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MAIN SUPPORT BATTALION

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PREFACE

This manual provides information on the structure and operations of the main support battalion. It is directed toward the commander and staff of the MSBs of divisions organized and operating under-L series TOEs as modified by the Force Design Initiatives for an Army of Excellence Study. It is also designed to be used by personnel concerned with providing or receiving support in the division support area.

The manual outlines the functions and operations of each section within the MSB; how the MSB commander and staff integrate their activities; and the MSB's role in providing support. This includes both the logistics and medical mission and the tactical responsibilities. This manual also describes the many coordination links the MSB must maintain with supported and supporting units.

This manual is based on doctrine in FMs 100-5, 100-10, 71-100 and 63-2-2. FM 100-5 is the Army's keystone doctrinal manual. It outlines how the Army will fight the Airland Battle. FM 100-10 is the Army's keystone CSS doctrinal manual. It provides an overview of the CSS system for supporting the Army in the field. FM 71-100 is the Army's capstone manual for division operations. It assists the MSB commander in planning and conducting combat operations. FM 63-2-2 describes the support provided by resources within and outside of the division. It is directed toward commanders and staff who are concerned with providing CSS within armored, mechanized infantry, and motorized divisions organized and operating under / "Division 86" TOEs as modified by the Army of Excellence Study. (Work is currently underway on a new FM 63-2, which will cover the operations of a heavy division support command in depth. The new manual is designed to supersede FMs 63-2-2 and 63-22.)

The proponent of this publication is HQ TRADOC. Submit changes for improving this publication on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forward it to Commander, US Army Logistics Center, ATTN: ATCL-CLD, Fort Lee, Virginia 23801-6000.

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

CHAPTER 1

MSB Organization and Functions

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ARMORED, MECHANIZED INFANTRY, INFANTRY, HEAVY/LIGHT DIVISIONS

Main support battalions exist in four types of divisions. They are the armored, mechanized infantry, infantry, and heavy/light divisions. In each case, the role of the MSB is to support customers in the division rear and provide designated reinforcing support to the forward support battalions. MSB commanders and staffs must understand the composition, employment, and missions of the supported force.

The division has varying numbers and types of combat, combat support, and combat service support units. It is a self-sustaining force capable of independent operations. The division's main focus is to defeat the enemy by conducting close and deep operations whale protecting its combat support, CSS, and command and control facilities with successful rear operations.

ARMORED AND MECHANIZED INFANTRY DIVISIONS

Armored and mechanized divisions close with and destroy the enemy by firepower, mobility, and shock effect. Heavy elements move, attack, and defend to defeat the enemy in close combat. Heavy divisions normally fight over wide areas against a threat with similar capabilities. The divisions operate best in basically open terrain. There they can use their mobility and long-range, direct-fire weapons to best advantage. The divisions need significant logistics support of tracked vehicles for long ground moves. The divisions consume supplies, especially class III and V, at high rates and require substantial maintenance support. The MSB will shift its support effort forward to the critical place and time to influence the battle.

INFANTRY DIVISION

The infantry division operates in virtually all terrain, weather conditions, and enemy situations. It is organized for responsive employment and immediate combat operations upon arrival in any environment. It is most effective in terrain favoring dismounted operations. This includes large urban areas, mountains, and jungles. The infantry division has limited mobility. Therefore, its fuel

and maintenance needs are much less than a heavy divisions. Further discussion of the infantry division is in FM 71-100.

HEAVY/LIGHT DIVISION

The threat to the heavy/light division (2d Infantry Division) relies on massive firepower, large numbers in multiple echelons, and high maneuverability. It may attack with very little warning. The US and its allies must defend against the initial attack, then seize the initiative while using the terrain to best advantage.

The US division designed to oppose the threat is a mix of heavy and light forces along with aviation assets. The heavy forces are to be used along roads and in open areas. Aviation assets will be used to insert infantry forces into overwatch positions. The division has only a limited capability of self-sustainment. It is designed to fight as part of a combined command, not a US corps.

EMPLOYMENT OF DIVISION ELEMENTS

The division has varying numbers of maneuver battalions to accomplish a specific mission. CS and CSS units are task organized to support the division. Though these units will vary, division elements which typically operate in the division rear and are customers of the MSB include:

- Combat engineer battalion elements.
- Chemical company elements.
- Division artillery elements.
- Aviation brigade.
- ADA battalion elements.
- Division band.
- DISCOM CP.
- Division main and rear CPs.
- Main support battalion.
- Signal battalion elements.
- Military intelligence battalion elements.
- Military police company headquarters.

ARMORED, MECHANIZED INFANTRY, INFANTRY, HEAVY/LIGHT DISCOMS

ARMORED, MECHANIZED INFANTRY, AND INFANTRY DISCOMS

The main support battalion is part of the division support command. The DISCOM commander provides logistics and medical support in the division by exercising control over his units and providing advice and planning for the division logistics community. The support battalion (MSB and FSB) commanders are the logistics operators for the division. They provide all classes of supply, maintenance support, transportation assets, medical support, and field services (MSB only) to division units in their areas. The DISCOM can, on a very limited basis, furnish CSS to nondivision units in the division area.

The division maintains only enough supplies to sustain operations until more supplies arrive. DISCOM operations enable the division commander to mass combat power at the critical point and to seize the initiative. The division CSS system is flexible. It can anticipate and quickly surge to resupply and support reorganized maneuver units. The thrust of the logistics system of the DISCOM is to push support as far forward as possible.

As depicted in Figure 1-1 the DISCOM consists of the following elements:

- HHC/MMC. The HHC supervises and controls all support operations. It also advises the division commander and staff on logistics throughout the division. The MMC provides materiel management for weapon systems, controls maintenance priorities, and coordinates supply functions. FM 63-22 discusses the responsibilities, organization, and operations of the HHC/MMC.

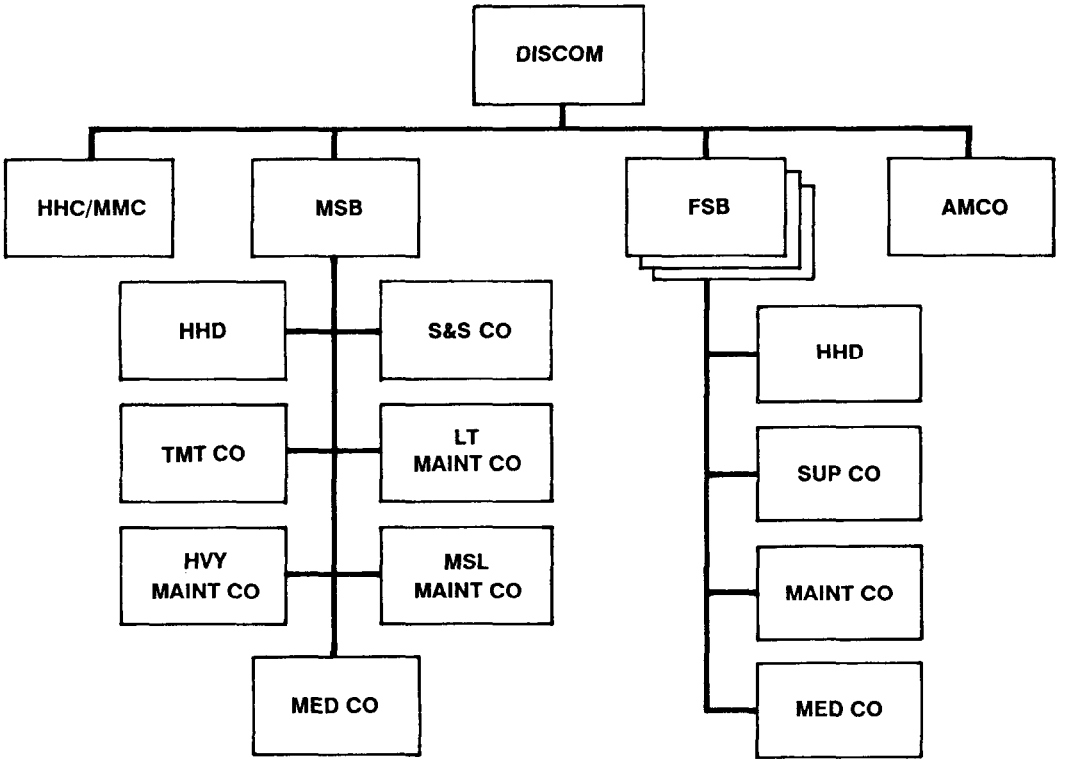


Figure 1-1 Heavy Division Support Command

- Main support battalion. The MSB is the division logistics and medical operator in the division rear. It provides direct support to division units in the division rear and designated and reinforcing support to the FSBs. Its base is in the DSA, though it provides support forward as required.
- Forward support battalions. The DISCOM has three FSBs– one to provide direct support to each division maneuver brigade and units in the brigade sector. Information on the FSBs is in FM 63-20.
- Aircraft maintenance company. This is a separate company under the DISCOM. It provides AVIM support to division units. It is the subject of Chapter 6 of FM 63-2-2. Other operational information appears in FM 1-500.

HEAVY/LIGHT DISCOM

The DISCOM structure for the heavy/light division supports a heavy/light mix without some support normally provided by a corps to a division. The DISCOM is a modified heavy DISCOM with attachments. The basic support concepts and

considerations employed by the MSB of the heavy/light division are the same as those for other MSBs. The support requirements, however, differ due to differences in terrain and mission, and the people and equipment of the supported force. The MSB has maintenance teams to provide or supplement repair capability for MLRS, Chapparal, tracked vehicles, artillery/turret/fire control systems, and radios. Supply and missile maintenance capabilities have also been adjusted to meet the force requirements.

The elements depicted in Figure 1-1 for the heavy division DISCOM are the same for the heavy/light division.

MSB ORGANIZATION AND MISSION

The main support battalion is the main logistics and medical operator in the division rear. It supports units in the division rear and provides designated and reinforcing support to the FSBs. The battalion provides direct support maintenance, supply, transportation, and medical support to units for a variety of missions. When the battalion is augmented, it also provides field services. The MSB is responsible for the effective management of subordinate units. It also directs and coordinates security for these units.

One MSB is organic to the DISCOM. The MSB is normally commanded by a lieutenant colonel. The command element is responsible for the supervision, direction, and coordination of assigned and attached units that run the support operations in and around the DSA. Figure 1-2 shows the MSB organization. As shown, it has a–

- Headquarters and headquarters detachment.
- Supply and service company.
- Transportation motor transport company.
- Light and heavy maintenance companies.
- Missile support company.
- Medical company.

Commanding, controlling, and coordinating the many MSB elements with their diverse missions present a challenge for the MSB commander and staff. They must perform sustainment tasks of arming, fueling, fining, moving, and sustaining the soldier. They must integrate these tasks into a comprehensive battle support plan. The thrust is to push CSS as far forward as possible. The MSB commander and staff. as well as CSS planners and operators at the corps and brigade levels and within the division units, must incorporate the sustainment imperatives in every action taken.

BATTLEFIELD LOCATIONS

When the MSB is tactically deployed, its companics establish locations within the DSA. METT-T determines each company location, but the companics are dispersed throughout the DSA.

Figure 1-3 gives a graphic depiction of the DSA. It shows the units normally found in the DSA. This circle has a diameter of about 7 to 10 kilometers.

The MSB commander plans and manages the security and movement of MSB elements in coordination with the DISCOM S2/3. The MSB locates as far forward as the tactical situation permits. All support areas should be near the main supply routes. However, they should not be astride the MSRs which may become high speed avenues of approach for enemy forces. For planning purposes, support sites should be 1 to 3 kilometers from MSRs. BSAs should be accessible from the DSA by ground in 2 hours or less. MSB activities should use built-up

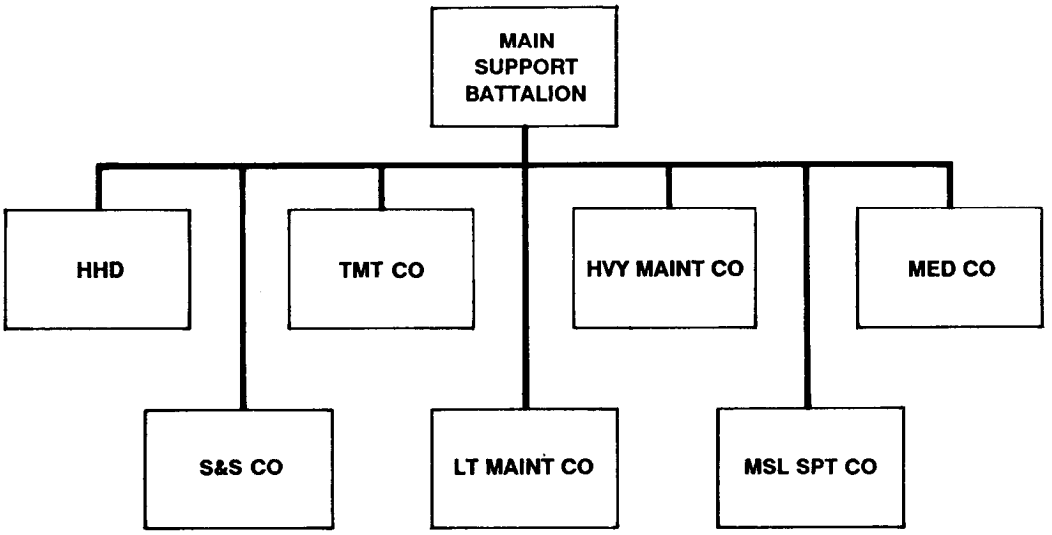


Figure 1-2 Main Support Battalion

areas as much as possible. Appendix A addresses additional terrain management factors.

Support units need to be as mobile as the units they support. Mobility and dispersion enhance the security of MSB elements. MSB units must be prepared to move once every three days or less. Supplies remain uploaded as much as possible. Receipt processing and issue points should also be mobile. Whenever possible, support units throughput personnel and ready-to-issue equipment to units in the BSA. The MSB must be capable of moving 50 percent of its personnel and equipment in a single lift. However, this factor does not include supply stocks or disabled equipment at maintenance sites. Also, mobility considerations for the MSB are complicated by the presence of the TMT company in the battalion. The assets of this company will not

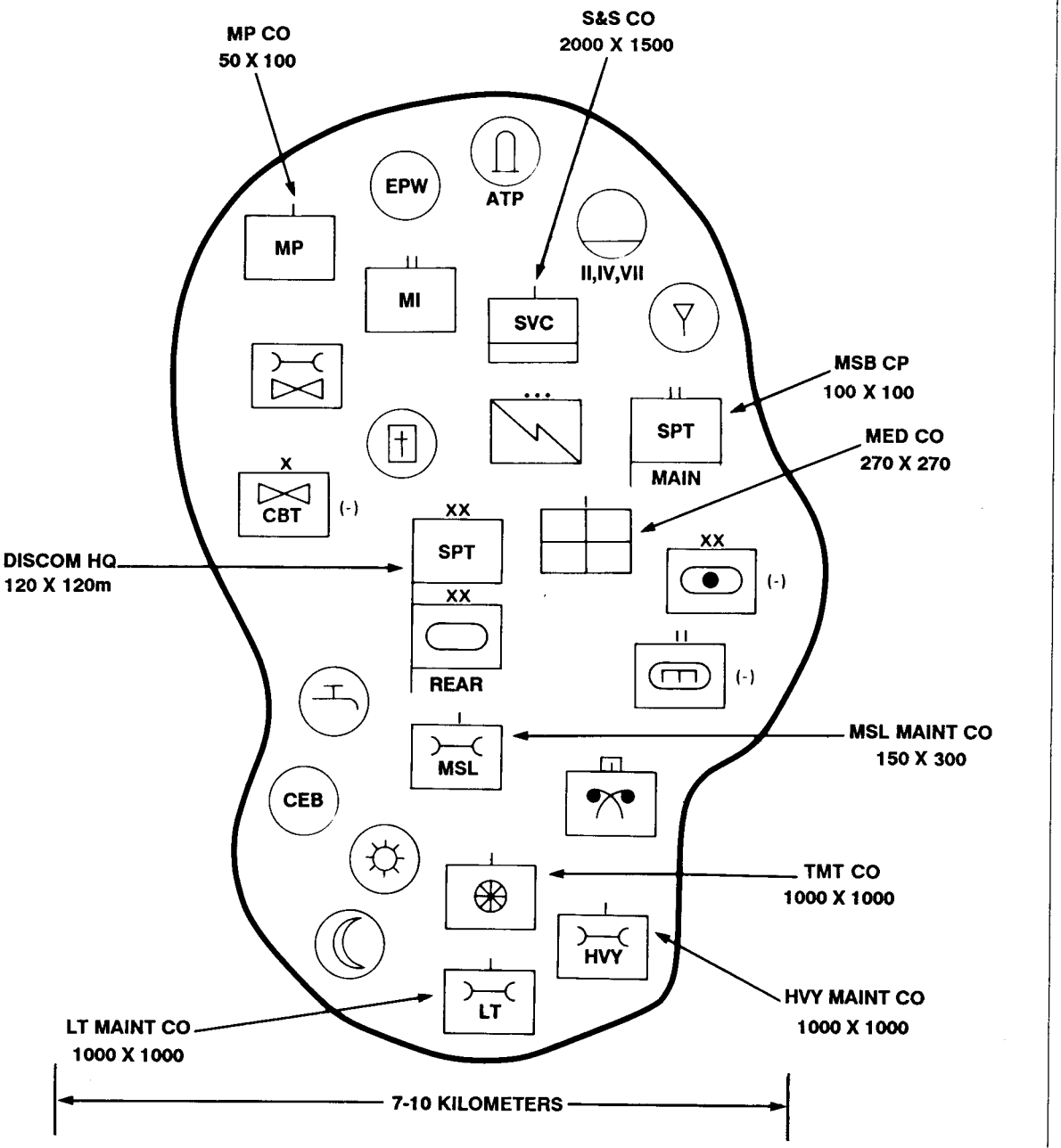


Figure 1-3 Typical Division Units Deployed Throughout the DSA

be available solely to move MSB elements. In addition to performing its routine CSS movement functions, the company also has the mission to move reserve stocks and to assist planning the movement of DSA elements. Movement planners must take all of these considerations into account.

SUSTAINMENT IMPERATIVES

The division logistics system is flexible and capable of anticipating and quickly surging to support division units. Sustaining the division fight requires all MSB elements to adhere to the sustainment imperatives.

- Anticipation. MSB operators and planners must anticipate future operations as accurately as possible and accumulate assets to accommodate any likely contingency. MSB elements must clearly understand the MSB commander's intent. The MSB projects support needs. It also must project unexpected changes in current and future operations by coordinating with DISCOM planners. The MSB ensures that the support structure constantly remains flexible to respond quickly to change.
- Integration. Tactical and operational plans must have fully integrated CSS. The MSB commander's support plan must have supplies and services available at the right time and place for supported units to do their mission. Integration of sustainment operations with the other operations of the division is crucial.
- Continuity. Committed forces must receive continuous supplies and services to maintain their fighting strength. The division commander requires continuous support to maintain the initiative and to ensure breaks in support do not inhibit the depth of operations. Pauses for rebuilding impede momentum and rob the commander of the initiative. Continuity ensures a lapse in support or unforeseen events do not affect an operation.
- Responsiveness. The MSB must react rapidly to crises or fleeting opportunities. It must meet needs that change with little notice. For example, MSB personnel must keep pace with the changes in priorities of supported units. They must be ready to respond quickly so that supported units retain momentum.
- Improvisation. No matter how carefully MSB planners and operators try to anticipate events, unforeseen contingencies arise in every conflict. This manual suggests several support techniques for the MSB. However, leaders and staffs must not interpret a guideline or technique as an absolute requirement. If it is not effective in maintaining combat power and momentum, MSB personnel must not be afraid to discard it. The MSB must improvise to meet unforeseen emergencies. It must seek innovative solutions to problems.

MSB SUPPORT

Logistics and medical elements of the division are integrated into the command and control system of the division. This allows the division to shift its support effort to the critical place and time to influence the battle. For example, MSB elements can and do routinely operate outside of the DSA. Some elements habitually support specific division units. Others may bead hoc formations to reinforce a main effort sector or an FSB. The DISCOM headquarters coordinates support, organizes for combat, assigns locations, and specifies command relationships after thorough consultation with the MSB, DMMC, FSBs, and supported units.

The MSB performs its mission if it supports the division's course of action and meets the DISCOM commander's guidance. Specifically, it supports the division rear and reinforces units by providing or coordinating to provide all classes of supply, as well

as maintenance, medical, field services, and transportation support in the amounts and at the times specified in the MSB SOP. It must replenish its supported units' basic loads of all supplies including repair parts. It must also replenish prescribed loads of maintenance-significant class II and IV items. It must maintain equipment to meet prescribed operational levels. It distributes class VII items in accordance with the division commander's priorities. The MSB coordinates transportation requirements with the movement control officer to meet the needs identified by the division. Finally, it coordinates medical evacuation and treatment operations and field services activities with the DISCOM support operations branch to meet division rear needs. Chapters 5 to 10 have specific information on the elements of the MSB. The following are the types of support the MSB provides.

SUPPLY

Sustaining support includes resupply actions that are constantly in progress to maintain a unit at a desired level of combat effectiveness. The key supply operator in the DSA is the MSB S&S company. This unit is responsible for the operation of the main distribution points in the DSA. Supported units in the DSA draw class I, II, III, IV, VI, and VII supplies and water from these points. The light maintenance company provides class IX common items. The medical company supplies class VIII items, and the AMCO is responsible for JP-4 and class IXA supplies.

MAINTENANCE

MSB maintenance units provide DSM, limited reinforcing unit maintenance support, and repair parts supply for all equipment. Maintenance preserves the availability of weapon systems and equipment. The thrust of the maintenance system in the division is toward repairing damaged equipment as far forward as possible. This maximizes system availability and minimizes recovery and evacuation time. The MSB forms maintenance support teams which perform repair on major weapon systems. Items that cannot be fixed on site must be moved to the MSB's maintenance collection point to await repair.

TRANSPORTATION

The organic ground transportation capability at division level is the MSB TMT company. Transportation support consists not only of the actual movement of people and materiel but also the management function. This involves efforts to use resources, including road networks, most efficiently. The MSB must work closely with the MCO who is responsible for the management function.

HEALTH SERVICE SUPPORT

MSB medical support is characterized by patient evacuation from unit-level medical facilities in the division rear, emergency medical care at the clearing station, limited amounts of other medical care, and provision of medical supplies. The MSB provides evacuation support from the BSAs and reinforces the FSB medical companies. It provides support throughout the division area. Medical support seeks to return the soldier to duty as soon as possible.

FIELD SERVICES

At division level, the amount and types of field services available depends mostly on how much corps support is available. When augmented, the MSB provides CEB and laundry and GRREG services.

SUSTAINMENT PLANNING

Success on future battlefields will depend on how well logistics commanders and planners support the AirLand Battle. They must be able to meet the needs generated from close, deep, and rear operations. To ensure unity of effort and success in combat, they must consider all three as interrelated parts to the same battle.

CLOSE OPERATIONS-OFFENSE

Characteristics of offensive operations include momentum, initiative on the part of commanders, ability to make rapid shifts in the main effort to take advantage of opportunities, and rapid penetration. Units may launch an offensive operation at any time and with little notice. The goal of the MSB is to sustain maneuver and support units engaged in the division.

The concept of support for offensive operations is to have MSB units well forward to sustain the attacking units, with priority of support to the main effort. The MSB locates to best support the FSBs and weight the main effort. MSB elements move forward as required to shorten the support lines as the tactical situation dictates. They must provide continuous, adequate support to forces during the offense while conserving assets and planning for future operations. Figure 1-4 shows a sample MSB employment during offensive operations.

Supply

Consumption of supplies (especially fuel and ammunition) is greatest during offensive operations. High use of supplies will dictate that the MSB takes steps to build up forward stocks. A significant problem will be maintaining this support over extended supply lines. Also, planners should consider use of preplanned push packages of essential items. These may include water, fuel, ammunition and MOPP gear. Needs for obstacle-breaching and bridging materiel may also be high.

Maintenance

Maintaining momentum also requires keeping in or returning to the current battle as many weapon systems as possible. Emphasis is on battle damage assessment and quick return of equipment to the forward area. The MSB may send MSTs forward to integrate into the FSB shops, or they may perform on-site maintenance. Managers must carefully organize an MST to ensure the right people go with the required transportation, communications assets, tools, TMDE, repair parts, and components. Besides extending support forward, the MSB accepts unserviceable items from the FSB.

Transportation

TMT company assets will be heavily taxed in the offense. As the attack escalates, long lines of communications and high requirements for selected supplies and personnel replacements will stress the system. Planners must ensure adequate security for unescorted convoys. Coordination is essential between the support operations section of the MSB and the DISCOM MCO. They must ensure delivery to the right location and ensure movement of retrograde equipment and deceased personnel.

Medical

The MSB will participate in evacuation planning to support an offensive action. The type of offensive maneuvers, as well as the enemy capability, influences the character of patient evacuation work load. The MSB must push class VIII forward. It must also be ready to provide prompt evacuation in fast-moving situations. Prompt evacuation of patients from forward treatment facilities requires the MSB to have available ambulances well forward from the outset of the offensive operation.

Field Services

To sustain the fighting forces, field services are provided as permitted by the tactical situation. Corps augmentations to the MSB provide most field services to the division. Due to the mobility of offensive operations, commanders may temporarily suspend some field services (CEB and laundry). However, GRREG operations are vital and may intensify during offensive operations. The MSB must prepare for heavier usage of GRREG supplies and long lines of evacuation.

CLOSE OPERATIONS-DEFENSE

The immediate purpose of division defensive operations is to defeat the attack. Preparation for defense entails stockpiling critical supplies at forward support points and at successive defensive positions. The MSB must anticipate support needs for forward areas.

The division G4 and DISCOM staff must develop a concept of support and recommend priorities for support to the division commander. At the same

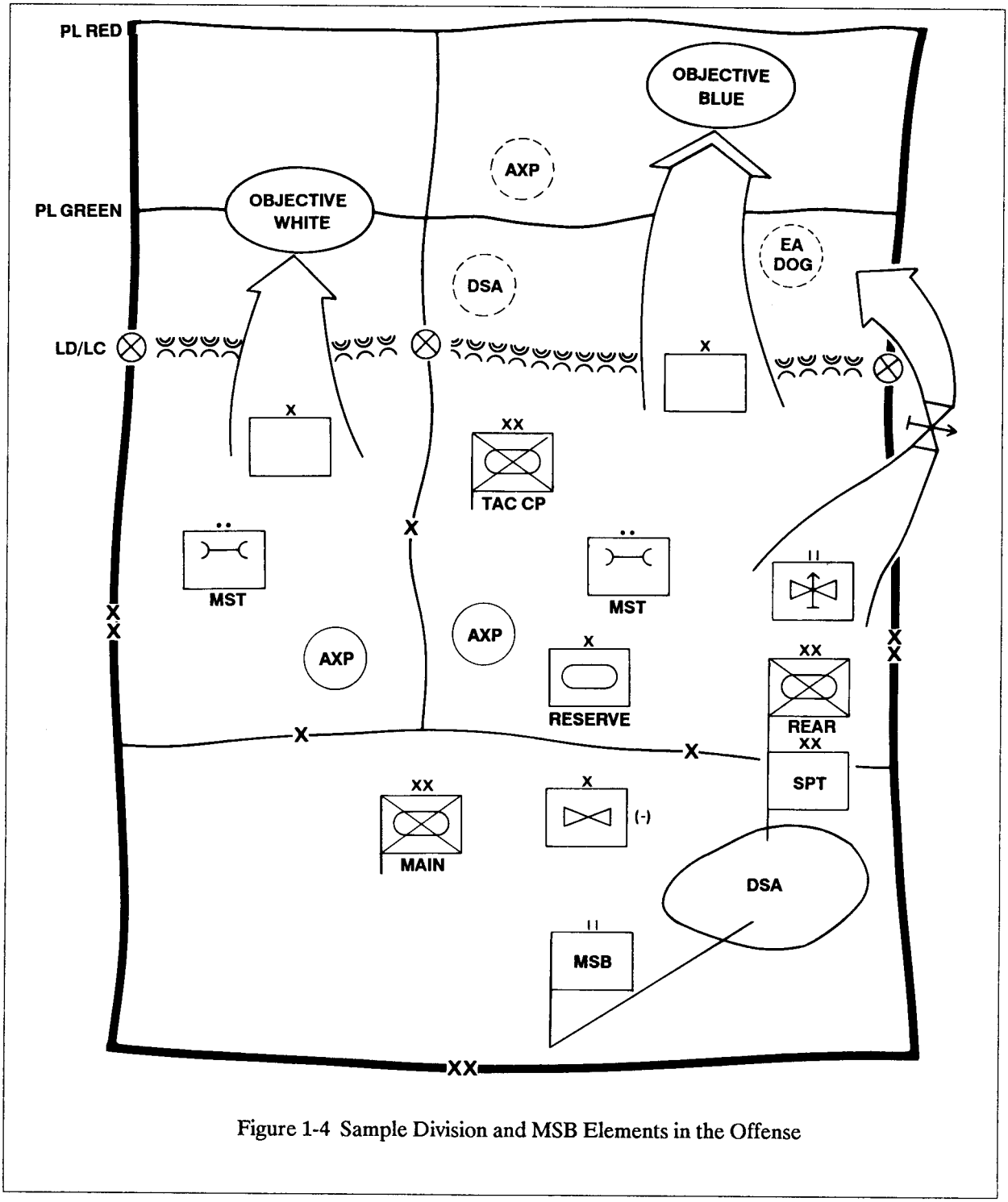


Figure 1-4 Sample Division and MSB Elements in the Offense

time, the DISCOM must support defensive operations while anticipating support requirements as the division shifts to the offense. Figure 1-5 shows a sample MSB employment during defensive operations.

Supply

Operations will be most intensive during the preparation stage. The MSB will push critical supplies forward. The MSB will plan to stockpile supplies (particularly fuel and barrier materiel) far forward and in successive defensive positions. As soon as the MSB knows a defense is planned, it must begin coordination to have barrier materiel throughput by corps assets as close to the emplacement sites as possible.

Maintenance

The MSB must execute maintenance support with the same attention to supported units needs as for offensive operations. The maintenance companies' emphasis in the defense is to maximize the number of weapon systems available at the start of the operation. The MSB maintenance companies must concentrate on exchange versus repair and maximize cannibalization. There is increased emphasis on evacuation of unserviceable equipment. Repair operations in forward areas consist of component replacement, adjustment, and servicing.

Transportation

As implied in the discussion on supply, transportation is most critical while preparing for a defense. Stockpiling supplies and shifting personnel and equipment before the operation will tax the system. Transportation may also be required to shift personnel, weapon systems, and supplies laterally or in depth to meet the probable points of enemy attack. The MSB's major role in this area is to coordinate transportation needs for support operations.

Medical

Though casualty rates are likely to be lower than in an attack, priorities for evacuating patients must be set on the basis of the location of the probable enemy main effort. Planners should designate predetermined ambulance exchange points. The medical company commander and MSB support operations section should also coordinate increased use of helicopters for evacuation.

Field Services

The field service functions of CEB and GRREG operate routinely where the tactical situation permits. GRREG units should evacuate the dead quickly. If laundry and CEB facilities are located in the DSA, the MSB staff should ensure they are far enough in the rear and out of the way of tactical units.

RETROGRADE OPERATIONS

A retrograde operation is a movement to the rear or away from the enemy. Retrograde operations gain time, preserve forces, avoid combat under undesirable conditions, or draw the enemy into an unfavorable position. Maneuver elements at a given time may be defending, delaying, attacking, or withdrawing.

To ensure uninterrupted support in any retrograde, support sites should be well to the rear. The MSB displaces early and when possible at night. Echeloning MSB elements allows them to continue to provide support at old sites until new sites are operational. Any MSB assets not essential to supporting forward elements should move as soon as possible.

Supply

To avoid the unnecessary destruction, loss, or hauling of supplies, managers control the flow of supplies forward. Push resupply is used with a priority towards fuel and ammunition. Operators place supplies along routes of withdrawal to simplify resupply, reduce road congestion, and permit early withdrawal of supply units. Transportation assets moving to the rear move any supplies which are already forward but not required by the delay force.

Maintenance

Maintenance planning emphasizes support forward while moving most of the maintenance companies rearward. Forward elements should concentrate on exchange versus repair and maximize

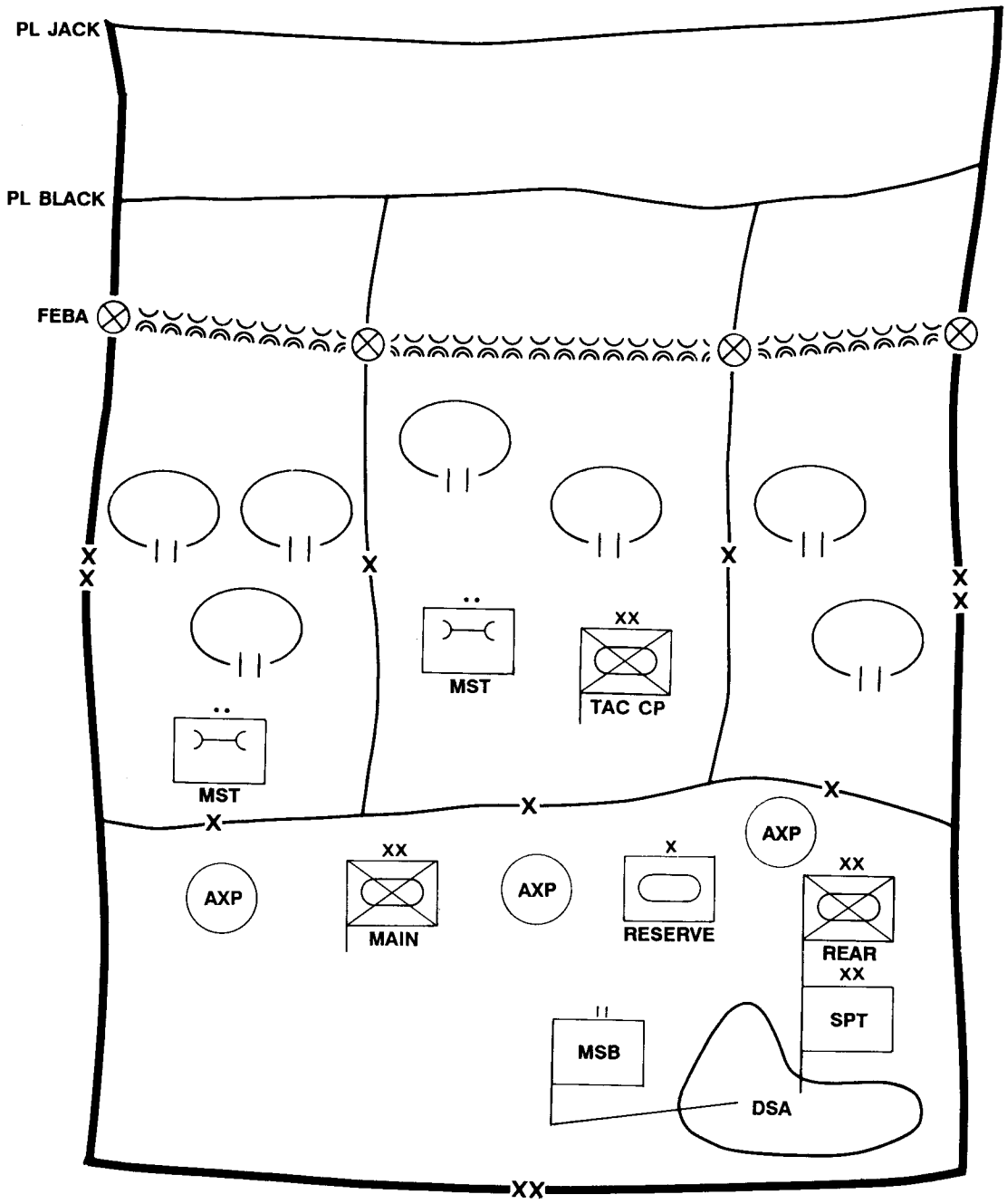


Figure 1-5 Sample Division and MSB Elements in the Defense

cannibalization. Transportation assets are scarce so forward repair is essential.

Transportation

Retrograde operations stress transportation resources. The MSB continues to move assets to the FSB and evacuate supplies, materiel, and personnel rearward. All MSB transportation assets must be carefully managed and used. There must be continuous management by the MCO and close coordination with the MMC for movement needs.

Medical

Patient evacuation is complicated by several factors. Evacuation routes may be congested with withdrawing forces. Evacuation assets are required to move patients that would normally be treated in the clearing station. Nonmedical transportation assets may not be available to assist. Medical company assets should move back by echelon as early as possible. This requires prompt patient sorting and evacuation. Planners must predetermine locations of successive treatment sites. More information on medical support in retrogrades is in Chapter 10.

Field Services

Any laundry and CEB units in the division also move to the rear as soon as possible. Commanders may temporarily suspend nonessential services. Deception planners may integrate facilities of suspended activities into their plans.

DEEP OPERATIONS

Deep maneuver is a high-speed, short-duration, audacious operation. Planners may reorganize maneuver forces to meet specific objectives. These forces can either carry all resources needed during the operation (self-sustainment) or be sustained via a surface or an air LOC (sustainment over a LOC).

Sustainment of deep maneuver must be carefully planned. Early in the planning phase, the MSB commander provides information to the DISCOM commander on logistics and medical assets. Once the attack is started, innovative thinking and rapid decision making are key elements the MSB commander must use to ensure that the momentum is maintained.

Support of deep operations depends on the availability of transportation assets. With ground LOCs, MSRs need to be open and secure. Ground transportation must move supplies in support of units moving to the line of departure as well as support those units once they move forward. The forward support units that move early into the deep operations area should be able to sustain fuel, ammunition, food, medical, and maintenance support until support from the MSB and other sources arrives.

REAR OPERATIONS

The primary purposes for conducting rear operations are to secure the force, neutralize or defeat enemy operations in the rear, and ensure freedom of action in close and deep operations. Rear operations protect necessary CS and CSS from disruption. MSB facilities and supplies must be safe from ground, air, and missile attack while continuing to support projected operations without decreasing the support to currently engaged units. Effective planning requires open communication lines and quick reactions on the part of the MSB commander. Further information on rear operations is in Appendix A.

LOGISTICS SUPPORT TO CORPS UNITS

The forward corps support group provides logistics support to corps units operating in the division rear. The forward CSG or logistics battalion task force operating in the DSA provides a liaison element to the DISCOM headquarters. The LO, DISCOM support operations branch, and MSB support operations officer coordinate to work out the most efficient and effective way to support these units. There may be separate corps support points in the DSA to support the corps units.

The LO from the CSG or logistics task force coordinates the movement of COSCOM units in the DSA with the DISCOM and division rear CP. Corps

logistics units operating in the division are under the command and control of the CSG.

Though these units will vary, corps elements which may operate in the division area include

- Field artillery battalion.
- Air defense artillery battery.
- MLRS battery.
- Engineer elements.
- Military police company.
- Attack helicopter battalion.
- TOW light antitank company.
- Smoke company.
- Signal company.
- Girder bridge company.
- Ribbon bridge company.
- Decontamination company.
- Civil affairs company.
- PSYOPS company.
- Surveillance detachment.
- Electronic warfare company.
- Public affairs, chaplain support, CID, and history teams.

CHAPTER 2

Command and Control

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PRINCIPLES

Command and control is the system used by the MSB to direct, coordinate, and control the activities used to accomplish the logistics and medical mission. This encompasses the personnel, equipment, facilities, and procedures needed to gather and analyze data. It also involves planning what is to be done, issuing instructions for doing it, and supervising how it is done. The MSB commanders must organize their resources and institute control procedures to ensure that the support system provides the right support, in the right place, at the right time.

Today's dynamic battlefield demands adherence to the sustainment imperatives of integration, responsiveness, anticipation, continuity, and improvisation by all logistics commanders. Mission-oriented command and control promotes clear communication of the commander's intent; coordination of key elements of deep, close, and rear operations; and maximum latitude for subordinates in execution of assigned tasks.

Mission-oriented command and control involves more than just the issue of mission-type orders. It begins with a willingness on the part of the commander to delegate authority and provide resources commensurate with the responsibilities assigned to subordinates. Staff and subordinate commanders must be trained in communications and the decision-making process. They must know when and in what circumstances they have the prerogative to act.

Command and control of MSB units requires as a minimum—

- A good understanding of the MSB commander's responsibilities.
- A thorough understanding of the division commander's intent for ongoing and future operations.
- Familiarity with the responsibilities and capabilities of higher, lower, and supporting unit levels.
- Close contact and exchange of information at all levels in the command chain.
- Writing directives, reports and orders. (However, maneuver warfare cannot depend solely on written communications.)
- Effective oral communications.
- Understanding the information systems related to CSS.
- Ensuring radio and data transmission nets are used effectively.
- Staying personally involved in and appraised of the CSS and tactical situations.
- Familiarity with the law of land warfare.

- An understanding of the responsibilities to the soldiers.

Information is an essential ingredient of command and control. The Army's command and control system operates to exchange information since it is the means by which organizations are assigned missions and the status of their execution is determined. The C2 system consists of three interrelated components organizational relationships, process, and facilities.

ORGANIZATIONAL RELATIONSHIPS

To accomplish the support mission, the MSB and its subordinate units are deployed throughout the DSA and division area. To perform its C2 functions, the MSB must develop and maintain a variety of relationships. They include relationships with—

- Higher organization–DISCOM.
- Supported organizations—Supported units in the division rear.
- Lateral organizations–FSBs, the AMCO, and corps logistics task force.
- Subordinate organizations–MSB company elements.

MSB AND DISCOM HEADQUARTERS

The MSB is under the command of the DISCOM commander. Requests for support to the MSB flow through the DISCOM staff and MMC. This ensures logistics and medical needs are staffed with the DISCOM S2/S3, DISCOM medical operations center and DMMC. The MSB commander provides technical support and advice to the DISCOM commander on matters concerning the division rear area. The DISCOM commander gives support priorities and direction on support operations, battlefield locations, security, and movement. He also makes decisions on cross-leveling assets among the MSB and FSB.

MSB AND DMMC

The DMMC provides supply and maintenance management for the MSB. It determines, procures, and directs the distribution of all supplies (except class VI, VIII, and X, and classified maps). It develops and supervises ASLs. It maintains division property book and Army equipment status reporting data. The DMMC also specifies the items and quantities of class IX materiel to be physically located in the forward area and the MSB. It provides guidance for the disposition of items which includes instructions for evacuation of items that cannot be repaired by direct support maintenance units of the MSB.

Day-to-day supply (less class V, VII, VIII, and IX) management is provided by the general supply section of the DMMC to the S&S company of the MSB. This company provides information to the DMMC in its day-to-day supply transactions. The DMMC also provides day-to-day class IX direction to the maintenance companies of the MSB. The companies provide information to the DMMC on their day-to-day class IX transactions. The MMC property book and class VII section provide management of class VII supply for the MSB.

Day-to-day maintenance direction is provided by the materiel section of the DMMC to the support operations officer of the MSB. Since all those involved in the division rear maintenance effort need to be kept informed, maintenance information is passed among the DMMC and maintenance companies of the MSB.

MSB AND AMCO

The aircraft maintenance company is under the command of the DISCOM commander. The AMCO provides all division AVIM. It relies on the MSB for all ground equipment maintenance and repair parts, supply (except aviation), HSS, field services, and ground movement.

MSB AND FSBs

The relationship between the MSB and FSBs is established by the DISCOM commander. The quantity and type of support provided by the MSB to the FSBs are determined by command priorities and

capabilities of the FSBs to accomplish the mission. Based on command guidance from the DISCOM commander and the mission, the MSB provides tailored and timely reinforcing support to the FSBs. The MSB provides designated DS supply, reinforcing DS maintenance, transportation, some field service functions, and limited medical reinforcement to each FSB. The companies of the MSB maintain technical relationships with their related companies of FSBs located in the BSAs.

MSB AND MSB COMPANIES

The MSB commander must maintain close personal contact with his subordinate company commanders. He depends on them to provide timely information on the status of their companies. In addition, the company commanders must understand the MSB commander's intent to perform their roles with initiative. This understanding is enhanced through frequent face-to-face discussion.

Though the company commanders will likely be in the vicinity of the MSB CP to facilitate coordination, they must not tie themselves to one spot. They command their companies from the locations where they can best assess and influence the support operation. These commanders use verbal orders, radio, visual signals, or wire among themselves, the MSB staff, their platoon leaders, and the supported elements.

MSB AND SUPPORTED DIVISION UNITS

The MSB provides direct support to division rear units. It thereby establishes a close working relationship with the logistics planners for division elements in the division rear. The division staff officer charged with assisting in the area of logistics is the G4. He provides logistics information to and coordinates support with the DISCOM support operations officer. The DISCOM support operations officer coordinates support requirements and capabilities with the MSB.

The MSB and the DISCOM support operations officers work out the day-to-day details of logistics operations for division elements in the division rear. These include specific requirements and time schedules. However, for routine operations, the MSB companies also develop relationships with supported unit CSS operators.

PROCESS

As with any other Army organization, the MSB commander and staff use the command and control process outlined in FM 101-5 to make decisions and supervise execution of orders. This process is a continuous one; the MSB commander and staff are always involved in estimating and planning. However, the focus becomes more precise when the MSB receives a mission. Typically, it has already received a warning order when the commander, XO, or support operations officer attends a DISCOM meeting. In some cases, the MSB commander must deduce the mission, but usually he receives the planning guidance and a restated mission from the DISCOM commander. In addition to working with the DISCOM commander, he also receives guidance from the DISCOM support operations branch.

When it receives or deduces its mission, the MSB begins mission analysis. The commander and staff take into account all the planning considerations such as the force to be supported, MSB capabilities, and the division commander's priorities of support. The command section identifies tasks required to accomplish the mission, restates the mission, and issues a warning order to all MSB elements, along with the commander's planning guidance.

The MSB commander provides his subordinate commanders and staff with planning guidance as often as required. The frequency, as well as the amount and content of the guidance, will vary with the mission, available time, tactical situation, available information, and historical data. Planning and guidance are used to prepare estimates. Therefore, the commander must ensure the nature of the guidance does not bias staff estimates. The purpose

of the estimate is to provide a common start point for staff planning. Planning guidance may include restated mission, specific courses of action to develop or eliminate from consideration assumptions, constraints, critical information required, or specific considerations (such as NBC, deception, or EW).

The MSB staff provides functional area estimates as discussed in FM 101-5 and Chapter 4 of this manual. On the basis of these estimates, the MSB commander finalizes his concept of operations. The XO then gives guidance on preparation of the OPORD/OPLAN. The S2/S3 consolidates the input and publishes and distributes the OPORD/OPLAN after the MSB commander approves it.

The MSB command section must keep in mind two points related to the decision-making process summarized above. First, planning is continuous. It does not begin on receipt of a mission. The commander and staff are always gathering data and anticipating future requirements. When the mission is received, however, steps must be taken to finalize all the operational details of the CSS and security plans. In addition, the command section must adjust to time constraints. Frequently, time becomes the most critical factor affecting any commander in the decision-making process. The commander may have to proceed through this process and issue oral orders based on his knowledge of the situation without taking the time to formally include the staff in the process. The specificity and formalization of the planning guidance may have to be adjusted.

After the order is issued, the MSB commander and staff supervise its execution. The primary purpose of the staff is to assist subordinate units to carry out the intent of the MSB commander's order. Plans and orders are refined as the situation changes. Information comes back to the command section through reports and personal observations of the commanders and staff. On the basis of this information, they evaluate whether the mission is being accomplished. Changes are made to add to or revise previous instructions.

FACILITIES

Another component of command and control is facilities. This component includes command posts and supporting automation and communication systems. These facilities make possible processing and transmission of information and orders necessary for effective command and control. Automation and a general view of the MSB command post are discussed below. Communications are described in Chapter 3.

AUTOMATION

Automated systems throughout the DISCOM are designed to allow commanders to manage information to optimize use of limited resources.

Command, Control, and Subordinate System Structure

CCS2 is an evolving architecture that will improve logistics capabilities. The system will provide the means of interfacing the five battlefield control functions of maneuver, air defense, CSS, intelligence/EW, and fire support. CCS2 will function as an integral part of, and in support of, the Army Tactical Command and Control System. (Note: Initial fielding will begin in FY90. A fully interactive, automated system is expected in 1995 when the objective CCS2 is realized.)

The CSS Control System of the ATCCS will be an automated system that will provide commanders and their staff with logistics, medical, and personnel information. It is designed to provide timely, accurate, integrated information that facilitates the decision-making process; accrues maximum benefit from resources; enhances visibility of critical assets; and identifies sustainment supportability. It facilitates the collection, analysis, projection, and distribution of information to the maneuver commanders. The CSSCS facilitates the consolidation of data from CSS subordinate units and the CSS Standard Army Management Information Systems. The CSSCS will

be employed at maneuver brigade, division, corps, and echelons above corps. Figure 2-1 shows the CSSCS in support of the division rear.

