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SOVIET AND U.S. ARMY  
OPERATIONAL AND TACTICAL LOGISTICS

A thesis presented to the Faculty of the U.S. Army  
Command and General Staff College in partial  
fulfillment of the requirements for the  
degree

MASTER OF MILITARY ART AND SCIENCE

by

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1990

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MASTER OF MILITARY ART AND SCIENCE

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

SOVIET AND U.S. ARMY OPERATIONAL AND TACTICAL LOGISTICS,  
by Major Constantine S. Vakas, U.S. Army, 94 pages.

This study examines the logistics systems of the Soviet and U.S. Armies that support operational and tactical levels of war. It delineates very clearly the current status of these systems. The doctrine, organization, techniques, and procedures of the two systems are described and, where appropriate, compared and contrasted.

Understanding both the similarities and differences is an important benchmark for the quality of war plans made today and the continued constructive evolution of the U.S. Army under the AirLand Battle tenets. Soviet logistics doctrine, organization, techniques, and procedures provide valuable insights and offer many readily applicable lessons to U.S. planners. These insights and lessons are particularly important because of analogous Soviet and U.S. warfighting doctrine, and fundamentally comparable support doctrine.

Specific findings with implications for U.S. logistics planners include: 1) The proposal to move large portions of division level support assets into the corps needs to be examined based on current Soviet trends, 2) the Soviet use of norms and planning factors may offer a means to simplify material management center functions, and 3) the continued consolidation of supply, maintenance, and transportation functions into multifunctional support units is fully justifiable.

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## Chapter 1

### INTRODUCTION

#### PURPOSE AND SCOPE

It is common to study Soviet combat operations and tactics both as a gauge to judge the validity of our combat operational and tactical ideas, and simply to know the potential adversary as a part of our preparation for battle. It is less common to study Soviet operational and tactical level logistics. Few writings exist by comparison, and these are frequently general in nature. Even in the Command and General Staff College (CGSC), much time is spent studying Soviet operations and tactics, but virtually none is spent on any form of Soviet logistics. These observations have, in total, led me to conclude there is a mainstream officer lack of familiarity with Soviet operational and tactical level logistics, and a general tendency to discuss U.S. operational and tactical logistics as if they exist in a vacuum.

Certainly, it is useful to more clearly understand Soviet operational and tactical logistics for the same reasons we study Soviet combat operations and tactics. There are significant differences and fundamental similarities in Soviet and U.S. operational and tactical level logistics support. Understanding both the similarities and differences

is an important benchmark for the quality of the war plans made today and the continued constructive evolution of U.S. Army logistics doctrine, organization, techniques, and procedures.

This paper describes, and where appropriate, compares and contrasts the two logistics systems. Chapter two discusses U.S. Army logistics and the general sustainment system. Chapter three presents the Soviet side. The strengths and weaknesses of these elements are briefly discussed, and findings with implications for U.S. Army logistics planners that could impact on the execution of AirLand Battle are highlighted in the conclusions presented in chapter four.

This paper focuses on doctrine, organization, techniques, and procedures. It is deliberately limited to qualitative discussion and analysis against the backdrop of the commonly accepted characteristics of the AirLand Battlefield. No attempt is made to quantify the numbers or characteristics of support equipment or the quantity, skills, and competence of support troops.

#### OPERATIONAL AND TACTICAL LEVELS DEFINED

The U.S. Army definition of the operational level is broad. Operations are the employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization, and conduct of campaigns and major operations. A campaign is a series of joint actions designed to attain a strategic objective in a theater of war. A major operation comprises the coordinated

actions of large forces in a single phase of a campaign or in a critical battle.<sup>1</sup> Operational levels reach up into the U.S. theater and the Soviet front where operations combine with strategy. They also go down to the U.S. Army corps and the Soviet field army.

While operations set the objectives and pattern of military activities, tactics is the means by which corps and smaller unit commanders translate potential combat power into battles and engagements.<sup>2</sup> The high end of tactics overlaps the low end of operations. The lower end of tactics extends down through both the U.S. and Soviet divisions to the lowest fighting units.

This study addresses both the theater and the front. However, to narrow the scope, this study primarily focuses on logistics activities supporting operations and tactics which generally begin at the U.S. Army corps and the Soviet field army, and extend down through the divisions.

#### DOCTRINAL BACKGROUND

AirLand Battle was introduced as the U.S. Army's war fighting doctrine in 1982.<sup>3</sup> This doctrine emphasizes high intensity and high mobility on a non-linear battlefield. AirLand Battle adopts an offensive spirit; seizing and retaining the initiative even in defensive operations. It recognizes the need to exploit depth in operations (the extended battlefield) and to synchronize deep, close-in, and rear operations in one battle.

AirLand Battle is world-wide in scope. It applies to

different kinds of war, from low to high intensity warfare, including the use of nuclear and chemical weapons that collectively constitute the "integrated battlefield". However, it is primarily oriented to the European theater, and against the Soviets in conventional war.

This doctrine has a significant impact on logistics support that is characterized in two ways in FM 100-5:

First, providing logistics support to combat units will become more difficult: the highly mobile, independently operating army units will require large quantities of fuel, ammunition, spare parts, and other support to sustain combat operations. Second, providing responsive logistics support will become more critical: AirLand Battle tactics such as deep attack by ground maneuver forces are risky and depend on good intelligence, command and control, communications, and leadership, but their success or failure will be determined primarily by the adequacy of logistics support.<sup>4</sup>

Sustainment, i.e., logistics support, is highlighted in FM 100-5 as a cornerstone of all successful operations:

Sustainment is a central, potentially decisive aspect of operations not an adjunct to them. It is as important to the success as any other part of the commander's operational plan.<sup>5</sup>

Because of all of this the U.S. Army has spent, and continues to spend, much time and energy restructuring and refining corps and division level logistics support in pursuit of optimum performance on the AirLand Battlefield. Additionally, the AirLand Battlefield is itself continuing to evolve creating increased logistics challenges.

These efforts have special emphasis today in light of the Conventional Forces Europe (CFE) strength reductions and

other ongoing arms control and confidence building measures in Europe. These activities dictate smaller, but fully capable support forces that must function flawlessly.

The Soviet principles of military art, and subordinate operational and tactical principles for combat represent the Soviet central thoughts for operational and tactical level military operations.<sup>6</sup> They are in part analogous to the AirLand Battle tenets and imperatives. The Soviet Army is also undertaking logistics support changes in the face of increasingly complex and demanding sustainment requirements.<sup>7</sup>

#### LOGISTICS DEFINED

The term "logistics" has an extensive history. It is still defined and interpreted in many different ways. This paper views logistics from the the U.S. Army's framework of combat service support (CSS). The field of CSS consists of a wide range of functions and services, and is composed of three basic categories: personnel services support, medical support, and logistics. The Adjutant General and Finance branches primarily provide the first category. The Medical Service branch provides the second. The Quartermaster, Ordnance, and Transportation branches provide logistic support. The U.S. Army's definition of logistics also includes the Quartermaster field services function. So, logistics is supply and services, maintenance, and transportation.

Supply includes the acquisition, storage, care of



material in storage, distribution, and salvage of supplies. It also includes the determination of the kind and quantity of supplies. Supplies consist of all items necessary for equipping, maintaining, and operating a military command.<sup>8</sup> The field services role of logistics consists of support functions such as food service, laundry and dry cleaning, clothing sales, fumigation and bath, property disposal, airdrop, and graves registration.<sup>9</sup> The U.S. Army defines maintenance as all actions necessary for retaining or restoring an item to a specified condition. It includes inspecting, testing, servicing, classifying as to serviceability, repairing, and rebuilding. It also typically includes all maintenance-related supply actions.<sup>10</sup> Transportation is the movement of personnel, material, and equipment from origin to destination.<sup>11</sup>

During combat operations, combat service support is considered to consist of six tasks key to the sustainment of military forces. These are simply stated as manning, arming, fueling, fixing, transporting, and protecting. The logistics examination in this paper focuses on arming, fueling, fixing, and transporting.

Manning correlates to the first two categories of combat service support presented above: personnel services support, and medical support. Protecting consists of all of the actions necessary to defend the sustainment system. The support system is understandably a prime target of enemy operations both in the forward areas and in depth. Enemy

air, missile, ground, and special forces attack the sustainment system as a part of a coordinated battle or campaign plan.

While manning, protecting, and the logistics sub-category field services are no less important, they are not included in the focus of this study. They form an excellent basis for future work, including future Master of Military Art and Science (MMAS) topics.

Arming is the provision of munitions to weapon systems. It encompasses all types of ammunition to include mines and demolition munitions. Fueling is the provision of required fuels to weapon systems and other equipment. Fixing transcends maintenance. Its purpose is to preserve the availability of weapon systems and equipment. It includes the provision of repair parts at the required place and time and all the actions taken before during, and after battle to keep equipment operational. Moving consists of the actual transportation of people and material. It also includes transportation management and highway regulation which seek to use resources, including road networks, most efficiently and to greatest effect.<sup>12</sup>

#### REVIEW OF LITERATURE

Four main sources of information have been examined for this study: 1. U.S. field manuals, 2. books and both primary and secondary source articles in periodicals, 3. studies and reports from various agencies, and 4. interviews of Soviet logistics subject matter experts in the Combined Arms Center

Threats Directorate and the Soviet Army Studies Office which are both located at Fort Leavenworth.

The 1986 edition of Field Manual (FM) 100-5, Operations is the U.S. Army's current AirLand Battle keystone war-fighting manual. It expresses the way the Army intends to fight in any battle environment, and provides the authoritative foundation for supporting doctrine, force design, material acquisition, professional education, and individual and unit training.<sup>13</sup> Thus, FM 100-5 guides the way the Army organizes, equips, and trains its forces. It includes a general chapter on sustainment planning and execution. Other "how to fight" manuals reviewed include: the 1988 approved final drafts of FM 100-15, Corps Operations and FM 71-100, Division Operations, and FM 71-3, Armored and Mechanized Infantry Brigade.

The 1988 edition of FM 100-10, Combat Service Support is the counterpart to FM 100-5. It is the principal "how to support" manual. Subordinate, more detailed doctrine is provided most notably in FM 63-3J, Combat Service Support Operations-Corps, FM 63-2-2, Combat Service Support Operations, Armored, Mechanized, & Motorized Divisions, and the 1988 Test FM 54-30, Corps Support Groups. The new corps support group doctrine, organization, and employment procedures addressed in this manual are not yet officially approved. However, they are considered virtually finalized by Army senior leadership. Corps support groups are treated as established organizations in full existence in this

thesis. All of these support manuals have been updated in accordance with AirLand Battle doctrine. They describe the organization of combat service support and the functions, operations, and command relationships of the combat service support organizations at each echelon.

FM 100-2-1, The Soviet Army: Operations and Tactics, FM 100-2-2, The Soviet Army: Specialized Warfare and Rear Area Support, and FM 100-2-3, The Soviet Army: Troops, Organization, and Equipment serve as the U.S. Army's definitive source of unclassified information on Soviet ground forces. These manuals are used to examine Soviet logistics. However, they are supplemented extensively by articles, studies, reports, and discussions with subject matter experts in order to obtain the most current Soviet information.

The field manuals and the other sources of information mentioned above are discussed throughout the body of this study.

Chapter 1 ENDNOTES

<sup>1</sup>U.S. Department of the Army, Operations, FM 100-5, Washington, D.C., May 1986, p. 10.

<sup>2</sup>Ibid., p. 10.

<sup>3</sup>Ibid., p. i.

<sup>4</sup>Frans Nauta, Logistics Implications of Maneuver Warfare, Vol I. Bethesda, MD: Logistics Management Institute, September 1988, pp. 1-2.

<sup>5</sup>U.S. Department of the Army, op. cit., p. 74.

<sup>6</sup>U.S. Department of the Army, The Soviet Army: Operations and Tactics, FM 100-2-1, Washington, D.C., 16 Jul 84, pp. 2-2 - 2-4.

<sup>7</sup>Dr. Graham H. Turbiville, "Soviet Logistics Support Concepts Change," Army Logistician, March-April 1987, p. 2.

<sup>8</sup>U.S. Department of the Army, Combat Service Support Operations-Corps, FM 63-3J, Washington, D.C., 12 Aug 85, p. 4-2.

<sup>9</sup>Ibid., p. 4-4.

<sup>10</sup>Ibid., p. 4-3.

<sup>11</sup>Ibid., p. 4-4.

<sup>12</sup>U.S. Department of the Army, Combat Service Support, FM 100-10, Washington, D.C., 18 Feb 88, p. 1-9.

<sup>13</sup>U.S. Department of the Army, Operations, op. cit., p. i.

## Chapter 2

### U.S. ARMY OPERATIONAL AND TACTICAL LOGISTICS

This chapter addresses U.S. operational and tactical level logistics. Its focus is on corps and lower logistical organizations, functions, and activities; and the overall sustainment system to which they belong. The theater army echelon, the level above the corps, is also briefly discussed.

Logistics on the battlefield cannot be studied in isolation. It must be examined as a component of the entire spectrum of battlefield CSS. The CSS sustainment system must be understood in order to fully understand logistic support. This chapter consists of four major parts. The general sustainment concept, organization, and system are discussed in parts one through three. First, the U.S. Army's general concept for sustainment to include the AirLand Battle sustainment imperatives are presented. Second, the general organization of sustainment on the battlefield is examined. Third, the sustainment system is discussed by organizational echelon. Finally, the chapter concludes with the specifics of logistics support.

