of forces and weapon systems and about the nature of defensive engineer preparations. These measures include:

- Use of screening properties of terrain, darkness and other conditions of limited visibility during engineer preparation of defensive positions and positioning of forces.
- Camouflage painting of materiel.
- 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.
- Assimilation of minefields and obstacles to the terrain.

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Chapter 13
Radioelectronic Combat (REC) Operations

The OPFOR clearly recognizes the systemic dependencies of modern military forces on command, control, and communications (C^3). Communications is the basic means to ensure command and control (C^2); loss of communications is the loss C^2; and the loss of C^2 in combat invariably leads to defeat. The OPFOR intention is to control the electromagnetic spectrum and deny its use by the enemy. This is integral to virtually all aspects of OPFOR combat action. As a result, the OPFOR has developed a formidable capability to degrade the C^3 assets of enemy forces.

The OPFOR has a wide variety of assets for signals intelligence (SIGINT), which include both communications intelligence (COMINT) and electronic intelligence (ELINT). All components of the OPFOR have made technical advancements in SIGINT as well as in electronic countermeasures (ECM), measures employed to neutralize enemy communications and electronics through jamming and deception. The OPFOR has also placed major emphasis on electronic counter-countermeasures (ECCM) through strict enforcement of signal security, equipment redundancy, alternate subsystems, system design, and operator skill.

CONCEPT

The OPFOR has organized its electronic warfare capabilities into an integrated system called **radioelectronic combat (REC)**. REC is similar to the U.S. doctrine of command, control and communications countermeasures (C^3CM). Integral to REC is the use of physical destruction. REC is an integrated program of C^3 countermeasures using a combination of reconnaissance, jamming, firepower, and deception to attack enemy organizations and systems through their means of control. The purpose of REC is to limit, delay, or nullify the enemy's use of his C^3 systems, while protecting OPFOR troop control systems. The ultimate goal of REC is to destroy or to disrupt critical enemy C^2, and weapon system communications, primarily by jamming or by destructive fires.

The OPFOR defines REC as the totality of actions taken by troops for the following purposes:

- Disorganization of enemy C^2. (This is the primary purpose)
- Destruction, capture, or suppression of those enemy systems.
- Detection of enemy radioelectronic systems.
- Degradation of enemy intelligence and equipment.
- Protection of OPFOR radioelectronic assets.
- Stability in operating OPFOR systems.

These actions are independent in their objectives, missions, location, and time. Yet, all actions are integrated under the OPFOR umbrella concept of REC. The OPFOR emphasizes the destructive aspects of REC near the forward edge of troops. More elaborate applications of REC, such as large deception plans, are prepared at army

level or higher, with subordinate divisions implementing them.

Integration and Planning

Integration and preplanning are critical to the overall success of REC. The OPFOR has integrated REC so well into its operations and tactics that it is difficult to tell where REC stops and other combat actions begin. REC is a critical element of OPFOR combined arms combat. Preplanning allows OPFOR leaders to integrate the effects of REC actions at each stage of a battle or operation. This preplanning ensures that REC will have maximum effect at selected times and places.

Target Priorities

The OPFOR selects targets with the intention of eliminating them by either physical destruction or by jamming. Control points are assigned a priority according to their expected relative impact on the battle. Target priorities are generally as follows; however, they may change as the combat situation develops:

- Artillery, missile, and air force units that possess nuclear projectiles or missiles and their associated control systems.
- Conventional field artillery, air support, and air defense.
- CPs, communication centers, OPs, and radar stations.
- Reserves and logistic support.

RADIO AND RADAR RECONNAISSANCE

The OPFOR categorizes electromagnetically derived intelligence somewhat differently than does the U.S. The term used by the OPFOR is **radioelectronic reconnaissance**. Subcategories of radioelectronic reconnaissance include **radio reconnaissance** and **radar reconnaissance**. The former--sometimes called radio intercept and direction-finding (DF)--is the equivalent of the U.S. COMINT; the latter--sometimes called radar intercept and DF--equates to ELINT. Although radio and radar reconnaissance organizations are entirely separate from the REC structure, their function is an integral part of the REC system.

Intelligence Requirements

Essential to the success of REC is the timely collection and interpretation of intelligence. Every effort is made in peacetime to build up a picture of the enemy's electronic order of battle, together with equipment types, emission characteristics, operating procedures, and operator characteristics. This vital information comes from reconnaissance, target acquisition, and intelligence assets available at the various command levels. The primary means of locating targets of specific interest to the REC effort is through the use of radio and radar intercept and DF measures.

Intercept

Radio intercept is the ability to monitor and understand message content. The OPFOR has an extensive intercept capability for both radio transmissions and radar emissions. Intercept units move forward. immediately behind leading units and can intercept enemy transmissions within the following distances from the forward edge of friendly troops:

- Artillery ground radar - about 25 km. VHF - about 30 km (high power) or 10 km (low power) (line-of-sight considerations apply).

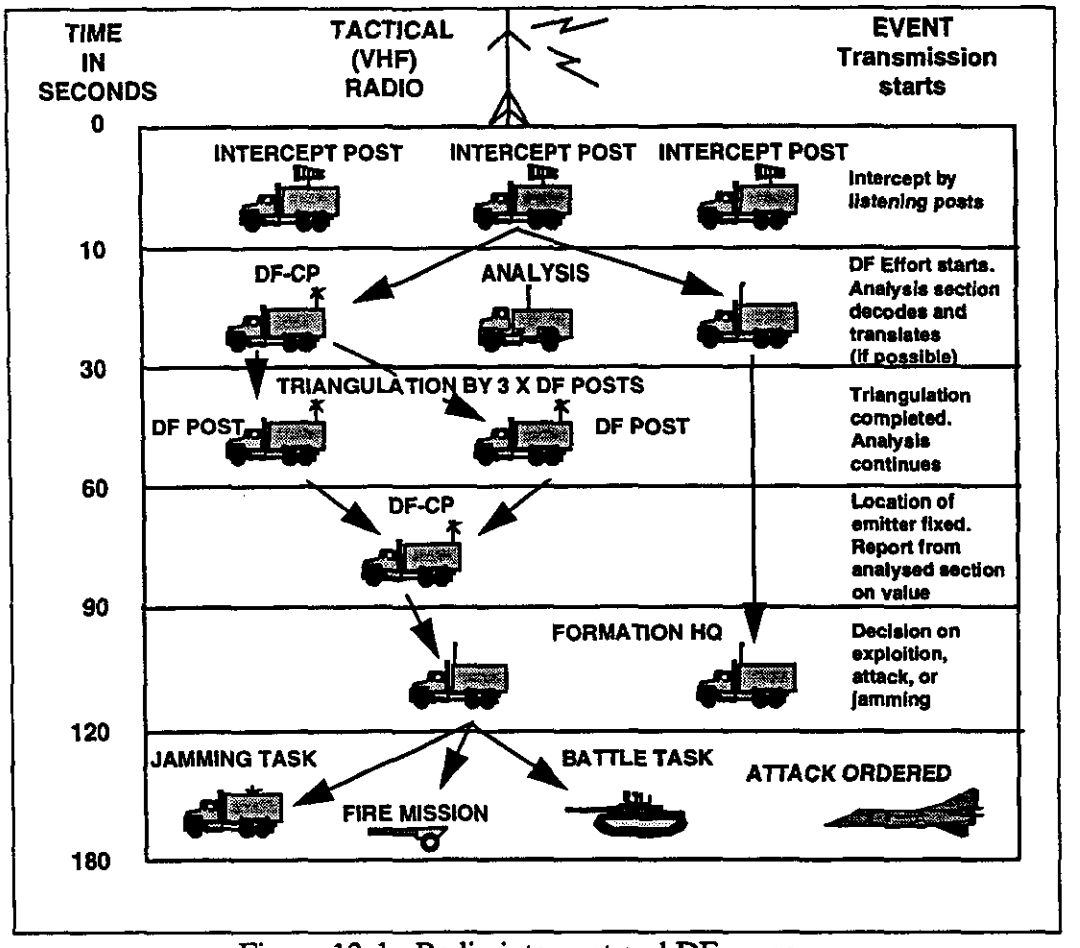

Figure 13-1. Radio intercept and DF process.

- HF ground waves - about 80 km.
- HF skywave - unlimited.

The use of airborne intercept platforms can greatly extend these ranges. OPFOR ground-based and airborne intercept equipment may lack the technical sophistication of other nations' advanced equipment, but it is simple, rugged, and easy to maintain.

Direction Finding

The purpose of radio and radar direction finding (DF) is to locate transmitting stations and radar emitters. Various types of mobile antenna systems serve in a DF role. Forward area mobile elements include a VHF tactical radio direction finder, as well as radar direction finders. OPFOR DF elements can pick up tactical FM radios operating on low power at distances in excess of 10 km and detect high-power signals at distances up to 40 km. Operational accuracy is usually within plus or minus 3.5 degrees.

DF provides the OPFOR with:

- Approximate locations of electronic emitters.
- Locations that, when applied with intercept, terrain analysis, or other means, can be refined to a target area of sufficient accuracy for artillery fires. (DF results, by themselves, are seldom accurate enough for artillery or other weapon targeting.)

	Higher Command Nets: HF	Tactical Command Nets: VHF
INTERCEPT Groundwave Skywave Air-to-Ground	 up to 80 km over 1,000 km	 30-80 km (low/high power) 400 km
DIRECTION FINDING Groundwave Skywave Accuracy	 up to 80 km approx 200 km ± 3	 30-80 km (low/high power) ± 2-3
DF RADIUS OF ERROR Distance 20 km Distance 40 km	 1 km 4 km	 3 km 12 km

Figure 13-2. Ranges of ground-based radio intercept and DF equipment.

- A "picture" of the battlefield that reveals the disposition and possible intentions of enemy units.
- Adequate locations for firing on most radars and jammers.

Because of the length of transmission, the peculiarity of their signal, and power output, it is easy to locate jammers and identify them as targets for attack by suppressive fires. Due to signal characteristics, DF can locate ground radars with greater precision than it can for radio emitters, often within 50 to 200 meters. It is possible to evaluate information from DF resources quickly, but it usually requires further confirmation by other sources. DF targets within conventional artillery range, which are extremely perishable and normally a serious threat, receive priority and are candidates for immediate engagement.

Range

Figure 13-2 shows the ranges of ground-based radio intercept and DF equipment, assuming favorable propogation conditions and no masking effects from intervening terrain. The effectiveness of both intercept and jamming, particularly of radio relay, is greatly enhanced by using airborne platforms.

Vulnerabilities

Enemy Countermeasures

In addition to the targets located by DF, the OPFOR expects to discover other targets due to the enemy's lax signal security and poor ECCM. Thus, good enemy security procedures and ECCM will limit the effectiveness of OPFOR radio and radar reconnaissance. It is also important to note that intercept and DF equipment is vulnerable to deception because it only locates electronic emitters, not necessarily units.

Equipment Limitations

OPFOR concerns about the restricted mobility and lack of protection of box-bodied vehicle-mounted systems has led to the introduction of a fleet of armored vehi-

cle-mounted systems. Upgrades to OPFOR intercept the DF equipment has caused a significant change in REC capabilities. The divisional commander now has the ability to deploy electronic reconnaissance assets with the remainder of the battalion. The major concern will be combat net radio and radio-relay nets, both operating at frequencies that require intercept and DF equipment close to the forward edge. The deployed technology gap is closing, and it is likely that the OPFOR has automated search, lock-on and look-through capable systems.

Time Problems

The problem of collecting, collating, and evaluating intelligence and issuing appropriate decisions will continue to increase as the volume of data grows. Rapid advances in automation and digital communications have, however, allowed the OPFOR to develop a system of speedy information handling and data transfer.

Assets

The OPFOR continues to modernize the equipment needed to support REC at all echelons of its military services. The OPFOR has deployed increasingly modern electronic collection systems. New-generation signal-intercept and DF systems, in variations designed to cover HF, VHF, and ultra-high-frequency (UHF) communications bands, complement the OPFOR fielding of new non-communications (radar) intercept systems. There is mounting evidence that the OPFOR has benefited from the proliferation of electronic warfare equipment in modernizing these collection systems. When the OPFOR combines its impressive radioelectronic reconnaissance resources with the use of combat forces, it results in an outstanding capability to effectively disrupt enemy C^3.

Ground-Based

Units dedicated to radioelectronic reconnaissance and jamming are organic at various command levels from *front* down to division. Intercept and DF posts, both divisional and army, are normally very close to the line of contact, within 3 to 6 km for VHF and 10 to 30 km fo HF ground wave. *Front*, army, and divisional artillery units also have an organic artillery reconnaissance capability. Artillery reconnaissance assets also include battlefield surveillance and weapon-locating radars as well as sound-ranging equipment, which for the OPFOR falls under the overall category of radioelectronic reconnaissance.

Front. A *front* is likely to deploy one radio reconnaissance brigade. Each brigade has a radio intercept battalion, a radio DF battalion and a radar intercept and DF battalion. This brigade is also known as a radio and radar intercept and DF brigade or as a radiotechnical reconnaissance brigade. It is also possible to have an independent radio reconnaissance battalion instead of or in addition to the radio reconnaissance brigade. The radio intercept battalion concentrates on enemy higher formation communications, i.e., from corps rearwards. The radar intercept elements are targeted against the enemy's air forces, supplementing the work of the radar early warning units. In addition, the air army's independent helicopter REC squadron supports fixed- and rotary-wing operations.

Army. An army or army corps will have at least one radio reconnaissance battalion, possibly two. This battalion is also known as a radio and radar intercept and DF

battalion or as a radiotechnical reconnaissance battalion. Each battalion consists of one radio intercept company, one radio DF company, and three radar intercept and DF companies. An army many also have a radio reconnaissance regiment instead of a battalion. Radio intercept and DF elements are tasked against communications from corps to division, and radar elements against enemy air power.

Division. A division has one reconnaissance and REC battalion, consisting of two reconnaissance companies, one reconnaissance assault company, one radio/radar reconnaissance company, and one REC company. The division is concerned with enemy tactical communications.

Airborne

Airborne radioelectronic reconnaissance platforms provide a much improved capability to intercept radio and radar signals more frequently and at greater distances than ground-based systems. The aim of these airborne platforms is the detection and location of enemy battlefield surveillance radars, CPs, communication centers, and tactical nuclear delivery systems.