Functional Systems

Besides providing logistics C2 information to the CSSCS components of the ATCCS, CSS STAMISs are employed at the MSB to enhance logistics operations. These software systems operate on either the TACCS or the ULC hardware. The systems used by the MSB are discussed below

- *SIDPERS* operates on TACCS and automates strength accounting assignment, organization record keeping personnel record keeping, and labor-intensive military personnel operations within the S1 section of the MSB.
- *ULLS* operates on the ULC and provides automation of logistics functions at the unit and battalion levels. ULLS is employed throughout the division to include the DISCOM. The unit maintenance application has been developed. (In addition, an S4 consolidated logistics component is currently under development.) ULLS interfaces with CSSCS, SARSS-1, SAMS-1, SPBS-R, and other applicable STAMISs.
- SARSS-1 operates on TACCS hardware in the MSB's S&S, light, and missile maintenance companies. The system automates class II, III (pkg), IV, VII, and IX supply actions. It performs time sensitive functions such as receipt, storage, issue, replenishment, inventory adjustments, supply performance reporting and excess identification, as well as maintaining accountable stock record balance. During normal distribution operations, SARSS-1 interfaces directly with SARSS-2A on TACCS at the DMMC. In contingency operations, SARSS-1 can operate in the autonomous mode without SARSS-2A support and interface directly with the DAAS to route requisitions directly to the wholesale supply system. In addition to interfacing with SARSS-2A, SARSS-1 interfaces are maintained with ULLS, SPBS-R, SAMS-1, DAMMS-R, CSSCS, and PWIS.
- *SAMS-1* operates on TACCS and is employed in all maintenance companies assigned to the FSB and MSB (light, heavy, and missile maintenance companies) and in the aircraft maintenance company. The system automates maintenance production control, providing immediate job order and backlog status information. It provides, through file inquiry, repair parts and shop stock asset status. It screens production parts requirements against on-hand assets and automatically generates, edits and passes requests to the supply system via an interface with SARSS-1.
- *SAMS-2* operates on TACCS hardware and is employed in the light maintenance company of the MSB and in the DMMC materiel section. The system receives SAMS-1 data and provides immediate production and supply requirements to managers. It gives daily visibility of deadlined equipment. The materiel condition status report module displays parts required for production and readiness by either unit or weapon system. In addition to the SAMS-1 interface, SAMS-2 interfaces with other appropriate SAMS-2 (for example, DMMC to CMMC), SAMS-3, and other designated STAMISs.
- *DAMMS-R* operates on TACCS hardware and is employed in the HHD of the MSB where it interfaces with the MCO assigned to the S2/S3 section of the DISCOM headquarters. The MCO automated mission performance also requires a DAMMS-R on TACCS interface with the MSB TMT company DAMMS-R operations on ULC. The system provides intransit cargo movements data, mode asset status, hold/diversion status, movement information, transportation status reports, container reports, ETA forecasts, and transportation intelligence.
- *TAMMIS-D* operates on TACCS and ULC hardware and is employed in the medical company of the MSB. The system provides timely, accurate, and relevant information through the MEDPAR-D and MEDLOG-D subsystems. MEDPAR-D provides automated capabilities in treatment and disposition data, unit medical administration, ICRS. medical C2, and system setup/maintenance. There is also a ADTMC

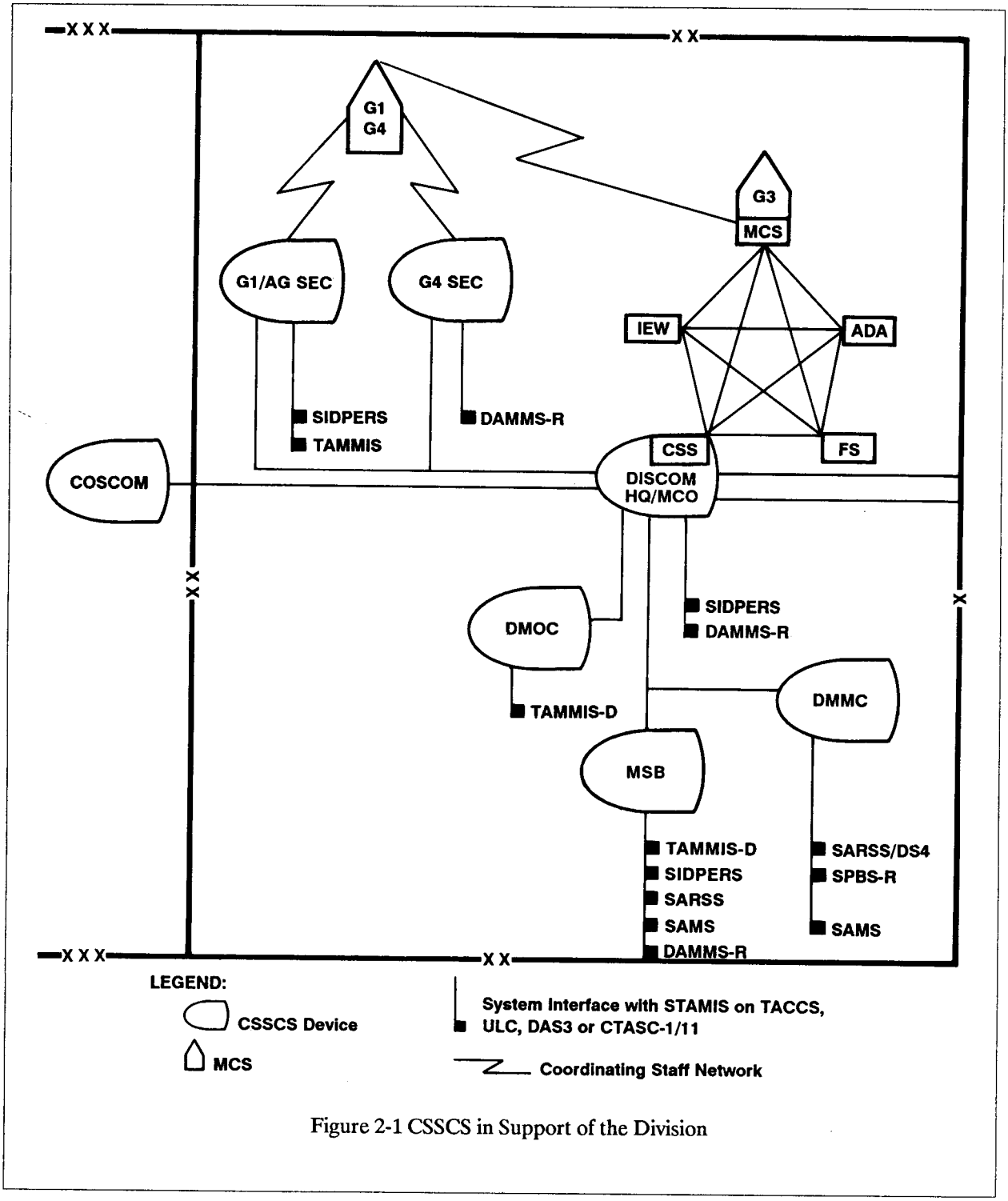


Figure 2-1 CSSCS in Support of the Division

module which will assist the aidman in the proper treatment and/or disposition of disease cases. MEDLOG-D manages medical supplies, medical assemblages, and biomedical equipment maintenance.

COMMAND POST

The dynamics of the modern battlefield– speed, complexity, and lethality–will require the very highest level of organization and operational efficiency within any CP structure. Automated and manual information systems must minimize the time required for administrative processing of information, ensure accurate portrayal of the tactical situation, prevent needless verification of data, and make information immediately available to the commander and members of the staff. Two principal staff sections provided to do this are the support operations office for the support mission and the S2/S3 section for tactical mission.

The primary MSB C2 facility is the command post. A key consideration in determining the location of the CP is the ability of the site to provide for good communications with higher, lower, and adjacent organizations. Considerations must include the capability to remote antennas and to use terrain to mask transmissions. FM 24-1 has details. The CP should be located near routes which allow relatively easy access into the area. Prominent terrain features and major road junctions should be avoided to prevent the enemy from readily determining the CP location.

When possible, the CP should be located in built-up areas. Barns, garages, and warehouses eliminate the need for extensive camouflage. Basements provide added protection from enemy fires. Use of built-up areas also reduces infrared and electromagnetic signatures and can reduce the requirement to move as often.

When built-up areas are not available, the CP should be located on the reverse slope to provide cover and concealment from both ground and air observation fires. The ground must be firm enough to support vehicle traffic, have good drainage, and provide enough space to disperse vehicles.

The CP should travel light and be able to move often. A CP is a major source of electromagnetic and infrared energy. If the CP does not move often, its location can be freed and targeted. The larger and more elaborate the CP setup, the less rapidly the CP will be able to move. However, the more frequently the CP moves, the more command, control, and communications suffer.

When the CP does move, it displaces by echelons. Once an interim operational capability is established at the new location, the remainder of the CP elements move.

LAYOUT

The CP is formed out of assets organic to the HHD MSB and is normally comprised of personnel and equipment from the plans and operations and communications branches and support operations section. The CP is organized into a dual shelter configuration. The direct support mission is managed in the support operations van while the communications, intelligence, and operations missions are accomplished in the S2/S3 tent as depicted in Figure 2-2.

CP PERSONNEL

The CP personnel normally operate in a 2-shift mode. Table 2-1 is an example of how the MSB CP positions could be organized into two shifts. This is only an example of minimum staffing. During intense activity, all available personnel may be required for short periods. However, maximum staffing cannot continue indefinitely. MSB commander and staff must consider fatigue and sleep loss that occur during combat. Fatigue caused by lack of sleep is a major source of battlefield stress. Leaders are particularly susceptible. Principles to minimize fatigue include the following:

- Specified sleep plans must be developed and enforced.
- Plans should allow for at least 3 to 4 hours of sleep every 24 hours. Even at this rate, performance, especially decision making skills, will become degraded in several days.

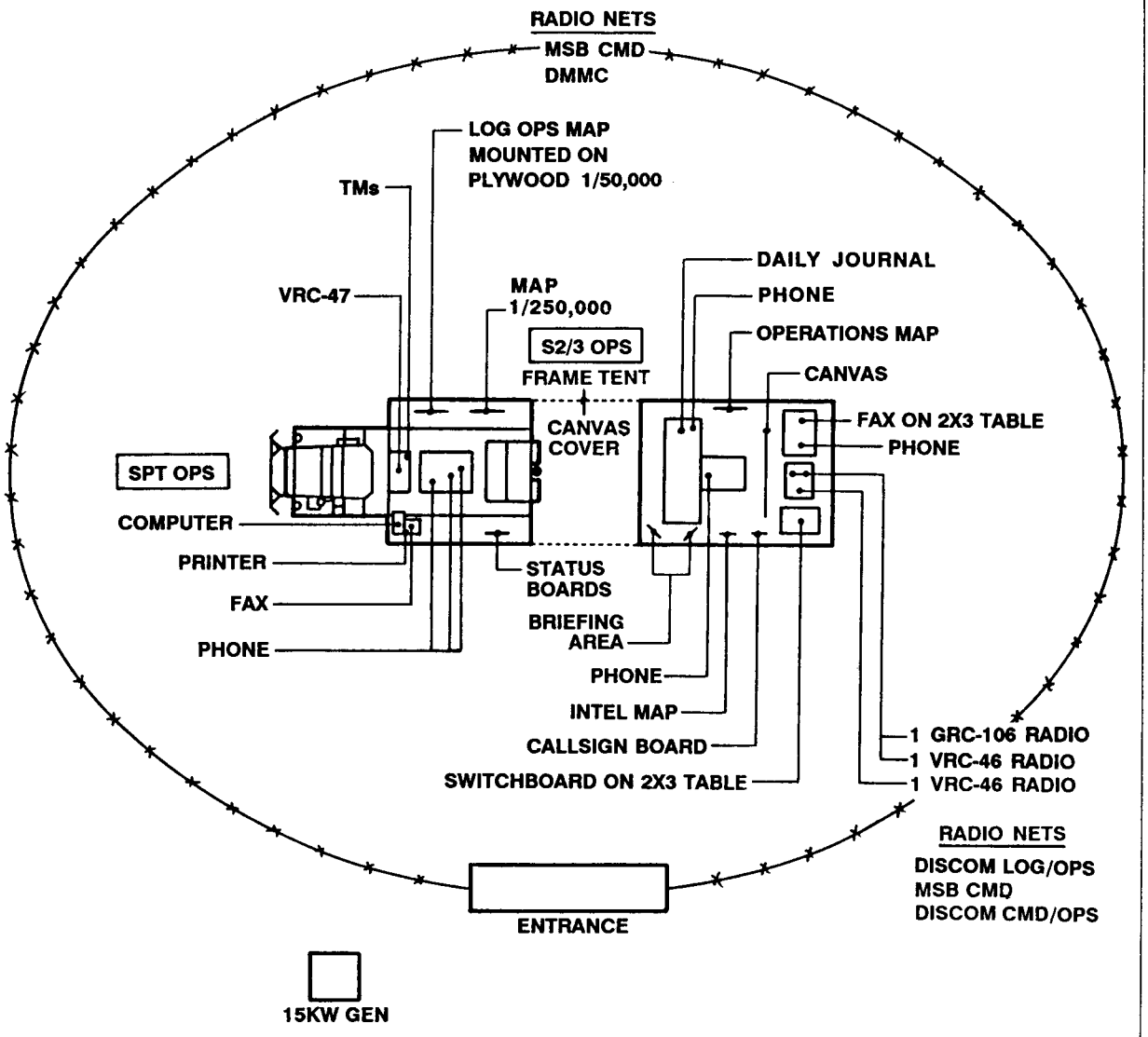


Figure 2-2 MSB Command Post

- Priority of sleep must go to those whose decision making is critical to the mission.

In order for sleep plans to work, soldiers must be cross-trained. One technique which may help is to develop performance supports to simplify critical tasks. These include aids such as specific SOPs or checklists.

The primary shift is normally assigned to the busiest part of the workday. The secondary shift is intended for periods of reduced activity. Normally a problem beyond the decision-making authority of the secondary shift will cause selective reinforcement from the primary shift.

Table 2-1. MSB CP Organized in Two Shifts

PEAK ACTIVITY	REDUCED ACTIVITY
S2/23 OFF	S2/S3 Ops Sgt
*Spt Ops Off	Maint Off
Sup-Svc Off	Unit Level Comm Maint
Maint Control Sgt	Clerk Typist
Trans Off	
*Mat Stor Supv	
*Maint Coordinator	
*Spt Ops Sgt	
Intel Analyst	
Equip Rec/Parts Sp	
NBC NCO	
*Laundry NCO	
Clerk Typist Spt Ops Typist	
Cbt Signaler	

*NOTE: May require frequent absences from the CP.

CHAPTER 3

Communications

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DEVELOPMENTS IN COMMUNICATIONS SYSTEMS

Communications equipment and systems are currently undergoing change within the corps and the division. The current area communications system will be replaced by the mobile subscriber equipment system.

Current VHF-FM (AN/VRC-12 series) radios and HF-SSB (AN/GRC-106) radios will also be replaced by the single channel ground and airborne radio subsystem, and the improved high frequency radios. Along with these equipment changes, automated hardware systems will also be deployed in support of C2 and management information systems.

These changes will affect the MSB in the area of connectivity to the area system. Under the current system the MSB normally has trunks from the MSB switchboard to the signal battalion operated switchboard which supports the DISCOM headquarters (support platoon of the command operations company of the signal battalion). When MSE is deployed, the MSB will run wire from unit locations to the MSE interface point. The amount of wire the MSB headquarters and companies will need will be based on the dispersion requirements of the particular situation, which is the relationship of each unit to the nearest MSE interface point.

With the deployment of the MSE, the wire laying for all units will have to be covered by unit SOP. It must cover who does it and in what priority. The communications means will remain essentially the same. The MSB will depend on courier, combat net radios, and wire access to the signal corps provided area communications system. Telephones, facsimile, and data terminals will be user owned and operated subscriber instruments on the area system via wire access.

CURRENT AREA SYSTEM

The current area system is shown in Figure 3-1. The MSB and companies use their organic switchboards (SB-22) and telephone instruments for internal wire communications. Wire nets are depicted in Figures 3-2 through 3-8 (Pages 3-3 through 3-8). The MSB will normally tie into the area communication system (signal battalion multichannel system) at the DISCOM support platoon switchboard (signal battalion asset). The companies will tie into the MSB switchboard or directly into the signal battalion switchboard to gain access into the

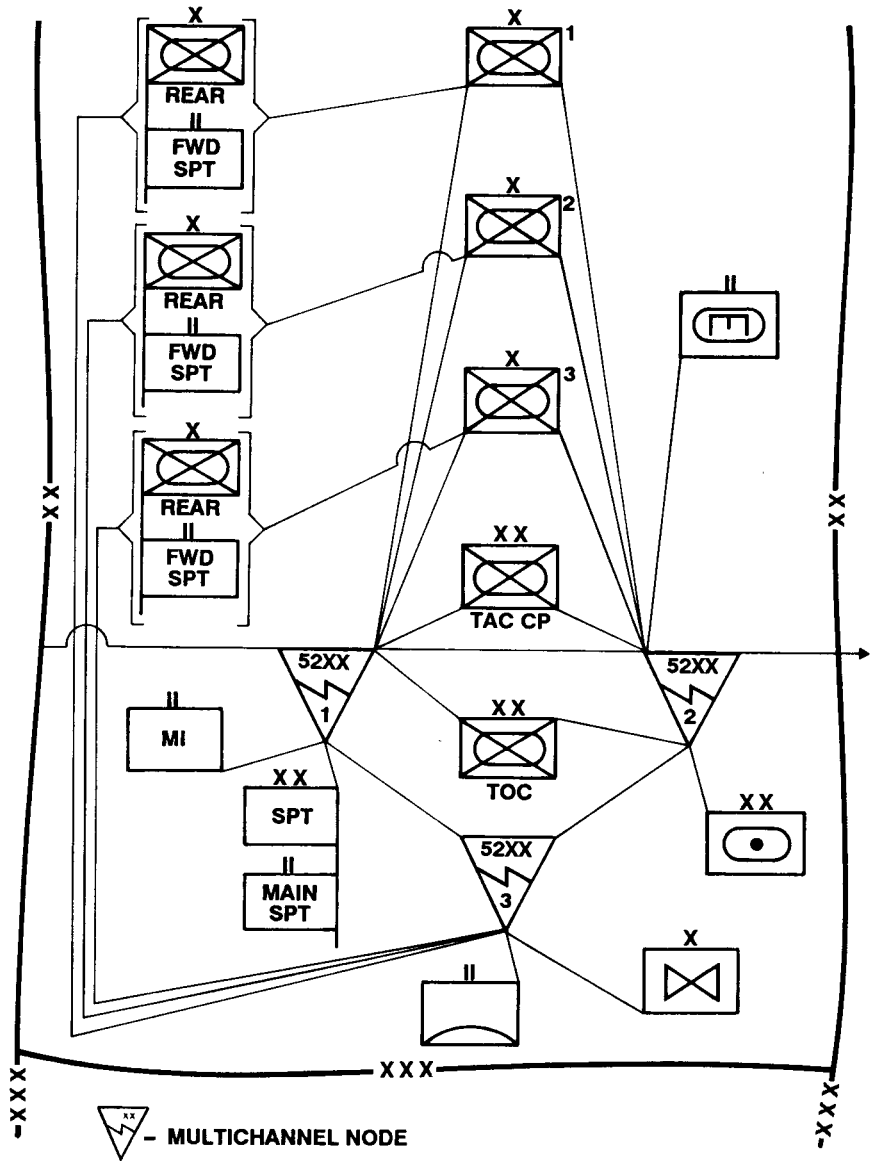


Figure 3-1 Sample Armored/Mechanized Infantry Division Multichannel Diagram
(Current Area System)

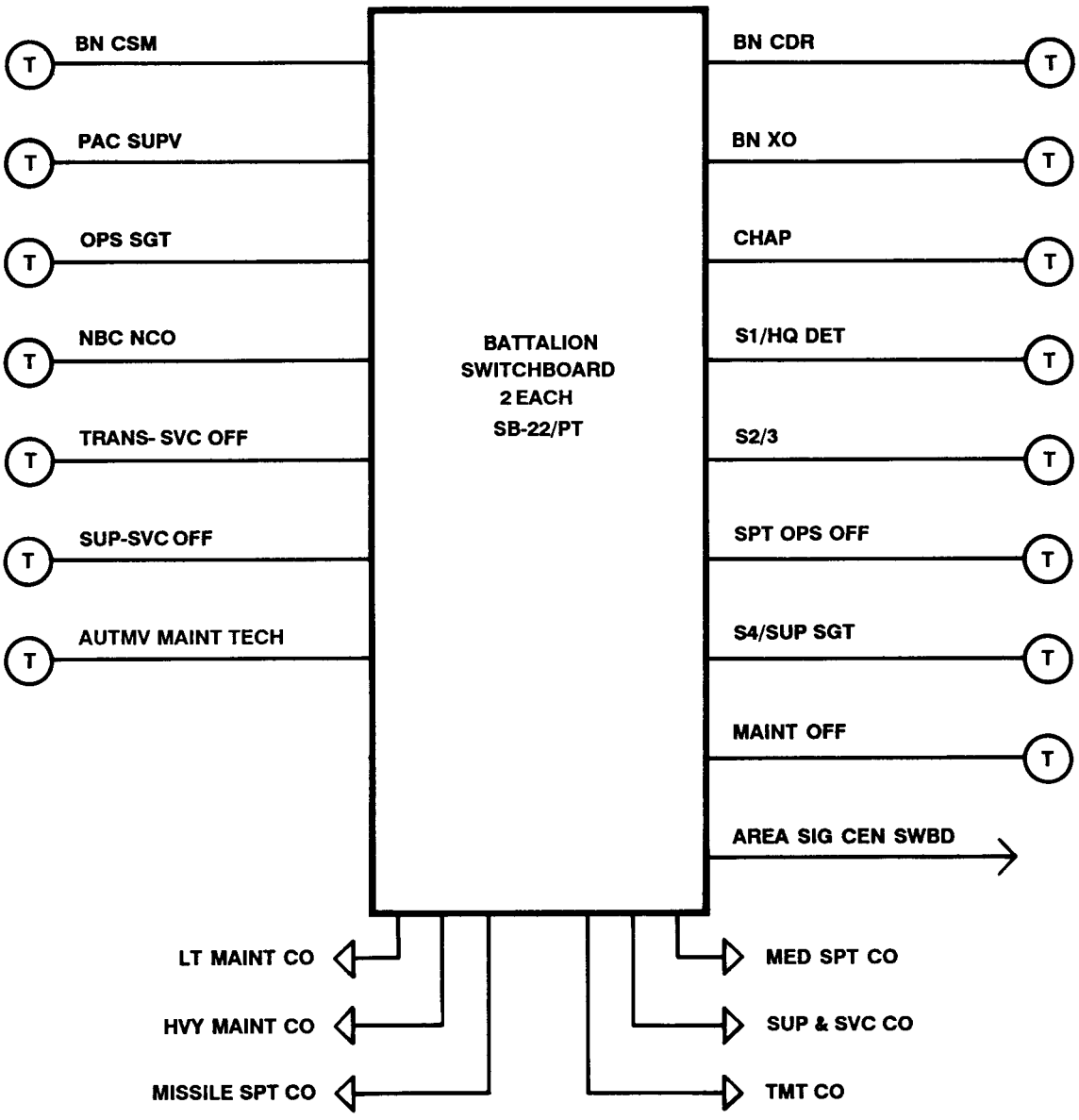


Figure 3-2 HHD Wire Net

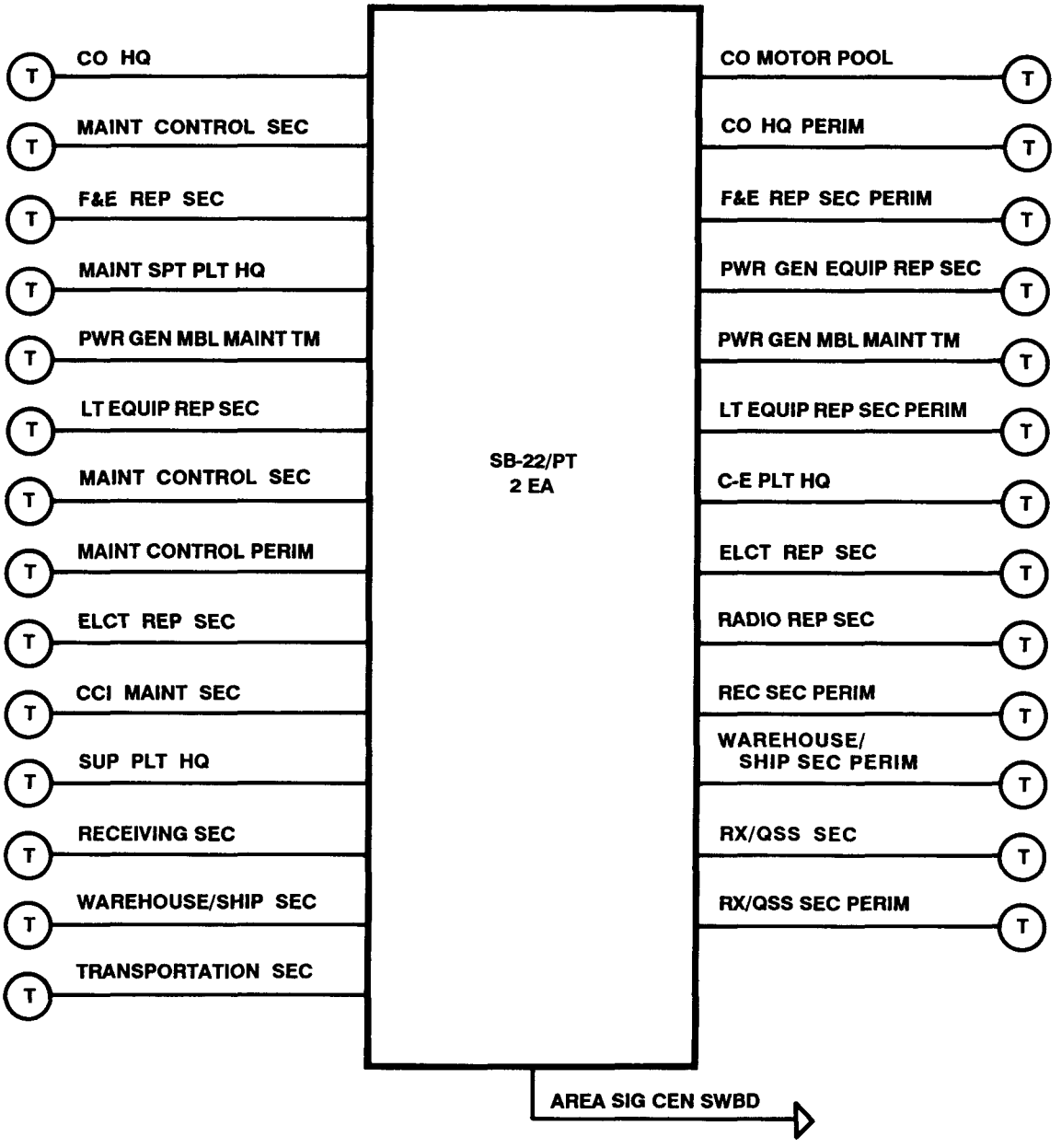


Figure 3-3 Light Maintenance Company Wire Net

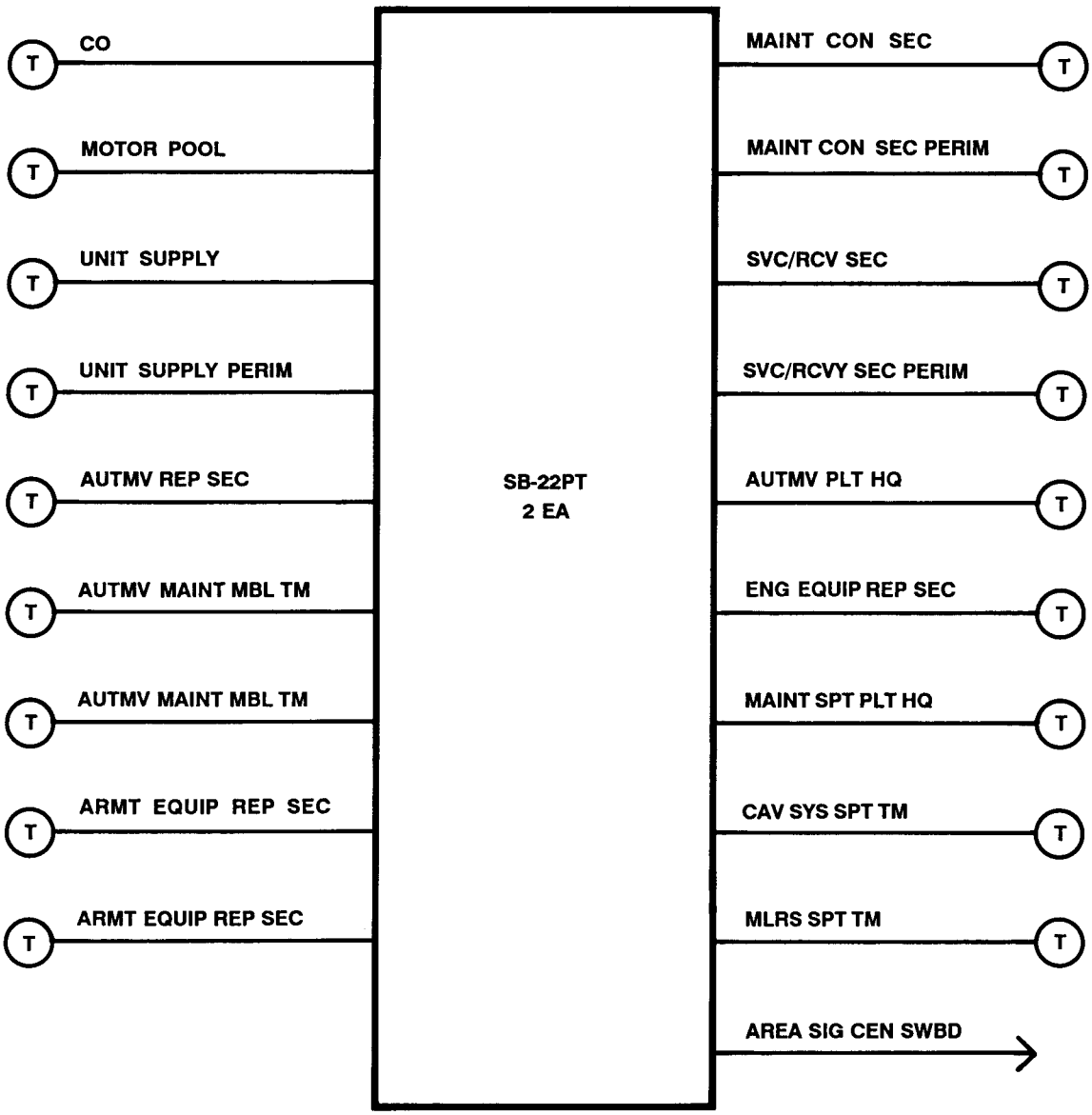


Figure 3-4 Heavy Maintenance Company Wire Net

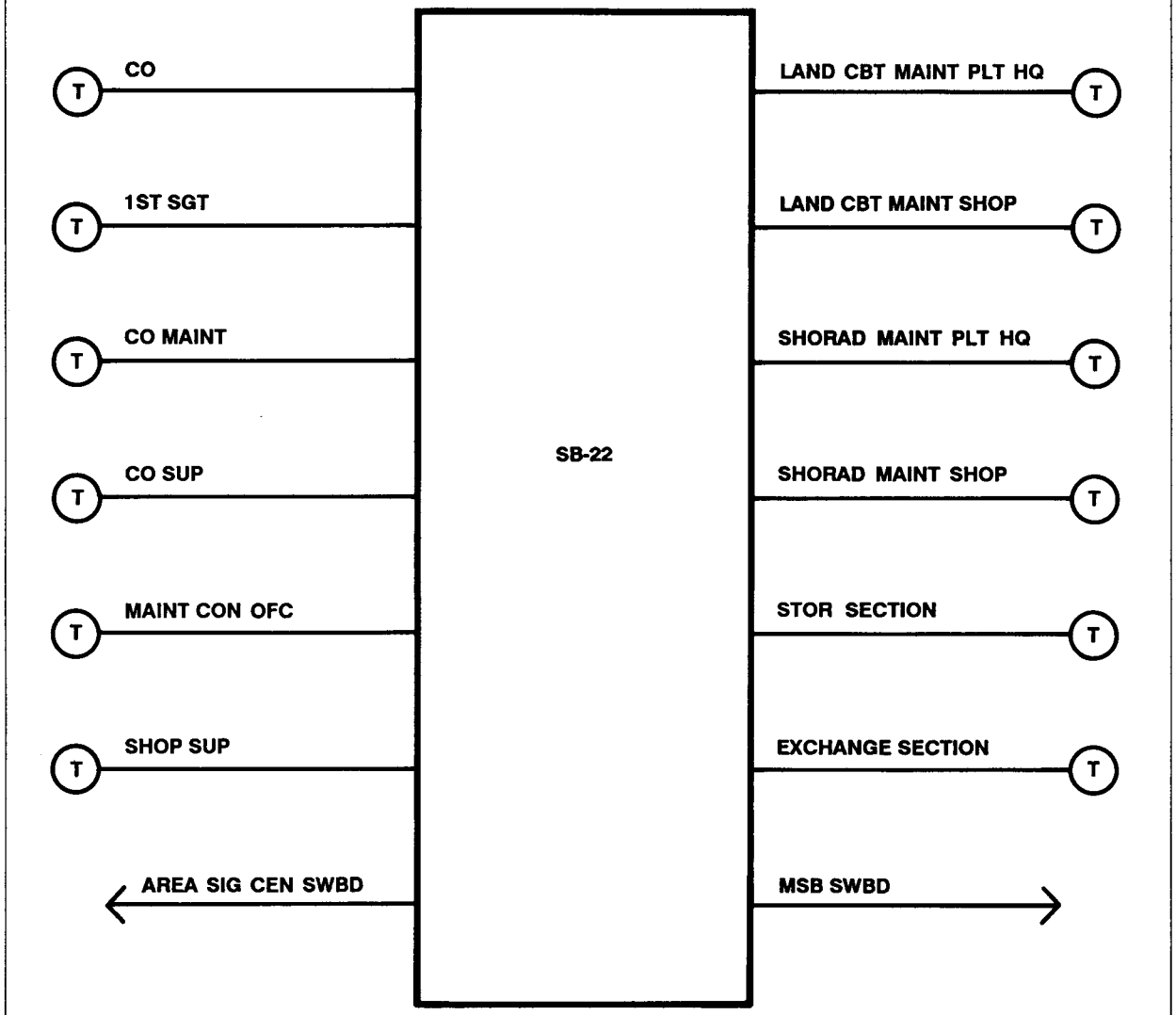


Figure 3-5 Missile Support Company Wire Net

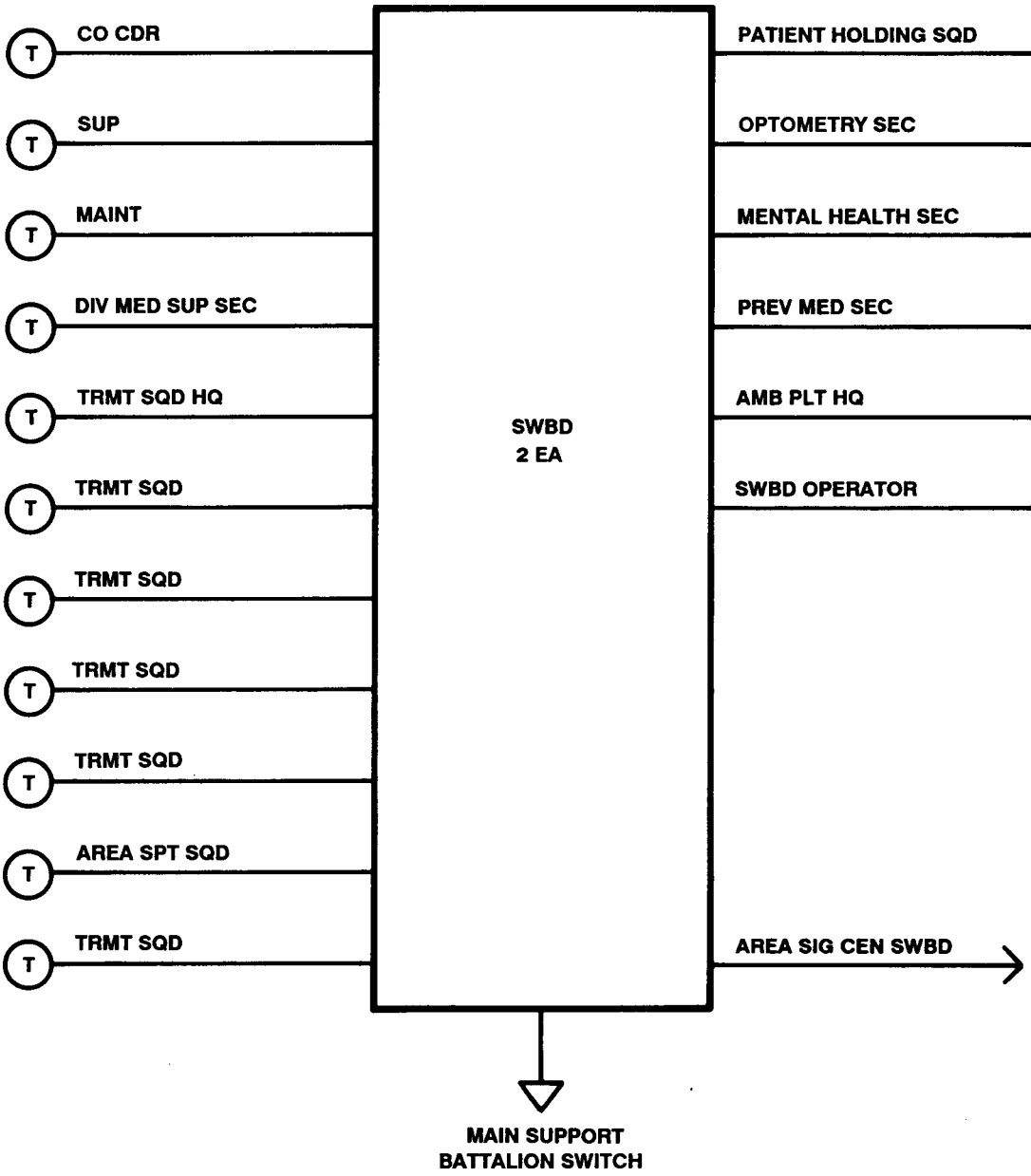


Figure 3-6 Medical Company Wire Net

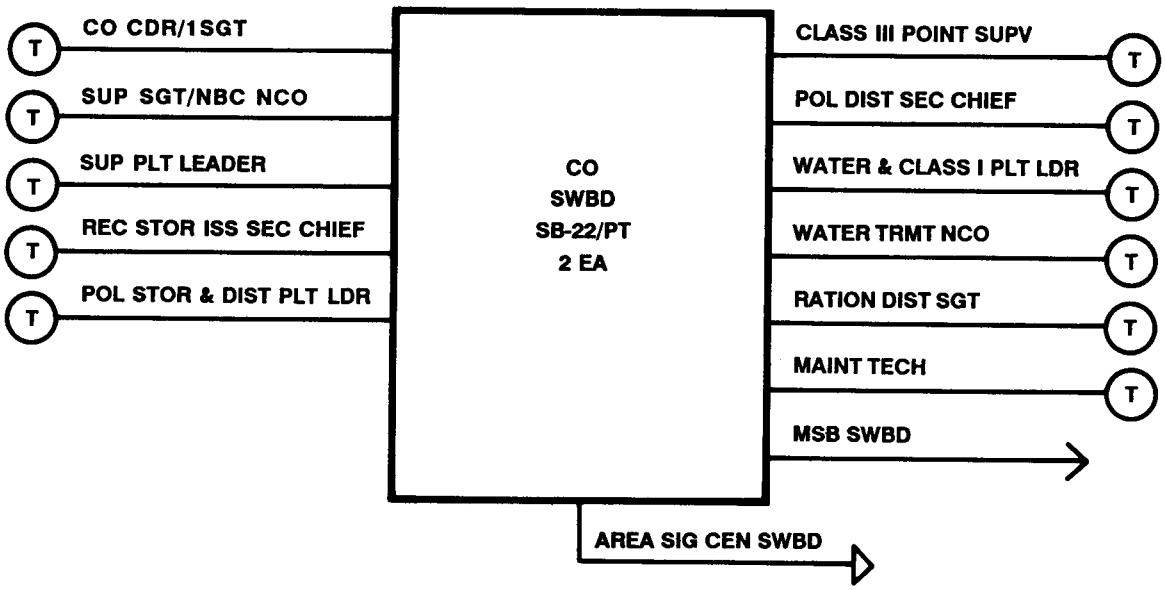


Figure 3-7 Supply and Service Company Wire Net

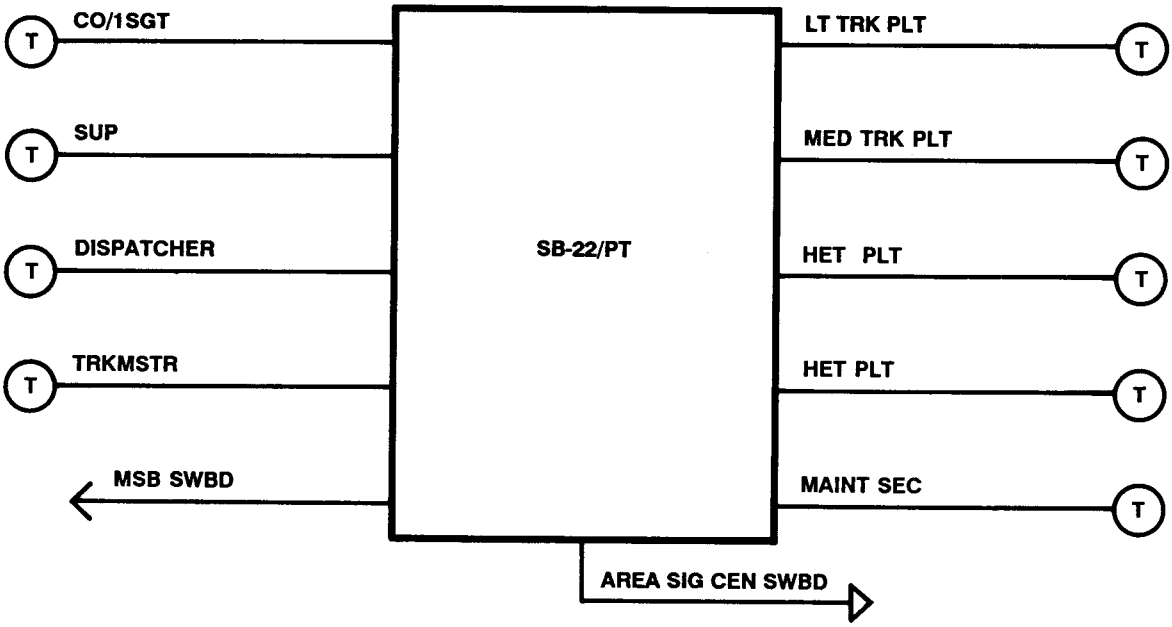


Figure 3-8 Transportation Motor Transport Company Wire Net

area system. Methods of tie-in into the area system will be dependent on tactical dispersion of units.

When the MSE area system replaces the current area system, the current 2-wire unit switchboards and telephone instruments will not be capable of entering the 4-wire digital MSE area system. The MSB as well as other units will retain the organic, 2-wire equipment, for internal communications requirements.

MSE AREA COMMUNICATIONS SYSTEM

MSE is the area common user voice communications system within the division. It is the backbone of the corps system and will be deployed from the corps rear boundary forward to the division maneuver battalion's main CP. MSE is comprised of five functional areas:

- Area coverage, corps and division C2 communications system.
- Wire subscriber access using DNVT.
- Subscriber terminals.
- Mobile subscriber access using MSRT or CNR.
- Nodal switching.

The MSB will participate in the first four of the above stated functional areas.

AREA COVERAGE

Area coverage means that MSE provides common user support to a geographical area, as opposed to dedicated support to a unit or customer. Figure 3-9 shows the deployment of area nodes across a corps area. These nodes are called node centers. They are depicted in Figure 3-10. They are under the control

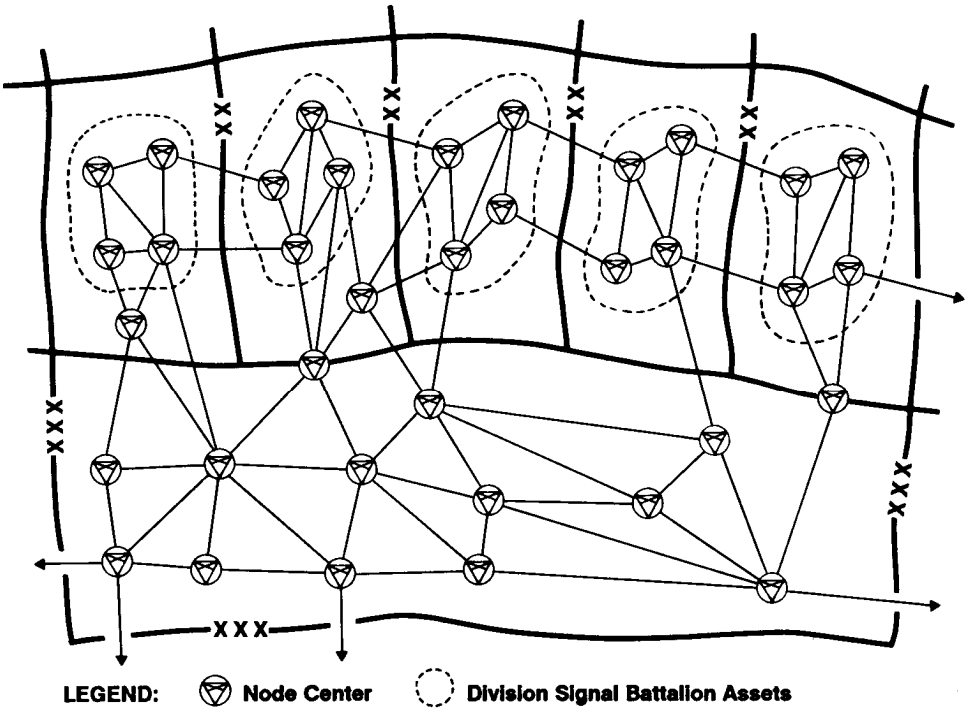


Figure 3-9 Deployment of Area Node (MSE)

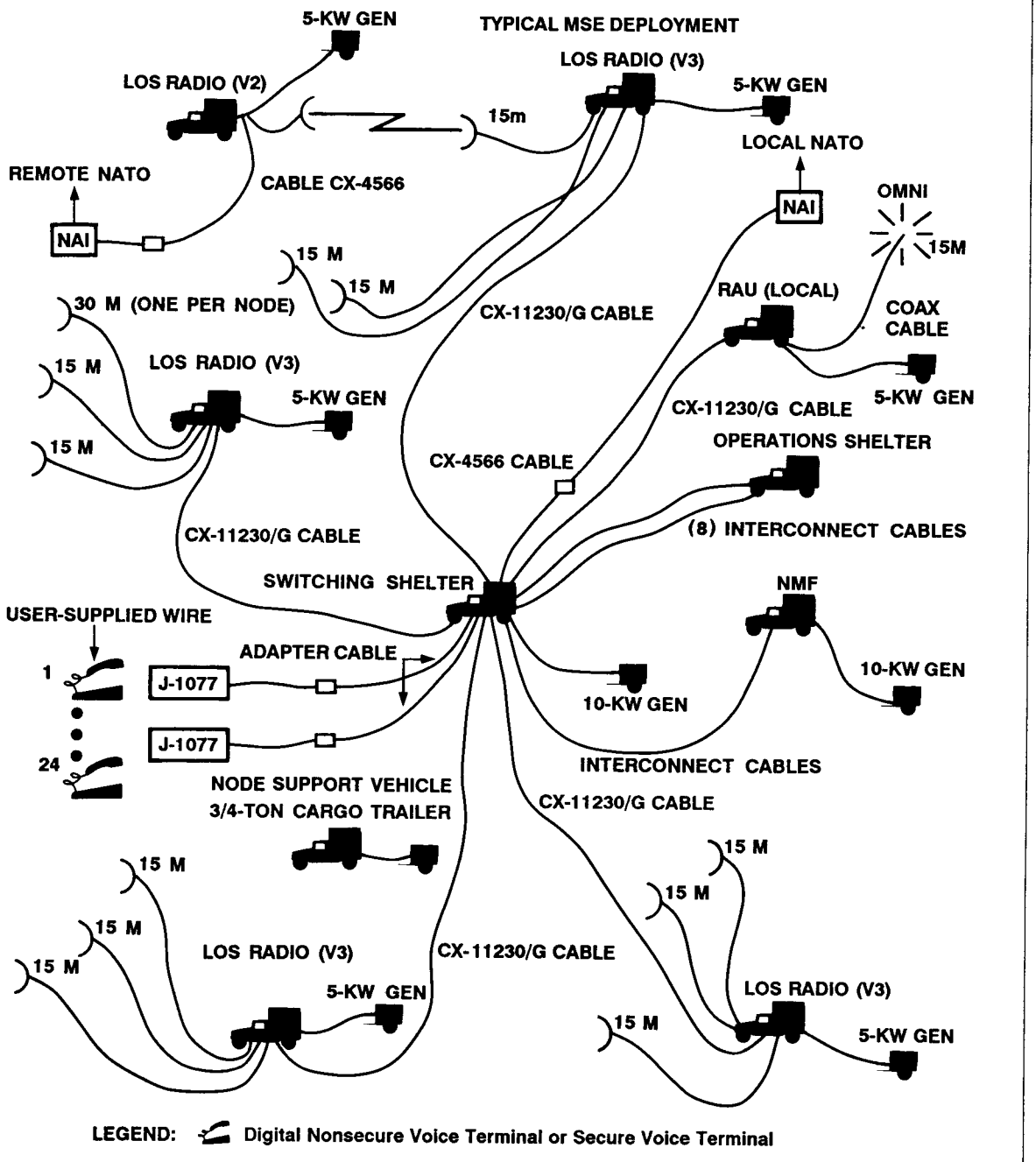


Figure 3-10 Node Center

of the corps signal officer to meet the needs of the corps commander's intent.

At the division level, the division signal battalion operates four of these nodes. Connected to these nodes, via lime-of-sight radios, are small extension node switchboards and large extension node switchboards. The following switchboards are organic to the division signal battalion:

- 12 SEN (VI) switchboards capable of supporting 26 subscribers each.
- 4 SEN (V2) switchboards capable of supporting 41 subscribers each.
- 1 LEN switchboard capable of supporting 176 subscribers.

A typical deployment of switchboards within the division is shown in Figure 3-11. Tactical dispersion requirements will, in most cases, require the MSB to tie into a SEN rather than the LEN. The deployment of SEN/LEN switchboards is merely one approach. The location of switchboards will be determined by the division C-E officer's recommendation to the G3. This recommendation will be based on METT-T, the commander's intent and customer requirements. The SEN/LEN location should not be related to a specific unit.

WIRE SUBSCRIBER ACCESS

Wire subscriber access points will provide the entry (interface) points between user owned and operated freed subscriber terminal equipment, and the MSE area system, operated by the corps, division signal battalions.

Figures 3-12 through 3-14 show the MSE switchboard configurations which the MSB may tie into the area system. The two types of interface equipments are —

- The signal distribution panel (junction box) J-1077. Each panel will provide up to 13 subscriber access points.