#### SUPPORT CONCEPT AND DOCTRINE

The AirLand Battle sustainment imperatives preface any

thought of combat service support in general or logistics in particular. They spring from the AirLand Battle tenets of: initiative, agility, depth, and synchronization. The U.S. Army's concept for sustainment can best be stated as meeting these imperatives by providing optimum support forward through organizational design, techniques, procedures, training, and leadership. There are five sustainment imperatives that embody the concept: anticipation, integration, continuity, responsiveness, and improvisation.

Anticipation means maintaining or accumulating the assets necessary to support the commander's operation at decisive times and places. Anticipation also requires that sustainment operations be flexible enough to accommodate possible tactical or operational contingencies. Logisticians must anticipate shifts in demand based on the changing nature of operations, and be prepared to respond effectively.<sup>1</sup>

Neither tactical nor operational plans can succeed without fully integrated CSS. Support forces must be organized within themselves to give the commander the greatest possible freedom of action. The integration of sustainment operations with the operations of the maneuver force is also crucial. Sustainment operations must fit into the total force and the overall plan.<sup>2</sup>

Continuity implies the responsibility to ensure that an operation is not affected by a lapse in support. Sustainment cannot be interrupted for long without directly diminishing the combat power of a force. Support forces must take

advantage of every opportunity to increase sustaining capabilities for the combat force throughout its operations. Continuity rests on forward stockage, alternate facilities, and multiple lines of communication (LOCs).<sup>3</sup>

Responsiveness is the ability to meet changing requirements on short notice. This goes beyond the notion of routine responsiveness. The sustainment system must react rapidly during crises or when fleeting combat opportunities arise. Efforts to reestablish a ruptured defense or to exploit a tactical success may call for relocation of support bases, major redirection of supply flows, reallocation of transportation means, or short notice transfer of units from one part of the operation to another.<sup>4</sup>

Finally, improvisation is a hallmark of CSS. Unforeseen contingencies arise no matter how well planned the operation. Enemy action, interruption of LOCs, major technical difficulties, and even natural disasters upset plans and require improvisation. "Less dramatic emergencies, such as unexpected maintenance failures in a particular type of equipment, loss of support equipment, or unanticipated peaks in workload also require improvised solutions."<sup>5</sup>

#### SUPPORT ORGANIZATION

The organization and location of CSS elements on the battlefield are determined by the tasks performed, the echelons they support, and the areas in which they support.<sup>6</sup>

First, CSS units are organized according to the task they



are expected to perform. They are formally organized by a Table of Organization and Equipment (TOE). For example a maintenance company is organized (provided the proper personnel skills, tools, and equipment) to fix the equipment of the units that it habitually supports. Thus, a division maintenance company is organized to perform the task of keeping division equipment in the battle. It has the personnel skills tools, equipment, and components required to maintain the equipment of division units it habitually supports.

While there are requirements for fixed standard support units, there is also a requirement for more flexible support units. Using the same maintenance example, a non-division maintenance company is organized with a base maintenance capability and with specialized maintenance support teams designed to work on specific combat equipment such as engineer, artillery, aircraft, and communications equipment. These combat weapon system teams are assigned to the maintenance company as required.

Organization by task is not limited to TOE design. Informal, ad hoc task organization is frequently employed. This is simply the temporary grouping of sustainment assets to support a combat formation performing a specific mission.

Support is also organized by echelon. The combat arms battalions within a divisional maneuver brigade have small support organizations that provide organic support (critical supplies such as fuel and ammunition, transportation, food

service, personnel and administrative service, and minor medical service). The brigade is supported by the next echelon, which is the division support command (DISCOM) forward support battalion (FSB) that generally operates in the brigade support area (BSA). At the next echelon, the DISCOM supports the division as a whole. A corps support command (COSCOM) similarly supports the corps.

The U.S. Army approach to sustainment is based on the premise that maneuver and combat support elements should have an organic sustainment capability commensurate with their anticipated requirements. The company/battery fights engagements of short duration and so is provided with only a minimal sustainment organization. The battalion fights or supports engagements of slightly longer duration and is provided a slightly greater sustainment organization (supply, maintenance, personnel, and medical). The brigade does not have an organic sustainment capability. It is supported by an FSB from the DISCOM which can generally support the brigade indefinitely as long as the flow supplies and replacements from the rear continues and evacuation routes to the rear remain open.

Last, CSS is organized by area. Support is provided to the company in the company trains area, to the battalion in the battalion combat and field trains area, and to other units in the BSA. At higher levels, support is provided to division and nondivision units in the division support area (DSA) and in the corps by geographical area. For example, a

nondivision maintenance company in the corps rear area supports all units in its given area of responsibility.

#### SUPPORT SYSTEM

The sustainment system actually begins in the United States which is the support base for all European deployed forces. However, operational level sustainment starts at the theater army. A vast assortment of supplies and equipment are routinely shipped to theater locations from a series of army depots in the U.S. Various pre-positioned war reserve stocks as well as depot level maintenance capabilities are maintained in Europe as a part of the theater level infrastructure because of the potential for LOC interruption. Generally, supplies and services are pulled by or, when necessary, pushed forward through the units in the echelons described below. The organizations, processes, and procedures constitute the operational and tactical level sustainment system.

#### THEATER ARMY ECHELON

The commander of the U.S. Army European theater is responsible for providing CSS to all army units in the theater. He executes this responsibility through the theater army headquarters staff by establishing priorities, assigning missions, and allocating resources in accordance with his theater concept of operations. He uses a material management center (MMC) to manage supply and maintenance, a movement control agency (MCA) to provide theater-army-level movement management services, assorted functional commands (such as

personnel and medical), and a theater army area command (TAACOM).<sup>7</sup>

The TAACOM operates in the area behind the corps. This area is called the communications zone (COMMZ). The TAACOM provides:

- Supply support to the corps for all supplies except those supplied to the corps direct from the U.S. via ALOC.
- Intermediate general support (GS) maintenance of components and overhaul of major items for return to the supply system.
- Backup intermediate direct support (DS) maintenance support to the corps.
- Logistics and personnel service support to army units located in or passing through the COMMZ to include reception, staging, and reconstitution.

It also coordinates area-related functions such as traffic circulation, population control, and rear support operations with host nation elements.<sup>8</sup>

The number of TAACOMs assigned to a theater depends on the size of the theater expressed in terms of the force in the theater, the work load, and the geographical area. The 21st TAACOM is the only TAACOM deployed in U.S. Army Europe (USAREUR).

The TAACOM has subordinate area support groups (ASGs). They provide DS-level logistics support, less movement control and line-haul transportation, to units located in or

passing through their assigned areas. One important function of the support groups is supporting combat units that have just arrived in-theater prior to their deployment forward into the corps area of operations. Support is also provided to formations which are undergoing extensive reconstitution. ASGs also support the corps with specified logistics support and the overall theater supply system through the repair or overhaul of components and major end items as directed by the theater army MMC.

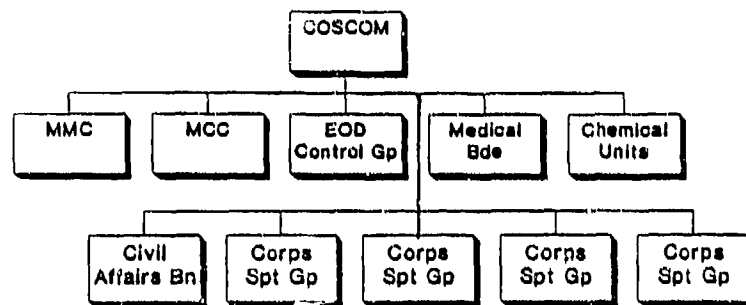
The TAACOM is made up of only those units needed to provide support. The number and types of subordinate units depend on the makeup, the number of corps supported, and the number of units located within its assigned area of the COMMZ.

#### CORPS ECHELON

"The corps is a dynamic force with no fixed structure. A corps commander may control and direct as few as two or as many as five divisions in combat."<sup>9</sup> There are two fully functioning U.S. corps in the Federal Republic of Germany (FRG). Each has a COSCOM that provides the full spectrum of logistics to all corps forces. Figure 2-1 below outlines a COSCOM organization.

Corps CSS units operate as far forward as necessary to execute the tactical plan supporting units in their assigned areas. The COSCOM headquarters, with its material management and movement control centers, is normally located in the corps rear area. Typically, the corps headquarters and the

COSCOM headquarters are within reasonable surface travel distance of each other because of their close relationship.<sup>10</sup>



NOTE: The actual size and numbers of civil affairs and chemical units vary based on the mission. These units may be attached to the COSCOM or directly to the Corps.

Figure 2-1. COSCOM Organization<sup>11</sup>

Corps support groups (CSGs) provide the command and control of the COSCOM's logistics units with one CSG normally supporting each committed division and one supporting the corps rear.<sup>12</sup> The CSGs supporting the divisions are called forward corps support groups. The one supporting the corps rear is labeled a rear corps support group. Figure 2-2 below illustrates the corps battle area.

CSGs are the single source of logistics support for nondivisional units. CSG units provide rations, clothing, and organizational equipment as well as the field services necessary to sustain soldier morale in combat. They also provide ammunition, fuel, repair or exchange for damaged

items, and transportation for both personnel and equipment.<sup>13</sup>

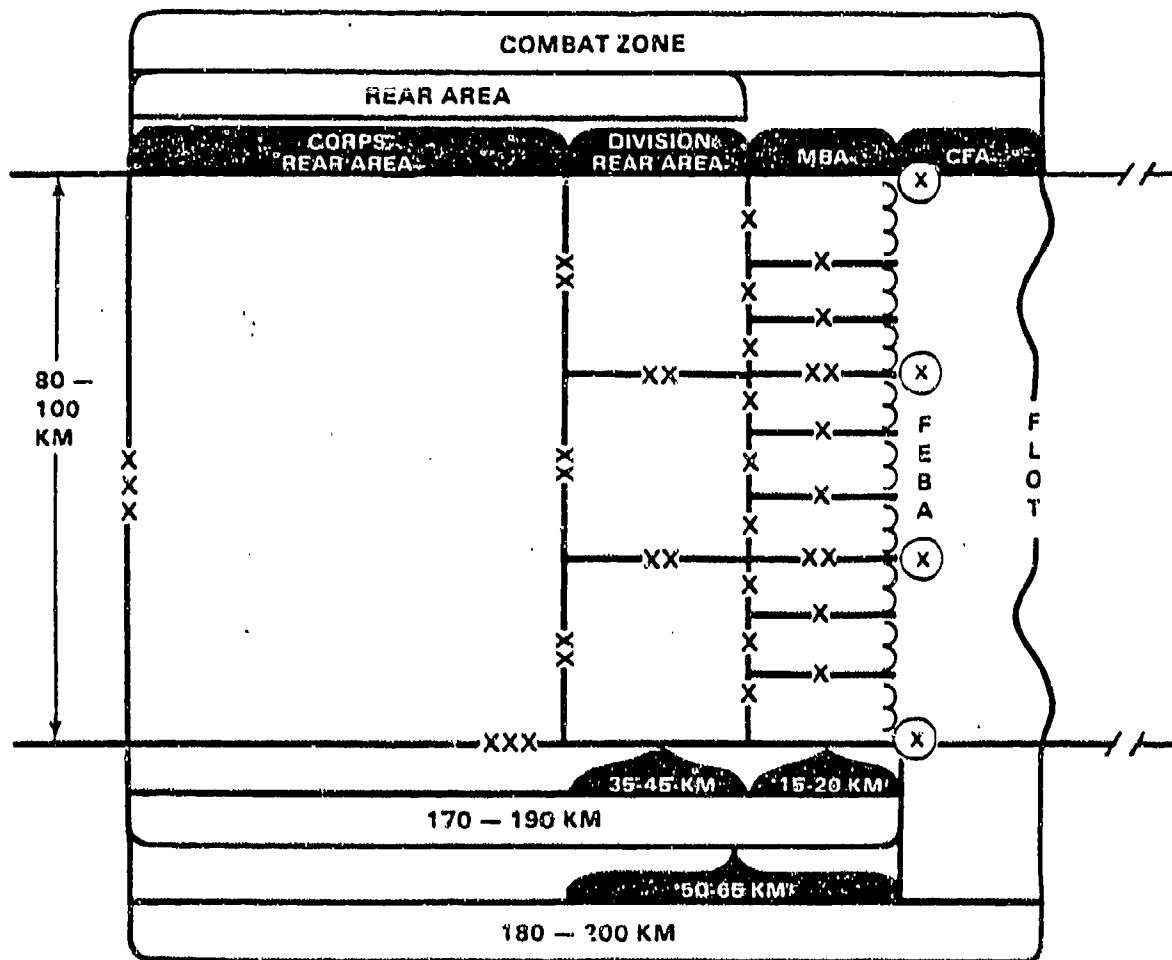


Figure 2-2. The Corps Battle Area<sup>14</sup>

Forward CSGs orient on the division, separate brigade, or armored cavalry regiment (ACR) sector. They serve as the single source of logistics for all corps organizations in their area of responsibility. They provide:

- Support to nondivisional corps forces operating in a committed division's area of operations. Corps

units such as corps artillery, engineer, military police, signal, and chemical units are supported by logistics units employed forward into the division support area (DSA).

--GS supply to the committed division, to include GS ammunition and GS petroleum.