Other OPFOR aircraft that may have possible radioelectronic reconnaissance configurations or ECM roles are MiG-21/FISHBED, MiG-23/FLOGGER B/G. MiG-25/FOXBAT A/E, Su-7B/FITTER A, and Su-17/FITTER C/D/H fighters; Tu-16/BADGER, Tu-22/BLINDER, Tu-22M/BACKFIRE B, and Tu-95/BEAR bombers; and An-12/CUB B/C/D and Il-20/COOT A variants of transport aircraft. A variant of the Mi-8/HIP helicopter may also perform radar reconnaissance collection roles.

Significant numbers of radioelectronic reconnaissance COOT-A and CUB aircraft are in the OPFOR inventory. These greatly enhance the OPFOR capability both to intercept and DF emitters in the enemy's depth, i.e., at corps and above. At theater level, satellite reconnaissance provides radioelectronic reconnaissance.

Space

Military satellites perform a wide variety of reconnaissance and collection missions for the OPFOR. Recent reconnaissance satellites have improved intelligence collection processing capabilities. Radar reconnaissance satellites can lock onto intercepted signals to provide information concerning target location. The OPFOR also has large area radar surveillance satellites in its inventory.

JAMMING

Another element of the OPFOR REC concept is the requirement to jam at critical times enemy C^2 and weapon system communications when they cannot be destroyed by firepower. The OPFOR uses jamming in support of:

- Air defense operations, suppressing radar bombing equipment, radio navigation equipment, and radio control links for air-to-surface missiles (ASMs) and surface-to-surface missiles (SSMs).
- Ground operations, suppressing nuclear delivery systems, radars, radio control links for ASMs and SSMs, CPs, and communications centers.

The principal means of OPFOR jamming are--

- Radar jamming by using barrage and spot noise, pulse, chaff, and decoys.

- Electronic jamming of command guidance systems--using pulse and simulation techniques.
- Radio noise jamming of AM and FM signals.

REC combines jamming of the enemy and protection measures for friendly electronic systems. Offensive REC activity is carefully coordinated with air and ground attacks and indirect fire and, of course, concentrated on the main axis. Coordination is vital to avoid the accidental jamming of friendly nets as well as enemy; so a careful selection is made of frequencies that can be jammed, and at what times. An estimated goal is the disruption or destruction of at least 50 percent of the enemy's C^2 and weapons systems communications.

Communications Jamming

Assets

To degrade an opponent's organization, the OPFOR has deployed a communications jammer mounted on the amphibious armored tracked vehicle MT-LBu. This system is replacing older truck-mounted jamming systems. It improves operator and system survivability and better supports fast-moving OPFOR armored formations. Additionally, the OPFOR ground forces are deploying newer and more technically-advanced jammers, to include expendable jammers.

There is normally at least one active REC regiment per *front*, a REC battalion per army, and a reconnaissance and REC battalion in each division. Most elements deploy in direct support of armies and divisions to attack UHF, VHF, and HF ground wave nets, with heliborne jammers concentrating on radio-relay and tropospheric links. Operational-level jammers target HF skywave nets. Tactical and operational-tactical jammers deploy well forward, within 3 to 6 km of the line of contact, or 10 km of HF ground wave. They colocated with their own organic intercept and DF posts that can confirm targets and assess jamming effectiveness. The OPFOR may also make use of unattended jammers for specific phases of an operation. These may be delivered into the enemy's depth by special-purpose forces or by parachute.

Frontal aviation has an organic independent helicopter REC squadron with Mi-8SMV/HIP J, Mi-8PPA/HIP K, and the Mi-8MT(Mi-17P)/HIP H jamming variants. *Front*-level aviation may also include one independent REC aviation regiment.

There are no known dedicated jamming means or systems at echelons above *front*. However, 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.

Range

Ground based units can work effectively, assuming favorable propagation conditions and no masking effects from intervening terrain. (Figure 13-3 shows the ranges of ground-based jamming equipment.) The effectiveness of both intercept and jamming, particularly of radio relay, can be greatly enhanced by using an airborne platform such as HIP-H, J or K. If jamming operations are conducted in support of an OMG moving into the enemy's depth, the effects are likely to be considerable, both to the intended target as well as other radio receivers in the immediate area. In such a case, however, efficiency may be impaired

Electronic Jamming	Higher Command Nets: HF	Tactical Command Nets: VHF
NARROW BAND (Ground-to-Ground)	up to 60 km	up to 30 km
WIDE BAND (Ground-to-Ground)		up to 15 km

Figure 13-3. Ranges of ground-based jamming equipment.

by the need to displace frequently, and it is most unlikely that radio reconnaissance units can provide the targeting details required for such operations on a timely basis.

Radar Jamming

Ground-Based

The OPFOR supplements its communications-jamming capability with a considerable number of ground-based radar-jamming sets. The OPFOR continues to modernize its radar-jamming assets in response to advances in radar technology. This effort emphasizes the OPFOR's intention to disrupt enemy airborne radars, thereby supporting both its own air operations and air defense of high-value rear area targets.

The OPFOR has not deployed active jammers against battlefield radars, presumably because destruction is preferred and their high radiated power and directional nature make their accurate location relatively easy. A *front*-level regiment and an army-level battalion employ jammers against airborne radars, both navigation and bombing. These jammers protect high-value targets such as major headquarters, communications centers, nuclear weapons, major troop concentrations, airfields, river crossings, and bridges.

Airborne

Aviation supporting *front* operations also performs spot or barrage jamming and dispenses chaff directed against enemy air defense early-warning and fire control radars. It also may eject chaff to achieve jamming, deception, and camouflage. Individual aircraft may carry self-screening jammers (SSJ) and chaff dispensers.

The OPFOR continues to upgrade its airborne assets. Modern aircraft have internally mounted SSJ systems. To complement advances in ground-based communications jamming systems, the OPFOR has deployed heliborne jamming platforms. These heliborne systems offer the distinct advantages of greatly increased range, mission flexibility, mobility, and brute jamming power.

DISPOSITION OF LOCATED TARGETS

Physical Destruction

The OPFOR can physically attack in three ways: indirect fire, ground attack, and air attack.

- **Indirect fire.** This includes artillery, mortars, rockets, and SSMs.

- **Ground attack**. The OPFOR may attempt to destroy C^3 elements by using special-purpose forces, agent-saboteurs, airborne and heliborne forces, or other elements operating behind the frontlines.
- **Air attack**. The OPFOR may decide to attack with high-performance aircraft or attack helicopters. Aircraft may use conventional ordnance (bombs, cluster bomb units, rockets, cannon, or machine gun fire) or precision-guided munitions (smart bombs and ASMs).

Destruction has become the preferred option when attacking enemy radars. The OPFOR is also experimenting with reconnaissance destruction complexes. These complexes combine firepower with communications and target identification assets; this reduces the time from target identification to destruction.

Exploiting and Jamming

Where possible, OPFOR prefers to exploit communications nets for intelligence purposes, at least until a crucial period in a battle. All stations accurately located are vulnerable to attack at the time their destruction would most influence the course of an action, or immediately in the case of nuclear systems. Similarly, if destruction is not feasible, nets can be jammed at the most damaging time; even a few minutes disruption is immensely valuable if properly timed. When possible, the OPFOR uses spot jamming to obliterate communications. Failing that, either barrage or sweep-through jamming can degrade and slow down radio traffic. Jamming is closely coordinated with the fire support plan.

MASKIROVKA

Maskirovka is critical to the success of OPFOR REC. The purpose of *maskirovka* is to mislead the enemy and cause possible delays. This deception may take the form of disinformation practices or counter-reconnaissance techniques. Disinformation includes the transmission of false information to confuse the enemy. Counter-reconnaissance techniques can mask troop movements and deployments. The OPFOR uses a variety of means for this purpose. Because the enemy is unable to distinguish between real and decoy targets, the resulting confusion leads to uncertainties about OPFOR intent, deployments, and troop movements. Thus, the electronic portion of *maskirovka*, when used with other denial and deception measures, ensures that, at the very least, the OPFOR can deny the enemy the use of the electromagnetic spectrum. The OPFOR can also exploit or manipulate those emissions that it does not jam or destroy.

Concealment

The OPFOR conceals military equipment against detection by ground, airborne, and shipborne radars by a technique called radar deception or antiradar camouflage. Depending on the radar visibility of the objects to be camouflaged, the OPFOR plans to achieve antiradar camouflaging by creating false targets or by blending into the terrain background those objects that might serve for orientation. Whenever possible, the OPFOR conceals equipment behind local features or make use of the camouflaging properties of the ground relief. The OPFOR uses natural cover, timber, brush wood, metallic nets, and corner reflectors for radar camouflage. Mock-ups of military equipment can also serve as antiradar reflectors.

DIRECTED ENERGY WARFARE

Directed energy (DE) is a highly directional beam of concentrated electromagnetic energy or atomic/subatomic particles. It has potential for a number of military applications including ranging, communications, and target acquisition and designation. It can also be used to degrade, incapacitate, or destroy human or materiel targets. **Directed energy warfare** is an umbrella term that encompasses all military usage of this technology, including weapons.

Background

The term **directed energy weapon (DEW)** refers to three weapon concepts base on laser, radio frequency, or particle beams:

- **Laser weapons**, which would employ an intense beam of coherent electromagnetic radiation at infrared (IR), optical, ultraviolet (UV), or X-ray frequencies.
- **Radio frequency weapons**, which would employ an intense beam of electromagnetic radiation at microwave or millimeter-wave frequencies.
- **Particle beam weapons**, which would employ an intense beam of charged or neutral particles such as electrons, protons, or hydrogen atoms.

All three DEWs are line-of-sight weapons in which energy travels from the beam source to the target at or near the speed of light. DEWs have a number of advantages over more conventional weapons. Time of flight to the target is essentially zero. Since a very high rate of fire would be possible from an unlimited magazine and the DEW beam could redirect it's beam very quickly, it could engage many targets in a short time over a wide field of view. The probability of achieving target kill would increase rapidly as the range to the target decreases. A major disadvantage of DEWs is that soft kill may be difficult to assess. Also, for laser and particle beam weapons, the beam would be very highly collimated; so the requirements for tracking the target and pointing the beam tend to be quite stringent. This is not the case for radio frequency weapons, which would produce beams with appreciable angular divergence.

The electromagnetic environment is critically important in modern warfare. The OPFOR believes the next major conflict will be won by the side that best exploits the electromagnetic spectrum. Laser designators guide weapons to their targets. Electromagnetic reflections detect delivery systems. An electromagnetic ground control device known as a jammer or spoofer can divert weapons from their targets. Now laser energy and high-power microwave radiation have weapons applications. The concepts for such weapons have existed for over 50 years, but higher technology now makes it possible to harness and package these concepts and make them practical for battlefield use with sufficient power levels to disrupt either airborne missions or ground operations.

DEWs are more of an evolutionary than a revolutionary product of higher technology. The technology is here, its practicability tested and, in most cases, its practicality for battlefield use has been proven effective, although its role in warfare will be limited. Unlike the standard "lead bullet" threat, DEWs are dependent upon line-of-sight requirements, battlefield conditions (smoke and haze), and weather. These external factors will drive the employment doctrine

of such weapons as they affect the beam propagation as it transits the atmosphere.

Laser Weapons

Since the invention of the laser in 1960, it has proliferated worldwide in a variety of applications, from medical to military. Tens of thousands of lasers are currently in use by the world's armed forces as rangefinders or target designators. These systems are likely to be encountered in any conflict. Lasers presently deployed with the OPFOR, although not dedicated weapons, pose an immediate threat to eyes and optical/electro-optical (EO) sensors. These lasers are EO adjuncts, such as rangefinders and designators for artillery systems, armored vehicles, and aircraft. The OPFOR is aware of the antipersonnel/antisensor potential of these systems and will not hesitate to use them against troops in battle. Incidental mission usage of these systems is also possible. Even non-weapon lasers can dazzle sensors or blind soldiers. The hazard to eyes is increased significantly when magnifying optics are used and at night, when the eye becomes more sensitive to light.

Laser weapons, which are the most developed of the three DEW technologies, would use coherent, highly concentrated beams of electromagnetic radiation at optical or IR wavelengths to damage, disrupt, or destroy targets. Laser weapons fall into two categories: low-energy, for sensor damage ("soft kill"), and high-energy, for physical destruction ("hard kill"). A high-energy laser weapon capable of hard kill at a given range would often produce soft kill at a much greater range.

Targets for the laser weapon fall into two categories: soft targets and hard targets. A soft target is one affected when a very small amount of energy impinges on the target, whereas a hard target requires a great deal of energy before any noticeable effect occurs. Optical and EO systems are soft to some wavelengths of light and hard to other wavelengths. This wavelength variation occurs because all optical and EO systems have a pass band of wavelengths in which they operate. When the light is within this pass band, it readily passes through the optics and gets greatly concentrated by the optical system; if it is not in the pass band of the sensors, the light stops at an outer surface. If an optical or EO system receives laser weapon radiation that is in the pass band, then the amount of energy required to do damage is extremely low. Therefore, this is "in band" damage to the target, and the target is a soft target. The effects of in-band radiation against EO sensors include dazzling and blooming. If the radiation is not in the pass band of the sensor, then it is "out of band" to the sensor. The amount of energy required to damage a sensor with out-of-band radiation can be many orders of magnitude greater than the energy for an in-band kill.

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Chapter 14
NBC and Smoke Warefare

The use of nuclear, biological and chemical (NBC) weapons can have an enormous impact on the conduct of all operations. Not only does the sheer killing and destructive power of these weapons create the battlefield effect, but the strategic, operational, psychological, and political impacts of their use affect campaign designs. In addition, the proliferation of these weapons can dramatically alter the nature of regional conflicts.

PREPAREDNESS

The OPFOR anticipates the use of NBC weapons, particularly nuclear and chemical. To allow its own troops to continue combat operations despite the presence of contaminants, it has developed and fielded a wide range of the following:

- NBC detection and warning devices.
- Individual and collective protective equipment.
- Decontamination equipment.