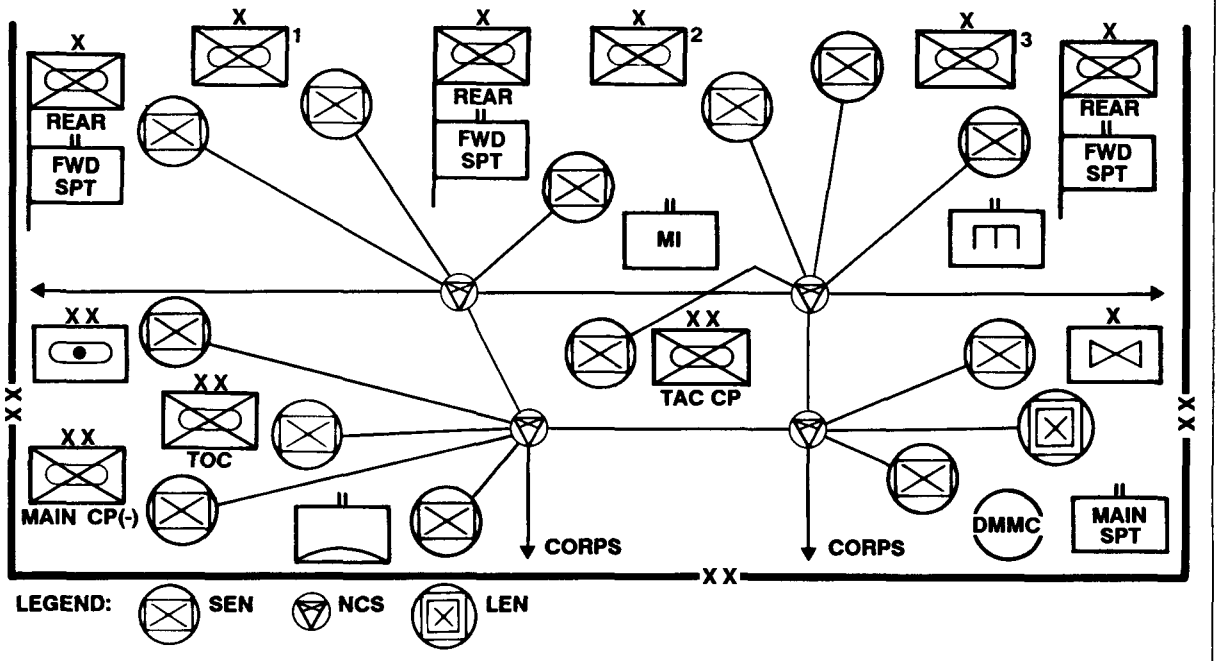


Figure 3-11 Division Deployment of SEN and LEN Switchboards

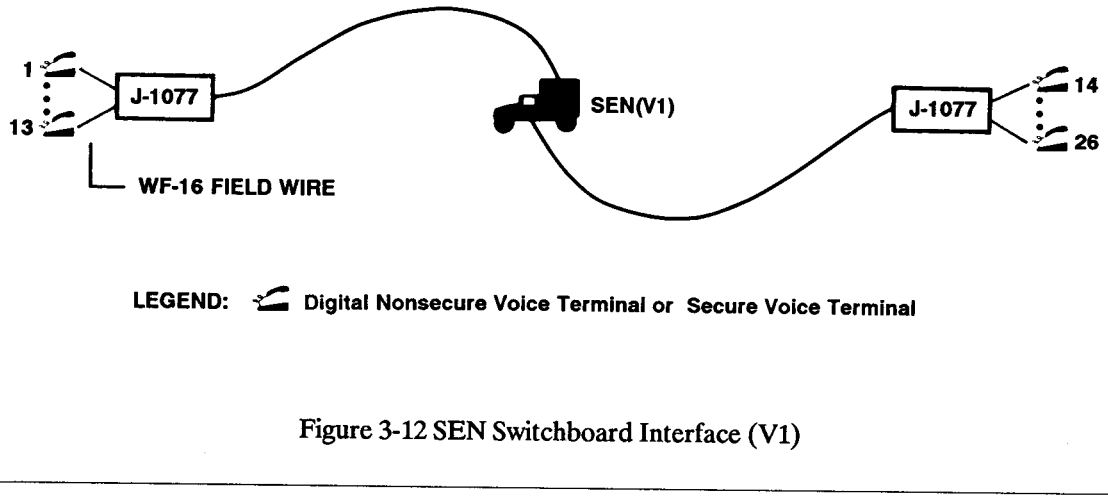


Figure 3-12 SEN Switchboard Interface (V1)

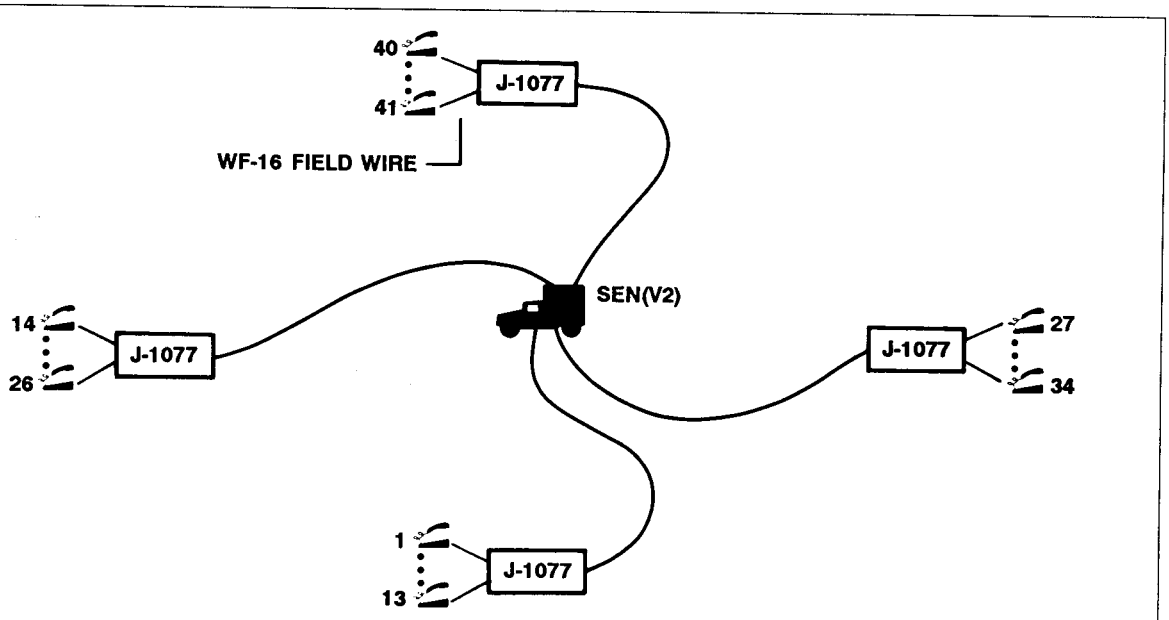


Figure 3-13 SEN Switchboard Interface (V2)

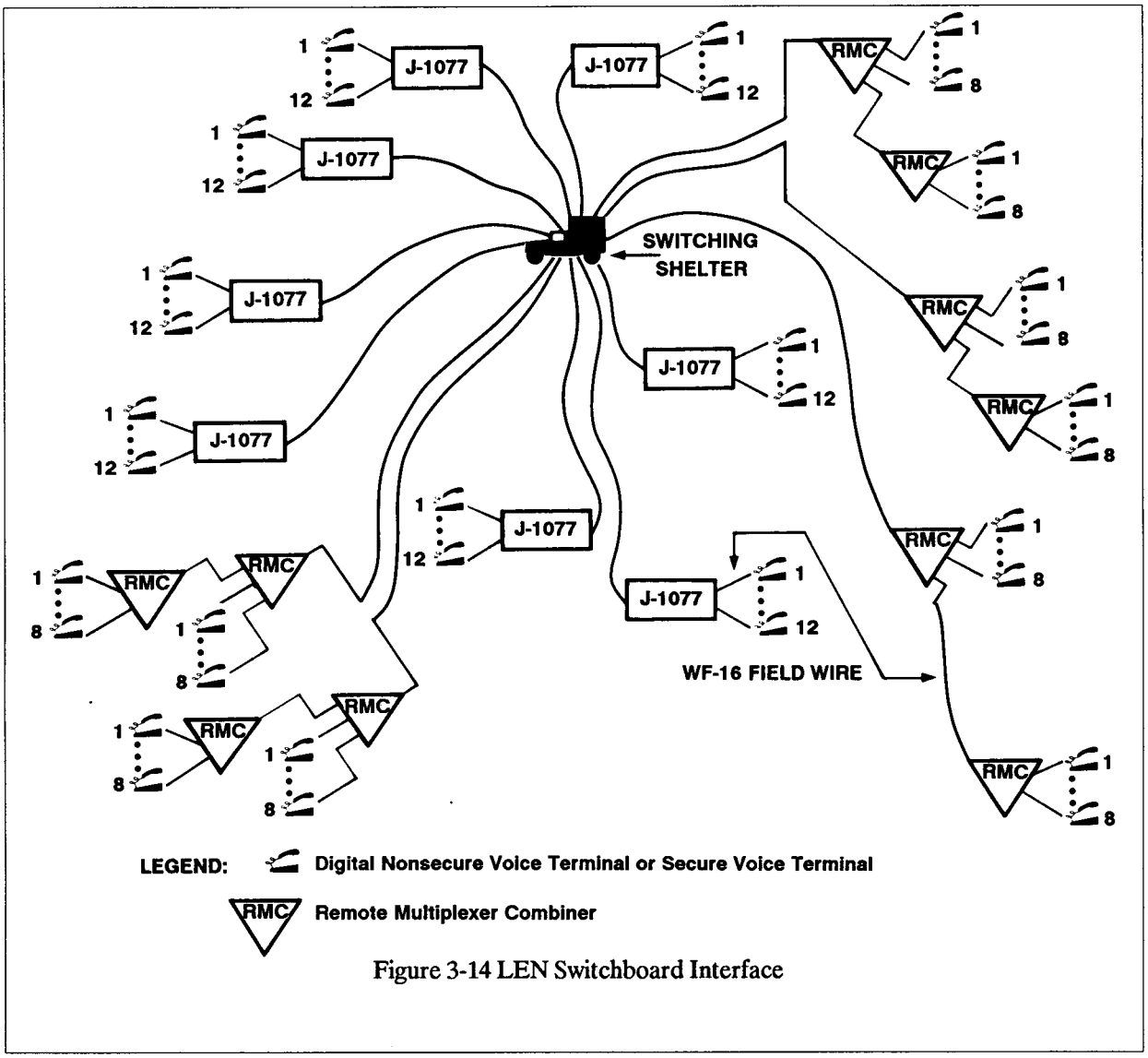


Figure 3-14 LEN Switchboard Interface

- Remote multiplexer combiners which provide access for eight subscriber access points.

Beyond these two interface points (J-1077 and RMC), the using units are responsible for the installation and operation of freed subscriber terminal instruments as well as the installation and maintenance of the WF 16 field wire from the instruments to the interface points (J-1077 and RMC) into the area MSE system.

WF 16 wire consists of hvo pairs of wire. One pair is olive drab, the other brown. The olive drab pair has a ridge along the side for night identification.

SUBSCRIBER TERMINALS (FIXED)

Subscriber terminals used by the MSB headquarters and its organic companies are the digital nonsecure voice telephones. This is the prime MSE subscriber terminal and provides full duplex digital, 4-wire voice as well as a data port for interfacing the

AN/UXC-7 facsimile, TACCS computer, the unit level computer, and the interface for the MSB into the ATCCS.

MSE is primarily designed as a voice switching network. Until data transfer systems become available or MSE is enhanced with a packet switching capability, automation terminals should be kept to a minimum. Bulk data requirements should be met with another means of transfer, such as courier. See Figure 3-15. Figures 3-16 and 3-17 portray the assignment of DNVT, FAX, ATCCS and ULC for the MSB and its companies. The DNVT will tie into the area system through either a panel or an RMC.

MOBILE SUBSCRIBER TERMINAL

The MSE terminal is the AN/VRC-97 or MSRT This MSRT, which consists of a very high frequency radio and a digital secure voice terminal, is a vehicle-mounted assembly. It interfaces with MSE system through a radio access unit. The primary use of the MSRT is to provide mobile subscribers access to the MSE area network.. Figure 3-18 is a typical MSRT interface into the area system. RAUs are deployed to maximize area coverage and MSRT concentrations. The MSRT provides key mobile subscriber access to the area system. MSRT can also operate in a CP location to allow access to staff and functional personnel.

COMBAT NET RADIO SYSTEM

The combat net radio structure is designed around three separate radio systems; each has different capabilities and transmission characteristics. The three systems are –

- Improved high frequency radio.
- Single-channel ground and airborne radio.
- Single-channel objective tactical terminal.

SCOTT is a stand-alone transportable tactical satellite communications terminal that will be transparent to the MSB. The other two systems, IHFR and SINCGARS, will provide a means of voice transmission of C2 information and a means for data transmission, which will be required if data transfer requirements cannot be met by the MSE system.

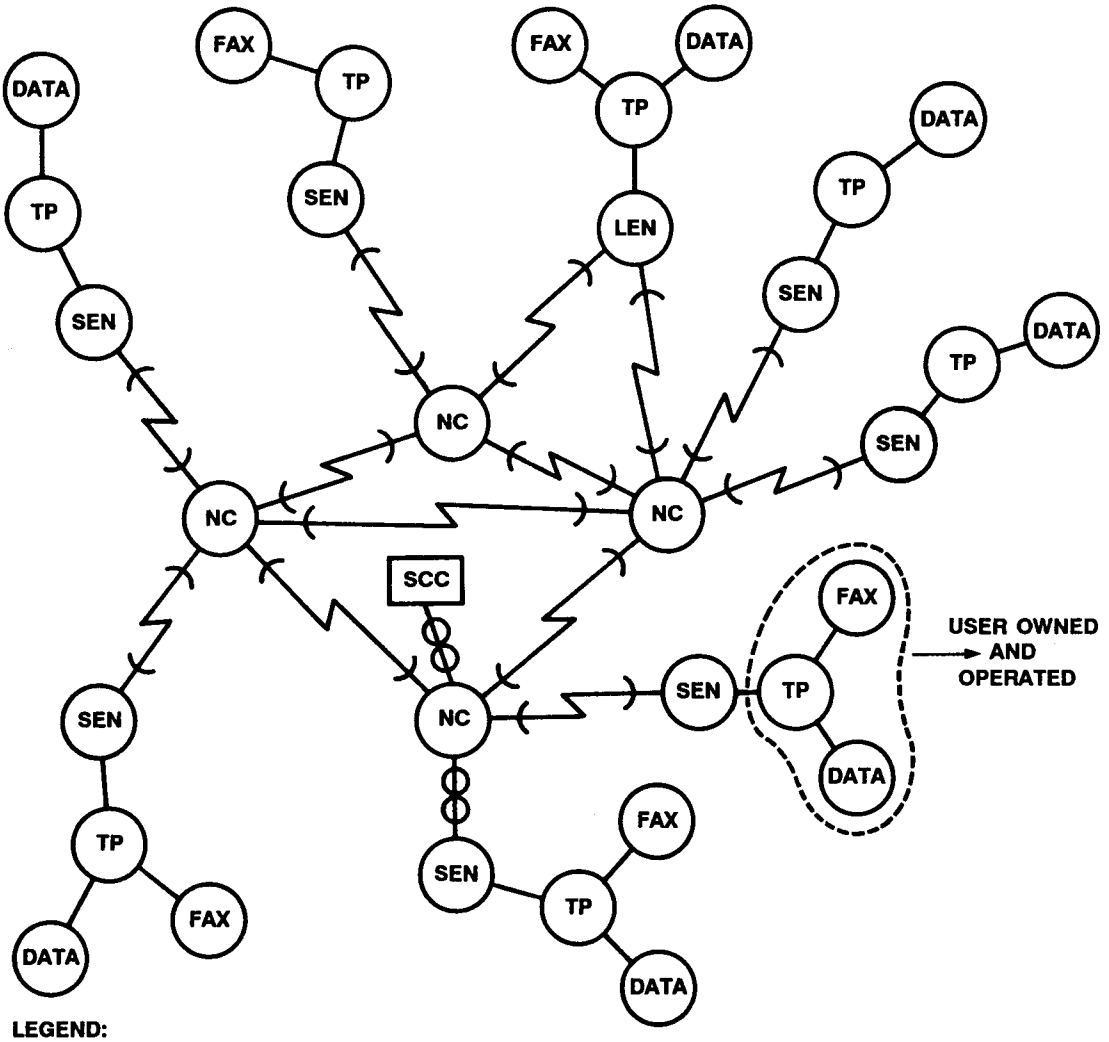
Current CNR equipment in the MSB are the AN/GRC-106 and the AN/VRC-12 series radios. These will be replaced by AN/GRC-213 and SINCGARS series, respectively. The AWGRC-213 is a low-power manpack/vehicular radio. It interfaces with the other configurations of the IHFR system. SINCGARS is a new family of VHF-FM radios. These radios are designed for simple, quick operation using a 16-element keypad for operation for voice or digital data communications. They are capable of short-range or long-range operation for voice or digital data communications. The planning range is 8 to 35 kilometers. They are capable of a single-channel operation for interface with the AN/VRC 12 series or other FM radios operating in a single channel mode. They also operate in a jam resistent, frequency-hopping mode which can be changed as needed.

Diagrams for each net operated by the MSB are presented in this section. Each is presented first with the current equipment (AN/VRC-12 and GRC-106 radios) and then with the SINCGARS and IHFR radios. The second diagram for each net does not represent a simple, one-for-one replacement, old for new. Rather the diagram reflects the application of incremental change packages for SINCGARS and IHFR over a period of time. (The assignment of radio equipment to specific sections was influenced by a requirements validation review.)

MSB COMMAND/OPERATIONS NET

This net is used to command and control the elements of the MSB both from a tactical (rear operations) and from a CSS mission perspective. Net control is maintained by the communications branch of the S2/S3 section. The S2/S3 section and support operations section colocate and use a combination of remotes and installed radios to operate in the following external nets:

- DISCOM Command/Operations Net.



LEGEND:

SCC - System Control Center
NC - Node Center
LEN-Large Extension Node (Switchboard)
SEN - Small Extension Node(Switchboard)
TP-Digital Nonsecure Voice Telephone (DNVT-TA1035/U)
FAX-AN/UXC-7 Facsimile
DATA - Tactical Army CSS Computer System/Army Tactical C2 System/Unit Level Computer

Figure 3-15 Division Fixed Subscriber Terminals

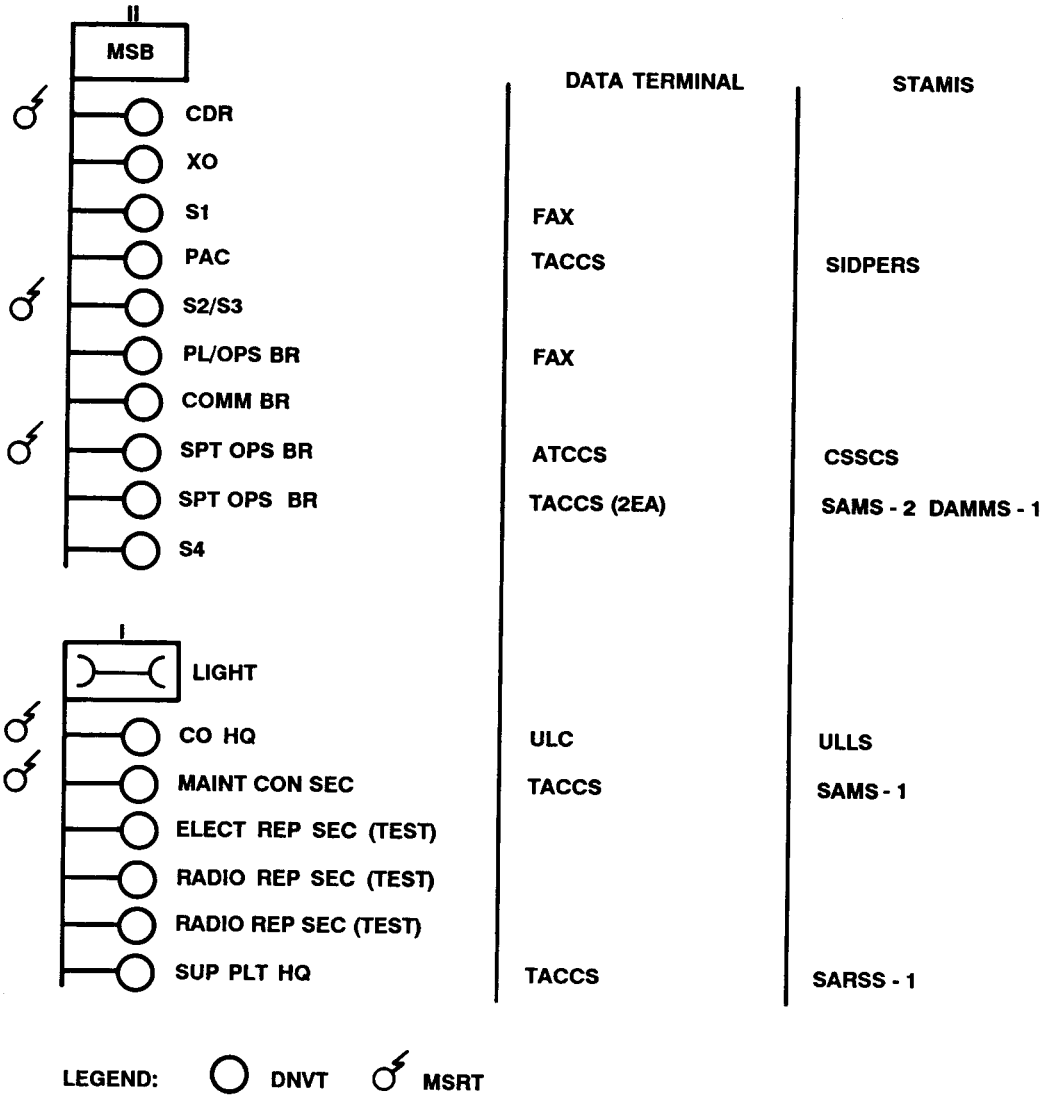


Figure 3-16 MSB Subscriber Terminal Assignments (Fixed and Mobile)

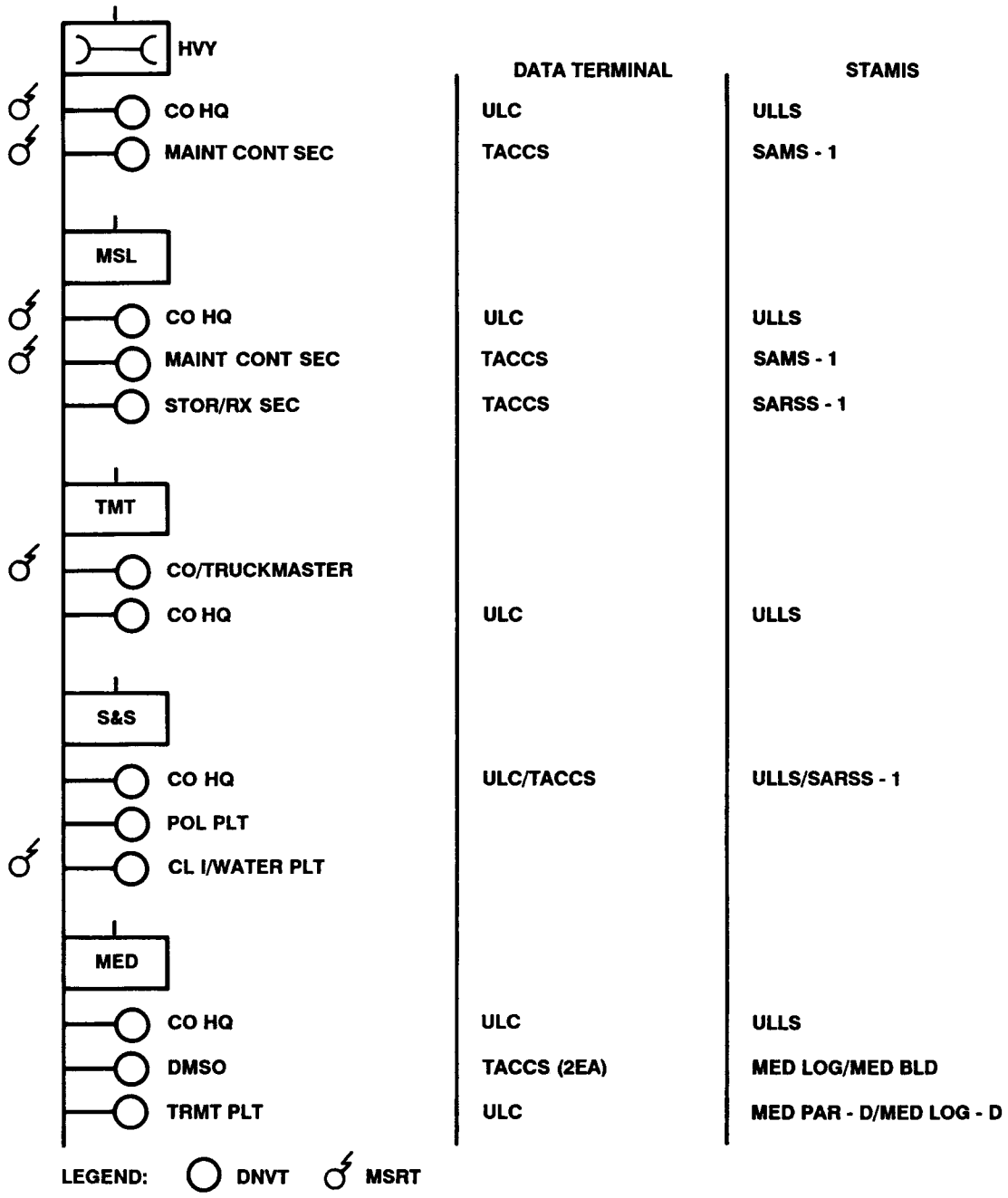


Figure 3-17 MSB Subscriber Terminal Assignment (Cont)

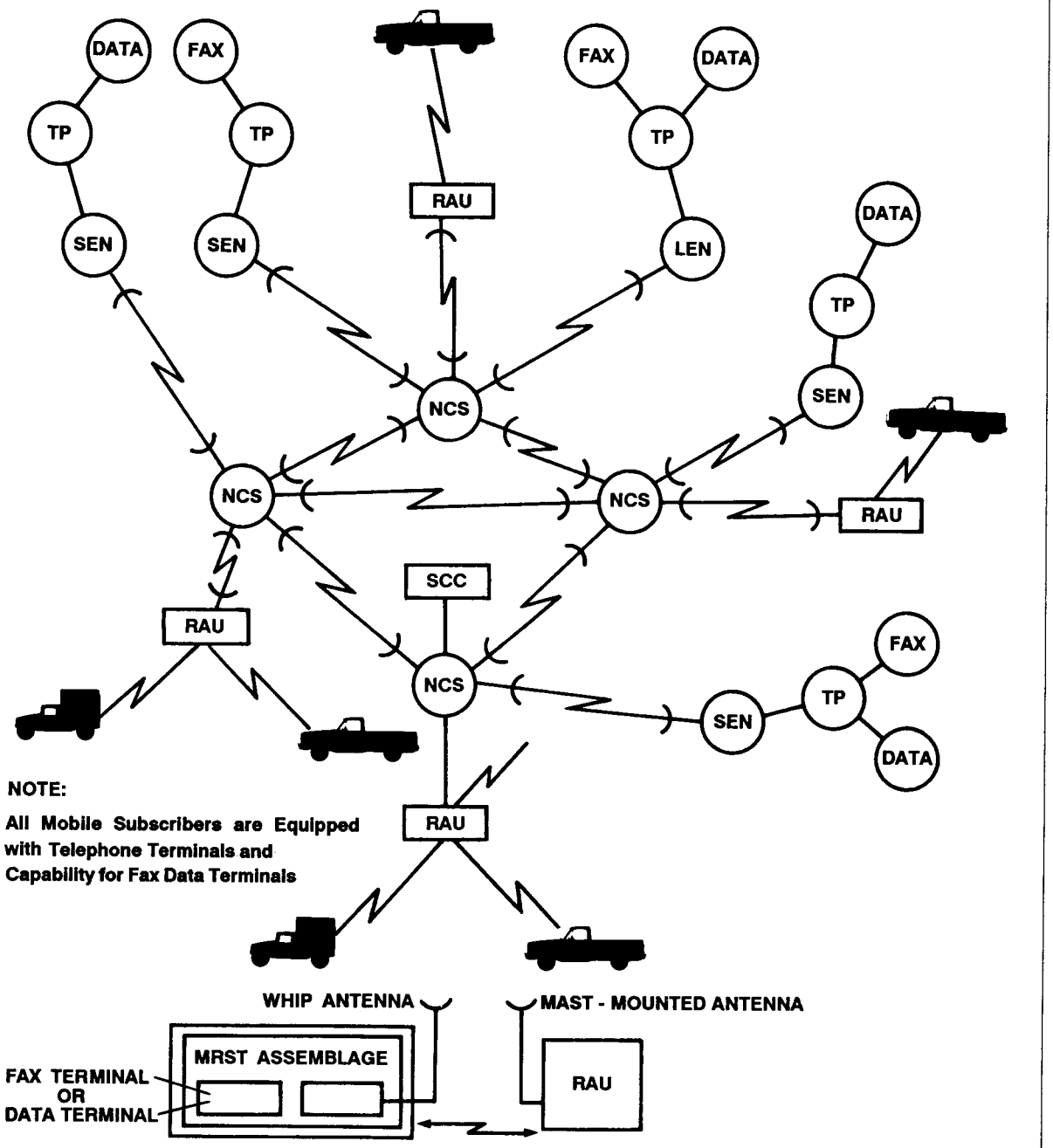


Figure 3-18 Mobile Subscriber Interface

- DISCOM Logistics Operations Net.

See Figures 3-19 and 3-20 for the MSB command/operations net.

SUPPLY AND SERVICE COMPANY NET

This command net provides C2 for the company. Each of the five water points have radios in this net. The petroleum platoon is allocated three tanker units with radios for control purposes when convoys go forward to refueling points in the FSB area. See Figures 3-21 and 3-22 for the S&S company net.

MAINTENANCE COMPANIES COMMAND NETS

The maintenance companies nets provide C2 for their maintenance elements. At times elements of these companies will operate throughout the division area requiring close coordination of customer radio frequencies to meet on customer nets for coordination of maintenance requirements. See Figures 3-23 and 3-24 for the light maintenance company, Figures 3-25 and 3-26 for the heavy maintenance company, and Figures 3-27 and 3-28 for the missile support company.

MEDICAL COMPANY COMMAND NET - FM

The medical company FM net provides C2 for medical treatment and evacuation throughout the division area forward to the brigade rear boundaries. Dual net capability is provided at platoon and squad level for coordination with supported units and medical air evacuation. See Figures 3-29 and 3-30 for the medical company command net.

MEDICAL COMPANY OPERATIONS NET AM VOICE

The medical operations AM net provides long-range voice capability to tie the division medical elements into the overall corps medical treatment and evacuation system. See Figures 3-31 and 3-32 for the medical company operations net.

TRANSPORTATION MOTOR TRANSPORT COMPANY COMMAND NET - FM

This net provides C2 for truck platoons and squads. The company CP acts as NCS for the net and provides the truckmaster access for control and dispatch purposes. See Figures 3-33 and 3-34 for the transportation motor transport company net.

SIGNAL SECURITY

As part of the overall operations security program, MSB elements must consistently practice signal security. A vital consideration is siting of transmitting antennas. Sites must enable communications while minimizing the enemy's ability to intercept and locate transmissions. Considerations include —

- Remote antennas away from CPs by at least 1 kilometer.
- Construct and use directional antennas.
- Use terrain features, such as hills, vegetation, and buildings to mask transmission.
- Disperse transmitters.

Other guidelines on signal security include the following:

- Maintain radio or radio listening silence, using radio only when absolutely necessary.
- Distribute codes on a need-to-know basis.
- Use only authorized call signs and brevity codes.
- Use wire and messengers whenever feasible.
- Use available secure voice/RATT devices.
- Maintain net discipline and control.
- Use authentication and encryption codes specified in the current SOI.
- Keep transmissions short (less than 20 seconds).
- Report all COMSEC discrepancies to the net control station.
- Use lowest transmitter power output consistent with good communications.
- Avoid significant surges in traffic on single channel radio nets.

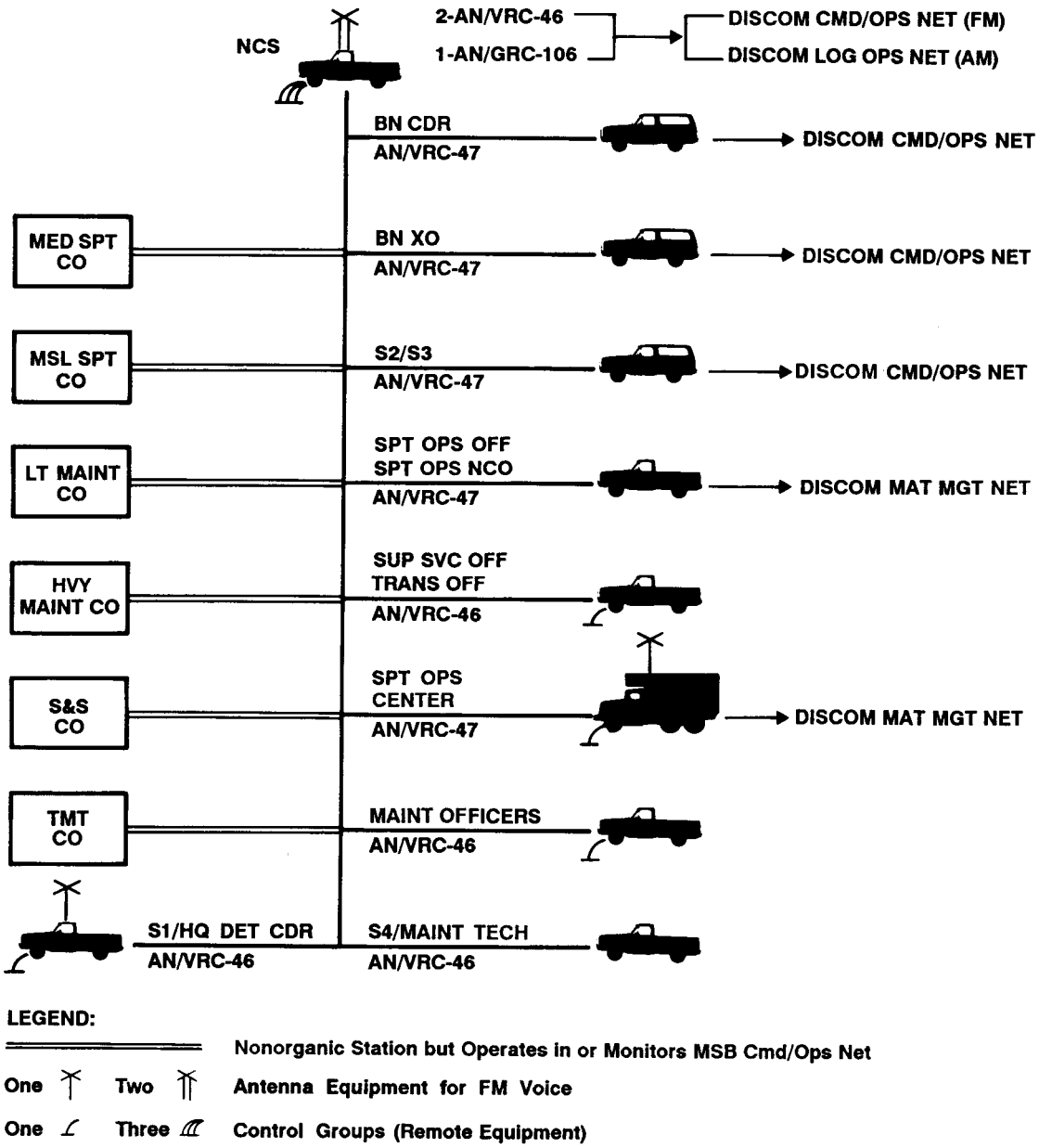


Figure 3-19 MSB Command / Operations Net, FM (AN/VRC-12 Series)

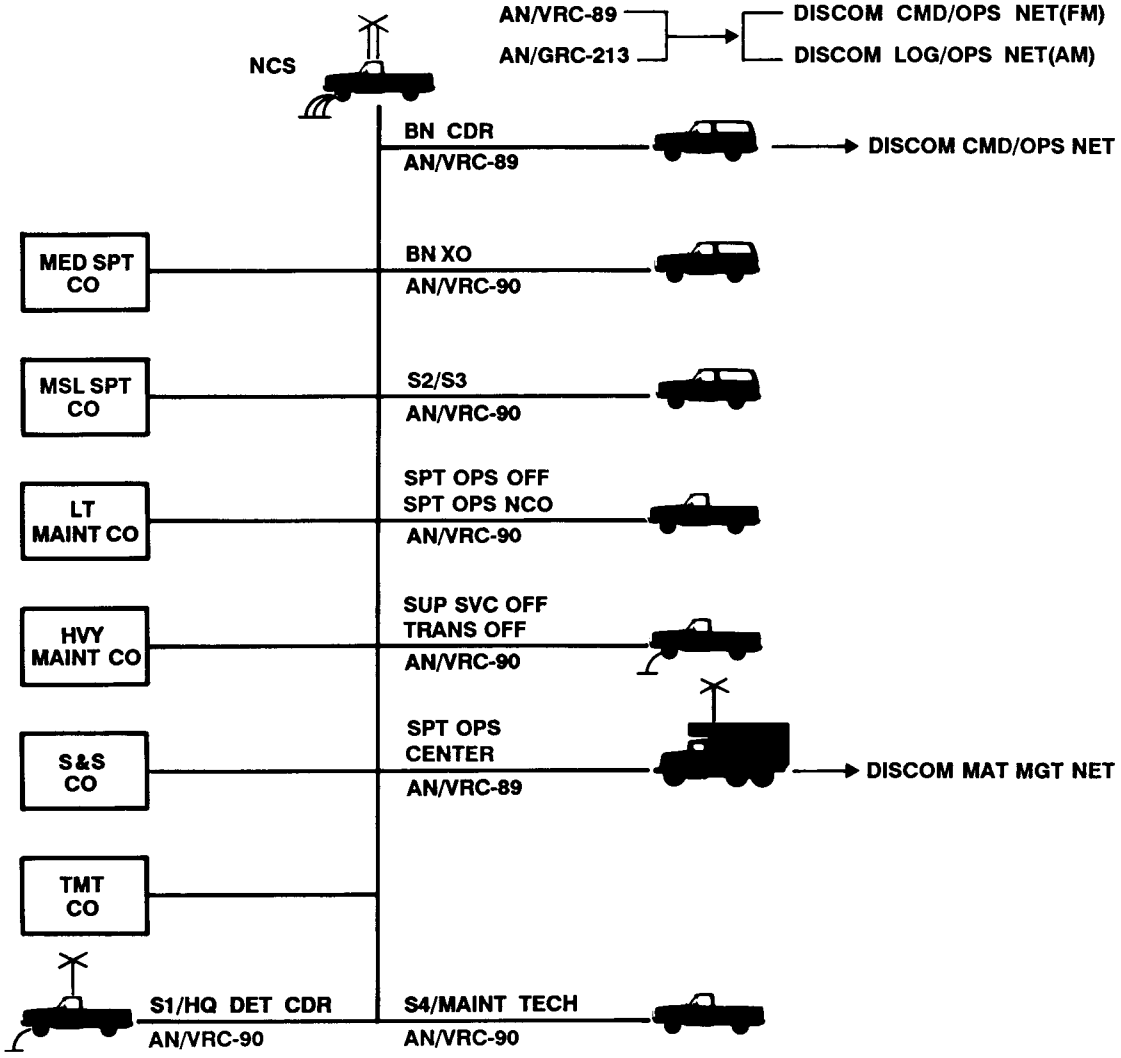


Figure 3-20 MSB Command / Operations Net, FM (SINCGARS)

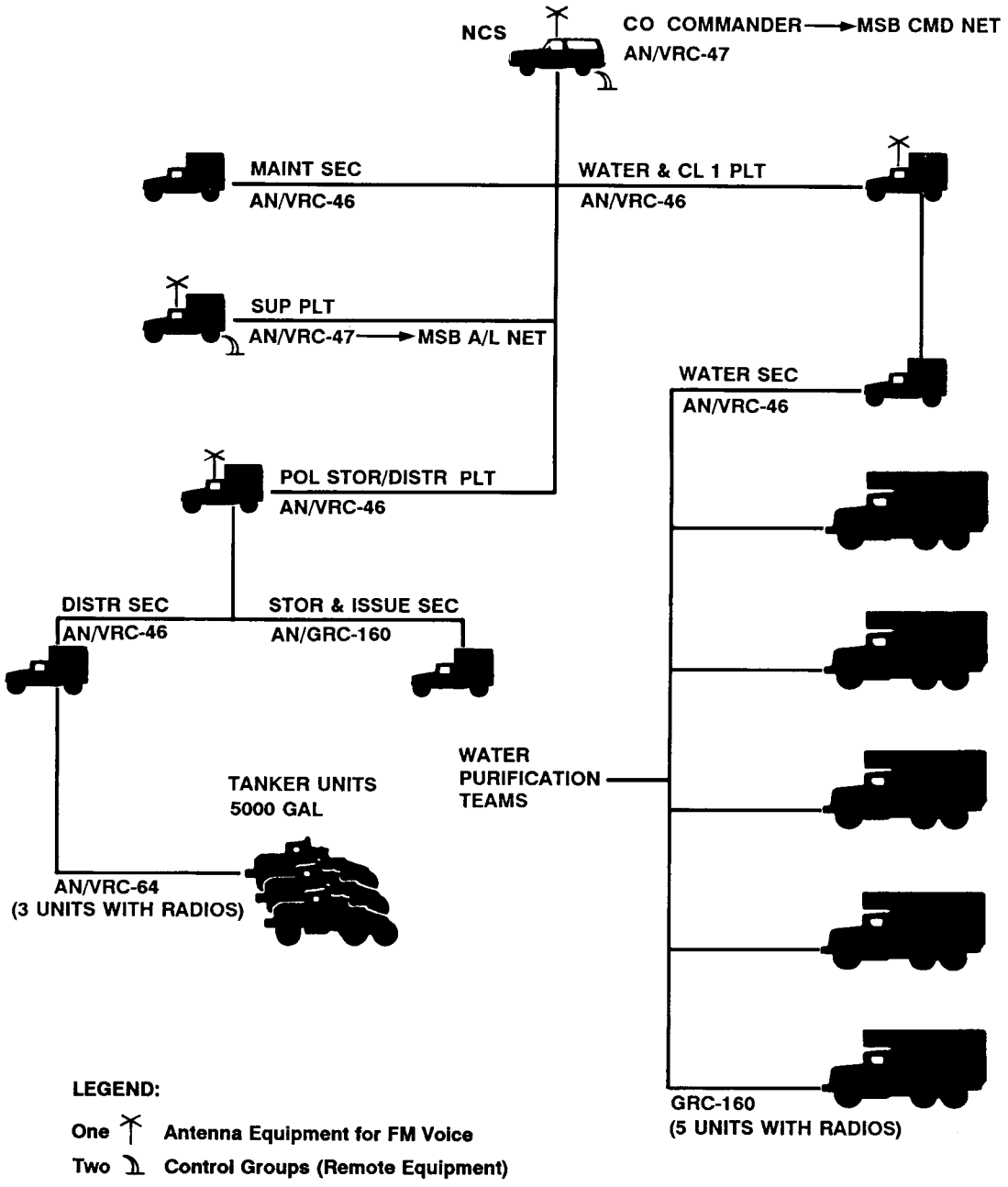


Figure 3-21 Supply and Service Company Command Net, FM (VRC-12 Series)

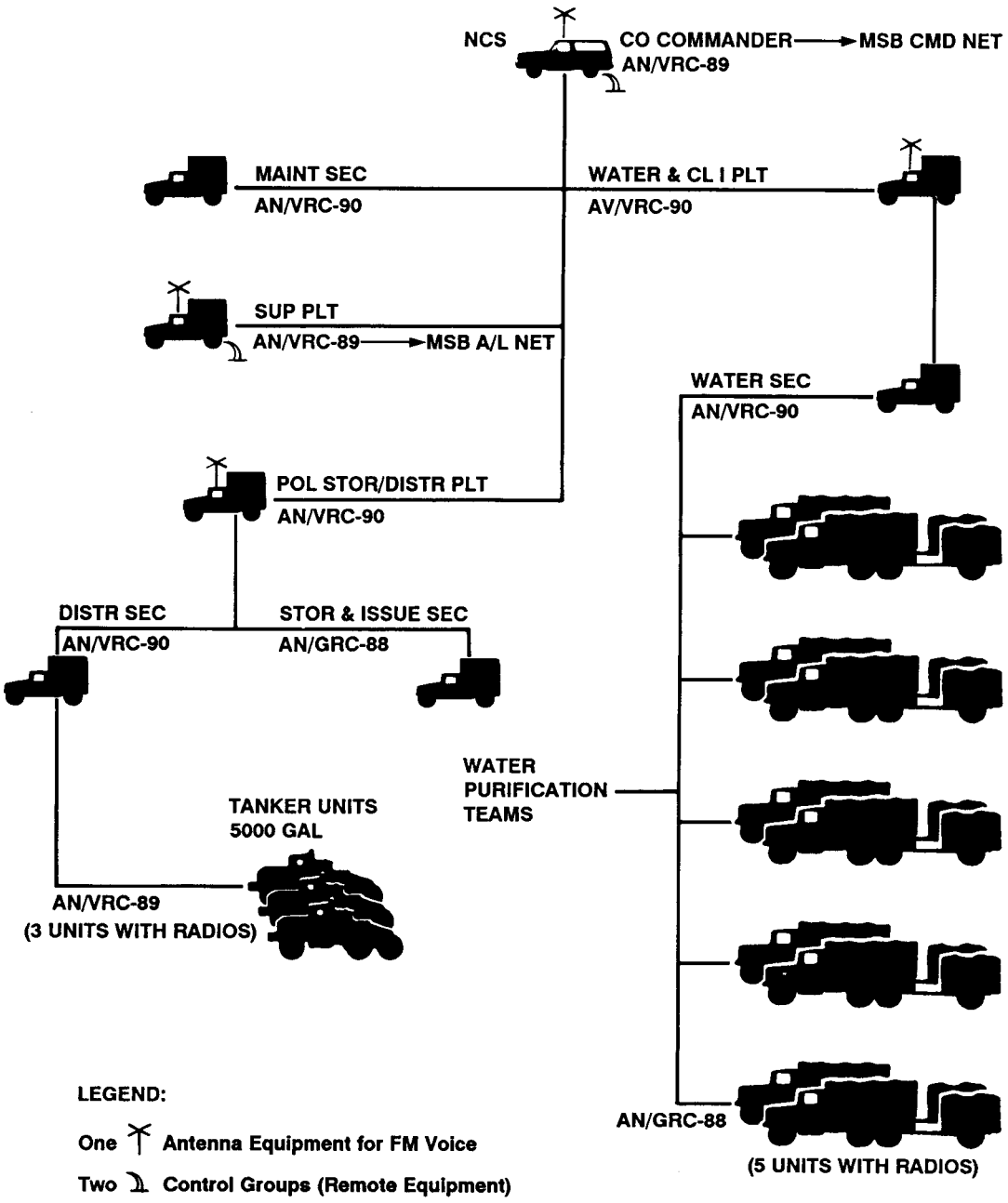


Figure 3-22 Supply and Service Company, FM (SINCGARS)

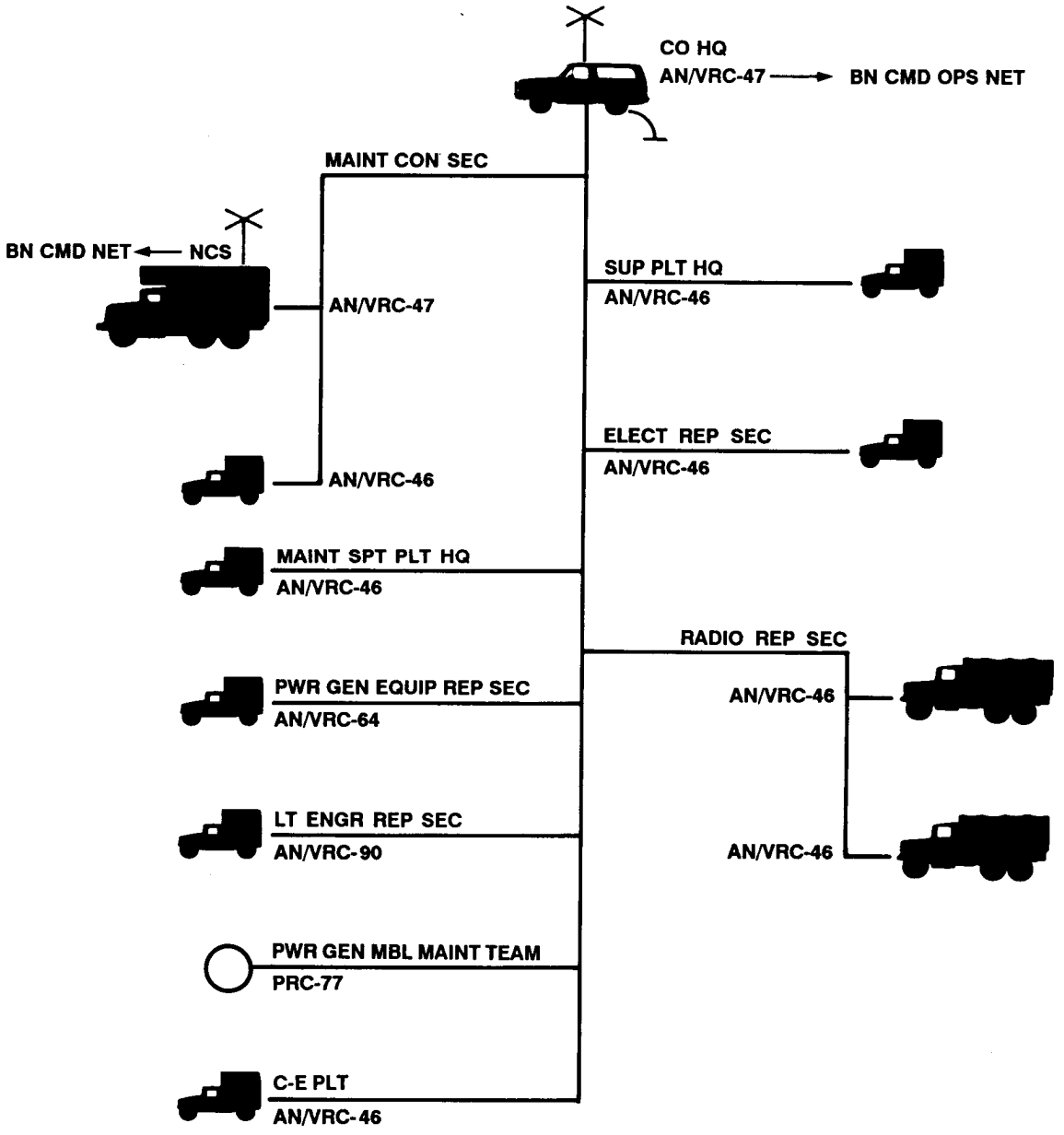


Figure 3-23 Light Maintenance Company Command Net, FM (AN/VRC-12 Series)