--Area support to units in the CSG's area of responsibility behind the division's rear boundary.

--Backup DS maintenance and field services support to the committed division.

The rear CSG provides:

--Area support to units employed in or passing through its area of operations, to include hospitals and replacement units which normally operate in the rear of the combat zone as well as divisions, separate brigades, and ACRs in reserve.

--Backup support to the forward CSGs. The rear CSG's subordinate units maintain the bulk of the corps general supply base from which to resupply GS and DS units in the forward CSGs.

--Corpswide GS supply. As an example, bulk fuel and ammunition are throughput from the corps rear area to the DSA.<sup>15</sup>

The number of CSGs employed by the COSCOM depends on: the number and types of divisions committed, the number and type of corps nondivisional units supported, the number of subordinate CSS battalions requiring command and control, the



extent of host nation support (HNS) available, and the corps slice required to support a contingency, and extended LOC, or a special task force. Figure 2-3 depicts sample organizations for forward CSGs and a rear CSG.

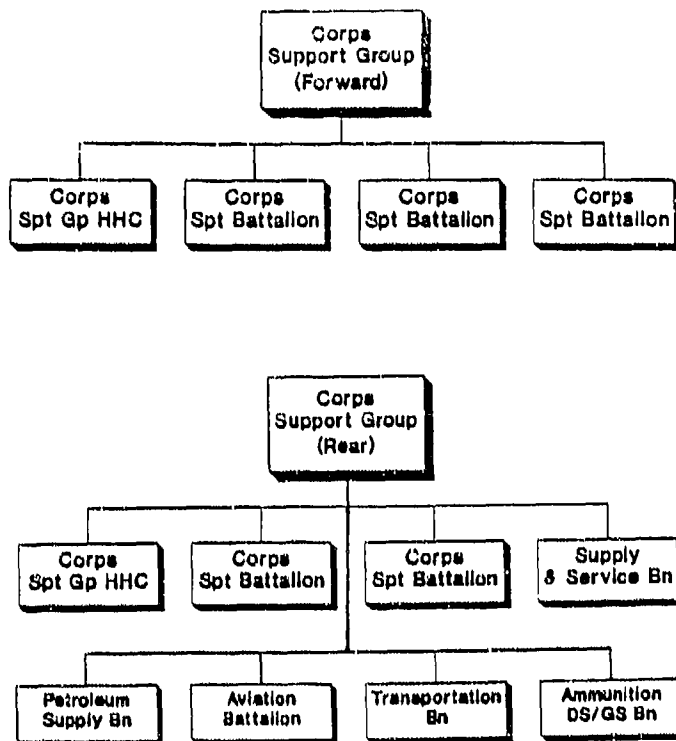


Figure 2-3. CSG Organizations<sup>16</sup>

COSCOM assigns the forward oriented CSGs an area of support responsibility along the corps frontage, encompassing the support area behind the committed division's rear boundary and extending forward through the BSA. This area is periodically adjusted based upon the density of supported units, intensity of combat, and forward or rear movement of division boundaries. COSCOM also assigns a support sector to the rear CSG. That sector may encompass an area from the

rear of the forward CSG's to the corps rear boundary.<sup>17</sup>

There is no standard CSG organizational structure. CSGs can provide command, control, staff planning, and supervision for three to seven subordinate battalions. CSGs are tailored to meet the needs of supported forces in sector. The number, type, and mix of subordinate battalions varies. COSCOM task organizes CSGs based on support mission requirements.<sup>18</sup>

#### DIVISION ECHELON

The DISCOM is the multifunctional CSS organization that provides division-level logistics support to all organic and attached elements of the division. Figure 2-4 below is the DISCOM organizational chart. DISCOM operates the DSA which is that portion of the division rear occupied by the DISCOM command post and organic and attached units. This area may also contain COSCOM elements operating in support of both divisional and nondivisional units. The DSA is normally located in the division rear adjacent to air-landing facilities and main supply routes (MSRs).<sup>19</sup>

The DISCOM provides and focuses support forward via three forward support battalions (FSBs) which collocate with the combat maneuver brigades. These are discussed in the Brigade Echelon which is the next section of this chapter.

The DISCOM support operations section and MMC provide planning and coordination for sustainment support for all division and attached units and manage unit reconstitution. The MMC is considered the center of logistics operations.

The main support battalion (MSB) supply & service (S&S)

company provides supply support for units in the division rear area and manages the division's reserve supplies (Classes I, II, III, and IV) to back up the FSB forward supply companies. The MSB S&S company also provides clothing exchange and bath and graves registration services when augmented.<sup>20</sup>

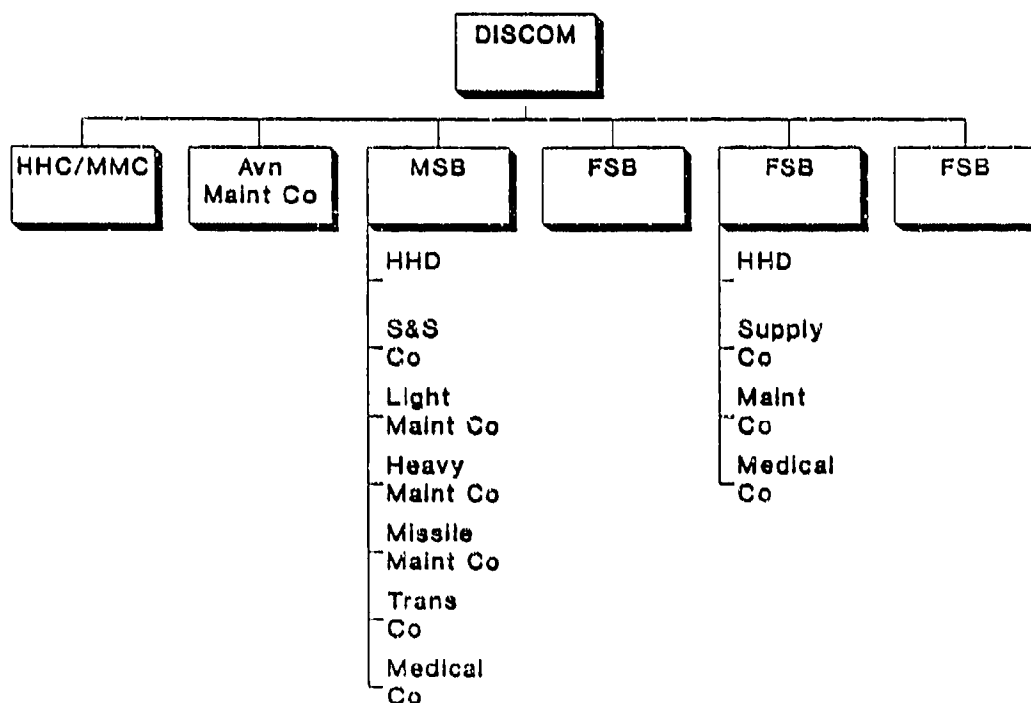


Figure 2-4. DISCOM Organization<sup>21</sup>

MSB maintenance units perform division wide maintenance tasks. The light maintenance company repairs communications equipment and electronic components and maintains the main authorized stockage list (ASL) of repair parts (Class IX). The heavy maintenance company supports division units not in the combat maneuver brigades from a base shop in the DSA and

with maintenance support teams (MSTs) which are highly mobile and work in the supported units areas. The missile maintenance company provides repairable exchange and repair parts supply support for the FSB maintenance companies. It also provides backup support to the FSB maintenance companies and repairs all other division missile systems not organic to the combat maneuver brigades.<sup>22</sup>

The aircraft maintenance company (AMCO), a separate company within the DISCOM, provides aviation intermediate maintenance support for the division combat aviation brigade (CAB) aircraft, aircraft armament, avionics, and aircraft-peculiar items of ground support equipment. The AMCO also provides aircraft repair parts (Class IXA), aircraft end item support (Class VII), and backup aviation unit support.<sup>23</sup>

The transportation motor transport (TMT) company of the MSB provides transportation for personnel, supplies, and equipment to support division logistic support operations. It also supplements corps transportation in picking up and delivering supplies from corps GS/DS sources during surge periods.<sup>24</sup>

The COSCOM may also position DS units in or close to the DSA to hold additional ammunition stocks, major components, and repair parts. These units also provide support to the nondivisional units operating in the division and forward brigade areas.

## BRIGADE ECHELON

Divisional combat maneuver brigades have no organic CSS assets. A FSB from the DISCOM provides dedicated CSS to each maneuver brigade and its supporting DS artillery battalion and to other units in the brigade area within its capability. Figure 2-3 outlines the FSB organization.<sup>25</sup>

The BSA is generally located on an MSR near the brigade rear boundary. The precise location is contingent on tactical plans, the location of the DSA, terrain in the area of operations, security considerations, and accessibility to both ground and air LOCs.<sup>26</sup>

Forward COSCOM elements may be located in the BSA depending on the situation. Supported battalion field trains are placed in the BSA when battalion trains are echeloned. Battalion CSS is discussed in the next section.

The FSB supply company provides supply support in the brigade area. At its supply points, it receives ammunition, POL, rations, and bulk Class IV delivered by corps transport (normally truck and air, possibly rail) from corps GS or DS supply companies. It receives other supplies and equipment from the MSB in the division rear. The FSB supply company, when augmented, provides graves registration, clothing exchange and bath, and decontamination support.

The FSB maintenance company, which consists of a base shop and mobile MSTs, provides maintenance support in the brigade area. Some of the MSTs operate forward in the battalion combat trains or with DS artillery battalion

maintenance platoons. The company repairs recovered equipment, arranges evacuation of major systems (like artillery or tanks) to its location or the DSA, and operates the repair parts supply system for supported battalions.<sup>27</sup>

#### BATTALION ECHELON

Battalion support consists of battalion organic CSS assets and forward MSTs from the FSB. These assets are typically split into field and combat trains. The field trains collocate in the BSA. The combat trains are generally located between the BSA and supported company resupply points. The combat trains may site up to ten kilometers from the forward line of troops (FLOT).<sup>28</sup>

The combat trains provide those items and services that are immediately needed to sustain the maneuver companies. The logistics resources include elements of the maintenance platoon augmented by the FSB MST and elements of the battalion support platoon which carry uploaded supplies, which primarily consist of fuel and ammunition. The field trains provide a link between the combat train and the FSB. The field trains should be viewed as the most stable location in which a maneuver battalion operates. Field train elements normally include battalion administrative elements and the more static elements of the maintenance and support platoons. The field trains contains supplies, equipment, and personnel that are less essential for the immediate fight. However, the field trains conduct continuous coordination between the combat trains and FSB

focusing and serving as the battalion staging area for ongoing CSS activity.

#### LOGISTICS OPERATIONS

The supply, maintenance, and transportation operations of the corps and lower echelons are examined in this section. These logistics functions are defined on page five in chapter one. Logistics support, as discussed earlier, should be thought of in terms of weapon-system support. This correlates to the arm, fuel, fix, and transport battlefield tasks. The objective is to continuously integrate these tasks into a single effort to ensure that weapons and equipment are always ready to fight at appropriate times and locations.<sup>29</sup>

#### SUPPLY

It is written in FM 63-2-2 that: "Supply requirements are the statement in a plan or request, of the need for specific quantities of supplies and equipment over a specified period of time."<sup>30</sup> They are based on strategic and tactical plans, accumulated demand data or previous experience factors, troop strength, item density, and other guidance given at each echelon of command. The material management centers at DISCOM and COSCOM perform integrated management of all classes of supply (except Class VIII) and all maintenance activities (discussed below). Integrated material management involves requirements computation, establishment of stockage levels, distribution and procurement direction, disposal, and development of guidance

for maintenance priorities.<sup>31</sup>

Operationally, the supply system is based on decentralized DS/GS stock locations maintained by the COSCOM CSGs and the DISCOM MSB and FSBs. The MMCs maintain centralized control based on a combination of both manual and automated record keeping systems. These systems enable the MMCs to issue supplies to users and to pass supply requests to sister and higher MMCs to ensure a steady flow of replacement supplies.

Distribution is the movement of supplies from one location to another or from one unit to another. It is accomplished by two methods: unit and supply point. These two methods are further expedited by applying the concept of throughput.<sup>32</sup>

Unit distribution is the movement of supplies from a higher level supply source to a lower level supply source or user using the transportation assets of the higher level. Unit distribution is the preferred method of distribution when possible.<sup>33</sup>

Supply point distribution is the provision of supplies from a higher level supply source to a lower level supply source or user by establishing a central supply point and the lower level supply source or user using their transportation assets to pickup the supplies from the central supply point.<sup>34</sup>

Throughput is not a method of distribution. It is a concept of bypassing at least one intermediate supply



handler. Throughput makes maximum use of transportation assets and reduces transload time. Throughput is applied as often as possible to both distribution methods.<sup>35</sup>

Examples of ammunition and fuel supply flows are provided next illustrating supply operations on the battlefield.

#### SUPPLY-Conventional Ammunition Operations

Ammunition supply sites such as theater storage areas, corps storage areas, ammunition supply points, and ammunition transfer points (TSAs, CSAs, ASPs, and ATPs) operate on an area support basis. ASPs are established, based on mission, enemy, terrain, troops, and time available (METT-T), as close as possible to the tactical units. When possible they are located in division rear areas. Whether the ASP is in the corps or division area, the corps is responsible for receiving, storing, and issuing the ammunition. The division ammunition officer (DAO) coordinates with the COSCOM to control the flow of ammunition by quantity and type for the division.<sup>36</sup>

ATPs are operated by the DISCOM support battalions. There is one ATP in each BSA and one in the DSA. ATPs receive ammunition on corps trailers and whenever possible transload it directly to using units supply vehicles. Corps transporters drop full trailers and pickup empties. In every case the objective is to throughput ammunition as far forward as possible to minimize double handling, maximize transportation movement, optimize the efficiency of the supply operation, and relieve forward deployed units from

traveling excessive distances to the rear. Figure 2-5 illustrates the flow of ammunition.