Survivability

The OPFOR's ability to protect itself against NBC weapons and to operate in contaminated environments is unmatched by most military forces. The OPFOR readily admits that casualties would be considerable in any future war involving the use of NBC weapons. However, it insists that the timely use of protective equipment, correct employment of reconnaissance assets, and expeditious decontamination procedures can significantly reduce a combat unit's vulnerability.

Multiple Options

The OPFOR continues to steadily improve its capability for waging theater nuclear, chemical and biological warfare, while significantly improving its conventional fire support capabilities. This force modernization has introduced a degree of flexibility previously unavailable to the OPFOR combined arms commanders and creates multiple options for the employment of NBC weapons. Consequently, the OPFOR has examined the possibility of waging conflict at different levels, with or without nuclear weapons. Despite the potential for a sustained period of conventional or nonnuclear combat, a theater conflict is conducted under a "nuclear-scared" posture.

Influence on COFM

In past wars, the correlation of forces and means (COFM) in a particular sector could be changed only by a slow process of providing more men and equipment. Nuclear and/or chemical and biological weapons can bring a sudden change of great magnitude to the balance. Their use can change the COFM 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 OPFOR commander and strongly reinforces the OPFOR policy to preempt enemy use of nuclear or chemical weapons.

Doctrine and Plans

OPFOR planning and preparation for both nuclear and nonnuclear combat always assumes the possibility of enemy use of nuclear weapons. It develops plans and doctrine under the supposition that dispersion and mobility must always be maintained. The OPFOR plans to detect and destroy enemy nuclear weapons and delivery systems as a top priority by whatever means are the most effective and acceptable at the time. Planning, likewise, assumes that, whatever the level of conflict (nuclear, chemical, or conventional), all types of weapons releasable at the time would be employed in an integrated, complementary way to accomplish the objectives of the war.

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. This would hopefully deny a credible enemy nuclear option.

Dispersal and Rapid Concentration

The availability of friendly nuclear strikes and the longer ranges of conventional artillery reduce the requirement for massed artillery formations. Improved troop mobility permits both the rapid concentration and quick dispersal essential to the survival of tank and motorized rifle formations as they maneuver on a nuclear-threatened battlefield.

In this context, the OPFOR now stresses 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, artillery, and weapons of mass destruction.

The enemy, being under nuclear threat, also must disperse his formations making himself 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 to complicate enemy targeting and to deny him the time to use his mobility to reinforce.

Limited Nuclear War

OPFOR political and military leaders have discussed the possibility of a limited nuclear war. The OPFOR accepts that a war could be limited to a given theater and would not necessarily escalate to an intercontinental exchange of nuclear strikes.

Attempting to limit nuclear war to a theater would place even greater pressure on the OPFOR to achieve theater objectives quickly. This presents enemy decision makers with a *fait accompli* that would make escalation clearly unattractive. In this context, the principles of tempo, decisiveness, and mission take on added importance.

Nuclear from the Outset

In a war that is nuclear from its start, nuclear strikes would be directed against the strongest sectors of the enemy's defenses and throughout his operational depth. Divisions, in "nuclear-dispersed" formations, would attack through the created gaps led

by forward detachments advancing at top speed into the depth of the enemy defenses. Their aim would be to seize or to neutralize remaining enemy nuclear weapons and delivery systems and command, control, and communications facilities. They would try to split and to isolate the enemy by attacks from different directions and across a broad frontage.

The exploitation force would probably attack in two echelons to take full advantage of the speed of advance that it would expect to achieve. The echelons are essentially an initial exploitation force and a follow-on relief exploitation force. A rapid tempo of advance is assured by assigning tank units to the first-echelon and by using motorized rifle units with tank elements on the main axis. Tanks are especially effective in the first echelon, since they have maneuverability, firepower, lower vulnerability to enemy nuclear attacks, and the capability to achieve penetrations of great depth.

Transition to Nuclear

Even when nuclear weapons are not used from the outset, OPFOR commanders deploy their troops based on the assumption that the enemy may strike with nuclear weapons at any moment. It continuously updates its own plans for nuclear employment so it will be prepared if it has to preempt such an attack. The OPFOR has developed its combined arms concept to fit nuclear engagement as well as a nonnuclear phase, which it plans within the context of a pervasive nuclear-threatened environment. Thus, the OPFOR does not have to make a complex transition from nonnuclear to nuclear war-fighting modes, since the nonnuclear mode is already adapted to an overall nuclear posture.

The OPFOR prefers to avoid nuclear warfare. It would probably do so as long as its objectives were being achieved and there were no indications that the enemy was "going nuclear." However, the OPFOR would attempt to preempt enemy nuclear use by massive, initial, in-depth, theater nuclear strike. The OPFOR perceives that its decision to go nuclear must be early so that sufficient nonnuclear power remains to follow up and to exploit the gains of nuclear employment with an immediate, high-speed air and ground offensive.

Nonnuclear but Nuclear Threatened

Nonnuclear warfare is distinguished not so much by major differences in combat deployments as by the extra missions assigned to artillery, helicopters, and *frontal* aviation. Conventional fire support systems would provide additional massive fires to take up the slack in destructive firepower that would otherwise be provided by nuclear strikes.

Nonnuclear operations are related closely to nuclear operations. Conventional weapons with improved accuracy and lethality are approaching the destructive power of weapons of mass destruction. Conventional and/or chemical combat can appreciably alter the COFM in the OPFOR's favor as well as provide more advantageous positioning of forces when and if the nuclear phase begins.

Though it might use chemical weapons, the OPFOR would strive to keep a theater offensive nonnuclear. The OPFOR would attempt to achieve the swift, early destruction or neutralization of enemy tactical nuclear capability by rapid, deep penetrations by ground forces and strikes

throughout the enemy depth with all available nonnuclear means.

Under nuclear-threatened conditions, the OPFOR offensive concept would have the following features:

- Avoid concentrating forces.
- Concentrate fires, but not firing weapons.
- Attack across broader frontages, on multiple axes.
- Avoid enemy strong points.
- Probe for enemy weak points.
- Penetrate where possible.
- Commit follow-on forces when and where they can best contribute to success.
- Drive rapidly and deeply into the enemy rear to destroy nuclear weapons and enemy defenses.

Weapons

OPFOR nuclear delivery systems include aircraft from both strategic and *frontal* aviation, and surface-to-surface missiles (SSMs) with ranges from 70 to 500 km. All OPFOR artillery 152-mm or larger is nuclear-capable.

The OPFOR classifies nuclear weapons according to yield or explosive power and type of burst. Nuclear weapons are considered 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 may be employed 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 to counter enemy employment of nuclear weapons, to maintain the initiative and momentum of the offensive, and to maintain fire superiority over the enemy (preempt his strike). The fire plans for divisions and higher levels include contingency plans for nuclear strikes. At all stages, nuclear delivery means will be surveyed in and target-ready to make a strike. The decision to initiate tactical nuclear warfare would be made at the highest level of government. The fire plan for the initial massive nuclear strike is developed at theater level and approved by the Supreme High Command. Employment authority for subsequent nuclear strikes probably is delegated to *front* and may be as low as army command level. The division chief of artillery submits recommendations for the subsequent employment of the division's nuclear and chemical weapons to the army commander for approval and integration into army and *front* fire support plans.

In deliberately planned operations, nuclear fires are planned in detail. In more mobile situations, as in meeting engagements, exploitation, and pursuit, some nuclear weapon systems are kept in high readiness to fire on targets of opportunity.

OPFOR target analysts favor airbursts and using large yields. Strikes near the line of contact are to be followed up by maneuver forces as closely as safety and circumstances permit. 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, weapons also might be reserved for other large, important targets.

Targeting

The following targets are considered suitable for employment of nuclear strikes:

- Enemy nuclear-delivery means--air, artillery, missiles, and rockets. (These receive the highest priority)
- Enemy high-precision weapons.
- Headquarters of division and higher levels.
- Prepared defensive positions.
- Reserves and troop concentrations.
- Supply installations, especially nuclear ammunition storage points.
- Communication centers.
- Key air defense sites.
- Command posts.

The suitability of targets is determined by their priority category, missions, the current tactical situation, and the nuclear weapons available for use.

Types of Strikes

The OPFOR categorizes nuclear strikes as group strikes, massed strikes, and individual strikes. The category depends on the number of targets hit and the number of nuclear munitions used.

A **group nuclear strike** employs several nuclear munitions simultaneously. It focuses on one or several enemy targets.

A **massed nuclear strike** employs a large number of nuclear munitions simultaneously or over a minimum time interval. Its goal is the destruction of 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, carries out the strike.

Offensive Nuclear Employment

Once the decision to release nuclear weapons is made, their use is governed by two principles: **mass** and **surprise**. The initial nuclear strike will be accomplished suddenly, throughout the depth of the enemy's combat deployment, and in coordination with nonnuclear fires. Initial nuclear strike objectives are--

- To destroy the enemy's main combat formations and his command and control system.
- To destroy the enemy's nuclear and high-precision weapons.
- To isolate the battlefield.
- To breach the enemy's main line of defense and define the main axes of attack.

Nuclear fires are employed to support the main attack while other fire support means support secondary or supporting attacks. The enemy's forward defenses are targeted and destroyed rather than avoided and bypassed. Nuclear strikes are in effect the main attack. These strikes are then exploited by a high-speed air and ground offensive.

Subsequent nuclear strikes are integrated with the maneuver and fire support plans and employed to reinitiate an offensive that has been slowed or stopped by organized enemy resistance. Nuclear strikes also may be used to eliminate the threat of a counterattack and to clear resistance from the opposite bank in a river crossing. In pursuit, nuclear strikes are planned on

"choke points" when retreating enemy forces present lucrative targets.

Defensive Nuclear Employment

If an enemy offensive can be severely degraded by the impact of nuclear weapons, the defender may gain the opportunity to switch quickly to an offensive role. This drastic change in the COFM is the primary goal when nuclear weapons are employed on the defense. Primary uses in the defense are--

- Destruction of enemy nuclear and high-precision delivery means.
- Destruction of main attacking groups.
- Counterpreparations.
- Elimination of penetrations.
- Support of counterattacks.
- Denial of areas to the enemy by use of surface bursts.

Radiologically contaminated barriers produced by surface or subsurface bursts may be used to prohibit or slow the advancing enemy and to canalize large elements into pockets to become a nuclear target.

BIOLOGICAL

If biological weapons are employed, they would probably be targeted against rear area objectives such as food supplies, water sources, troop concentrations, convoys, and urban and rural population centers rather than against frontline forces. The OPFOR realizes that, if biological agents are employed against such targets, they could seriously disrupt and degrade mobilization plans as well as the subsequent conduct of a war. 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.

The choice of agents and dissemination systems would depend on the type of targets(s) to be attacked. Probable targets for biological warfare pathogen attack are nuclear delivery units, airfields, rear area logistics facilities, and command, control, and communication centers. Attacks might be made by clandestine means prior to the start of war or by combat forces during open warfare.

Biological weapons consist of pathogenic microbes and the toxins caused by micro-organisms, both of which are intended to incapacitate or kill people or animals and destroy plants, food supplies, or material. Micro-organisms are classified as bacteria, viruses, ricketttsia, or fungi. Bacteria, which are resistant to both low temperatures and freezing, cause diseases such as bubonic plague, cholera, and anthrax. Viruses are responsible for smallpox, variants of encephalitis, and yellow fever. Rickettsia, bacteria-like microorganisms found living as parasites in arthropods, can cause certain human diseases such as rocky mountain spotted fever. Fungi are similar to bacteria in that both exist in plants; however, fungi have a more highly developed structure. Toxins are a class of highly active poisons produced as a naturally occurring by-product of some living organisms, or through a chemical production method. Available delivery means mentioned by the OPFOR include rockets, artillery shells, mines, air-dropped packets, aircraft sprayers, saboteurs, and infected insects and rodents.

CHEMICAL

The OPFOR is equipped, structured, and trained to conduct both offensive and defensive chemical warfare. Although the OPFOR is aware of its overwhelming advantage, it continues to steadily improve its chemical warfare capabilities. Much of OPFOR training revolves around the use of lethal agents. Besides offensive chemical capability, the OPFOR is equipped with chemical protective and decontamination equipment.

Weapons and Agents

The OPFOR has a variety of systems capable of chemical delivery. They include aircraft, multiple rocket launchers (MRLs) , artillery, mines, rockets, and missiles.

The OPFOR classifies chemical agents according to the effect they have on the organism. It identifies six major types: nerve, blood, blister, choking, psychochemical, 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. Nerve agents are further classified 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. 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) 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 OPFOR attack before a combat engagement. It would use persistent agents deep within the enemy's rear and along troop flanks to protect advancing units.

Targeting

Airfields, nuclear storage sites, and nuclear delivery systems are targets for chemical attacks since such targets can be neutralized without the necessity of pinpoint strikes. Also, 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.

Offensive Chemical Employment

In the offense, likely chemical targets include--

- Troops occupying defensive positions across the front of an OPFOR attack. The troops may be neutralized by nonpersistent agents delivered by MRLs.
- Nuclear delivery systems, troop concentration areas, headquarters, and artillery positions. All types of chemical agents delivered by field

guns, MRLs, missiles, and aircraft are the most likely.

- Bypassed pockets of resistance which pose a threat to the flanks or rear of attacking forces. Defending troops can be attacked directly or their movement restricted by contamination.

The OPFOR perceives that chemical weapons have a unique role; their use is not dependent on initiation of nuclear warfare. It is possible that the OPFOR would use chemical weapons early in an operation or from its outset. It would direct chemical attacks principally against enemy positions in the forward battle area.

Simultaneously with strikes across the front, chemical strikes also could be expected throughout the depth for enemy defenses. These chemical strikes would be combined with other forms of conventional attack to neutralize enemy nuclear capability, command and control, and aviation. Subsequent chemical attacks might be conducted against logistic facilities.

The basic OPFOR principle of chemical warfare is to achieve surprise. It would use massive quantities of chemical agents against unprotected troops or equipment. It may also use agents to restrict the use of terrain.

Initially, the use of chemical weapons may be subject to the same level of decision as nuclear weapons, but they are likely to be used more freely once the initial authority for employment has been given. In a nuclear war, chemical weapons are used to complement nuclear weapons. However, they may be used in a nonnuclear environment against an enemy whose chemical defenses are weak or where their use would be particularly advantageous, forcing an enemy to don protective equipment also inhibits his ability to fight.