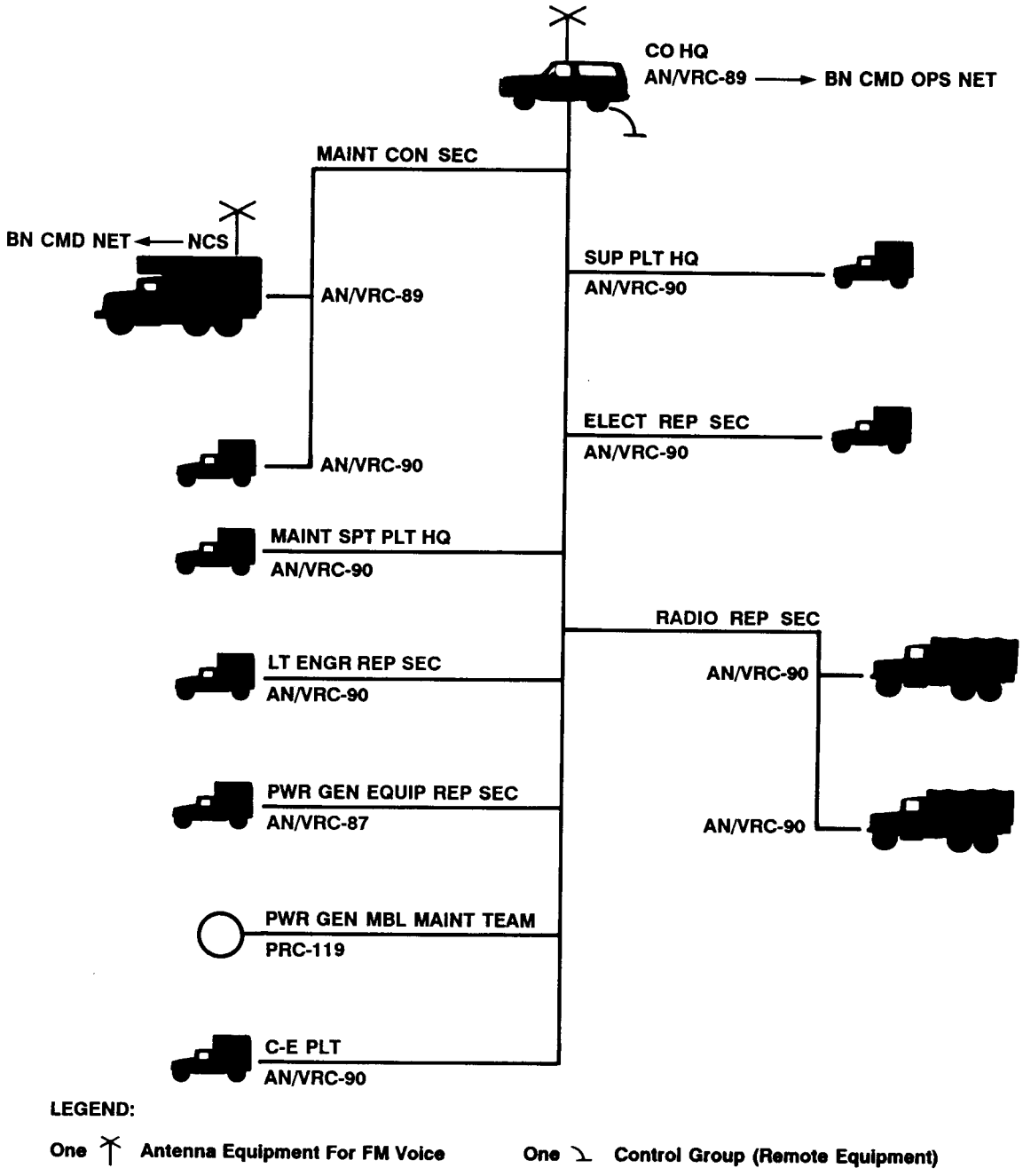


Figure 3-24 Light Maintenance Company Command Net, FM (SINCGARS)

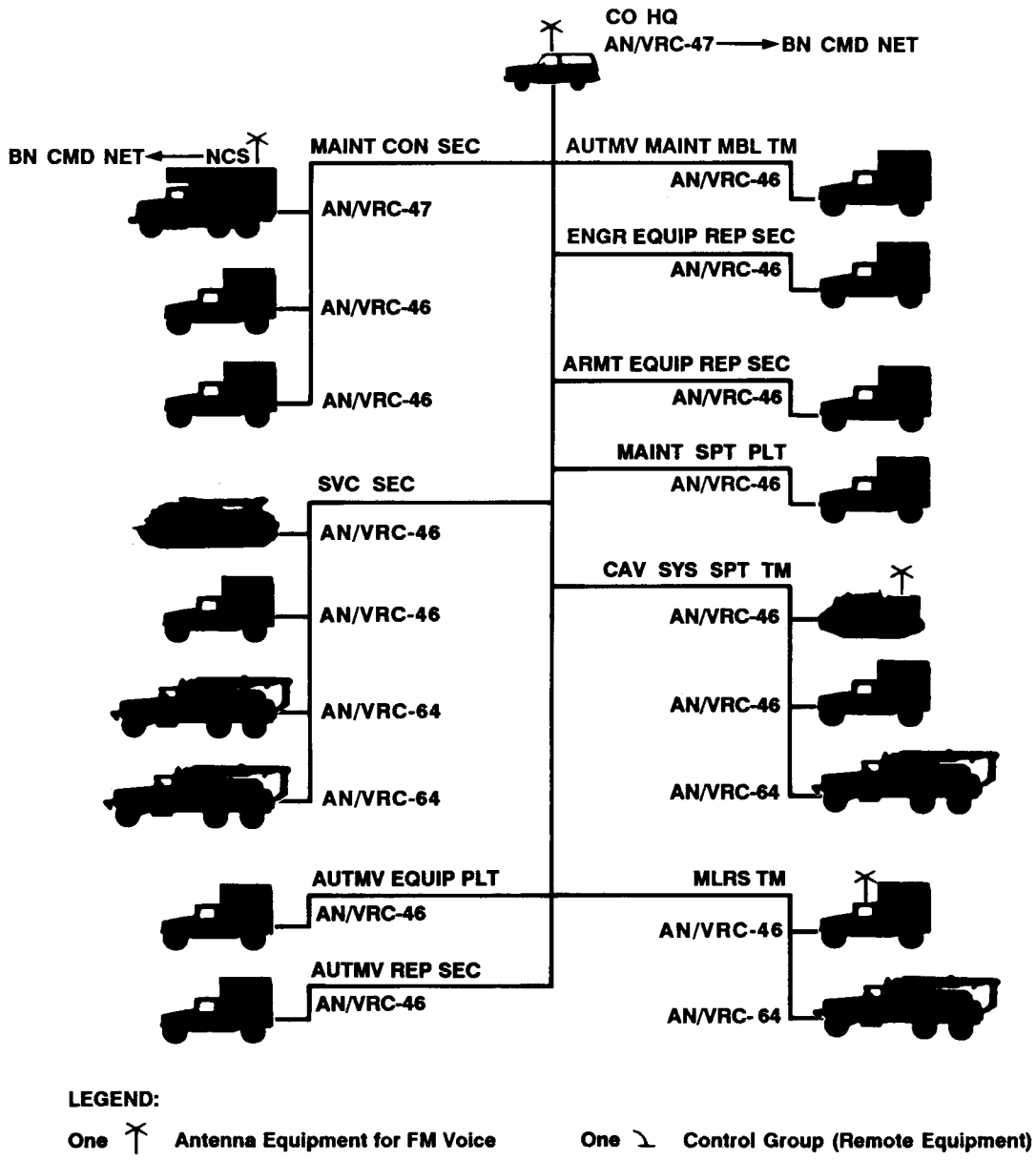


Figure 3-25 Heavy Maintenance Company Command Net, FM (AN/VRC-12 Series)

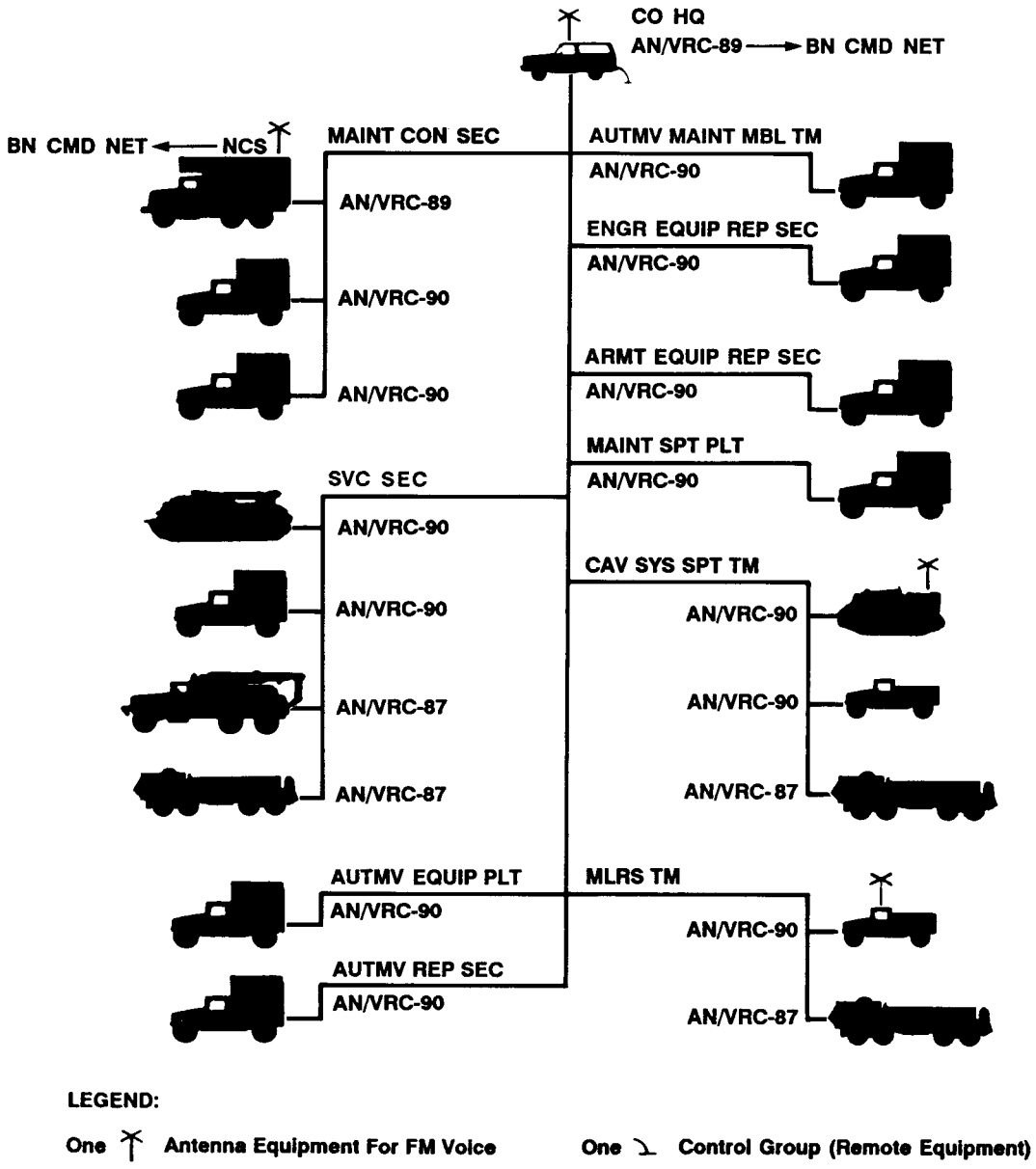


Figure 3-26 Heavy Maintenance Company Command Net, (SINCGARS)

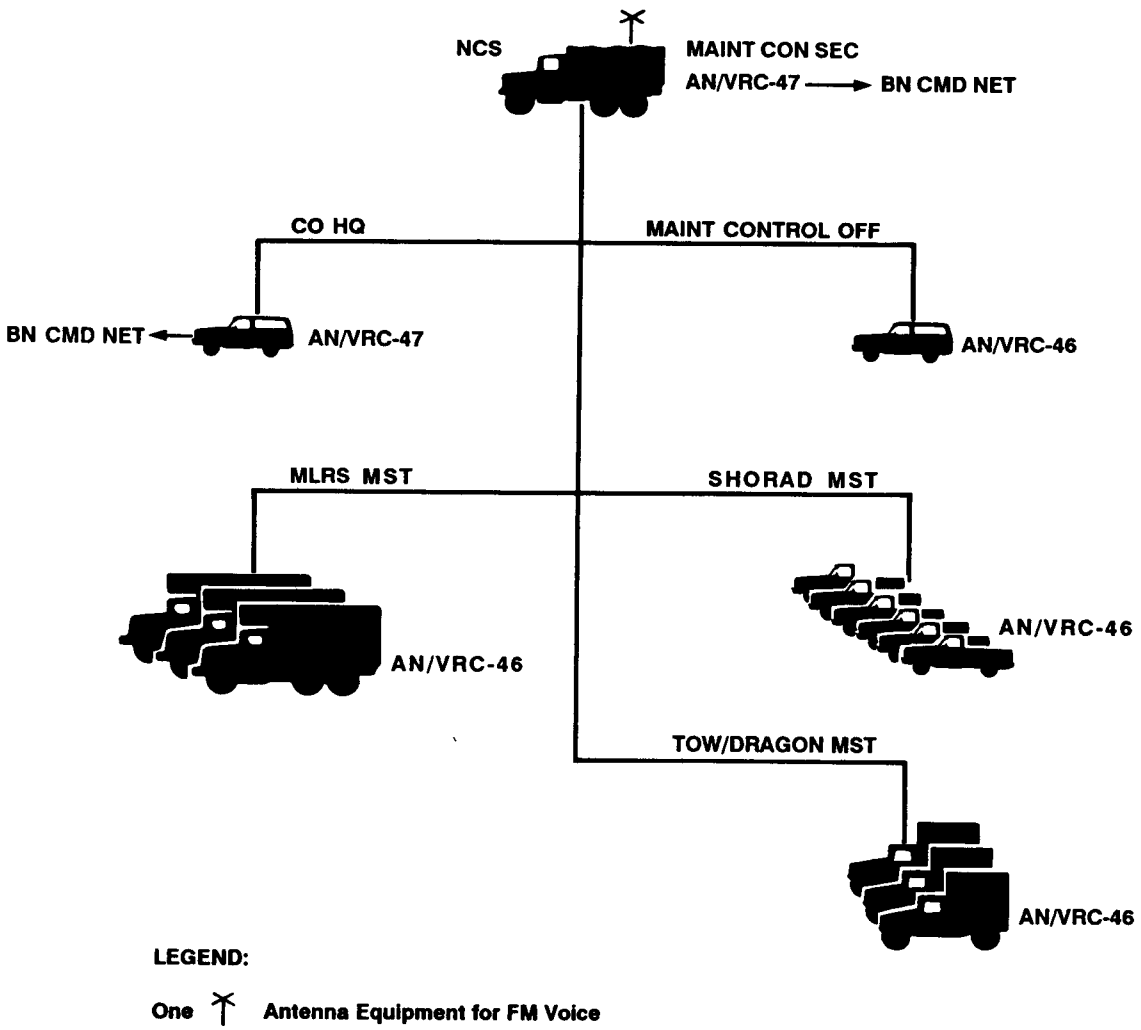


Figure 3-27 Missile Support Company Command Net, (AN/VRC-12 Series)

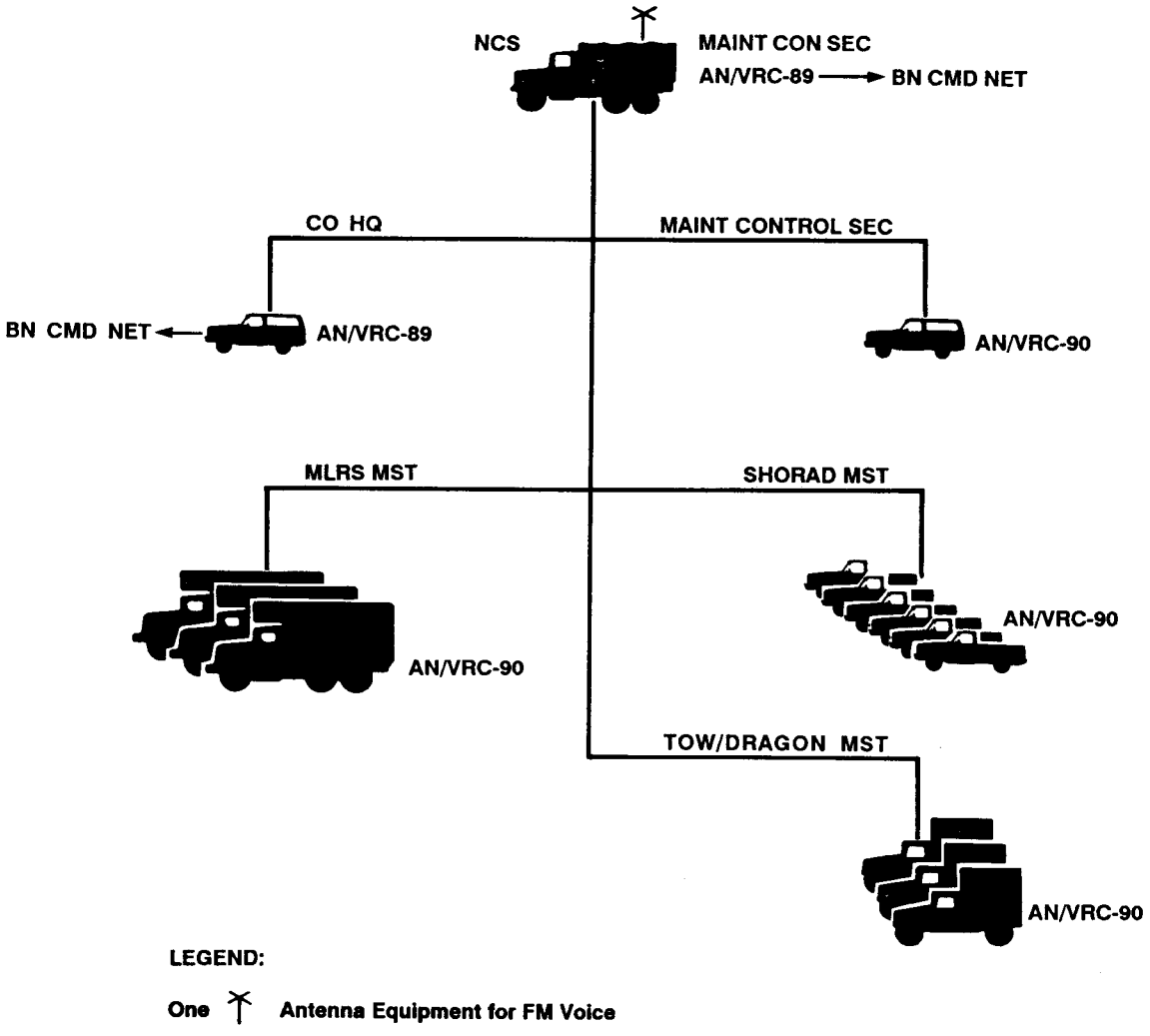


Figure 3-28 Missile Support Company Command Net, FM (SINCGARS)

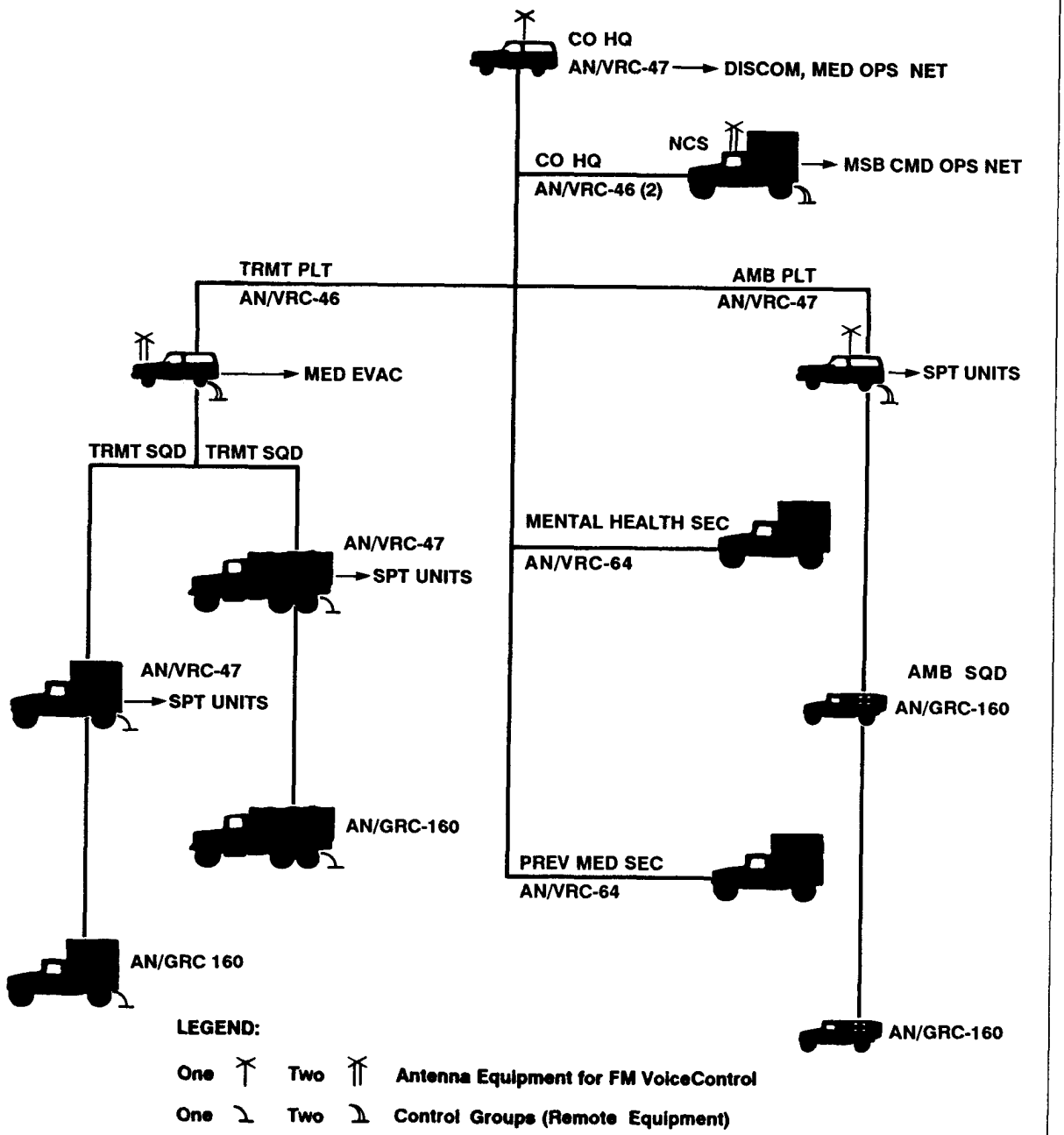


Figure 3-29 Medical Company Command Net, FM (AN/VRC-12 Series)

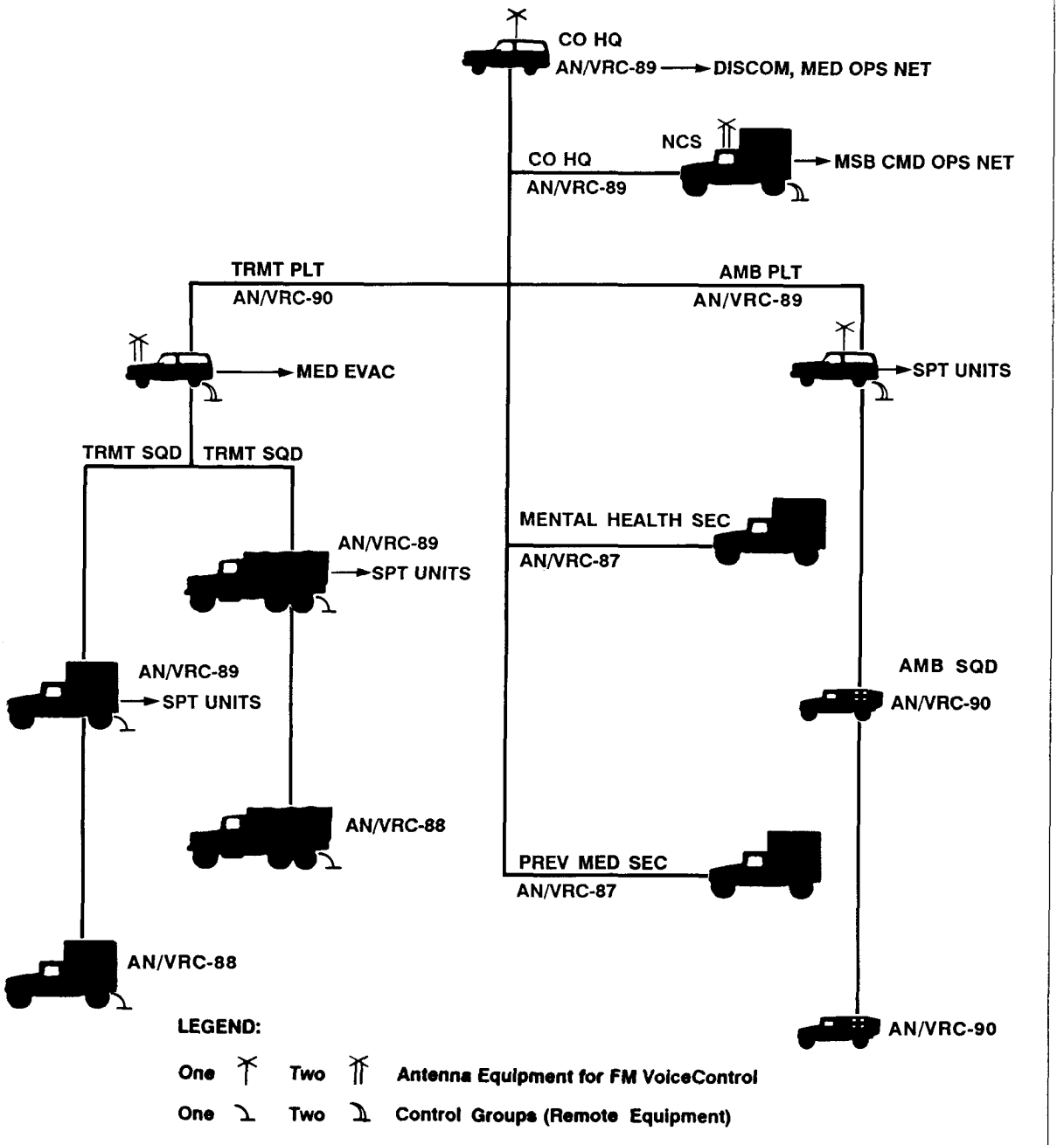


Figure 3-30 Medical Company Net, FM (SINCGARS Series)

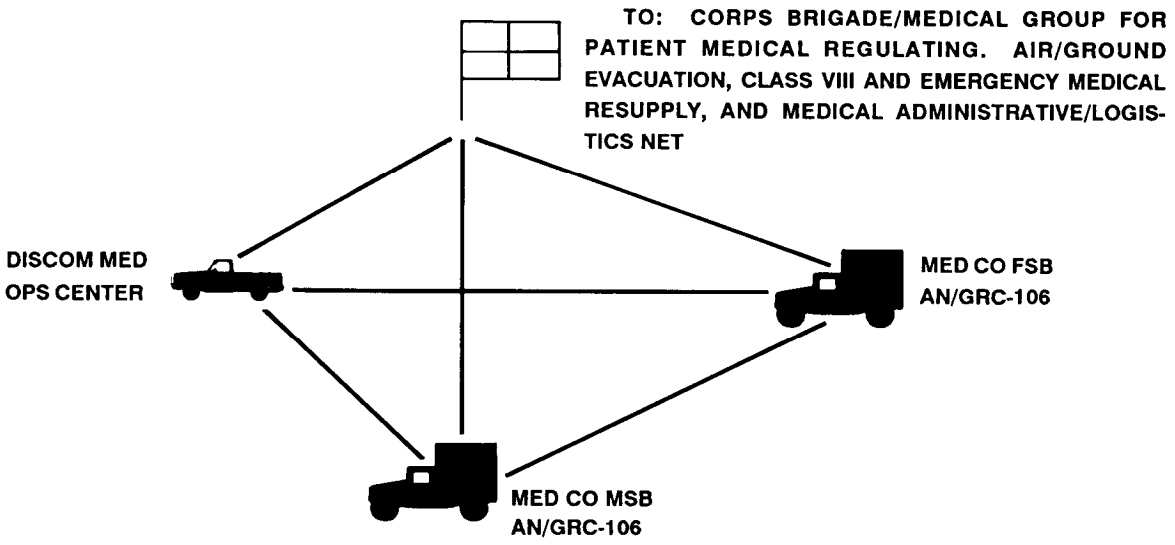


Figure 3-31 Medical Operations Net, AM-HF

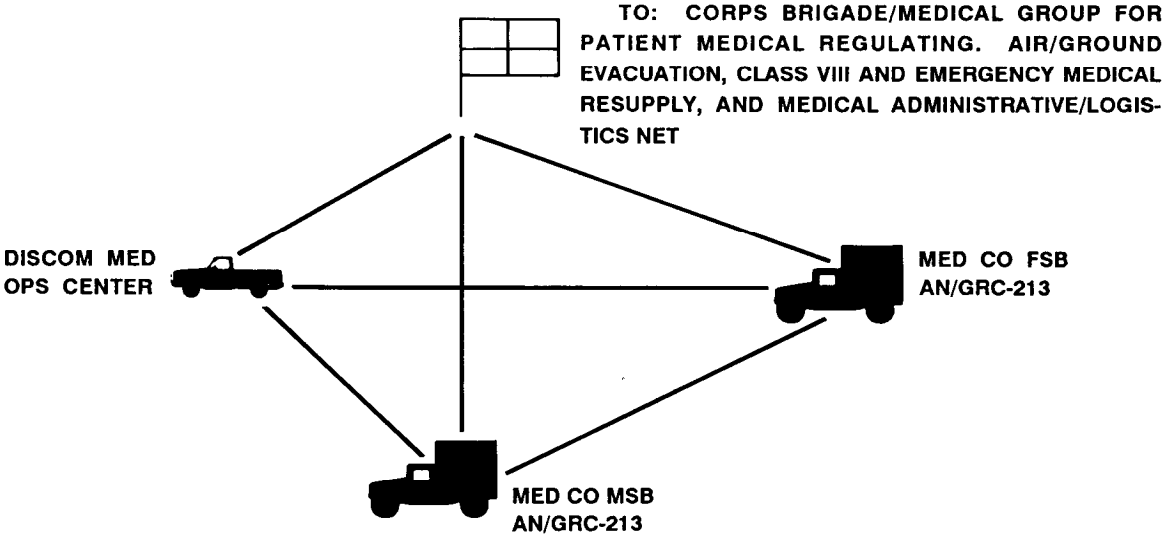


Figure 3-32 Medical Operations Net, AM-IHFR

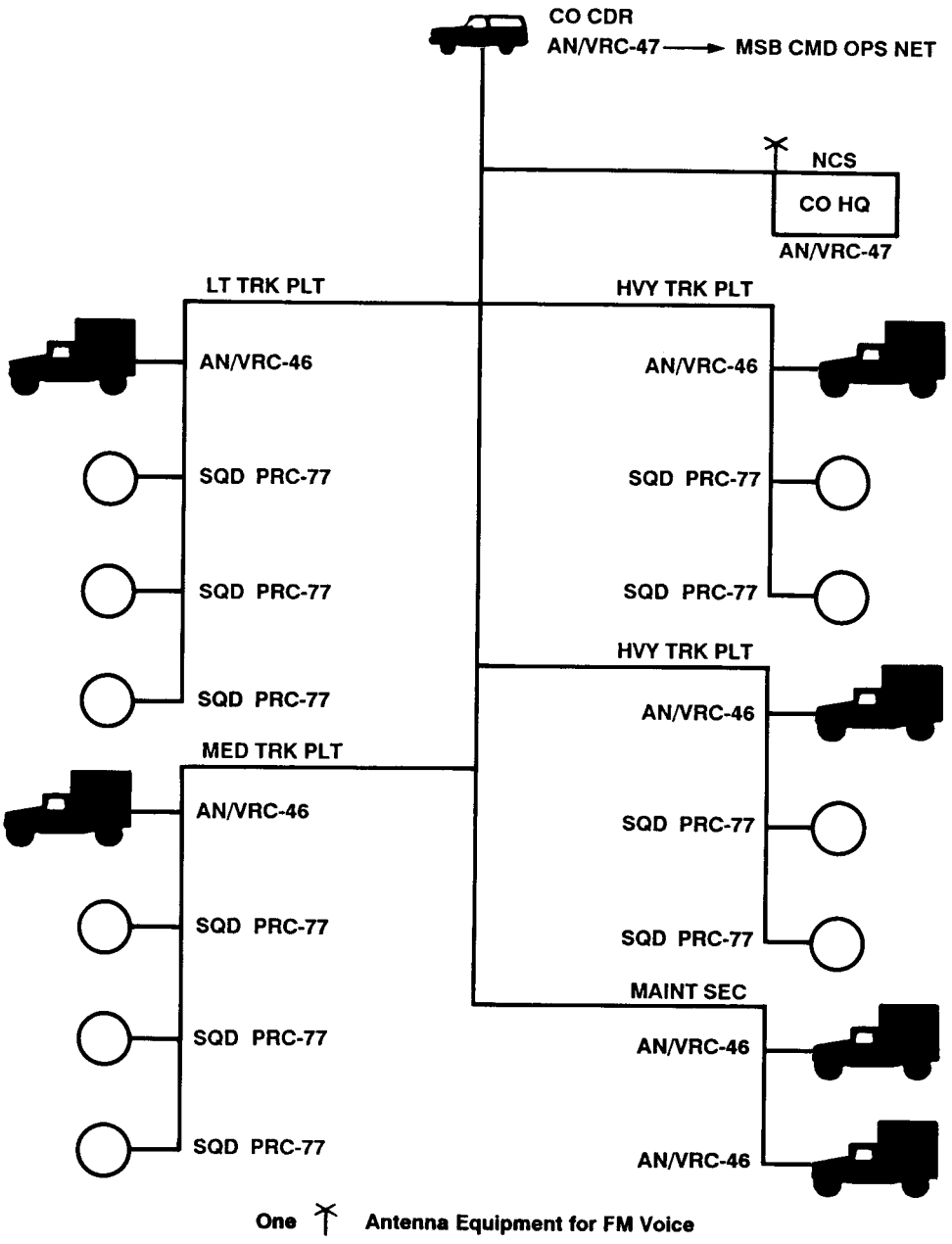


Figure 3-33 Transportation Motor Transport Company Command Net, FM (AN/VRC-12 Series)

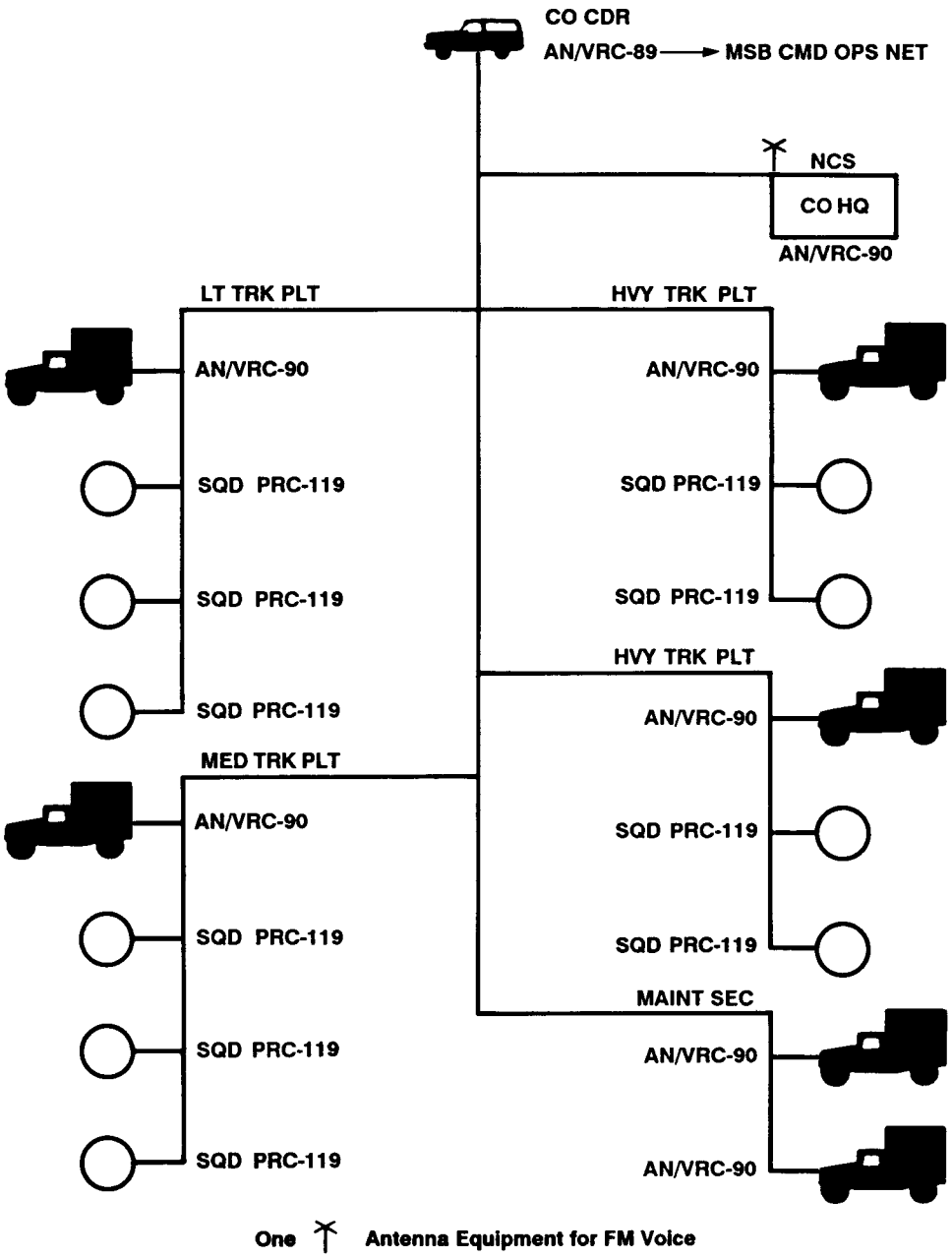


Figure 3-34 Transportation Motor Transport Company Command Net, FM (SINCGARS)

CHAPTER 4

Headquarters and Headquarters Detachment

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ORGANIZATION AND MISSION....4-1

PERSONNEL AND SECTIONS....4-1

ORGANIZATION AND MISSION

The MSB headquarters and headquarters detachment consists of a battalion headquarters and a headquarters detachment. As shown in Figure 4-1, the battalion headquarters has five sections: command, S1, S2/S3, S4, and support operations.

The battalion headquarters performs the C2 functions. It also employs the C2 facilities discussed in Chapter 3. Generally, its mission includes

- Command and control of organic and attached units.
- Planning, directing, and supervising support provided by the MSB to customers.
- Providing information and advice on MSB support to the commander and staff of the DISCOM.
- Planning, directing, and supervising the administration for organic and attached units. Training and internal logistics support for units organic and attached to the battalion.
- Planning and directing rear operations as assigned by the DISCOM commander.

PERSONNEL AND SECTIONS

MSB COMMANDER

The MSB commander commands all units organic or attached to the battalion. He provides subordinate elements with clear missions, taskings, and statement of his intent.

Upon receipt of a mission, the commander gives planning guidance to his staff. He receives required information from his staff. He then restates the mission in a clear, concise statement of tasks to be done, and the purpose to be achieved. Examples of tasks that the staff must be able to perform are –

- Analyze terrain and threat.
- Function as an effective team.
- Exchange information.
- Prepare estimates.
- Give appraisals.
- Make recommendations and decisions.
- Prepare plans.
- Issue orders.
- Coordinate and control unit operations.
- Supervise subordinate units.

EXECUTIVE OFFICER

The XO is the principal assistant to the battalion commander. As second in command, he must understand the support operations and the non-CSS functions of the battalion. He supervises the MSB staff.

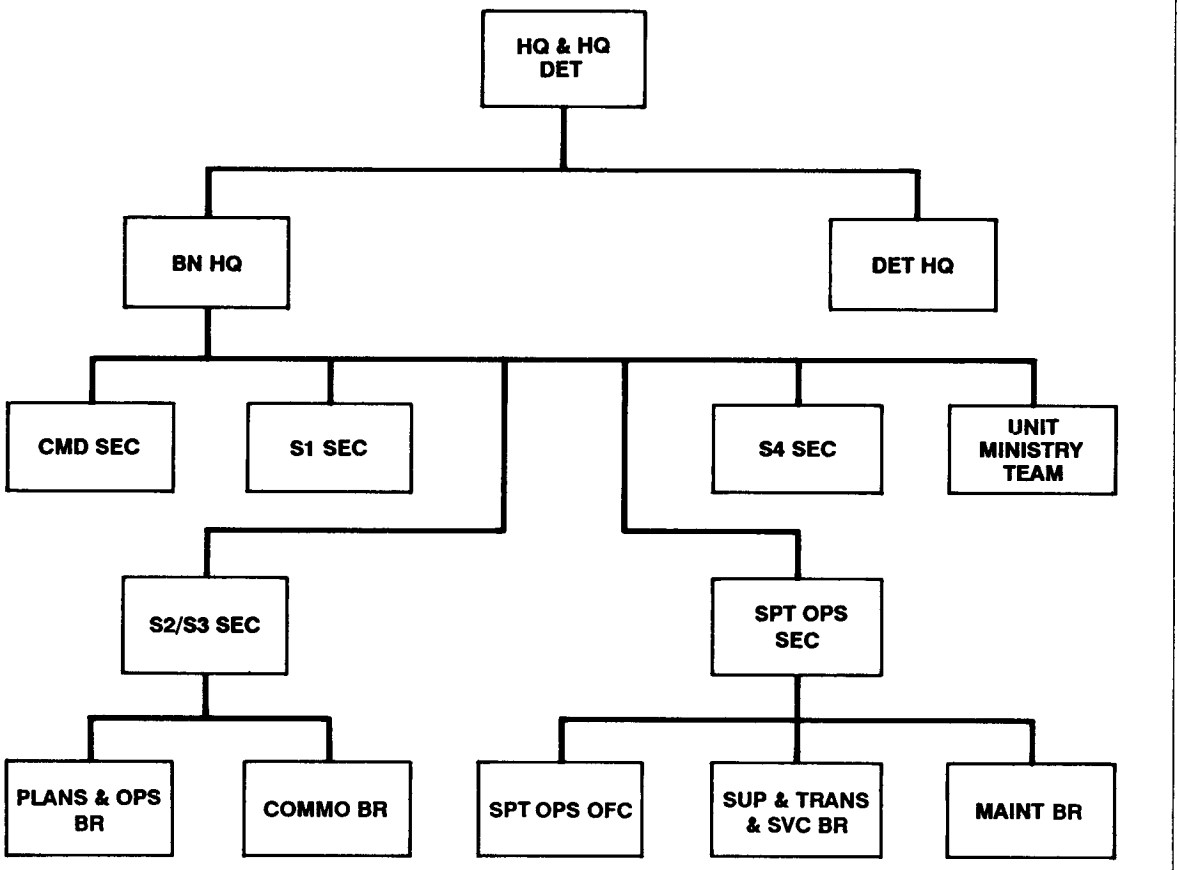


Figure 4-1 Organization of the Headquarters and Headquarters Detachment of the MSB

He coordinates assigned missions with subordinate unit commanders. Under the commander's directions, he formulates staff operating policies. He oversees the maintenance of the master policy files. Also, he supervises CP operations.

S1 SECTION

The S1 Section consists of the battalion S1 or adjutant and the personnel and administration center. As the personnel staff officer, the S1 coordinates staff responsibility for the personnel service support. This includes personnel, administrative, financial, religious, medical, public affairs, and legal support.

The S1 participates in the full range of staff officer functions. He coordinates PSS activities and advises the commander on them. He participates in the operations order process and develops loss rate estimates. He recommends replacement priorities. He assures his areas are fully coordinated with other staff elements. He also pays particular attention to areas where close coordination is necessary to assure proper completion of PSS missions. Such areas are in GRREG, transportation, and medical support.

The PAC provides the battalion S1 with staff support on personnel, administrative, financial, public affair, and legal matters. The chaplain and

the medical company commander also provide staff support on an area basis. PSS staff personnel support both the command and its soldiers.

During combat operations, primary PAC responsibilities focus on strength accounting, casualty reporting, and replacement operations. For performing strength accounting, the S1 section consolidates subordinate element's battle rosters. It cross-checks casualty witness statements with the medical aid stations and MP straggler control point reports. It updates the battalion master battle roster. It also prepares the PERSTAT. The S1 section establishes a replacement receiving point. It briefs replacements on unit assignment and tactical situations. It also coordinates the transportation of replacements to subordinate units.

The S1 section coordinates medical support. It coordinates the schedules, locations, and capabilities of medical support with the MSB medical company. It prepares and provides an area medical plan to the subordinate elements. The section monitors the battalion preventive medicine countermeasures. It monitors the routine and emergency treatment to ensure compliance with the tactical SOP. It coordinates with the medical company commander and MSB S2/S3 to develop a combat lifesaver program for MSB personnel. It also coordinates with the medical clearing station for return to duty of MSB personnel.

The S1 and PAC normally colocate with the S4 section near the MSB CP. This collocation provides for improved, continuous operations capability. Cross training of S1 and S4 section soldiers is key to this capability.

The PAC maintains and processes personnel information through data input to the TACCS. Subordinate and supported units send information for input to the PAC. Input is in the form of hasty strength reports, casualty feeder reports, and battle roster updates. The input of information into TACCS automatically updates the personnel summary report and personnel requirement report. It also updates other SIDPERS input. In situations where subordinate units are task force configured, the PAC prepares a report known as the task force personnel summary. The PAC forwards strength reports and the casualty feeder reports to the DISCOM S1. Further information on S1 and PAC operations is found in FM 12-6.

Other functions of the PAC in support of the MSB include –

- Coordinate with the S2/S3, S4, and MP platoon leader on the location of EPW collection points.
- Project numbers of EPWs and civilian internees.
- Determine total transportation requirements for losses, replacements, and EPWs. Submit transportation request to the S4.
- Provide administrative service, if tactical situation permits.
- Coordinate through the DISCOM S1 to obtain finance services support from the servicing finance support unit.
- Determine requirements for mail distribution.
- Coordinate and supervise postal operations.
- Coordinate morale, welfare, and recreation.
- Maintain the hometown news releases and distribution center operations.
- Coordinate the preparation of soldiers for overseas movement.

S2/S3 SECTION

The S2/S3 is the operations, intelligence, security, and training officer. He is responsible for internal MSB operations. The S2/S3 advises and assists the MSB commander in planning and coordinating battalion operations. Also, he supervises the communications, operations, and training of the battalion. He is responsible for the security and intelligence functions of the battalion. The S2/S3 supervises the MSB functions that are not classified as logistics or medical. However, his role and that of the support operations officer require that they maintain constant contact. The S2/S3 is responsible for writing and reviewing the battalion tactical SOP. The S2/S3 section consists of two branches – plans and operations branch and communications branch.

Plans and Operations Branch

The plans and operations branch monitors the tactical operations of the MSB. It makes recommendations to the commander, publishes orders, and supervises implementation of plans and orders. It also maintains the current friendly and enemy situations.

The NBC specialist in the branch monitors, receives, coordinates, analyzes, and evaluates NBC activity data. He develops response procedures for NBC defense. He makes recommendations to the commander on MOPP levels. He also prepares NBC reports 1 through 6. More information on NBC operations is in Appendix B.

The branch plans and coordinates tactical movements. It conducts route reconnaissance and supervises tactical road marches. It also receives closing reports and supervises appropriate staff activities during movement.

The S2/S3 section prepares and develops an intelligence estimate. The section identifies information requirements by reviewing restated missions. It identities current intelligence holdings by reviewing the S2 workbook and situation maps. It also reviews policy files, journals, intelligence files, and summaries. It prepares the IPB as it relates to the MSB mission. Once the estimate is prepared, the section provides the contents of the intelligence estimate to the commander. It also provides this content to the commander's staff and to the MSB staff.

The branch prepares and develops the battalion defense plan. It coordinates the integration of MSB defense with the DISCOM S2/S3. It identifies probable engagement areas and selects target reference points. Other plans the branch develops under the battalion defense plan are –

- Mobility and countermobility plan.
- Air defense plan.
- Communications plan.
- ADC plan.
- Rear operation annex of Appendix A.

This branch is also responsible for the preparation of other documents. They are —

- Movements orders.
- Intelligence annex to orders.
- Daily intelligence summary for subordinate units.
- Portion of the OPORD/OPLAN.
- Essential elements of information for inclusion into the OPORD.

Communications Branch

This branch supervises COMSEC and CCI activities. It operates the communications equipment. It also serves as net control station for the MSB command/operations net. The branch ensures communications links with higher, adjacent, subordinate, and supported units. It operates a station in the DISCOM command/operations net (FM voice) and in the DISCOM logistics operations net (AM voice). It plans and implements backup means of communications. It also ensures radio communications exist during a move between the start point and release point.

S4 SECTION

This section is responsible for planning, coordinating, and supervising unit-level supply and services. It also plans for maintenance and transportation support within the battalion. The S4 section coordinates schedules and methods of distribution between subordinate elements and DS units. It processes requests from the supply and service company for class II, III, IV, and VII items. Processing these requests replenishes the basic loads of all MSB elements. It requests and issues all required CTA 50-900 items within the MSB. It also monitors the MSB company requests for class IX items from the maintenance company. The section monitors the status for all battalion elements in the areas of class I, III, and IV items. It monitors operational readiness of equipment. It also prepares the class III forecast and submits it to the support operations section.

The S4 section, through the BMT, coordinates unit maintenance operations. It consolidates subordinate units maintenance reports to analyze overall battalion equipment status. It provides equipment status reports to the commander and other staff sections for mission planning purposes. It monitors subordinate units' PLL. This ensures operating levels are consistent with tactical SOP requirements. It coordinates recovery and evacuation assets with subordinate elements. Coordination ensures timely recovery and evacuation of all battalion equipment. The section coordinates with the S3 and support operations section on the priority of maintenance effort. Also, it coordinates for allotted time for equipment repairs.

The S4 section coordinates with the S1 on unit strength. It also coordinates on replacement data to project logistics requirements. Together they also ensure all MSB replacements are issued all authorized equipment. The S4 monitors field feeding and sanitation activities within the MSB. It also coordinates field service requirements with the support operations section for all MSB units.

The S4 section coordinates movement plans with the S2/S3. It consolidates transportation requirements for all MSB units. It passes them to the support operations section. It prepares load plans for the battalion headquarters. Also, it coordinates transportation assets with the S2/S3 for POW evacuation.

SUPPORT OPERATIONS SECTION

The support operations section coordinates and provides supervision for logistics and medical functions. This mission includes DS supply and DS maintenance. It includes some field services, HSS, and transportation operations. The support operations officer advises the commander on requirements versus available assets. Requirements are determined in coordination with the DISCOM support operations branch. The support operations officer ensures logistics and medical support to the supported units remain at a level consistent with tactical operation. He recommends support priorities and ensures logistics SOPS are up-to-date. He prepares and distributes the external service support SOP. This SOP provides guidance to supported units on procedures involved in receiving support. He coordinates additional support with the DISCOM support operations branch. The support operations officer directs the activities of the support operations section.