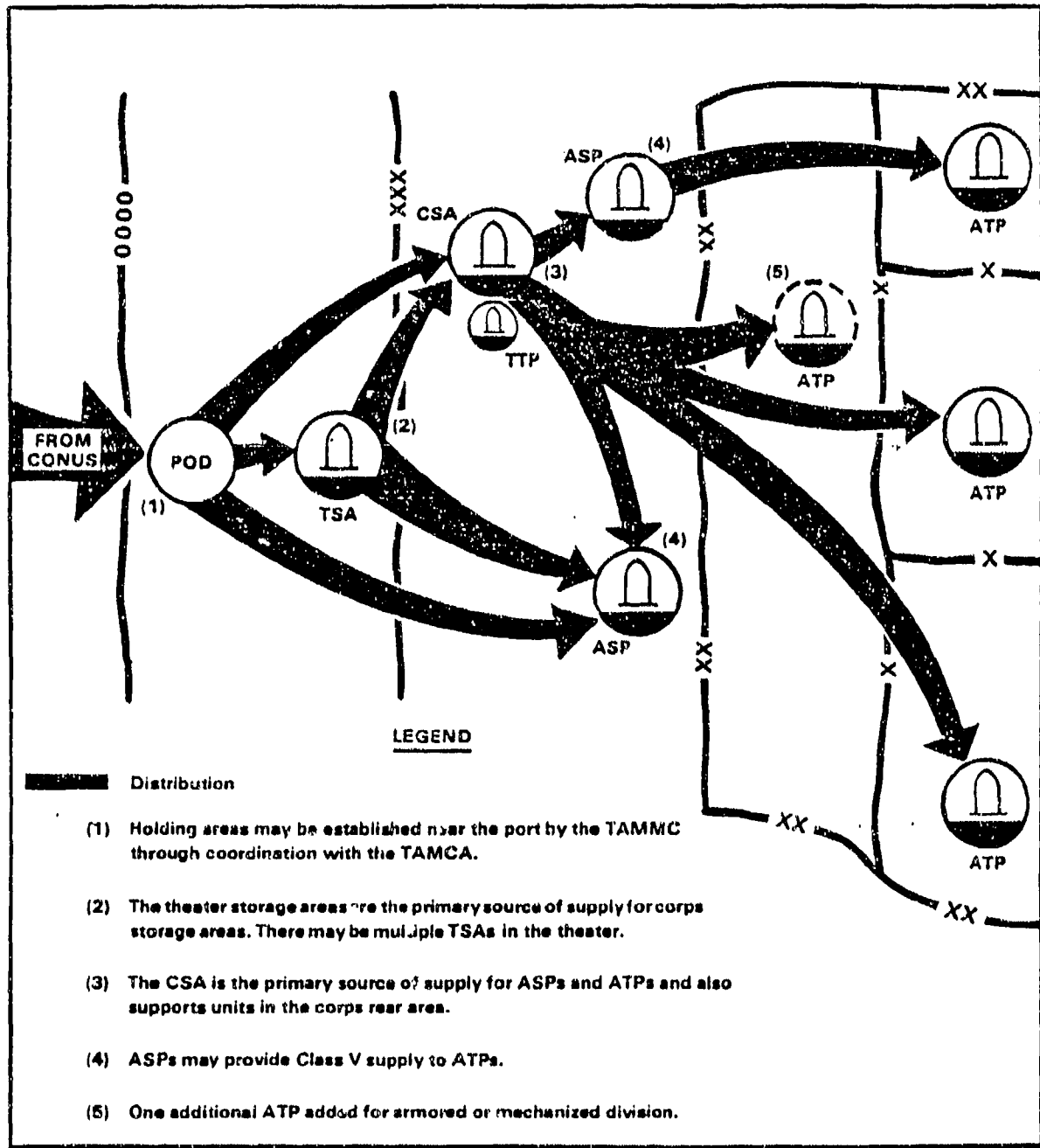


Figure 2-5. Conventional Ammunition Flow<sup>38</sup>

In addition to providing direct support to the brigade, ATPs also support other divisional units, corps units, and special forces operating in the brigade sector. Ammunition requirements that exceed the capability of the ATP are filled by another ATP or by the supporting ASP.

Aerial resupply by helicopter or airdrop by plane is used to meet special contingency requirements. These actions are staged from appropriate corps or division areas. Delivery is made directly to the using unit.

Expenditures of ammunition are controlled based on tactical priorities and ammunition availability. Combat units indicate their needs in the form of a required supply rate (RSR) for specific types of ammunition to sustain tactical operations for specific periods. The tactical commander at the relevant level establishes a controlled supply rate (CSR) when the actual supply rate is less than required. CSRs serve as an allocation to subordinate units to insure that the best use is made of supplies. The MMCs at both corps and division manage the implementation of CSRs.<sup>37</sup> Figure 2-5 on the next page illustrates the flow of ammunition.

#### SUPPLY-Bulk Fuel Operations

Supply management and the actual flow of bulk fuel to forward deployed units is in many ways similar to the ammunition system described above. The system supplies bulk petroleum by replacing quantities issued and consumed. Status reports (or activity summaries), which substantiate

issues of products made during any given period, are the basis for system replenishment. These are further supplemented by fuel requirement forecasts based on changing operational requirements. When appropriate, forecasts are developed by consuming units and, like activity summaries, forwarded through support channels to the appropriate MMC.

Centralization of inventory control functions is at the COSCOM MMC in the combat zone. Consolidated forecasts and summaries are forwarded by the divisions, separate brigades, ACRs, and CSGs to the COSCOM MMC. COSCOM in turn makes requests to TAACOM.

The CSBs of the CSGs have subordinate petroleum supply companies. These companies operating in the corps rear area receive shipments of bulk fuel from TAACOM based on COSCOM requests. The fuel may be shipped via 5,000 gallon or larger fuel tank trucks, railway tank cars, barges, pipelines, and flexible tactical hoses. The CSB petroleum supply companies have large 10,000 and 50,000 gallon fabric tanks to store fuel. In some cases, TAACOM shipments are throughput to forward tactical units bypassing these intermediate storage sites.

Issues from the petroleum supply companies are made via CSB petroleum truck companies that deliver bulk fuel forward using organic 5,000 fuel tankers. They deliver to the Class III supply elements of the DISCOMs, separate brigades, ACRs, and to CSG DS supply companies for issue to consuming units throughout the combat zone. Deliveries bypass the combat

units intermediate storage areas (such as the MSB fuel system supply point (FSSP) located in the DSA) whenever possible. CSB tanker bulk fuel may be pumped directly into tactical unit tankers for distribution forward. In some cases where speed is crucial, the semitrailers may be simply exchanged at a trailer transfer point (TTP). Tactical units trade empty trailers for full CSB trailers using this procedure.

#### MAINTENANCE

This section concentrates on maintenance doctrine and procedures to support ground equipment in the combat zone. Weapon systems are the primary focus of maintenance resources.

To maintain weapon systems forward in the battle area, a combination of various events has to be preplanned and vigorously executed. The impetus of maintenance is from the rear forward. However, this impetus has to be accomplished by trained mechanics who are skilled in the use of proper diagnostic techniques, who are equipped with appropriate tools, and who have the right repair part(s) on hand.<sup>39</sup>

There are four levels of U.S. Army maintenance: unit, direct support (DS), general support (GS), and depot. They provide the basic framework that orients battlefield maintenance.

Unit maintenance is performed by a crew, the operator of the equipment, or unit-maintenance personnel as shown in the maintenance allocation charts (MAC) of the appropriate technical manuals (TMs) or commercial manuals that accompany the equipment. It is oriented towards routine equipment sustainment. It is characterized by quick turnaround on

relatively simple service and replacement.<sup>40</sup>

DS maintenance is characterized by highly mobile, forward oriented, technically difficult, repair of items by replacement of unserviceable modules. It is oriented towards rapid repair and return to the user. Divisional DS units support maneuver elements of the division, while nondivisional DS units provide DS support to nondivisional units, area support, and backup DS maintenance for divisional units. DS unit organization includes teams to support specific systems and their auxiliary equipment; for example tank and artillery teams.<sup>41</sup>

GS maintenance is generally performed outside of the combat zone. It is scheduled by material managers at echelons above corps (EAC) to respond to the needs of the theater supply system, and is characterized by extensive repair and overhaul. It is oriented on repair and returning equipment to the supply system for subsequent reissue.<sup>42</sup>

Depot maintenance operations can best be viewed as occurring outside of the theater. It is typically performed in the U.S. in the military depot system or in the industrial base. Like GS maintenance, it is oriented on repair and return to the supply system. Depot maintenance is characterized by extensive overhaul and complete rebuild.<sup>43</sup>

Battlefield maintenance is based on the concept of support for combat units and weapon systems as far forward as possible. Figure 2-6 below illustrates maintenance support. It is explained in the paragraphs that follow.

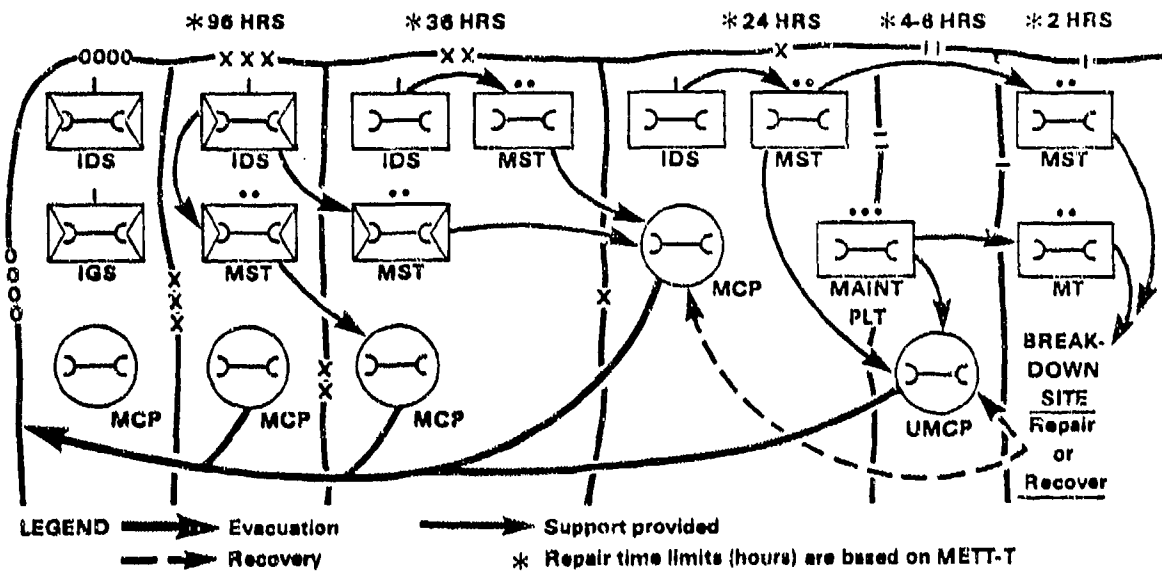


Figure 2-6. Maintenance Support<sup>44</sup>

When division equipment needs repair, maintenance personnel organic to the unit (unit level) or DISCOM MSTs (DS level) arrive on the scene first. CSB maintenance company MSTs operating in the division rear or in the forward area of the corps rear may be sent to work with them and serve as DS backup. Regardless of their point of origin, the MSTs provide technical assistance, higher level maintenance support, repair parts, and tools. They return to their organic headquarters when no longer needed in the forward location.<sup>45</sup>

The first step in determining what level of maintenance is required to repair a piece of equipment is to conduct a battle damage assessment. Deficiencies noted are then, in effect, compared to the MAC to determine what level of maintenance is required. If the equipment requires GS or depot work it is evacuated to EAC for repair and return to

the supply system. If DS maintenance will work, an estimate is made of how many hours will be required to repair the item. Generally, work that can be accomplished in less than 36 hours is performed by the normal assigned DS unit. If the estimate is beyond 36 hours, the equipment is a candidate for evacuation to the corps rear area and may be subsequently further evacuated to EAC. Repair time limitations are for planning purposes in order to help regulate the flow of maintenance support. The actual disposition of equipment that cannot be repaired on site is determined by the involved MMC.<sup>46</sup>

The MMC may provide automatic evacuation instructions to the DS units. These instructions identify the specific DS or GS units that will provide backup maintenance support to other DS units. Automatic evacuation instructions are intended to simplify and streamline the evacuation of unserviceable equipment because they free the DS unit from having to contact the MMC for instructions each time an unserviceable piece of equipment requires evacuation. They also allow for precoordination between maintenance units that are operating in the area.<sup>47</sup>

Damaged equipment is recovered to maintenance collection points when it cannot be repaired on site. The using unit has primary responsibility for recovering damaged equipment. Recovery by tactical units is usually to maintenance collection points (MCPs) along MSRs. The evacuation of damaged equipment begins where recovery operations stop at



the DS MCPs. Evacuation is a coordinated effort between maintenance, supply, and transportation elements. Battlefield recovery serves to get damaged equipment to a location where it can be loaded on heavy equipment transporters (HETs), while evacuation moves the equipment to a point where it can be repaired.<sup>48</sup>

The MMCs are involved throughout the process addressed above. They provide centralized management of maintenance within the division and corps. They determine what, where, when, how, and by whom the equipment will be repaired. The MMC shifts repair priority within the division or corps to various units and/or weapon systems to ensure maximum combat power.<sup>49</sup>

#### TRANSPORTATION

This section focuses on the ground truck transportation system. It is organized to support the supply and replacement distribution mission critical to successful corps and division CSS.