Defensive Chemical Employment

In the defense, persistent chemical agents are employed to deny the enemy use of certain terrain and to canalize attacking forces. Chemical agents are employed against an attacking force to impede effective command and control and to destroy the momentum of the attack by causing the attacking troops to adopt protective measures.

NBC PROTECTION

The OPFOR believes that the best means of protection against weapons of mass destruction is the destruction of enemy delivery systems, and these are always a high-priority target. Other operational-tactical responses to the threat are:

- **Dispersion.** Concentrations must last for as short a time as possible.
- **Speed of Advance.** If the advance generates enough momentum, enemy targeting will be difficult and enemy systems kept on the move.
- **Concealment.** Camouflage and deception complicate enemy targeting.
- **Continuous Contact.** As long as friendly and enemy units are intermingled, they cannot be attacked.

Organization

The OPFOR is well equipped for a chemical defense. All troops are equipped with protective clothing, and all combat and many noncombat vehicles have excellent overpressure and filtration systems. In addition, the OPFOR provides for a high level of collective protection in the form of shelters to minimize the degradation of per-

formance entailed in the wearing of full protective clothing by troops. Its forces may possibly be the best trained for operations in a toxic environment; the evidence is somewhat contradictory in this regard. Chemical protection units/subunits are organic to all formations and units and are responsible for nuclear and biological as well as chemical protection and reconnaissance measures. *Fronts* have a brigade, armies/army corps a battalion, divisions a battalion, and regiments a platoon, and there is a chemical staff at each level.

Helicopters are also used for NBC reconnaissance. Some higher formation reinforcement would go to main-axis divisions, though many of the army and *front* units would be required to deal with the threat to the rear areas and to provide chemical defense reserves. In addition, medical and transport and higher formation missile units have chemical protection subunits. Engineer troops play an important role, too, both in passive defensive measures and in road decontamination and the building of bypasses and in 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 the best prepared force in the world to conduct both offensive and defensive NBC operations. Chemical troops are capable of accomplishing a number of tasks in support of combat troops. They have a wide variety of dependable equipment which, 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 OPFOR agents. Agent detector kits and automatic alarms are available in adequate quantities and are capable of detecting all standard agents.

SMOKE

The OPFOR employs smoke extensively on the battlefield. It will probably use it whenever the situation permits. The OPFOR distinguishes between toxic and neutral smokes in its doctrinal literature. This distinction drives OPFOR planning on when to mask. The OPFOR intends to force the enemy to use his chemical protective systems. This generally lowers enemy effectiveness.

Organization

At the operational level, the OPFOR has the following smoke assets: the *front*-level chemical protection brigade has a smoke battalion, and army also has a smoke battalion. Either of these battalions has three smoke companies.

Agents

The OPFOR may use a number of different 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 man-made 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. OPFOR artillery is used to fire WP rounds (which have a moderate degrading effect on thermal imagers and a major one on lasers). Smoke bombs or pots dropped by fixed-or rotary-wing aircraft are still used by the OPFOR. Largely neglected by most countries, the OPFOR makes considerable use of smoke pots.

All OPFOR armored fighting vehicles can generate smoke through their exhaust systems. A platoon can produce a screen which covers a battalion frontage for 4 to 6 minutes. In addition, their forward-firing smoke grenade dispensers can produce a bispectral screen up to 300 meters ahead of the vehicles.

Types of Smoke Screens

The OPFOR recognizes three types of smoke screens: **blinding, camouflage,** and **decoy**. Classification of each type as frontal, oblique, or flank in nature depends on the placement of the screen. Smoke screens 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 smoke screens can mask friendly forces from enemy gunners, OPs, 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 the WP and plasticized white phosphorus (PWP) is possible by MRLs, artillery, mortars, fixed-wing aircraft, or helicopters. Blinding smoke is laid directly in front of enemy positions, especially those of antitank weapons and OPs. It can reduce weapons' effectiveness by a factor of 10 and reduce casualties by 90 percent.

Blinding smoke screens 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 locations, and subsequent mission lines. The screening properties of a blinding smoke screen can couple with dust, high explosive (HE) combustion effects, and incendiary effects of phosphorus. This can create an environment in which fear and confusion add to the measured effectiveness of the smoke.

System	On Friendly	Placement in Between	On Enemy	Uses				
				Blinding	Camouflage	Protective	Decoy	Signal
Smoke Grenade	X	X		X	X	X	X	X
Smoke Generator	X	X			X	X	X	
Smoke Pot	X	X			X	X	X	X
VEESS	X				X	X	X	
Vehicle Dust	X				X	X	X	
Helicopter	X	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.

Camouflage

Camouflage smoke is used to cover maneuver. It conceals the location of units and the nature and direction of an attack. The camouflage smoke screen 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 smoke screens vary depending on terrain, weather, and the tactics conducted. Camouflage also forces attack helicopters to fly above or around a screen exposing themselves to attack. Camouflage smoke is not just used on the line of contact. It can be used to cover concentration areas and forming up places. It is also used to cover the approach of attacking forces from the depth, or a withdrawal, with successive lines extending many kilometers to the rear.

Establishing camouflage smoke screens normally requires use of a combination of --

- Smoke grenades.
- Smoke barrels.
- Smoke pots.
- Decontamination vehicles.
- Vehicles mounting smoke generating devices.
- Aircraft.

Two vehicles can lay a smoke screen long enough to cover a battalion advancing to the attack. For larger smoke screens, the OPFOR divides the line into segments and assign two vehicles to each segment. The OPFOR states that camouflage smoke screens should cover an area at least five times the width of the attacking unit's frontage.

The OPFOR is concerned with the threat of enemy helicopter-mounted ATGM systems. Consequently, its doctrine calls for advancing forces to move as close behind the smoke screen as possible. The higher the smoke screen, the higher an enemy helicopter must go to observe troop movement behind the smoke screen and 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 5- to 10-meter-high screen. This screen masks against ground observation but leaves the force vulnerable to helicopters "hugging the deck" and "popping up" to shoot.

The protection that camouflage smoke produces interacts as a protective smoke. Protective smoke screens are a good means of reducing the effects of the thermal radiation of nuclear explosions. They 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 smoke screen is useful in front of, around, or above friendly positions.

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 depends upon the type of combat action, time available, terrain, and weather conditions. An example of the use of decoy screens is a river crossing in which several possible crossing sites receive screening simultaneously. If the enemy fires into the decoy screen, black smoke devices and fires ignite to simulate burning vehicles or equipment. Other disin-

formation may include speakers that simulate the sound of tanks operating.

Signaling Smoke

The OPFOR 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.

Meteorological Influences

Local meteorological conditions greatly affect the employment of smoke. Troop control of forces maneuvering in smoke is extremely difficult. This is true even when commanders have planned the use of smoke and have conducted reconnaissance and prepared their troops. When weather conditions are ignored, smoke unexpectedly covering friendly forces can lead to disorientation, loss of troop control, and tactical disaster. Careful analysis of such conditions in the planning process is important. The conditions that most affect the employment of smoke are wind and lower atmospheric stability in conjunction with temperature, relative humidity, and precipitation.

Wind

Specification of wind direction usually depends on the wind's relation to the line of contact. Wind is classified as head, tail, oblique, or flank. A wind that blows at an angle of 60 degrees to 90 degrees to the forward edge is either a head or tail wind; this depends on whether it is blowing from one's forward edge to that of the enemy (tail) or vice versa (head). A tail wind is highly favorable when forces attempt to establish a blinding smoke screen. An oblique wind blows across the forward edge at an angle of 30 degrees to 60 degrees. A flank wind blows parallel to, or not more than 30 degrees from, the forward edge.

Wind speed data help to predict the drift rate and life span of a smoke screen. They also predict the quantity of smoke agent required. The OPFOR classifies wind speed as being favorable, moderate, or unfavorable. Under favorable conditions, smoke cloud disruption is not great; the cloud's life span is optimum and the quantity of smoke agent it requires is minimal. Under moderate conditions, operations require a relatively large quantity of smoke agent; however, the life span of the cloud still permits tactical use. A high density of smoke is possible under moderate wind speeds. If the wind direction changes frequently, there is a danger of ineffective dispersal. With unfavorable wind speeds, the smoke cloud disperses too rapidly or not at all. Figure 14-2 shows the effect of wind on the number of artillery rounds required to produce a smoke screen.

Atmospheric Stability

There are three levels of atmospheric stability: stable, neutral, and unstable. **Stable** conditions exist when the lower layers of the air are cooler than the upper layers. This usually occurs at night and in the early morning when there is a cloudless sky. During this time, intermixing of air in the atmosphere is very limited, and the smoke tends to drift along the earth's surface.

	Head Winds		Flanking Winds (Meters per Second)			
	Up to 5	More than 5	Up to 2	3 to 5	6 to 7	More than 7
Weapon	Required Rounds		Required Rounds			
82-mm Mortar	108-180	162-270	N/A	72-120	108-180	144-220
120-mm Mortar	54-90	81-135	N/A	36-60	54-90	72-120
122-mm Howitzer	36-60	54-90	N/A	18-30	27-45	36-60
Munition expenditure norms for producing a 120 to 200 meter smoke screen for 15 minutes						

Figure 14-2. Wind effects on smoke operations.

Wind Direction						
	Head or Tail		Oblique (45%)		Flank	
Weapon	Number of tubes	Number of rounds	Number of tubes	Number of rounds	Number of tubes	Number of rounds
82-mm Mortar	12	900	8 to 12	750	8	600
120-mm Mortar	8	450	8	350	4	250
122-mm Howitzer	8	300	8	220	4	150
152-mm Howitzer	13 to 14	200	10	150	6 to 7	100

NOTES:
1. Assuming the wind speed is 3 to 5 meters per second.
2. If the wind speed is 6 to 7 meters per second, multiply the ammunition consumption by 1.5.
3. An artillery battery of 6 to 8 pieces, regardless of the caliber of its weapon, can produce a smoke screen of:
   * Over a 500 to 700 meter frontage if a crosswind
   * Over a 150 to 200 meter frontage if head or tail wind

   If a frontage exceeds these dimensions, divide it among the batteries.
4. When there is a layer of snow over 20 centimeters in depth, multiply the ammunition consumption by a factor of 1.5 to 2.

Figure 14-3. Munition expenditure norms for producing 1 km smoke screen for 15 minutes..

Neutral conditions exist when the air temperature at the earth's surface matches that at the upper layers. This usually occurs when there is cloud formation and the wind speed exceeds 2 to 3 meters per second. This condition favors the employment of smoke. In **unstable** conditions, the lower layers are warmer than the upper layers; this causes an intensive intermixing of the air by vertical air movements.

Heavy rain is unfavorable for smoke because falling raindrops can wash the smoke out of the air. This can cause the accelerated dispersion of a smoke cloud. However, heavy rain can act as a natural obscurant. It can also absorb and reflect portions of the electromagnetic spectrum.

Weather conditions are favorable for smoke employment when the wind is stable in direction (with a speed of 3 to 5 meters per second) and when a stable or neutral

atmospheric condition exists. Moderate conditions for smoke use include a wind speed of 1.5 to 3 meters per second or 5 to 8 meters per second with neutral atmospheric conditions. Unfavorable conditions can include the following:

- Wind speeds of less than 1.5 or greater than 8 meters per second.
- Winds that are gusty or unstable in direction.
- Strong unstable atmospheric conditions.
- Heavy rain.

An analysis of worldwide environmental conditions show that certain areas are better suited for smoke use than others. In Western Europe, for example, the winds are normally stable, the relative humidity is normally high, and the average number of cloud-free days is low (36 to 38 per year). As a result, Western Europe provides highly favorable conditions for the use of smoke. The Middle East, especially the desert regions, is not very favorable because of the low relative humidity.

Employment

The OPFOR follows general guidelines in its use of smoke. Artillery, mortar, and aircraft are the OPFOR's 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 points before and during an attack. It 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. 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 smoke screens are useful in concealing the direction and time of attack. They also help to 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; this could include 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 flamthrower operators or subunits as they approach their targets.

FLAME

The OPFOR has not neglected flame weapons. They are of great value in reducing strongpoints and in built-up areas. At higher formation level, *fronts* have separate flamethrower tank units which can be decentralized as appropriate.

Chapter 15
Logistics

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 take place 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 insists that formations must be ready to live off mobile stocks, and not depend on constant resupply from higher. Medical and repair facilities must move forward to work in areas where there has been heavy fighting and concentrated casualties.

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 OPFOR 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. OPFOR logistics operations are designed 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 primary principles of OPFOR logistics support are the following:

Centralized Planning

Logistics resources must be under centralized direction and.This requires concurrent operational and logistics planning and coordination with civilian industry and transportation. Centralized planning insures coordination of civilian war production with military requirements. The bulk of logistics resources are at army and *front* levels. The OPFOR feels this contributes to operational and tactical flexibility. *Front* and army commanders familiar with the overall op-

erational concept can quickly plan to strip resources from stalled or burned out divisions or armies and reallocate them to formations making better progress. Changing the emphasis from one axis to another would be far more difficult in a decentralized system.

Tailoring Logistics Units

Tailoring allows allocation of logistics resources to the combat elements most essential to mission success. It allows the OPFOR to assign priorities for logistics support. Just as *front* and army combat strengths are tailored to their mission, so are their logistics resources. These assets are allocated to subordinate formations 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 can cramp the style of formations on secondary axes, but it 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 regiment 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. Sometimes uncommitted or less hard-pressed units/formations may be required to collect from their superiors to maintain the concentration of resources on key axes. As a basic principle, however, each level must keep up with its subordinates.

Forward Positioning of Support Elements

The OPFOR establish 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. The forward medical facilities attempt to locate in areas of great-

est need. The emphasis is on the quick return of lightly wounded personnel and repairable equipment to the 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 and *front* resources following as fast as possible.

Standardization of Equipment

The OPFOR system of equipment standardization is both extensive and effective. For example, of the 3,544 parts that make up a 3 1/2-ton truck, 45 percent may be used on other vehicles, and 23 percent may be used on other trucks of the same weight class. Extensive standardization has reduced the volume of repair parts and improved the OPFOR ability to repair forward through cannibalization. Obsolete vehicles and weapons can also be retained for training purposes without the need to keep a huge stockpile of repair parts.