The support operations section is responsible for the following actions:

- Coordinates DS to units in the DSA. Reinforces support to the FSBs.
- Provides technical assistance to the MSB companies and supported units.
- Coordinates with the MSB S3 to integrate the technical mission with operation plans.
- Maintains the logistics situation map depicting locations of units providing logistics support for division units.
- Coordinates with the S2/S3 on the location of all support points within the DSA. Ensures supported units are aware of the locations and time schedules for support operations.
- Implements the commander's guidance on priority of support to committed brigades.
- Advises the MSB commander on logistics support operations.
- Prepares, reviews, or implements plans, and procedures based on guidance from the MSB commander.
- Coordinates with the DISCOM support operations branch and FSBs for reinforcement when the FSBs are over committed.
- Develops and maintains reconstitution support plans for reconstitution of committed units. Designates and trains members of reconstitution teams. The reconstitution teams assess damage or reconstitute decimated units.

The support operations section has a support operations office; a supply, transportation, and services branch; and a maintenance branch.

Support Operations Office

This office is responsible to plan, coordinate, and supervise DS supply and services for the battalion. It also plans DS maintenance and transportations functions. The office interfaces with the customer's logistics staff officers and the DISCOM support

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operations branch. It also interfaces with the DMMC. It provides supply, services, and transportation support.

For HSS, the support operations office assisted by the medical company, provides input to the DISCOM service support. It provides input for the annex on medical evacuation and hospitalization. Input covers class VIII supply, helicopter landing sites, priority of medical effort, and evacuation procedures. On the basis of projected WIA losses, the office plans treatment and evacuation. It coordinates plans with units in the DSA and the medical company. It also coordinates plans with the DISCOM medical operations office. The support operations office manages mass casualty operations when treatment and evacuation requirements exceed capabilities.

Supply and Transportation and Service Branch

This branch plans, coordinates, and supervises battalion operations for supply, transportation, and field services. The branch prepares schedules. It assigns priorities in coordination with the DISCOM support operations. Also, it distributes the work load. The branch coordinates the delivery of supplies with the MSB S&S company. It monitors classes II, III (P), IV, and VII issues from the distribution points. This branch monitors the salvage operations activities to direct high priority exchange items as directed by the DMMC. It also monitors the subordinate units' WRSO status reports for anticipated requirements.

The branch has several specific functions in the area of supply and services. It coordinates supply distribution and services provision with the DISCOM. It coordinates the same for the FSBs and supported units. It monitors daily battle loss reports to anticipate requirements. If airlift or airdrop is required, it requests and coordinates the support as discussed in Chapter 6.

In the area of transportation, the branch coordinates with the DISCOM MCO for daily vehicle availability and requirements. It maintains statistics on operational capabilities of the TMT company and other organic or attached transportation assets. The transportation personnel also evaluate transport capabilities of the battalion. They prepare the TMT company operation and organization procedures. This includes coordinating transportation of supplies to and from using units.

This branch coordinates with the S&S company on placement and operations of field services augmentation units. It requests field services. It coordinates through the DISCOM support operations branch for incoming augmentation. The branch coordinates the augmentation of GRREG collections points to the supply companies in the BSAs. It also coordinates transportation requirements for the GRREG collection points.

Maintenance Branch

The maintenance branch plans, coordinates, and supervises the maintenance operations of the battalion. This includes technical supervision over DS maintenance functions within the battalion. It provides technical assistance to supported units. It also coordinates the execution of the work load assigned by the DMMC. This branch coordinates the reinforcing of maintenance support to the FSBs. Its personnel coordinate maintenance operations between maintenance companies and division units in the DSA. Personnel also request additional required maintenance support from the DISCOM support operations branch. They monitor MCP activities to direct orderly evacuation and repair of unserviceable. Personnel coordinate SOPs, both internal and external, for all units supported by the MSB. They coordinate maintenance overflow with the DISCOM support operations branch.

Two key areas for this particular branch are in communications and general maintenance operations. Both areas coordinate the external maintenance operations for the MSB. They ensure the implementation of orders pertaining to both particular areas. This branch also plans and supervises all battalion repair parts support matters. It specifically supervises the receipt, storage, and issue of repair parts by the MSB.

HEADQUARTERS DETACHMENT

The headquarters detachment provides for billeting, discipline, security, and training. It also provides administration of personnel assigned to the HHD. The detachment is typically staffed with a detachment commander and a detachment sergeant. It has a detachment supply sergeant, a food service sergeant, and an armorer. The S1 serves as the detachment commander. All other positions in the headquarters detachment are additional duty assignments for other personnel in the battalion headquarters.

Functions of the detachment consist of the following:

- Ensures HHD logistics support is provided.
- Performs route reconnaissance.
- Ensures load plans are maintained.
- Organizes unit for movement and issue movement orders to HHD personnel.
- Provides C2 of HHD in response to air or ground attack.
- Establishes communications with LP/OPs.
- Coordinates with the S2/S3 on the quartering party.

UNIT MINISTRY TEAM

The unit ministry team provides religious support. The UMT consists of the chaplain and chaplain assistant. The team in coordination with the DISCOM's chaplain provides religious support to the MSB and throughout the DSA. Religious support consists of rites, sacraments, ordinances, services, and pastoral care. More information on religious support is found in FM 16-5.

The commander is responsible for the religious program in his unit. The UMT implements the command religious program by providing —

- Input to the personnel estimate establishing religious support priorities.
- Pastoral care.
- Counseling.
- Worship services.
- Memorial and funeral services.

Other staff functions the chaplain performs are–

- Morale and religious update to the commander.
- Ethical issues update to the commander.
- Staff input to the battalion plans and orders.

CHAPTER 5

Supply and Service Company

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ORGANIZATION AND MISSION

The S&S company of the MSB provides receipt, storage, and issue of class I, II, III, IV and VII (less class V) supplies. The company also operates a salvage point. The company provides unit maintenance for its organic equipment. It also provides water purification and supply points and limited potable water distribution throughout the division area.

The company consists of a company headquarters, a supply platoon, a petroleum storage and distribution platoon, a class I and water platoon, and a maintenance section. When augmented, the company has a GRREG platoon, CEB platoon, and an arid environment water section. The company is organized as shown in Figure 5-1.

The company performs the following functions:

- Receives, temporarily stores, and issues class I, II, packaged III, IV and VII supplies on a daily basis. This company does not receive, store, or issue classified maps, aircraft, airdrop equipment, COMSEC, or construction materials.
- Stores, issues and distributes bulk petroleum using organic fuel transporters and the fuel system supply point.
- Operates up to five water purification and supply points in the division and brigade support areas. Water distribution will be done by supply point distribution from a designated water point.
- Operates mobile roadside filling stations to refuel vehicles. Operates up to two forward refueling sites for area disbursement of bulk petroleum.
- Provides a salvage collection point for all types of supplies except COMSEC and medical supplies, toxic agents, radioactive materials, vehicles, aircraft, ammunition, and explosives.
- Operates supply distribution points in the DSA and provides supply support to the forward support battalions.

SUPPLY SYSTEM

SUPPLY PLANNING

The S&S company commander, working with the support operations section, focuses his attention on the supply requirements of units in the DSA and routine supply to FSBs. The S&S company commander also prepares for reinforcing direct support

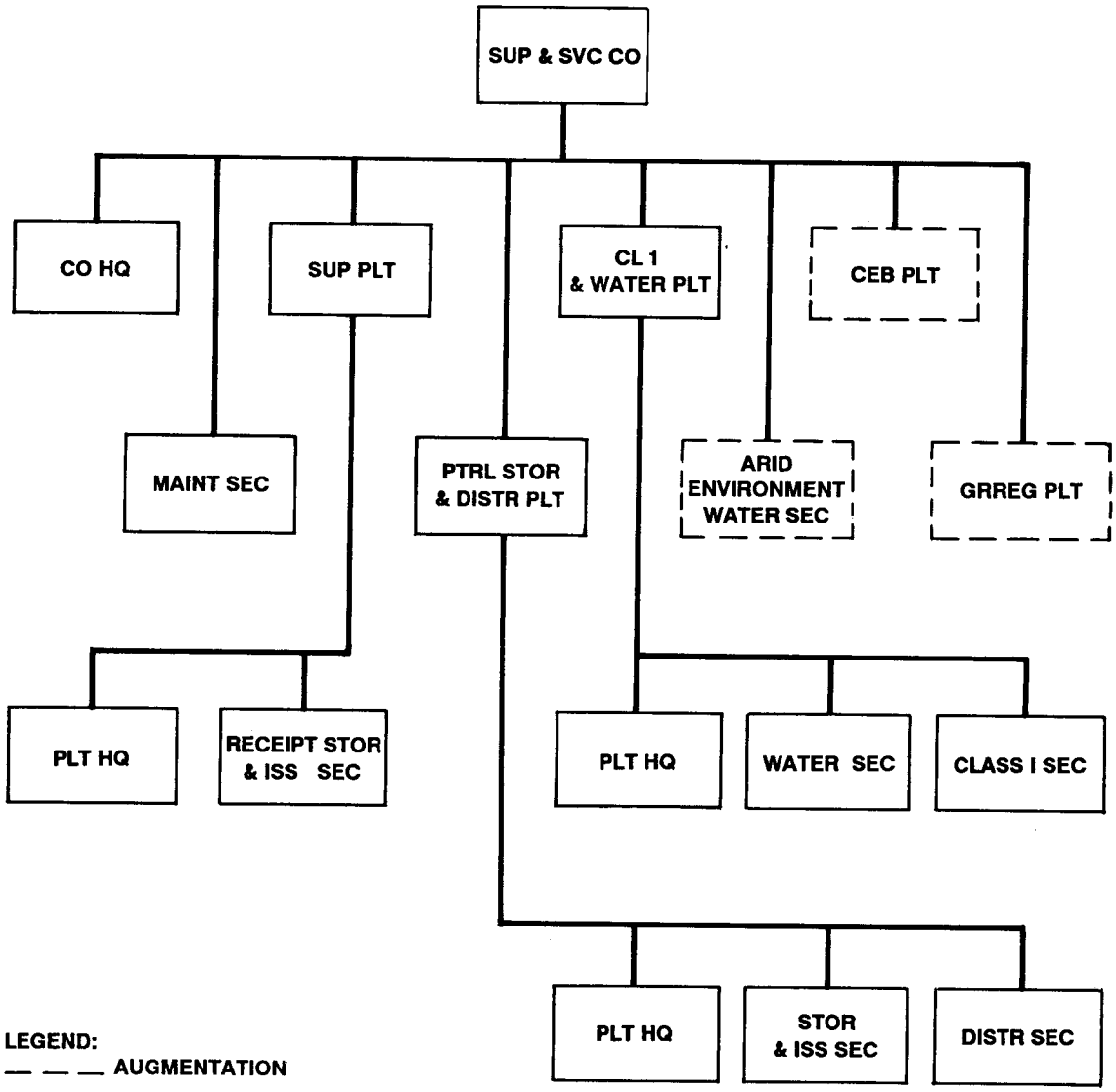


Figure 5-1 Typical Organization of Supply and Service Company

missions that the DISCOM commander may direct in support of any FSB supply company. In addition to following the priorities established by the commander, the following are factors that affect requirements:

- Tactical plans.
- Environment and terrain.
- Demand data and previous experience.
- Troop strength.
- Equipment densities.
- Distance factors.

Supply planners track the tactical situation as well as casualties and equipment destroyed or in repair. This allows them to take necessary actions (such as requesting additional transportation or critical supplies) without having to wait for unit requests. It also enables them to reorganize supply elements or to request backup support to meet the most critical requirements. This may involve shifting assets from one supply point to another. Planners also coordinate with the DMMC to ensure that anticipated supply support requirements will be provided.

Planners must also coordinate with the DMMC to ensure all necessary steps have been taken to supply items which are used either sparingly or not at all during peacetime. The division chemical officer will provide planning assistance through G4 channels for chemical items. Items to consider include —

- Chemical falters.
- Human remains pouches and other GRREG supplies.
- Cargo sling sets.
- Batteries.
- MOPP gear.
- Class VI.
- Wire.
- Fog oil.
- Chemical decontaminants.

Procedures must also be worked out for command-regulated items. Expensive, highly technical, or scarce items are often designated in the OPORD as command regulated. Command approval is required before these items can be issued. However, this does not necessarily mean commanders must approve each individual request. Division commanders may authorize the DMMC to release items on the basis of support priorities specified in the OPORD. The commander may place additional limitations on issue of items if he desires. This will often include setting quantities of critical items authorized to be issued to each unit in accordance with the support priorities. If requests from a unit exceed its authorized quantity, the unit would have to go through command channels to get its authorization changed. In any case the support operations section and S&S company should ensure procedures are established in advance.

Planners must also consider supply elements layouts within the context of the MSB S2/S3 plan. The company is located in the DSA near land lines of communication. The supply platoon's sections normally operate at separate sites near the MSR. To provide continuous command and control and liaison with the MSB commander, the company headquarters is established at the edge of the company area closest to the MSB TOC.

The supply platoon headquarters is established in an area central to the supply sections. Section sites should be reasonably close to the MSR, accessible to supported units and resupply vehicles. Each site should be large enough to disperse operations, yet not so large that internal security becomes a problem. The sites should have good roads, an adequate number of areas with level ground and good drainage, and, when possible, the natural potential to provide cover and concealment.

Due to the large quantity of supplies that pass through the area, it is necessary to make detailed layout plans to ensure that distribution points are adequately dispersed yet still provide access for supported units. Layout plans should show receipt, storage, and issue areas for each section; entrance and exit control points; traffic patterns and customer parking areas areas where man-made camouflage will be used; communication equipment and wires; and fighting and firing positions.

SUPPLY POINT AND UNIT DISTRIBUTION

The S&S company uses both supply point and unit distribution. When supply point distribution is used, unit representatives come to the supply points in the DSA to pick up their supplies. Supply point distribution is normal for most classes of supply. However in unit distribution, the S&S company furnishes or coordinates transportation to deliver supplies to the requesting unit. Unit distribution is used to deliver barrier materials to emplacement sites with corps assets. Other classes of supply may be delivered using unit distribution when the tactical situation permits and transportation assets are available. Emergency resupply using unit distribution may be accomplished via motor or air transport.

AERIAL RESUPPLY

Air Resupply Mission

Air resupply missions are categorized as preplanned or emergency. Preplanned missions make up the routine air transport requirements. Emergency air movements are initiated by resupply requirements that cannot be determined in advance.

The movement control officer coordinates movement of supplies with the MSB support operations office. If the movement control officer determines that air resupply is appropriate, he passes a request through the DTO to the G3. The G3 allocates helicopters on the basis of all aviation tasks by balancing combat, CS and CSS requirements. The G4 must make sure the CSS role for helicopters is developed and considered concurrently with the tactical mission. The priorities for helicopter resupply should be addressed in the OPORD and used by the movement control officer.

Emergency requests are passed through supply channels the same as routine requests. However, they are also passed simultaneously through command channels from the user to the G3. The G3 approves emergency requests and tasks the aviation brigade to perform the mission. At the same time, the G4 coordinates with the DISCOM support operations branch so it can task the appropriate supply activity (the MSB S&S company or FSB supply company) to prepare the shipment. A liaison officer from the AB coordinates with the movement control officer and the requesting unit. Prerigged loads of standard resupply packages may reduce response time for emergency air resupply. More details on requests for aerial resupply are in FMs 55-2 and 100-27.

Regardless of whether the mission is preplanned or emergency, if it cannot be performed by division helicopters for any reason, the request goes from the division TOC to the corps TOC. It is also coordinated with the tactical airlift liaison officer.

AirLand Resupply

Selection and control of pickup and landing zones are extremely important. Pickup zone selection and control are the responsibility of the supported unit, the unit which requests the mission, that may be the S&S company of the MSB. The receiving unit, which is having the cargo delivered to it, is responsible for landing zone selection and control.

As a general rule, pickup and landing zones must provide for 30 meters separation between utility aircraft and 40 meters between cargo aircraft. It must have no obstructions such as tree stumps, bushes, or man-made objects that could damage the helicopter rotor systems, or the load itself. The number of aircraft that will be using it at one time must be considered along with its use after dark. If night resupply is scheduled, a larger area is normally needed. The surface condition should be solid enough to prevent a helicopter or load from bogging down. Blowing dust, sand, gravel, or loose debris can injure people as well as cause damage to equipment or aircraft. If the site has a slope of 15 degrees or more, a helicopter cannot land. Also, when carrying an external load, a helicopter cannot rise straight up or come straight down. The avenue of approach and departure should be over the lowest obstacle in the direction of the prevailing winds. Helicopters can operate in a crosswind or tail wind of up to 15 knots.

Airdrop Resupply

Airdrop support units are allocated to the corps and theater. As a rule, airdrop of supplies and equipment is a joint operation of the Air Force and Army or other user, such as the Marine Corps. Airdrop

resupply missions are classiied as either preplanned or immediate. Preplanned missions are considered routine type requirements while immediate missions are emergency in nature. Coordination with logistics elements is made at each echelon if time permits.

In some situations the MSB (normally the supply and service company) could be a requestor of airdrop resupply support; however, most missions originate in the combat battalion or brigade.

The unit receiving airdrop resupply support is responsible for the following

- Selecting, marking and securing the drop zone.
- Ensuring no unsafe conditions exist on the drop zone during the airdrop operation.
- Recovering the supplies/equipment provided by airdrop.
- Time permitting, recovering and evacuating airdrop equipment used in the airdrop.
- In the absence of an Air Force combat control team, the unit receiving the airdrop resupply support will be required to perform the CCT function.

More details on airdrop resupply are found in FMs 55-2 and 100-27.

THROUGHPUT DISTRIBUTION

Throughput distribution bypasses one or more echelons in the supply system to minimize handling and speed delivery forward. Many of the supplies going to the FSB come directly from the corps without going through to the MSB. In the case of class IV barrier materials and some class VII major end items, corps assets may throughput supplies directly to the user in the forward area.

NIGHT OPERATIONS

Supply planners can anticipate high consumption of batteries, flashlights, and illumination rounds during night operations by their supported customers. Also, additional fuel will be used to run vehicle-mounted night sights.

When resupply operations are conducted at night, MSRs must be clearly marked. Chemical lights are one possibility, but enemy scouts can easily move them. Engineer tape on stakes is more secure.

Aerial resupply will require a diectional light source to guide helicopters. Directional strobe lights or bean-bag lights (and in emergencies, chemical lights) may be used.

Use of prestocked supplies requires careful coordination. Locations must be capable of being found in limited visibility. Despite the difficulties, however, this technique will be important. Care must be taken to ensure the attack is not signaled by the prepositioning.

Use of materials-handling equipment is more dangerous at night. Therefore, whenever possible, supplies to be delivered at night should be loaded during the day. External SOPs should require supported units to provide additional walking guides or personnel to load supplies onto trucks.

CAPTURED OR FOUND SUPPLIES

Two types of materiel fall into this category. The first is US materiel or equipment that has been found and turned in, and the second is enemy equipment or materiel captured or found on the battlefield. The main thrust of this process is to get serviceable materiel back into the supply system and to dispose of unserviceable materiel. The following are some ways in which materiel captured or found on the battlefield may be put to use:

- Once cleared by veterinary personnel, captured subsistence may be used to feed EPWs and the local population. Found US subsistence may be consumed once it has been tested by veterinary personnel.
- Captured fuels may be used once they have been analyzed and determined suitable for use by the lab specialists in the petroleum storage and distribution platoon.
- Various captured materiel may be used for barrier and fortifications construction.
- Captured medical supplies may be used to treat EPWs and civilians.
- Captured vehicles and equipment are normally turned in to maintenance collection

points. Other equipment may be turned into the salvage point where it is identified, classified, and reported through the DMMC. The S2/S3 will provide disposition instructions based on directions received from the DMMC.

Other considerations for found and captured materiel are —

- Report all enemy materiel through intelligence channels.
- Report toxic agents to NBC element in the S2/S3 section.
- Report medical materiel through medical channels.
- Require examination of explosives by EOD personnel.

MOADS

The MOADS will provide a transition to the conventional ammunition support in the AirLand Battlefield environment currently envisioned for Army 21. It will also provide combat-conifgured loads for key ammunition types and provide highly responsive class V support to combat units. As the MOADS concept is implemented, the heavy division MSB ATP will be phased out. No longer will the S&S company of the MSB operate the division ATP in the DSA. Rather, the nondivisional direct support ammunition company will operate a rear ATP in the DSA which will support corps and division area users. Due to this change, the FSB ATPs will be up-manned to handle all class V requirements for combat users in the brigade area. The MSB, like other units in the division rear, will be supplied class V by the direct support ammunition company. Refer to FM 9-6 for more information on the MOADS doctrine.

METHOD OF OPERATIONS

CLASS I

The type of rations issued by the MSB within the division will be according to the theater command policy in a theater of operations. Initially, units in the division area and brigade area eat MREs and T-rations which are replenished as soon as supply lines are established. A and B rations will be introduced when the tactical situation permits and refrigeration is available.

Class I supply storage and issue is preplanned and prepared for delivery according to personnel strengths, the Army field feeding system, and directions from the DMMC. The MSB receives and processes the supporting units requests and submits a consolidated report to the DMMC. The flow of personnel strength data as it pertains to scheduled supply and flow of class I supplies is shown in Figure 5-2.

At the outset of hostilities, the COSCOM MMC will automatically push rations to the division based on strength figures provided by the division G1. As the situation stabilizes, the DMMC will prepare and convert personnel strength data to support class I requirements.

The DMMC converts personnel strength data to stock numbers and quantities for each type of standard meal ration based on the current field feeding ration mix or the tactical commander's instruction. The DMMC inputs ration requisitions to the COSCOM MMC. This generates regular rations delivery by COSCOM GS units to the MSB supply and service company. The DMMC then prepares and sends a consolidated issue document (for each FSB and other supported division units) to the MSB. Class I personnel at the MSB break bulk rations according to the issue document. The MSB TMT company transports the supplies on a scheduled cycle (along with the issue document and other transportation and shipping documents) to the FSB class I point in the BSA. Issue slips and

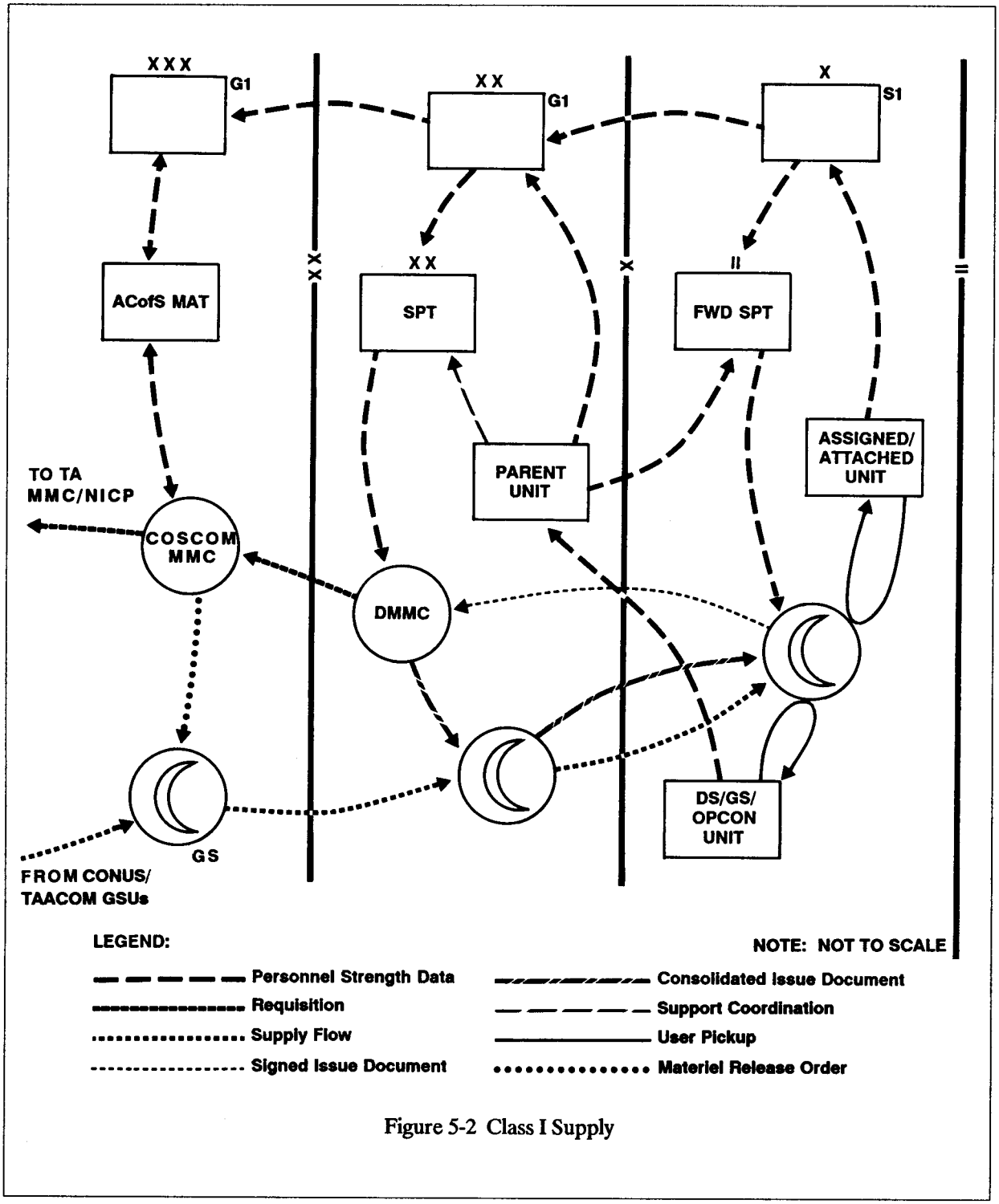


Figure 5-2 Class I Supply

forms are forwarded by the MSB to the DMMC for posting to accountable records.

The DMMC sets the amount of the division class I basic load according to instructions from the division staff. Stockage is normally measured in days of supply. Personnel at the class I section unload the corps trucks and inspect the shipments for type, number, and condition before signing any receipts. They store, guard and rotate the reserve items by issuing the oldest first and then replenishing reserve stock. Class I personnel issue rations to units in the division rear, using the unit issue slips prepared by the DMMC. Unit vehicles pickup rations according to one of the following methocds:

- Truck to truck. This is the preferred method and involves transferring designated stocks from a supply point vehicle to that of the customer.
- Item pile. This method requires that all stocks be unloaded and separated on the ground, on dunnage, according to like items. Customer units will pass each of the different piles and load the quantity they are authorized. The item piles on the ground will, in most cases, be broken down by individual unit. The item pile method is used when the class I personnel are limbed on time or short personnel.
- Unit pile. This method is similar to the item pile with the only difference being that the customer will only have to stop once. All stocks will be off-loaded from carriers and broken down according to unit issue slips. Units will enter the class I point, find their designated area, and pick up their rations.

WATER

The MSB operates up to five water purification and supply points. When water sources permit, a water point is normally set up in each BSA. Upon request, the MSB attaches enough water equipment and personnel to the FSB to establish a water point in the vicinity of the BSA class I point.

The S&S company of the MSB has a limited water distribution capability and will distribute water to a "dry" water point when the water source is far removed from the supported brigade. Using units will normally pick up water using their organic water trailers. FM 10-52 has more information on field water supply.

In areas where direct support water systems are not capable of providing enough water support, the MSB is reinforced with an arid environment section. Due to insufficient water sources, water supply units will be provided. Water supply units will be structured as a water supply battalion under command and control of the rear corps support group in the COSCOM. Water purification detachments will introduce water into the base terminal storage and distribution system. Water supply companies will distribute water from the base terminal forward, using TWDS. After water arrives in the corps, it will be loaded into 3,000-gallon SMFTs operated by medium truck companies and moved forward into the division storage and distribution system.

The arid environment water section of the MSB will be issued an arid augmentation pack. This pack will contain one 300,000-gallon SDS and one 40,000-gallon SDS for each assigned brigade. The pack will contain hypochlorinators, distribution hoses, and standpipes. Additionally, the arid environment water section will have SMFTs and FAWPSS. After the corps medium truck companies (operating the 3,000-gallon SMFTs) have delivered water to the arid environment water section's 300,000-gallon SDS, the water section will move water forward into the brigade 40,000-gallon SDS.

The arid environment water section will use 3,000-gallon SMFTs. If a unit is isolated, the FAWPSS will be used for aerial resupply.

CLASSES II, III, (PKG), IV, VII

Class II

Class II supply operations are limited to critical items since clothing and individual equipment are bulky and impede MSB mobility. The MSB must use priorities provided by DISCOM in coordination with the G4 for unit issues. Items normally stocked are class II minimum essential combat ASL items. These items include high demand mechanics tools, protective items such as MOPP gear, boots, helmets, and individual soldier equipment.

Class II items may be issued individually or in lots to speed up receipt and issue time. These items support a specific number of troops. Intense combat operations in an NBC environment will increase the demand for class II items. Arrangements should be made for scheduled resupply of protective overgarments and other class II NBC-related items and equipment.

Packaged Class III

Packaged class III supplies are either prepared for delivery to the FSB supply companies as directed by the DMMC or issued to division rear units. Packaged class III supplies are requested, received, and distributed like class II and IV items. They include fuel in 5- and 55-gallon containers; packaged products such as lubricants, greases, hydraulic fluids, and solvents in containers of 55 gallons or less; and cylinders of liquid and impressed gases. The receipt, storage, and issue of packaged petroleum products and fuels are described in FM 10-69. AR 710-2 is used for guidance on preparing paperwork for packaged petroleum products.

Class IV

Class IV supplies consist of construction and barrier materials. Because of the bulk of these materials, the MSB handles limited quantities. COSCOM units store and maintain the majority of all class IV supplies. The MSB supply platoon has the capability to handle limited quantities of survivability item — class IV (A). These are items that can be emplaced by any unit and include such common items as sandbags, concertina wire and fence posts. Requests for survivability items are processed the same as for class II items. Supported units within the division rear obtain class IV (A) from the class II, III (packaged), IV, and VII supply point. The receipt, storage, and issue section of the MSB is responsible for preparing limited class IV (A) supplies for transport and delivery to the FSB supply companies. COSCOM units deliver barrier materials directly to the emplacement site whenever possible.

Class VII

Class VII items are intensively managed and are normally command controlled. Class VII replacement is based on combat losses reported through command charnels to the division G3 and G4. This permits the commander to remain apprised of the operational status of subordinate commands and to direct the distribution of items to those units having the most critical need. Weapon systems such as tanks are intensively managed by WSRO. If the item is a WSRO-contracted weapon system, the primary link-up points of the item with its crew may occur in the DSA or in assembly areas for information in reserve. More information on WRSO is in Appendix C of this manual and in FM 63-2-2. Class VII supplies follow the same requisition flow as class II, III (packaged), and IV. A predetermined amount of class VII is maintained and issued to division rear organizations upon DMMC approval. Upon corps approval of DMMC class VII requisitions, COSCOM units transport class VII supplies to the MSB S&S company or deliver them to the FSB or unit when possible.

Requests and Supply Flow

Supported units submit requests for class II, III (packaged) IV and VII to the supply platoon. If the supplies are on hand they will be issued to the requester. Once issued, the supply points will notify the DMMC of the issue transaction. Items that are command regulated will require approval before they can be issued. Requests for items that are not on hand are consolidated and sent to the DMMC. The DMMC requisitions the supplies from the COSCOM MMC. The flow of class II, packaged III, IV, and VII supplies is shown in Figure 5-3. The COSCOM MMC directs a GS unit to forward supplies to the DSA supply point or if requested by DMMC, directly to the FSB.

The supply platoon may also receive an MRO from the DMMC to release an item to an FSB. If supplies are not on hand at the forward distribution point for users in the brigade, the FSB sends the requests to the DMMC. If the items are on hand at the main distribution point, the DMMC may send an

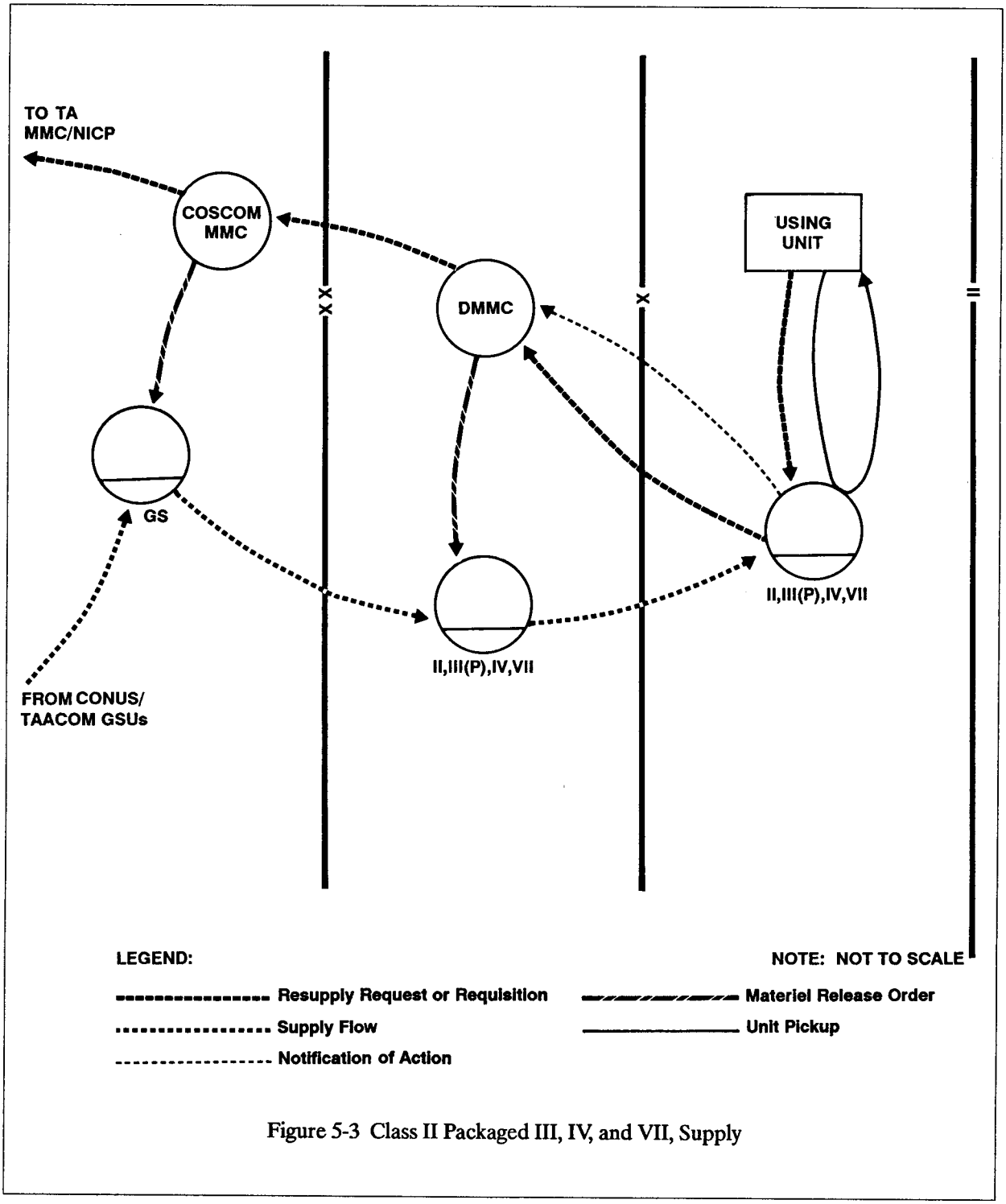


Figure 5-3 Class II Packaged III, IV, and VII, Supply

MRO to the main distribution point to release the item to the forward distribution point.

Advance copies of issue documents are used at the MSB to plan for the receipt of supplies. Two forms arrive with the shipments. Receiving personnel verify quantities, condition, item description, and markings of items received against shipping documents. Supplies are processed by priority designation. Supplies are placed into storage in locations assigned by the receipt, storage, and issue section. The receipt documents given to the supply platoon headquarters are sent to the DMMC to verify that supplies have been received and stored. Supply point distribution is normally used to issue class II, packaged III, IV, and VII supplies to supported units.

MAPS

Unclassified maps follow the same requisition flow as class II, packaged III, and IV supplies. They are stored in the receipt, storage, and issue section. Maps are issued through supply point distribution to supported units according to established tables of allowances or to fill special requirements. Classified maps are handled through S2 channels.

BULK FUEL

All division units submit daily forecasts to the class III (bulk fuel) section of the DMMC. The class III point submits status reports to the DMMC. The DMMC uses these forecasts and status reports to compute bulk requirements for the division. The DMMC forwards the requirements to the COSCOM MMC. The COSCOM MMC coordinates the delivery of bulk fuel to the division according to the class III distribution plan. The COSCOM petroleum supply company supplies fuel to the division's MSB S&S company through the petroleum medium truck company or other transportation modes. The S&S company is responsible for providing class III direct support to all division units in the division rear and support to the FSBs' supply companies. If fuel supply is limited, the G4 (based on input from the G3) gives instruction on fuel allocation to the class III officer at the DMMC. The MSB then receives fuel allocation guidance from the DMMC. The flow of bulk fuels is depicted in Figure 5-4.

The division aviation brigade obtains ground fuels from the MSB (or the nearest FSB for forward deployed aviation elements) using supply point distribution. Normally, the division aviation brigade is resupplied with aviation fuel direct from corps, with reinforcing support from the MSB. The MSB maintains a limited reserve stockage of aviation fuel, which is distributed to the aviation brigade as required. The flow of turbine fuel to the aviation brigade is in response to forecasts which are consolidated at the aviation brigade S4 level and forwarded to the DMMC. Where JP-5 or JP-8 is available, the MSB will not have assets dedicated to providing a reserve for the AB. Aviation fuel delivered by corps or MSB tankers is transferred to petroleum vehicles organic to aviation brigade units at predetermined locations. Aviation brigade units establish and operate FARPS and handle all aircraft refueling with organic assets. FM 10-68 gives details on aircraft refueling. Note: Units deploying to overseas theaters must coordinate in advance regarding the fuel of choice in that area of operations so that organic petroleum equipment can be converted and redesignated as necessary.

SALVAGE

The supply platoon of the MSB S&S company operates the salvage collection point. Personnel collect, classify, and dispose of salvage materials. Salvage is delivered to the salvage collection points by users or finders. The collection points handle serviceable items that can be returned to supply channels; items that maintenance companies cannot accept; and salvaged items. Salvage includes items that are discarded, captured, uneconomically reparable, condemned, abandoned, and scrap. The salvage collection point does not handle toxic agents, radioactive materiels, ammunition and explosives, and COMSEC and medical supplies. The salvage point is normally colocated with a maintenance collection point.

When receiving material, the salvage point will perform the following functions:

- Check the item and its condition against the information shown on the turn-in documentation.
- Classify items as serviceable or unserviceable.

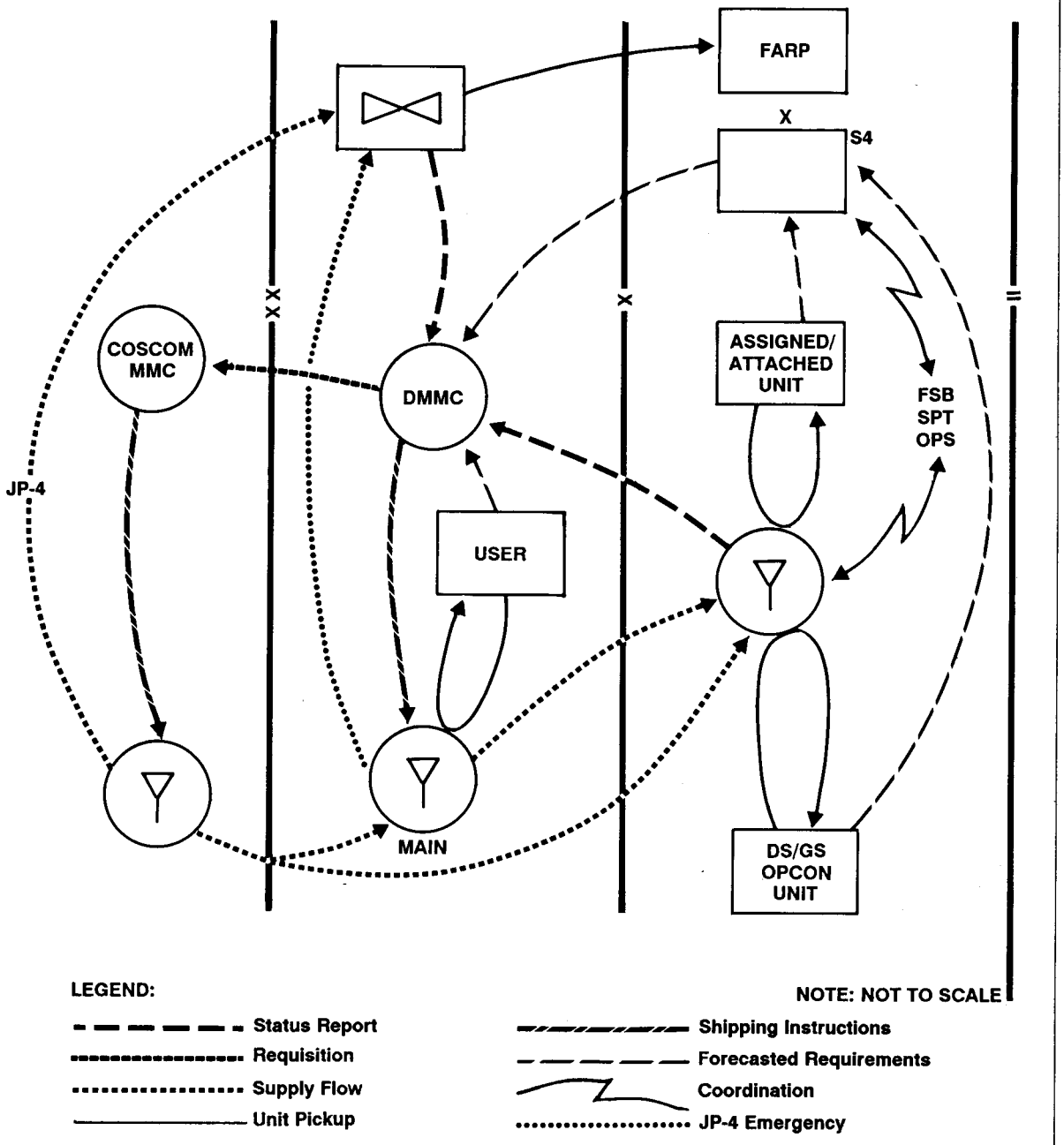


Figure 5-4 Bulk Fuel Supply

- Segregate items turned in as serviceable, reparable, or scrap. Serviceable items are protected from the elements as much as possible.

The salvage point will dispose of items based on guidance received from the DMMC. Disposition instructions for foreign or captured materials will be provided through the division intelligence officer. Normally, reparable items are sent to the maintenance shop and serviceable clothing and canvas items to the laundry and renovation platoon of the COSCOM. Unrepairable items and scrap are evacuated through salvage channels to a property disposal unit.

GRREG

All commanders must make certain that units under their command perform unit-level graves registration. Each unit must search for, recover, identify, and evacuate his own remains. The MSB has one GRREG trained soldier in the headquarters of the S&S company. He is available to train division personnel in unit graves registration responsibilities in the handling of personnel effects and remains, as well as what forms they need to complete. The FSBs also have GRREG NCOs for training in the brigade sectors. Unit-level GRREG responsibilities are detailed in FM 10-63-1.

In the initial stages of hostilities before the MSB receives the augmentation platoon, personnel will have to be pulled from other duties to operate a collection point. The GRREG NCO is normally assigned the duties of chief of the GRREG collection point until the GRREG section arrives. The GRREG point receives remains from supported units, continues the identification process initiated by the unit, inventories personal effects, and evacuates remains and personal effects. GRREG point personnel ensure the personnel recovering the remains have completed a DD Form 567 for each remains. The collection point maintains a record of remains processed.

After remains have been received and processed at the MSB collection point, they are evacuated to an intermediate graves registration collection point or temporary military cemetery in the corps area. Helicopters and backhaul transportation (except for class I vehicles) may be used to evacuate remains. Remains must always be covered and screened from sight.

Authorized emergency burials may be required, if the number of fatalities occurring makes evacuation of remains impossible. The headquarters must be notified as to the number of remains, location, and reasons evacuation cannot be accomplished. In such cases authorized emergency war burial procedures will be used.

All remains found in a contaminated area should be handled as if contaminated. NBC tags should be attached to contaminated remains. If NBC tags are not available, a tag with a large "C" written on it is attached to each contaminated remains. Personnel handling contaminated remains must maintain an adequate level of individual protection. Contaminated remains are kept separate from uncontaminated remains. Due to the possibility of mass fatalities in an NBC attack, normal GRREG methods may not be feasible. Contaminated remains will not be evacuated unless they can be thoroughly decontaminated and checked by NBC personnel. In extreme cases, mass burials may be required. Requests are made through command channels. Permission for mass burials comes from the joint central GRREG officer in the theater after approval from the theater commander.

CEB

The CEB point provides showers from portable bath units, delousing service, and exchange of soiled clothing for laundered clothing. Records and daily, weekly, or monthly reports are maintained for CEB activities. CEB personnel give each supported unit a scheduled time for baths so that services are provided in an orderly manner. Supported units assign soldiers to guard valuables and assist with clothing exchange. More information on clothing exchange and bath operations can be found in FM 10-280.

In a nuclear, biological, or chemical environment a chemical unit decontaminates personnel, equipment, and terrain. CEB personnel may have to help decontaminate soldiers. FM 3-5 has more information on decontamination of personnel, equipment, and terrain.

PLATOON/SECTION FUNCTIONS

COMPANY HEADQUARTERS

The company headquarters provides the personnel responsible for command, control, billeting, training discipline, and security of the company. It provides personnel for interior supply and communications. It also provides a GRREG cadre as a training base for GRREG activities.

The unit supply element supports the company with certain supplies and TOE equipment. The supply sergeant is responsible for directing and supervising internal supply operations. The armorer and supply specialist assists the supply sergeant in the receipt, storage, security, and issue of unit supplies. Unit supply operations are described in the unit supply update and FM 10-14:

SUPPLY PLATOON

The supply platoon operates the supply points from which division and attached units in the DSA draw class I, II, IV, and VII supplies. The supply platoon also breaks down and delivers class I supplies to the FSBs. It normally consists of a platoon headquarters and a supply section.

Platoon Headquarters

The platoon headquarters supervises, directs, and manages the receipt, storage, and issue section. The supply platoon headquarters also maintains coordination through the support operations office with supported units on the hours of operation, the schedule of issues, turn-in procedures, and salvage operations. Personnel coordinate inventory of supplies and equipment as well as keeping track of daily demands and conduct the inventory.

Receipt, Storage, and Issue Section

This section receives, stores, and issues class II, III (pkg), IV, VII supplies to supported units in the division rear. It prepares designated supplies for transport to the FSB supply points and performs salvage collection point operations for designated supply items. It also maintains the division reserve of these supplies. See FM 10-27 for details on DSU supply operations.

PETROLEUM STORAGE AND DISTRIBUTION PLATOON

This platoon establishes and operates the class III supply point in the DSA. It provides vehicles and personnel for delivery and dispensing of bulk class III to division rear supported units and provides for line-haul transport of bulk class III to the FSB supply companies. The platoon is responsible for receipt, storage, issue, quality control, delivery, and dispensing of bulk class III in support of the division mission.

Platoon Headquarters

The platoon headquarters plans, directs, and supervises the operations of the petroleum storage and issue section and the distribution section. Headquarters personnel provide status report input to the DMMC for all on-hand and issued bulk class III. They also reconnoiter site locations, provide fuel point operations, and provide distribution control of fuel delivery assets. The headquarters is normally staffed with a platoon leader, platoon sergeant, and petroleum laboratory specialists. Petroleum laboratory specialists perform fuel inspections and analyses on petroleum products. These inspections and limited tests determine whether petroleum products meet prescribed usage and quality control specifications. FM 10-72 gives the specific tests the petroleum laboratory specialists perform.

Petroleum Storage and Issue Section

The storage and issue section operates bulk class III storage and issue sites at the main class III point.

This section is capable of setting up and operating two sets of FSSP equipment. Bulk fuels are received from corps tankers and off-loaded into collapsible fabric tanks for temporary storage. Customer unit vehicles are issued bulk fuels from these tanks using FSSP equipment and associated pumps and filter separators. The storage and issue section can set up remote filling station sites by employing the FARE systems and associated 500-gallon drums.

Distribution Section

This section dutributes bulk fuel to customer units in the division rear and to the FSBs using organic 5,000-gallon tankers. The distribution section also has the capability to establish and operate two mobile roadside falling stations in the DSA. The primary function of the mobile roadside dispensing station is to refuel vehicles transiting through the DSA, not to provide bulk issues to using units. The mobile filling stations are normally set up only when the volume of traffic justifies the service. The normal mix of fuel carried by the mobile refueling vehicle is diesel on the truck-mounted tank and pump unit and MOGAS on the trailer-mounted storage tank. For delivery of bulk fuel see FM 10-71.

CLASS I AND WATER PLATOON

This platoon operates the class I supply point in the DSA and provides up to five water purification sites for both the DSA and BSA. The platoon provides limited potable water distribution by ground delivery to a dry water point. Coordination for airlift may be required.

Platoon Headquarters

Headquarters personnel plan, direct, and supervise the operations of the class I and water sections. Personnel may recommend the selection of the site. Some major considerations used in site selection are ample water sources, good drainage, level ground, camouflage capability, and accessibility.

Class I Section

The class I section receives, stores, maintains records, prepares for distribution, and issues class I supplies to division rear units. The section also processes and prepares rations for transport to the FSB supply companies.

Water Section

This section operates up to five water purification and supply points. Normal deployment of the section is one water point attached to the FSB in each BSA and either one consolidated point in the DSA or two different points depending on the situation and the mission. FM 10-52 has more information on field water supply.

MAINTENANCE SECTION

The maintenance section performs unit level maintenance for organic equipment of the S&S company and the TMT company. This includes unit maintenance for wheeled vehicles, trailers, MHE, generators, water purification equipment, fuel handling and storage equipment, and related support material.

The maintenance section should be set up in a sheltered place where the tools and equipment can be stored and secured. The site should be located near the MSR and have a good road network into and out of the area. The site should provide good cover and concealment and have an area large enough for some dispersion. As personnel get the maintenance section set up, the maintenance supervisor should plan personnel shift assignments so that operations and repair of wheeled vehicles can begin. While mechanics and repair personnel conduct unit maintenance, drivers should perform after-operation maintenance checks and services to ensure materiel readiness.

Maintenance management involves making sure that equipment is in constant readiness. It is the responsibility of each equipment operator to perform preventive maintenance on his equipment each day it is operated. PM is the systematic care, inspection, and servicing of equipment to maintain it in a serviceable condition, prevent breakdown, and

ensure maximum operational readiness. More information on management of maintenance operations is in AR 750-1. Detailed information for descriptions and explanations of forms and records is in DA Pamphlet 738-750.