COSCOM trucks haul supplies, equipment, and personnel from the corps rear area to the DSA or BSAs if necessary. DISCOM trucks haul supplies, equipment, and personnel from the forward areas of the corps rear and DSA to the BSAs and battalion combat trains if necessary.

The COSCOM MCC is the transportation manager for the corps. It is the distribution counterpart to the MMC. It determines and coordinates movement requirements within the corps area. The MCC prepares the corps movement program,

based on movements requirements submitted by the COSCOM MMC. It prepares movement plans and annexes in support of logistics or contingency plans. The MCC plans, routes, and schedules movements on road nets, according to priorities established by the Corps G3/G4. It receives movement data from the theater MCA on vehicle clearances for entry into the corps area and transmits requirements which exceed corps transport capability to the MCA.<sup>50</sup>

Movement control teams (MCTs) are assigned to the MCC on an as needed basis. They collocate with each CSG support operations section to provide movements control support. The MCT workloads CSG transportation assets.<sup>51</sup>

The actual corps transportation assets are located in the CSGs. The rear CSG has a separate transportation battalion with medium and heavy truck companies and cargo transfer companies. The CSBs in the rear CSG and the forward CSGs have light-medium and medium truck companies.<sup>52</sup>

Sustainment is provided by a continuous flow of loaded trucks or semitrailers from general support units (GSUs) to direct support units (DSUs) or forward areas. At the same time, empty or return-loaded trucks and semitrailers move rearward where they are reloaded and sent forward again to supported units. Cargo may be moved in line hauls, local hauls, or semitrailer relays.

The division transportation system parallels that of the corps. The division transportation officer (DTO) is the principal transportation manager. He works with the DISCOM

movements control office (MCO). The MCO controls the employment of transportation assets for CSS within the division. All transportation requirements within the division are forwarded to the MCO for action. The DMMC coordinates support operations with the MCO<sup>53</sup>

Division level transportation is largely centralized at the MSB. The FSBs have very few cargo truck assets to service supported battalions. The transportation motor transport (TMT) company in the MSB is composed of light, medium, and heavy trucks. It provides division level transportation support from the DSA forward into the BSAs. The light trucks of the support platoons from the supported battalions pickup supplies in the BSA and haul them forward. Ideally, support platoon vehicles never drive beyond the BSA.

Chapter 2 ENDNOTES

<sup>1</sup>U.S. Department of the Army, Operations, FM 100-5, Washington, D.C., May 1986, p. 62.

<sup>2</sup>Ibid.

<sup>3</sup>Ibid., pp 62-63.

<sup>4</sup>Ibid., p. 63.

<sup>5</sup>Ibid.

<sup>6</sup>U.S. Department of the Army, Combat Service Support, FM 100-10, Washington, D.C., 18 Feb 88, pp. 1-11 - 1-14.

<sup>7</sup>U.S. Army War College, Army Command and Management: Theory and Practice, Carlisle Barracks, PA, 19 Aug 85, p. 19-3.

<sup>8</sup>U.S. Department of the Army, Combat Service Support, op. cit., pp. 1-19 - 1-20.

<sup>9</sup>U.S. Department of the Army, Combat Service Support Operations - Armored, Mechanized, & Motorized Divisions, FM 63-2-2, Washington, D.C., 29 Oct 1985, p. iii.

<sup>10</sup>U.S. Department of the Army, Combat Service Support, op. cit., p. 1-18.

<sup>11</sup>U.S. Department of the Army, Corps Support Groups, FM 54-30 (Test), Washington, D.C., Oct 1988, p. 1-17.

<sup>12</sup>U.S. Department of the Army, Combat Service Support, op. cit., p. 1-18.

<sup>13</sup>U.S. Department of the Army, Corps Support Groups, op. cit., p. 1-5.

<sup>14</sup>U.S. Department of the Army, Combat Service Support Operations - Corps, FM 63-3J, Washington, D.C., 12 Aug 1985, p. 2-7.

<sup>15</sup>Ibid., pp. 1-6 - 1-7.

<sup>16</sup>Ibid., p. 1-14.

<sup>17</sup>Ibid., p. 1-11.

<sup>18</sup>Ibid., p. 1-11.

<sup>19</sup>U.S. Department of the Army, Combat Service Support, op. cit., p. 1-17.

<sup>21</sup>U.S. Department of the Army, Combat Service Support, op. cit., pp.1-17 - 1-18.

<sup>20</sup>U.S. Army, Combat Service Support Operations - Armored, Mechanized, & Motorized Divisions, op.cit., pp. 4-3, 4-14, & 4-16.

<sup>22</sup>Ibid., p. 1-18.

<sup>23</sup>Ibid., p. 1-18.

<sup>24</sup>Ibid., p. 1-18.

<sup>25</sup>Ibid., p. 1-17.

<sup>26</sup>U.S. Department of the Army, Combat Service Support Operations - Armored, Mechanized, & Motorized Divisions, op. cit., p. 3-9.

<sup>27</sup>U.S. Department of the Army, Combat Service Support, op. cit., p. 1-17.

<sup>28</sup>Ibid., p. 1-16.

<sup>29</sup>Ibid., p. 6-1.

<sup>30</sup>U.S. Department of the Army, Combat Service Support Operations - Armored, Mechanized, & Motorized Divisions, op. cit., p. 5-2.

<sup>31</sup>Ibid., p. 5-4.

<sup>32</sup>U.S. Army Command and General Staff College, AirLand Battle Sustainment Doctrine (Division and Corps), ST 63-1, Fort Leavenworth, Kansas, 1 Mar 1989, p. 3-11.

<sup>33</sup>Ibid., p. 3-11.

<sup>34</sup>Ibid., p. 3-11.

<sup>35</sup>Ibid., p. 3-11.

<sup>36</sup>U.S. Department of the Army, Combat Service Support, op. cit., p. 6-2.

<sup>37</sup>U.S. Department of the Army, Combat Service Support Operations - Corps, op. cit., p. 5-24.

<sup>38</sup>U.S. Department of the Army, Combat Service Support, op. cit., p. 6-4.

<sup>39</sup>U.S. Department of the Army, AirLand Battle Sustainment Doctrine (Division and Corps), op. cit., p. 4-1.

<sup>40</sup>Ibid., p. 4-2.

<sup>41</sup>Ibid., p. 4-3.

<sup>42</sup>Ibid., p. 4-4.

<sup>43</sup>Ibid., p. 4-5.

<sup>44</sup>U.S. Department of the Army, Combat Service Support, op. cit., p. 8-4.

<sup>45</sup>U.S. Department of the Army, AirLand Battle Sustainment Doctrine (Division and Corps), op. cit., p. 4-6.

<sup>46</sup>Ibid., p. 4-11.

<sup>47</sup>Ibid., p. 4-7.

<sup>48</sup>Ibid., pp. 4-6 - 4-7.

<sup>49</sup>Ibid., p. 4-7.

<sup>50</sup>U.S. Department of the Army, Corps Support Groups, op. cit., pp. 10-12 - 10-13.

<sup>51</sup>Ibid., p. 10-13.

<sup>52</sup>Ibid., p. 10-2.

<sup>53</sup>U.S. Department of the Army, Combat Service Support Operations - Armored, Mechanized, & Motorized Divisions, op. cit., p. 7-4.

## Chapter 3

### SOVIET ARMY OPERATIONAL AND TACTICAL LOGISTICS

The focus of this chapter is the combined arms and tank field army and lower logistical organizations, functions, and activities; and the overall support system to which they belong. The front echelon, the level above the field army, is also briefly discussed.

This chapter consists of three major parts. First, the concept and doctrine for support is addressed. Because Soviet logistics on the battlefield, like U.S. logistics, cannot be studied in isolation, this includes information on the strategic level of sustainment which begins in the U.S.S.R. itself. Second, the general organization of support and the support system by echelon to include key personnel are discussed. Finally, the chapter concludes with the specifics of operational and tactical logistics support.

#### SUPPORT CONCEPT AND DOCTRINE

Soviet sustainment starts with the concept of the rear area. The area behind the front line of combat stretching all the way back to the U.S.S.R. is defined as the rear area. The rear area has both a broad and narrow aspect. The broad aspect includes the entire Soviet Union, its population, its economy, its government, and its political

structure. It is the production base for necessary war material, the mobilization base for personnel replacements, and the control center for the complete war effort. The narrow aspect includes the activities of all military units that provide technical, materiel, and medical support to combat forces in established theaters of military operation (TVDS).<sup>1</sup>

Soviet rear area support is organized into strategic, operational, and tactical levels. Strategic rear area operations are conducted at the national level by the Ministry of Defense in peacetime and the Supreme High Command in war. These operations connect the broad to the narrow aspects of the rear areas by orchestrating close cooperation between the military and civilian sectors in Soviet industry and economic effort. Central rear services, the highest logistic organization of the armed forces, focuses this linkage, and directly projects support to operational forces.<sup>2</sup>

Operational rear area functions are conducted by front and army rear area support elements in wartime and within military districts and groups of forces in peace. All have substantial support organizations. Support activities in the operational rear are conducted mainly by a combination of mobile and relocatable facilities. Fixed installations are used as well in the initial period of war. The tactical rear begins at the division level and extends to the lowest level at the front line. Tactical rear area operations meet the immediate combat needs of supported units. As an example,



divisions typically carry three to five days of supplies.<sup>3</sup>

Overall, the responsibility for rear area military support lies with the "tyl", or rear services, of the armed forces. Rear services responsibilities include: finance, medicine, supply, maintenance, military communications, transport, and location of quarters with CSS principally centered in what the Soviets call materiel, technical, and medical support.<sup>4</sup>

The Soviet Army rear services at the operational and tactical level are analogous to the general field of combat service support. Five basic imperatives have shaped rear services concepts and force structure since the early 1970s:

- The need for greater rear service mobility.
- The requirement to consolidate and centralize diverse rear service assets into more manageable, responsive units and groupings.
- The need to establish logistic resources that are increasingly more powerful from lower to higher levels.
- The requirement to create rear service control and management bodies that match those of maneuver units in effectiveness.
- The need to develop measures designed to ensure survivability of rear service units and resources in the face of increasing threats from a variety of strike systems and forces.<sup>5</sup>

These imperatives are largely based on the Soviet

principles of military art, and operational and tactical principles for combat which represent Soviet central thoughts for operational and tactical level combat operations which have evolved from lessons learned in World War II, local wars, exercises, and the introduction of new weapons and equipment.<sup>6</sup> These rear services imperatives are analogous to the AirLand Battle tenets and imperatives, and dictate that the rear services be organized, equipped, and trained to be capable of maintaining a rapid tempo of operations, causing an efficient concentration of effort, and preserving their own combat effectiveness.

The requirements above have fostered six basic logistics principles pertinent to this discussion.<sup>7</sup> They help illustrate the nature of rear services.

1) Tailoring of Logistics Units--This principle allows the allocation of logistic resources to the combat elements most essential to the success of the mission.

2) Delivery Forward--Higher echelon units are principally responsible for the supply requirements for subordinate units. Supplies and services are delivered directly to subordinate units using higher echelon organic transportation. For example, the army delivers to divisions. Throughput, bypassing one level, is practiced as well. Lower echelon units may also use their trucks to return to the rear for supplies when necessary.

3) Continuous Support--Materiel and technical support units and facilities are established as far forward as

possible to facilitate the flow of supplies from the central logistics level in the Soviet Union directly to combat units.

4) Integrated Use of Transportation--Generally, rail transport is used at higher levels to move supplies from the homeland to front and armies. Motor transport, pipeline, aviation, and maritime/river transportation means are used in varying combinations at all levels, with motor transport preeminent at tactical levels.

5) Complete Mobile Support--Materiel and servicing facilities operate from wheeled vehicles from division to company level. Stocks of critical supplies such as ammunition are maintained uploaded to facilitate a continuous, rapid offensive.

6) Forward positioning of Support Elements--Soviet maintenance facilities operate forward in areas of greatest need with emphasis on quickly returning repairable equipment to combat elements. Equipment requiring extensive repair is evacuated to the next level facility.

#### SUPPORT SYSTEM

Three major areas are addressed below. The key personnel that command and staff the logistic system are first discussed. Next, the operational level logistic system is outlined and reviewed. Finally, the tactical level logistics system is similarly discussed.

#### KEY PERSONNEL

The deputy commander of the rear is the keystone of the support system. He serves as the principal controller and

coordinator of the many logistic organizations and assets which make up the rear services. This position is also known as chief of the rear.

It is stated in FM 100-2-2, the U.S. Army's principal manual describing Soviet rear area support operations, that

The Soviets stress the important role played by the chief of the rear. He is a rear services officer who is directly subordinate to his commander. There is a rear services officer at every level of command down to regiment. He assumes responsibility for rear area details, which permits the commander to devote his full energies to combat operations.<sup>8</sup>

The chief of the rear is directly responsible for the materiel requirements and supply of his unit, in particular:

- mass expendable goods, such as rations, clothing, and fuel;
- individual equipment;
- medical and veterinary supplies.