Complete Use of Transportation

Logistics planners base their estimates on the use of all movement resources available. The OPFOR logistics system uses rail transport as far forward as possible to move supplies to *front* or army level depots. Other transportation assets, primarily motor assets, move supplies from that point forward. OPFOR doctrine calls for using tactical combat vehicles to move additional POL and ammunition stocks, especially 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, operational success may be sacrificed.

Complete Mobile Support

From division to company, materiel and servicing facilities operate from wheeled vehicles. Critical supplies such as ammunition are boxed and uploaded on support and combat vehicles. This system supports a continuous, rapid offensive.

Maintenance of Stock Levels

Supplies are held as far forward as possible and, when consumed 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 army can resume its support. Ammunition and fuel holdings at all levels include an emergency reserve, up to 30 percent of the total, which can only be used on the authority of the next higher commander.

Use of All Possible Resources

The OPFOR teaches its troops to 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 in particular is likely to prove valuable, and the engineers of the fuel supply service have special pumps to exploit filling stations. While food preparation and clothing supply procedures have improved, the supply priorities discussed above may require the use of enemy materiel. Captured fuel and food generally are used only after testing and approval by mobile field laboratories.

Force Restoration

Units may maintain strength by piecemeal replacement of casualties during

combat, especially 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 and is restored out of combat. Timely replacement of ineffective units and formations in the first echelon is vital to the maintenance of momentum. The eroded formation is not necessarily removed from the order of battle. It may be reorganized into composite groupings, or it may be reconstituted with repaired equipment and fresh personnel.

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 the Rear within the Ministry of Defense (MOD). The Chief of the Rear, 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 the Rear 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 the Rear, other troop component items are the responsibilities of other directorates and troop commands.

Resources

The MOD prepares its budget proposal in conjunction with other agencies of the State. The General Staff prepares preliminary estimates of armed forces requirements. A planning commission reviews and modifies these estimates in the light of priorities assigned to other government agencies and the resources available. The MOD submits the estimates to the Council of Ministers for approval as a part of the annual State budget. The General Staff further defines the military requirements, directing its headquarters and directorates to prepare a detailed procurement program. This program provides the data needed for the arms and services and the subordinate elements of the Chief of the Rear to prepare their own specific procurement programs.

Logistics Stockpiles

The logistics storage of OPFOR war materials consists of four major categories: state, strategic, mobilization, and mobile reserves.

State Reserves

Food stuffs, petroleum products, manufactured goods, and other strategic raw materials are stored in special government warehouses. These items can be issued only with the express permission of the State. While these stocks are separate from the military items held in strategic reserve, military use of at least part of these items is anticipated.

Strategic Reserves

These 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.

Mobilization Reserves

These materials are held 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. It also is responsible for their accountability and maintenance. The military districts coordinate mobilization measures between military and civilian sectors.

Mobile Reserves

Ammunition, fuel, rations, and equipment are located with deployed ground units and transported by the unit's organic transport. Ground forces maintain these supplies for use in immediate conduct of ground operations. These supplies are distributed throughout the ground forces in both tactical and support elements. Published norms establish quantities of these supplies. They are constantly checked and kept at proper levels. An emergency reserve of supplies is maintained within these stocks. Only the unit commander can order its use.

OPERATIONAL LOGISTICS

Operational logistics focus on force capabilities, infrastructure development, distribution, and the management of materiel, movement, personnel, and health services. Operational logistics covers the support activities required to sustain campaigns and major operations. It enables success at the tactical level of war.

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. While effective logistics operations sustain combat effectiveness for the duration of operations, they retain the ability to surge in support of decisive operations. As the scale and complexity of *front* and army operations increase, so does the importance of logistics to the success of these operations.

Within the OPFOR, the bulk of logistics units is concentrated at two levels -- *front* 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. Tactical units are free to engage the enemy in high-speed and highly mobile action.

Front

The *front* is not a fixed organization but is tailored 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 *front* is extensive and complex, serving as the major connecting link be-

tween the industrial base of the State and forces engaged in combat.

A *front* is likely to have one materiel support brigade, consisting of three motor transport battalions and one POL transportation battalion. A *front* may also be allocated an entire tank transport/heavy-lift regiment. This regiment can move the armored vehicles of a maneuver division; a battalion can move those of a maneuver regiment.

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. With the exception of its reduced size, the army logistics base is similar to that of the *front*. An army also has one materiel support brigade. Logistics elements are basically the same for both tank and combined arms armies.

Like the *front*, the army rear area is served by 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 Organizational and Mobilization Directorate of the General Staff is responsible for management of the uninterrupted supply of all forces in the initial phases of 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 cuts the logistics cord, formations can continue combat action by using their mobile stocks until supply lines are reopened. To achieve this, skip-echelon resupply is practiced wherever possible.

For example, *front* 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 divisional artillery regiment or on the gun lines. This procedure speeds up the operation of the system by avoiding time-consuming transloading. Where a formation's stocks are consumed, early resupply must be carried out to bring them back up to the normative level. 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. These quantities are called "units of fire" for ammunition, "refills" for POL, "daily ration" for food, and "set" for spare parts and accessories. These amounts originally are computed based on physical conditions or limitations.

Ammunition

In terms of complexity and weight to move, ammunition supply, especially artillery ammunition, is the biggest headache facing OPFOR logisticians. It may amount to over half the total tonnage of supplies. Getting the exact number of the right caliber of rounds to the right place at the right time is a challenging task. This is especially true where the routes available are limited in number and have suffered battle damage or route denial.

Ammunition planning is based on the **unit of fire** for each weapon. OPFOR planners use the unit of fire to compute ammunition and transportation requirements. 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 rear services integrates the ammunition order into his supply transport plan. He allocates transportation assets to move ammunition between depots and user units.

An OPFOR unit's basic load is a multiple of the unit of fire. It includes the amounts hauled in the unit trains and stored in the depot at the next higher headquarters. It varies with the unit's mission, degree of enemy resistance, etc. A multiple of the unit of fire is assigned for weapons before each major operation or phase. The multiple assigned is situation-dependent. Assignment is based on the mission, the enemy, and the availability of ammunition.

POL

Fuel and lubricant supply are second in priority following ammunition, due to three major reasons. First, the number of different types of fuel and lubricants that have to be moved is very 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. Pipelines are also difficult to interdict, and are flexible in that it is possible to quickly change the fuel being pumped by simply inserting a separating plug. Thirdly, captured POL stocks can be used.

All available means move POL to *front* and army. At *front*, depots are maintained with a 12-day supply. At army level, POL depots maintain a two- to three-day supply, stored in tanks. Oil and lubricants are stored in 150- to 500-liter drums. Advance bases are established 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.

Computation of fuel requirements is based on the **refill,** the amount of fuel carried in a vehicle's internal fuel tanks A unit's refill is the total requirement for all vehicles in the unit. The road range of most OPFOR vehicles with one refill is approximately 500 km, though some logistics vehicles enjoy a greater range. 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 *front*. As with ammunition, stocks are kept up for as long as possible by timely resupply from army or *front*.

Tactical pipelines may deliver fuel as far forward as division rear areas. Pipeline brigades or battalions may be at *front* and army levels. A brigade can lay about 45 miles of four-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 are connected to portable fuel tanks. When the pipeline extends over flat terrain, mobile pumping stations are located at approximately nine-mile intervals. In rough or mountainous terrain, the stations would be closer together.

Rations

Rations are issued based on meals per man per day. The Directorate of Rations Supply of the MOD develops norms for a day's supply of rations. Basic ration norms determine the amount of food products that are issued to feed one man for a 24-hour period. The chief of the rear 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 OPFOR system does not have a resupply procedure for unit end items while the unit is engaged tactically. The unit in combat is replaced by another unit when attrition reaches a critical level.

Mobile contact teams fix repairable equipment, returning it to action as soon as possible. This is the only way to replace equipment end items. Damaged equipment is not repaired in the field if it requires more than a few hours work. Under this system, the users submit their requests to the next higher maintenance unit that supplies the item from stocks on hand. Mobile reserve supplies are maintained on trucks from *front* to regimental levels and are replenished as soon as possible after being expended.

Water Supply

Engineers, in cooperation with the medical service, plan water supply in the field. When time permits, a water supply plan is drawn up to include 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 *fronts* and armies. Water supply points for all lower echelons are organized by organic engineer units or by the soldiers themselves under the direction of the local commander. The daily requirements for areas where water points are widely scattered are carefully computed to determine the amount of transportation needed.

Engineer, Signal, Chemical, and Medical Items

Items peculiar to these services are procured through separate channels under the supervision of the chiefs of the services from *front* to regimental levels. Medical supplies are handled through independent channels, as a separate function of the chief of the rear.

Supply Distribution System

A *front* receives its supplies from the national storage depots or in some cases directly from the industrial production line. The *front* and army logistics bases are large

complexes providing all combat service support needs.

Front assets deliver the 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. Critical ammunition and POL are uploaded and sent forward as required. If necessary, intermediate echelons may be bypassed to deliver items directly to the user.

Supplies move in bulk mainly by rail and pipeline but also by road from the strategic rear into the operational rear where dumps are established or replenished. 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

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 the Rear. It is responsible for management of 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.

Motor Transport

Extensive use of motor transport begins at *front* level. If rail transport facilities are available at *front*, they are used with motor transport at army level. At *front* 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 *front* levels supports the OPFOR 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 OPFOR motor transport is the great quantity and extensive use of trailers. Loaded trailers are pulled forward to fighting units and exchanged for empty trailers. The empty trailers are returned to rear logistics bases for reloading. In this manner, fighting units maintain maximum quantities of critical supplies such as ammunition and fuel.

Second-echelon unit logistics elements support first-echelon units. This practice increases the transport capability for logistics support to the first echelon regiments and divisions. Logistics bases can locate deeper in the *front* 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 assist in control of its huge numbers of vehicles, the OPFOR has special traffic control elements. They are along march routes at critical points to direct column movement. Because maps are sensitive, restricted documents in the OPFOR military, traffic regulators are critical to vehicular movements.

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 system is based on the accomplishment of repair as far forward as possible with repair facilities being moved to the scene of combat rather than waiting for damaged equipment to be evacuated to them.

Organizational Maintenance Capabilities

Front

The *front* can have up to five battalions each for armored, wheeled-vehicle, and artillery maintenance. These are the resources (together with others for specialized equipment) which deploy forward, either in the army rear or in the *front* mobile base. The *front* rear base will also establish workshops.

Army

Army assets are limited to a single maintenance battalion for armored vehicles, wheeled vehicles, and artillery. This battalion includes one recovery platoon and one ordnance maintenance company. Working in the army's area, there are substantial *front* assets, the exact numbers depending on the importance of the axis and the severity of the fighting that is anticipated. These units deploy to locations convenient for the various damaged vehicle collection points established by the divisions. They carry out as many repairs as possible before the momentum of the advance demands their forward displacement. Combined arms and tank armies have their maintenance capabilities augmented by *front* as required. Army units can provide mobile detachments for forward operations if necessary.

Maintenance Facilities

Maintenance facilities in the field provide repair for:

- Tracked vehicles.
- Wheeled vehicles.
- Artillery and ordnance.
- Engineer equipment.
- Signal equipment.
- Chemical equipment

Service for these items is provided by fixed and mobile repair facilities that extend repair capabilities forward into the battle area.

Equipment Repair

In wartime, the types of repair that are 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. They are routine, medium, or capital.

Routine repairs. Replacement, adjustment, or repair of individual components that can be made within a short time. Major components are not disassembled. This category is performed at levels below division.

Medium repairs. Major overhaul of at least two basic assemblies. This category of maintenance is performed at regimental or division level.

Capital repairs. Major overhaul or complete disassembly of a piece of equipment. This is the most extensive category of maintenance and can be performed at army and *front* levels.

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 the distribution of medical equipment and the 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 that will be accomplished only when there is a low casualty load and reduced enemy activity.

In anticipation of an overtaxed combat medical support system, OPFOR doctrine emphasizes the importance of "self-help" and mutual aid among individual soldiers. Each soldier is equipped with 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 the casualty collection points and the battalion aid station. It is intended to reduce the demands made on trained medical personnel, particularly when the use of NBC weapons results in a sudden and massive influx of casualties.

The OPFOR 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 OPFOR combat medical support is multistage evacuation with minimum treatment at each level. From company through *front*, 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 the 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 feels that major medical treatment should be per-

formed at an army-level mobile field hospital.

System

In wartime, each command level of the OPFOR from company to *front* 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 the 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 is designed to return as many soldiers as quickly as possible to duty, and, apart from emergency life saving treatment, gives priority to those who can return to action. In theory, the system is geared to the mass casualties expected in combat where nuclear and chemical weapons are used. Medical units move forward with the troops they are supporting, setting up facilities in areas where heavy fighting is taking place.

Front

In addition to the four to six mobile hospital bases supporting army operations, there may be two to three rear hospital bases established in the *front* 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 can be used as medical reserves or to set up new mobile hospital bases if the interval between those operating in the army rear and the *front* 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 may result if the enemy resorts to the use of weapons of mass destruction.

Also operating in the army rear, 40 to 50 km from the line of contact (at least initially) would be mobile hospital bases from *front*. One deploys in support of every two to three divisions in contact.

Evacuation

At each level, it is the responsibility of the higher echelon to collect casualties from the lower. Ambulance assets are limited, with divisional companies able to move 80 casualties and *front* and army battalions 300 casualties each in one lift. The separate air ambulance regiment 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 usesskip-echelon evacuation whenever possible.

REAR AREA SECURITY

Threat

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 OPFOR cause. In addition to these threats, the OPFOR anticipates attacks on their rear areas by airborne and heliborne forces, as well as larger-scale problems by enemy operational maneuver forces and/or bypassed groupings. The more operations are characterized by fluidity and maneuver, and the less dense the forces deployed on either side, the greater the threat is perceived to be.

Rear Security Measures

The OPFOR uses a dedicated rear area security force to counter any threats. Each *front* deploys a considerable counterintelligence effort. They can assign up to an entire division for security tasks. This unit is equipped and trained for conventional as well as unconventional warfare. As the airborne and amphibious threats grow, there is an increasing stress on deploying antilanding reserves, including, or even based on, heliborne units to provide a rapid reaction.