Unit maintenance mechanics perform quarterly maintenance services on the unit's organic equipment. When they cannot make the repairs, they send the items to the appropriate maintenance company of the MSB.

GRAVES REGISTRATION PLATOON

The graves registration platoon will receive, identify, and evacuate remains brought into the DSA and BSA. Search and recovery activities after combat will be conducted when the tactical situation permits.

When the S&S company is augmented, it sets up a collection point in the DSA and sends a team to set up a collection point in each BSA. The DSA collecting point receives remains from the BSA and from units in the division. The collecting point may also receive remains of allied or enemy soldiers, POWs, and civilians.

CEB PLATOON

In the field, troops will require periodic bath and exchange of clothing. The CEB platoon, which augments the MSB S&S company, provides CEB service throughout the division. The platoon includes three sections, each of which can operate a CEB point. The location of the three points depends on METT-T. If circumstances permit, a point may be moved as far forward as a BSA.

ARID ENVIRONMENT WATER SECTION

This section augments the supply platoon when the division is deployed in an arid environment. It provides the capability to store and distribute potable water for the division and to forward water points in the BSA.

CHAPTER 6

Light Maintenance Company

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ORGANIZATION AND MISSION

The light maintenance company provides designated DS maintenance to division units not supported by the maintenance companies of the FSBs. It provides reinforcing DS maintenance for the FSBs and maintains the division class IX common ASL. It consists of a company headquarters, a maintenance control section, communications-electronics support platoon, maintenance support platoon, and supply platoon. See Figure 6-1.

The company performs the following functions

- Technical assistance to division units.
- Maintenance of an ASL. This includes the receipt, storage, and issue of common repair parts.
- Reparable exchange service and operation of a quick supply store for selected repair parts.
- On-site maintenance support of communications and power generation equipment.
- Controlled cryptographic item maintenance for all units of the division, less signal and military intelligence battalion items.
- Unit maintenance on C-E, refrigeration, and air conditioning equipment and repair of fuel and electric components for the heavy maintenance company.
- Transportation of crane and forklifts for the heavy maintenance company.

MAINTENANCE PRINCIPLES

MANAGEMENT

The maintenance companies (light, heavy, and missile) in the MSB operate on the TOC/LOC concept. This means the maintenance control section is the command control, and communications center. This section coordinates maintenance priorities with the company commander and MSB support operations officer. Together they determine which maintenance assets will operate at the DSA base shop, MCPs, and on-site locations. This determination is a continuing process, not a one-time decision. Task organizing of units and changes in the number and locations of CS and CSS units require changes in the maintenance configurations.

REPAIR TIMELINES

When equipment becomes inoperable, the applicable manager must decide whether to repair it on

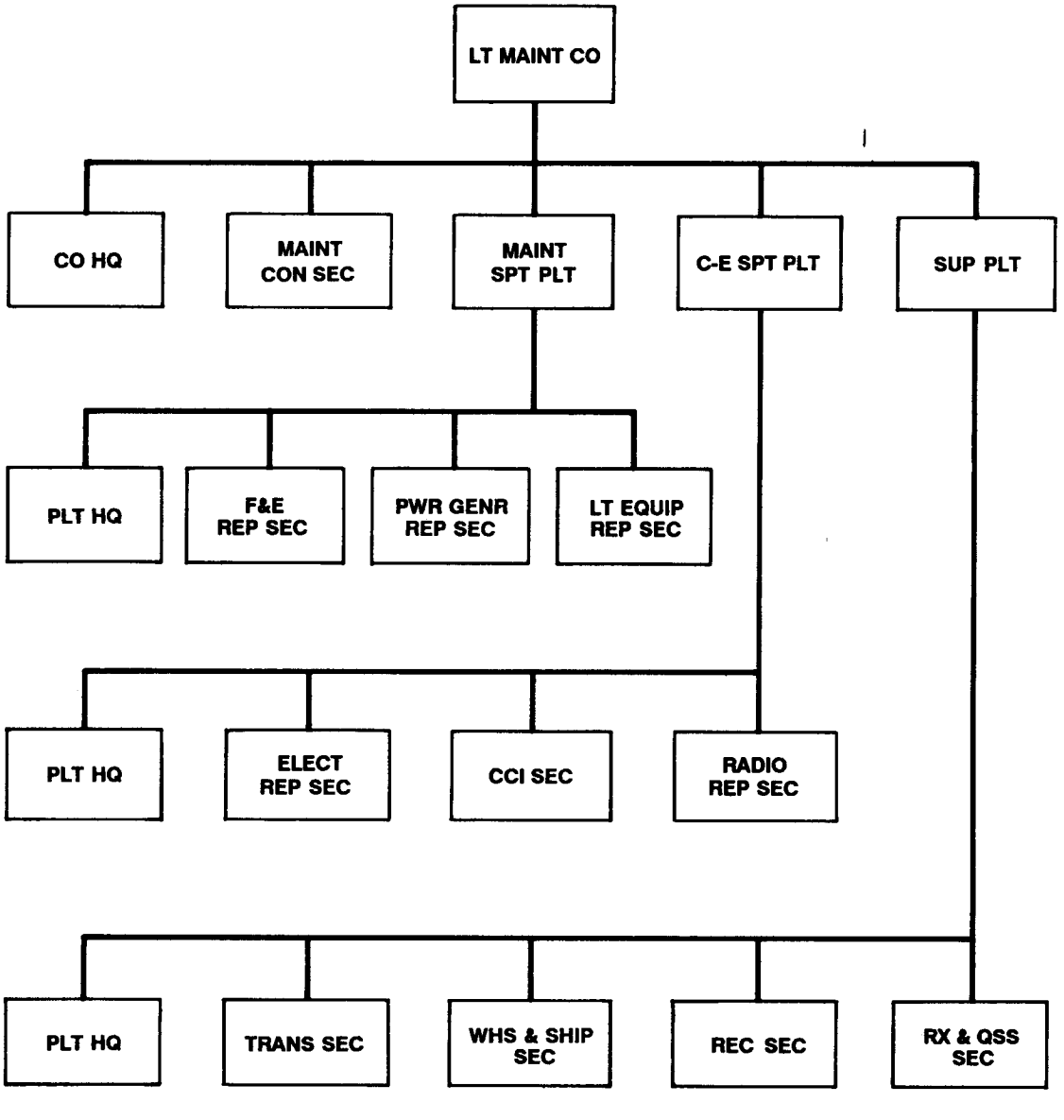


Figure 6-1 Typical Organization of Light Maintenance Company

site or to recover it to a maintenance activity. Whenever possible, equipment is repaired on site. As a tool, timelines are set to help maintenance leaders decide where to make repairs. Table 6-1 shows sample guidelines. If the time it takes to repair an item once all repairers, tools, and repair parts are on hand exceeds the specified time, decision makers should consider recovery or evacuation. Times are based on command policy and METT-T. Users, maintainers, and managers must always bear in mind that these guidelines must be flexible.

Table 6-1 Maintenance Timelines

LOCATION	HOURS
On site	2
UMCP	6
BSA	24
DSA	36

CENTRALIZED CONTROL

Each maintenance company commander with his maintenance control officer retains control over all company operations even though assets may be decentralized. They must be aware of both the DSM work load and available resources. Managers must avoid having equipment awaiting repairs on one part of the battlefield, while repair assets are idle on another.

BATTLE DAMAGE ASSESSMENT AND REPAIR

BDAR are techniques used to expedite return of a damaged piece of equipment to the current battle. BDA is inspecting equipment to determine the extent of damage, classifying it, and developing a plan of action. Priorities for repair of battle damaged systems are usually–

- Most essential to immediate mission.
- Reparable in the least time.
- Reparable but not in time for immediate mission.

BDR uses emergency repair to return a system to a full or partial mission capable status. Commanders may direct use of BDR during combat. Fuel and armored systems are primary candidates for BDR. When the mission is over, repairers use standard maintenance procedures to repair the items.

CONTROLLED EXCHANGE

Controlled exchange is the systematic removal of serviceable parts from unserviceable, economically reparable equipment. Use of it must comply with the division commander's published guidance. The end result is to restore an item to mission capable status.

CANNIBALIZATION

Cannibalization is the authorized removal of serviceable parts from unserviceable uneconomically reparable equipment. It can be a valuable source of repair parts during combat. The main purpose of cannibalization is to support area supply or RX operations. The commander controls cannibalization.

METHOD OF OPERATIONS

The light maintenance company operates from the DSA. It normally colocates with the heavy maintenance company. It has a base shop capability to repair equipment for which it is responsible. The objective of the company is to return to operation the maximum amount of light equipment in the least time.

The MSB support operations section Coordinates with the DISCOM support operations branch to arrange all reinforcing support for the MSB. This

includes evacuation of materiel, emergency needs, and technical help. The support operations section monitors the ASL and PLL levels. It ensures that the company maintains proper operating levels. The support operations section also coordinates MST operations with maintenance companies and supported units.

The maintenance support platoon of this company along with the C-E support platoon set up and operate the base of operations. When required, the company sends MSTs into the division rear or forward to the FSB to provide support consistent with tactical limitations and support capabilities.

The light and heavy maintenance companies operate the main division MCP. The MCP receives unserviceable equipment, except aircraft and aircraft items, from supported units. At the MCP, maintenance personnel assigned by the maintenance control officer perform large-scale BDA. They may use controlled exchange and cannibalization to maximize operational systems. All supported units are responsible for recovery of equipment. Units bring recovered materiel to the nearest collecting point. When units cannot recover equipment to an MCP, they should recover items as close as possible to an MSR to await maintenance support. The unit must provide or arrange for security. It must also provide accurate location information to the MCS.

During night operations, unless prohibited by the tactical commander, maintenance elements work in lightproof shelters with subdued visible light. Workers may drape tarps and tentage over tank and howitzer main guns to provide expedient shelters. When available, repairers use night vision devices to repair critical items that they cannot fix in the shelter. They also preposition equipment, tools, and repair parts and mark them for easy use.

BDA is difficult. Therefore, recovery vehicles should be forward during night attacks. Equipment should beat a location which makes assessment easy. Recovery personnel should reconnoiter routes during daylight so they can rapidly recover vehicles to the MCP.

The supply platoon maintains the division ASL for class IX supplies (less missile and aircraft). The materiel section of the DMMC computes and manages the division class IX ASL.

Figure 6-2 shows the flow of class IX supplies. For most class IX supplies, division units input data to ULLS and handcarry floppy disks to the light maintenance company. The company inputs request data to SARSS-1 and sends requests electronically to the DMMC. The DMMC inputs request data to SARSS-2A and sends requisitions electronically to the COSCOM MMC.

The light maintenance company will issue the item if it is on hand. If parts are not on hand, the request is back ordered through the DMMC. The DMMC passes the requisition to the COSCOM MMC. The COSCOM MMC prepares the MRO, back orders the item, or passes the requisition to a higher source of supply.

The light maintenance company notifies the DMMC of receipt from the general support repair parts supply company. The supply platoon stores the items (for ASL replenishment) or releases them to the customer if the request was a passing action. The platoon uses ASL stocks to replenish an FSB when it receives an MRO. The platoon also operates an RX activity and a QSS for low-dollar, consumable supplies.

See FM 43-12 for more information on maintenance operations.

PLATOON/SECTION FUNCTIONS

COMPANY HEADQUARTERS

The company headquarters is the command and control center for the company. It provides the necessary organization, administration, supply, and unit maintenance support to elements of the company. The company commander and the first sergeant plan, direct, and supervise the operation and

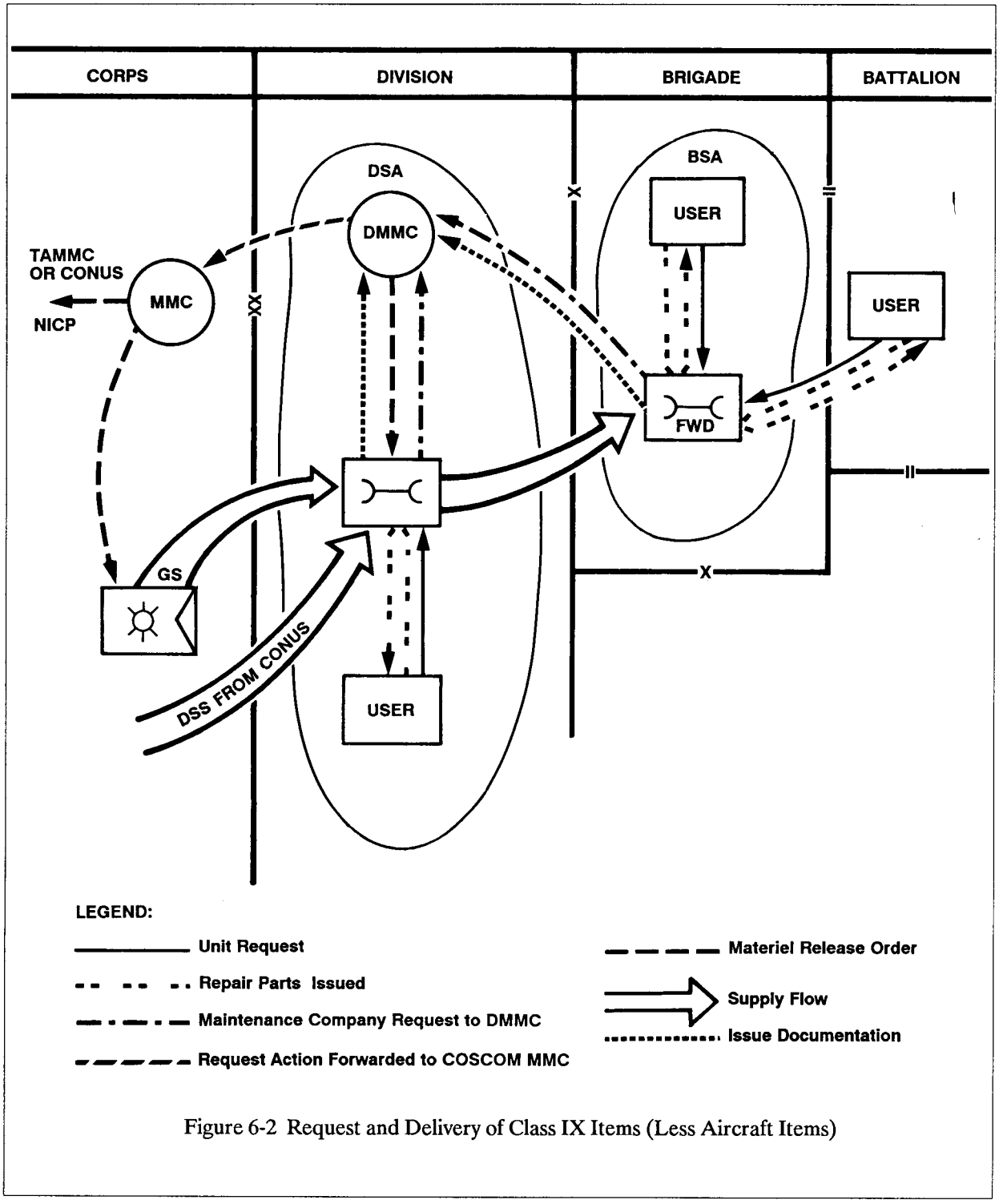


Figure 6-2 Request and Delivery of Class IX Items (Less Aircraft Items)

the employment of the unit. The dicipline, billeting, and security of the company are maintained through the command and control system set up by these two individuals. The unit maintains its vehicles through its motor pool operation. It also provides support for the company through the unit supply element.

MAINTENANCE CONTROL SECTION

This section provides the control, coordination, and overall supervision of DS maintenance shops, MCPs and MSTs. It provides technical inspections, shop supply, job orders, and equipment accountability.

The inspection element is subordinate to the maintenance control section. The technical inspectors of this element are responsible for all aspects of quality assurance, technical inspection, and quality control for DSM activities of the company. They answer directly to the company commander. They also serve as the nucleus for TI, QC, and BDA teams.

MAINTENANCE SUPPORT PLATOON

This platoon provides DSM for the power generation equipment, light equipment, and automotive components. It consists of a platoon headquarters, three power generation repair sections, a light equipment repair section, and a fuel and electronic repair section.

Fuel and Electronic Repair Section

This section is responsible for repair of automotive components in support of all maintenance shops and high-mortality repair parts components in support of the RX mission (less C-E items).

Power Generation Repair Sections

The platoon has three of these sections. Each section can conduct limited on-site maintenance. It can also supplement the technical assistance capabilities of other maintenance elements as needed. The three sections operate under the control and supervision of the power generation technician.

Light Equipment Repair Section

This section provides the capability for repair of quartermaster and chemical equipment. It supplements the on-site maintenance and technical assistance capabilities of the other elements as needed.

COMMUNICATIONS-ELECTRONICS SUPPORT PLATOON

The C-E support platoon provides DS electronics maintenance for all COMSEC equipment in the division rear area excluding MI and signal battalion items. This platoon will be responsible for the repair of all user-owned MSE terminal instruments (DNVT, DSVT, FAX, and data terminals). The signal battalion performs COMSEC repair for the signal and MI battalions.

Radio Repair Section

The radio repair section repairs all AM, FM, and single side band radio systems in the division rear area. It has limited capability of providing dual location support when employed as an MST. To reinforce FSBs, it can provide personnel and took to repair radios in forward areas.

Controlled Cryptographic Items Maintenance Section

The CCI maintenance section operates under the control of the C-E equipment technician. It supports all division units in the division rear. It provides DSM for teletypewriter, wire, and special electronic device equipment. It can repair the following:

- Field artillery computers and related equipment.
- Dial/manual central office telephone exchange equipment.
- Teletypewriters.
- TAC maneuver systems.
- Weapons support radar.
- Engineering electronic orientation, measurement, vision, and detection equipment.

Electronics Repair Section

This section is responsible for the repair of the division ADP equipment. The section inspects, tests, and performs DS maintenance on TACCS computers, DAS-3 computers, and related equipment.

SUPPLY PLATOON

The platoon headquarters supervises and controls the functions of the platoon in support of the MSB's class IX supply mission. The platoon maintains the division's main ASL (less missile and aircraft) for class IX. It operates an RX shop and maintains QSS stocks. The platoon consists of receiving, warehouse/shipping, transportation, and RW/QSS sections.

Receiving Section

This section receives and accounts for all supplies coming from supply sources, field returns, and shipment redirects.

Warehouse/Shipping Section

This section stores supplies and performs warehouse storage operations such as shelf-life monitoring, protection from weather, security against pilferage, and the picking of materiel for issue based on release documents. It also packages and crates supplies when required.

Transportation Section

The transportation section picks up and transports materiel from external supply sources, moves it internally among storage locations, and delivers ASL materiel to maintenance companies of FSBs. It consists of truck drivers and MHE operators.

RX/QSS Section

The RX/QSS section provides exchange of selected reparable items to supported units and receives, stores, and issues QSS items. Unserviceable reparable accompany requests for reparable. QSS service improves availability of low-dollar, consumable items.

CHAPTER 7

Heavy Maintenance Company

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ORGANIZATION AND MISSION

The heavy maintenance company provides DS maintenance to division units not supported by the FSBs. (The company does not maintain medical, C-E, COMSEC, airdrop equipment, light textiles, avionics. aircraft armament, missile, and ammunition items.) The company also provides limited reinforcing DSM, less repair parts, for the FSBs. Also, it has two teams which provide close-in DS to the cavalry squadron and the MLRS unit in the division. The company is organized as shown in Figure **7-1.**

Other support this company provides includes–

- Common repair parts support to organic platoons and sections.
- Limited recovery help to supported units.
- On-site and combat system-oriented support by the maintenance support teams.

Maintenance principles for this company are the same as those outlined in Chapter 6.

METHOD OF OPERATIONS

EMPLOYMENT AND RESPONSIBILITIES

The heavy maintenance company operates from the DSA. The company typically colocates with the light maintenance company. It has a base shop capability to repair equipment for which it is responsible. The focus is always on returning the system to the user. The maintenance control officer controls the mission of the heavy maintenance shop. He also keeps the company commander informed on maintenance operations.

Maintenance support teams from the maintenance support platoon extend support forward. When repairs are beyond the ability of the FSBs, the company may dispatch MSTs to help units in the brigade sector. The MSTs maybe integrated into the FSB company shops, or they may provide on-site support. MSTs work as close to the site of equipment failure as possible. This minimizes downtime and increases equipment availability to the unit.

The main division MCP is operated by the light maintenance company, the heavy maintenance company, and elements of the missile support company. It is the center for maintenance operations in the DSA. If equipment cannot be repaired in the BSA, it is brought to the main MCP. Equipment beyond the repair capability of DSA assets is evacuated through the DSA to the Corps. MSTs from the COSCOM may assist the MSB maintenance companies in BDA by recommending disposition for specific items.

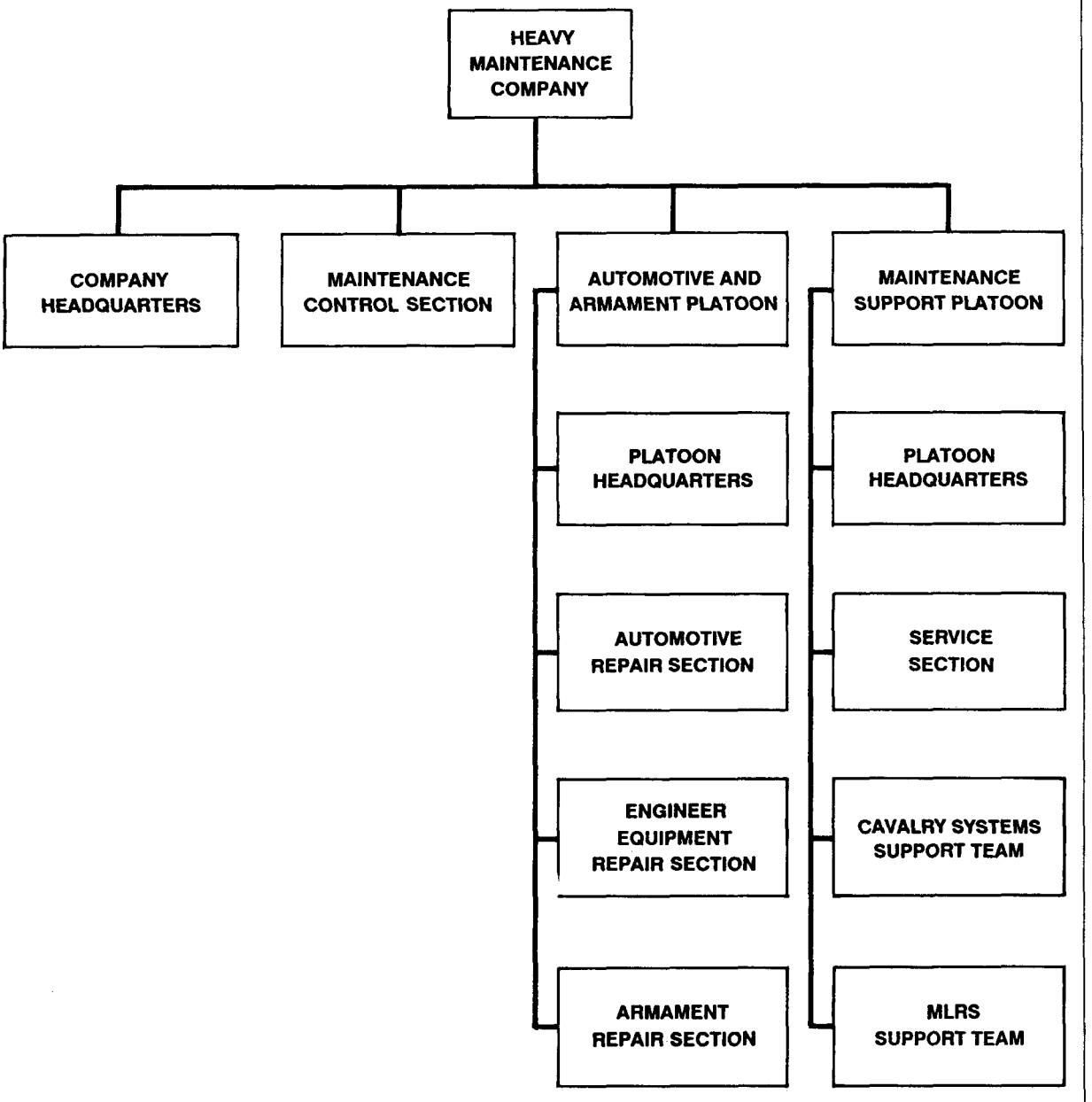


Figure 7-1 Typical Organization of Heavy Maintenance Company

RECOVERY

The service and recovery section of the company provides limited reinforcing recovery support for units in the DSA. Recovery is the process of retrieving or freeing immobile, inoperative, or abandoned materiel. Items are recovered from where they are disabled or abandoned and returned to operation or to the MCP. There items are repaired, evacuated, or otherwise disposed of. Recovery is performed to—

- Return immobilized equipment to operation.
- Retrieve equipment for repair and return to user.
- Prevent enemy capture.
- Use enemy equipment for intelligence purposes or for US or allied force use.

Recovery is initiated by the operator of the disabled item. First the operator should attempt repairs and self- or like-vehicle recovery. If the operator cannot recover the equipment, he requests help from his battalion motor officer. The BMO evaluates the request on the basis of command guidance and the overall tactical and maintenance situations. He then develops a recovery plan. If the unit is in the division rear and recovery is beyond the unit's capability, the unit requests help from the heavy maintenance company.

EVACUATION

The service and recovery section helps evacuate unserviceable from the BSA to the DSA or to maintenance activities to the rear of the division. Factors which affect the amount of evacuation done are the tactical situation, extent of damage, and availability of people, parts, and tools.

Vehicles taking repair parts or serviceable items forward evacuate unserviceable on the return trip. Large and heavy items such as tanks are beyond the heavy maintenance company capability. In such cases, HETs from the MSB TMT company are required. Support from the TMT company is requested through the DISCOM movements control officer of the S2/S3 office.

Recovery and evacuation principles are covered in FMs 20-22 and 43-5.

PLATOON/SECTION FUNCTIONS

COMPANY HEADQUARTERS

The company headquarters provides command, control, administrative, and logistics support to all elements of the company. It provides technical inspection support to operating elements of the company. The command element is responsible for training, discipline, billeting, and security of the company. The command element has a unit armorer and an NBC NCO. The NBC NCO is responsible for coordinating and conducting training on NBC defense at the company level. He also instructs unit personnel in NBC operating procedures.

MAINTENANCE CONTROL SECTION

Maintenance control section provides the control, coordination, and supervision of the heavy maintenance shop. This supervision includes technical inspections, shop supply, job order accounting, equipment accountability, and the administrative operations of the maintenance control office. This section has a maintenance control office and an inspection element. The inspection element also serves as the nucleus for the BDA teams.

The inspection element is the technical inspection and quality control element for the company. The quality control technician supervises the element. He is responsible to the maintenance control officer. Technical inspectors are responsible to the company commander for all aspects of quality assurance, TI, and QC for DS maintenance activities of the company. This section has inspectors for wheeled vehicles, engineer equipment, and armament items.

AUTOMOTIVE/ARMAMENT PLATOON

The automotive armament platoon provides base support for automotive and armament equipment. It also provides reinforcing support to the maintenance companies of the FSBs. This platoon consists of automotive repair, engineer equipment repair, and armament repair sections.

Automotive Repair Section

The automotive repair section provides base shop capability for repair of automotive equipment and on-site repair in the division rear. The two key areas of concern are tracked-vehicle repair and wheeled-vehicle repair. Tracked-vehicle repairs center on DS maintenance on malfunctioning end items, assemblies, and components. This includes transmissions, engines, electrical items, steering controls, and hydraulic cylinders on tracked vehicles. Wheeled-vehicle repairs center on DSM on engine, powertrain, and chassis components of wheeled vehicles; MHE (less propulsion motors on electric MHE); and related items.

Engineer Equipment Repair Section

This section provides base shop support of utility, power, and construction equipment. Repairers perform DS maintenance on construction equipment. This includes such items as compressors and cranes.

Armament Repair Section

This section provides base shop support for equipment not repaired on site. It performs DSM on fire control instruments, control systems and related equipment. This equipment includes laser rangefinders, ground laser-locator designators, and related items. This section also performs corrective support maintenance on small arms and turret-mounted weapons and mechanisms. It also repairs previously diagnosed malfunctioning towed weapons.

MAINTENANCE SUPPORT PLATOON

The maintenance support platoon has a service section and support teams which provide DS maintenance. One team supports the cavalry squadron of the AB. The other team supports the MLRS battery. The platoon headquarters provides command and control of the teams.

Cavalry System Support Team

This team provides DSM to the AB cavalry squadron. The team normally operates out of the cavalry squadron trains area. It is reinforced with other MSB elements as required. The team can perform DSM on engine, powertrain, and chassis components of tracked and wheeled vehicles. It also provides DSM for turret-mounted weapons and mechanisms, tactical utility and precise power generation equipment, and related equipment. The field radio repairer inspects, tests, and performs DSM on radios and related items. The team also provides recovery and lift support to the cavalry squadron.

MLRS Support Team

The MLRS support team provides DS maintenance support to the division MLRS battery. The SST is task organized into MSTs for specific operations. The MSTs may include elements of other platoons and companies of the MSB.

Service Section

The service section performs machine work repair and metal working repair in support of the DS maintenance mission.

CHAPTER 8

Missile Support Company

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ORGANIZATION AND MISSION

The missile support company provides DS maintenance support and class IX supply for land combat missile systems and SHORAD/FAADS systems. The company also provides DS maintenance support for FAAR, MCTNS, associated training support equipment, and missile peculiar test measurement and diagnostic equipment for the division. The company is organized as shown in Figure 8-1. It consists of a company headquarters, maintenance control section, storage/RX section, land combat maintenance platoon, and SHORAD maintenance platoon. Figure 8-2 shows a sample of a tactical disposition layout. The company is usually deployed in the DSA, but also sends out MSTs.

The company also provides–

- Reinforcement of land combat/MCTNS class IX and RX supply support for FSB maintenance companies.
- Receipt, storage, and issue of class IX supplies for land combat, SHOW, and MCTNS systems to support mission shop stock, RX, MST requirements, and missile/weapon systems user requirements.
- MST support for all systems not organic to brigades.
- Technical assistance inspections when requested by supported units.
- QA/QC inspections of system-peculiar equipment maintenance and TMDE maintenance.

Maintenance principles for this company are the same as those outlined in Chapter 6.

METHOD OF OPERATIONS

The missile support company is organized and equipped to provide forward support maintenance, as well as to operate abase shop in the DSA. MSTs of the missile support company provide limited on-site DS maintenance of malfunctioning equipment, to include repair by RX of selected components. Malfunctioning components are returned to the missile support company base shop by MSTs for repair.

The company also—

- Provides a technical supply source.
- Provides base shop repair for line replaceable units.
- Provides line replaceable unit RX for all missile systems in the division.

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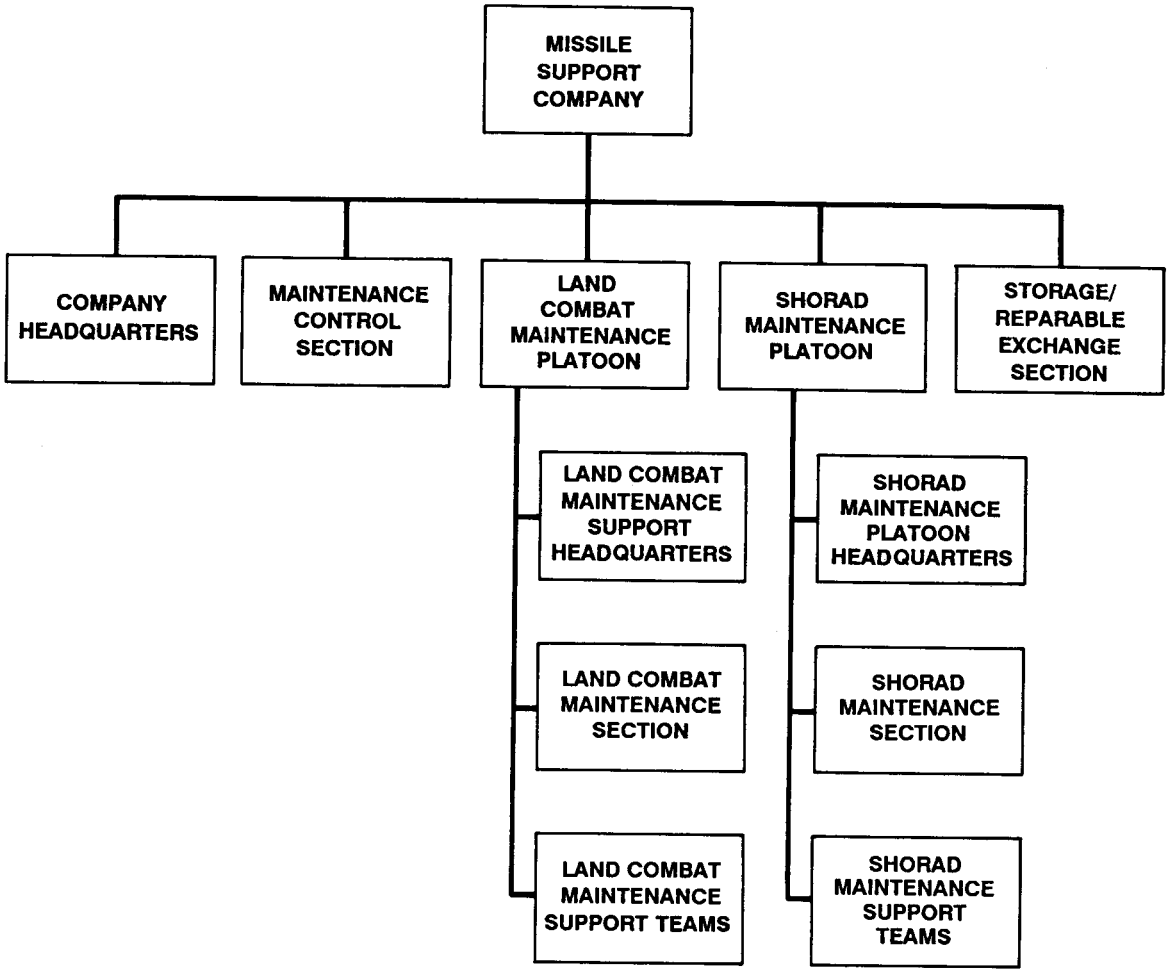


Figure 8-1 Missile Support Company

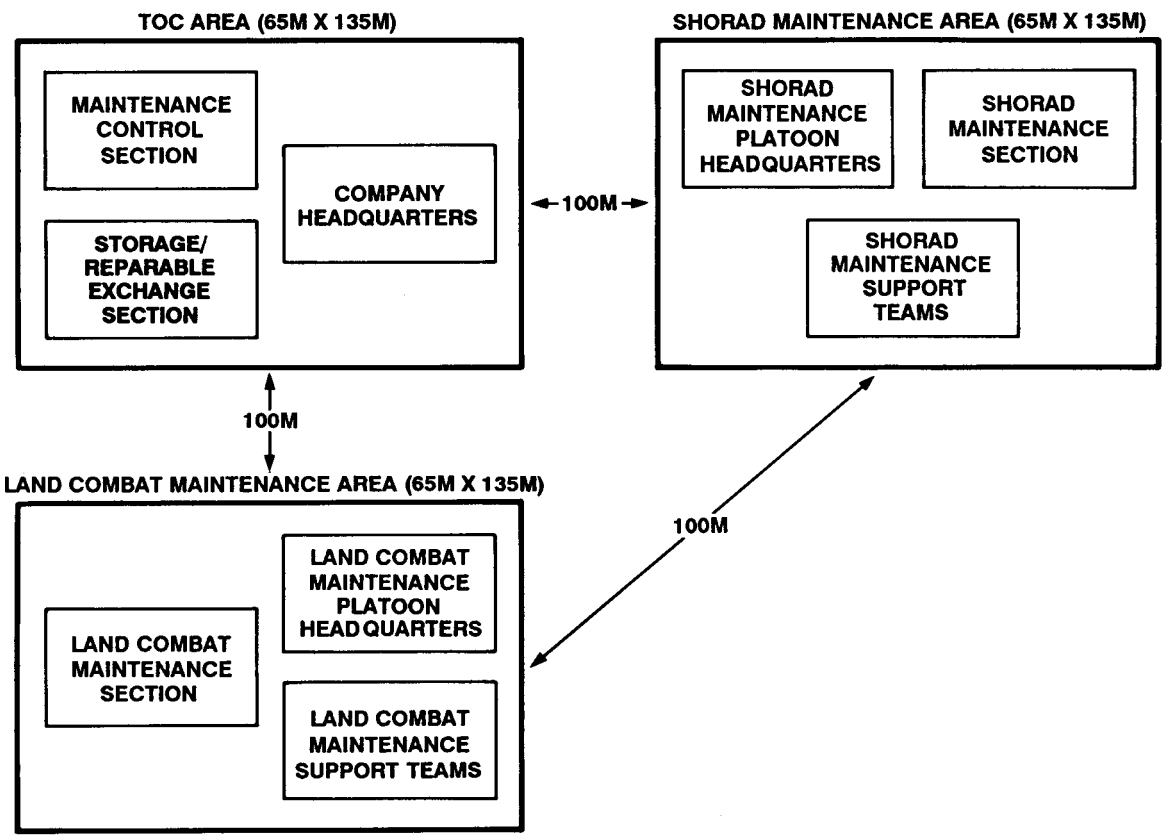


Figure 8-2 Tactical Disposition Diagram

- Has the TMDE necessary to perform maintenance as allocated by maintenance allocation charts.

The levels of missile support maintenance are as follows:

- Unit level is performed by operator/maintainer for land combat systems and an operator and unit maintainer for SHORAD/FAAD. Unit maintenance keeps the system operating by isolating and replacing malfunctioning LRUs.
- Direct support maintenance is performed by missile support teams, which assist unit maintainers and the base shop maintenance. The base shop repairs defective LRUs by isolating and replacing defective SRUs.
- General support/depot maintenance consists of repairing defective SRUs by isolating and replacing defective components. Repaired SRUs are returned to the supply system.
- CONUS depots and contractor facilities provide reinforcement for EAC/depot facilities.

SUPPLY

The missile support company depends on a constant flow of repair parts. MSTs operating from the FSB will evacuate their unserviceable LRUs through forward support maintenance facilities to the missile support company. These LRUs are exchanged for serviceable ones. The defective LRU may be repaired by the missile support company by replacing the defective SRU. Whole systems evacuated to the missile support company for repair normally receive first priority for repair effort.

The defective SRUs are turned in and evacuated to the GS/depot maintenance facility in EAC for repair. The missile support company will requisition a serviceable SRU through the DMMC. The DMMC will pass the requirement to the COSCOM MMC.

MAINTENANCE SUPPORT TEAMS

Maintenance support teams provide support for land combat missile systems, multiple launch rocket systems, and Vulcan, SHORAD, FAAR systems. The missile support company has an additional mission of fielding BDA teams. This function will normally be accomplished by the MSTs as they perform their mission.

The advantages of moving MSTs to equipment rather than moving equipment to the base shop are —

- Reducing equipment downtime.
- Saving time in transit for large and bulky items.
- Eliminating damage caused by transporting major items.
- Minimizing security risk in moving classified items.
- Repairing major items without disconnecting them from the system.

Effective MST support depends largely on response time, training, and communications between user and support personnel. Before the MST is dispatched, there must be a fully coordinated effort between the maintenance support team and the requester. The MST must have vital information concerning the scope of the problem before being dispatched. Such information should include symptoms of malfunction, anticipated repair parts, identity of requestor unit, location of the unit, and point of contact.

Prior to team departure, the supported unit maintenance officer is advised of repairs completed and of unresolved problems. Maintenance forms and logbook entries are completed. Work order requests opened on equipment requiring base shop repair will be closed out and the equipment evacuated by the supported unit.

BASE SHOP OPERATIONS

Base shop support in the DSA is provided by the land combat maintenance and SHORAD/FAADS maintenance platoons of the MSB missile support company. The shop is responsible for the receipt, inspection, control, repair, and coordination of evacuation of all equipment received from supported units. Shop supply may maintain small stocks of frequently demanded items to improve maintenance response. The shop must be laid out to allow free flow of work and to minimize the required movement of repair parts, tools, and equipment. The maintenance control officer supervises the overall operations and establishes policy and procedures.

Shop procedures will be outlined in the maintenance internal SOP which should be based on guidance in DA Pam 738-750. An external SOP for use by supported units should also adhere to those guidelines.

The management activities vary depending on the system available in the division. TAMMS is a manual system described in DA Pam 738-750 that prescribes equipment records to be used for controlling the operation and maintenance of all Army materiel. SAMS, operating on TACCS, replaces other automated systems. It automates work order requests, parts requisitions, maintenance and supply management, and production of ad hoc maintenance and supply reports.

PLATOON/SECTION FUNCTION

COMPANY HEADQUARTERS

The company headquarters provides the necessary organization, administration, supply, and unit maintenance for support of the unit. The headquarters is typically organized with a command element, a supply element, and a motor pool element. In addition to the commander, the first sergeant, and vehicle driver, the command element has a tactical communications systems operator/mechanic. This individual installs, operates, and performs operator and unit maintenance on radio and wire communications systems and equipment.

The motor pool element, in addition to working the normal maintenance mission, is also capable of performing unit maintenance on refrigeration and air-conditioning equipment, multifuel forced-air heaters, high pressure air compressors, gasoline engines, and electrical motors peculiar to equipment supported. Unit maintenance is also performed on tactical utility and precise power generator sets, light sets, and power consumption equipment organic to the missile support company.

A key figure in the supply room element is the NBC NCO. This individual conducts and coordinates training on methods and techniques of NBC defense at the company level. He instructs unit personnel in NBC procedures and maintains the units operating efficiency and preparedness in matters relating to NBC defense.

MAINTENANCE CONTROL SECTION

The maintenance control section provides control, coordination and overall supervision of maintenance shops. It provides technical inspections, shop supply, job orders, equipment accountability, and administrative operations of the maintenance control office. This section is organized with a maintenance control office and an inspection element. It is the maintenance control office that maintains the coordination with customer units and higher headquarters in the accomplishing of the unit's maintenance mission. The section maintains the net control station for the missile support company.

The inspection element is the inspection and quality control element of the missile support company. It is under the supervision of the maintenance control officer. Technical inspectors are responsible to the company commander for all aspects of quality assurance, technical inspection, and QC for the DS maintenance activities of the company. They also serve as the nucleus for QA/QC and BDA teams.

STORAGE/RX SECTION

This section is responsible for receipt, storage, and issue of ASL items. The ASL consists of approximately 3,100 lines of supply including approximately 600 lines of RX items for land combat and SHORAD/FAADS systems. This section also provides-

- Technical assistance to supported units.
- Off-loading assistance of incoming shipments.
- Receipt, storage, and issue of nonstock or fringe items.
- Physical movement of items to storage location and relocating of stock.
- Issue of parts from stock.

The storage element assigns incoming supplies to storage locations and manages the stock locator system and document control procedures. It safeguards, protects, stores, and preserves supplies by proper use of dunnage, packing materials, and other storage aids.

The RX element receives, stores, and issues reparable exchange items. It also receives requests for issue documents along with the unserviceable items and accompanying turn-in documents. The RX element will retrograde unserviceable. The element performs inventories as directed by the accountable officer.

LAND COMBAT MAINTENANCE PLATOON

The land combat maintenance platoon is organized with a platoon headquarters, a land combat maintenance section, and a land combat maintenance support team section. The platoon provides

personnel for base shop support in the DSA and reinforcing on-site DS maintenance and technical assistance to supported units in the division rear area. It also reinforces support to the forward brigades. It provides control and overall supervision of platoon repair functions.

Land Combat Maintenance Section

The land combat maintenance section provides base shop support for land combat and MCTNS equipment within the division to include system training equipment. This section also performs unit and DS maintenance on all system-related test equipment.

This section provides technical expertise for all maintenance areas, to include LCSSs, which are the responsibility of the section. Direct supervision is provided to LCSS test operations on a 2-shift basis to meet system requirements. Specialists are provided for each shift to permit rotation of LCSS manning to achieve maximum testing accuracy and maintenance of safe testing procedures. These specialists perform unit and DS maintenance for all the LCSS test stations.

Land Combat Maintenance Support Team Section

The land combat maintenance support teams provide reinforcing on-site maintenance service in the division rear land combat systems and primary support for MLRS. The equipment is identical to that of the MSTs located in the forward support company. The MLRS MSTs use the concept of automatic test equipment. Unserviceable that cannot be repaired by the MSTs are evacuated to the base shop section. Items are repaired and returned to the user or to RX assets.

SHORAD MAINTENANCE PLATOON

The SHORAD maintenance platoon provides base shop DS repair and maintenance support team service for Vulcan and FAAR systems. The platoon is organized with a platoon headquarters, a SHORAD maintenance section, and maintenance support team section.

SHORAD Maintenance Section

This section performs base maintenance on all SHORAD/FAADS missile systems in the division. The section also provides gas and battery charging services for STINGER trainers. Items are repaired and returned to the user or the reparable exchange assets.

SHORAD Maintenance Support Team Section

The SHORAD MST section is responsible for on-site maintenance of all Vulcan and FAAR systems in the division. The MSTs use 1 1/4-ton trucks, equipped with secure FM radios, to travel to sites where support is required. MSTs repair unserviceable equipment, using “on-board” spare parts and RX assemblies. They also provide on-equipment maintenance for missile system-related power units and environmental control equipment.

CHAPTER 9

Transportation Motor Transport Company

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PLATOON/SECTION FUNCTIONS....9-4

ORGANIZATION AND MISSION

The TMT company provides truck transportation for distribution of supplies and the movement of heavy or outsized vehicles and cargo for the division. The company consists of a company headquarters, a maintenance section, alight truck platoon, a medium truck platoon, and two heavy truck platoons. See Figure 9-1 for the organization for the heavy division TMT company.

The TMT company provides –

- Transportation of classes I, II, III (P), IV, VII, and IX supplies from the DSA to the BSA.
- Movement of heavy or outsized vehicles and cargo.
- Assistance in displacement of division elements with less than 100 percent organic mobility.
- Backup transportation to other division elements when their organic transportation capabilities are exceeded.
- Emergency unit distribution of class V supplies.
- Assistance in the coordinated defense of the unit or base area.

TRANSPORTATION PRINCIPLES

The transportation system is designed to ensure that all required personnel and supplies are delivered to the point of need on time. To achieve this goal, several principles must be employed.

One principle involves the consolidation of transportation assets. Units are allocated only the assets that are mission-essential. Other transportation resources are consolidated so that movement control elements can most effectively use the limited resources available.

This concept depends on centralized control of assets. Within each echelon, there is one focal point. This person or section maintains constant awareness of transportation requirements and capabilities. The movements control officer is the focal point for the DISCOM.

The transportation system also requires flexibility and efficiency. The system must be able to provide an uninterrupted flow of traffic and to adjust to changing situations. This principle ties in to the centralized control concept since the focal point, who is aware of the changing battlefield, must be able to divert assets to the most critical missions. In addition, the system is based on efficient use of resources. Although transfer operations are necessary in some

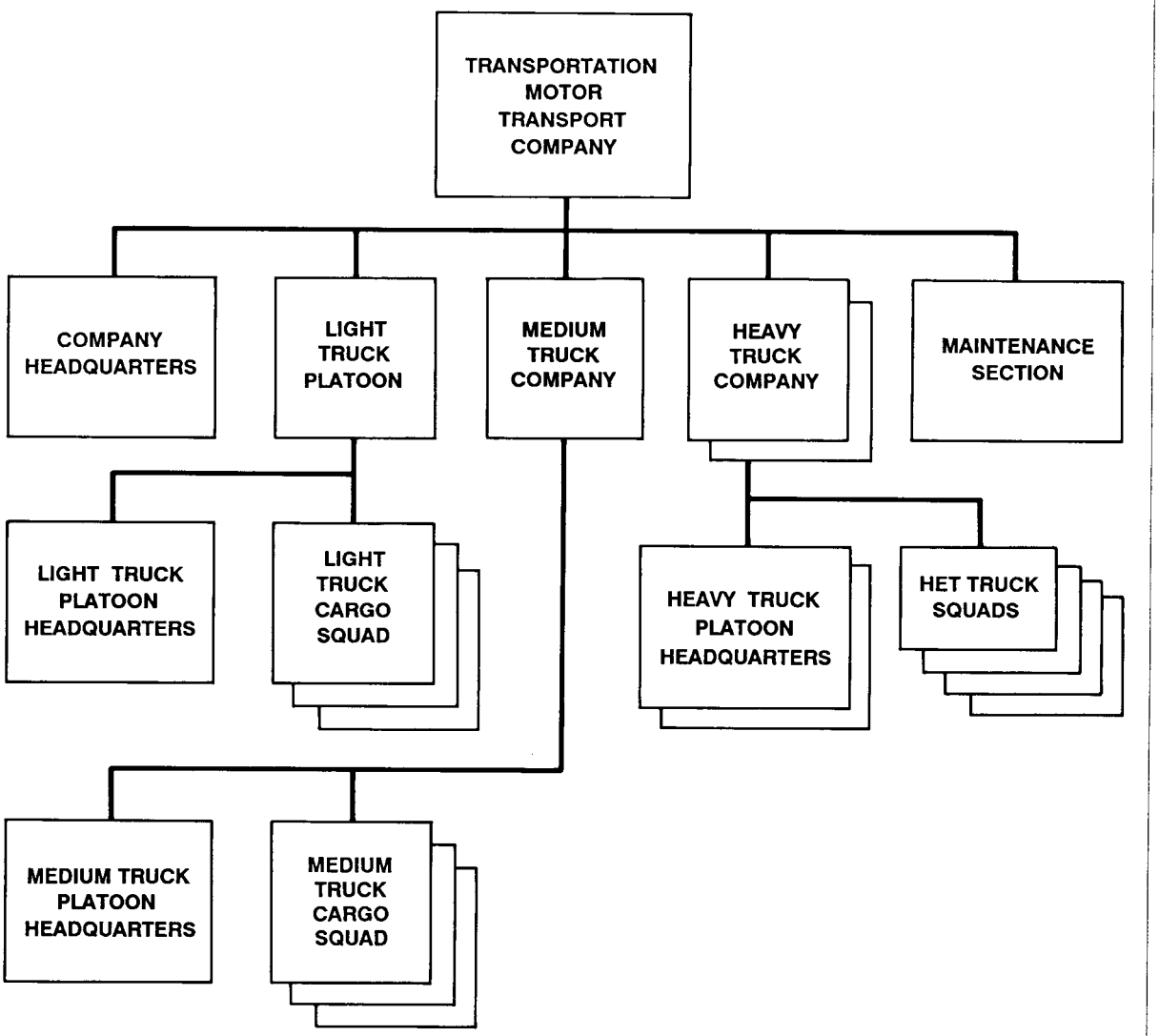


Figure 9-1 Typical Organization of Transportation Motor Transport Company

cases, throughput is the preferred distribution method. Also, transportation equipment traveling empty should always be avoided loads going to the same destination should be consolidated and movement control elements should maximize use of road networks.