He is supported by a staff which includes specialists of the fuel supply service, general supply service, clothing and material service, and medical and veterinary service.<sup>9</sup>

In addition, the chief of the rear is responsible for:

- transportation and distribution of all supply goods, including traffic coordination;
- command and control of all logistical (but not technical) installations in the rear areas or communications zone of his unit or of his parent organization;
- security in the rear area;

--logistical planning in its entirety as well as the supervision and control of its execution.<sup>10</sup>

It is important to note that not all logistic activities are the immediate responsibility of the chief of the rear. Responsibilities for technical support and certain supply items are borne by branch arms and services using the equipment, while the rear services have the responsibility for the centralized direction of logistic resources.<sup>11</sup>

In this respect, the chief of rear services is supported by the chiefs of the service branches and special troops. They, in turn, are responsible for technical supervision over selected supply items and the maintenance and repair of their organic equipment. The following technical support and special services units have these specific responsibilities:

- rocket and artillery armament services: for all artillery equipment, small arms, and all types of ammunition and explosives;
- tank forces: for all armored combat vehicles;
- motor transport troops: for all non-armored vehicles;
- communication units: for all communication equipment;
- engineers: for all engineer equipment;
- chemical troops: for all CBR reconnaissance and decontamination equipment.<sup>12</sup>

There is also a deputy commander for armament paralleling

the chief of the rear. He is responsible for controlling and coordinating technical support to include maintenance/repair tasks and the resupply of major end items.<sup>13</sup> He also coordinates maintenance needs which exceed functional proponent capabilities.

There is no chief of the rear lower than regiment. The unit commander and his staff manage rear area operations. At tank and motorized rifle battalion level, the commander is assisted by the following personnel:

- The chief of the battalion staff (similar to U.S. battalion executive officer) is the principal assistant for organizing and administering battalion rear area operations.
- The battalion deputy commander is responsible for organization and control of maintenance, repair, and salvage of both combat and noncombat vehicles.
- The battalion supply platoon commander orders, stores, and distributes all supplies and equipment. He commands a supply platoon consisting of a supply section and an ammunition and motor transport section.<sup>14</sup>

The various personnel described above all play key roles in the Soviet logistic system. The operational and tactical levels of this system are described below.

#### OPERATIONAL LOGISTICS

The bulk of Soviet logistics units are concentrated at

the operational level in fronts and armies. This concentration supports the Soviet philosophy of streamlined, highly mobile combat elements at division and below. Both the responsibility and the primary means for logistic support are maintained at these higher levels.<sup>15</sup>

Figure 3-1 below illustrates the flow of supplies and support through the front to the divisions and the divisions' subordinate units before the start of offensive.

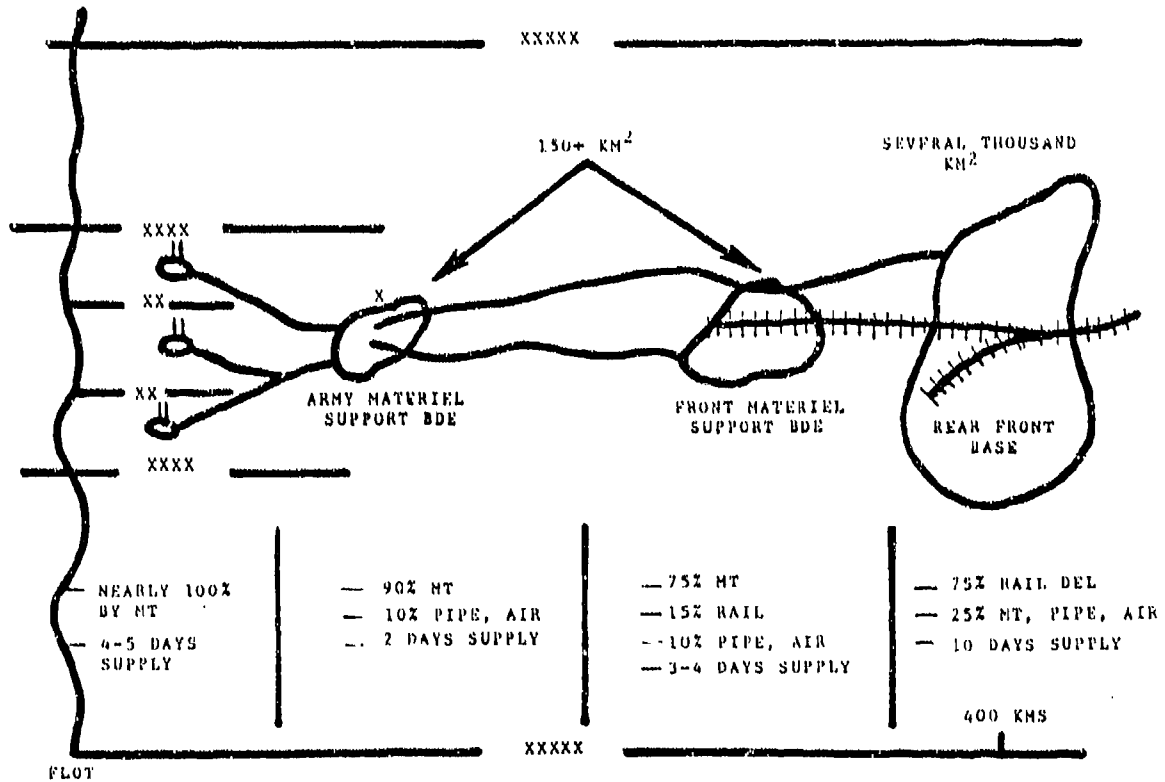


Figure 3-1. Support Flow<sup>16</sup>

The front is not a fixed organization. It is tailored to meet specific objectives based on forces available, mission requirements, enemy forces, and the physical geography of the area of operations. Tailoring affects the type and number of assigned logistic units. The logistic operation of the front

is both extensive and complex, and it serves as the major connecting link between the Soviet industrial base and forces engaged in combat.<sup>17</sup>

The front rear area generally begins between 150 to 200 kilometers from the Forward Edge of the Battle Area (FEBA). It is served by air, highway, rail, and pipeline from the strategic level central rear services. Rail is the principal means of meeting movement requirements to the front, and is used to carry material as far forward as possible.<sup>18</sup>

It is stated within FM 100-2-2 that:

The front supply complex has a wide range of fixed and mobile depots and other facilities such as major hospitals and capital maintenance facilities. At this level, depots are administered by each service, special troop directorates, and the various subordinate elements under the chief of the rear.<sup>19</sup>

Mobile materiel support brigades in combination with a transportation brigade located in the forward portion of the front area distribute supplies and provide support forward to army rear areas.

It is further stated that:

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 logistic base is similar to that of the front.<sup>20</sup>

The army logistic base has been largely replaced by a single mobile materiel support brigade that has integral truck assets. This brigade is normally located within 100 kilometers of the FEBA. The army rear, like the front, is



served by rail, highway, air, and pipeline. Mobile elements of the army materiel support brigade deploy forward if distances between the army and its subordinate divisions' rear area become great, or if support requirements change based on an increase in forward deployed tactical units. Multiple transport modes service these forward sites as much as possible. Motor transport is used for the bulk of forward material movement from these sites.<sup>21</sup>

#### TACTICAL LOGISTICS

Soviet logistic support is fully mobile at the tactical level. Streamlined logistic elements support the combat units with ammunition, fuel, and rations to support continuous operations. Supply elements deliver materials to the rear of the combat units at the FEBA. Medical and maintenance elements deploy as far forward as possible to treat casualties and accomplish rapid repair and return of lightly damaged vehicles. Personnel and equipment requiring additional attention are evacuated from the battlefield.<sup>22</sup>

Two principle organizations at the division level fall within the scope of the study. The materiel support battalion coordinates and provides supply and transportation. The maintenance battalion provides division level maintenance. They are each discussed below.

Each division has a large materiel support battalion (MSB). The battalion commander is directly subordinate to the division's deputy commander for rear services. Figure 3-2 below is an organizational outline.

The battalion consists of two ammunition transportation companies, two fuel transportation companies, and a general purpose transportation company tasked to carry repair parts, food, clothing and miscellaneous items. It also has a combined depot which stocks food, fuel, ammunition, repair parts, clothing, and other miscellaneous supply items consumed by the division. The depot has cargo vehicles of its own. However, much of the battalion's supply holdings are carried up loaded by the various transportation companies. The mobile field bakery plays an important role in feeding the division. The medical, maintenance, supply and services, and engineer subunits provide for the battalion's internal operations. The battalion may also be augmented by attaching additional units and resources in order to fully support the division as the tactical mission changes.<sup>23</sup>

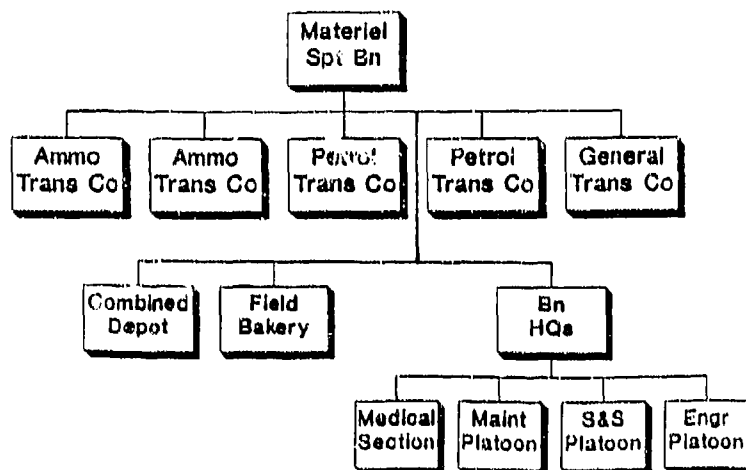


Figure 3-2. Divisional MSB<sup>24</sup>

The battalion has a substantial headquarters staff. In addition to the commander, the headquarters has a deputy commander, a chief of staff, and staff officers who are responsible for each of the supply items and major functions handled by the battalion.<sup>25</sup>

The MSB deploys its units in a division support area that may be "several tens-of-square-kilometers." This area is selected on the basis of road network and assembly areas available for the rapid dispatch of convoys to combat units; routes available to higher level logistics commands; suitability for storing, camouflaging, and protecting supplies and adequately dispersing battalion subunits; and sanitation and water supply availability.<sup>26</sup>

Dr. Graham H. Turbiville writes that:

Material support battalion transport units will deliver supplies directly to regimental materiel support companies and other units and establish field refueling stations. On occasion, battalion vehicles may be sent to army level to pick up supplies, though the usual practice is for higher headquarters to deliver materiel to lower echelons. In any event, the optimum means of supply transfer is from truck to truck, if possible, though supplies may be stored on the ground, using pallets, natural terrain features, or positions prepared by engineer elements.<sup>27</sup>

Division maintenance operations are the responsibility of the deputy commander for armament. Each division has a separate maintenance battalion. Figure 3-3 below outlines the basic maintenance battalion organization.

The maintenance battalion is composed of a headquarters company that includes special task, recovery, and supply and services platoons, a tracked vehicle maintenance company, a

wheeled vehicle maintenance company, and an ordnance maintenance company.<sup>28</sup> The operations of this battalion are discussed in the logistics operations portion of this chapter.

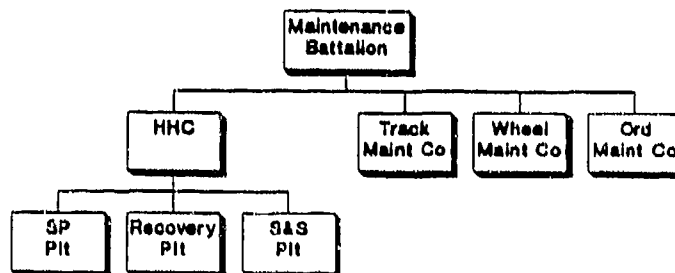


Figure 3-3. Divisional Maintenance Battalion<sup>29</sup>

At the regimental level, supplies are loaded on vehicles to maintain mobility comparable to the combat units. The regimental chief of rear services is responsible for overall logistics management. He has a materiel support company under his control. The regimental deputy commander for armament manages maintenance requirements through the regimental maintenance company.

As stated in FM 100-2-2:

Battalion level logistics support is self-contained. Supplies are maintained with the supply and maintenance platoon and transported on battalion vehicles. Prescribed norms of supply are maintained for all classes of materiel, with replenishment provided directly by regiment or division logistic elements. The battalion chief of staff is the organizer of rear service functions. The deputy commander for technical matters is in charge of maintenance support. The supply platoon commander is responsible for receipt, storage, and delivery of supplies to companies. He also deploys and operates battalion ammunition, fuel, and ration points.<sup>30</sup>

## LOGISTICS OPERATIONS

The supply, maintenance, and transportation operations of the field army and lower echelons are examined in this section.