All logistics and communications units must be capable of self-defense. Repair units have an augmented ability to protect themselves, as the crews of damaged equipment usually remain with their equipment while it undergoes repair. Similarly the convalescent sick and wounded provide a reserve of manpower for elements near medical locations or second-echelon forces.

LOGISTICS CONCERNS

While OPFOR logistics concepts are sound, there are weaknesses in putting them into practice. These areas are highlighted below.

Personnel

The health, linguistic, and educational problems of the ground forces conscripts are magnified within the rear services as they do not always obtain the best soldiers. Considerable reliance is on reservists to flesh out logistics units to wartime strength (up to 70 percent at *front* level). The problem is complicated further by the fact that the quality of logistics officers is generally lower than in the combat arms.

Training

Rear services training has tended to be limited in extent and lacks realism. At *front* and strategic levels, there are no field training exercises at all. Wartime performance may well fall short of the demands of theory.

Planning Procedures

OPFOR logistics planning seems to be cumbersome and slow. It may not be able to keep pace with operational planning without considerable automation. Planning may also meet difficulties when the situation is obscure and uncertain. These problems are compounded by the frequent failure of commanders, particularly at the tactical level, to keep their logisticians informed, and to understand and allow for logistics limitations.

Transport

At the operational level, the amount of vehicles needed to sustain high-intensity operations can cause congestion, especially where routes are limited and also needed by fighting formations. The numbers of soft vehicles to support combat formations are vulnerable to interdiction by air, missile,

airborne landing, stay-behind, or diversionary forces.

A further problem is likely to occur at one of the most decisive moments of an operation. If the moment of transition from attacking a defending enemy to pursuit (and vice versa) is not foreseen in good time, the switch in emphasis from ammunition to POL supply could take place too late, resulting in an operational pause.

Deep Operations

While the combat and combat support arms have the ability to execute deep operations, they place unprecedented demands on the logistics system. The attachment of additional materiel support elements may ease the problem, but may restrict the ability to maneuver, given the need to move and protect a substantial logistics tail. Operational maneuver forces could end up tripping over their own entrails. The alternative, relying on the traditional resupply system, even if skip-echelon is working, may hardly be possible. Even if the supply cord is not cut, the steady and rapid lengthening of LOCs may overstretch the system. Aerial resupply depends on the creation and maintenance of air superiority.

Chapter 16
Airborne Operations

The OPFOR continues to devote attention to the development and employment of its airborne capabilities. This modernization program is based on the OPFOR principles of mobility, surprise, and combat activeness. The OPFOR views airborne forces as a means to carry the battle into the depths of the enemy's position. The OPFOR believes that the wide use of airborne forces on the modern battlefield is a must.

The current OPFOR airborne force is formidable. This force is deliverable to great distances. It is highly mobile and can assault a prepared position or a well-armed enemy force. It is also an excellent force to use for power projection.

DOCTRINE

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. OPFOR military doctrine calls for using airborne forces in both conventional and nuclear environments. Airborne units are an integral part of many operations at army and *front* levels. Vertical envelopment of the enemy has become an important maneuver in modern offensive operations. During offensive operations, airborne units and operational maneuver groups (OMGs) may work together. The OMG is a combined arms formation employed in army- and *front*-level offensive operations to raid deep into the enemy's rear area.

The OPFOR also uses airborne forces as a means of projecting power. Major portions of OPFOR 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 are specially trained to establish, defend, and expand an airhead. Their equipment is all air-transportable.

To allow flexibility in employment, during wartime OPFOR airborne forces are directly subordinate to the Supreme High Command, with operational control exercised by the General Staff. Theaters would receive some airborne units for strategic operations. Also, *fronts* and combined arms and tank armies would temporarily receive units for specific operational-depth missions.

MISSIONS

The OPFOR categorizes airborne missions based on the depth and importance of the objective and the size of forces involved. There are four categories of missions:

- Strategic.
- Operational.
- Tactical.
- Special.

The type of operation is primarily a function of depth, but it is also determined by the location of enemy forces, the level of the controlling headquarters, the significance of the target, weapons systems capabilities, and geography. Other factors taken into consideration in deciding how far behind enemy lines to insert an airborne force are:

- The size of the force.

- The potential for reinforcement of the force.
- The state of advance of friendly forces designated for linkup.

Strategic

The Supreme High Command establishes strategic missions in wartime. The General Staff controls these missions. The outcome of a strategic mission should have significant impact on a war or campaign. The use of airborne forces in a power-projection role is also a strategic mission.

Airborne divisions or regiments 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. Because of the scope and depth of a strategic mission, it requires substantial air combat and transport. Troops on the ground receive supplies by air-drop or airlift.

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

Operational missions are under the control of *fronts* and armies. Airborne forces are not organic to a *front*. However, higher command may allocate such forces in a regiment, brigade, or division size to support a *front* in a given operation. Operational mission objectives include:

- Enemy tactical nuclear and high-precision weapons.
- Headquarters or command posts.
- Logistics facilities.
- Communications facilities.
- Airfields.
- Ports.
- Bridges and other water or gap crossing sites.
- Mountain passes.

Operational missions also may be undertaken to block or to neutralize enemy reserves, to block a withdrawing enemy, or to attack enemy forces from the rear or flank.

Tactical

Airborne operations can also support tactical missions when necessary. A tactical airborne mission could have the same types of objectives as an operational mission, but only to tactical depths (50 km or less). On the rare occasions when *front* or army might allocate airborne troops for such missions, these would normally rely on helicopters for such a shallow insertion, rather than airdrop from fixed-wing aircraft. However, the heliborne force is more likely to comprise troops from a motorized rifle battalion of a maneuver division. A division commander can order and control such a tactical mission, but it requires approval of the army commander (and possibly the *front* commander, if it involves airborne troops).

Special

Special airborne missions are probably established by the Supreme High Command and controlled by *front* and army commanders. Company- or smaller-size units conduct such missions. Special missions include:

- Reconnaissance.
- Neutralization of nuclear delivery means and high-precision weapons.
- Sabotage.
- Creation of panic in enemy rear.

- Deception.

The OPFOR places great emphasis on reconnaissance activities for all types of formations, especially for airborne forces. The fluid character of operations in the rear area indicates that airborne units may have to rely heavily on various types of reconnaissance detachments to obtain intelligence. Raids and ambushes are ideally suited for airborne forces. Operating in the enemy rear area offers ample opportunities for airborne units to lay ambushes for enemy units detected by reconnaissance detachments, to conduct raids, and to strike at newly discovered high-priority targets such as nuclear weapons and/or their delivery systems.

Not all airborne units have a requirement or train for carrying out special missions. Furthermore, airborne units do not carry out all special missions.

AIRBORNE LANDINGS

Only after careful consideration would a commander make the decision to use airborne forces. Airborne landings require many valuable assets. The OPFOR would not place these assets in jeopardy unless it believes that the mission has a reasonable chance of success. If other units are capable of fulfilling a given mission, they would be used instead of airborne units.

The use of airborne forces in an operation depends upon whether that would enhance the likelihood of surprise, deep penetration, and rapid exploitation. 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 an OPFOR planner's decision to conduct an airborne operation.

Also essential is a favorable combat force ratio in the landing zones and objective area. The more powerful the enemy force in the projected operations area, the less likely that the OPFOR would conduct an airborne assault.

Front and Army Operations

The OPFOR intends to employ airborne forces in support of an army or *front* operation. The supported commander establishes the airborne units' objectives and time of deployment. Control is decentralized to insure that the airborne objectives support the overall mission of the army or *front* commander.

Airborne landings in support of army or *front* operations can occur at distances of up to 250 km from the forward edge. As already discussed, many factors can affect the decision of how far behind enemy lines to insert an airborne force.

The size of an airborne force used to support an army or *front* operation could be up to a division in strength. A reinforced regiment would be the most common-sized force used to accomplish most operational missions.

Organization and Equipment

OPFOR airborne forces may take the form of either divisions or independent airborne brigades. The modernization program has transformed OPFOR airborne divisions and independent airborne brigades into forces capable of seizing defended objectives and of attacking well-armed enemy forces deep in the enemy rear. The BMD is responsible for the greatest improvement in airborne combat capability. The BMD is an air-droppable, amphibious assault vehicle

with armament similar to that of the BMP found in motorized rifle units. The exceptional mobility and firepower of OPFOR airborne units make them a formidable threat to an enemy's rear.

Airborne Units

Airborne division. Each airborne division has three BMD-equipped airborne regiments. Division-level support elements include an artillery regiment, an antiaircraft battalion, a reconnaissance company, an engineer battalion, a signal battalion, a materiel support battalion, a maintenance battalion, a chemical protection company, and a medical battalion.

Airborne regiment. Each airborne regiment consists of three BMD-equipped airborne battalions, a self-propelled combination gun battalion, an antiaircraft battery, and an ATGM battery. Regimental support elements include a reconnaissance company, an engineer company, a signal company, a parachute rigging and resupply company, a materiel support company, a maintenance company, a chemical protection company, and a medical platoon.

Airborne battalion. Each airborne battalion has three airborne companies, an air defense platoon and an automatic grenade launcher platoon. Battalion support elements include a reconnaissance platoon, a signal platoon, a material support platoon, a repair workshop, and a medical aid station. The airborne battalion is designed to provide troop control, and limited communication, supply, and medical support.

Airborne company. The airborne company consists of three platoons of BMDs. There are three BMDs in each platoon (one per squad). The company headquarters has its own BMD.

Independent airborne brigade. Each independent airborne brigade includes three parachute battalions, an artillery battalion, an air defense artillery battery, and an antitank battery. Brigade support elements include a reconnaissance company, an engineer company, a signal company, a parachute rigging and resupply company, a materiel support company, a maintenance company, a chemical protection platoon, and a medical platoon

Air Delivery Capabilities

Military transport aviation allocates air transport support units required for deployment. Either transport aircraft or heavy-lift helicopters could air-land airborne units or insert parachute battalions by parachute. During times of military emergency, aircraft of civil aviation can augment military capabilities. The civil fleet equipment consists of some medium and long-range passenger transports, and larger numbers of short-range transports and helicopters.

Planning and Preparation

Planning considerations for OPFOR airborne operations include: the mission, troops and support available, terrain, the depth of the operation, flight routes, air superiority, drop zones (DZs), surprise, security, and the enemy situation.

Intelligence information for an airborne operation is obtained by aerial reconnaissance, clandestine agents, sympathizers, maps, radio and radar reconnaissance, long-range patrols, or air-dropped reconnaissance teams. Of major concern is the enemy armor, artillery, and air threat. Reconnais-

sance activities also occur outside the projected objective area, as a deception measure.

Prerequisites for Success

An airborne operation requires extensive coordination between the airborne force and the controlling *front* or army headquarters, supporting aviation, and ground maneuver forces. The following principles should contribute to success:

- Surprise is a principle 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.
- Landings shoud be in undefended areas or in areas where enemy defenses have been effectively neutralized.
- There must be effective air cover for the enroute formation. Suppression of enemy ground-based air defense weapons along the flight route is imperative.
- Airborne assaults receive fire support from air strikes, missile strikes, and the artillery accompanying advancing ground forces as it comes within range.

Preparation

Preparation for an airborne landing includes the following:

- Determination of 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.
- Determination of the nature of the terrain and condition of the road network.
- location of natural and manmade obstacles that would interfere with airdrop of men and equipment.
- Selection of suitable primary and alternate DZs.

A typical DZ is 3 km by 4 km. A regiment normally receives one or two DZs. With two DZs, battalion integrity is possible. A division uses four to six DZs. Alternate zones are designated for emergency use. Follow-on forces normally drop into the zones used by the initial assault wave.

Air Movement

The OPFOR considers the air movement phase of an airborne operation to be its most vulnerable phase. It emphasizes the necessity of creating a threat-free flight corridor from the departure area to the DZ or landing zone (LZ). All along the flight path, fire support assets target enemy air defenses. Fighters and fighter-bombers escort transport aircraft to protect them from enemy fighters and ground fires. Careful coordination of the protection of the air movement phase is a must.

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 also may use radioelectronic combat measures during air movement.

Airdrop

The OPFOR attempts to complete its airdrops before dawn. To simplify the airdrop, the OPFOR probably employs only

one type of aircraft for each DZ. The OPFOR normally conducts combat airdrops at an altitude of 150 to 300 meters. It emphasizes the necessity to drop 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.

Drop Zone Procedures

If the main body is airdropped during daylight hours, personnel move directly to their predesignated attack positions, but if the DZ is not on the objective, personnel assemble in battalion assembly areas. However, if the airdrop is at night, personnel assemble before occupying predesignated attack positions. If the DZ is not on the objective, personnel dropped during the hours of darkness assemble as companies and move to battalion assembly areas.

The airdrop and reorganization phase at the DZ is the second-most vulnerable period in an airborne operation following the air movement phase. All actions taken at the DZ are to clear the DZ before an enemy force arrives.

If the DZ is under strong enemy attack, personnel assemble and move immediately to the DZ perimeter to establish defensive positions. Personnel use any available BMD to reinforce defensive positions, and do not sort out the BMDs until after they have repelled the enemy attack.

If the DZ is not on the objective and battalions assemble first, they try to avoid combat with enemy units. They attempt to evade enemy ground forces and hide from an air threat. 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.

When an enemy threat against the DZ is successfully neutralized or suppressed, units move to battalion assembly areas located either at the DZ boundary or a few hundred meters outside the DZ.

For a planned follow-on air landing, the regiment's initial assault force leaves a rear detachment at the DZ. This detachment provides security and to assist in the landing of the follow-on force.

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 quickly before dawn. If movement is during the day, the unit moves cross-country using terrain features to provide concealment whenever possible. During movement, the airborne force keeps the radios in the "receive only" mode until it makes contact with the enemy. In the "receive only" mode, only the commander transmits messages.

Reconnaissance missions during the ground movement phase are extremely important, since the information received before departure may be limited or perishable. For information on the routes of march and enemy forces in the area, the airborne commander sends out his reconnaissance teams. These teams primarily come from the reconnaissance company of an airborne division, regiment, or brigade or from the reconnaissance platoon of an airborne battalion. A platoon-sized team may have engineer or chemical defense elements attached.