METHOD OF OPERATIONS

TRANSPORTATION PLANNING

The motor transport mission to be carried out will determine the planning process. Transportation planning is determining what must be moved, where and when it must be moved, and the best way to move it. Proper transportation planning ensures the timely delivery to planned destinations.

The division transportation officer is a member of the division commander's special staff. He works for the chief of staff or under the administrative supervision of the division G4. The division transportation officer provides plans and priorities to the DISCOM commander, through the DISCOM movement control officer, in planning and controlling the use of motor transport resources assigned to the division for logistics support.

At the DISCOM, motor transport availability and capability are balanced against transport requirements and priorities. The DISCOM MCO, through the MSB support operations section, directs the TMT company to meet given requirements in the following ways:

- Receiving and screening requests for transportation requirements.
- Preparing and forwarding documentation to support movement.
- Providing the daily vehicle availability to the DISCOM MCO.
- Collecting and disseminating current roadnet data.
- Collecting and reporting transportation information.
- Reviewing transportation capabilities in context of warning order.
- Requesting convoy security through S3 channels, if necessary.
- Receiving and reviewing cargo distribution instructions.

When division logistics motor transport requirements exceed division transport capabilities, or when tactical deployment generates excessive requirements, the DTO requests support from the corps through movement control channels. A discussion of TMT company operations appears in PM 55-30.

CARGO VEHICLES

Vehicles authorized for motor transport vary in type, design, and capabilities. The TMT company provides a pool of cargo vehicles which are employed daily to support division operations. The 5-ton cargo vehicles and the container/break-bulk transport semitrailer combinations are used primarily in a cargo or equipment transport role. However, the 5-ton cargo vehicles may be used to transport troops. The semitrailer combinations are used in a troop transport role only in emergency situations.

The heavy equipment transport semitrailer, lowbed, is authorized to transport the main battle tank, other tracked or wheeled heavy vehicles, or heavy and outsized cargo items. The 5-ton cargo trucks with mounted tank and pump units and the 1 1/2-ton trailer with tank unit are authorized to provide POL resupply for the TMT company.

The drivers in each squad operate assigned vehicles in accordance with daily dispatch orders. They observe rules and regulations governing vehicle operations, safety practices, and rules of the road. They complete daily operational records, perform required operator maintenance services, and assist unit personnel in performing unit maintenance on assigned vehicles.

More information on division transportation operations for the TMT company is in FM 55-2 and 55-30.

CONVOY MOVEMENT

The motor transport mission to be carried out will determine the planning process on how the convoy is to be organized and controlled. Details on convoys appear in FM 55-30.

Movement requirements in the division area place a severe burden on the traffic and tonnage capabilities of the roads. Movement control is carried out by use of convoy clearances and the highway traffic plan. This plan is a combination of SOPs, directives, regulations, and overlays concerning control of the roadnet.

Convoys are broken down into the march column, the serial, and the march unit. Some factors considered when planning for a convoy operation are —

- Map/route reconnaissance.
- Start and release points.
- Halts.
- Security.
- Fire support and coordination.
- Convoy organization.
- Feeding the troops.
- Refueling vehicles.

More detailed procedures are outlined in FM 55-30.

PLATOON/SECTION FUNCTIONS

COMPANY HEADQUARTERS

The company headquarters provides for both the administrative and logistics functions of the unit. It also provides command, control, direction, and supervision of the operating elements of the unit in the performance of their mission tasks. The headquarters is typically organized with command and supply elements.

The command element is the center of command, direction, supervision, and control of the operational matters of the company. Maintenance, training support operations, and administration are key functional areas of the company that are directed and supervised by this element. In addition to ensuring the company's mission is accomplished, the command element has continual concerns for the health and welfare of the soldiers of the company.

The supply element is primarily responsible for the requesting, receiving, storing, safeguarding, and issuing of supplies and equipment for internal operations of the company. The supply element is also concerned with the efficiency and preparedness of the unit in matters relating to NBC defense as well as the operational maintenance of all individual and crew-served weapons organic to the unit.

MAINTENANCE SECTION

The motor pool element coordinates, directs, and supervises all matters of vehicle dispatch policy and procedures in the performance of mission operations. This includes coordination with platoons on vehicle repair, maintenance, and availability. Driver training is planned and conducted through the motor pool element. This element also prepares and maintains dispatch and operational records and reports which requires coordinating with platoon personnel on vehicle availability and dispatch matters.

LIGHT TRUCK PLATOON

The light truck platoon is organized with a platoon headquarters and three light truck cargo squads.

Platoon Headquarters

The platoon headquarters provides command, direction, control, supervision, and technical guidance to the platoon in mission operations and administrative and training matters. The headquarters also inspects and supervises transport operations to ensure proper and efficient operation and use of platoon vehicles.

Light Truck Cargo Squads

There are three light truck cargo squads in the light truck platoon. These squads provide truck transportation for movement of general cargo and personnel by light truck. The motor transport may be used for local and line haul of troops and cargo. These squads provide supervisory and operating personnel to operate assigned vehicles in the performance of mission tasks. The squads ensure that daily operator maintenance services are performed and that operator dispatch records are prepared.

MEDIUM TRUCK PLATOON

The medium truck platoon is organized with a platoon headquarters and three medium truck cargo squads.

Platoon Headquarters

The platoon headquarters provides command, direction, control, supervision, and technical guidance to medium truck cargo squads performing motor transport support tasks. The platoon leader and platoon sergeant coordinate the activities of the platoon. In addition to the mission requirements, these two individuals ensure that platoon administrative actions are completed and that the platoon has an active training program. A key concern to these two individuals is the maintenance status of the platoon. There is close supervision with the dispatcher in the planning and scheduling of platoon operations. Through the platoon headquarters, there is a continuous inspection and supervision of transport operations ensuring the proper. and efficient operation and use of platoon vehicles.

Medium Truck Cargo Squads

There are three medium truck cargo squads in the platoon. These squads provide transportation for movement of containerized and general cargo, and bulk petroleum products by truck tractor with semitrailer combinations.

HEAVY TRUCK PLATOONS

There are two heavy truck platoons organic to the TMT company. Each platoon is typically organized with a platoon headquarters and two HET truck squads.

Platoon Headquarters

The platoon headquarters provides command, direction, control, supervision, and technical guidance to heavy truck squads performing motor transport support tasks. The platoon leader plans, schedules, directs, supervises, and coordinates activities of the heavy truck platoon in mission operations and administrative and training matters. He works closely with the dispatcher in planning and scheduling platoon operations.

HET Truck Squads

The HET truck squads primary mission is to transport heavy or outsized cargo by heavy truck tractor-semitrailer combinations. They also evacuate disabled heavy equipment. Evacuation normally starts at the UMCP and terminates at the maintenance facility with the capacity to repair the vehicle. The secondary HET mission is to transport operational tanks and other heavy equipment over extended distances. This type transport allows combat vehicles to arrive at the battle area in good mechanical condition with fresh crews. Two personnel, one driver and one assistant driver, constitute an HET vehicle operating team.

CHAPTER 10

Medical Company

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ORGANIZATION AND MISSION

The medical company provides division and unit level health service support, medical staff advice, and help to units in the DSA that are not otherwise supported. It also provides evacuation from the BSA and reinforces the FSB medical companies. The company consists of a headquarters, medical supply office, preventive medicine section, mental health section, optometry section, treatment platoon, and ambulance platoon. See Figure 10-1.

The company provides–

- Advice and help to the MSB commander and his staff on matters for conserving the fighting strength of members of the command; preventive, curative, and restorative care; and related services.
- Triage, initial resuscitation, stabilization and preparation for evacuation of sick and wounded, and treatment of patients generated in the DSA.
- Mobile facilities for receiving and sorting patients.
- Mobile facilities to treat patients in the division rear.
- Reinforcement and reconstitution of FSB medical evacuation assets.
- Evacuation from unit-level medical elements and other units in the division rear without organic ambulances and medical support.
- Emergency and preventive dentistry care and consultation services.
- Emergency psychiatric treatment and mental health consultation services. This includes battle fatigue treatment.
- Division-level medical resupply to division and nondivisional units on an area basis.
- Patient holding for up to 40 patients able to return to duty within 72 hours.
- Limited laboratory and radiology services for division-level treatment.
- Preventive medicine and environmental health surveillance, inspection, and consultation services for division units.
- Optometric support limited to eye examinations, spectacle frame assembly using presurfaced single-vision lenses, and repair services.

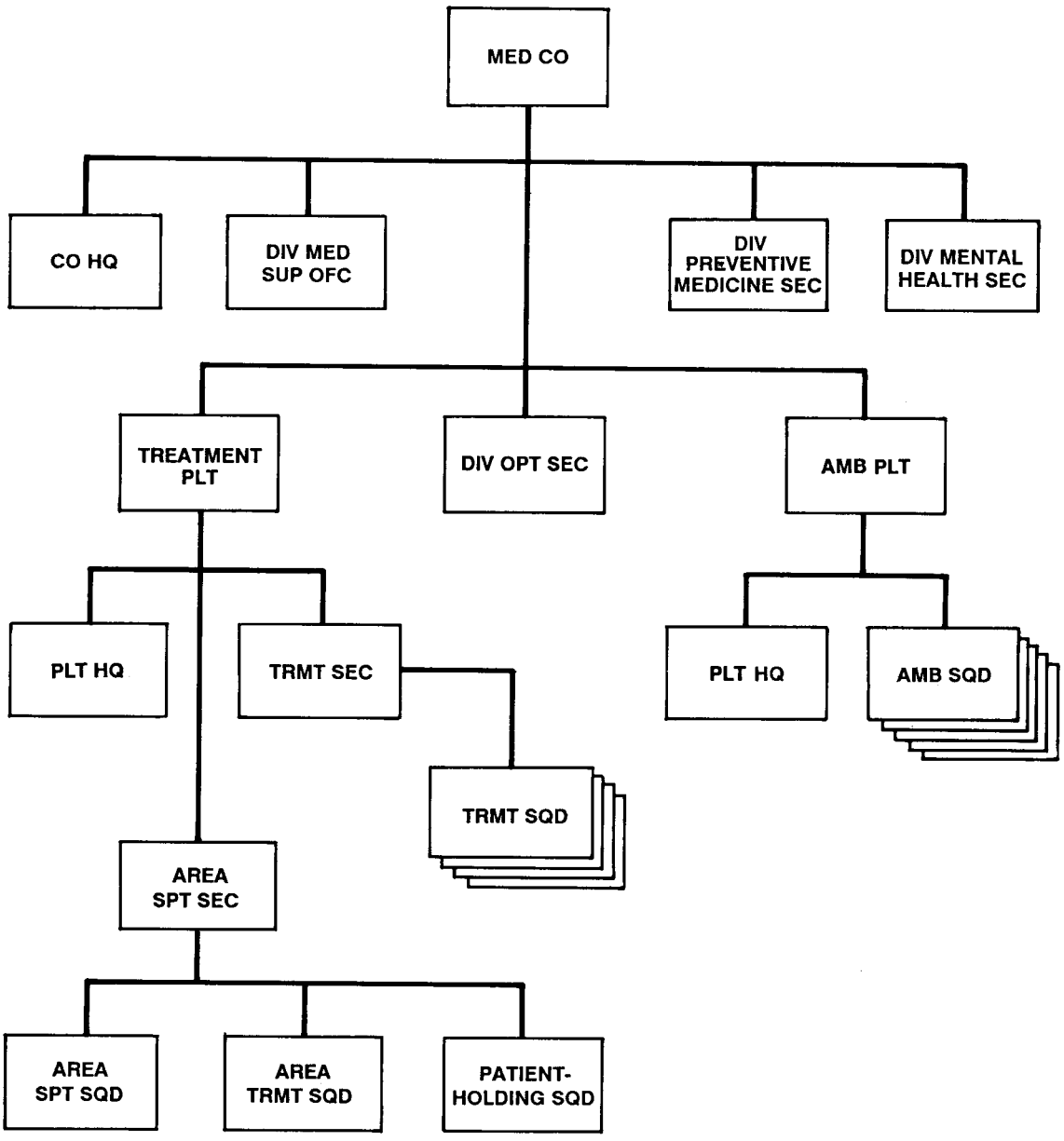


Figure 10-1 Typical Organization of an MSB Medical Company

MODULAR MEDICAL SUPPORT SYSTEM

The DMOC, along with the division surgeon, is the primary division-level HSS planning element. It develops and maintains the medical troop basis to ensure task organization for mission accomplishment.

HSS needs of the division and changes in the tactical situation require coordination between the DMOC and the MSB. The DMOC and MSB interact through command and medical channels. Communications through medical channels pertain to medical support operations, coordination, evacuation, resupply, and personnel and equipment status reports. The DMOC interfaces with the MSB S2/S3 for employment of MSB medical assets and status reports on the tactical situation. The DMOC also interfaces with the support operations section of the MSB for –

- HSS planning.
- Tasking of MSB medical elements.
- Backhaul of patients using nonmedical vehicles or aircraft.
- Corps medical assets attached to the division.

The modular medical system standardizes all medical treatment subunits in the division. For example, the MSB and FSB treatment squads are identical relative to the functional mission. The MSB may send modules to the FSB if the FSB cannot handle the work load in the brigade sector. The modular system is oriented to patient acquisition, EMT, initial resuscitation, patient holding, returning soldiers to duty, and patient evacuation. The five modules are –

- Combat medic. Combat medics provide EMT, routine treatment for DNBI, and preventive medical service. Medics also instruct nonmedical soldiers on self-aid, buddy-aid, and combat lifesaver functions.
- Ambulance squad. This squad evacuates patients throughout the division area and provides care en route. It can split into two teams.
- Treatment squad. This module provides ATM to battlefield casualties. This squad can also split into two teams.
- Area support squad. This squad provides emergency dental care and basic medical laboratory and X-ray diagnostic support. When the squad is located with a treatment team and patient-holding squad, the three form an area support section. This section provides support on an area basis.
- Patient-holding squad. This squad can hold and provide minimal care for up to 40 patients.

METHOD OF OPERATIONS

PLANNING

The DMOC with the support operations sections of the MSB and FSBs and the medical company commanders plan medical operations in the division. MSB medical planners concentrate on support in the division rear, reinforcement of FSBs, and evacuation from the BSAs. The company XO is the main assistant to the commander on the tactical employment of the company assets. Employment of medical assets in the division depends on —

- The division commander's plan.
- The anticipated patient load.
- Expected areas of casualty density.
- Medical resources available.

Planning must be proactive rather than reactive. The planner must be able to plan for responsive support to each element supported, or rapidly change plans if needed. Within their limits, HSS personnel may have to defend themselves and the patients under their care. The MSB medical company must be able to defend against a Level I threat and to survive NBC strikes while continuing to

support the operation. HSS must be included in rear operations and area damage control planning.

Offense

MSB medical elements should be prepositioned according to the division HSS plan and expected needs. The DMOC and MSB must continue to coordinate HSS as various phases of the offense begin. When the tactical situation or unexpected events force changes to the HSS plan, the DMOC staff aggressively coordinate the changes with the MSB and other medical elements as quickly as possible.

Defense

Medical support during defensive operations is more difficult than in the offense. Casualty rates are lower, but enemy action and the initial direction of maneuver to the rear complicate forward acquisition. Increased casualties among medical personnel reduce capabilities. Medical personnel have less time to reach patients, complete emergency treatment, and remove them from the battle site. Insecure ground routes may permit evacuation only periodically. The MSB medical company may need to stay highly mobile to support areas of high casualty density as the battle develops. The DMOC must disseminate threat information on evacuation routes to the MSB and to all medical evacuation assets. Ambulance exchange points for ground and air ambulances may help to bypass threat forces or reduce evacuation time.

Retrograde

Medical support in retrograde movements may vary widely. It depends upon the operations, the enemy reaction, and the situation. Firm rules for all retrograde operations are difficult to set, but planners must consider certain factors:

- Time is extremely important in retrograde operations. With less time available, the DMOC and division surgeon must evaluate the capability to collect, treat, and evacuate all patients.
- The enemy may disrupt command, control, and communications. SOPs should delineate measures to counteract factors impeding evacuation. Evacuating patients directly from the BAS to corps hospitals can enhance MSB mobility.
- Sorting of patients is critical. Planners must consider the type of transportation available for evacuation. Seriously wounded patients are evacuated as quickly and comfortably as possible. Proper sorting and rapid evacuation of patients lessens the need to set up complete medical clearing stations.
- When a patient's condition precludes movement or when the patient load exceeds the means to move them, the tactical commander must decide whether or not to leave patients behind. The surgeon must ensure that the tactical commander understands the need to reach a timely decision in this regard. Medical personnel and supplies must stay with patients left behind.
- Planners must identify locations for successive positions. Generally, movement is toward existing medical elements. Initial locations may be farther to the rear than in other types of operations. For continuity of support, medical personnel occupy and prepare the next rearward location before closing the forward facility.
- The rate of movement, the distance involved, and the tactical situation determine the frequency of displacement. MSB medical units must move before there is danger of involvement in the action of forces conducting the retrograde.

A rearward passage of lines requires detailed planning between surgeons of the units concerned. Planning must cover patient collection points, AXPs with corps assets, and class VIII resupply. Medical elements must remain mobile. This permits their rapid movement without the need to abandon patients, The medical planner can help maintain mobility by keeping the aid station free of patient accumulation. He also can keep the patient load low by coordinating evacuation with supporting medical elements and by anticipating increases in patient loads.

The medical plan for support of both divisions during the passage of lines stipulates that the passing division transports its own patients to the rear. It may transfer critically sick or injured patients to the

division in place to expedite treatment. This technique preserves the mobility of medical assets in the division assuming the covering force or defensive role.

MEDICAL TREATMENT LEVEL

Four levels of HSS have a direct impact on patients as they are treated or evacuated from the FLOT to the CONUS base. The MSB medical company has responsibilities at the second level. At this level, medical personnel render care at the clearing station. Here personnel examine the casualty. They evaluate his wounds and general status to determine whether to evacuate him or treat and return him to duty. Personnel continue emergency care, including beginning resuscitation, and begin additional emergency measures, if necessary. However, they do not go beyond the measures dictated by the immediate need.

CLEARING STATION OPERATIONS

The medical company treatment platoon operates the division clearing station in the DSA. The preventive medicine section, mental health section, and other elements may also operate at the clearing station. During static situations, ambulances may circulate within the DSA and provide routine sick call, EMT, evacuation, and area medical support. Figure 10-2 shows a sample clearing station layout in a field environment.

Clearing station personnel treat seriously ill or wounded patients arriving at the station and stabilize them for movement. Other functions include –

- Providing consultation, clinical laboratory, and X-ray diagnostics for unit physicians and physician assistants.
- Recording all patients seen or treated.
- Monitoring casualties when necessary for radiological contamination before medical treatment. Details are in FM 8-9 and TM 8-215.
- Ensuring chemical casualties are properly handled. Medical personnel can supervise the decontamination of patients. However, supported units must augment medical personnel to decontaminate and treat patients.
- Ensuring personnel implement preventive medicine measures to protect against food, water, and vector-borne diseases and environmental injuries.

NIGHT OPERATIONS

Light discipline requirements affect medical operations. Extensive treatment operations require lightproof shelters. At night, patient acquisition is more difficult. Units may use a casualty-marking system such as luminous tape or filtered flashlights.

Limited visibility also slows evacuation. Units may require additional ground ambulances to compensate. In the offense, ambulances move forward with battalion aid stations. However, ambulances must move carefully to avoid signaling the enemy. Units should use predesignated AXPs and patient-collecting points. Air evacuation is difficult. It requires precise grid coordinates and prearranged signals and frequencies.

EVACUATION

The ambulance platoon of the MSB medical company provides evacuation. This platoon and corps air and ground ambulance assets in the DSA normally provide evacuation from the FSMC. The ambulance platoon does not have enough assets to move the anticipated number of patients from the FSMCs. It will normally require augmentation from the corps ground ambulance company. The medical evacua-, tion battalion provides evacuation from the MSB medical company to the corps-level hospitals.

A point where patients are exchanged from one ambulance to another is an ambulance exchange point. Planners normally designate these points as a part of the medical support plan. Tracked and wheeled vehicles carry patients from the BAS to an AXP where the MSB wheeled ambulance take over for the trip to the rear. Use of AXPs returns evacuation assets to their supporting positions faster because the crews are familiar with the road net and the supported units tactical situation.

MASS CASUALTY SITUATIONS

Medical planners and leaders must anticipate and manage mass casualty situations. These situations

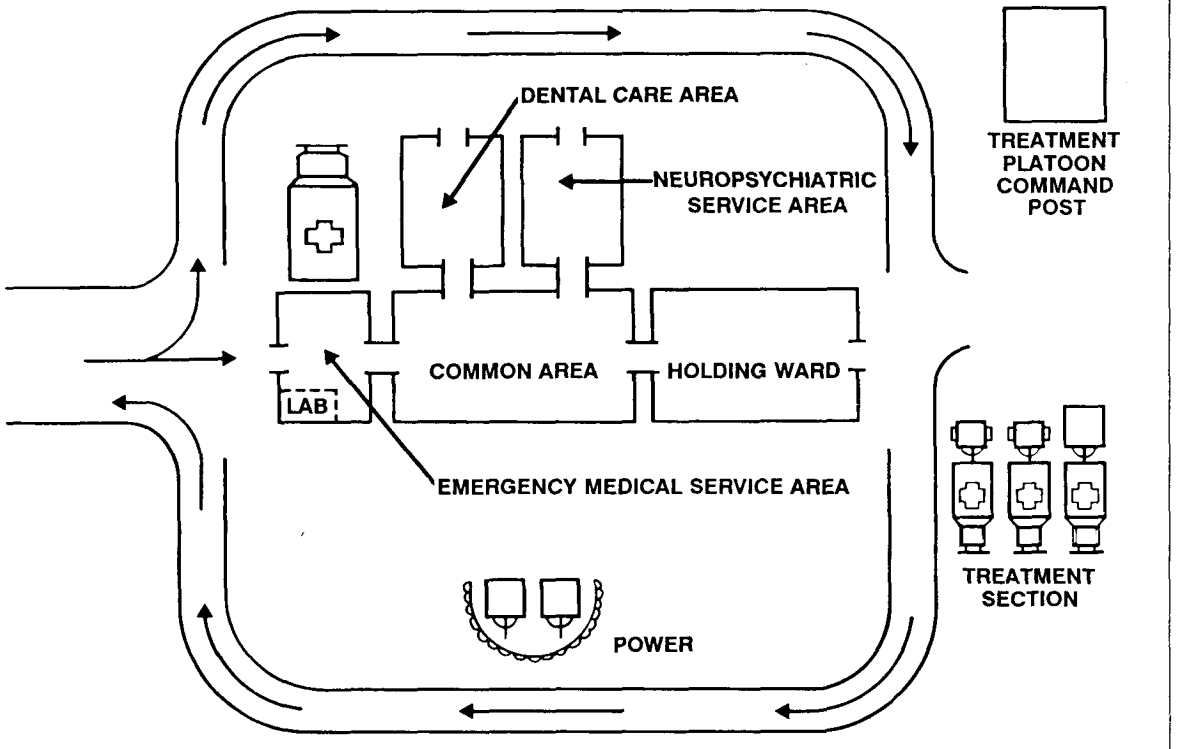


Figure 10-2 Sample Clearing Station Layout

will severely tax division and corps medical systems. When possible, the division will shift its resources to meet these needs. The corps medical brigade/group may have to provide additional resources.

The keys to managing these situations are the use of on-site triage and EMT teams, effective communications, and skillful use of air and ground ambulances. Rapid buildup of evacuation assets at the mass casualty location eases the situation. Also, planning for prompt movement of patients to all available treatment facilities helps. This movement dissipates the medical work load by distributing casualties on the basis the patient's condition and the treatment facility capabilities.

Planners must develop contingency plans for mass casualty situations before the battle-begins. These plans should include at least the following:

- Identifying nonmedical vehicles for evacuation.
- Providing en route medical care on nonmedical vehicles.
- Identifying required communications nets and procedures.
- Identifying procedures for medical equipment exchanges.
- Identifying the sites of medical facilities.

CLASS VIII SUPPLY

Medical logistics systems provide medical supplies, equipment, and repair parts. The DMSO

manages class VIII items. This function includes the management of medical maintenance and repair services for the division.

Division units stock two days of medical supplies. The DMSO maintains five days of supplies. During the initial deployment phase each FSMC will receive a preconfigured push-package of medical supplies every 48 hours. This continues until the corps MEDSOM battalion establishes the supply system. The FSMCs also operate class VIII points for units in brigade sectors.

During deployment, lodgment, and early buildup phases, medical units operate from planned prescribed loads and prepositioned war reserve stockpiles for the applicable LOGPLANs. The LOGPLANs may also define preconfigured medical supply packages tailored to meet the mission. These packages will normally be sent directly to the division until the MEDSOM battalion sets up line item requisitioning. While preconfigured packages were intended for use during the initial phase, operational needs may dictate continued use in exceptional cases. Division planners must coordinate such support with the MEDSOM battalion.

The DMSO issues from stock on hand or sends the requisition to the MEDSOM battalion. The DMSO coordinates shipment of materiel from the DSA to the forward area with the MCO. Returning medical evacuation assets may also carry supplies forward.

Trauma and sick call sets make up most of the sets in the division. The commonality of these sets allows the supply system to satisfy the division's major medical resupply need through a simple resupply process. Corps medical logistics units prepackage supplies to reconstitute the sets. Each set has three to five days of supplies for the heavy division. The bulk of the DMSO's stocks will consist of these sets. (These sets are anew development. The list of contents is not yet available.)

The division's mission, its location, and guidance from the division surgeon and the medical materiel manager of the MOC determine the number of days of supply and additional items for the DMSO to maintain. The medical materiel manager is the class VIII manager for the division.

MEDICAL MAINTENANCE AND OPTICAL SUPPORT

The biomedical equipment specialist provides medical maintenance. The corps MEDSOM battalion provides higher lever support.

The medical company provides single-vision lens optical fabrication support. The corps MEDSOM provides multivision lens fabrication support.

PLATOON/SECTION FUNCTIONS

COMPANY HEADQUARTERS

The headquarters provides command and control for the company and attached medical units. It provides unit-level administration, general and medical supply, unit-level biomedical maintenance, and NBC operations and communications support. FM 10-14 discusses unit supply operations. FM 43-5 covers unit maintenance, and FM 10-63-1 addresses unit GRREG functions. Chapters 3 and 4 cover C3 considerations for the headquarters.

DIVISION MEDICAL SUPPLY OFFICE

This office provides class VIII supply and unit maintenance on biomedical equipment for the division. The functions of the DMSO include–

- Development and maintenance of prescribed loads of contingency medical supplies.
- Management of the medical quality control program.
- Supervision of unit biomedical maintenance.

This office also monitors the division medical assemblage management program. It directly

coordinates LOGPLAN needs for preconfigured class VIII packages.

AMBULANCE PLATOON

The ambulance platoon headquarters provides command and control of the ambulance squads. It also provides communications for the platoon to direct ground evacuation of patients from units receiving area support to the clearing station. Four ambulance squads provide ground evacuation. The platoon headquarters normally colocates with the treatment platoon headquarters for mutual support and area support taskings. The platoon is mobile in its operations; all of its assets are totally deployed at one time. The platoon normally places one ambulance team in direct support of each forward support company. Two teams normally support units in the division rear. The remaining three teams are for task force operations, reinforcing support, or ambulance shuttle. Each ambulance carries an MES configured for en route care.

In mid-and high-intensity scenarios, corps ground ambulances evacuate patients from medical companies in the BSA to the DSA and beyond. The main role of MSB ambulances is to provide area support of units in the DSA and to reinforce FSMCs.

TREATMENT PLATOON

The treatment platoon operates the division clearing station. It receives, triages, treats, and determines disposition of patients. This platoon also provides professional services in the areas of minor surgery, internal medicine, general medicine, and general dentistry. In addition, it provides basic diagnostic laboratory, radiological, and patient-holding services. The treatment platoon has a headquarters, an area support section, and a treatment section.

The headquarters provides command and control of the treatment platoon as well as unit administration and logistics. It also provides the communications to move treatment squads within the AO and to coordinate further patient evacuation.

Treatment Section

This section consists of two treatment squads. These squads perform routine medical care, triage, and ATM. They are expansion elements of the division clearing station.

The treatment squads are identical to those of the FSMC and the maneuver battalion's medical platoon. These squads may reinforce or reconstitute other division medical elements. They may also assist in direct damage control and mass casualty operations. Each squad can split and operate as two treatment teams for short periods.

Each squad employs two treatment vehicles. Each vehicle has a trauma MES and a sick call MES. When not reinforcing other elements, these squads normally locate with the clearing station and operate with the area support section. In support of rear operations or other special operations, one squad may serve as a DS element. These squads may be split into separate teams and used to reinforce FSMCs. For communications, each team uses one FM radio in its vehicle.

Area Support Section

The area support section forms the division clearing station. It has an area treatment squad, an area support squad, and a patient-holding squad. These three elements operate as a single treatment unit. They provide both unit and division level support for units in the division rear. They serve as the primary MTF for patients who overflow BSA clearing stations. Elements of this section do not reinforce or reconstitute forward medical units.

Area Support Squad. This squad provides emergency dental services and limited laboratory and radiological services.

Area Treatment Squad. This squad is the base medical treatment element of the division clearing station. It provides troop clinic-type services and ATM for division and nondivisional personnel. In coordination with the DMSO, it may also provide limited emergency medical resupply of medical units in the division rear. For communications, the squad has an FM tactical radio. It operates the company/treatment platoon net control station and monitors the MSB command net.

Patient-Holding Squad. This squad operates the holding ward facility of the division clearing station.

It has a 40-patient capability. Its main function is to provide nursing care for patients awaiting evacuation and those admitted for minor injuries or illnesses who are expected to return to duty within 72 hours. This includes battle fatigue and neuropsychiatric patients. This facility is under the direct supervision of a medical corps officer.

DIVISION PREVENTIVE MEDICINE SECTION

This section ensures personnel implement preventive medicine measures to protect against food-, water-, and vector-borne diseases and environmental injuries (such as heat and cold injuries). Specifically, the section –

- Performs environmental health surveys and inspections.
- Monitors water production and distribution within the division area.
- Monitors the immunization program.
- Monitors disease and injury incidence to recognize disease trends early and recommend preemptive disease suppression measures.
- Conducts surveillance of division units to ensure implementation of preventive medicine measures at all levels and to identify health threats. It recommends corrective action as required.
- Monitors division level resupply of disease prevention supplies and equipment. These include water disinfectants, pest repellents and pesticides.
- Deploy PVNTMED teams in support of specific units or operations as required. Teams may operate with FMSCs in BSAs.
- Investigates incidents of food-borne, waterborne, insect-borne, zoonotic, and other communicable diseases.
- Helps train unit field sanitation teams.

DIVSION OPTOMETRY SECTION

This section provides limited optometry services. These include routine eye examination and refraction; spectacle frame assembly utilizing presurfaced single-vison lenses; and spectacle repair services. This section normally performs work referred from unit and division level MTFs.

DIVISION MENTAL HEALTH SECTION

This section is responsible to help the command control combat stress. It uses sound prevention programs, maximizing the return to duty rate with far forward care of battle fatigue casualties. Under the direction of the division psychiatrist, it provides division-wide mental health services. The DMHS is colocated with the division clearing station in the DSA. This section, acting for the division surgeon, has staff responsibility to set policy and guidance for the prevention, diagnosis, management, and return to duty of battle fatigue casualties. It has technical responsibility for the diagnosis, treatment and disposition of NP cases, and for the psychological aspect of the surety program.

The division psychiatrist advises the division surgeon on mental health issues and the morale of troops. He keeps abreast of the tactical situation and plans for BF/NP He assists in patient triage and ensures personnel handle BF/NP patients properly. Elements of the section may operate with the FSMCs. Severe cases beyond the ability of the FSB clearing station to manage are evacuated to the DSA as conditions permit. Physical restraints are used during transport when necessary. All battle fatigue casualties are RTD candidates. Those not responding to treatment are evacuated to the corps.

Other responsibilities of the section are –

- Provide education programs and individual case consultation to unit leaders and medical personnel. Education covers prevention, early recognition and intervention at the unit level for battle fatigue, substance abuse, suicidal risk, and neuropsychiatric and personality disorders.
-] Provide unit preventive psychiatry (combat mental fitness) plans and SOPs.
- Maintain contact with supported units and provide staff planning to predict battle fatigue casualties.

APPENDIX A

Division Rear Operations

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GENERAL

Rear operations are actions, including area damage control, taken by all units, singly or in a concerted effort, to secure and sustain the force, neutralize or defeat enemy operations in the rear area, and ensure freedom of action in deep and close operations. Since the primary role of the MSB is sustainment, nearly all MSB activities involve rear operations. The rest of this manual deals primarily with the details of the sustainment function. This appendix addresses the other rear operations functions.

REAR OPERATIONS OBJECTIVES

The objectives of rear operations are to –

- Secure the rear areas and facilities.
- Prevent or minimize enemy interference with command, control, and communications.
- Prevent or minimize disruption of combat sup port and combat service support forward.
- Provide unimpeded movement of friendly units throughout the rear area.
- Provide continuous, unimpeded support to deep, close, and rear operations.
- Find, fix, and destroy enemy incursions in the rear area.
- Provide area damage control before, during, and after an attack or incident.

REAR OPERATIONS PRINCIPLES

The keys to rear operations are sound planning, early warning, continuous OPSEC, and the rapid deployment of sufficient forces and resources to counter the threat. Rear operations is a command responsibility. The division commander will ensure battle planning includes consideration for deep, close, and rear operations. Rear operations will be part of the division's overall operations, mission analysis, threat assessment, IPB, resource allocation, and base assessment process.

The principle of economy of force means the MSB must defend itself against attempts to disrupt their operations. It must be able to minimize destruction, to reinforce its units, and, if necessary, to gain time until response forces arrive. As discussed below, units will form base defense perimeters to defend against the threat. When enemy forces exceed base and base cluster defense capabilities, response forces will provide the initial force to close with and to destroy the enemy. If an enemy incursion exceeds the capability of response forces, tactical combat forces must be assigned to neutralize the threat.

Responsiveness is a key to defeating enemy incursions in the rear area. This involves the immediate reaction and rapid deployment of sufficient combat power and area damage control resources to destroy the enemy and to minimize damage. Responsiveness is achieved through –

- Effective command relationships and command supervision.
- Reliable communications
- Accurate intelligence.
- Centralized planning and decentralized execution.
- Organic mobility of response force.
- Training and rehearsals.
- Prior assessment of the capabilities of bases and facilities to withstand enemy attack. This assessment is based on their degree of exposure and their importance to the division's ability to sustain operations. This mission-essential vulnerability analysis assists the commander in allocating resources to protect personnel, supplies, and facilities in consonance with their importance to the mision.

RESPONSIBILITIES AND C2

Four activities must be conducted as part of rear operations: sustainment, movements, terrain management, and security. The mission of the division rear CP is to integrate these functions to support the commander's concept and facilitate current and future operations. In this regard, it works closely with the DISCOM commander and staff, who have primary responsibility for logistics operations. Area damage control is a responsibility of commanders at all levels. It crosses the four major functional areas. For clarity, ADC will be addressed separately.

Typically, the DISCOM commander is designated by the ADC-S as a base cluster commander. His base cluster will normally include the MSB. The DISCOM command net serves as the primary FM link between the DISCOM headquarters and the MSB. Multichannel (VHF) links are established between the DISCOM and MSB.

MOVEMENTS

The sustainment efforts of the division are made possible through movement. Required supplies and personnel replacements must be moved from the sustainment base at corps and EAC into the division rear and forward to support the main battle. Casualties and damaged equipment must be evacuated from the forward area for prompt treatment or repair and returned. Movements take place between the forward brigade areas, the division rear, the corps rear area, and laterally within the division rear.

RESPONSIBILITIES AND COORDINATION

The planning and coordinating of logistics movements within the division rear is the responsibly of the CSS cell of the rear CP in coordination with the DISCOM movements control officer and the military airlift command air liaison officer. As discussed in Chapter 9, the MCO in conjunction with the DTO and MSB coordinates the movement of supplies and materiel from the DSA to the BSAs and return. He also coordinates CSS movements between the corps rear and the DSA, or, in the case of throughput, directly to the BSAs.

To control movements in the division rear, the rear CP may designate a movements control FM net, require units such as the MSB TMT company to report convoy start and end times by VHF, or rely on information from MP traffic control points or patrols. The rear CP must be able to stop or shift traffic between routes, gather information on enemy and route conditions, and respond to requests for help from convoys encountering enemy activity.

SECURITY

Logistics traffic will be a high priority interdiction target for threat aircraft, artillery, and unconventional warfare elements. In the offense, bypassed enemy

forces will attempt to get supplies by force. Single vehicles, especially ones moving fuel and ammunition, will be ambushed by unconventional forces.

After assessing threat capabilities and intentions, the rear operations commander may dedicate escorts to critical convoys such as those moving fuel and ammunition. Escort possibilities include ground escorts of MPs, combat engineers, or tactical forces; aerial escorts; or ADA systems such as Vulcans and Stingers. When resources are scarce, dedicated escorts may not be practical or possible. In such cases, response forces, air defense, or fire support assets may be positioned along the MSR to provide general support. The MSB staff must coordinate convoy security with the MCO AND TMT company.

DSA MOVEMENT

The DISCOM commander moves MSB units to provide responsive support to the division and to provide security for MSB units. Forward moves during an offensive operation and rearward moves during a defense or retrograde must be made to maintain appropriate distances from the FLOT and from supported units. As stated in Chapter 1, vehicles should be able to get from the DSA to each BSA in two hours or less. In addition, MSB elements that stay in place for long periods of time do so at great risk. Movement is a key component of MSB security. MSB elements must be prepared to move every one to three days.

The first step in DSA movement is to determine the new location, what units will occupy it, and whether all units will move together. An advance party of representatives from the moving units, including MSB elements, should be sent first to conduct security and NBC sweeps of the new site and establish initial communications among units.

The advance party performs the following tasks:

- Conduct security sweep of new site to ensure area is free of enemy forces.
- Conduct NBC surveys to ensure area is free of contamination.
- Establish LPs, OPs, and dismount points.
- Establish communications with old location and notify command of results of sweeps.
- Facilitate arrival of quartering party.

The quartering party consists of representatives of each unit and subelement. It prepares the new DSA for arrival of the main body. It must have enough assets to perform the following tasks:

- Increase security by manning key points along the perimeter.
- Establish communications with parent and higher headquarters.
- Select locations for unit vehicles, work sites, and tentage.
- Establish land-line communications among the BCOC, unit CPs, dismount points, LP/OPs, and other critical sites.
- Select individual and crew-served weapon fighting positions.
- Position personnel to guide arriving units to the main body from the RP to preselected locations.
- Position chemical alarms.

The main body begins the move as coordinated by the DISCOM S2/S3 and the division rear CP. The serials should be planned to move by echelon. An entire MSB element's mission capability should never be included in a single serial. However, individual elements should not be too fragmented due to austerity of communications assets. The first serial or serials should include elements of critical support points. These include MSB assets for classes III, V, and IX critical maintenance; and medical treatment.

Movement by echelon is required to provide continuous support. Personnel at the old site continue to provide support until lead elements of the MSB establish support points at the new BSA. Echeloning support requires careful planning and thorough coordination. Customers in the division rear and supported FSBs must know where the new DSA is and when to expect support operations to begin at that site. Supply personnel at the old site issue supplies from the reserve stocks already at the old DSA to reduce the stocks to be moved. The DMMC must coordinate in advance with the COSCOM MMC to have

replenishment stocks shipped to the new site when supply assets there are ready to receive them. Planners may also have to arrange to stockpile supplies at the BSA supporting the main tactical effort before moving the DSA. This may eliminate breaks in support when transportation assets are being used to move DSA elements.

When possible, elements of the main body close during hours of darkness. The quartering party meets them and guides them to the positions. Work then follows the priorities set by the commander in the movement and occupation order. Establishment of hasty defenses normally has priority over the logistics mission. The following is a suggested sequence of tasks for the main body

- Finalize communications among units.
- Erect work areas.
- Camouflage vehicles and installations.
- Position crew-served weapons.
- Prepare primary fighting positions.
- Clear fields of fire and prepare range cards.
- Emplace wire, mines, and other obstacles and cover them by fire.
- Select composition of and position for reaction force.
- Select and prepare alternate and supplementary positions.
- Finalize base defense plan depicting base layout, sectors, fields of tire of crew-served weapons, obstacle and fire support plans.
- Implement reconnaissance and surveillance plan.
- Emplace sensors and early-warning devices.
- Prepare protective positions adjacent to work areas.
- Prepare and rehearse reaction force.
- Submit base defense, obstacle, and proposed fire support plans to BCOC.
- Coordinate with adjacent bases.
- Plan deceptive measures.

MSB planners should also plan for hasty moves. These would only be conducted when the battalion is in danger of destruction or has been seriously compromised by enemy reconnaissance. The objective of such moves is preservation of essential personnel, supplies, and equipment. As much as possible, procedures should be covered in SOPs to minimize the time required for planning once the move is required. Plans must be coordinated with the DISCOM headquarters and the division rear CP.

TERRAIN MANAGEMENT

The MSB, like other CSS units, has terrain requirements. It must be positioned adjacent to established air, road, rail, and often, water lines of communication to facilitate mission accomplishment. Its positioning must, among other things, simplify the receipt of supplies and materiel from higher echelons, the movement of these supplies forward, and evacuation, repair, and return of damaged equipment. Terrain also affects mission effectiveness. Any MSB maintenance unit located in a built-up area with adequate power, hardstand, and civilian resources can repair materiel more efficiently than it could if located in a forest with soft soil. DISCOM mission considerations must be integrated with security and movements considerations when making terrain decisions.

As discussed in Chapter 1, locations of MSB elements in the DSA will vary depending on METT-T. For example, the medical company should not be colocated with other units which may be prime targets of enemy attacks. Transportation and engineer units are poor choices for collocation since mission-requirements will mandate large portions of these units being away from the base for extended periods. This results in a weakened base defense capability. MSB elements selected for collocation in bases must complement each other's strengths and weaknesses. Other guidelines to follow for locations of elements include the following:

- Balance the advantages of dispersion (reduced destruction from a single enemy strike) with the

disadvantages (C3 constraints). In general, though specific situations may dictate otherwise, the DSA can be expected to occupy an area approximately 7 to 10 kilometers in diameter. Assets must be dispersed, yet, the MSB elements must be close enough and located on defensible terrain to defend against ground attack.

- Make supply points accessible to both customers and transportation assets replenishing the supply points.
- Keep class III points away from other supplies to prevent contamination. They should also be located at least 100 feet from water sources.
- Position GRREG and salvage points near the MSR so they are accessible to units and to maximize backhaul missions of vehicles used for resupply.
- Locate the class I point near the water point whenever water sources allow.
- Locate medical facilities away from likely target areas (ATP, class III point, bridges, road junctions) but near evacuation routes and an open area for landing air ambulances.
- Locate maintenance sites so they are accessible to customers and evacuation vehicles.
- Position units with heaviest firepower along the most threatening avenues of approach.

SECURITY OPERATIONS

Security operations enable the MSB to perform its foremost rear operations function– sustainment. MSB commanders are responsible for the security of their units. They must ensure that their units have the knowledge and training required to be proficient in basic tactical skills.

ORGANIZATION FOR SECURITY

To enhance sustainment operations, MSB elements are often grouped together. Typically, all DISCOM elements in the DSA forma base cluster under the DISCOM commander, though the rear operations commander is ultimately responsible for the composition of bases and base clusters in the division rear. Factors discussed under the terrain management must also be considered when grouping bases. In addition, units selected for collocation complement each other. A mix of weapon systems, adequate planning and supervisory personnel, and varied communications assets are required to form a viable base.

INTELLIGENCE

Though the division rear CP coordinates rear operations in the division, the DISCOM must be intimately involved in the IPB process. Also, the DISCOM must be involved in IPB because of the value of information in sustainment planning and because the MSB commander and other CSS commanders are responsible for the security of their units.

Terrain

The concept of OCOKA is used to analyze terrain. OCOKA refers to observation and fields of fire, concealment and cover, obstacles, key terrain, and avenues of approach. The DISCOM commander relies heavily on the rear CP for terrain analysis and passes information to the MSB. The division is supported by a DS terrain team which provides information to the G2 for IPB.

Line of sight is required in the DSA for radios, ground and air observers' vision, air defense target acquisition, and fields of fire for MSB direct fire weapons.

Concealment is protection from air and ground observation. Cover is protection from effects of fire. The MSB elements must "dig-in" to the degree possible using organic and available engineer assets. The MSB must determine what possibilities the terrain offers to both the friendly and enemy forces. This analysis is vital to MSB units in view of the limited weapons available and numerous personnel and items of equipment in the area. In built-up areas, MSB elements are likely to

occupy buildings to maximize cover and concealment. Buildings significantly reduce heat signature. However, planners must consider the road net available for sustainment and security operations.

Obstacles are natural and man-made features that stop, impede, or divert movement. MSB planners must be familiar with all existing obstacles and the effects of removing, overcoming or bypassing them. Weather effects on trafficability also act as obstacles.

Any feature that provides a tactical advantage is key terrain. Whether a particular feature is key or not varies with the tactical situation. However, features which may be key terrain features include bridges, fording sites, high ground, choke points, and road junctures.

Avenues of approach are ground and air routes by which a force may reach an objective or key feature. Considerations for avenues of approach in the rear are their capabilities to support movement and to allow rapid enemy movement into the rear area.

Weather

Weather affects mobility and the functioning of virtually all items of equipment, as well as the performance of personnel. Terrain and weather are considered concurrently. Again, DISCOM planners depend on the rear CP to pass weather analysis information from the division weather team. The five aspects of weather that affect planning are temperature and humidity, precipitation, wind, clouds, and visibility.

Threat Evaluation and Integration

Threat evaluation is a detailed study of the enemy forces. It considers threat organization, tactical doctrine, equipment, and support systems. The DISCOM passes any information it has on the threat to the rear CP to assist in its evaluation. Truckers from the TMT company and customers coming into support points are valuable sources of information.

Once the threat evaluation is complete, this information is integrated with weather and terrain factors to determine how the threat is likely to operate in the rear area. Relevant information developed by the rear CP is passed to the DISCOM. Base clusters must ensure that all base commanders understand the different threat levels and the associated actions. The ROC must also be aware that DISCOM units are neither staffed nor equipped to continue support operations at normal levels whale responding to increased levels of threat. Support will be degraded. How much it is degraded depends on the threat level.

Level I threats are those which can be defeated by base or base cluster self-defense measures. They normally involve the activities of agents, saboteurs, and terrorists.

Level II threats are those beyond base or base cluster self-defense capabilities. They can, however, be defeated by response forces, normally MPs with supporting fires. They normally involve –

- Diversionary and sabotage operations by unconventional forces.
- Raid, ambush, and reconnaissance operations by small combat units.
- Special or unconventional wartime missions.

A tactical combat force is required to defeat a Level III threat. Level III threats normally involve –

- Heliborne operations.
- Airborne operations.
- Amphibious operations.
- Penetration by enemy forces from the main battle area.
- Ground force deliberate operations (for example, operational maneuver groups with linkup of smaller airborne and assault units).
- Infiltration operations.

BASES

A base is a geographically small, defensible area with a contiguous perimeter and established access controls. For MSB units, the DISCOM commander determines the position of the base. Elements of the MSB are grouped into bases to enhance their own defense as well as to jointly support combat forces. Frequently, a MSB company will constitute a base. Normally, the base commander is the senior unit commander when more than one unit is in the base.

Selection of the base commander should take into consideration not only rank, but also branch and experience. The medical company commander may not command a base or cluster with nonmedical units.

The base commander is responsible for preparing the base defense plan and coordinating with its appropriate base cluster operations center, typically operated by the DISCOM S2/3. The base commander will establish a base defense operations center to operate 24 hours a day. The BDOC is normally formed from the staff of the base commander. If the units occupying the base are less than battalion-sized, the base commander will draw personnel and equipment from his own and tenant units to form a functional BDOC. The base commander will train all personnel in basic defense techniques to establish a viable perimeter. The commander will develop a reaction force. This force is designed for internal security and reinforcement of the base. Each base must be capable of defending itself against a Level I threat and delaying a Level II threat until the base cluster reaction force arrives. If a base is faced with a Level III threat, it must take action to prevent critical supplies and equipment from falling into enemy hands, defend itself as long as possible, and avoid capture.

Whenever possible, the base should be situated and configured to take advantage of natural and man-made terrain features. The area to be defended may vary from high ground with good observation and fields of fire to a highly congested area with buildings or vegetation obscuring observation and limiting fields of fire. Both the support mission and security considerations are involved in the positioning decision. In addition to terrain factors discussed above, considerations include the following:

- Dispersion.
- Cover and concealment.
- Internal accessibility.
- Proximity to supported units.
- Security and defense capabilities.
- Communications.

The final selection of a site includes a thorough ground reconnaissance of the site chosen by map reconnaissance. Tentative locations of base elements are determined and marked. Sketches of the area are prepared. The BDOC develops the traffic circulation plan, OPs and LPs, motor parks, and the base defense plan. Sketches also show the locations and directions of fire for any crew-served weapons. Weapon systems in the DSA or BSA for repair should be integrated into the defense plan whenever possible.

BASE CLUSTERS

Base clusters contain several bases grouped together to enhance security and mission accomplishment. A base cluster normally does not have a defined perimeter or established access points. Base clusters rely on mutual support among bases for protection. Mutual support may be achieved through interlocking fires, integrated patrol and surveillance plans, or use of reaction forces. A base cluster reaction force also aids in mutual support. The base cluster commander must designate the personnel in the reaction force and ensure they have sufficient weapons, mobility, and communications. They must be trained to react quickly and appropriately.

The DISCOM commander is normally the base cluster commander for MSB units in the DSA. The base cluster commander establishes a base cluster operations center with assets primarily from the S2/S3 section. The BCOC provides the command and control to plan, coordinate, and supervise base cluster operations. It positions units assigned to the cluster into bases and designates the base commanders. The base cluster commander is responsible for integrating base defense plans into a base cluster defense plans.

DEFENSE OPERATIONS

An effective base defense system must accomplish the following four tasks:

- Security of the base. The base and base cluster commanders must establish the necessary defensive measures to ensure the security of their

units. Each commander must apply METT-T analysis to determine requirements.

- Detection. Detection includes the use of day and night observation devices as well as communications, intelligence, radar, and sensor equipment to provide early warning of enemy infiltration attempts. Chemical and radiological monitoring must also be used. Warning systems and procedures must be established and understood by all personnel. If an attack is unlikely, few people are involved in defensive operations. However, personnel will always man LPs, OPs, and access points. If a threat is probable, defensive requirements will disrupt support operations. Alarms should be used to notify all personnel of alert postures. Warning devices include sirens, pyrotechnics, and horns.
- Delay. MSB units must be capable of engaging and destroying the threat's progress within their capability to preclude premature commitment of scarce response and tactical combat forces. Obstacles covered by director indirect fires slow or canalize movement. The ROC can, with G3 approval, authorize mine emplacement in the division rear. However, he must ensure a proposed minefield is coordinated with adjacent, higher, and subordinate units. He must also ensure limitations to friendly maneuver are minimized and all requirements for reporting marking, and recording are met.
- Destruction. MSB units should place machine guns and lightweight antiarmor weapons to cover obstacles and avenues of approaches. Grenade launchers mounted on vehicles are effective fire suppression systems that can be quickly be dispatched to threatened areas. If the threat exceeds the base's capability, the base may not prevent breach of the perimeter. Evacuation of critical units may be preplanned and rehearsed for emergencies.