The Soviet approach to logistics differs in many ways from the U.S. approach described in Chapter 2. The Soviet logistic process is tightly bound into the operational structure and commanders are required to prepare logistically for every operation; control of logistics is centralized at each level.<sup>31</sup>

### SUPPLY

To simplify logistic planning and to standardize ordering and issuing procedures, the major classes of supply are divided into specific quantities or distribution lots. The quantities are called "units of fire" for ammunition, "refills" for fuel, "daily ration" for food, and "set" for spare parts and accessories. These amounts are originally computed based on mobility requirements, transportation limitations, consumption needs, or physical conditions. However, once a specific quantity has been prescribed as a unit of issue, the quantity itself is no longer referred to, and all future references are given in multiples or percentages of the unit of issue.<sup>32</sup> These norms of expenditure simplify calculations and speed up the centralized planning process used to support combat operations. Prescribed levels of these norms, which at the lowest echelons are in effect a basic load, are maintained at each level.

The critical extension of this consumption analysis is called norms of supply. Norms of supply are the required supplies (stated in units of fire, refills, etc.) to support a specific kind of combat operation. Norms of supply have been assessed from analytical study of past conflicts, to include usage rates seen on the Soviet Western Front, local wars, exercises, and theoretical calculations. Norms of supply vary according to operation type, terrain, and even the different nationalities of the enemy.<sup>33</sup>

Norms of supply are calculated in advance of operations, and a logistics plan from the front level down to the deployed battalions is developed that provides for the echeloned forward delivery of these amounts.

#### SUPPLY-Conventional Ammunition Operations

The chief of rocket troops and artillery plans the supplies and estimates the expenditure of all types of ammunition. 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.<sup>34</sup>

A unit of fire is determined for each type and caliber of weapon. Gun units of fire are expressed in number of rounds per weapon. Normally multiple rocket launchers (MRL) have a gun unit of fire of three salvos, while tanks, self-propelled artillery, and other vehicular-mounted weapons have a gun

unit of fire equal to the ammunition storage capability aboard the vehicle. Other weapons have gun units of fire based upon the characteristics of the weapon, combat experience, and available transportation. A unit's unit of fire is the total amount authorized for all the weapons in the unit of that type and caliber.<sup>35</sup>

Ammunition is always delivered as far forward as possible. For example, within divisions, artillery ammunition can be delivered directly to gun lines by divisional MSB transport. Less critical ammunition would more likely be delivered to a regimental ammunition point 10-15 kilometers from the front line.

#### SUPPLY-Bulk Fuel Operations

Rail, pipeline, and waterways move fuel to front and army. Depots maintain a 12 day supply at the front. The army echelon maintains a 2-3 day supply. Advance support sites are established when the distance between army depots and advancing divisions exceeds 100 kilometers. While uncommon, tactical pipelines may deliver fuel from there as far forward as division rear areas. Pipeline brigades or battalions operate at both front and army levels.<sup>36</sup>

Divisions carry a 3-5 day stock of mobile fuel which roughly equates to two refills. To reduce demand as much fuel as possible is carried in spare drums (jettisoned in action) or external cans mounted on vehicles.

A refueling point in a rear area may contain several rubberized-cloth fuel containers capable of refueling

numerous vehicles simultaneously. Refueling points are established along specific routes to refuel all passing vehicles. Army, division, or regimental fuel service trucks may situationally deliver fuel to battalion refueling points, or directly to vehicles.

As previously mentioned, computation of fuel requirements is based on refills. A unit's refill is the total requirement for all vehicles in the unit. One refill is that amount carried aboard integral fuel tanks for tracked vehicles. For wheeled vehicles, one refill is equivalent to that required for a 500 kilometer range.<sup>37</sup>

#### MAINTENANCE

Maintenance and recovery operations are positioned forward to support combat operations. Lower-level units have limited maintenance capability and depend on higher-level maintenance units to provide direct and backup support.

The deputy commander for armament is the principal maintenance coordinator. The chief of rocket and artillery armament service is responsible for the maintenance of small arms, automatic weapons, mortars, artillery, and missiles. Also, as previously mentioned, some maintenance is managed by a functional user's stovepipe system from the front line up through the front echelon. Engineer, signal, and chemical weapons/equipment are key examples of this arrangement. The special units that are the principal users also repair this equipment.

Separate maintenance facilities in the field are provided



for the following types of equipment:

- Tracked vehicles
- Wheeled vehicles
- Artillery and ordnance
- Engineer equipment
- Signal equipment
- Chemical equipment

Service for these items is by mobile repair facilities that extend repair capabilities forward into the battle area.<sup>38</sup>

Repairs are classified as routine, medium, or capital:

- Routine repairs involve the 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 involve major overhaul of at least two basic assemblies. This category of maintenance is performed at regimental or division level.
- Capital repairs are the 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.<sup>39</sup>

Only driver and crew preventive maintenance and routine inspections are conducted at the company level. The repair workshop at the battalion level contains a shop truck and

mechanics who make routine repairs on tracked and wheeled vehicles. This mobile workshop can be reinforced with a vehicle recovery section.<sup>40</sup>

At regimental level, the maintenance company performs routine and some medium repair functions. Motorized rifle and tank regiments have both wheeled and tracked vehicle workshops. Each of these units may form repair and evacuation groups (REGs) to provide support to subordinate battalions. Also, motorized tank and rifle regiments usually have armorers to perform light repair on small arms and on some automatic weapons. Armorers in artillery regiments do routine maintenance on artillery pieces as well as on small arms. Artillery repair in tank regiments is done by the tank workshop.<sup>41</sup>

The basic organization of the divisional maintenance battalion was addressed earlier in this chapter. There are shop vans, supply trucks, tank retrievers, and tow trucks within the companies. Both routine and medium repairs may be performed. These companies establish damaged vehicle repair and collection points in combat that are similar to regimental REGs.<sup>42</sup>

The maintenance capabilities of combined arms and tank armies are augmented by front as required. Army units can provide mobile detachments for forward operations as necessary. The mobile artillery repair shop performs electrical welding and riveting, disassembly and assembly of mechanical and optical parts, and adjustment of fire control

equipment. Front maintenance units are manned and equipped for capital repairs. These units operate from fixed facilities and can also provide mobile detachments.<sup>43</sup>

There are a number of features associated with field maintenance operations during combat. First, a technical observation point (TOP) is established in the forward area of each combat battalion. The purpose is to monitor the battlefield for damage, to assist crews, and to call repair and recovery units forward.<sup>44</sup>

The TOP is a combination of vehicle operators, mechanics, medics, combat engineers, and NBC specialists. It is supervised by the battalion deputy commander for armament. Company TOPs may be established if the battle area is beyond the observation of the battalion TOP.

The TOP assesses vehicle battle damage and status of the crew, and initiates action to repair or recover vehicles. The actual repair or recovery is performed by the battalion repair and recovery group (REG). A REG is usually composed of a tracked recovery vehicle, a tank repair workshop van, and a parts truck. Regimental REGs may situationally augment battalion personnel. Repair priorities are based on required repair time.<sup>45</sup>

Repairs that cannot be completed in the battalion area are evacuated to the regimental repair site. The division evacuates vehicles and equipment beyond the repair capability or capacity of the regiment to the division damaged vehicle collection point. Vehicles and equipment that cannot be

repaired by the division are evacuated to the army or front. Army or front transportation is used for this evacuation.

As stated in FM 100-2-2:

If evacuation from lower to higher echelons is not possible, vehicles may be left along specified evacuation routes to await mobile maintenance teams which provide direct or backup support. The higher unit's team will remain to complete repairs as the lower units move forward in support of continuing combat operations.<sup>46</sup>

#### TRANSPORTATION

This section focuses on the ground truck transportation system. Like the U.S. army, the Soviet system is organized to support the supply and replacement distribution mission critical to successful combat operations.

Delivery forward is one of the basic logistic principles. Higher echelon units, in general, handle supply requirements for subordinate units. Supplies are delivered directly to subordinate units using higher echelon organic transportation. For example, the army delivers to division and the division delivers to regiment. When possible throughput is also used to speed delivery. The enforcement of delivery forward essentially relieves each successively lower unit from the burden of returning to the rear to pickup needed supplies. The intended result is centralized, expeditious distribution in support of advancing forces.

While they are extensively used at the front, trucks are the primary method of transport below the army level. Trucks are in abundant supply, and they are largely of long-term standardized designs. A very high percentage of civilian

vehicles are of identical design to their military counterparts. This further simplifies employment and maintenance if they are pressed into military service.<sup>47</sup>

Another major strength is the great quantity and extensive use of trailers. Loaded trailers are pulled forward to fighting units and exchanged for trailers uploaded with items for evacuation. These trailers are returned to rear logistic bases for processing and reloading for forward delivery.<sup>48</sup>

Trucks, as previously discussed, are concentrated at the front in a transportation brigade and within the one or two materiel support brigades that provide forward materiel support at front level. The army materiel support brigade has the army level truck assets. Division level truck companies are a part of the materiel support battalion. Transportation platoons are a part of regimental materiel support companies. Finally, battalions have a transportation section.

Traffic control is managed by the chief of the rear via troops of the Commandant's Service. The Commandant's Service provides dispatchers and traffic regulators on all roads in the combat zone. Each division has a company and each regiment a platoon of these special troops.<sup>49</sup>

Chapter 3 ENDNOTES

<sup>1</sup>U.S. Department of the Army, The Soviet Army: Specialized Warfare and Rear Area Support, FM 100-2-2, Washington D.C., 16 Jul 84, p. 12-1.

<sup>2</sup>Ibid., p. 12-1.

<sup>3</sup>Ibid., p. 12-1.

<sup>4</sup>Graham N. Thompson and James Kinnear, "The Bear's Tail", Armed Forces, August 1988, p. 368.

<sup>5</sup>Dr. Graham H. Turbiville, "Rear Service Support: Concepts and Structure," Military Review, December 1988, pp. 71-72.

<sup>6</sup>U.S. Department of the Army, The Soviet Army: Operations and Tactics, FM 100-2-1, Washington D.C., 16 Jul 84, pp. 2-2 - 2-4.

<sup>7</sup>U.S. Department of the Army, The Soviet Army: Specialized Warfare and Rear Area Support, op. cit., pp. 13-1 - 13-2.

<sup>8</sup>Ibid., pp. 12-1 - 12-2.

<sup>9</sup>Guenther Lippert, "Soviet Ground Forces Logistics", Soldat und Technik, 1981, p. 2.

<sup>10</sup>Ibid., p. 2.

<sup>11</sup>C. N. Donnelly, "Rear Support for the Soviet Ground Forces," International Defense Review, March 1979, p. 346.

<sup>12</sup>Guenther Lippert, op. cit., p. 2.

<sup>13</sup>Ibid., p. 3.

<sup>14</sup>U.S. Department of the Army, The Soviet Army: Specialized Warfare and Rear Area Support, op. cit., p. 12-3.

<sup>15</sup>Ibid., p. 13-4.

<sup>16</sup>Statements and drawings provided by Dr. Graham H. Turbiville, personal discussion, March 9, 1990.

<sup>17</sup>U.S. Department of the Army, The Soviet Army: Specialized Warfare and Rear Area Support, op. cit., p. 13-4.

<sup>18</sup>Ibid., p. 13-4.

<sup>19</sup>Ibid., p. 13-4.

<sup>20</sup>Ibid., p. 13-4.

<sup>21</sup>Ibid., p. 13-4.

<sup>22</sup>U.S. Department of the Army, The Soviet Army: Specialized Warfare and Rear Area Support, op. cit., p. 13-6.

<sup>23</sup>Dr. Graham H. Turbiville, "Soviet Logistics Support Concepts Change", Army Logistician, March-April 1987, pp. 3-4.

<sup>24</sup>Ibid., pp. 3-4.

<sup>25</sup>Ibid., p. 3.

<sup>26</sup>Ibid., pp. 4-5.

<sup>27</sup>Ibid., p. 5.

<sup>28</sup>U.S. Department of the Army, The Soviet Army: Specialized Warfare and Rear Area Support, op. cit., p. 13-16.

<sup>29</sup>Ibid., p. 13-16.

<sup>30</sup>Ibid., p. 13-6.

<sup>31</sup>MAJ J. F. G. Wilberforce, "Description of Soviet Logistic Doctrine and of Warsaw Pact Resupply Systems," DOAE Item No. WP 329/1, UK Ministry of Defence, June 1988, p. 5, FOUO.

<sup>32</sup>U.S. Department of the Army, The Soviet Army: Specialized Warfare and Rear Area Support, op. cit., p. 13-7.

<sup>33</sup>MAJ J. F. G. Wilberforce, "Description of Soviet Logistic Doctrine and of Warsaw Pact Resupply Systems," op. cit., p. 3, FOUO.

<sup>34</sup>U.S. Department of the Army, The Soviet Army: Specialized Warfare and Rear Area Support, op. cit., pp. 13-9 - 13-10.

<sup>35</sup>MAJ Hal D. Hanes, Soviet Logistics (Supply), unpublished student study project, U.S. Army Command and General Staff College, Fort Leavenworth, KS, 1981, pp. 13-15.

<sup>36</sup>Ibid., p. 13-10.

<sup>37</sup>Ibid., p. 13-10.

<sup>38</sup>U.S. Department of the Army, The Soviet Army: Specialized Warfare and Rear Area Support, op. cit., p. 13-16.

<sup>39</sup>Ibid., p. 13-16.

<sup>40</sup>Ibid., p. 13-16.

<sup>41</sup>Ibid., p. 13-16.

<sup>42</sup>Ibid., p. 13-16.

<sup>43</sup>Ibid., p. 13-16.

<sup>44</sup>Ibid., p. 13-17.

<sup>45</sup>Ibid., p. 13-17.