Offense

Once on the ground, offensive tactics of airborne forces are similar to those of OPFOR motorized rifle forces. Unlike raids, the attack at the final objective usually is conducted to overwhelm the enemy and to gain control of an enemy held area or facility. Final objectives most common in OPFOR airborne exercises are river crossing sites, airfields, and mountain passes.

Before the attack, supporting units deploy to provide maximum support. Attached artillery supports the airborne unit as it closes in on an objective. Engineer elements position themselves to move in quickly and sweep the area of obstacles. Air defense sections position themselves where they can engage attacking enemy aircraft or helicopters.

Airborne battalions assume battle formation normally within 1000 meters of the objective, but they try, to get as close as possible before deploying. About 200 meters is the minimum distance for deployment into battle formation.

Seizure of a river-crossing site typically takes place in the same manner. However, the commander adjusts his plans to account for the peculiarities of the mission. He modifies the reconnaissance patrol's mission to include finding suitable crossing sites so that units can deploy to seize key terrain on both sides of the river. Combat engineers also scout the river to determine its depth and width, speed of the current, river bottom characteristics, existence of floating obstacles and mines, riverbank composition and slope, and approaches on the river's far bank. Designated subunits also have the mission to prevent the enemy from destroying bridges or ferries during the attack.

In the mountains, DZs may be closer to the objective and located on several sides of an objective to compensate for the decreased speed of movement . If the 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.

Defense

Once a OPFOR airborne regiment or battalion has seized an objective, its mission is to defend the objective until the arrival of OPFOR forces advancing from the frontline. In almost all cases, they use a 360-degree perimeter defense. Establishment of the defense in depth, or with all units forward, depends upon the enemy threat and the terrain. If the commander puts maximum power forward, he maintains a small mobile reserve. For a regiment, this reserve would be no more than a company.

Linkup

Airborne units either await a linkup with friendly forces or fight their way back to friendly lines. To accomplish linkup, the airborne 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. Once linkup has occurred, operational control of the airborne unit returns to the *front,* the theater, or the General Staff.

HELIBORNE LANDINGS

Heliborne operations have been a part of the OPFOR military for some time. The U.S. airmobile experience in Vietnam and the Persian Gulf has increased OPFOR interest in the combat uses of the helicopter. Heliborne operations in OPFOR ground force maneuvers have increased over time. Such operations are now standard in military exercises.

Missions

Theoretically, by day or night, the OPFOR can launch battalion-sized heliborne landings up to 50 km or more forward of the line of contact with specialized airborne troops, or up to 20 km with motorized rifle troops. In practice, however, the landing force is usually of battalion size or smaller, is assigned an objective within range of OPFOR divisional artillery (i.e., within about 15 km of the line of contact), operates in daylight, and links up with an advancing friendly force within hours.

Typical missions for a heliborne operation are the following:

- Neutralization of enemy command, control, and communications facilities.
- Seizure of critical terrain such as an opposite shore of a river-crossing site.
- Pursuit of a withdrawing enemy.
- Attack enemy defense positions from the rear.
- Neutralization or disruption of enemy combat support or combat service support elements.
- Deception.

The OPFOR expects the heliborne force to face superior enemy firepower and mobility after landing in the enemy rear. Therefore, the landing force generally requires external fire support and early linkup if it is to survive.

A typical heliborne mission might be the seizure of a bridgehead in support of a river crossing. Other possible objectives are mountain passes, beach exits, desert oases, crossroads, or other features whose denial to the enemy can make the overall maneuver plan easier. Heliborne units also can block enemy attempts to break out of an encirclement or to reinforce a meeting engagement.

Heliborne units can also perform reconnaissance missions by insertion into the enemy rear area. Insertion of small reconnaissance units with light armored vehicles is possible. In the OPFOR rear area, heliborne units can perform rear area security missions. They can 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 also can lay and clear mines in the enemy rear.

Organization

While recognizing the need to limit the use of airborne forces to mainly strategic and operational missions, the OPFOR also recognizes the need for the capability to insert troops to perform missions at tactical depths. The primary function of these tactical airborne or heliborne landings in *front* and army operations is to cooperate with forward detachments and OMGs in reaching their operational objectives.

The *front* or army may allocate airborne troops for such missions. However, the landing force is more likely to be a motorized rifle battalion or company from a second-echelon division inserted by helicopter. Transport helicopters for use in heliborne operations come from either the army's combat helicopter regiment or *frontal* aviation's transport helicopter regiment.

Planning Considerations

Heliborne operations in the offense exploit fleeting opportunities. In the defense, they counter threats which suddenly materialize. Heliborne planning has to be rapid, thorough, and flexible. Planning begins with the selection of the objective. The responsible commander designates the objectives, one or more helicopter landing zones at or near the objective, and a departure area for the force.

During the operations, helicopters should spend only a minimum of time in any one place. They are particularly vulnerable when stationary, either on the ground or hovering in the air. The pickup and landing of the assault force must occur quickly, and without confusion.

The lift capability of each helicopter is a variable depending on air density encountered during the mission. The lift capability degrades seriously as temperature or altitude increase.

Dispersal of weapons, supplies, and key personnel throughout the helicopter force precludes the operation from failing because of a few unlucky losses among the helicopters.

Once on the ground in the enemy rear area, a heliborne landing unit can expect an attack from any direction by superior enemy forces. It is likely to require external fire support. The ground force is in a tenuous situation concerning resupply. The possibility exists for the rapid exhaustion of the basic load of ammunition during heavy engagements at close quarters.

Troop Control

A division commander is the lowest ranking ground force officer likely to order a heliborne operation. *Front* or army commanders may order a heliborne operation drawing on the assets of a motorized rifle or airborne division. In any case, army and *front* would know of and approve the operation in advance.

The commander of the heliborne force is the commander of the battalion, company, or other subunits forming the basis for the landing force. The ground force commander is responsible for preparation and positioning the troops for loading. He shares with the aviation commander the decision to proceed with the landing, based on their assessment of the situation at the LZ. After completion of the landing, the ground force commander is solely responsible for conducting the operation.

While the ground force commander may be able to refine the scheme of maneuver, most of the decisions required for the operation as a come from a by higher authority. The operations plan is followed as closely as possible.

Most heliborne operations require at least a squadron and possibly a regiment of transport helicopters. These units belong to either the army or *front*. The aviation commander's responsibilities include proper loading of troops and cargo in the pickup

zone and navigation and tactics in the air. The ground and air commander for the operation normally ride in the same helicopter, while their respective deputies ride in another helicopter. Ground and air officers work out conflicts in the mission planning process by negotiation, with appeal to higher authority in case of disputes. Air liaison officers in ground units help the aviation commander to identify the best approach and departure routes, and coordinate the helicopter activity with ground force air defenses.

Communications

The ground force radio net interlocks with the aviation net. An airborne command post may relay communications from the landing subunit on the ground back to its parent unit. Minimal radio transmissions are a standard OPFOR procedure. Prearranged code words keep transmissions short and uninformative to the enemy. Use of color coded signal flares and smoke are an alternative.

Loading

The departure area is approximately 20 km behind the line of contact to avoid enemy artillery fire. It is large enough to allow troop dispersal. It contains subareas for helicopter pickup, disposition of troops, and subunits preparing to embark. The departure area is located where it can be masked from enemy observation by protective features of the terrain, and by camouflage and dispersal. Subunits which cannot be completely hidden from enemy reconnaissance should appear as small reserve or second-echelon units.

The pickup zone is as close as possible to the disposition area to minimize delay and confusion en route to the helicopters. A subunit may move from its disposition area to a short-term waiting area closer to the pickup zone. The waiting area also is camouflaged and allows for troop dispersal. Waiting area tasks include the distribution of special equipment and the attachment of specialist personnel for the operation.

The force is ready to load before the helicopters arrive. While waiting for the helicopters, the commander briefs his subordinates. The commander's final briefing includes recognition signals for use between subunits and the plan for linking up with friendly forces. Staff officers responsible for communications and other services brief the force chief of staff. The chief of staff has prepared and coordinated a detailed list, approved by higher authority, of each helicopter load.

Landing Zones

The heliborne force lands on its objective if possible. If not on the objective, the LZ should be as close and as advantageously placed as possible, but outside direct fire range of a defended objective. There should be at least one alternate LZ and possibly multiple LZs for subunits of the force.

The heliborne force commander has limited ability to reconnoiter LZs and routes to the objective. Usually he must depend on maps, aerial reconnaissance, and human sources such as prisoners or line-crossers. The terrain in question is likely to be beyond reach of ground reconnaissance patrols. Too obvious an air reconnaissance jeopardizes the chance of surprise. Minutes before the landing, an armed helicopter or other aircraft performs a final reconnaissance of the landing site.

In selecting the LZ, there are hazards to consider which may not appear on maps or aerial photography. The greatest danger is that the enemy, either through advance knowledge of the mission or by chance, may be in position to defeat the operation and can exploit his advantage fully. Another hazard may be undetected changes in the NBC situation in the LZ and the objective.

While the operation as a whole may rely heavily on air and artillery support, the heliborne force primarily suppresses the enemy forces in the landing area. Helicopters at the LZ cover the off-loading operation with ATGMs, free-flight rockets (both antipersonnel and antiarmor), and machine gun and small arms fire.

Objective

The objective normally is expressed in terms of terrain to secure or an enemy unit to neutralize. Ideally, it should be relatively small and lightly defended, and have easy access. For example, this landing force could neutralize an enemy tactical missile unit by destroying the launchers and guidance vehicles from ambush without attacking the enemy's garrison facility.

Higher authority normally approves and sometimes dictates the scheme of maneuver. Once the operation begins, the heliborne force commander may refine the scheme of maneuver if necessary, but makes as few changes as possible. In exercises, the mission ends with the arrival of a friendly ground force. The survival of the landing force may not be necessary for successful accomplishment of the mission.

While each phase of the operation builds on the success of the previous phase, the most critical moments occur in the movement from the LZ to the objective. In many situations, everything depends on the success of the initial attack on the objective, made before the enemy reacts to the presence of the heliborne force.

After seizing its objective, the heliborne force establishes a perimeter defense to await linkup. A motorized rifle battalion in heliborne landing operations cannot be self-sustaining. The planned time to linkup normally is 2 to 3 hours.

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Chapter 17
Special-Purpose Forces (SPF) Operations

The OPFOR maintains a complement of **special-purpose forces (SPF)**, controlled by the Main Intelligence Directorate of the General Staff. They train to conduct a variety of sensitive missions, including covert action abroad. In wartime, SPF would 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.

CONCEPT

The OPFOR concept of **SPF operations** includes the mission of **special reconnaissance**. By OPFOR definition, that mission connotes both a reconnaissance/intelligence collection function and a **direct-action** or **diversionary** function. This means that, in addition to basic intelligence reporting, SPF conduct operations such as sabotage and small-unit tactics against selected targets in the enemy rear areas. The following paragraphs define these key terms.

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, etc.

In peacetime or during war, military and civilian intelligence services organize special reconnaissance activities; intelligence agents and SPF carry them out.

Direct Action

Direct action involves an overt, covert, or clandestine attack by armed individuals or groups to damage or destroy targets or to kill or seize a person or persons. Examples of direct-action missions for OPFOR SPF units are: assassination, abduction (illegal capture), hostage taking, random killing and maiming, sabotage, capture, ambushes, raids, and rescue of hostages (civilian and military). Direct action includes diversionary measures.

Diversionary Measures

The OPFOR 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). Diversionary measures also involve the liquidation of personnel, as well as the destruction of military hardware, and other actions to weaken the morale and will of the enemy by creating confusion and panic.

They include misdirecting military road movement by moving road markers and generating false communications.

MISSIONS

The OPFOR SPF conducts operations to achieve military, political, economic, and/or psychological objectives. These operations may try to achieve tactical goals in support of strategic objectives and may have either long-range or immediate impact upon the enemy. They may occur in peacetime or as part of the OPFOR's subsequent attack on the enemy and have these five types of missions: basic, peacetime, transition to war, offensive, and defensive.

Basic Missions

SPF operations are part of the OPFOR concept of deep operations. This simultaneous attack of the front and rear areas to disrupt or destroy enemy forces includes these basic missions for the SPF:

- Neutralize weapons of mass destruction and high-precision weapons.
- Attack air defense facilities and airfields.
- Disrupt LOCs.
- Attack C^2 installations.
- Exploit surprise to disrupt defensive actions.
- Undermine morale and spread panic.
- Disrupt economic and logistics capabilities (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 and missiles.

Peacetime

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, while others are "sleepers," prepared to act on call in time of war. Agents are trained to operate as political agitators, intelligence collectors, and saboteurs. They establish residence in the vicinity of military targets: airports, missile bases, arsenals, communication centers, logistics centers and depots, and also on 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 are less involved in the collection of intelligence. 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.

SPF agents should provide incoming sabotage and assassination teams with safe areas, motor transport, fuel, supplies, and guide the teams toward their objective. Both intelligence and sabotage agents come under the command of senior *front* intelligence officers and can be transferred from one category to the other at any time, or be ordered to fulfill both roles.

Transition to War

Before the start of hostilities, the SPF conduct clandestine operations in the target area to increase the probability of destruction of 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:

- Conduct strategic and operational reconnaissance.
- Train and assist guerrillas operating in foreign countries.
- Organize local guerrilla or partisan groups.
- Weaken military capabilities of the target country, through either subversion or direct action.
- Assassinate key military and political figures.

In wartime, the SPF reconnaissance role is complemented by five principal direct-action tasks:

- Assassinating enemy political and military leaders.
- Neutralizing enemy nuclear facilities by guiding OPFOR aircraft to the target (using electronic devices), or destroying such facilities themselves.
- Neutralizing enemy C2 and communications centers.
- Destroying important enemy targets such as airfields, naval bases, and air defense installations.
- Disrupting enemy power supplies by attacking power stations, storage centers, and power lines.

Implementation of direct-action missions depends on the size of the enemy defenses, the element of surprise, and the assets available to the SPF unit commander.

Wartime missions of the SPF are planned under the direction of the General Staff and are integral to OPFOR combined arms operations. Intended to support theater- as well as *front-* or fleet-level operations, SPF are capable of operating throughout enemy territory.