TRAINING

MSB personnel must be trained in defense principles and techniques. Training must include use of organic weapons, communications procedures, emplacement and monitoring of ground sensors, preparation of defensive positions, fire support coordination, and NBC defense measures.

Individual Training

All MSB personnel have a part in base defense operations. They may require refresher training in the following areas:

- Preparation of individual fighting positions.
- Camouflage, cover, and concealment.
- Patrolling and operation of roadblocks and checkpoints.
- Limited visibility operations.
- Cross-training on individual and crew-served weapons and supporting equipment available in the unit.
- Marksmanship, especially night firing, and the preparation of range cards.
- LP and OP operations with emphasis on security, sound and light discipline, and reporting procedures.
- Emplacement and maintenance of special observation and detection devices such as sensors, flares, and remotely employed sensors.
- Cross-training in all communications equipment available in the unit.
- Obstacle construction and mine and boobytrap employment.
- Use of rally points.
- Use of individual and crew-served weapons in an air defense role.
- Operations security.
- Identification of threat vehicles and equipment.
- Spot reports using SALUTE format.
- Fire support requests, coordination, and adjustment.
- Target engagement and designation techniques.
- Identification, marking, and neutralization of minefield.

Unit Training

Unit training focuses on rehearsal of base defense plans, continuation of the support mission under limited attack, and full occupation of defensive

positions. The DISCOM may ask the rear CP for training support from combat units for tactical training and from MI units for OPSEC training.

Rehearsals should include manning of defensive positions, commitment of reaction forces, coordination of supporting frees, coordination with adjacent bases, and integration of external support by MPs and the tactical combat force. BDOC and BCOC exercises should also be used to train leaders to exercise fire support coordination, to test communications, and to exercise required coordination among bases, base clusters, and the rear CP. Rehearsals should be conducted at day and night and in various weather conditions.

AREA DAMAGE CONTROL

The division commander provides guidance to planners on requirements to support the AirLand Battle, including area damage control. The ROC is responsible for ADC plans to provide necessary support. Planners in the G4 shop and DISCOM ensure logistics and medical support is available to support the division. The DISCOM S2/S3 coordinates directly with the rear CP to ensure that mutual support of the commander's base assessment is within the ADC capabilities reported to the rear CP in the base cluster defense plans. When ADC assets are available, the rear CP must provide each base with external support necessary to overcome an attack and return to its primary mission.

Effective planning, setting specific responsibilities, and use of all available assets to conduct ADC are necessary to restore operations and provide continuous support. ADC assets will be limited. In emergencies, assets will likely have to be diverted from other missions. In most cases, bases will have to use local assets to deal with the situation.

MSB base commanders will identify assets available for ADC. Assets will include medical evacuation and treatment elements as well as equipment evacuation and repair, critical supply, and EOD assets. Commanders will identify critical support points, to include points that are the sole local sources of supplies. They will also assess the base and base cluster capabilities to conduct ADC operations. ADC plans must be included in BDOC and BCOC defense plans.

APPENDIX B

NBC Operations

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DEFENSE MEASURES

Threat forces have engaged in sustained efforts to build up their combat capability to employ NBC weapons and to survive and fight in an NBC environment. Their forces are large, well-equipped, and well-trained in NBC operations and defense. In addition to specialized NBC troops, all other threat combat and combat support forces receive extensive NBC training. Therefore, it is imperative that MSB personnel are capable of operating in such an environment.

Contamination avoidance, protection (individual and collective), and decontamination are the basic defense against NBC hazards. MSB personnel must be trained in these defensive measures to minimize the effects of NBC attacks. FMs 3-3, 3-4, 3-5 and 3-100 have details.

PLANNING

The plans-operations branch of the S2/S3 section is responsible for developing the NBC defense plan. The branch reviews the tactical SOP and the DISCOM NBC vulnerability analysis to develop the plan. The plan must include an NBC defense requirement forecast and a set of priorities for decontamination of MSB assets. The S2/S3 section also directs preparation for an NBC attack. It identities backup C2 procedures and components of and procedures for NBC defense teams. In developing the defense plan, the branch coordinates with the following elements:

- MSB S1 and medical company for medical evacuation and treatment support.
- Support operations section for alternate methods of providing supply, services, and maintenance support.
- Communications branch of the S2/S3 section for alternate lines of communication.

CONTAMINATION AVOIDANCE

The main defensive measure against NBC hazards is contamination avoidance. This reduces and sometimes eliminates requirements for protection and decontamination. Measures include–

- Taking passive measures such as dispersion, cover, concealment, deception, camouflage, and OPSEC.
- Tasking soldiers to chemical detection and radiological monitoring/survey teams. These teams obtain information about contamination hazards. FM 3-100 covers NBC marking in depth.
- Limiting contamination spread. Measures may be taken before, during and after an NBC attack to limit the spread and exposure to other individuals, equipment, and areas. These include prescribing levels of MOPP.
- Detecting identifying, and marking. Advance warning is vital to avoidance. Remote and local automatic alarms are deployed to provide early detection, warning, and identification of NBC hazards. The MSB commander is responsible for placing and maintaining the NBC contamination

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marking signs in the DSA. FM 3-100 covers NBC marking in depth.

- Relocating to an uncontaminated area. Unless the attack consists of a nonpersistent chemical agent, the DSA is generally moved as soon as the tactical situation allows to minimize exposure to residual hazards. If the decision is made to remain in place, the contamination hazard must be lessened or avoided as much as possible. The MSB commander works with ROC and DISCOM headquarters to analyze the units' situations to determine if immediate relocation to a clean (uncontaminated), alternate location is necessary and possible. He gives primary consideration to the current tactical situation and protection offered by present position. He also considers the increased exposure to the hazard that would be caused by relocation and the possibility of further NBC attack. The degree of decontamination required and the impact of continuing to provide support in partial or full protection also affect the decision.

PROTECTION

The MSB S2/S3 directs the response to an NBC attack. He is responsible for alerting higher, lower, and adjacent units. He alerts GRREG points and aid stations of NBC hazards. He coordinates support with and sends all required NBC reports to the DISCOM S2/S3.

On the individual soldier level, the best protection against a nuclear attack is to be well dug in with overhead cover. Deeply dug foxholes, caves, tunnels, or storm drains provide good protection. Most buildings do not. Basements of concrete or steel framed buildings may be adequate if available. Personnel should react immediately to the initial sign of attack, a flash. They drop to the ground or into a foxhole immediately without trying to move to cover. They close their eyes, put arms near or under their bodies, and keep helmets on. They should stay down until the shock wave has passed and returned. Once it has passed, injuries should be treated and preparations made for ensuing fallout. The area should be monitored and appropriate actions taken. Improvements may be made to shelters and food and water should be placed in protected areas.

The basic individual protection against a biological agent attack is the wearing of the protective mask with hood attached. The duty uniform and gloves provide additional protection against bites from vectors such as mosquitoes and ticks that carry disease microorganisms. Adequate protection against biological toxins such as "yellow rain" requires MOPP 4.

In a chemical environment logistics personnel must wear MOPP gear for extended periods, which may result in lower productivity. All soldiers must know the signals and alarms and react to them quickly. Detection teams should be designated in advance to survey contaminated areas.

DECONTAMINATION

When personnel, equipment, and areas within the DSA have been exposed to NBC contamination, decontamination measures must be taken as soon as possible. How much decontamination used will depend on the tactical situation and mission, the decontamination resources available, and how badly the DSA has been contaminated. Most items can be decontaminated with soap and water or decontaminating apparatus. The same applies to contamination with a biological toxin. Radiological decontamination steps are based on results of fallout surveys, tactical plans, and NBC warnings and predictions from the division.

SUPPORT MISSION IMPLICATIONS

When enemy uses nuclear weapons or chemical/biological agents, unusual demands are placed on the MSB and other logistics activities. Priorities must be set in advance to ensure effective logistics support during NBC attack. Normally, supply of ammunition, fuel, food, water, and chemical

defense equipment and essential maintenance are given the highest priorities. These demands and the measures to counter an NBC attack are discussed in the following paragraphs.

SUPPLY

In an NBC environment, the most critical supply items are issued on an automatic basis. Emergency resupply may be by air. There may be a marked increase in contaminated supplies. Supplies exposed to contamination must be checked (monitored) before use or issue. Contaminated stocks are normally not issued. Until fully decontaminated, they are segregated from clean stock. In emergencies, when not enough uncontaminated supplies are available, certain contaminated supplies may be used. However, contaminated supplies are only issued if they would give the receiving unit a decisive tactical advantage. Contaminated supplies would be issued first to units similarly contaminated. Only under the most dire circumstances would contaminated stocks be issued to an uncontaminated unit. The decision to issue contaminated items is made jointly by the issuing and receiving commanders. Every attempt is made to avoid unnecessary spread of contamination. Contaminated stocks are clearly marked using standard NBC markers.

Class I

Preplanned resupply is not normally provided to units operating in or near contaminated areas because units carry enough MREs to conduct operations without daily resupply. Also, emergency nutrients that can be consumed while wearing the protective mask are issued in an active NBC environment.

Rations are stored under protective coverings or in containers to prevent or reduce contamination. Decontamination efforts are limited to removing the containers and carton overwrap. Rations that are contaminated are not normally used. Supporting chemical units and medical personnel can provide technical assistance. They also give advice on the use of rations.

Water

Contaminated water is not issued or used. Water from local sources, such as lakes, ponds, and water systems, can become contaminated. Therefore, sources must be tested before use. If a water source is suspected of contamination, it is marked with NBC markers and not used until it is tested, treated with a ROWPU if necessary, and determined to be safe to use. Whenever water becomes contaminated and cannot be treated for drinking purposes, it is deposed of in a manner that prevents secondary contamination. The area is marked appropriately. All water treatment, storage, and dispensing equipment is monitored frequently for possible contamination.

Class II

Selected class II items, such as chemical defense equipment, receive priority of issue to selected units on an NBC battlefield. Highest priority support is given to units located in contaminated areas. The next priority is to units that recently left contaminated areas. The third priority is to units deployed in forward areas.

Class III

Class III supply is critical in an NBC environment. More frequent unit moves increase consumption. Emergency resupply of isolated units may be by air. Storage tanks and bladders protect bulk petroleum to a large degree. However, precautions must be taken to reduce contamination on tanks and bladders.

Class IV

Selected high-usage class IV items are provided with consolidated shipping containers for protection against NBC effects. This reduces handling and allows for responsive support. When properly identified, contaminated, or partially decontaminated class IV items may be issued. If decontamination is required, it is done by the user.

Class V

Ammunition support elements are responsible for decontaminating ammunition under their control, though deliberate decontamination may require

additional support. If the situation requires the issue of contaminated stocks, the standard NBC markers will be used. After issue, the user performs required decontamination.

Class VII

In NBC conditions, corps heavy materiel supply companies are responsible for decontamination of class VII items before issue. If contaminated items have to be issued, the receiving unit is responsible for decontamination. Prior to issue of contaminated items, the standard NBC marker will be affixed to the items. Every effort is made to avoid abandoning class VII items due to contamination.

Class IX

Contaminated class IX items are normally issued only in emergencies. In such cases, items for critical weapon systems may be issued. Before issue, the items are marked with the standard NBC markers. Repair parts, especially sensitive electronic parts, must be checked for damage before issue.

MAINTENANCE

Avoiding contamination of equipment is easier than decontaminating it. Decontamination is time consuming, and it causes corrosion and damage to some types of equipment. Providing overhead cover for equipment and supplies will significantly reduce liquid contamination of such materiel.

Petroleum products trap chemical contamination. They collect in bolt threads, hydraulic fluids, and closed assemblies. Hence, a vehicle may be safe to drive without MOPP 4, but not be safe to repair. Also, since oil, grease, and dirt degrade the effectiveness of chemical overgarments, mechanics must keep as clean as possible. Wet weather gear helps but causes heat buildup. As much as possible, maintenance company elements should operate in protected areas like underground garages and concrete buildings.

Using units will decontaminate their own equipment within their capabilities. Equipment turned over to maintenance personnel must be as free of contamination as the using unit can make it. When using units are not able to decontaminate equipment, they should mark the equipment with the type and the date/time of contamination. If feasible, they should mark the specific areas of equipment contamination to alert maintenance personnel of the danger. They should also segregate contaminated materiel. When possible, MSB maintenance personnel segregate contaminated materiel. When possible, MSB maintenance companies operate both clean and contaminated repair areas.

On-site repair and recovery of contaminated equipment should not be done by uncontaminated teams. Contaminated equipment will be moved by other contaminated vehicles whenever possible. Otherwise repairs are done in MOPP 4 on contaminated equipment. Repair may be limited to the most critical items. Monitors should keep track of the level of contamination.

FM 43-12 has more on NBC maintenance operations.

MEDICAL

A marked increase in the number of persons needing medical care, a loss of medical assets, and contamination effects will severely tax the MSB medical company capabilities. Advanced stages of MOPP result in heat buildup, reduced mobility, and degradation of sight, touch, and hearing. Individual and unit operational effectiveness and productivity are degraded. Medical units will require augmentation commensurate with the threat to continue operations in an NBC environment.

In the case of a nuclear attack, burns from secondary fires and casualties from the blast will compound the problem caused by contaminated patients. Externally contaminated patients should be decontaminated as soon as possible. However, if required, lifesaving care must be provided before decontamination. Removal of clothes and use of soap and water will remove most contamination.

Biological attacks may be hard to detect. However, MSB medical facilities may help in detection by monitoring biological warfare indicators such as a sudden rise in disease fatality rates or an appearance of an exotic disease.

All casualties in a chemical fire zone are presumed contaminated. Due to the vapor hazard of working on contaminated patients, medical company personnel may have to work at MOPP 4 for long periods of time, with the associated performance degradation. The medical company has no organic decontamination assets. It can handle small numbers of contaminated patients. However, mass casualties likely to be created by a chemical attack will require augmentation with nonmedical troops.

The ambulance platoon leader should limit the ambulances entering a contaminated area to the minimum amount. Once contaminated an ambulance is not likely to be spared long enough to undergo deliberate decontamination. Normally, contaminated vehicles will have restricted use and be confined to contaminated areas.

Treatment and evacuation of NBC patients will be based upon manifested signs and symptoms. SOP will govern the use of prophylactic measures following known or suspected biological or chemical agent attack. Following a nuclear attack, individuals who suspect radiation injury may reach the treatment facility to seek medical attention. Suspected nuclear radiation injury alone, without specific symptoms and physical findings, does not justify evacuation. Ordinarily, in nuclear and conventional warfare, burns and traumatic injury will be the basis for early medical care and evacuation.

Detailed doctrine on medical operations in NBC conditions appears in FM 8-9, TC 8-12, and TMs 8-215 and 8-285.

TRANSPORTATION

Supply routes may become contaminated. These supply routes may be used, but personnel will require the use of protective equipment. Vehicles used on these routes will require decontamination. This is very time consuming and will cause delays in delivery of cargo. As such, special precautions are taken to avoid contaminated supply routes.

NBC reconnaissance and strict traffic control measures will aid in contamination avoidance and limit the spread of contamination and exposure to other individuals, equipment, and areas. Detours and rerouting however, increase turnaround time and more cargo vehicles may be required.

Use of Army aviation assets for resupply of forward areas may increase on a contaminated battlefield because of the increased need for dispersion. This will be based on METT-T. Resupply by air is often more effective than ground means because of the capability of flying over obstacles and contaminated areas. An additional mission of all aircraft is medical evacuation. Those assets must be prepared to perform that mission when medical evacuation assets are overloaded during mass casualty situations. Contamination avoidance for transportation is the same as that for supply.

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APPENDIX C

Weapon Systems Replacement Operations

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BATTALION

WSRO provides a doctrinal mechanism to optimize the number of major weapon systems and crews available to the commander. It calls for designation of a weapon systems manager at every level from battalion to theater army. The WSM uses his knowledge of unit weapon system shortages and available assets to fill requirements IAW command priorities. The key to WSRO is the joint managing, reporting, and monitoring of weapon and personnel systems status at every level. WSRO also requires establishment of a link-up point where the weapon systems will be made ready to fight and linked up with its crew. The link-up point will normally be in the DSA, but this will vary based upon METT-T. See Figure C-1 for an overview of WSRO.

DIVISION

The division provides replacement weapon sytems directly to battalions. Efficient allocation of limited resources is accomplished by managing weapon systems rather than focusing on personnel and equipment components separately. At division, the DISCOM commander will assign a WSM to the DMMC as a full-time position with primary skills in supply and maintenance management. The individual assigned will be the division WSM. The division AG designates a person to be responsible for coordinating, managing, and providing crew members or crew replacements. This individual will react to the unit's critical shortages. Ultimate assignment of personnel and equipment is based on priorities established by the division commander.

WEAPON SYSTEMS

The primary link-up point for weapon systems is at the MSB S&S company in the DSA. As the weapon system arrives in a read-for-issue state, the crew need only perform those tasks needed to make the system ready to fight. This concept recognizes the fact that the tactical situation may permit a partial crew to perform the above tasks and drive the system to its unit. If the system is being transported to the unit location, crews should move at the same time. However, only complete weapon systems will normally move forward of the DSA.

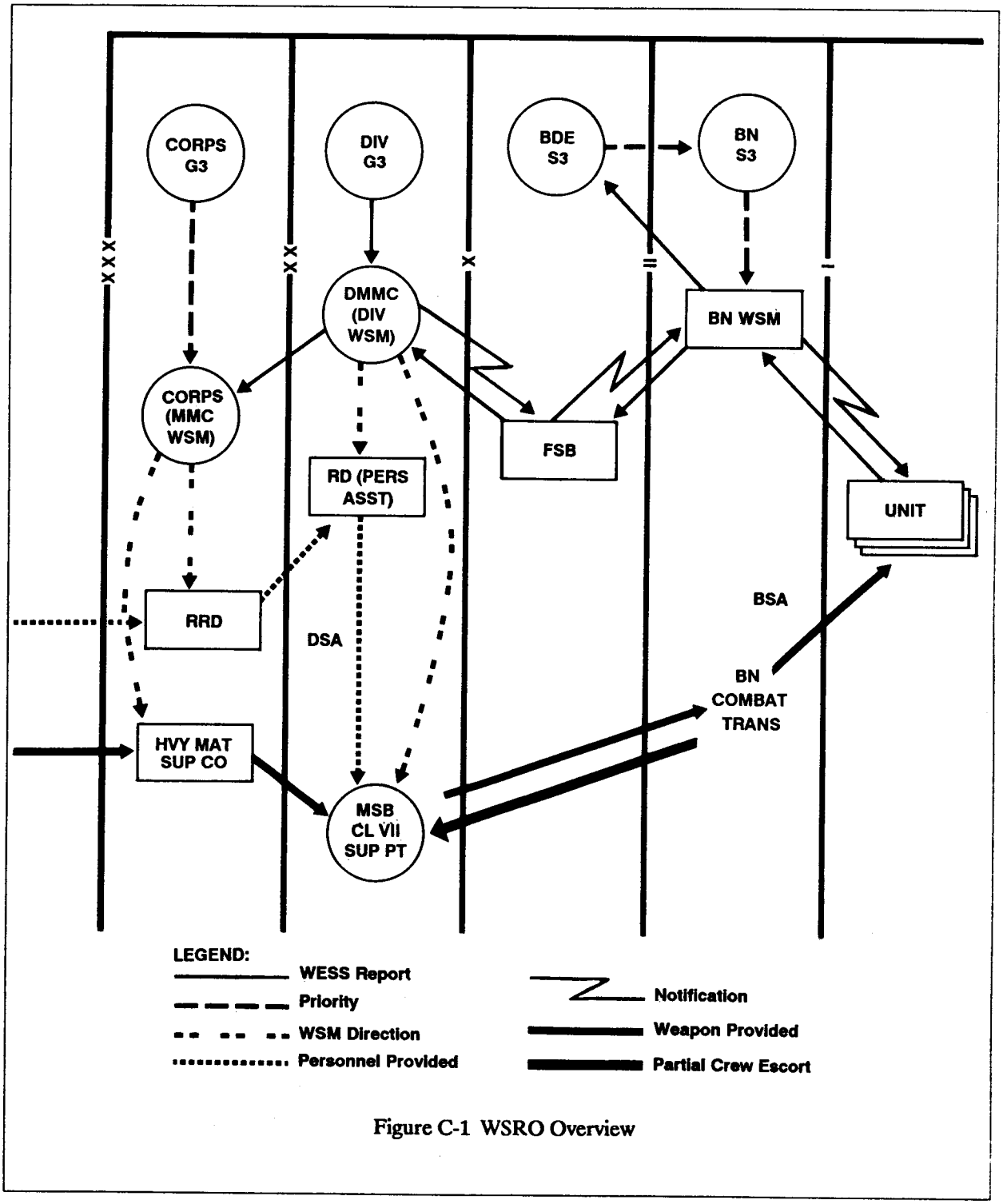


Figure C-1 WSRO Overview

The WSM will closely monitor crew assets available. Available crew members will be returned from the unit to the DSA to receive the weapon system and link up with new crew members. The WSM must coordinate closely with the maintenance management officer of the DMMC to verify the status of systems being repaired in DS maintenance units and the number of crew members with the system. Replacement crew members can join a system crew at the maintenance facility and, as part of a crew, can assist in expediting crew maintenance.

The corps assumes the linkup responsibility in the event the tactical situation precludes linkup in the DSA. Linkup would then take place at the corps heavy materiel supply company or its equivalent.

OPERATIONS

The MSB S&S company supply platoon (class II, III (P), IV, and VII section) establishes an assembly area (class VII supply point) for major end items. This assembly area is normally located adjacent to a rail line or the MSR from corps when one is available. The MSB light and heavy maintenance companies and the replacement detachment are normally located close enough to the assembly area so that coordination between all elements remains quick and dependable. The corps notifies the DMMC that weapon systems are being delivered to the division by a specific corps unit. In accordance with priorities established by the division for issue, the DMMC alerts the MSB S&S company, the maintenance companies, and the replacement detachment of the division AG element. At the same time, the DMMC also provides this information to the appropriate FSB for planning purposes.

The WSM at the DMMC verifies crew member shortages available in the receiving unit. The AG WSRO representative contacts the replacement detachment for specific unit replacements and has the personnel placed in a standby status, available for pickup by the receiving unit. The WSM contacts the FSB to have crew members of the receiving unit report to the class VII supply point and to pick up replacement crew members at the replacement detachment.

Incoming weapon systems are off-loaded at the class VII supply point by the class II, IV, and VII section of the MSB S&S company. This section notifies—

- The DMMC for property book action. The DMMC property book and class VII section will immediately identify the battalion to be assigned each new weapon system based on division priorities.
- The replacement detachment for coordination of the crews with the system.
- The WSM that the incoming weapon systems have arrived.
- The MSB maintenance companies for coordination of maintenance support teams who conduct required system checks with the new crews.
- The DISCOM movement control office to arrange forward HET transportation to the receiving battalion when required.

At the same time, the S&S company notifies the supply company of the FSBs what time the systems will be delivered to the receiving battalion. The FSB supply company advises the receiving battalion of the expected delivery time.

APPENDIX D

Support to Heavy/Light Mixes

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HEAVY/LIGHT OPERATIONS

Effective integration of heavy and light forces maximizes the capabilities of each type of force by using the advantages of one type to offset the limitations of the other. Not all situations are suitable for heavy/light operations. The force must be matched to the mission, enemy, and terrain. In considering integration of heavy and light forces, planners must pay particular attention to terrain.

Forces are categorized as heavy on the basis of their ground mobility. They include mechanized infantry, armored, and cavalry forces. Heavy forces are best employed where battles are fought over wide areas of relatively unrestricted terrain. They seek to engage targets at the maximum ranges of their weapon systems. Engagements are fast-moving and cover large areas of the battlefield.

Light forces provide versatility and strategic flexibility through their capability for rapid deployment. However, once deployed, light forces have limited mobility and firepower. They rely on concealment and sudden, violent action. Light forces achieve maximum advantage in close terrain where they cannot be attacked beyond the range of their weapons. In such terrain, they can deny the enemy unhindered movement.

The rapid deployability of light forces is achieved in part through an austere support structure. Sustained operations or operations in a high intensity environment will require augmentation of light forces.

Planners must understand the differences in support concepts and organizations between heavy and light forces to build the proper support package. Relationships, responsibilities, and procedures must be coordinated and clearly spelled out as the heavy-light force is being developed.

SUPPORT DIFFERENCES

Due to differences in force structure, equipment, and tactical doctrine, the support structures and doctrine for heavy forces differ from those for light forces.

The command and control structure of the light DISCOM (except for the infantry division) is fundamentally different than that of the heavy DISCOM. They are functionally organized with S&T, maintenance, and medical battalions. A forward company from each battalion is located in each BSA along with a forward area support coordinating offfice from the DISCOM HHC. Together these companies and the coordinating office make up the forward area support team. Though the FASCO coordinates the efforts of the FAST, command and control of the

companies is typically retained by the parent battalions.

Support to any light force being task-organized to a heavy force will require elements of all three functional battalions. If the task organization consists of a light brigade with a heavy division, the associated FASCO and FXT will accompany the brigade (along with additional assets). However, the FWCO office is not a battalion staff. It has not been staffed with sufficient assets to provide continuous command and control of the FAST for extended periods.

Regardless of the command and control relationship, information must flow from the deployed unit to the controlling headquarters. This information includes:

- Critical fuel and ammunition requirements.
- Status of each class of supply.
- Maintenance requirements and backlog.
- Class IX requirements and availabiliity.
- Movement requirements and available transportation assets.
- Availability of medical treatment and evacuation assets.
- Locations of support elements.
- Status of support personnel.
- Anticipated support problems.

In the area of arming, the major difference between heavy and light forces is in the weapon systems in each division and the resultant consumption factors. FM 101-10-1 details the consumption factors for each type of force. Another difference is in the ground transportation assets available for emergency distribution of ammunition. The light division assets are much more austere, as discussed further in this appendix.

Until MOADS is fully implemented, there are other differences among divisions in ammunition resupply. First, the current heavy, airborne, and air assault DISCOMs operate an ATP in the DSA. However, the LID does not. LID elements in the division rear will typically have to pick up ammunition at the nearest ASP. In addition, even before MOADS is implemented, the LID will rely on loads configured for LID units by the nondivisional DS company.

The major fueling differences among divisions are also driven by the different types and quantities of equipment. Again, the factors in FM 101-10-1 reveal tremendous differences in consumption between the light and heavy divisions. As a result, huge differences exist among divisions in assets available for storage and distribution of bulk fuels. Though all divisions rely to some extent on throughput of fuel to BSA class III points, there are no assets in the LID to provide additional resupply of forward class III points from the main class III point in the DSA. Also planners supporting any elements of the air assault division must take into account large aviation fuel requirements.

Variations also exist in distribution techniques, though supply point distribution is the primary method used in most situations. In heavy divisions, FSBs will use their 5,000-gallon tankers to provide forward refueling as discussed in FM 63-20. LID FASTs, on the other hand, must deliver fuel to light infantry battalion trains since the battalions do not have sufficient organic capability to go back to the class III point and pick up fuel.

In the field of maintenance, the concept for the LID is unique. Minimal DS maintenance is performed in the brigade sector. The bulk of the DS maintenance capability in the LID DISCOM is in the DSA. Even there, however, assets are austere. Whereas the heavy DISCOMs have three maintenance companies (heavy, light, and missile) in the MSB and the airborne and air assault divisions have heavy and light companies in the DSA, the LID has only a main support company in the DSA. To compensate for the austerity of its DS maintenance capability, the LID relies on increased passback to EAD maintenance elements and use of replacement over repair.

Although all divisions require DS maintenance reinforcement from nondivisional units, the LID's reliance is greater than that of other divisions. Two teams have been designed to accommodate the increased passback load associated with the LID. The LID maintenance support team and missile

maintenance team are modules assigned to the nondivisional maintenance company. These teams, which may be attached to the LID maintenance battalion, must deploy soon after the division does in order to provide required sustainment.

Another unique feature of the LID maintenance concept is that for maneuver elements unit maintenance is consolidated at brigade level. Planners must take that into account and ensure unit maintenance assets accompany light infantry forces less than brigade size when they are cross-attached to a heavy force.

Like ground and missile maintenance, aircraft maintenance in the LID differs from other divisions. The LID design includes the acceptable risk associated with an austere AVIM capability in the division and increased passback to EAD elements. An AVIM team has been designed to handle the additional passback in the LID. The other DISCOM with unique AVIM capabilities is the air assault DISCOM. Due to the number of helicopters in the air assault division, the DISCOM has an aircraft maintenance battalion with two AMCOs.

Fixing the heavy/light force is a significant challenge. Major differences in types and densities of equipment in the two types of forces results in problems in class IX and repair capabilities. Heavy/light mixes with LID elements are particularly difficult to support. The entire maintenance concept is unique, as discussed above. As a result, assets are extremely limited. In many cases, the relevant LID maintenance unit has only one or two repairers in a particular MOS. So repair capability cannot be split in thirds to provide support when a light infantry battalion is detached from its parent brigade or a light infantry brigade is attached or assigned to another division.

As noted above, the characteristic which distinguishes heavy forces from light forces is ground mobilty. Dismounted infantry in all light divisions have extremely limited ground mobility. The air assault division is designed with significant air mobility, and the infantry division has some organic ground mobility in the form of its armored and mechanized infantry battalions. However, all infantry forces were designed to be employed in situations that do not require substantial ground mobility. The light element of a heavy/light mix is required to have significant ground mobility.

In the heavy and infantry divisions, the TMT company is organic to the MSB. In the other light divisions, it falls under the S&T battalion. In all divisions, the basic mission of the company is similar. Trucks are used to move general supplies from the DSA to the BSA, transport reserve supplies, and assist in displacing division units that are less than 100 percent mobile. However, the assets to perform the mission vary widely among divisions. The support concept for the LID is based on prepackaged loads being throughput to forward areas. Heavy forces having to support light elements will require COSCOM support in packaging loads (as discussed later) and moving them directly to forward areas. Light forces in general also rely more on aerial delivery. In addition, the LID maintenance concept of reliance on replacement forward depends on extensive backhaul of unserviceable components and end items.

Another important difference between heavy and light TMT companies is that heavy DISCOMs have HETs to move tanks and other pieces of heavy equipment around the battlefield and to evacuate them when required. Planners must ensure that HETs accompany any heavy force task-organized to a light unit.

Like fixing, moving the heavy/light force represents a considerable challenge. The two types of forces have very different mobility requirements and transportation assets. When a light force is task-organized to a heavy one, transportation for tactical and CSS movements must be provided by EAD assets. When a heavy force is task-organized to a light unit, it must bring with it its share of transportation assets, including HETs. The light force, if it must support a heavy element, will need significant augmentation to handle the large requirements for such items as bulk fuel and ammunition.

Other differences between heavy and LID support concepts include the lack of tracked ambulances in the LID, throughput of subsistence from EAD to the class I points in the LID BSAs, and delivery of water to the combat trains of the light infantry battalion. If a LID element is task-organized to a heavy force, assets to make such deliveries must be included. Light infantry battalions do not have organic assets to go to a water point to pick up water.

SUPPORT TO SPECIFIC MIXES

When a specific heavy/light mix is developed, the directing headquarters designates the command relationship. The differences in support concepts and organizations discussed above must be carefully considered. What follows here is a general discussion on several types of mixes the MSB may have to support. Command relationship recommendations are included. However, these are only recommendations. The commander must select the most appropriate relationship after considering at least the following factors:

- The size and mission of the force.
- The distance of the deploying force from the support base of its parent unit.
- The support capability of the receiving force. This capability is particularly important to consider in the case of light forces since the different types have significantly different support capabilities.
- The relationship between the deploying support elements and the receiving unit.
- The sources of support for each force.
- The self-sustaining capability of the deploying force.

In the case of light force elements being task-organized to heavy forces, planners in the MSB must understand that light fighters are exactly that – light. The more they have to carry, the slower they move and the smaller the advantage of their relative mobility in restricted terrain. Providing too much support forward involves considerable risk. Light forces do not have the assets to move large quantities of supplies and equipment. The lack of an ability to move significant amounts of reserve stocks means that planners must arrange for rapdly supplying packages of critical supplies to light units. These packages (which include class IV items such as wire, mines, and survivability items) should be carefully planned in advance. The heavy DISCOM support operations branch must be involved and coordinate for support from the COSCOM to configure unit loads (unless preconfigured unit loads configured at EAC are available) and be ready to transport them forward quickly. Coordination also must be made to meet the light force's reliance on aerial resupply.

HEAVY BRIGADE TO A LIGHT DIVISION

The OPCON of a division heavy brigade to a light division is a viable option under the following conditions:

- The mission is relatively short (48 hours or less).
- The parent heavy DISCOM can continue to support the mission performed by the remaining heavy division elements.
- The line of communications from the heavy brigade to the parent DSA is secure and not so extended that the DISCOM cannot meet the movement requirements.

The heavy brigade must come with its full complement of support assets from the heavy DISCOM. These assets typically include:

- The FSB associated with the heavy brigade.
- Three HETs with drivers from the MSB TMT company.
- Three tankers with drivers from the MSB S&S company.

The support package may also include a water team from the MSB S&S company if the light division cannot support the brigade and a maintenance support team with essential ASL items from the MSB

maintenance companies if the heavy division MSB cannot provide responsive support to this limited duration operation from its DSA location. The MSB resources accompanying the brigade colocate with the FSB.

Attachment of a heavy brigade to a light division is the least preferred option for this type of mix. The attachment relationship requires the light division to support the heavy brigade. The major differences in support doctrine and organizations outlined above make the light DISCOM incapable of providing support without significant augmentation. The FSB with some MSB assets would still accompany the brigade as discussed above with the OPCON brigade. However, the light DISCOM will require additional assets to sustain the brigade. The MSB must provide to the maintenance company or companies in the light DSA repairers, tools, parts, TMs, and any other assets required to reinforce the FSB maintenance company.

The light DISCOM will also require additional bulk fuel storage and distribution assets, class IV supply resources, ambulances to evacuate casualties from the BSA to the DSA, and other transportation assets. Even with these resources, throughput (especially of class I and III) from corps to the BSA should still be used whenever possible.

HEAVY BATTALION TO A LIGHT BRIGADE

The preferred option for mixes at this level is also OPCON. In such cases, the heavy battalion task force (with a support slice from the parent heavy DISCOM) continues to receive support from the heavy DISCOM, which may require some MSB elements. The key factor influencing this situation is the distance from the battalion task force to the supporting FSB. If distances are great, sustainment of the task force over an extended period will be a substantial challenge, particularly in maintenance and class III and V supply.

MSB assets which may have to accompany the battalion task force might include —

- Tankers with drivers.
- HETs with operators.
- Tracked ambulances with drivers.

Attachment of a heavy task force to a light brigade is the least preferred option at this level. A light division forward area support team (or FSB in the case of the infantry division) is not capable of supporting a heavy battalion, even if accompanied by the package identified above. The FAST maintenance company lacks the capability to reinforce the repair capability of the MST deployed with the battalion in a number of commodity areas. It also does not have the ability to assist in the recovery of task force assets. The light division does not have HETs to evacuate heavy equipment or move it around the battlefield. Equipment incompatibilities will complicate class V and VII supply, and the FAST supply company does not have the capability to handle the large amounts of fuel required by the heavy task force. To cross-level assets from the FSB (and MSB) of the parent heavy DISCOM would likely jeopardize its ability to continue to support remaining elements of the heavy division.

LIGHT BRIGADE TO A HEAVY DIVISION

Light forces must be employed in sufficient strength to create a reaction or tactical pause by the enemy. This typically requires light forces to be employed in division size. However, to capitalize on its advantages in close terrain, a light brigade maybe employed with a heavy division.

If a division light brigade is task-organized to a heavy division the preferred relationship is attachment. The reason for this is that the light DISCOM does not have the robustness, particularly in movement, to support a brigade over extended LOCs while continuing to support remaining light division elements. This is especially true for the LID.

The attached light brigade would be accompanied by assets from the light DISCOM. These assets would likely include the following:

- FASCO from the light DISCOM HHC.
- Forward supply company from the S&T battalion.
- DAO representative from the DISCOM HHC.
- Forward maintenance company from the maintenance battalion.

- Forward support medical company from the medical battalion.
- Assets (repairers, tools, parts) from the DSA maintenance company or companies of the maintenance battalion (or MSB in the infantry division) of the light DISCOM. These will provide required reinforcing support in several repair areas such as wheeled vehicles and power generation equipment. (However, as noted above, the lack of robustness in the light DISCOM makes it impossible to provide a repair slice for every type of equipment.)
- Ambulances from the DSA medical company of the light DISCOM.
- Water team (if the heavy DISCOM cannot provide water support).
- Trucks from the TMT company.

(NOTE: Instead of the FST elements listed above, the FSB would accompany a brigade from the infantry division.)

Even with these assets, the MSB lacks the capability to provide sustainment to the light brigade without additional support from nondivisional elements. These would include additional trucks to provide required mobility and maintenance assets to handle increased passback. In particular, the MSB will not have the required class IX to support equipment that is unique to or in much higher densities in light forces, such as 105-mm towed howitzers and 60-mm and 81-mm mortars.

Assets from the maintenance company/companies normally located in the DSA and the TMT company (as well as the additional nondivisional trucks) would normally be attached to the appropriate company of the heavy division MSB.

LIGHT BATTALION TO A HEAVY BRIGADE

The preferred relationship for such a mix is again attachment. Challenges will be similar to those discussed above. The supporting FSB (with reinforcement from its MSB) will be severely stressed if it has to provide the required mobility, repair capability (including class IX) for light force equipment, class V for light force weapon systems, and water distribution to the battalion if it is a light infantry battalion. Mobility is critical. To enable a light battalion to move rapidly over long distances as may be required in heavy/light operations, the battalion will require additional vehicles or aviation assets. Additional maintenance and transportation assets should be provided to the MSB by the COSCOM to sustain the battalion.

OPCON of the battalion to the heavy brigade is the least preferred option due to the lack of movement assets to provide support over long distances.

GLOSSARY

-A-

AB - aviation brigade
AC - alternating current
ADA - air defense artillery
ADC - area damage control
ADC-S - assistant division commander for support
admin - administration
ADP - automatic data processing
ADPE - automatic data processing equipment
ADTMC - algorithm-directed troop medical care
ADSM - automated data systems manual
AG - adjutant general
ALOC - airlines of communication
AM - amplitude modulated
amb - ambulance
AMC - United States Army Materiel Command
AMCO - aircraft maintenance company
AMDF - Army Master Data File
AO - area of operations
AR- Army regulation
armt - armament
ASL - authorized stockage list
ASP - ammunition supply point
asst - assistant
ATCCS - Army Tactical Command and Control System
ATM - advanced trauma management
ATP - ammunition transfer point
autmv - automotive
AVIM - aviation intermediate maintenance
AWOL - absent without leave
AXP - ambulance exchange point

-B-

BAS - battalion aid station
BCOC - base cluster operations center
BDA - battle damage assessment
BDAR - battle damage assessment and repair
bde - brigade
BDR - battle damage repair
BF - battle fatigue
BMO - battalion maintenance officer
BMT - battalion maintenance technician
bn - battalion
br - branch
BSA - brigade support area

-C-

C2 - command and control
C3 - command, control, and communications
cav - cavalry
cbt - combat
CCI - controlled cryptographic items
CCL - combat-configured load
CS2 - Command, Control, and Subordinate System Structure
CCT - combat control team
cdr - commander
C-E - communications-electronics
CEB - clothing exchange and bath
cen - central

chap - chaplain
CID - Criminal Investigation Division
CL - class
CMMC - COSCOM materiel management center
cmd - command
CNR - combat net radios
co - company
comm - communications
COMSEC - communications security
con - control
CONUS - continental United States
COSCOM - corps support command
CP - command post
CS - combat support
CSG - corps support group
CSM - command sergeant major
CSS - combat service support
CSSCS - Combat Service Support Control System
CSST - cavalry system support team
CTA - common table of allowances
CTASC - Corps and Theater Automatic Data Processing Service Center

-D-

DA- Department of the Army
DAAS - Defense Automatic Addressing System
DAMMS-R - DA Movements Management System-Redesigned
DAS - Decentralized Automated Service
DAS3 - Decentralized Automated Service Support System
DD Form - Department of Defense Form
det - detachment
DISCOM - division support command
distr - distribution
div - division
DMHS - division mental health section
DMMC - division materiel management center
DMOC - division medical operations center
DMSO - division medical supply officer
DNBI - disease, nonbattle injury
DNVT - digital nonsecure voice telephone
DOD - Department of Defense
DS - direct support
DS4 - Direct Support Standard Supply System
DSA - division support area
DSM - direct support maintenance
DSS - direct support supply
DSVT - digital, secure voice telephone
DSU - direct support
DSVT - digital, secure voice telephone
DTO - division transportation officer

-E-

EA - engagement area
EAC - echelons above corps
EAD - echelons above division
elct - electronics
elect - electric
EMT - emergency medical treatment
eng - engineer
EOD - explosive ordnance disposal
EPW - enemy prisoner of war
ETA - estimated time of arrival

equip - equipment
evac - evacuation
EW - electronic warfare

-F-

FAAO - field artillery air observer
FAADS - forward area air defense system
FAAR - forward area alerting radar
FARE - forward area refueling equipment
FARP - forward arming and refueling point
FASCO - forward area support coordinator
FAST - forward area support team
FAWPSS - forward area water point supply system
fax - facsimile
F&E - fuel and electrical
FEBA - forward edge of the battle area
FLOT - forward line of own troops
FM - field manual, frequency modulated
FPF - final protection fires
FRAGO - fragmentary order
FSB - forward support battalion
FSMC - forward support medical company
FSSP - fuel system supply point
fwd - forward
FY - fiscal year

-G-

G1 - Assistant Chief of Staff, **G1** (Personnel)
G2 - Assistant Chief of Staff, G2 (Intelligence)
G3 - Assistant Chief of Staff, G3 (Operations and Plans)
G4 - Assistant Chief of Staff, G4 (Logistics)
gen - generator
GRREG - graves registration
GS - general support

-H-

HEMTT - heavy expanded mobility tactical truck
HET - heavy equipment transporter
HF - high frequency
HF-SSB - high frequency single side band
HHC - headquarters and headquarters company
HHD - headquarters and headquarters detachment
HQ - headquarters
HSS - health service support
hvy - heavy

-I-

IAW -in accordance with
ICRS - Individually Carried Record System
IEW - intelligence and electronic warfare
IHFR - improved high frequency radio
intel - intelligence
IPB - intelligence preparation of the battlefield
iss - issue

-J-

JP-4 - jet propulsion fuel, type 4
JP-8 - jet propulsion fuel, type 8

-K-

KIA - killed in action

km - kilometer
kw - kilowatt

-L-

LC - line of contact
LCSS - land combat support system
LD - line of departure
ldr - leader
LEN - large extension node
LID - light infantry division
LO - liaison officer
LOC - line of communication
log - logistics
LOGPAC - logistics package
LOGPLAN - logistics plan
LP - listening post
LRU - line replacement unit
lt - light

-M-

maint - maintenance
mat - materiel
MBA - main battle area
mbl - mobile
MCC - movement control center
MCO - movement control officer
MCP - maintenance collection point
MCS - maintenance control section; maneuver control system
MCTNS - man-portable common thermal night sight
mech - mechanized, mechanic
med - medical; medium
MEDLOG-D - Medical Logistics –Division
MEDPAR-D - Medical Patient Accounting and Reporting – Division
MEDSOM - medical supply, optical and maintenance
MES - medical equipment set
METT-T - mission, enemy, terrain, troops, and time available
mgt - management
MHE - materials handling equipment
MI - military intelligence
MLRS - multiple-launch rocket system
MMC - materiel management center
MOADS - maneuver oriented ammunition distribution system
MOGAS - motor gasoline
MOC - medical operations center
MOPP - mission-oriented protection posture
MP - military police
MRE - meal, ready-to-eat
MRM - maintenance reporting and management
MRO - materiel release order
MSB - main support battalion
MSE - mobile subscriber equipment
msl - missile
MSR - main supply route
MSRT - mobile subscriber radio-telephone terminal
MST - maintenance support team
MTF - medical treatment facility
MTOE - modification table of organization and equipment

-N-

NATO - North Atlantic Treaty Organization
NBC - nuclear, biological, chemical
NC - node center
NCO - noncommissioned officer
NCS - net control station
NICP - national inventory control point
nos - numbers
NP - neuropsychiatric
NSN - national stock number

-O-

OCOKA - observation, concealment and cover, obstacles, key terrain, and avenues of approach
ofc - office
off - officer
op - operator
OP - observation post
OPCON - operational control
OPLAN - operation plan
OPORD - operation order
ops - operations
OPSEC - operations security

-P-

PAC - Personnel and Administration Center
perim - perimeter
pers - personnel
PERSTAT - personnel status
petrl - petroleum
pkg - packaged
PL - phase lime
PLL - prescribed load list
pln - plan
plt - platoon
PM - preventive maintenance
POL - petroleum, oils, and lubricants
prev - prevention
PS - power supply
PSS - personnel service support
Psyop - psychological operations
pt - point
PVNTMED - preventive medicine
PWIS - Prisoner of War Information System
pwr - power

-Q-

QA - quality assurance
QC - quality control
QSS - quick supply store

-R-

RATT - radio teletypewriter
RAU - radio access unit
rec - receive
rep - repair
rcvy - recovery
RD - replacement detachment
RMC - remote multiplexer combiner
RO - requisitioning objective
ROC - rear operations commander
ROWPU - reverse osmosis water purification unit
RRD - replacement regulating detachment

RTD - return to duty
RX - reparable exchange

-S-

S1 - Adjutant (US Army)
S2 - Intelligence Officer (US Army)
S3 - Operations and Training Officer (US Army)
S4 - Supply Officer (US Army)
SALUTE - size, activity, location, unit, time, and equipment
SAMS - Standard Army Maintenance System
S&S - supply and service
S&T - supply and transportation
SARSS - Standard Army Retail Supply System
SCC - supply control center
SCOTT - single-channel objective tactical terminal
SDS - storage and distribution systems
sec - section
SED - special electrical devices
SEN - small extension node
SGT - sergeant
ship - shipment
SHORAD - short-range air defense
SIDPERS - Standard Installation/Division Personnel System
sig - signal
SINCGARS - Single-channel ground and airborne radio subsystem
SMFTS - semi-trailer mounted fabric tanks
SOI - signal operation instructions
SOP - standing operating procedure
sp - specialist
SPBS-R - Standard Property Book System– Revised
spt - support
sqd - squad
SRU - shop replaceable unit
SSB - single side band
SST - system support team
STAMIS - Standard Army Management Information System
stor - storage
sup - supply
supv - supervisor
svc - service
swbd - switchboard
sys - system

-T-

tac - tactical
TACCS - Tactical Army Combat Service Support Computer System
TACMS - tactical missile system
TAMMC - theater army materiel management center
TAMMIS-D - Theater Army Medical Management Information System — Division
TAMMS - The Army Maintenance Management System
tech - technical
TI - technical inspection
tm - team
TM - technical manual
TMDE - test, measurement, and diagnostic

equipment
TMT - transportation motor transport
TOC - tactical operations center
TOE - table of organization and equipment
TOW - tube-launched, optically tracked, wire-guided
tp - telephone
TRADOC - United States Army Training and Doctrine Command
trans - transportation
trk - truck
trkmstr - truckmaster
trmt - treatment
TRP - traffic regulation point
TWDS - tactical water distribution system

-U-

UCMJ - Uniform Code of Military Justice
ULC - unit-level computer
ULLS - Unit-Level Logistics System
UMCP - unit maintenance collection point
UMT - unit ministry team
US - United States

-V-

V - volt
VA - Virginia
veh - vehicle
VHF - very high frequency

-W-

WIA - wounded in action
WSM - weapon system manager
WSRO - weapon system replacement operations
wtr - water

-X-

XO - executive officer

References

REQUIRED PUBLICATIONS

Required publications are sources that users must read in order to understand or to comply with this publication.

Field Manuals (FMs)

63-2-2 Combat Service Support Operations: Armored, Mechanized and Motorized Divisions
71-100 Division Operations
100-5 Operations
100-10 Combat Service Support

RELATED PUBLICATIONS

Related publications are sources of additional information. They are not required in order to understand this publication.

Army Regulations (ARs)

710-2 Supply Policy Below the Wholesale Level
750-1 Army Materiel Maintenance Policies

Department of the Army Form (DA Form)

1687 Notice of Delegation of Authority Receipt for Supplies
2028 Recommended Changes to Publications and Blank Forms
2765-1 Request for Issue or Turn-In

Department of the Army Pamphlets (DA Pares)

738-750 The Army Maintenance Management System (TAMMS)

Department of Defense (DD Form)

567 Record of Search and Recovery

Field Manuals (FMS)

3-3 NBC Contamination Avoidance
3-4 NBC Protection
3-5 NBC Decontamination
3-100 NBC Operations
8-9 NATO Handbook on the Medical Aspects of NBC Defensive Operations
9-6 Ammunition Service in the Theater of Operations
10-14 Unit Supply Operations
10-27 General Supply in a Theater of Operations
10-52 Field Water Supply
10-63-1 Graves Registration Handbook
10-68 Aircraft Refueling
10-69 Petroleum Supply Point Equipment and Operations
10-71 Petroleum Tank Vehicle Operations
10-72 Petroleum Surveillance: Laboratories and Kits
10-280 Mobile Field Laundry, Clothing Exchange, and Bath Operations
12-6 Personnel Administration in the AirLand Battle
16-5 The Chaplain and Chaplain Assistant in Combat Operations
20-22 Vehicle Recovery Operations
43-5 Unit Maintenance Operations
43-12 Division Maintenance Operations
55-2 Division Transpiration Operations
55-30 Army Motor Transport Units and Operations
63-1 Combat Service Support Operations-Separate Brigade
63-20 Forward Support Battalion
63-22 Headquarters and Headquarters Company, and Division Materiel Management Center, Division Support Command Armored, Mechanized, and Motorized Divisions
100-27 US Army/US Air Force Doctrine for Joint Airborne and Tactical Airlift Operations
101-5 Staff Organization and Operations
101-10-1 Staff Officer's Field Manual-Organizational, Technical, and Logistical Data Planning Factors

Technical Manuals (TMs)

8-215 Nuclear Handbook for Medical Service Personnel

8-285 Treatment of Chemical Agent Casualties and Conventional Military Chemical Injuries

Training Circulars (TCs)

8-12 Use of the M51 Shelter System by Division Level Medical Units

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