<sup>46</sup>Ibid., p. 13-17.

<sup>47</sup>Graham N. Thompson and James Kinnear, "The Bear's Tail," op. cit., p. 371.

<sup>48</sup>U.S. Department of the Army, The Soviet Army: Specialized Warfare and Rear Area Support, op cit., p. 3-14.

<sup>49</sup>C. N. Donnelly, "Rear Support for the Soviet Ground Forces," op. cit., p. 348.



## Chapter 4

### CONCLUSION

This study has examined the logistics systems of the Soviet and U.S. Armies that support operational and tactical level war. The doctrine, organization, techniques, and procedures of the two systems are described in the preceding chapters. Where appropriate, significant differences and fundamental similarities between the two that have implications for U.S. logistics planners are highlighted in this conclusion.

Understanding both the similarities and differences is an important benchmark for the quality of the war plans made today and the continued constructive evolution of U.S. Army logistics doctrine, organization, techniques, and procedures.

The U.S. Army has spent, and continues to spend, much time and energy restructuring and refining corps and divisional level logistics support in pursuit of optimum performance on the AirLand Battlefield. The AirLand Battlefield is itself continuing to evolve creating increased logistics challenges.

U.S. efforts have special emphasis today in light of the CFE strength reductions and other ongoing arms control and confidence building measure initiatives. These various

activities dictate for the U.S. Army--and Soviet armed forces as well, relatively small, but fully capable support forces that must function flawlessly.

#### FINDINGS

The quality of Soviet logistics has been frequently discounted in the past. This may, at least partially, explain why Soviet logistics are often ignored today. Dr. Graham Turbiville wrote in 1972 that:

Soviet logistics has been portrayed as being both primitive and extremely austere by Western standards. This picture stems for the most part from outdated and incomplete information. Nevertheless, the mention of Soviet logistics seems to evoke in many minds the picture of horse-drawn supply columns plodding through waist-deep snow. This conception is far from being the case.<sup>1</sup>

Even today, many of the recently written articles surveyed suggest that Soviet logistics is a major weak link of the Soviet Army in battle. However, the literature surveyed in total and information obtained from discussions with Soviet specialists, do not support this contention. On the contrary, the Soviet operational and tactical logistics system is robust, well staffed, and of comparable quality to the U.S. system.

It is important that the overall strength of modern Soviet Army logistics be fully recognized. Soviet logistics doctrine, organization, techniques, and procedures provide valuable insights and offer many readily applicable lessons to U.S. planners within this context.

These lessons and insights are particularly valuable based on

comparable Soviet and U.S. warfighting doctrine, and fundamentally comparable support doctrine.

The Soviet principles of military art, and operational and tactical principles for combat represent Soviet central thoughts for operational and tactical level combat operations.<sup>2</sup> These are analogous to the AirLand Battle tenets and imperatives and dictate that the rear services be organized, equipped, and trained to be capable of maintaining a rapid tempo of operations, causing an efficient concentration of effort, and preserving their own combat effectiveness.

The Soviet Army rear services at the operational and tactical level are equivalent to the U.S. Army general field of CSS, of which logistics is a subcategory. The CSS sustainment imperatives are geared to the same end as those espoused for the rear services.

The key Soviet and U.S. doctrinal points on the nature of the battlefield and the requirements to support the battle, if not quite the same, are at least analogous. Those shared views set the common stage for the organization, and techniques and procedures that each army employs.

Some of the significant current similarities and differences between the organizations, techniques, and procedures of the two systems are highlighted below. In some cases the Soviet approach seems better and may be worth investigation. In other cases, the Soviets could perhaps better learn from the U.S.

First, logistical assets in the U.S. Army are, in general, equitably distributed through all echelons. The company, battalion, brigade (provided by the division), division, and corps all have, at present, a proportionate share. However, the Soviet Army concentrates logistical forces at the army and front level. On the surface Soviet divisional formations appear logistically austere. Guenter Lippert writes:

This economical development, based on the principle of concentration, has placed the high command in a position, where it can timely form supply and storage concentrations for future planned offensive operations. Nevertheless, the centrally directed deployment of logistics limits the subordinate echelons in fully exploiting unforeseen opportunities and limits the development of initiative on the levels and the capability to independently overcome crisis situations.<sup>3</sup>

CPT F. H. Dillon III writes:

The lack of low echelon repair capability should inhibit flexibility at the battalion level. Dependence upon higher echelons for support places a premium on maintaining open lines of communication.<sup>4</sup>

There is a positive side to the Soviet approach, however. Support elements appear to operate well forward under what is termed a delivery and support forward concept. So, even though they are not permanently assigned to the forward combat organization, they are nonetheless available when necessary. This might be good if it serves to free the maneuver commander from excessive logistical concerns.

The recently published AirLand Battle Future White Paper Final Draft supports the idea that the U.S. Army is moving away from both the past U.S. and the Soviet Army logistic

system as well<sup>5</sup>. AirLand Battle Future represents the next iteration of ALB doctrine and describes how the U.S. Army will fight in the near future. The proposals in it include the virtual elimination of the DISCOM within the division base. The intent is to free the division of the burden of full time logistic concerns in order to provide increased mobility and flexibility. The capability of the FSBs supporting the maneuver brigades will increase. The balance of the DISCOM will be dissolved and absorbed into the COSCOM. The definition of the new support operations is similar to the way the Soviet Army provides logistics support from the front and army as described above.

However, it important to note that while the Soviets do concentrate support assets at the front and army level, each level below the army does have permanently assigned support organizations capable of providing the required minimum levels of support. In fact, the Soviets have since World War II provided increasingly more support permanently forward to give each level the logistical assets necessary to support operations.

The elimination of logistics assets from the U.S. Army DISCOM is contrary to current Soviet Army support trends. The proposal must be carefully examined before it is approved.

Second, the MMC is considered the heart of U.S. logistical operations. A tremendous emphasis is placed on detailed asset management, and both receiving and sending

real time reports to maintain continuous support. Heavy automation and communication requirements are associated with this activity. The U.S. system of support is predominately a pull system based on the identification of needs.

Nothing in the literature reviewed revealed a Soviet counterpart. The Soviet Army reliance on norms of consumption and planning factors indicates predictable needs are preferable to the time and effort required to document and work with actual needs. The Soviet system of support is predominately a push system. It is undoubtedly a more simple system to operate, and may prove more reliable in combat. The Soviet approach is portrayed as fostering more flexibility and maneuverability on the part of lower level tactical units. This is because they routinely operate free of the full time logistics umbilical cord inherent when supplies and support are continuously being pulled forward.

At least on paper, the Soviet and U.S. Armies are practicing two extremes in the material management area. Perhaps there is a middle ground that would simplify U.S. Army MMC operations by employing some Soviet material management concepts.

Finally, while both Soviet and U.S. Army logisticians are becoming increasingly multifunctional, U.S. logistical organizations are more integrated. Maintenance, supply, and transportation functions are fully integrated into multifunctional units up through the corps level with the advent of the corps support group concept. The Soviets have

created materiel support units integrating supply and transportation up through the front, but they still maintain separate maintenance organizations. This duality is further complicated by fragmentation of maintenance responsibilities to certain functional proponents that operate stovepipe technical supervisory chains functioning at every level of command. The literature reviewed indicates the Soviets will continue multifunctionality, and the consolidation of support functions under common commands.

#### FURTHER RESEARCH

Each area examined in this paper deserves much closer attention and could easily be expanded into separate MMAS topics. Additionally, the logistics subcategory of field services and the medical, personnel, and protection categories of CSS are all important topics that warrant separate studies. The CGSC MMAS program should be expanded to include a logistics concentration degree to encourage further work. This MMAS in logistics should support the award of the 7Z logistician additional skill identifier, and in general, promote the increasing professionalization of the logistics field.

It is reasonable to conclude that Soviet and U.S. Army operational and tactical logistics systems will remain analogous to each other as they are refined, and with the common advance of technology. This conclusion is based on Soviet and U.S. shared doctrinal points on the nature of the battlefield and the requirements to support the battle.

Regardless of the course of the MMAS program, it is important that the U.S. Army logistics community consistently study Soviet logistics in order to take advantage of the various valuable insights and readily applicable lessons offered. This study will help to provide a full understanding of a potential adversary, and help to insure the optimum evolution of U.S. Army operational and tactical level logistics.



Chapter 4 ENDNOTES

<sup>1</sup>Dr. Graham H. Turbiville, "Soviet Ground Force Logistics," Army Logistician, July-August 1972, p. 18.

<sup>2</sup>U.S. Department of the Army, The Soviet Army: Operations and Tactics, FM 100-2-1, Washington D.C., pp. 2-2 - 2-4.

<sup>3</sup>Guenther Lippert, "Soviet Ground Forces Logistics," Soldat und Technik, 1981, p. 18.

<sup>4</sup>CPT Francis H. Dillon III, "Soviet Maintenance Operations," The Ordnance Magazine, Winter 1984, p. 34.

<sup>5</sup>U.S. Army Combined Arms Combat Developments Activity, AirLand Battle Future White Paper Final Draft, Ft Leavenworth, KS, pp. VII-1 - VII-9.

**GLOSSARY**

## GLOSSARY

### Acronyms and Abbreviations

Soviet

U.S.

#### A

- X      ACR -- armored cavalry regiment
- X      ALB -- AirLand Battle
- X      ALOC -- air lines of communication
- X      AMCO -- aircraft maintenance company
- X      ASG -- area support group
- X      ASL-- authorized stockage list
- X      ASP -- ammunition supply point
- X      ATP-- ammunition transfer point
- X      AVIM -- aviation intermediate  
   maintenance
- X      AVUM -- aviation unit maintenance

#### B

- X      BDA -- battle damage assessment
- X      BDE -- brigade
- X      BN -- battalion
- X      BSA -- brigade support area

#### C

- X      CAB -- combat aviation brigade
- X      CBR -- chemical, biological, and  
   radiological
- X      CO -- company
- X      COMMZ -- communications zone

<u>Soviet</u>	<u>U.S.</u>	
X		COR -- chief of the rear
	X	COSCOM -- corps support command
	X	CGSC -- Command and General Staff College
	X	CSB -- corps support battalion
	X	CSG -- corps support group
	X	CSS -- combat service support
	X	CSA -- corps storage area
	X	CSR -- controlled supply rate
X		CRTA -- chief of rocket troops and artillery
		D
X		DAG -- divisional artillery group
	X	DAO -- division ammunition officer
	X	DISCOM -- division support command
	X	DMMC -- division material management center
	X	DS -- direct support
	X	DSA -- division support area
	X	DSU -- direct support unit
	X	DTO -- division transportation officer
X		DVCP -- damaged vehicle collection point
		E
	X	EAC -- echelons above corps
	X	EOD -- emergency ordnance disposal
	X	ENGR -- engineer

SovietU.S.

## F

- X FARP -- forward arming and refueling point
- X FEBA -- forward edge of the battle area
- X FLOT -- forward line of own troops
- X FM -- field manual
- X FRG -- Federal Republic of Germany
- X FSB -- forward support battalion
- X FSSP -- fuel system supply point

## G

- X G3 -- assistant chief of staff for operations
- X G4 -- assistant chief of staff for logistics
- X GS -- general support
- X GSU -- general support unit

## H

- X HET -- heavy equipment transporter
- X HHC -- headquarters and headquarters company
- X HHD -- headquarters and headquarters detachment
- X HNS -- host nation support

## L

- X LOC -- lines of communication

Soviet      U.S.

M

	X	MAC -- maintenance allocation chart
	X	MCA -- movement control agency
	X	MCC -- movement control center
	X	MCO -- movement control office
	X	MCP -- maintenance collection point
	X	MCT -- movement control team
	X	METT-T -- mission, enemy, terrain, troops, and time available
	X	MHE -- material handling equipment
	X	MLR -- multiple launched rocket
	X	MMAS -- Master of Military Art and Science
	X	MMC -- material management center
X		MRD -- motorized rifle division
X		MRR -- motorized rifle regiment
	X	MSB -- main support battalion
X		MSB -- material support battalion
	X	MSL -- missile
	X	MSR -- main supply route
	X	MST -- maintenance support team
	X	MT -- maintenance team
	X	MT -- motor transport
	X	MTOE -- modification table of organization and equipment

O

	X	OD -- ordnance
--	---	----------------

SovietU.S.

X		OMG -- operational maneuver group
	X	ORF -- operational readiness float
		P
	X	PLL -- prescribed load list
	X	POD -- port of debarkation
	X	POE -- port of embarkation
	X	POL -- petroleum, oils, and lubricants
		Q
	X	QM -- quartermaster
		R
X		RAG -- regimental artillery group
X		REG -- repair and evacuation group
	X	RSR -- required supply rate
	X	RT -- rough terrain
		S
	X	S&S -- supply and service
	X	S&T -- supply and transport
	X	STON -- short ton
		T
	X	TA -- theater army
	X	TAACOM -- theater army area command
	X	TAMMC -- theater army material management center

<u>Soviet</u>	<u>U.S.</u>	
	X	TDA -- tables of distribution and allowances
X		TD -- tank division
	X	TM -- technical manual
	X	TMT -- transportation motor transport
	X	TOE -- table of organization and equipment
X		TOP -- technical observation point
X		TR -- tank regiment
	X	TTP -- trailer transfer point
X		TVD -- theater of military operations
		U
	X	USAREUR -- U.S. Army Europe
X		USSR -- Union of Soviet Socialist Republics



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