Offensive

When the OPFOR offensive actions begin, SPF assets strike quickly to neutralize the enemy's ability to make decisions. They can degrade his C^2 system within a few hours. SPF teams may consolidate resources in a base of operations and store heavy equipment for future use. They continually change this base of operations to avoid detection by the enemy. They protect the base with guards, mines, flares, and intrusion detectors to alert of an approaching enemy. This will allow the SPF teams to disperse and reform later at a predesignated location.

The OPFOR appreciates the important role that the SPF can play in support of an offensive. They may perform their missions separately, in support of strategic objectives, or in support of a *front*

or army operation. Missions generally include some of these actions:

- Conduct deep reconnaissance operations.
- Conduct direct action in the strategic or operational objective area, including ambushes and raids (by teams).
- Disrupt enemy governmental and military control systems and centers.
- Destroy key economic targets, to include power stations, pipelines, oil and gas storage facilities, and electricity transmission lines.
- Destroy critical air defense systems and associated radars.
- Support follow-on conventional military operations.
- Undermine national resistance.
- Assist foreign guerrillas to prepare for OPFOR offensive operations.
- Intimidate and demoralize the population.
- Assassinate key military and political figures.

Operations in the enemy's rear are calculated to undermine the enemy's morale and spread panic among the civilian population and the political leadership. Refugees can hamper deployment, defensive maneuver, and logistics. It is probably easier to destroy many governments' will to continue the struggle than it is to destroy their armed forces.

Defensive

A SPF brigade or battalion may support strategic, operational, or tactical defensive actions. SPF may conduct standard reconnaissance due to the lack of availability of other troops. The contribution made by SPF units in an intelligence capacity is expected to be in the reconnaissance and reporting role. This is critical in the initial stages of war, when the enemy is attempting to complete his mobilization, concentration, and deployment. Other missions generally include the following:

- Conduct direct action in the enemy's rear area, including ambushes and raids (by teams).
- Disrupt LOCs, C^2 nodes, key logistics, ports, naval bases and airfields, and road and rail traffic.
- Sabotage airfields, air defense sites, logistics depots and centers, railway lines, road and rail bridges, and communications systems.
- Destroy tactical logistics depots, especially fuel and ammunition. This would probably include division and brigade trains to stop the tactical resupply flow.
- Provide communications, liaison, coordination, and C^2 to stay-behind units conducting partisan operations.

TRAINING AND PREPARATION

Most SPF soldiers come from airborne forces, although some come from the ground forces or other branches of service. Basic selection criteria include political reliability, physical prowess, experience, initiative, and judgment. Foreign language speakers are actively recruited, as are those who have lived abroad. SPF teams operating in the enemy's rear areas must also learn local idioms to survive in a clandestine environment. All SPF recruits must have a secondary-level education and show abilities to learn new skills. This is important because recruits must quickly learn to use new, sophisticated, technical equipment. Personnel have completed military training (usually

airborne). Many of the field grade officers have attended foreign staff or war colleges.

Training

In addition to normal military training, all receive instruction in the following:

- Reconnaissance and target location.
- Infiltration tactics.
- Night linkups.
- Sabotage methods using explosives, incendiaries, and chemical and biological agents.
- Parachute training.
- Hand-to-hand combat and silent killing techniques.
- Psychological operations.
- Language and customs of the target country.
- Survival behind enemy lines.
- Effective and secure clandestine communications.

To make training as realistic as possible, SPF brigades have training facilities equipped with accurate, full-scale models of key targets such as enemy installations and weapon systems. Training facilities include mockups of enemy airfields, nuclear systems, nuclear storage sites, and communications facilities. Small groups of men are trained as teams under rugged conditions. Their tough physical training includes obstacle courses, methods to quietly neutralize sentry dogs, and field exercises which resemble actual battle conditions.

Preparation

SPF missions require intensive preparation. The OPFOR emphasizes the following factors when preparing for SPF missions:

- Absolute secrecy.
- Detailed planning and coordination.
- Unity of command.
- Resupply from enemy stocks.
- Detailed target lists with alternate objectives.
- Multiple destruction methods (explosives, incendiaries, mines, etc.).
- Effective, secure communications.

EQUIPMENT

Because of the clandestine nature of their missions and the distances behind enemy lines at which they plan to operate, SPF units normally do not use combat vehicles during a mission. Instead, their small teams carry the best available man-portable and airdropable equipment. Additional equipment can be airdropped into the area and retrieved later by means of homing devices.

In most cases, SPF personnel would dress in foreign uniforms or civilian clothes and employ the weapons of the target country. They could use indigenous civilian or military vehicles for transportation. SPF teams could infiltrate by parachute, sea, air landings, or penetrate borders disguised as civilians.

Weapons

The OPFOR SPF units utilize a wide variety of weapons. Some of these weapons may have silencers, night-vision devices, and/or enhanced ammunition. Weapons may include the following:

- Automatic and semiautomatic small arms (pistols, rifles, and machine guns).
- Grenade and rocket launchers.
- Antitank grenade launchers.

- Man-portable antitank guided missiles (ATGMs).
- Shoulder-fired surface-to-air missile (SAM) launchers.
- Flamethrowers.
- Mortars.

Explosives, Incendiaries, and Mines

SPF teams use light equipment to enhance mobility and secrecy. This includes a variety of explosives, incendiary devices, and mines. **Incendiaries** include grenades, napalm munitions, and locally produced devices from available supplies in the markets. The SPF teams may use chemicals obtained locally to manufacture explosives and incendiaries. The OPFOR SPF may also use a variety of **mines** to attack the enemy. These include directional fragmentation mines (similar to the U.S. Claymore mine), bouncing fragmentation mines, and blast mines. These can also protect SPF clandestine camps, storage areas, and booby-trap suitable items.

Performance Enhancers

The OPFOR SPF may use chemical preparations to improve their physical and mental performance during long periods of activity. These include mulitvitamin and chemical substances such as those used by astronauts and professional race drivers. Physical and psychological measures may also improve the performance capabilities of SPF personnel.

Chemical Agents

SPF forces may use lethal agents and traditional riot-control agents to neutralize selected targets. Nonlethal agents such as CS (tear gas) would disable guard personnel, permit the SPF forces to quickly take key installations, and maximize the element of surprise. Hallucinogenic agents such as LSD can cause persons to act erratically and may be selected for a specific target. A SPF team or even one person can carry an amount of LSD sufficient to contaminate the water supply of a city and destabilize the entire population of a medium-size city. This requires approximately 80 pounds to produce a significant effect on at least 50 percent of a city's population. As with lethal agents nonlethal agents are most effective when introduced shortly before an attack.

Biological Warfare

Biological agents are not effective for clandestine operations requiring an immediate or quick impact. However, this may be suitable for SPF forces to use where a long time (days) is appropriate before the sickness would develop. It would be very difficult to determine the source of this infection if secrecy was desired.

ORGANIZATION

The SPF of the Main Intelligence Directorate of the OPFOR General Staff are assigned to strategic and operational *front* and fleet commands. **Though organized into brigades and battalions, these forces would infiltrate and fight as small teams composed of 5 to 12 men.** In wartime, each of these brigades can field approximately 80 to 100 SPF teams, and a battalion can field 10 to 15. 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 is not fixed, but flexible according to the mission.

Once deployed, the teams would conduct reconnaissance and tactical operations against a wide variety of targets, such as ship and submarine bases, airfields, command and intelligence centers, communications facilities, ports and harbors, radar sites, and nuclear weapons facilities. Though a small force, SPF have the potential to achieve results disproportionate to their size against a list of critical, yet often vulnerable, targets.

SPF Brigades and Regiments (General Staff or Theater)

If the General Staff creates a theater headquarters, it may place a SPF brigade or regiment under the operational control of the intelligence directorate. However, this brigade/regiment remains under the command of the General Staff's Main Intelligence Directorate.

The OPFOR would employ SPF throughout the theater for reconnaissance, to disrupt communications, destroy bridges, seize choke points, and direct attacking aircraft to prime targets. SPF structure can vary from one theater to the next depending on the command's requirements and the number of targets on the enemy side. 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 *front*-level SPF.

SPF Brigade *(Front)*

SPF brigades contain three or four SPF (parachute) battalions, a signal battalion, and other support elements. The brigade may deploy approximately 80 to 100 SPF teams. Team organization and size can vary according to the specific mission. The average team size is 10 men.

The *front*-level SPF brigade conducts operations in support of operational-strategic objectives and *front* military offensive and defensive operations. The SPF brigades would deploy throughout the enemy operational and operational-strategic depth in wartime. This normally means inserting elements (by parachute or otherwise) 500 to 1,000 km behind enemy lines. Initially, SPF activity would focus on targets to the depth of the *front* subsequent mission, which is the rear of the enemy army group (600 to 800 km deep). If the *front* must then conduct a second mission into the enemy communications zone, SPF activity could extend to 1000 km or even beyond.

SPF Battalion (Army)

The SPF battalion of the army usually contains three parachute companies, a signal company, and a supply and service platoon. The battalion structure is flexible and can change according to the mission. A SPF company may operate as a single subunit when conducting a sabotage mission into the enemy's rear areas or can divide into smaller forces. The battalion can deploy approximately 10 to 15 SPF teams.

The army-level SPF battalion has the primary missions to conduct reconnaissance, create confusion (diversionary measures), and destroy targets. It normally inserts elements (by parachute or otherwise) approximately 100 to 500 km behind enemy lines. It targets items of special interest to the army commander. This means that the focus of SPF activity would initially be to the depth of the enemy corps (250 to 350 km). If the army must conduct a second mission into the depth of the enemy army group, the SPF activity could extend as far as 600 to 800 km into the enemy's depth.

Naval SPF

The Main Intelligence Directorate would normally assign a SPF brigade to each fleet in the navy. Naval SPF are under the operational control of fleet intelligence directorates. In wartime, naval SPF teams would be transported to a target area by aircraft, submarine, or ship and would be inserted immediately prior to hostilities. Their targets are enemy seaborne nuclear delivery systems, shoreline targets including major ports, or interior objectives best reached by infiltration from the sea. Infiltration of some reconnaissance/sabotage teams may be by submarine.

GLOSSARY

AAA - antiaircraft artillery
AAG - army artillery group
ABN - airborne
AC - army corps
ACC - auxiliary communications center
AD - air defense
ADP - automated data processing
AGRA - army group of rocket artillery
ALT - alternate
AM - amplitude modulation
AP - antipersonnel
APC - armored personnel carrier
ARM -antiradiation missile
ASM - air-to-surface missile
AT - antitank
ATR - antitank reserve
AT RES - antitank reserve
ATGM - antitank guided missile
AUX - auxiliary
AWACS - airborne warning and control system

BDE - brigade
BN - battalion
BrAG - brigade artillery group
BOS - battlefield operating system
BTRY - battery

C^2 - command and control
C^3 - command, control, and communications
C^3CM - command, control and communications countermeasures
CA - combined arms
CAA - combined arms army
CAG - corps artillery group
CC - communications center
CEP - circular error probable
CINC - commander in chief
CMTA - commander of missile troops and artillery (operational level)
COFM - correlation of forces and means
COMINT - communications intelligence
COMMZ - communications zone
COP - command observation post
COR - chief of reconnaissance
CP - command post (or control post)
CPM - critical path methods
CPV - combat potential value

DAG - division artillery group
DE - directed energy
DET - detachment
DEW - directed energy weapon
DF - direction-finding
DIV - division
DZ - drop zone

ECCM - electronic counter-countermeasures
ECH - echelon
ECM - electronic countermeasures
ELINT - electronic intelligence
ELM - element (s)
ENGR - engineer
EO - electro-optical
ESJ - escort jammer/jamming
EW - early warning
EW - electronic warfare

FAC - forward air controller
FAE - fuel-air explosive
FD - forward detachment
FM - frequency modulation
FROG - free rocket over ground
FWD - forward

GCI - ground-controlled intercept

HE - high-explosive
HELO - helicopter
HF - high-frequency
HUMINT - human intelligence

IMRB - independent motorized rifle brigade

INDEP - independent
INF - infantry
IR - infrared

KG - kilogram(s)
KM - kilometer(s)

LCHR - launcher
LD - line of departure
LOC - line of communications
LOG - logistics
LOS - line-of-sight
LZ - landing zone

M - meter (s)
MD - military district
MLRS - multiple launch rocket system
MM - millimeter
MOD - Ministry of Defense
MOD - mobile obstacle detachment
MR - motorized rifle
MRB - motorized rifle battalion
MRD - motorized rifle division
MRL - multiple rocket launcher
MSD - movement support detachment

NBC - nuclear, biological, or chemical
NOE - nap-of-the-earth

OMG - operational maneuver group
OP - observation post
OPFOR - Opposing Forces

PERT - program evaluation review techniques
POL - petroleum, oils, and lubricants
POW - prisoner of war
PWP - plasticized white phosphorus

RAG - regimental artillery group
RDC - reconnaissance-destruction complex
RDM - remotely delivered mines
REC - radioelectronic combat
RECON - reconnaissance
REINF - reinforced
RES - reserve
RFC - reconnaissance-fire complex
RPV - remotely piloted vehicle
RSC - reconnaissance-strike complex

SAM - surface-to-air missile
SCC - support communications center
SIGINT - signals intelligence
SLAR - side-looking airborne radar
SLCM - submarine-launched cruise missile
SOJ - standoff jammer/jamming
SP - self-propelled
SPF - special-purpose forces
SPT - supporting
SSJ - self-screening jammer/jamming
SSM - surface-to-surface missile
SVCS - services

TA -tank army
TB - tank battalion
TD - tank division
TELAR - transporter-erector-launcher and radar
TK - tank
TR - tank regiment

UAV - unmanned aerial vehicle
UHF - ultra-high-frequency
UK - United Kingdom
UV - ultraviolet

VEESS - vehicle engine exhaust smoke system
VHF - very-high-frequency

WP - white phosphorus

INDEX

Page numbers in **bold type** indicate the main entry for a particular topic; this page often includes a definition of the indexed term. Due to slight adjustments in pagination after completion of this index, it is possible that, in a few cases, the indexed topic may start on the page before or after the page number shown here.

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